UCLA
LANDSCAPE PLAN

SEPTEMBER 2022

UCLA

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ACKNOWLEDGEMENTS

UCLA Landscape Plan Core Project Team

Peter Hendrickson
Campus Architect

Associate Vice Chancellor for Design and Construction, Capital Programs

Co-Chair Landscape and Ecology Task Force

Justin Wisor
Director, Custodial and Grounds, Facilities Management

Co-Chair Landscape and Ecology Task Force

Stephanie Landregan
Program Director, Landscape Architecture Program, Extension

Program Director, Horticulture and Gardening Program, Extension

Nurit Katz
Chief Sustainability Officer

Bonny Bentzin
Deputy Chief Sustainability Officer

UCLA Contributors including Landscape and Ecology Task Force and Landscape Plan Workshop Participants

Numerous UCLA staff, faculty and students contributed essential information and feedback to develop the UCLA Landscape Plan. Their contributions are deeply appreciated.

Jose Alberola
Undergraduate Student

Kierstin Blatzheim

Undergraduate Student

Gary Bucciarelli

Assistant Adjunct Professor and Director of Research for Stunt Ranch Reserve

Emily Cline

Undergraduate Student

Erin Cooney

Graduate Student

Madeline Cowen

Graduate Student

Wayne Dollase

Professor Emeriti

Karen Dutko

Undergraduate Student

Ying Ling Esfandi

Senior Architect, Facilities Management

Jessie Fleming

Undergraduate Student

Renee Fortier

(Emeriti) Executive Director, Events and Transportation

Tom Gillespie

Professor, Geography

Mishuana Goeman

Professor of Gender Studies, American Indian Studies, and affiliated faculty of Critical Race Studies in the Law School

Special Advisor to the Chancellor on Native American and Indigenous Affairs

Sedonna Goeman-Shulsky

Graduate Student

Richard Jackson

Professor Emeritus, Public Health

Co-Chair, BeWell Pod, Semel Healthy Campus Iniative Center

Cameron Jewett

Undergraduate Student

Andrew Johnson

Undergraduate Student

Dave Karwaski

Events and Transportation

Allison Keeney

Assistant, Director, Mildred E. Mathias Botanical Garden

Liz Kennedy

Director, Ethical Labor and Sustainability, ASUCLA

Alyssa Kong

Undergraduate Student

Jada Larson

Undergraduate Student

Alison Lipman

Continuing Lecturer, Institute of the Environment and Sustainability

Travis Longcore

Associate Adjunct Professor, Institute of the Environment and Sustainability

Greg Luna

Senior Superintendent, Grounds, Facilities Management

Rebeca Méndez

Professor, Design Media Arts

Jared Meyer

Senior Director, Housing Maintenance, Housing and Hospitality

Valerie Millette

Undergraduate Student

Sydney Monte-sano

Undergraduate Student

Omar Newland

Principal Architect, Facilities Management

Jane Ni

Undergraduate Student, 21-22 USAC Facilities Commissioner

Cully Nordby

Associate Director, Institute of the Environment and Sustainability

Fiona Osborn

Undergraduate Student

Julio Pimental

Senior Grounds Supervisor, Housing and Hospitality

Stephanie Pincetl

Professor, Institute of Environment and Sustainability

Founding Director, California Center for Sustainable Communities

Perla Pineda

Undergraduate Student

Cassie Rauser

Executive Director, Sustainable LA Grand Challenge

Nola Talmage

Landscape Architecture Student

Jin Zhang

Landscape Architecture Student

Michael Bircumshaw

Landscape Architecture Student

Morgan Rogers

Graduate Student

Arturo Sanchez

Administrative Director of Health System Environmental Services & Sustainability

Kelly Schmader

Assistant Vice Chancellor, Facilities Management

Kirsten Schwarz

Co-Chair, BeWell Pod, Semel Healthy Campus Iniative Center, Associate Professor of Urban Planning and Environmental Health Sciences

Brad Shaffer

Distinguished Professor, Ecology and Evolutionary Biology, La Kretz Center for California Conservation Science

Monika Shankar

Graduate Student and GSR, BeWell Pod, Semel Healthy Campus Iniative Center

Rebecca Shipe

Adjunct Associate Professor, Ecology and Evolutionary Biology

Wendy Slusser

Professor and Associate Vice Provost, Semel Healthy Campus Iniative Center

Victoria Sork

Professor and Faculty Director, Mildred E. Mathias Botanical Garden

Rey Soto

Data Manager/Programmer, Epdemiology, Public Health

Amy Stanfield

Undergraduate Student

Hayley Stansell

Alumna and Masters of Landscape Architecture Student, Cal Poly Pomona

Ally Steinleitner

Undergraduate Student

V. Kelly Turner

Assistant Professor, Urban Planning and Geography

Claire Villegas

Undergraduate Student

Anne Youngdahl

Undergraduate Student

Consultant Team

Design Workshop

Urban Planning and Landscape Architecture

Stillwater Sciences

Ecology and Restoration

Carol Bornstein

Horticulture and Native Plants Consulting

JTL Consultants

Tree Risk Assessment

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1.0
Executive Summary

1.1 INTRODUCTION

The UCLA Landscape Framework Plan will guide future change for UCLA's campus landscape and outdoor spaces.

The plan will:

- Inventory and analyze the existing campus.
- Guide capital improvements.
- Establish best practices for operations and maintenance.
- Show design opportunities to attract donors.
- Identify future studies and plans.

8 Guiding Principles:

1. Model responsible environmental practices.

2. Protect, steward, and enhance UCLA's historic campus and environs.

3. Connect the campus to the surrounding neighborhoods while maintaining its distinctive character.

4. Ensure that pedestrian and bicycle circulation is safe, well connected, accessible, and easily navigable.

5. Promote the use of the landscape in research, teaching, learning, and scholarship.

6. Create inclusive, multi-use, outdoor environments that are universal in access, democratic in spirit, welcoming to visitors, and conducive to sociability and community for students, faculty, and staff.

7. Create and nurture biodiverse, natural environments and green spaces that promote health and wellness for the UCLA community.

8. Incorporate traditional ecological knowledge.

1.2 WHY THIS PLAN

The Plan's recommendations **respond to Southern California's changing climate**, UCLA's limited physical space, the call for a campus that is more inclusive, and restoring and managing the campus landscape as an ecosystem.

The Plan provides **short-term implementation measures and a long-range road map** for achieving UCLA's vision for its campus with a flexible framework that allows design professionals the ability to be creative while improving campus integration and the performance of the landscape and outdoor space.

The Plan is based on **research, analysis, expert consultation, and stakeholder engagement**.

The Plan **addresses multiple audiences**, including administrators, staff, grounds maintenance, student groups, funders, alumni, and consultants tasked with campus planning, design, funding, and implementation.

1.3 LANDSCAPE PLAN 30 YEAR VISION

Design and Programming

- Campus Place Types
- Programming of Campus Spaces
- Design Vision for Key Areas

Campus Planting

- Landscape Zones + Plant Palette
- Conversion of Turf

Environmental Systems

- **Establishing Priority Habitat Linkages**
- **Outlining Best Practices for Landscape Restoration**
- **Stormwater Management**

TURF CONVERSION

Achieved by removing turf and replanting with different plantings or re-purposing area for a different use.

REDUCTION

65%

of the Existing Turf Area

STUDY SPACE

Increasing the number of outdoor study areas on campus that contain seating, shade, power, Wifi.

INCREASE

111%

of the Existing Outdoor Study Area

NATIVE PLANTING

Increase in native plants and reduction in exotic/high water plantings.

TARGET

75%

of the Total Planting Area

IRRIGATION WATER USE

Achieved through surface conversion and recommended irrigation upgrades.

REDUCTION

31.4 M

Gallons Per Year

BIODIVERSITY

Increasing the amount of habitat areas on campus through implementation of plant palette and bio-diversity guidelines.

TARGET

30%

of the Total Land

1.4 HOW TO USE THIS PLAN

Identify Project

1. Review guiding principles and objectives.
2. Determine: place type, landscape zone, environmental systems.
3. Review: place type guidelines, programming, plant palette, turf conversion, habitat, biodiversity and stormwater management guidelines.
4. Determine if project is in a key design area.
5. Review key design area guidelines.
6. Design project.

Implementation:

UCLA Design, Construction and Operation Staff

- Integrate the Plan into:
  - Long Range Development Plan
  - Capital Improvement Projects
  - Operations & Maintenance
- Reference Codes and Ordinances
- Apply Total Asset Management
- Align to the Plan in Design Review
- Monitor Landscape Performance

UCLA Campus Community

- Integrate into Curriculum and Research
- Steward the Campus Landscape
- Engage with Edible Gardens
- Practice Urban Agriculture
- Organize Student-initiated Sessions
- Identify Programming Priorities
- Protect and Nurture Native Wildlife

Design & Construction Professionals

- Design Phase - Follow Landscape Plan Guidelines and Recommendations
- Construction Phase - Follow Best Practices, Codes and Ordinance

1.5 RECOMMENDATION OVERVIEW

GUIDING PRINCIPLE	OBJECTIVES	RECOMMENDATIONS *(SUMMARY)*
Model responsible environmental practices.	**Conserve water and improve water quality.**	▪ Upgrade system irrigation incrementally to a more efficient system/coordinated system. ▪ Create an irrigation master plan and target connecting all irrigation on to a central controller by 2035. ▪ Convert under-utilized turf to low water planting. ▪ Collect storm water in rain gardens and in storage tanks for use in irrigation. Utilize dry wells (for groundwater infiltration) where storage tanks or rain gardens are not options. ▪ Plant drought tolerant plants with the goal of replacing all water-intensive planting by 2035. ▪ Study the feasibility of using reclaimed wastewater for irrigation. ▪ Educate the public about the summer dormant period exhibited by many water efficient native plants. ▪ Capture storm water in rain gardens and use plants and design methods to reduce pollutants. ▪ Coordinate landscape improvements with water quality strategies. ▪ Increase pervious surfaces throughout campus. ▪ Provide appropriately sized green infrastructure within each campus micro watershed.
	Restore native plant communities, promote biodiversity and create habitat.	▪ Establish landscape zones tailored to campus microclimates that are consistent with local ecosystems. ▪ Create a new planting palette promoting local biodiversity and water conservation. ▪ Identify, create, prioritize, and protect habitat linkages through the campus. ▪ Provide landscapes and restorations to attract key species. ▪ Diversify campus plantings to help ensure resiliency to climate change, pests and disease.
	Protect and prioritize trees.	▪ Conduct campus-wide tree inventory and develop urban forestry management plan. ▪ Identify, assess, designate and protect Heritage Trees. ▪ Follow consistent and agreed upon maintenance best practices for tree care. ▪ Remove/thin overcrowded trees.
	Improve soil quality.	▪ Create an on-campus green waste/mulching area to stockpile biomass for soil amendment. ▪ Establish maintenance best practices for soil health. ▪ Reduce soil compaction by removing unnecessary hardscape. ▪ Protect and enhance soil with consistent mulching and aeration where needed.

GUIDING PRINCIPLE	OBJECTIVES	RECOMMENDATIONS *(SUMMARY)*
Model responsible environmental practices *(cont.)*.	**Mitigate and adapt to climate change.**	▪ Plan for drought and for periods of intense rainfall. ▪ Plan for higher average temperatures by providing more shade and plants that are traditionally from hotter/drier climates. ▪ Limit the amount of turf on campus. ▪ Retain moisture/rainwater. ▪ Protect and add trees, especially local species, to sequester carbon and provide cooling. ▪ Increase shade by planting additional canopy trees throughout the campus and prioritize areas that have the greatest amount of pedestrian and bicycle traffic such as: bus stops, study spaces, major pedestrian corridors, courtyards etc. ▪ Utilize cool pavements/hardscapes that reflect rather than absorb heat. ▪ Install green roofs where appropriate and feasible. When not feasible, install cool or reflective roofs.
	Improve the local air quality.	▪ Plant trees and plant materials near air pollution sources (between automobiles and pedestrians, etc.). ▪ Protect the campus's mature trees stock. ▪ Transition to all-electric landscape maintenance equipment. ▪ Setback walkways and outdoor gathering spaces from air pollution sources.
	Reduce light pollution.	▪ Transition to full-cut off light fixtures that cast no upwards light. ▪ Establish lighting zones that minimize lighting near critical habitat areas. ▪ Conduct a campus-wide lighting master plan.
	Minimize green waste and maintenance costs.	▪ Stop the practice of over aggressive tree trimming and hedging. ▪ Utilize a total asset management methodology for estimating annual funding of the campus outdoor environment. ▪ Create a space on campus to collect green waste and convert to compost/mulch. ▪ Identify and secure funding sources for maintenance and operations.

GUIDING PRINCIPLE

Protect, steward and enhance UCLA's historic campus and environs.

OBJECTIVES

Identify, celebrate, and highlight the different layers of campus history.

Coordinate landscape design with architectural design.

Protect key spaces on campus from major change.

RECOMMENDATIONS *(SUMMARY)*

- Undertake a cultural landscape assessment for the campus to uncover historically significant landscapes.
- Provide interpretive signage to identify and educate the public on significant spaces. Ensure community involvement in the curation of signage as it pertains to specific UCLA students or communities' histories.
- Preserve the structure of culturally significant landscapes and outdoor spaces by maintaining the space organization, tree stands, and structures while allowing for refinement of planting palette, site furnishings, etc.

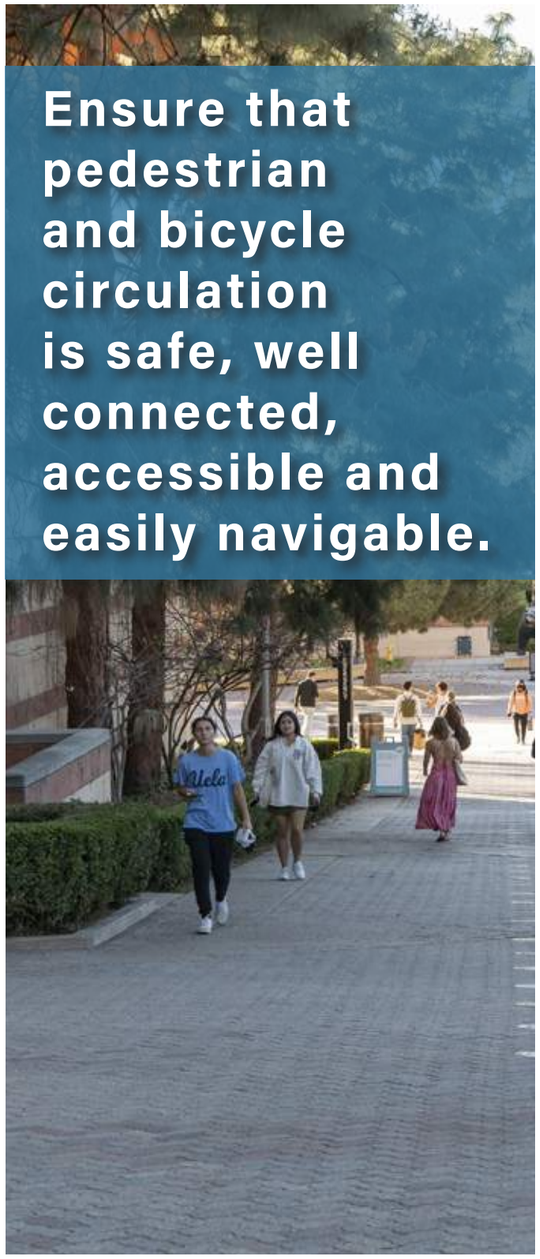
- Celebrate the legacy landscape of Ralph Cornell.
- Landscapes in the vicinity of classical architecture should reflect the principles of classical design: symmetry, balance, order, axis, hierarchy.
- Landscapes in the vicinity of modernist architecture should reflect the principles of modernism: clean lines and edges, distinct sculptural quality, subtle use of color with limited use of accent color, minimalist look, repetition of elements.

- Specific spaces on campus are historic and should be protected, including:
  - Franklin D. Murphy Sculpture Garden
  - Dickson Plaza
  - Wilson Plaza
  - Janss Steps
  - Inverted Fountain
  - Dickson Court Bridge

GUIDING PRINCIPLE	OBJECTIVES	RECOMMENDATIONS *(SUMMARY)*
Connect the campus to the surrounding neighborhoods while maintaining its distinctive character. 	**Connect between campus and surrounding neighborhoods.**	▪ Improve signage and wayfinding along the perimeters of the campus and conduct a campus-wide signage and wayfinding master plan. ▪ Follow recommendations within for the Le Conte Ave Key Design Area. ▪ Coordinate with on-going and/or planned initiatives or development projects in surrounding neighborhoods. ▪ Refer to UCLA transportation planning documents for transportation related improvements. ▪ Work with City of Los Angeles to implement pedestrian and bicycle safety measures on streets surrounding campus.
	Design the campus edge to the context.	▪ On the southern edge, adjacent to Westwood Village, create multiple pedestrian and bicycle access points by improving road crossings, lighting, wayfinding, and integral campus pedestrian routes. ▪ Continue to buffer the west, north and east campus edges adjacent to residential communities through the use of plant materials and screening of lighting. ▪ Minimize glare, illumination, and noise into the surrounding residential neighborhoods. ▪ Maintain wildlife connectivity with the Santa Monica Mountains at key locations in the northwest corner of campus. ▪ Enhance biodiversity and native plant landscaping of relatively unmanaged, densely landscaped edge areas along the north and east edges of campus.
	Enhance the landscape character of primary and secondary entrances.	▪ Establish capital improvement projects for the primary and secondary entrances redesign. ▪ Follow recommendations in the Place Type: Buffers and Entrances Section ▪ Follow recommendations in the Landscape Zones Section.

	Provide visual consistency for all pedestrian and multi-modal corridors.	▪ Create tree lined pedestrian and multimodal corridors with appropriate understory planting. Follow recommendations in the Landscape Zones Section.
		▪ Create a consistent look for entries. serving as an image both inviting and recognizable as UCLA.
		▪ Refer to UCLA Architectural Guidelines for site elements visual consistency.
		▪ Maintain and enhance key campus axis and corridors:
		  ▪ The historic campus core, Dickson Court to Wilson Plaza (see detailed recommendations within)
		  ▪ Inverted Fountain to Bunche Hall and To Sculpture Garden
		  ▪ South of Powell Library to Court of Science (see detailed recommendations within)
		  ▪ Bruin Walk (see detailed recommendations within)
		  ▪ Westwood Plaza all the way to Stone Canyon (see detailed recommendations within)

GUIDING PRINCIPLE



Ensure that pedestrian and bicycle circulation is safe, well connected, accessible and easily navigable.

OBJECTIVES

Upgrade neighboring streets and campus internal streets to complete streets standards.

Make the entire campus ADA accessible.

Enhance navigation for the entire campus.

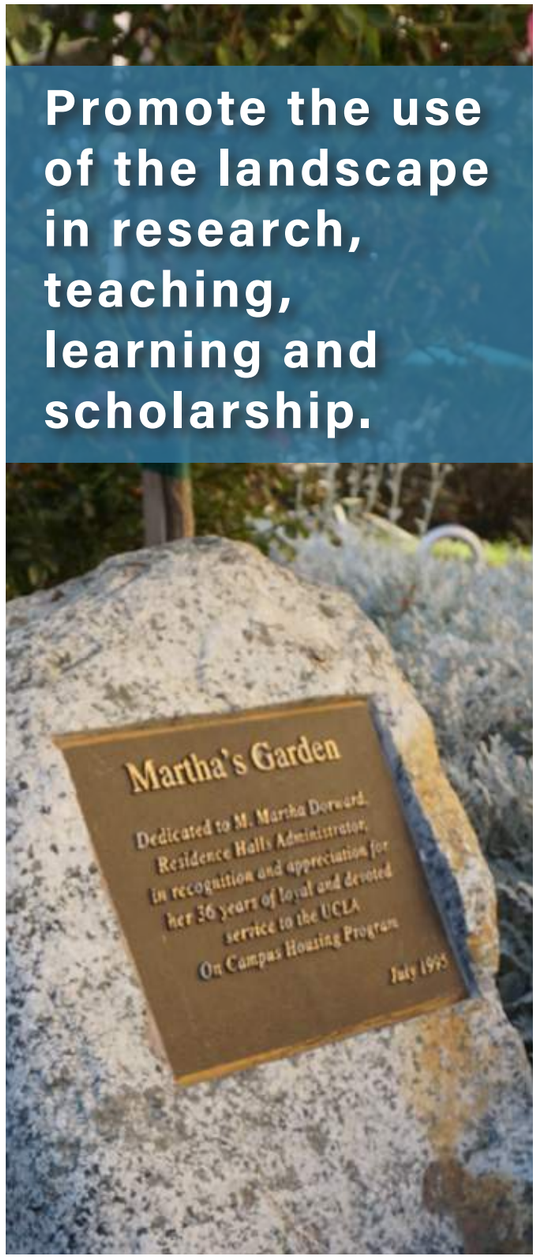
RECOMMENDATIONS *(SUMMARY)*

- Follow recommendations and proposed sections in the Pedestrian and Multi modal Corridors and Buffers and Entrances.
- Refer to UCLA Bicycle Master Plan and Active Transportation Plan for bike lanes related improvements.
- Provide high visibility pedestrian crossings from surrounding neighborhoods into campus.
- Calm the traffic speeds on the surrounding campus streets by utilizing traffic calming measures including: curb extensions, speed humps, narrower lanes, textured paving.

- Redesign areas with ADA access challenges and provide accessible parking.
- Coordinate with the MetaMap project by the Disability Computing Program.
- Refer to UCLA Accessibility Plan for accessibility related improvements.

- Conduct a campus-wide signage and wayfinding master plan.
- Refer to UCLA Architectural Guidelines for signage specifications and balance making wayfinding clear while not creating visual clutter.
- Continue to utilize technology and digital wayfinding for campus.
- Utilize tree plantings and landscape to visually connect the campus.

GUIDING PRINCIPLE	OBJECTIVES	RECOMMENDATIONS *(SUMMARY)*
Promote the use of the landscape in research, teaching, learning and scholarship.	**Use the landscape as an exhibit and a laboratory for formal and informal research, teaching, and learning.**	▪ Identify landscape improvements that are appropriate for Sustainability Action Research (SAR), Grand Challenges Initiatives, plant identification classes, and landscape architecture studios etc. ▪ Continue the on-going restoration projects in Sage Hill and Stone Canyon Creek. ▪ Continue on-going educational programs in the Botanical Garden and larger campus. Identify additional research, teaching and learning opportunities including those geared towards students in the horticultural extension ▪ Identify and study green infrastructure opportunities on campus to determine where they should go and how the existing green infrastructure is performing. ▪ Continue to study the connection between health and the provision of green space.
	Encourage engagement with the landscape by student led organizations.	▪ Promote and engage students with edible campus initiative. Follow recommendations in the Edible Campus Section within. ▪ Inventory students every two years regarding the UCLA campus outdoor environment to understand what areas are successful and what areas need attention. ▪ Promote Bee Campus, which sustains pollinators by increasing the abundance of native plants, providing nest sites, and reducing the use of pesticides. Engage with Bruin Beekeepers Organization and create habitat for native bees. ▪ Seek opportunities and encourage engagement with student organizations, such as UCLA Semel Healthy Campus Initiative Center, Undergraduate Students Association Council, Graduate Students Association. ▪ Encourage volunteer work for gardening and landscape replacement.
	Support use of the campus landscape for installations, exhibits, and performances.	▪ Maintain plant species diversity and utilize the campus as an arboretum for teaching and learning. Provide plant labels for plant identification and education. ▪ Identify and establish biodiversity and habitat demonstration sites for research and education. ▪ Build awareness of nature, site ecology, and biodiversity of the campus as ecosystem. ▪ Build additional outdoor study spaces for various groups sizes and bring classes outdoors when feasible.



GUIDING PRINCIPLE

Create inclusive, multi-use, outdoor environments that are universal in access, democratic in spirit, welcoming to visitors and conducive to sociability and community for students, faculty and staff.

OBJECTIVES

Design flexible spaces that can accommodate both large events and daily activities.

Give students the ability to determine space programming.

Create more social and casual gathering space on campus.

Continue to have UCLA be an "open" campus for public use.

RECOMMENDATIONS *(SUMMARY)*

- Accommodate a wide diversity of event types.
- Create small programmable spaces along the perimeters of large spaces for small group activities.
- Equip event space with sufficient water fountains, power outlets, secure but easily moveable furnishing, and other amenities.
- Open lines of communication between Capital Programs, Facilities Operations and Maintenance, Events, Public Safety, and other UCLA departments to identify priorities for improvements to outdoor space.
- Design every space on campus for more than two uses. Allow for flexibility and creativity in space utilization.

- Enhance the coordination among students, Events Office, UCLA Recreation, UCLA Athletics, and other relevant organizations to avoid conflicts.
- Create a menu of programming options for spaces to be allocated by student groups.
- Provide guidelines for how spaces can be organized for different event types.

- Convert underutilized turf (turf space that's hardly used for recreation and/or events) to study spaces.
- Add small programmable spaces along major pedestrian corridors, connective spaces, and buffer areas.
- Provide shade, Wifi, power, seating throughout campus.

- Work with Public Safety to balance an open campus with the safety of students, faculty and staff.
- Utilize technology for security and space management.
- Design spaces to allow for clear sight lines to reduce or eliminate "blind corners" and utilize Crime Prevention Through Environmental Design (CPTED) measures in campus design.

GUIDING PRINCIPLE	OBJECTIVES	RECOMMENDATIONS *(SUMMARY)*
Create and nurture natural environments and green spaces that promote health and wellness for the UCLA community.	**Improve human comfort.**	▪ Create additional tree canopies and shaded areas on campus. Assess and protect tree canopies. ▪ Incorporate shade structures and/or umbrellas where needed. Follow UCLA Architectural Guidelines for site elements related details. ▪ Use cool paving to reduce pavement temperature. ▪ Use reflective surfaces on roofs where possible.
	Encourage exercise and outdoor recreation activities.	▪ Create additional trails inside of campus. Enhance the existing trails. ▪ Implement the Sunset Recreation Area master plan. ▪ Provide a single source for space programming and utilize technology to promote and coordinate events.
	Establish spaces that accommodate programming for mental health and spirituality.	▪ Allocate spaces in courtyards or other intimate spaces on campus, accommodating programming for mental health and spirituality. Work with UCLA Healthy Campus Initiative. ▪ Incorporate ecological restoration and native plant landscapes within many areas of campus to leverage the mental health benefits of access to nature. ▪ Provide views of greenery from hospital beds and from dorms. ▪ Reduce glare into sleeping quarters. ▪ Designate spaces on campus that are free from excessive noise and coordinate these spaces with study and mediation spaces.

GUIDING PRINCIPLE	OBJECTIVES	RECOMMENDATIONS *(SUMMARY)*
Incorporate traditional ecological knowledge.	**Meet with Tongva and understand indigenous practices.**	▪ Building on the existing Memorandum of Understanding (MOU) with the Tongva, define clear administrative processes and protocol for the empowerment of Indigenous people in the implementation of the campus landscape. ▪ Follow recommendations in Traditional Ecological Knowledge section of the Campus Landscape Plan.
	Establish spaces on campus for land stewardship and programming by Indigenous people.	▪ Promote tribal land caretaking. ▪ Incorporate indigenous practices into campus maintenance practices as a method of fulfilling UCLA's sustainability goals and reducing maintenance costs. ▪ Incorporate native plants and water systems more on campus and create literacy of the landscape. ▪ Work with Indigenous student groups to build up landscape programming and Indigenous cultural events.
	**Create landscapes that educate and bring awareness to indigenous knowledge.**	▪ Create Tongva Gardens on campus. ▪ Work with Tongva leaders to place interpretive signage near native campus plantings that balances Indigenous cultural literacy with sensitivity to the privacy of the tribe's cultural knowledge. ▪ Establish spaces for tribal partners to conduct landbased pedagogy and collaborate with the students and faculty of UCLA to generate education forums to create relationships that extend to the public.

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2.0

History + Existing Conditions

2.1 HISTORY

Kuruvungna Village Springs

Cornell's Plan for the UCLA campus dated September 7th, 1944

GABRIELINO/TONGVA ANCESTRAL LANDS

UCLA acknowledges the Gabrielino/Tongva peoples as the traditional land caretakers of Tovaangar (the Los Angeles basin and South Channel Islands). As a land grant institution, they pay their respects to the Honuukvetam (Ancestors), 'Ahiihirom (Elders) and 'Eyoohiinkem (our relatives/relations) past, present, and emerging.

Despite the dispossession experienced by the indigenous peoples that once lived on and cultivated the land on which UCLA sits, their historic and ongoing resilience and cultural power remains. The University embraces the special responsibility of providing access to ancestral lands to the Gabrielino/Tongva and their ancestors.

The site of a former Tongva village and sacred spring called Kuruvungna is located just one and a half miles from the UCLA campus. The Gabrielino Tongva Springs Foundation serves as the site's current caretaker, preserving the location for the ongoing ceremonies of Tongva who reside in the region. The proximity of this place to UCLA indicates the complex relationship between the campus landscape and Indigenous lands.

'

CAMPUS HISTORY

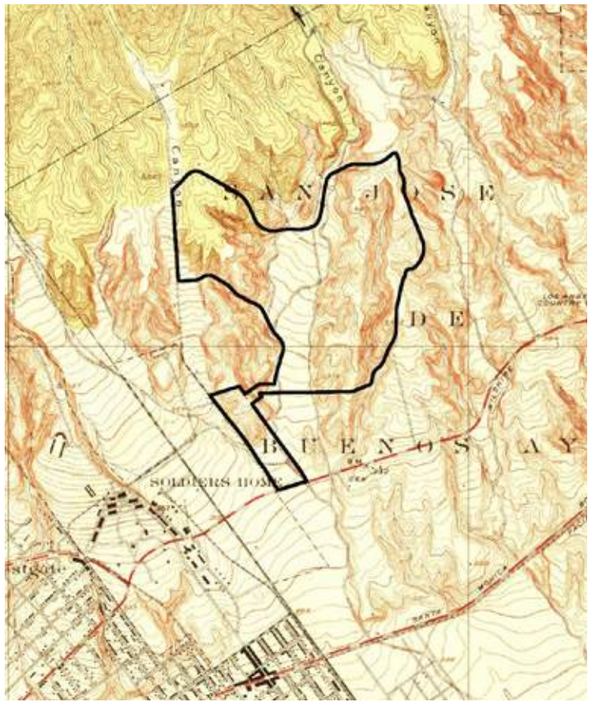
In 1925, the UC Regents chose a 384-acre parcel in Westwood as the new site for the Southern Branch of the University of California campus. Its design and development were presided over by the architect, George Kelham. Kelham developed UCLA's Beaux Arts, axial campus layout. The axial campus layout was somewhat challenging to implement due to the topography. To achieve the campus design significant modifications were made to the existing Arroyos and to the natural topography.

Its park-like setting and grand views promoted a picturesque aesthetic. Unlike other campus plans that have buildings fronting all 4 sides of open spaces, a quadrangle, UCLA's spaces are designed with open sides to promote views and breezes.

As UCLA grows, the original Kelham plan gives way to other design philosophies, including modernism. The application of modernist planning principles resulted in atrophy of the original plan, resulting in greater diversity of spaces and architecture.

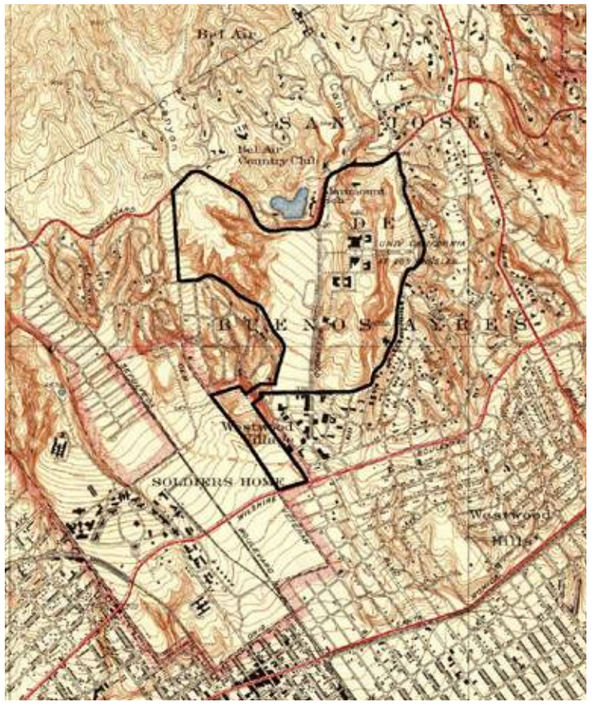
Reference:

Dundjerski, Marina. UCLA: The First Century. London: Third Millennium Pub, 2011.



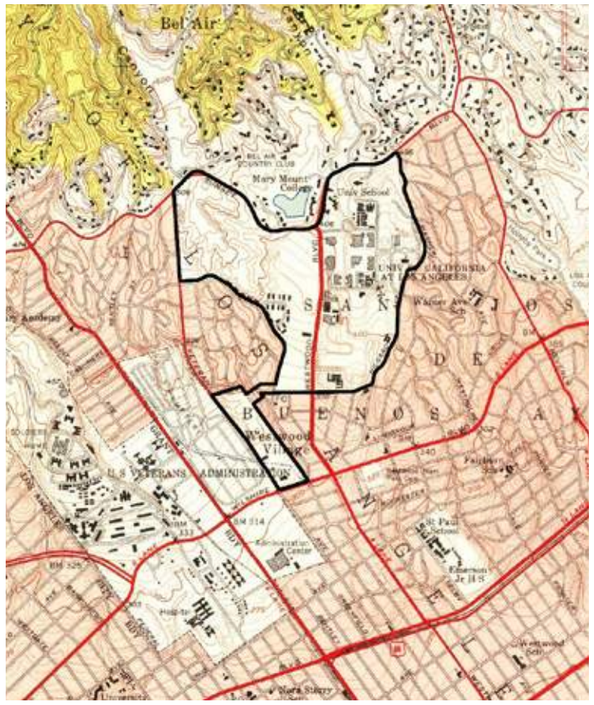
1925

The ancestral Gabrielino/Tongva landscape is covered by farms and ranches; naturalized drainages traverse the site. UC Regents purchase a tract of these lands for the UC Berkeley Southern Branch campus.



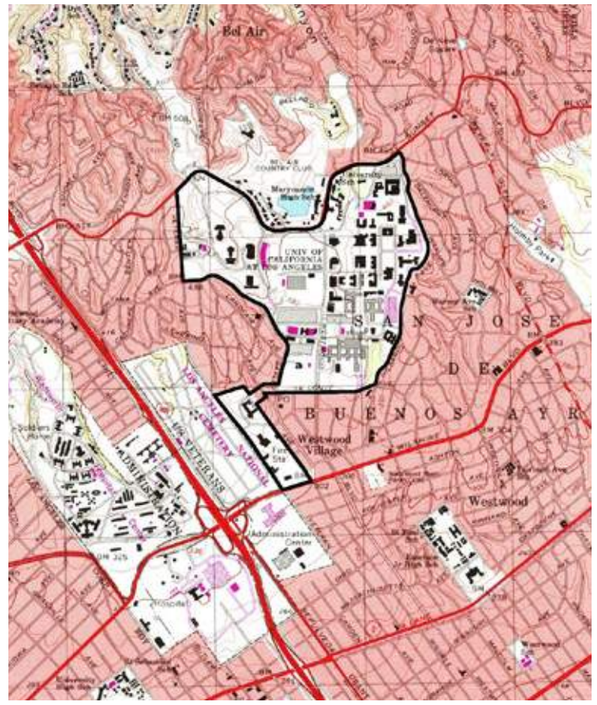
1934

Buildings begin to populate the Campus in an axial, Beaux Arts layout presided over by university architect George Kelham. In 1927, the campus is renamed UCLA. Campus surroundings begin to develop, limiting future expansion opportunities including the community of Bel Air to the north, developed by Alphonso Bell and designed by landscape architect Mark Daniels, and the community of Westwood Village to the south, developed by Harold Janss and designed by multiple designers as one of the nation's first suburban shopping districts.



1950

Oversight and planning for campus development is transferred to landscape architect, Ralph Cornell. The grand and picturesque master plan progresses, complemented by iconic sites such as the Franklin D. Murphy Sculpture Garden, Bruin Walk, and Mildred Mathias Botanical Garden. Historic grading and drainages are under grounded to accommodate campus growth.



1995

The increasing popularity of UCLA necessitates continued growth. Efficient and creative design solutions are implemented . The original Beaux Arts plan diversifies through a variety of architectural expressions.

Source:

USGS Historical Topographic Map

Cornell's Plan for the UCLA campus dated September 7th, 1944

THE LEGACY OF RALPH CORNELL

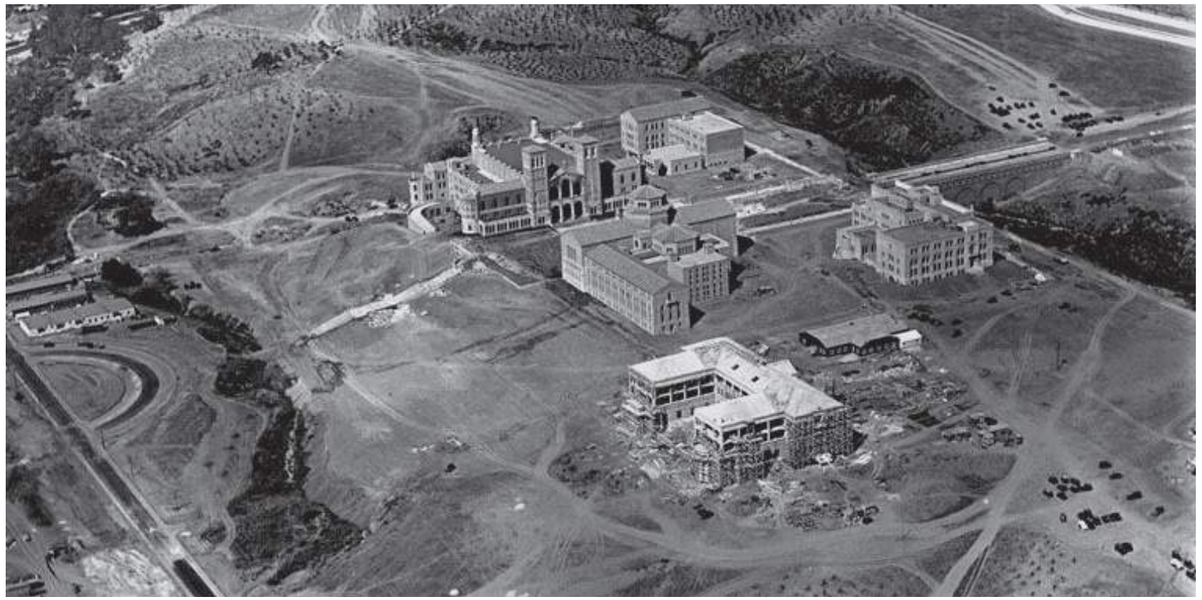
Ralph D. Cornell, who has been referred to as the Frederick Law Olmsted of Los Angeles, was the supervising landscape architect at UCLA from 1937 to 1972. Cornell was the mind behind many beloved sites at UCLA, including the Inverted Fountain, the Franklin D. Murphy Sculpture Garden, Bruin Walk and Bruin Plaza. He managed the development of the Mildred Mathias Botanical Garden.

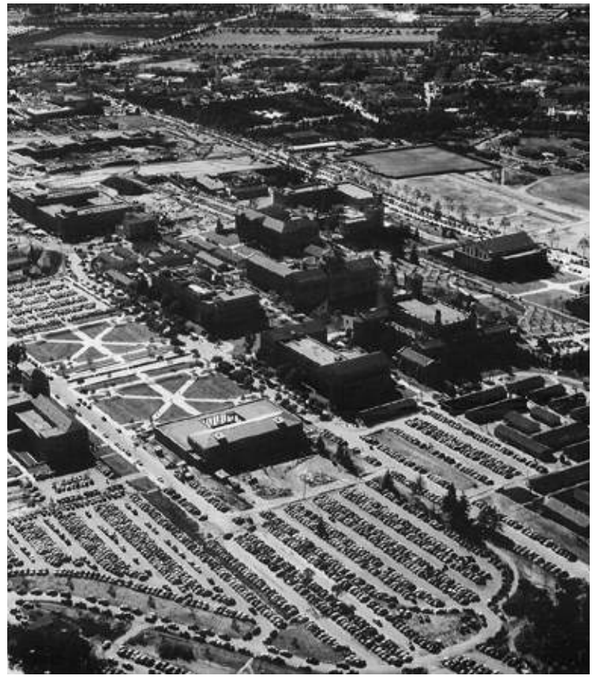
The Cultural Landscape Foundation calls Cornell, "the single most influential landscape architect to shape Los Angeles." He was an avid writer in design and planning theory and oversaw a plethora of built work. His extensive portfolio includes master planning, public, campus and cultural projects and features Picturesque, Beaux Arts and Modernist styles. In 1955, Cornell became senior partner in the firm he co-founded, which went on to work extensively on Modernist municipal projects throughout LA. Other local work includes Torrey Pines Park, Los Angeles Music Center, and La Brea Tar Pits. He oversaw long-term planning projects at UCLA, University of Hawaii Honolulu, and Pomona College.

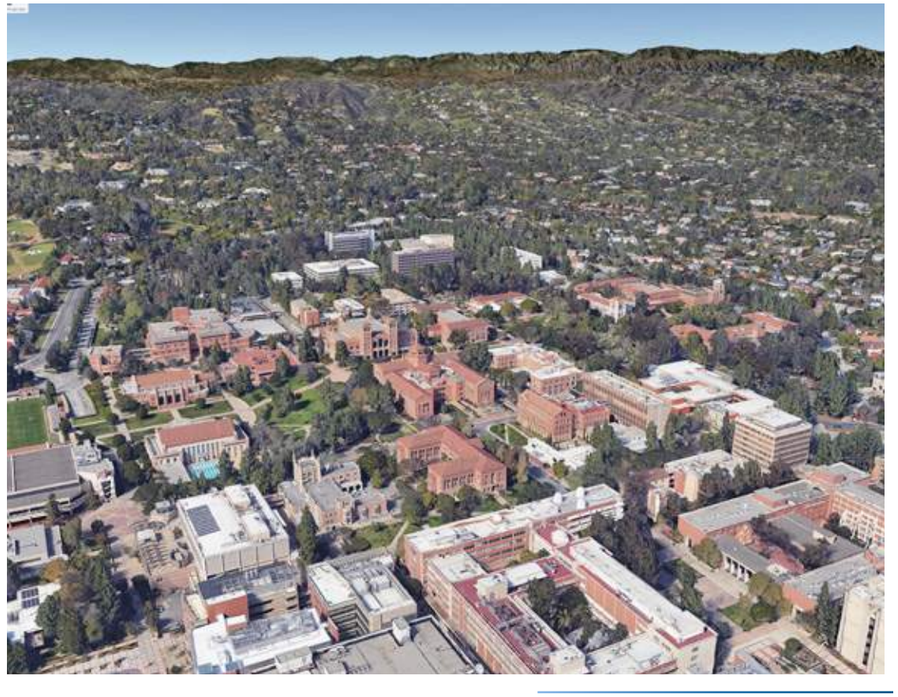
Reference:

"Ralph Cornell - Southern California Dean of Landscape Architecture." The Cultural Landscape Foundation.

https://tclf.org/news/features/ralph-cornell-southern-california-dean-landscape-architecture.







2.2 CAMPUS DEMOGRAPHICS

UCLA receives more annual applications than any other university in the nation In 2021, it was ranked as the number one public university for the fifth straight year by U.S. News & World Report. Efficient use of the campus and beautiful, high performing open space is critical to the success of the University by helping to attract students and by accommodating increasing enrollment and densification.

The campus population is also diversifying so the campus landscape must respond to this by also diversifying to accommodate new space programming, different aesthetic preferences, and expectation for environmental performance.

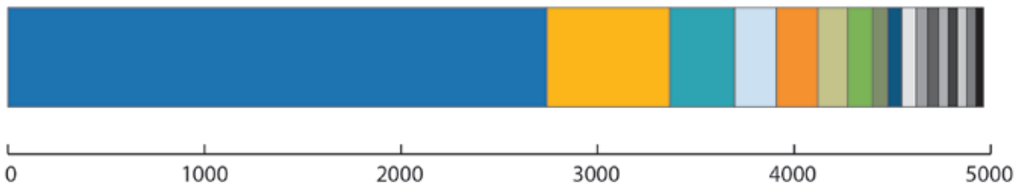
High performing landscapes retain a core identity while accommodating the unique needs and desires of a complex user base. In the case of UCLA, this means a campus landscape that meets those needs across gender, race, ethnic lines and supports institutional goals of diversity and inclusion.

Student Diversity by Ethnicity

Ethnicity	Undergraduate	Graduate
African American	5%	6%
American Indian & Alaska Native	<1%	<1%
Asian & Pacific Islander	33%	22%
Hispanic	21%	12%
White	26%	32%
Other Domestic or Unknown	4%	5%

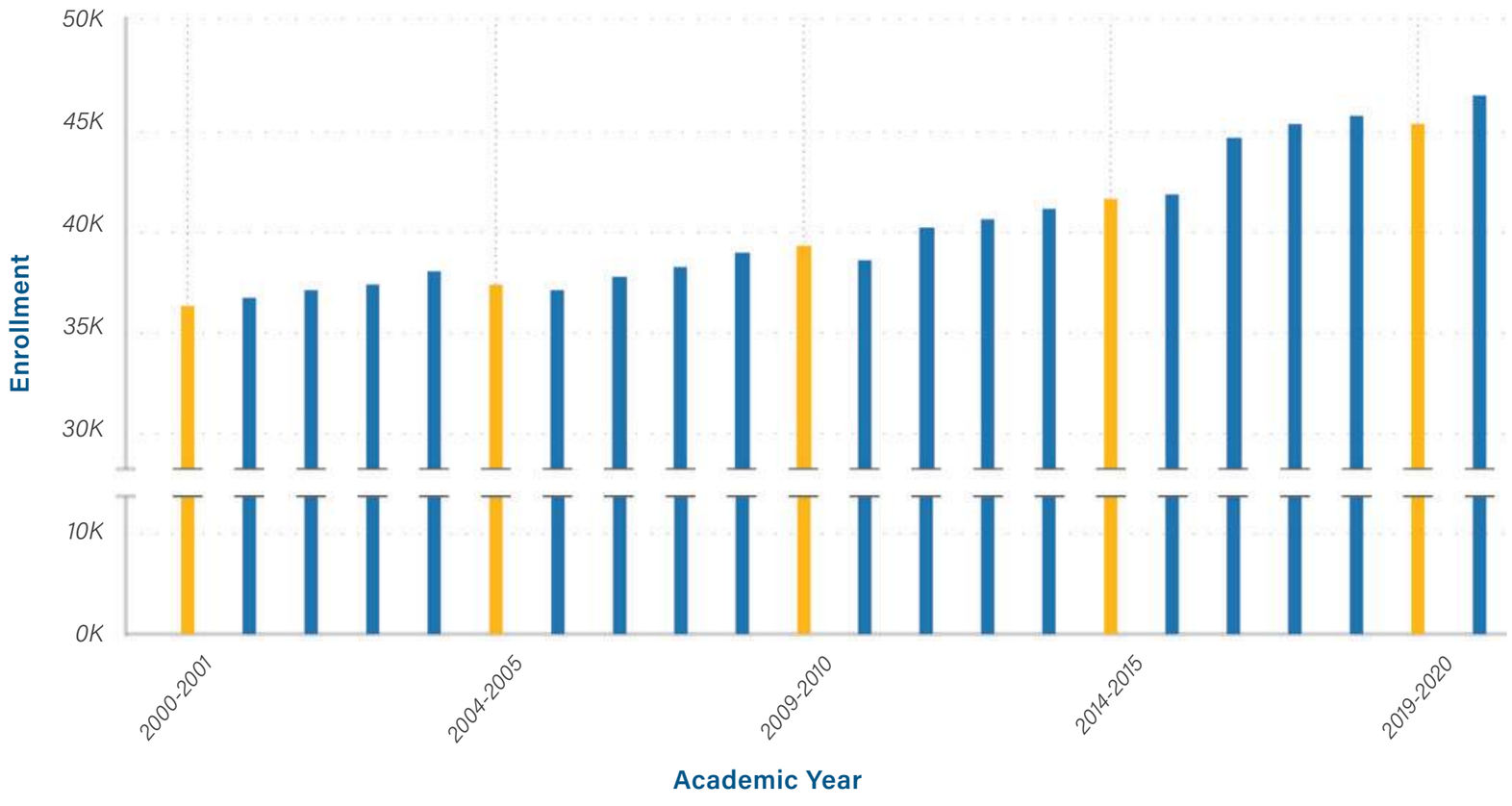
Source: https://www.ucla.edu/about/facts-and-figures

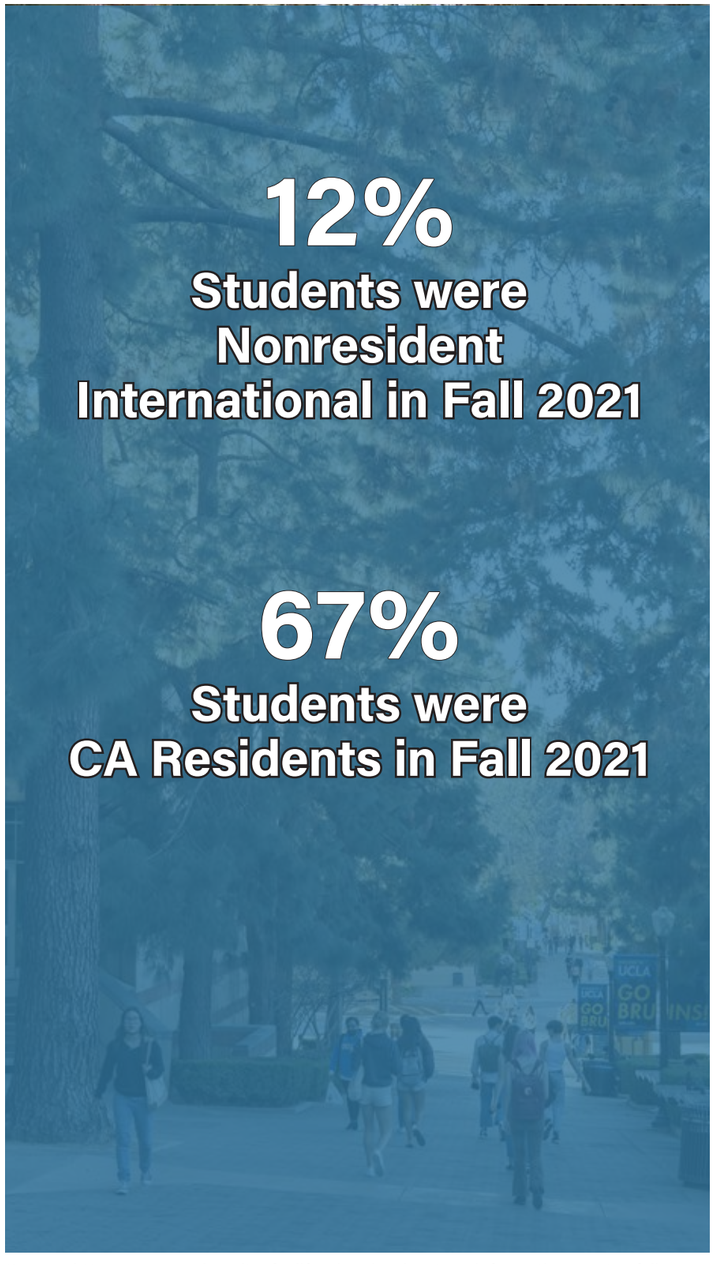
UCLA 2021 Enrollment International Demographics



- China | 49%
- India | 11%
- South Korea | 6%
- Canada | 4%
- Taiwan | 4%
- Japan | 3%
- Indonesia | 2%

UCLA Historical Enrollment: Fall Quarters





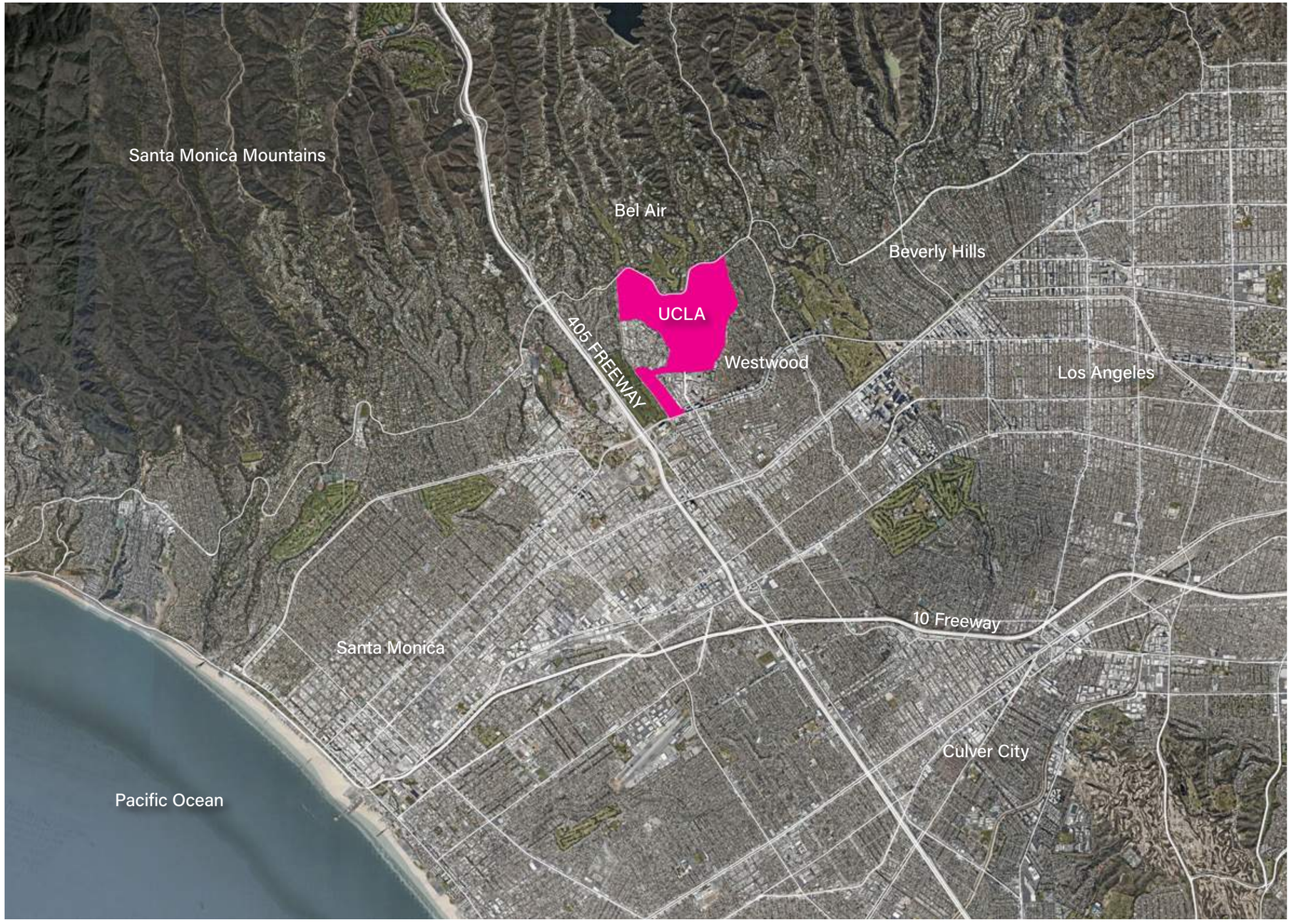
Source: https://www.universityofcalifornia.edu/about-us/information-center/fall-enrollment-glance

2.3 CONTEXT

Located in western Los Angeles, UCLA spans 419 acres. The campus is south of the Bel Air community and Country Club and north of Westwood Village.

Westwood Village is a walkable district with a variety of restaurants, entertainment, office, retail, residences as well as several buildings owned and operated by UCLA. To the southwest is the Los Angeles Natural Cemetery and Westwood neighborhood, which wraps the campus to the east. The area immediately west of campus consists of mostly student and faculty housing, including some dispersed properties owned by UCLA. Historically, UCLA's neighbors to the north and east have been concerned about noise and views. They seek to ensure as the campus grows their neighborhoods are protected from impacts. These neighborhoods continue to be involved in the planning and maintenance of UCLA and are key stakeholders. (Photographs of existing conditions)

UCLA is nestled into the base of the Santa Monica Mountains, west of Beverly Hills, northeast of Santa Monica, and five miles from the Pacific coast. Its southern border is immediately adjacent to the Westwood Village neighborhood.

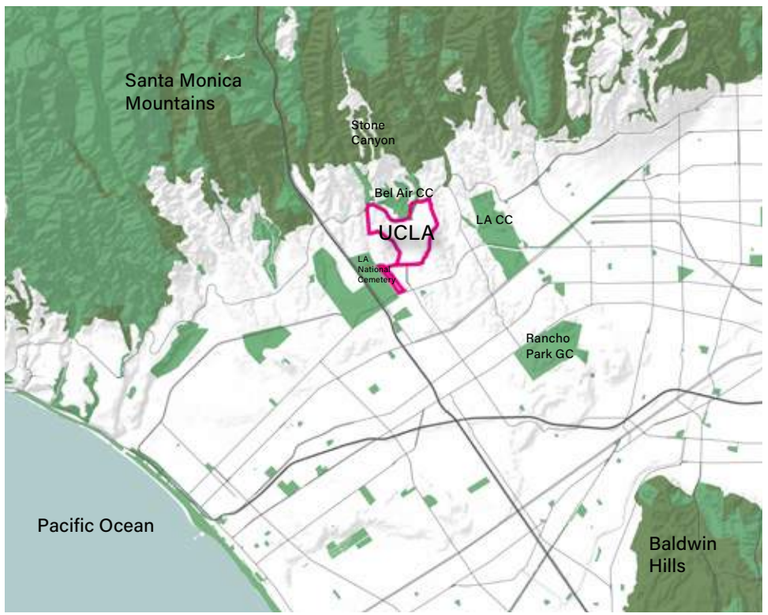


Regional Circulation

The 405 Freeway is approximately one mile west of the campus with on/off ramps at Sunset Boulevard and Wilshire Boulevard.

The Metro Purple (D Line) is being extended to provide rail transit to UCLA with a stop currently under construction at the corner of Westwood Boulevard and Wilshire Boulevard. Planning of alternative routes for a new north/south Metro Line called the Sepulveda Transit Corridor is ongoing that may include an on-campus UCLA station. The proposed opening date for the line is 2033.

Regional Open Space

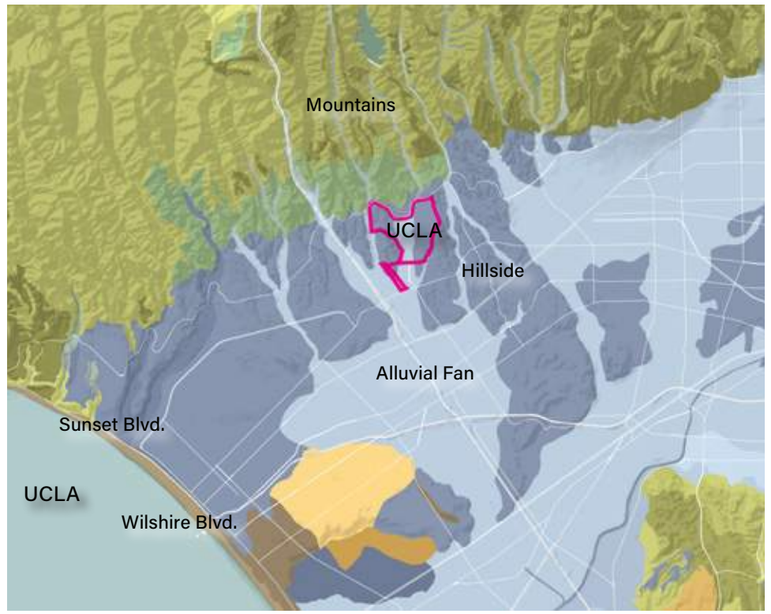


The Santa Monica Mountains and the Pacific Ocean are the dominant open spaces in the vicinity of UCLA. Some of the largest private contiguous open spaces are golf courses and the LA National Cemetery.

Baldwin Hills, located approximately five miles southeast of UCLA, is a layover site for migrating birds.

UCLA can play a role in the regional open space and habitat restoration by providing a site for layover of migratory birds and a place for public passive recreation.

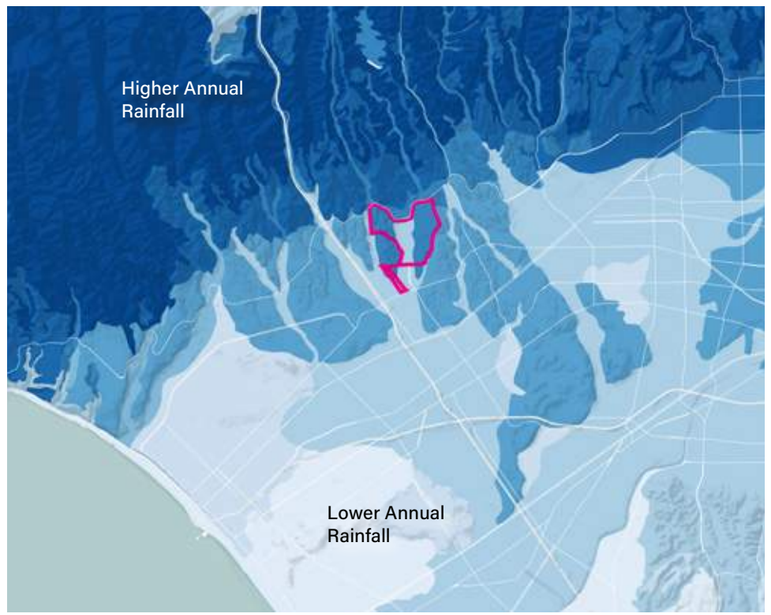
Regional Geographic Conditions



The topography and geology play a significant role in the campus design and ongoing operations and maintenance. UCLA sits between the mountainous region of the Santa Monica Mountains and the Alluvial Fan that makes up much of the Los Angeles Basin.

The transition between these two features requires landscape strategies to address soil conditions, water run-off, ADA accessibility, and regional wildlife migration patterns.

Annual Precipitation



The Santa Monica Mountains receive greater rainfall totals than the lower lying areas. The campus is located at the base of Stone Canyon, necessitating careful planning for water run-off.

As climate change continues, more intense storm events will result in greater pressure on the storm water infrastructure to accommodate higher volumes of water.

2.4 LANDSCAPE

The UCLA campus celebrates its "arboretum look" with a diverse and thriving plant palette. There are examples of climate-appropriate compositions installed on campus, emphasizing California native species. Many areas are defined by a healthy canopy of mature trees, particularly the historic core. Several impressive specimen trees dot the campus, e.g., *Tipuana tipu, Pinus pinea, Platanus racemosa*. However, plant species here are predominantly high-water exotic species. Some appear stressed due to changing climatic conditions.

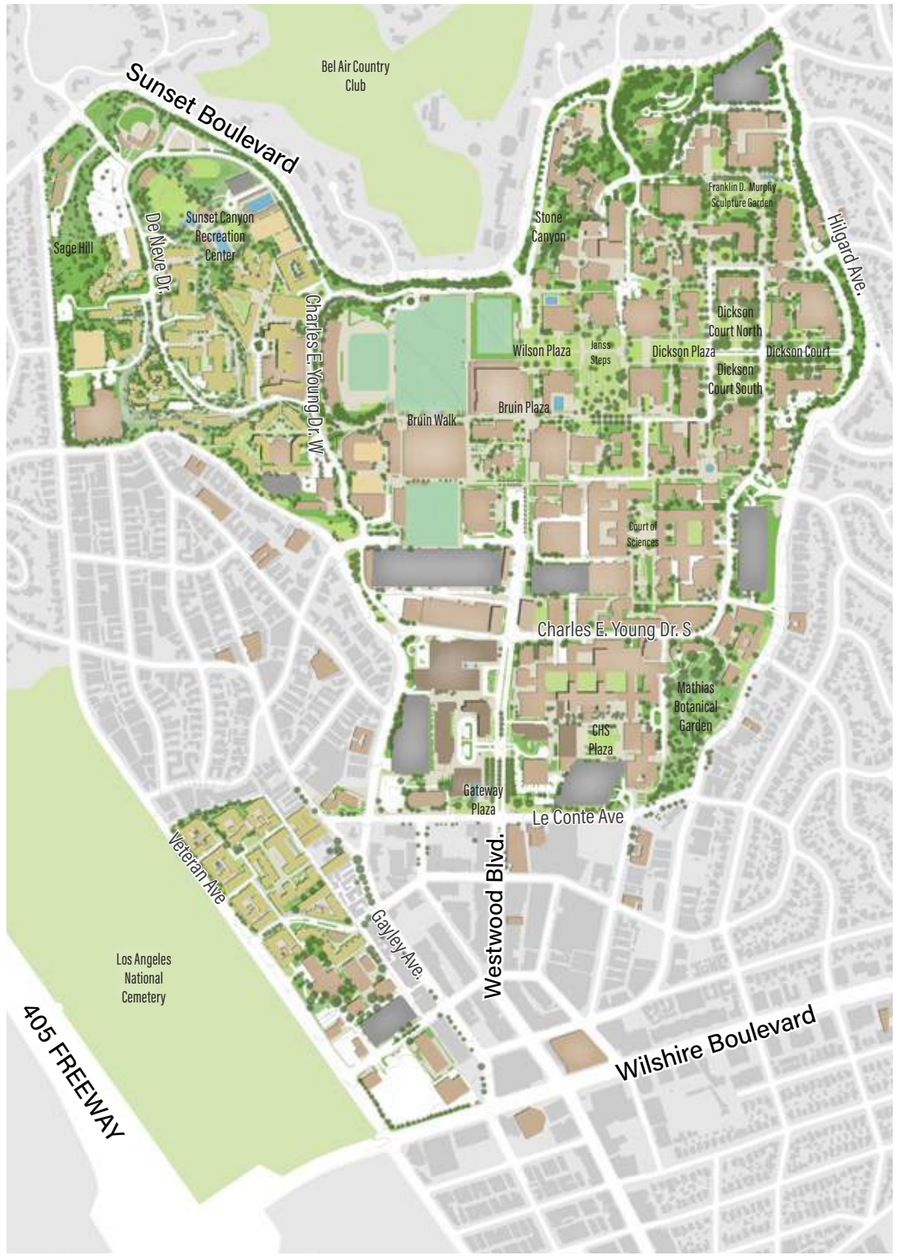
Situated in the dense urban setting, approximately 68% of the campus is constituted by buildings, streets, and hardscape. Understory planting accounts for 21% of the total campus area while turf accounts for 8% of the total campus area. With frequent drought conditions in California, UCLA is looking to convert underutilized turf areas into drought tolerant landscape or small programmatic space.

Sources:

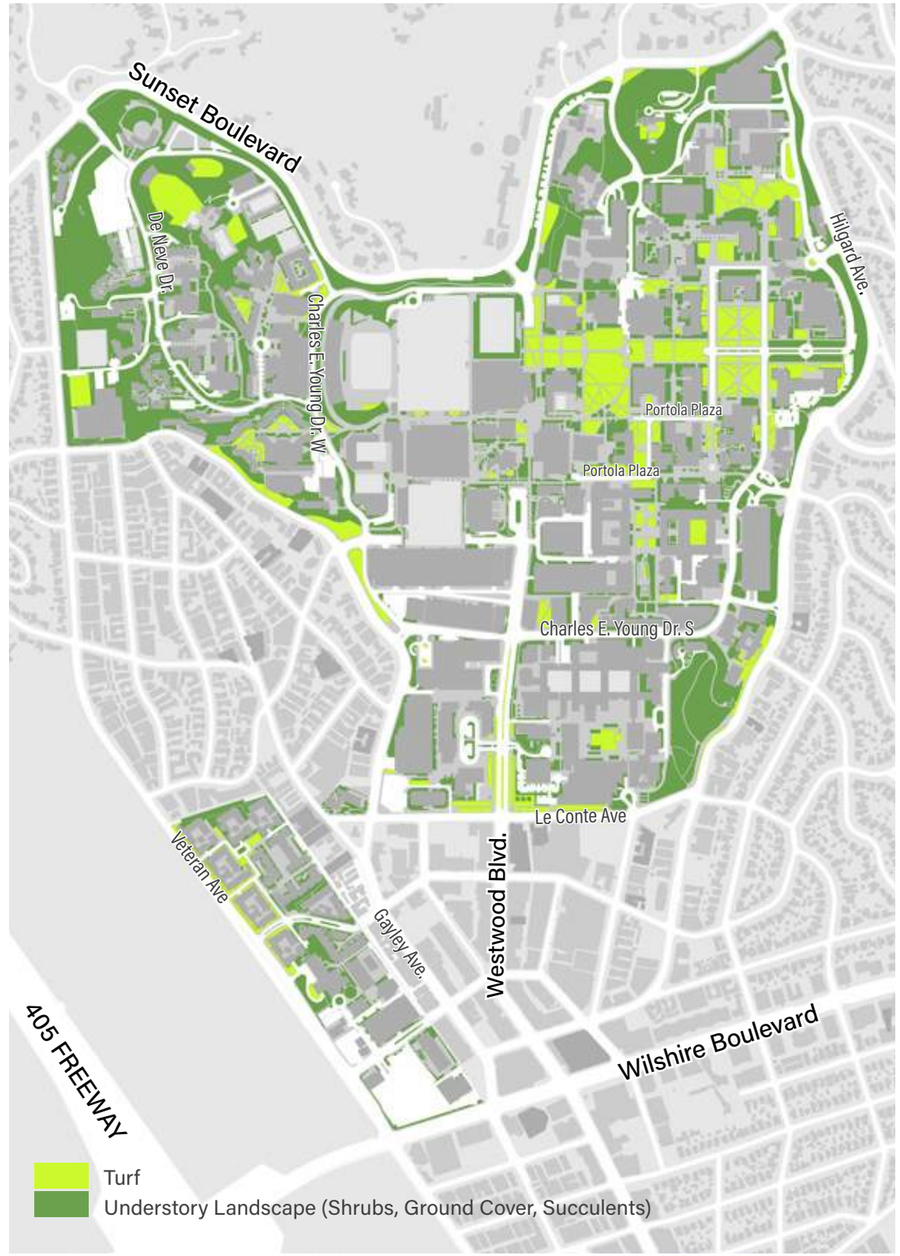
UCLA GIS Data

Google Earth Aerial

Existing Landscape



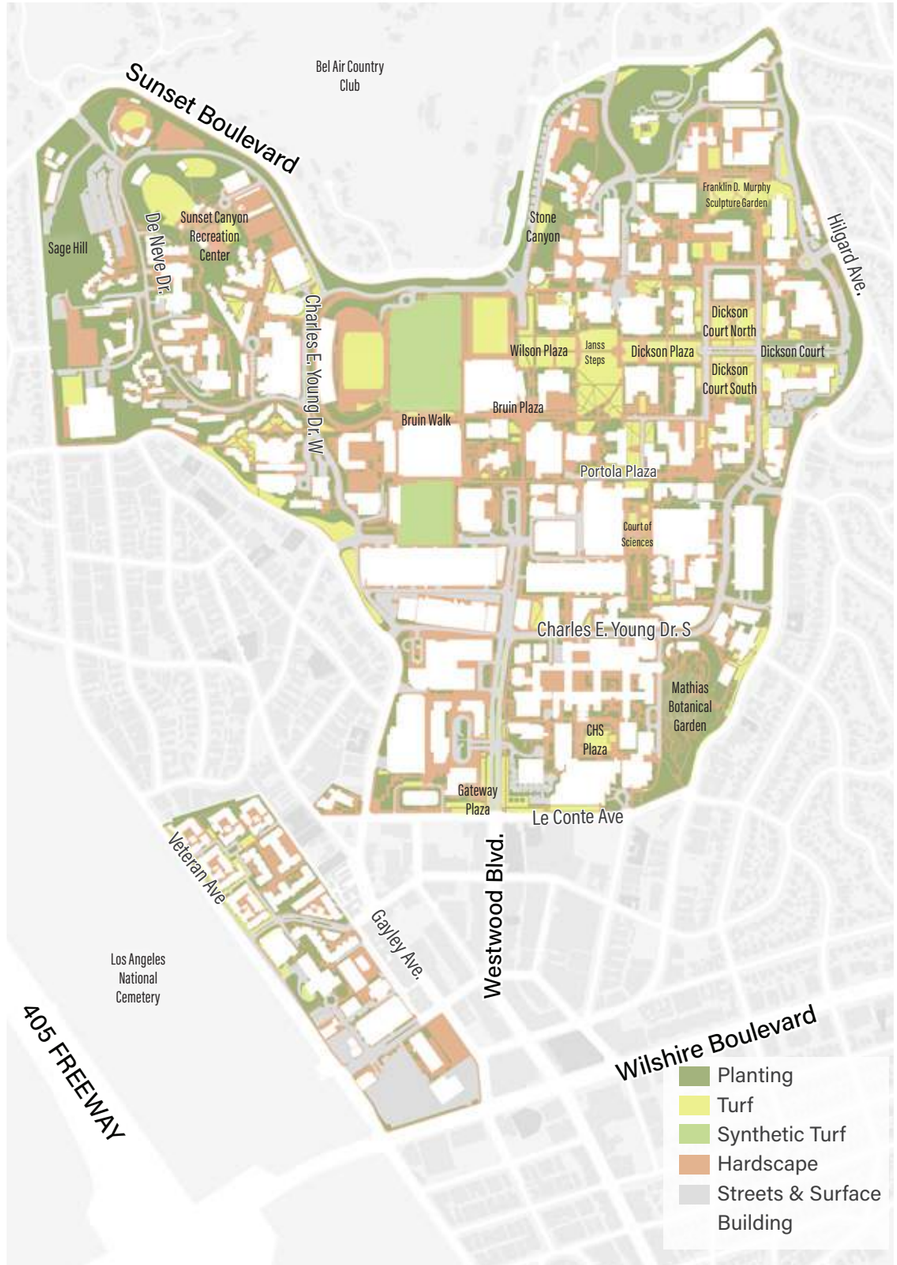
Existing Ground Plane Landscape

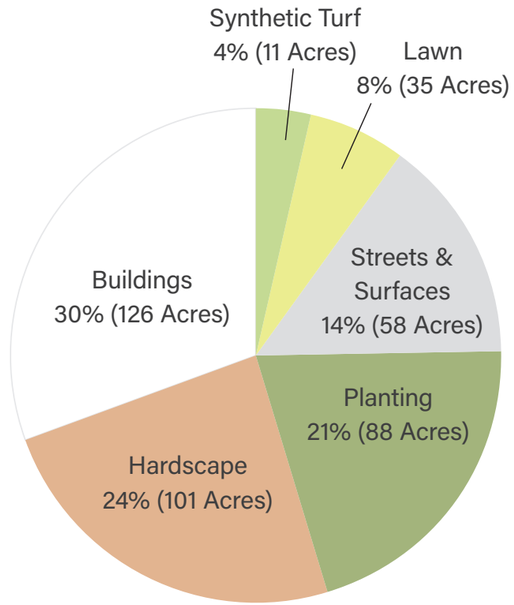


Existing Tree Canopy

Tree canopy is approximated based on Google Earth aerial.

Existing Surface Conditions





Numbers are approximated based on the Campus CAD file received from UCLA Capital Programs.

Classifying landscapes by surface types is a good place to begin to understand the existing campus conditions. This creates a good baseline for measuring campus planning alternatives to determine if the planning goals are achieved.

2.5 CIRCULATION

UCLA encourages non-automotive modes of transportation in its 2019 Active Transportation Plan. Still, vehicle travel and parking garages continue to be important mechanisms for campus accessibility. The location of parking facilities has important implications for bicycle and pedestrian circulation as well as for ADA accessibility. There has also been a push for more multi-functional use of parking facilities, which often are not at capacity. Landscape and programming proposals for parking structures and underground facilities must consider structural requirements and limitations such as loading and water infiltration.

The majority of vehicular trips come from the south via Wilshire Boulevard. Sunset Boulevard is also a major regional arterial providing access from the north.

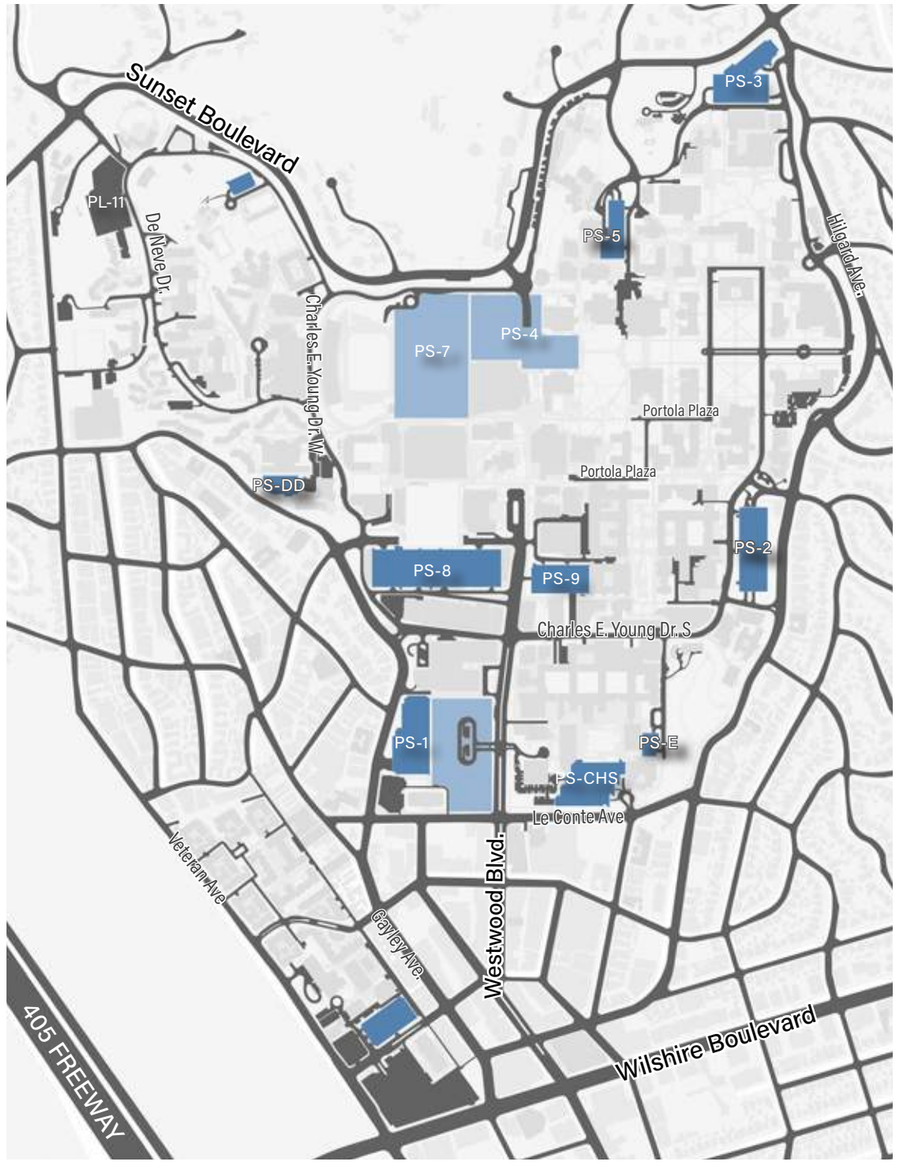
Parking Structures are located near the edges of campus reducing vehicular / pedestrian conflicts in the campus core.

Sources:

UCLA GIS Data

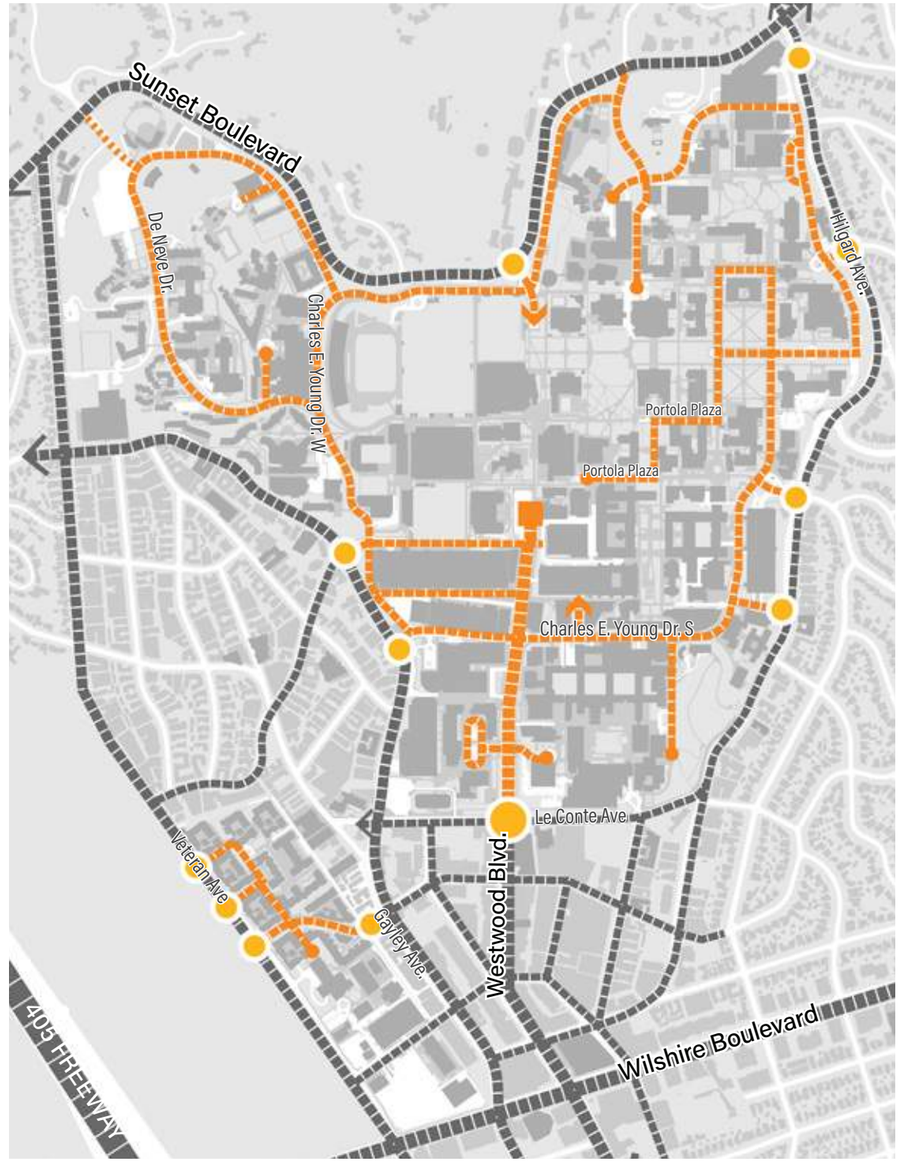
UCLA Transportation Plans

Existing Vehicular Circulation + Parking



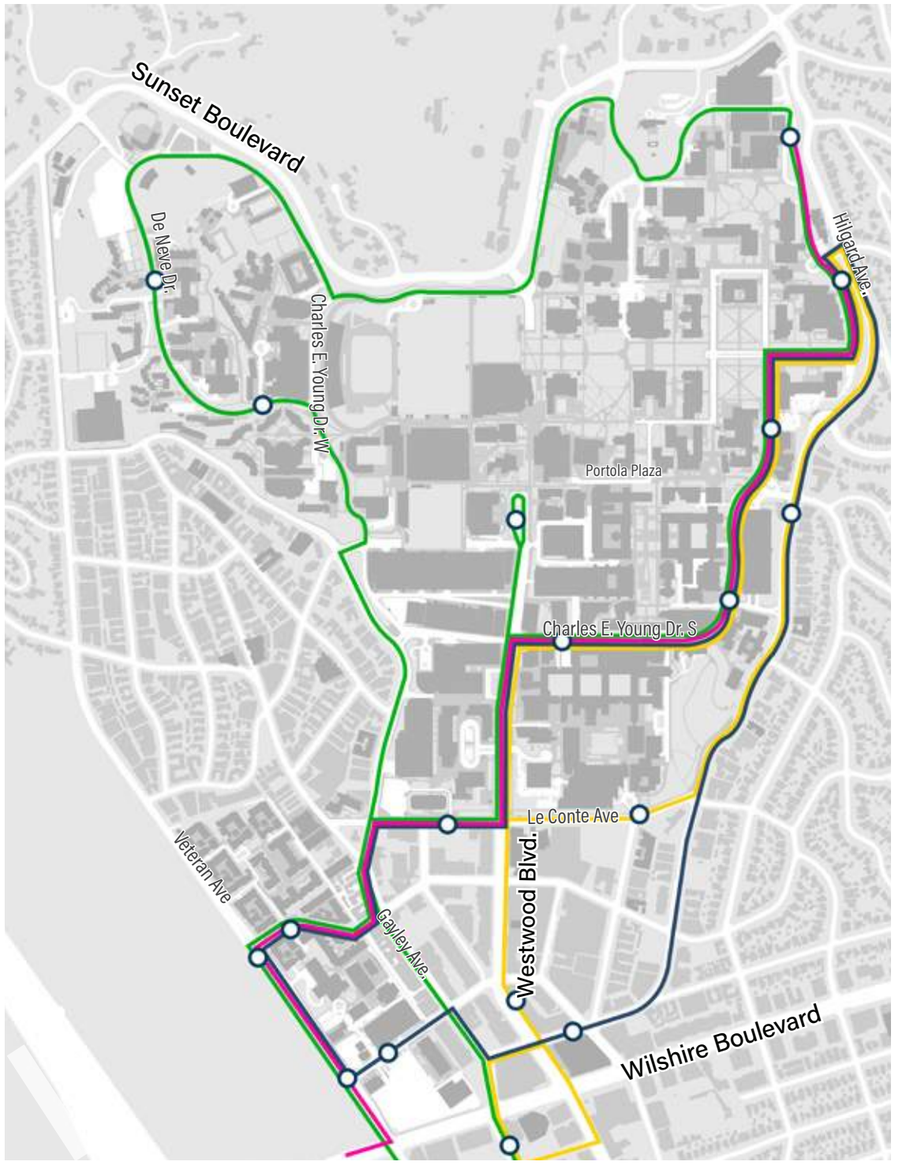
Surface Parking/Streets
Underground Parking
Parking Structure

Existing Campus Streets + Entrances



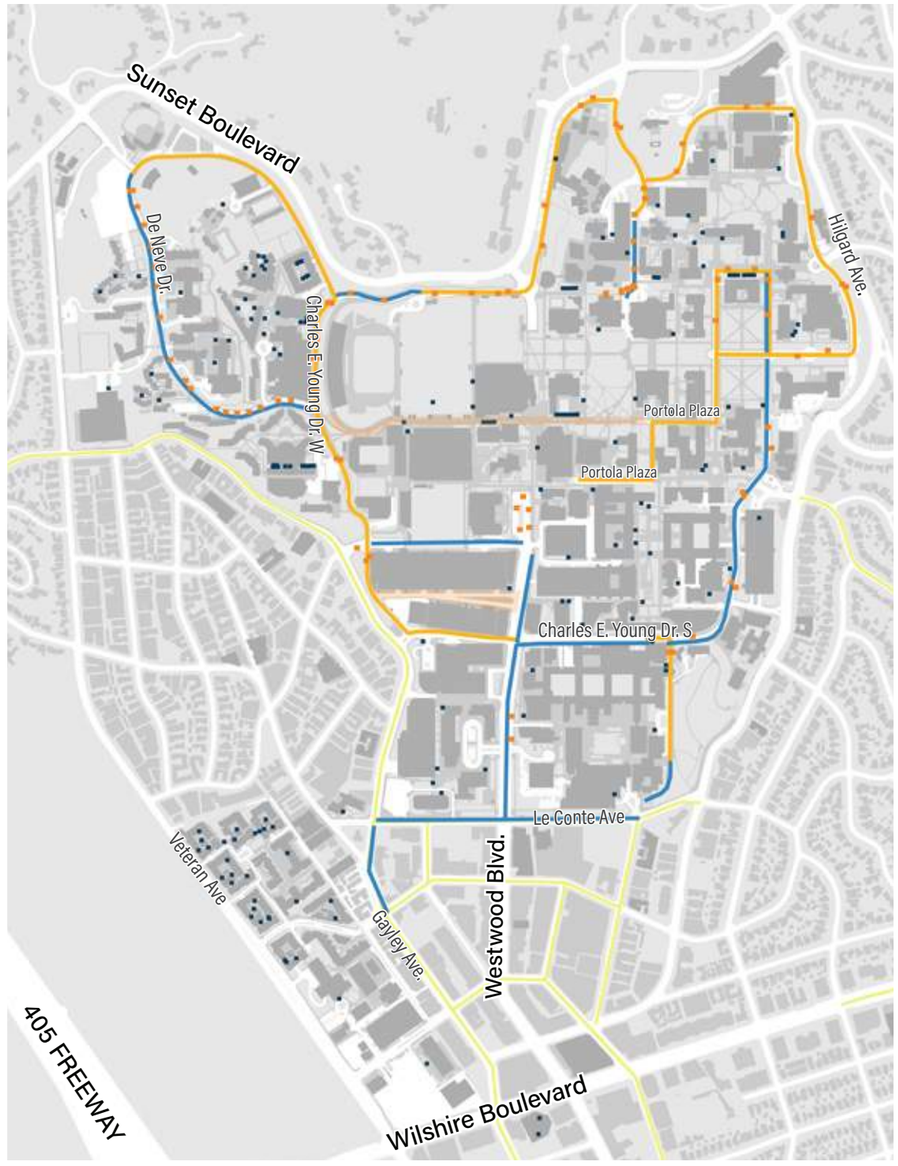
On Campus Streets
Off Campus Streets
Vehicular Entrances

Existing Public Transportation Network



- Bus Stops
- U1 Weyburn - BruinBus
- U2 Wilshire Center - BruinBus
- U5 Evening/Saferide Loop - BruinBus
- Santa Monica Big Blue Bus #17

Existing Bicycle Routes



- UCLA Bike Racks
- UCLA Bike Sharrows
- UCLA Bike Lanes
- UCLA Bike Routes
- Los Angeles Bikeways
- UCLA Dismount Zones

The University of California's 2019 Sustainability Report calls for single occupancy vehicle use reductions of ten percent by 2025. By 2050, the University system calls for no more than thirty percent of its students and employees to commute by single occupancy vehicle. UCLA has its own Active Transportation Plan which it published in 2019 and aims to "improve campus health, livability and safety through policy and infrastructure recommendations that increase walking, biking and other active forms of transportation."

Public Transit Network

UCLA is currently serviced by a campus bus system as well as Metro lines run by the City. A new transit center is being constructed in the southwest area of campus.

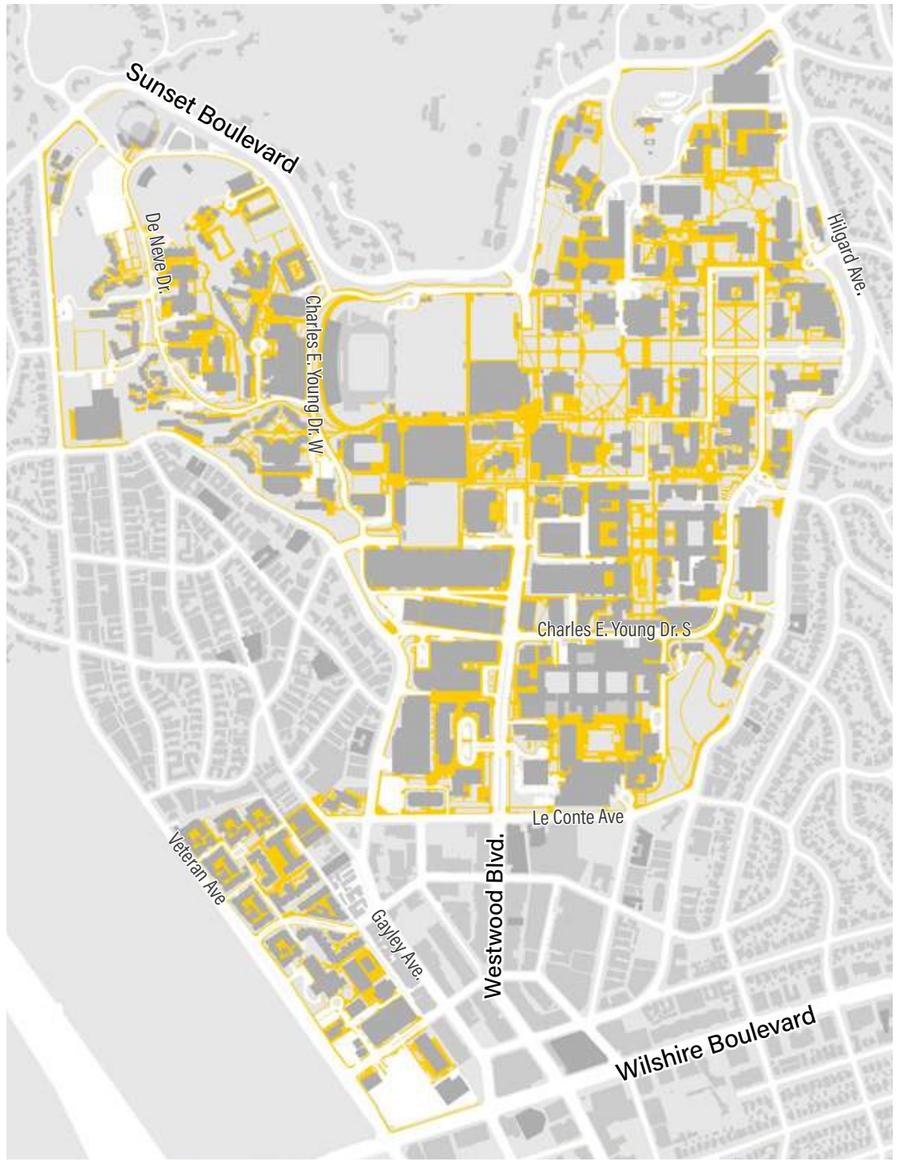
Bicycle Network

UCLA has a robust bicycle network which it intends to enhance in accordance with its 2019 Active Transportation Plan. The campus currently has one bicycle elevator, which is well used, but topography, amongst other challenges, still limits uptake in bike travel. Insufficient bike racks, abundance of vehicle travel, and biking restrictions in certain parts of campus, contribute to fewer people cycling around UCLA. The University installed a bike share system, which was discontinued due to the popularity of gig-scooters.

Pedestrian Network

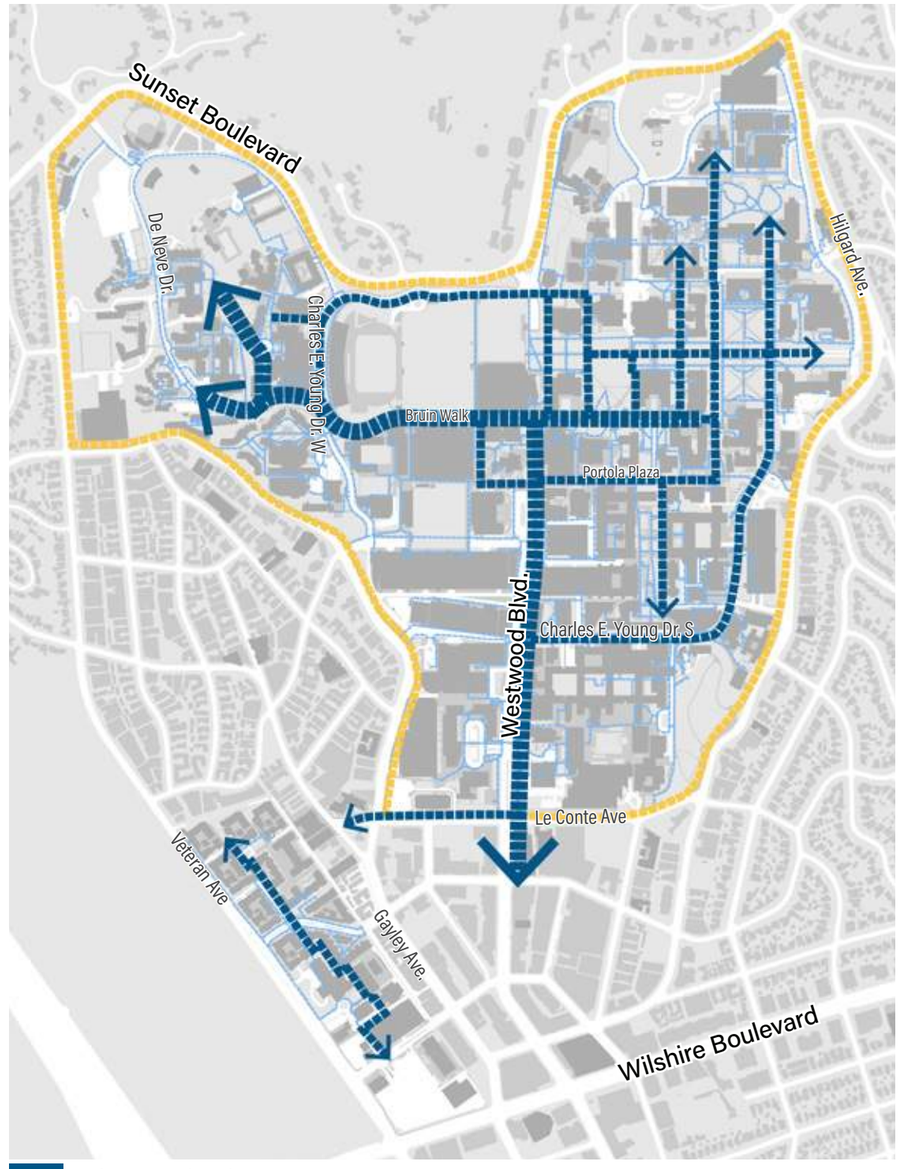
Walking is a popular way to get around campus. However, prior to the COVID-19 pandemic, the use of services like Uber and Lyft had been on the rise as students sought to avoid climbing hills, such as those between the housing and academic areas . As rideshare prices have risen, use of those services has somewhat decreased.

Existing Pedestrian Paths



Pedestrian Paths/Walks/Trails

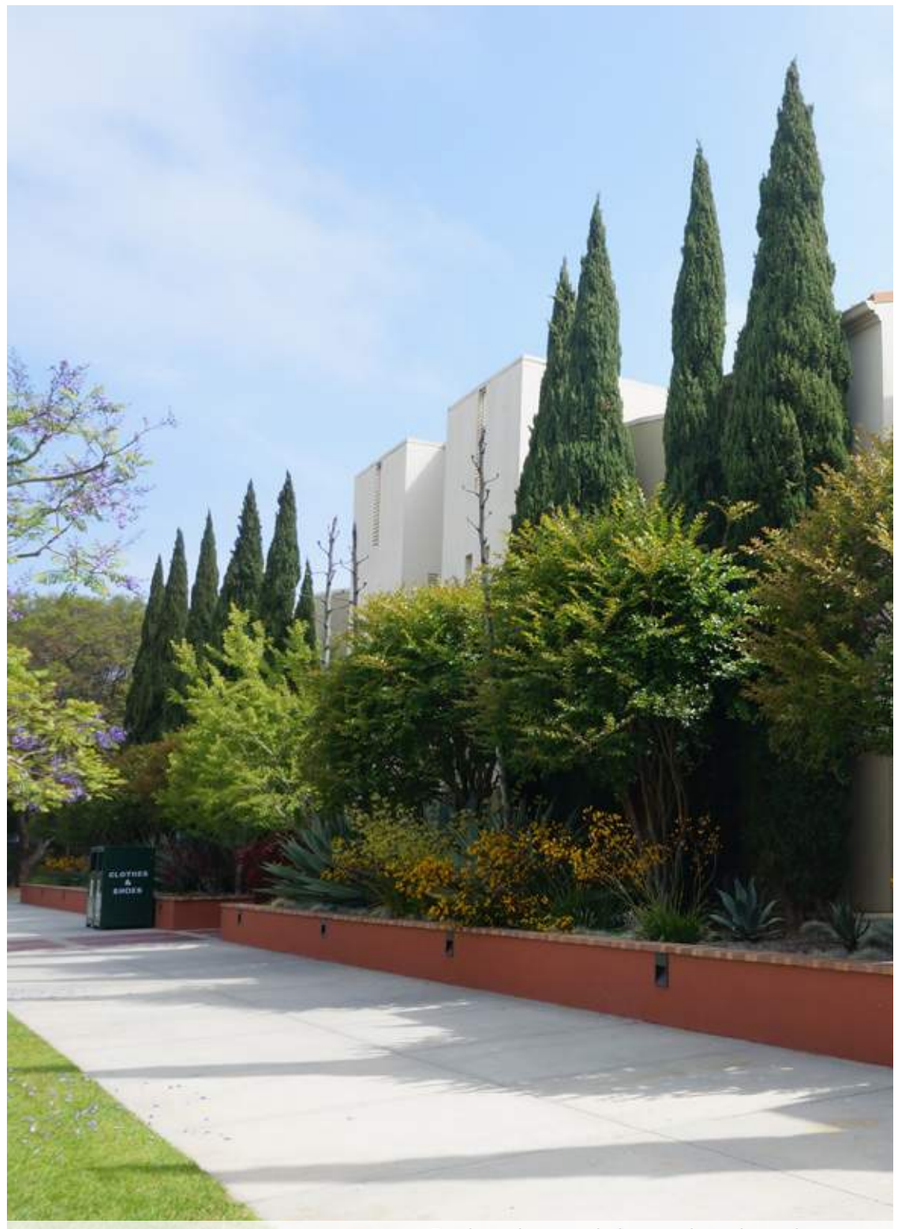
Existing Pedestrian Hierarchy



Primary Pedestrian Routes
Secondary Pedestrian Routes
Edge Trail

Sources:
UCLA GIS Data
UCLA Transportation Plans

A high-traffic pedestrian connection between Bruin Plaza and Election Walk



Pedestrian path in student housing area

2.6 SOCIAL AND CULTURAL CAMPUS

EXISTING INTENSITY OF USE

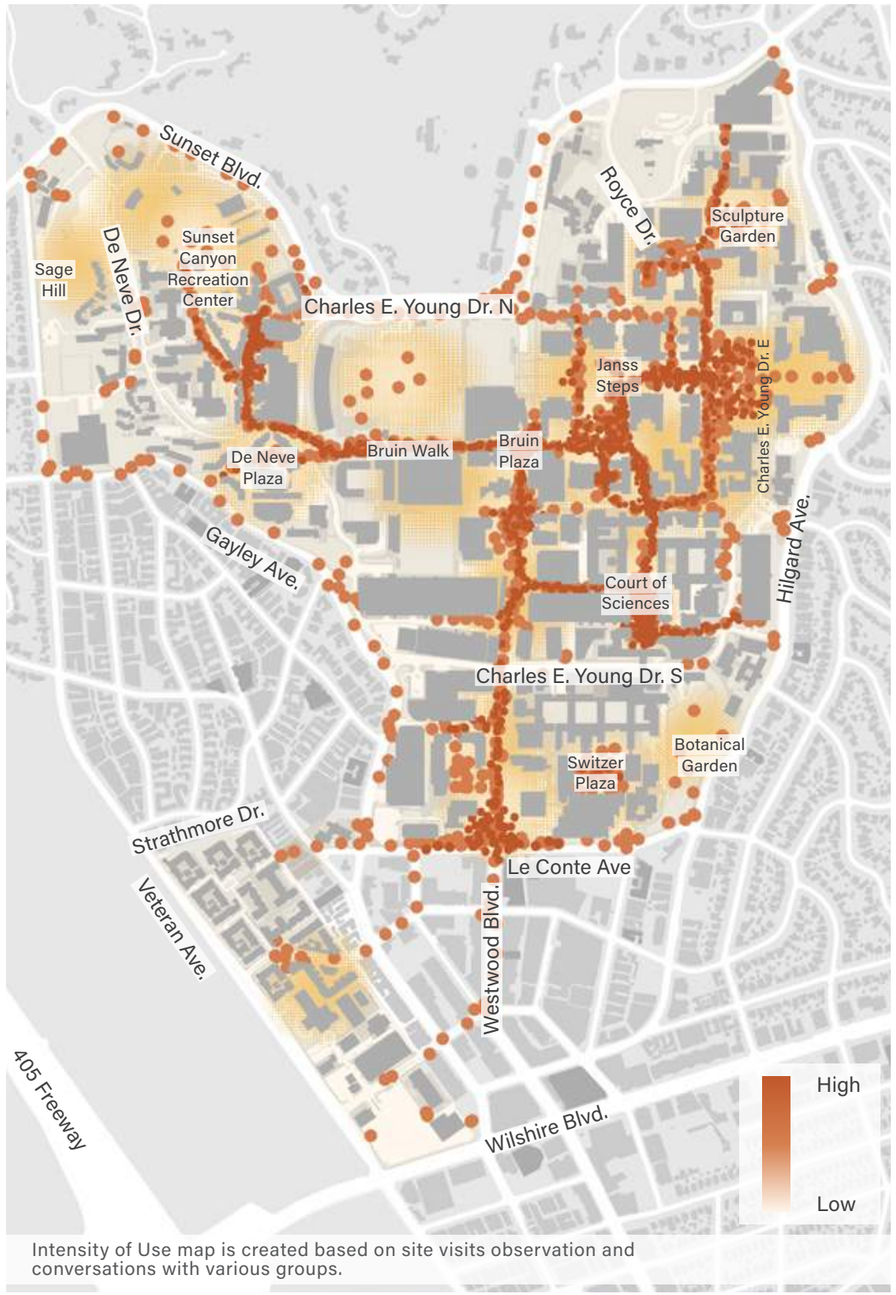
Intensity of use is a composite representation of human activity of campus. The Landscape Plan prioritizes enhancement of existing, high-use nodes and transit corridors for safety, connectivity, accessibility, and human comfort. It also proposes improving alternate nodes and corridors to activate underused space on campus, improve circulation through distribution, and promote habitat.

Switzer Plaza

Court of Sciences

Sunset Canyon Recreation Center

Westwood Plaza



Intensity of Use map is created based on site visits observation and conversations with various groups.

EXISTING PROGRAMMING

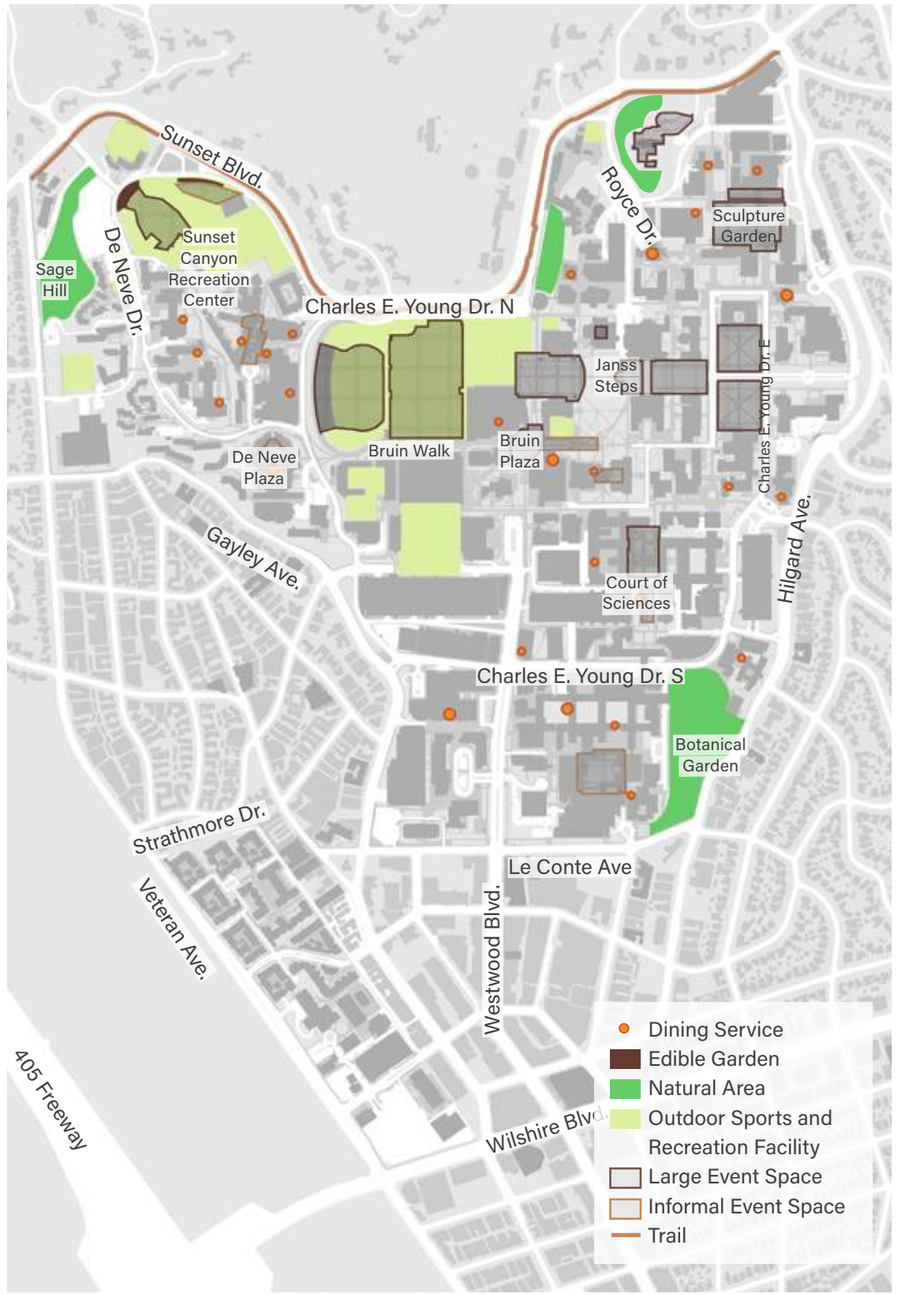
UCLA's landscape supports inclusive and diverse programming that the university community continuously evolves to meet current campus trends as they relate to social justice, health and wellness, and environmental performance. Certain programming also supports the educational and research aims of the University.

Straus Stadium

Mildred E. Mathias Botanical Garden

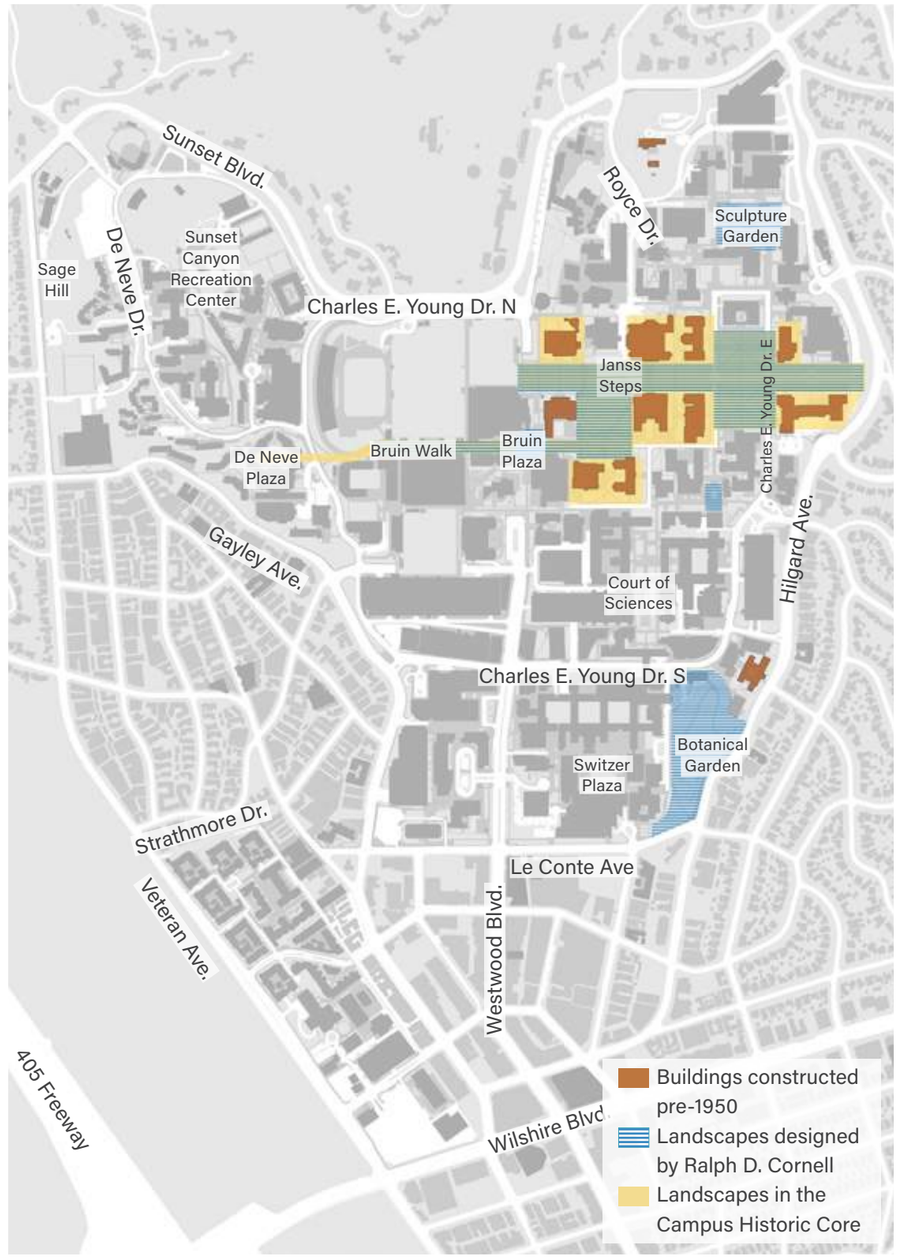
Wilson Plaza

Bruin Walk



HISTORIC LANDSCAPES

Powell Library - 1929



Ralph D. Cornell, UCLA's landscape architect from 1937to 1972, united disparate buildings around a distinguished central axis and envisioned a number of other iconic campus spaces. The Landscape Plan celebrates this historic legacy while making space for prevailing practices in sustainability and contemporary perspectives of campus history.

University Residence was designed by one of southern California's most important architects, Reginald D. Johnson (1882-1952), FAIA. This work was published in California Arts and Architecture as "The 'White House' of Westwood." (Source: U.C.L.A. Director's House Completed," Press release (found in University Archives), October 3, 1930.)

Kerckhoff Hall - 1929

Sculpture Garden - 1967

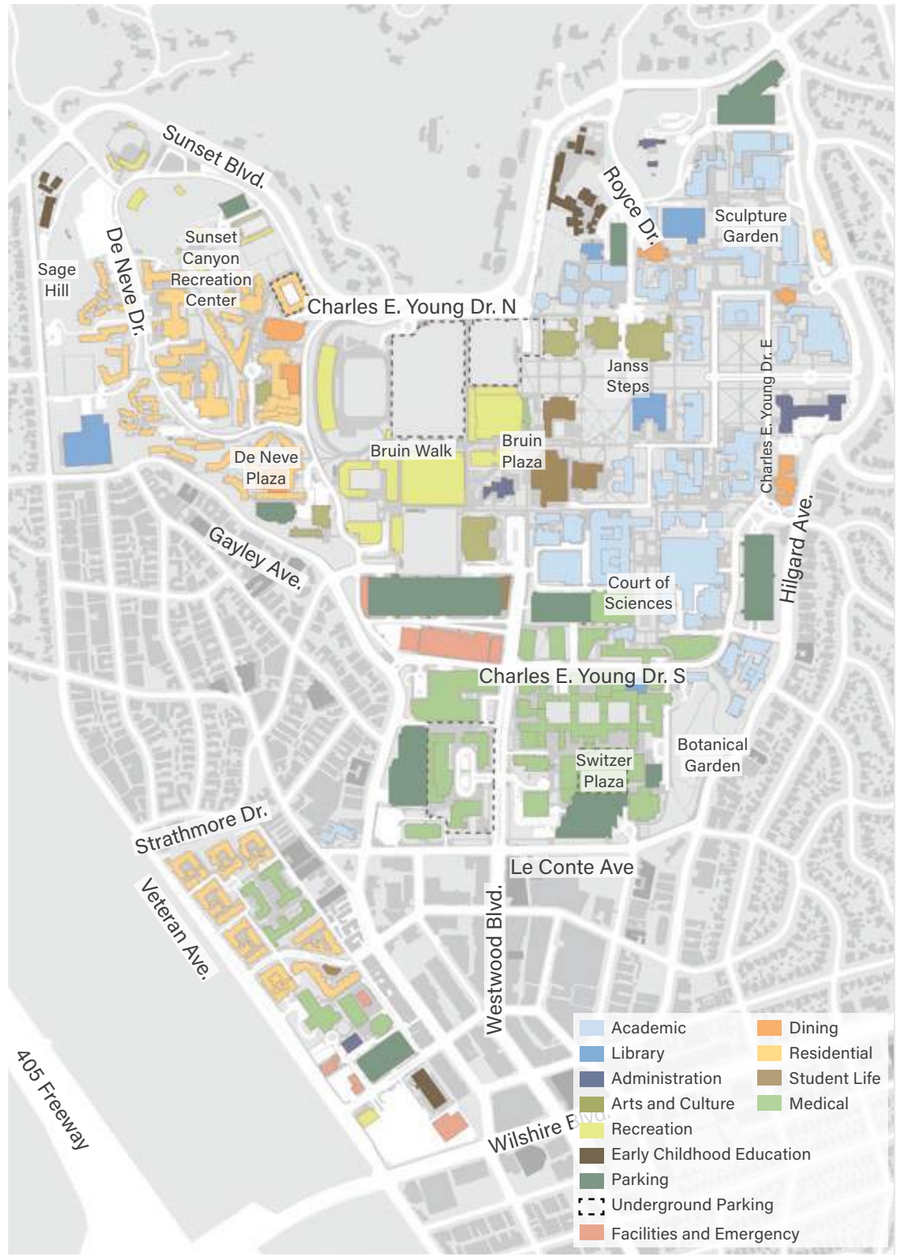
Royce Hall - 1929

Botanical Garden - 1929

BUILDINGS

George Kelham's Royce Hall - 1929

Existing Building Uses



Today, UCLA's campus hosts a variety of architectural types. University architect George Kelham oversaw the original development of the Westwood campus. One of the first four buildings on the site, Royce Hall, was constructed in the central court in 1929 in a Romanesque/ Gothic Revival style. The library, Kinsley Hall, Haines Hall, and Moore Hall followed.

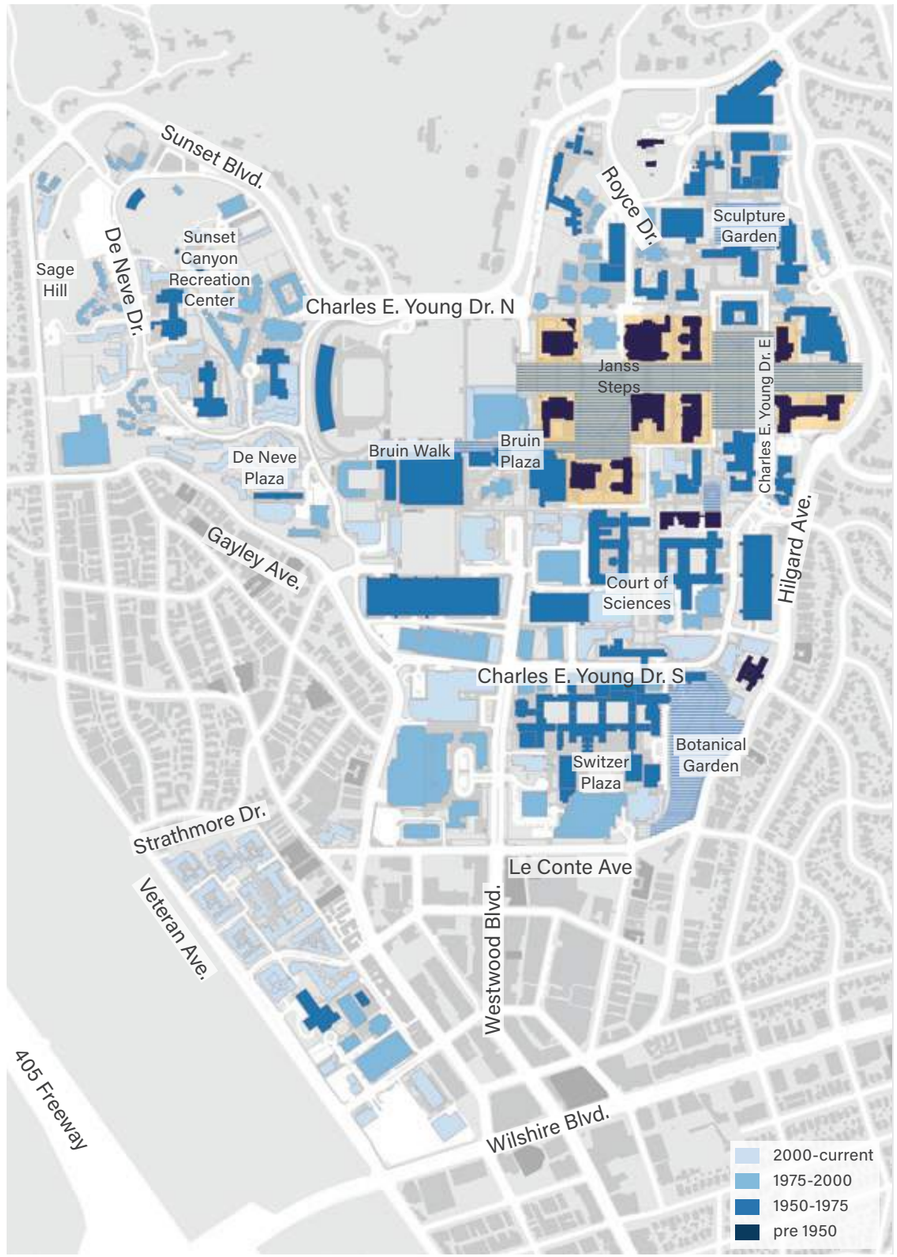
Welton Becket became the campus architect from World War II until the late 1970s and the classical architectural master plan was replaced with minimalist, mid-century modern structures in the face of growing enrollment. Becket oversaw a building boom that lasted until the passage of Proposition 13 in 1973. He oversaw the infill of the Arroyo Bridge area to allow for development and greatly streamlined the campus' general aesthetic, most notably with the slab-shaped brick buildings of south campus, including the UCLA Medical Center.

Other mid-20th century architects who designed buildings at UCLA include A. Quincy Jones, William Pereira, and Paul Williams. More recent, postmodern designers of UCLA's buildings include I.M. Pei, Robert Venturi, Scott Brown and Associates, Richard Meier, Cesar Pelli, and Rafael Vinoly.

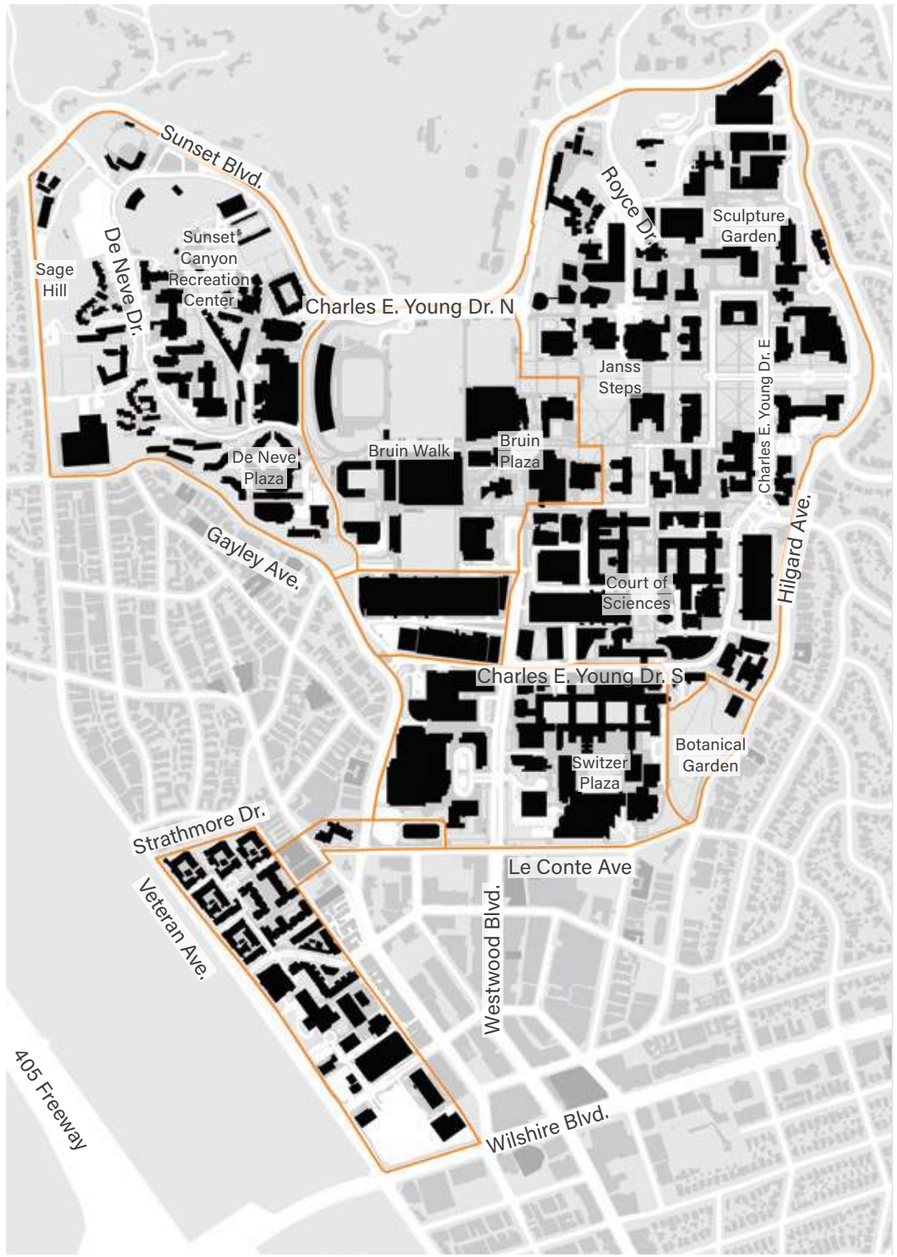
Source:

UCLA GIS Data

Existing Building Ages



Existing Building Figure Ground



3.0
Landscape Framework

3.1 LANDSCAPE PLAN OVERVIEW

UCLA's Landscape Plan addresses the following:

Design and Programming

- **Campus Place Types**
  - Delineation and definition of place types
  - Guidance for place types
- **Programming of Campus Spaces**
  - Identification of key event spaces
  - Identification of under-utilized areas
  - Spaces for outdoor study
  - Spaces for edible gardens
- **Design Vision for Key Areas**
  - Identification of issues
  - Design vision

Campus Planting

- **Landscape Zones + Plant Palette**
  - Hill District
  - Alluvial Corridor
  - Grand Savanna
  - Urban Canyon
- **Conversion of Turf**
  - Priority areas
  - Design guidance

Environmental Systems

- **Establishing Priority Habitat Linkages**
  - Existing patch size and quality
  - Proposed patch size and quality
  - Linkages and strategies
- **Outlining best practices for landscape restoration**
- **Stormwater Management**


Hilgard Ave.
Bel-Air
Country Club
Sunset Blvd.
Janss
Steps
Charles E. Young Dr. N
Bruin Walk
Sage
Hill
Court of
Sciences
Pauley
Pavilion
Botanical
Garden
Westwood Blvd.
Gayley Ave.
Switzer
Plaza
Le Conte Ave.
Veteran Ave.
Westwood
Village
Wilshire Blvd.
Los Angeles
National Cemetery
405 Freeway

3.2 DESIGN AND PROGRAMMING

- **Campus Place Types**
  - Delineation and definition of place types
  - Guidance for place types
- **Programming of Campus Spaces**
  - Identification of key event spaces
  - Identification of under-utilized areas
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Westwood Blvd.
Switzer
Plaza
Gayley Ave.
Le Conte Ave.
Veteran Ave.
Westwood
Village
Wilshire Blvd.
Future Purple Line
Westwood/UCLA
Metro Station
Los Angeles
National Cemetery
405 Freeway
Buildings constructed pre-1950
Hardscape
High Foot Traffic Pedestrian Paths
Trails
Surrounding Streets
Historic Core Axis
Internal Green Streets
Dry Creek
Study Spaces
Key Nodes

VISION

1. Sunset Trail Improvements
2. Habitat Connectivity
3. Bruinwalk Improvements
4. Bruin Plaza Improvements
5. Wilson Plaza Improvements
6. Dry Creek Landscape
7. Janss Steps Improvements
8. Turf Conversion (Various Locations)
9. Dickson Court Improvements
10. Powell Library South Improvements
11. Court of Science North Improvements
12. Campus Edge Improvements
13. Westwood Blvd Improvements
14. Connection to CHS Plaza
15. Le Conte Edge Improvements
16. Entry Plaza Improvements

1. Sunset Trail Improvements
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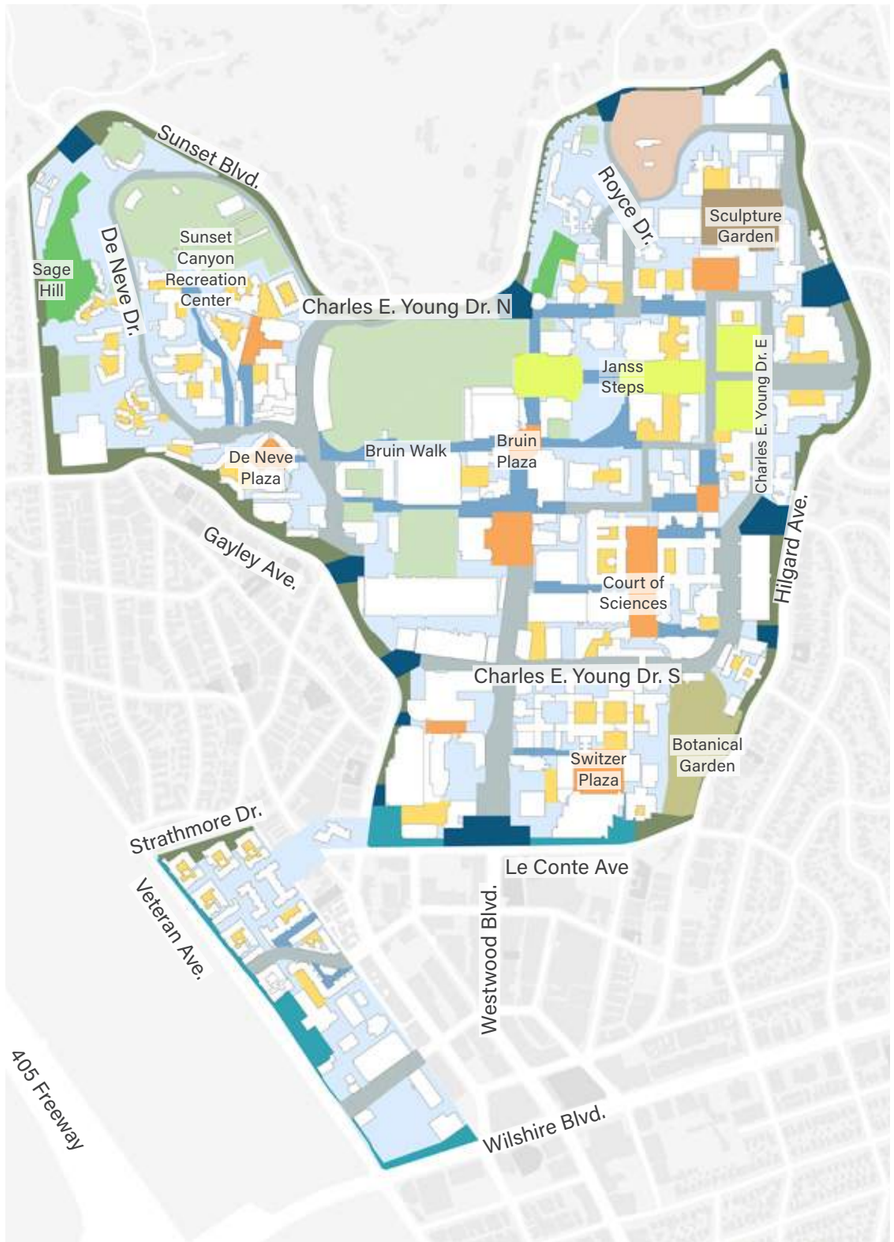
CAMPUS PLACE TYPES



INTRODUCTION

UCLA's landscape can be divided into 11 general and three specific place types, each with their own programmatic purpose, spatial experience, and aesthetic qualities. These place types can be grouped as internal place types, edge place types, and restorative place types. For each of the general place types, this Plan describes the function, current observations, and strategies for improvement. It also demonstrates suggested design guidelines on a generic or typical example of each place type.

These place types are not intended to be overly prescriptive or rigid, but provide a framework to make consistent, measurable, systematic improvements to the expansive campus landscape. While strategies for improvement are specific to each place type, there is much overlap. The intention of the plan, in this regard, is for each place type to be celebrated as a distinguishable space but for there to be visual, programmatic, and operational consistency across the campus.

Quads	9.8 acres
Plazas	12.5 acres
Courtyards	15.9 acres
Pedestrian Corridors	16.6 acres
Multi-modal Corridors	42.9 acres
Sports & Recreation	34.1 acres
Connective Space	222.9 acres
Chancellor's Residence	6.9 acres
Botanical Garden	6.8 acres
Sculpture Garden	4.5 acres
Buffers	24.5 acres
Urban Edges	3.9 acres
Campus Entrances	11.2 acres
Restoration Sites	5.8 acres

Quad

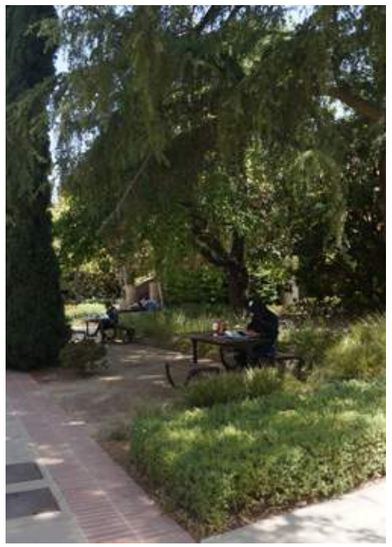
Plaza

Courtyard

Pedestrian Corridor

Multimodal Corridor

Sports and Recreation



Connective Space

Buffer

Campus Entrance

Restoration Landscape

Internal Place Types

Quads
Plazas
Courtyards
Pedestrian Corridors
Multi-modal Corridors
Sports & Recreation
Connective Space
Chancellor's Residence
Botanical Garden
Sculpture Garden

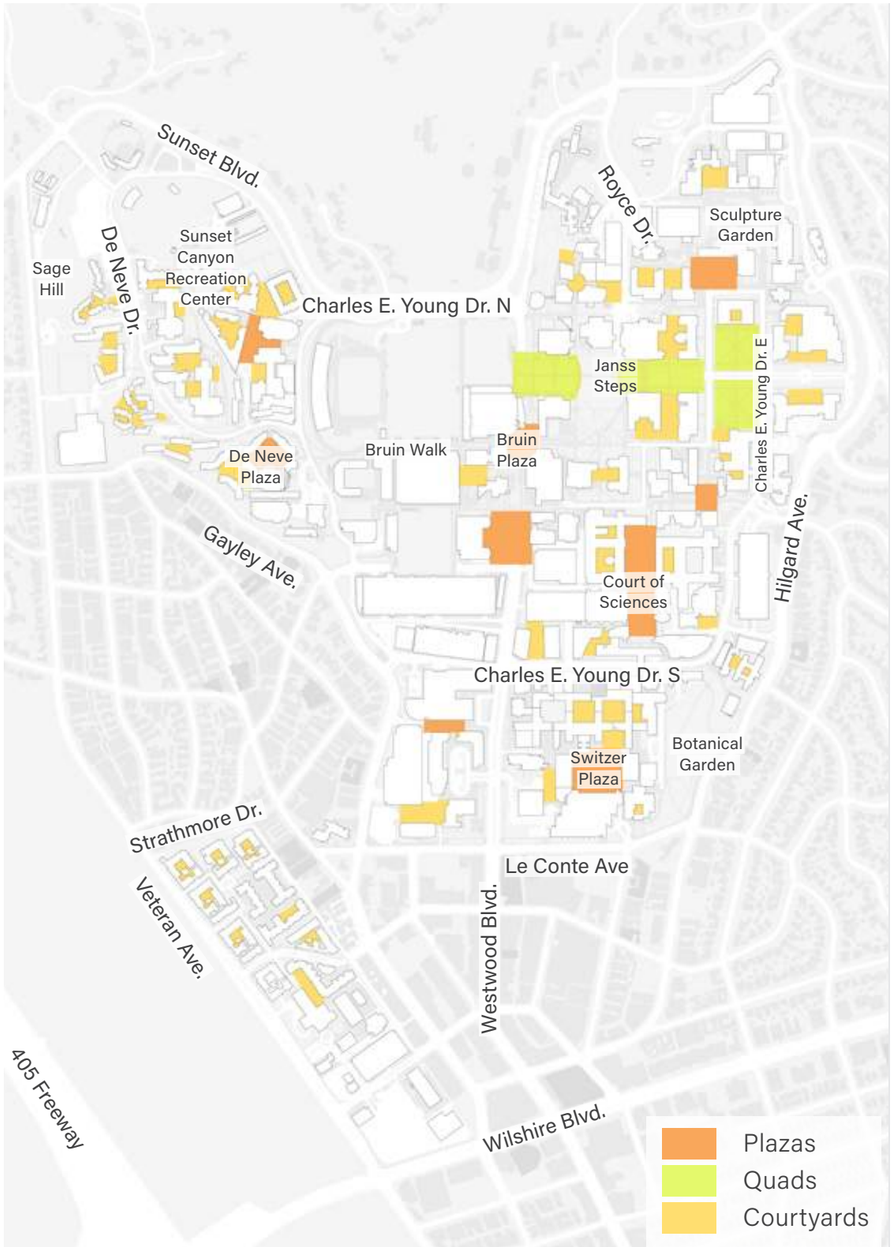
Edge Place Types

Buffers
Urban Edges
Campus Entrances

Restorative Place Types

Restoration Sites

QUADS | PLAZAS | COURTYARDS



CHARACTER AND FUNCTION

Quads are large areas dominated by turf and sweeping open spaces, sectioned in a formal, symmetrical, and axial way. The typological style celebrates the traditional, picturesque, and neoclassical aesthetic of the campus' historic, central axis. Facades, courtyard entries, arcades, and Romanesque Revival structures compliment campus quads.

Campus quads often host centralized events and ceremonies, including graduations.

Plazas have formal layouts, incorporating symmetry, geometrical shapes, planned out sections, divisions, straight edges, and long site lines. Hardscapes dominate these spaces, however, elements including lawns, tree rows, planters, paving, sculptures, fountains, and other furnishings compose them. Plazas are often located at intersecting pedestrian pathways and other high traffic, high visibility spaces.

Plazas often host multiple uses simultaneously, including dining, studying, meeting, concerts, rallies, speeches, protests, fairs, and markets. Their egalitarian quality is ideal for civic and community events.

Courtyards are often smaller than quads and plazas, leading to a secluded and intimate feel. They exhibit rich aesthetic diversity with features including café-style seating, architectural shade structures like pergolas and arcades, seat walls, benches, planters, small fountains, sculptural pieces, and specimen trees.

Campus courtyards serve as transitions between indoor and outdoor spaces. They are used for gathering, movement, and stormwater management due to building proximity. As outdoor living rooms, plazas invite small, informal, inclusive, and flexible events where people may sit, relax, observe, and interact.


QUADS


PLAZAS


COURTYARDS

OBSERVATIONS

- Quads are typically organized along the historic, central axis, with a neoclassical, picturesque aesthetic. They are often sites for formal, centralized events and ceremonies that require large, unobstructed, open space.
- Plazas often have formal layouts, incorporating symmetry, geometrical shapes, planned out sections, divisions, straight edges, and long site lines. They are hubs of activity, often where transit corridors intersect. They are some of the most visible, highly trafficked places on campus.
- Courtyards are heavily distributed and exhibit rich aesthetic diversity. They act as outdoor living rooms and gathering spaces for adjacent buildings.
- Spaces are dominated by paving. There is a lack of planting and shade. Formal planting and turf tend to be environmentally under-performing with high maintenance and water demands and minimal benefits for stormwater management and biodiversity.
- Educational and art elements in plazas can sometimes be dated and/or celebrate a historic identity that was built on the erasure of regional ecology and first nations people. Traditional Ecological Knowledge is rarely used in these spaces.
- Provisioning for large events sometimes renders Quads and Plazas impractical for everyday use.

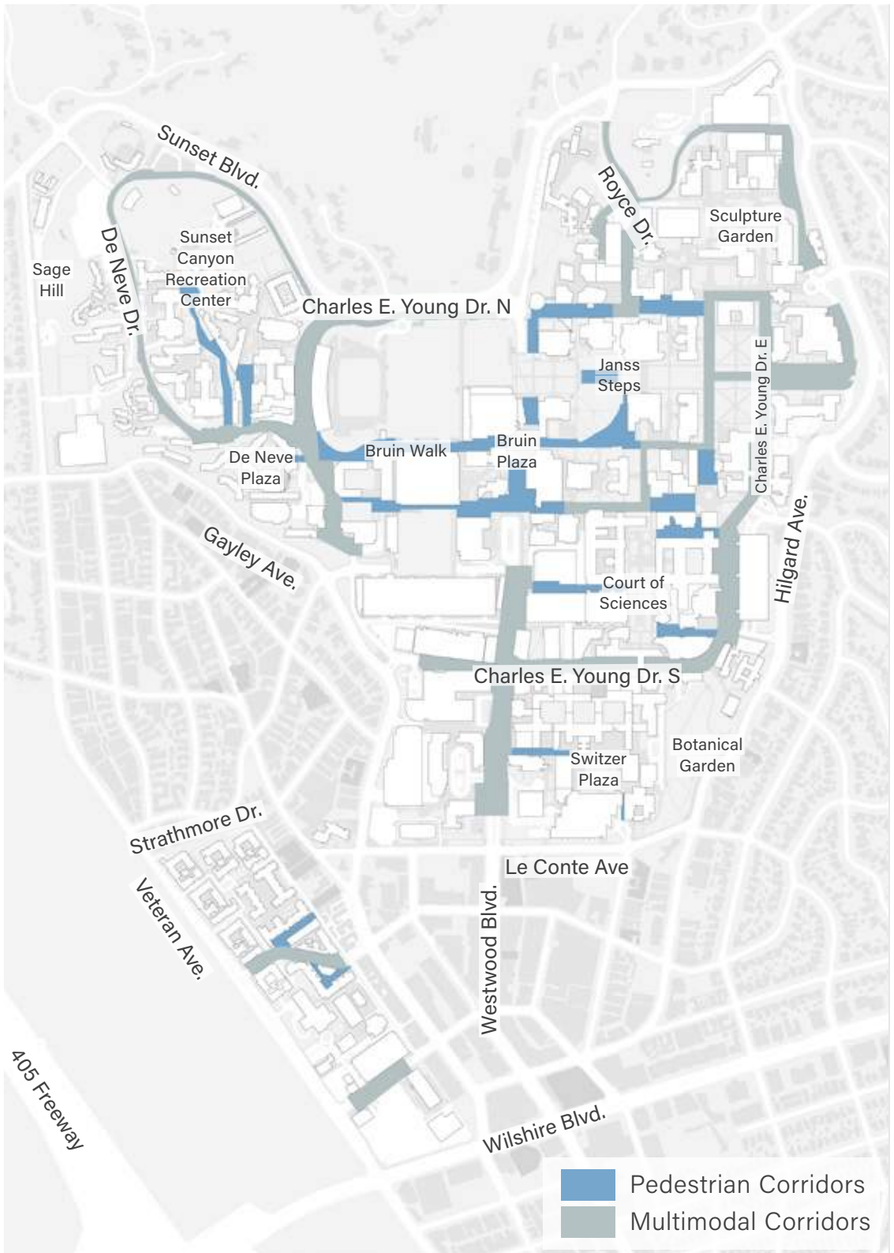
RECOMMENDATIONS

- Plant summer-dry native and non-native landscapes along the perimeters of turf areas.
- Plant additional canopy trees to increase shade coverage and reduce heat island effect.
- Introduce habitat corridors and patches based on the framework and recommendations in Biodiversity Enhancement section.
- Create edible gardens in places where appropriate. See Edible Campus section for more details.
- Incorporate Traditional Ecological Knowledge where appropriate. See traditional ecological knowledge section for more details.
- Convert excessive paving in plazas to summer-dry native and non-native landscape or programmable spaces.
- Equip event spaces with power, water fountains, flexible furnishing, and other amenities.
- Place public art works strategically in areas with high visibility and/or areas with historic and cultural value. Public art works should possess qualities that are consistent with UCLA's mission and values.
- Identify opportunities to incorporate stormwater management best practices in low point of each micro watershed. Program uses should be prioritized in these place types.
- Provide a variety of shade and seating on the edges of plazas, courtyards, and quads to create comfortable places to relax and study.
- Edges of quads, courtyards and plazas lit to define the space at night and encourage night use. Light fixtures spaced no more than 50' OC that cast warm temperature light. Light calibrated to eliminate glare and improve visibility, allowing more comfortable movement through the space.

The Southern Court of Sciences has a drought tolerant plant palette. Trees, shade structure, and cafe-style seating make the space very inviting and user-friendly.

Moveable furniture, planter pots, and props provide programmatic flexibility and space for dining at the base of the stairs adjacent to Covell Commons.

PEDESTRIAN AND MULTIMODAL CORRIDORS



CHARACTER AND FUNCTION

Pedestrian corridors are the main arteries that direct and carry the flow of the human experience on campus. These corridors are primarily conduits of foot traffic between campus destinations but at times they too can be places to stay. They sometimes host events, including fairs, tabling markets, and vehicles and equipment for filming.

Surface materials primarily include concrete, brick, and other decorative paving.

Multimodal corridors move people to and from campus destinations in cars, on foot, by bike, and on public transit. These spaces are generally more expansive to accommodate the various modes.

Asphalt is the typical surface material.

PEDESTRIAN CORRIDORS

MULTIMODAL CORRIDORS

OBSERVATIONS

- Multimodal corridors are dominated by asphalt while pedestrian corridors are mostly surfaced with concrete, brick, and other decorative type paving. There is a diversity of paving types across campus and a distinctive identity in the Historic Core.
- There are several places on campus with many stairs and ramps, especially near housing. The bike elevator between Westwood Plaza and Portola Plaza is well used and appreciated.
- Linearity provides high potential for these spaces to be habitat corridors by connecting larger stepping-stones and integrating green infrastructure.
- A lack of planting, particularly native species limits human comfort, visual appeal, and biodiversity benefits.
- Water is conveyed off-site and there is insufficient green infrastructure along pedestrian corridors.
- Occasionally inefficient use of active transportation infrastructure, such as bike share is being phased out.
- Congestion of primary east/west pedestrian corridors from residential areas to north and south campus.
- Physically demanding and at times non-ADA compliant grade variations deter some pedestrians. Stairs make it challenging to transit through corridors with a bike.
- Some pedestrian linkages are not clear. A lack of signage and wayfinding elements makes navigating the campus challenging.

RECOMMENDATIONS

- Enhance trails along the perimeter of the campus, create new trails inside the campus as a safe recreational amenity for campus community.
- Ensure there is a trail access point every 1/4 mile.
- For Sunset Boulevard, Hilgard Avenue, and Gayley Avenue, reduce traffic speed, incorporate protected bike lanes, enhance pedestrian experience with better streetscape elements where possible.
- Plant canopy trees and/or provide shade structure at all shuttle bus stops.
- Apply special paving at key intersections.
- Build curb extensions to calm down the traffic and improve pedestrian safety where possible.
- Improve signage and wayfinding in an elegant way that is compatible with surrounding architecture and landscape characters. Refer to the UCLA Architectural Guidelines for details.
- Provide accessible routes throughout the campus. Refer to UCLA Accessibility Plan for additional information.
- Create a drainage swale and habitat area at the bottom of Janss steps to capture surface runoff from the slope and provide visual interest.
- Improve the accessible path from Bruin Walk to Dickson Plaza with a 20′ wide promenade flanked with seating and pedestrian lighting. Keep the 20′ wide fire truck access.
- Utilize corridors as integral to natural and habitat linkages.

Hummingbird Alley serves as habitat, a pedestrian path and a place for quietness.

Bruin Walk is a crucial east-west pedestrian corridor on campus

BUFFERS AND ENTRANCES

CHARACTER AND FUNCTION

Buffers act to screen campus from sensitive edges, including neighboring, low-density residential areas.

Urban edges provide visual delineation of the campus while enabling access to campus.

Campus entries are clearly defined with threshold landscapes

BUFFERS

URBAN EDGES

CAMPUS ENTRIES

OBSERVATIONS

- Northern buffer to adjacent neighborhoods is made up of aging eucalyptus.
- Edge landscapes are some of the most contiguous landscapes on campus resulting in their ability to provide a habitat corridor.
- Entrances lack a cohesive identity in planting, signage, and built structures.
- Buffer areas along Sunset include some intact native plant communities.

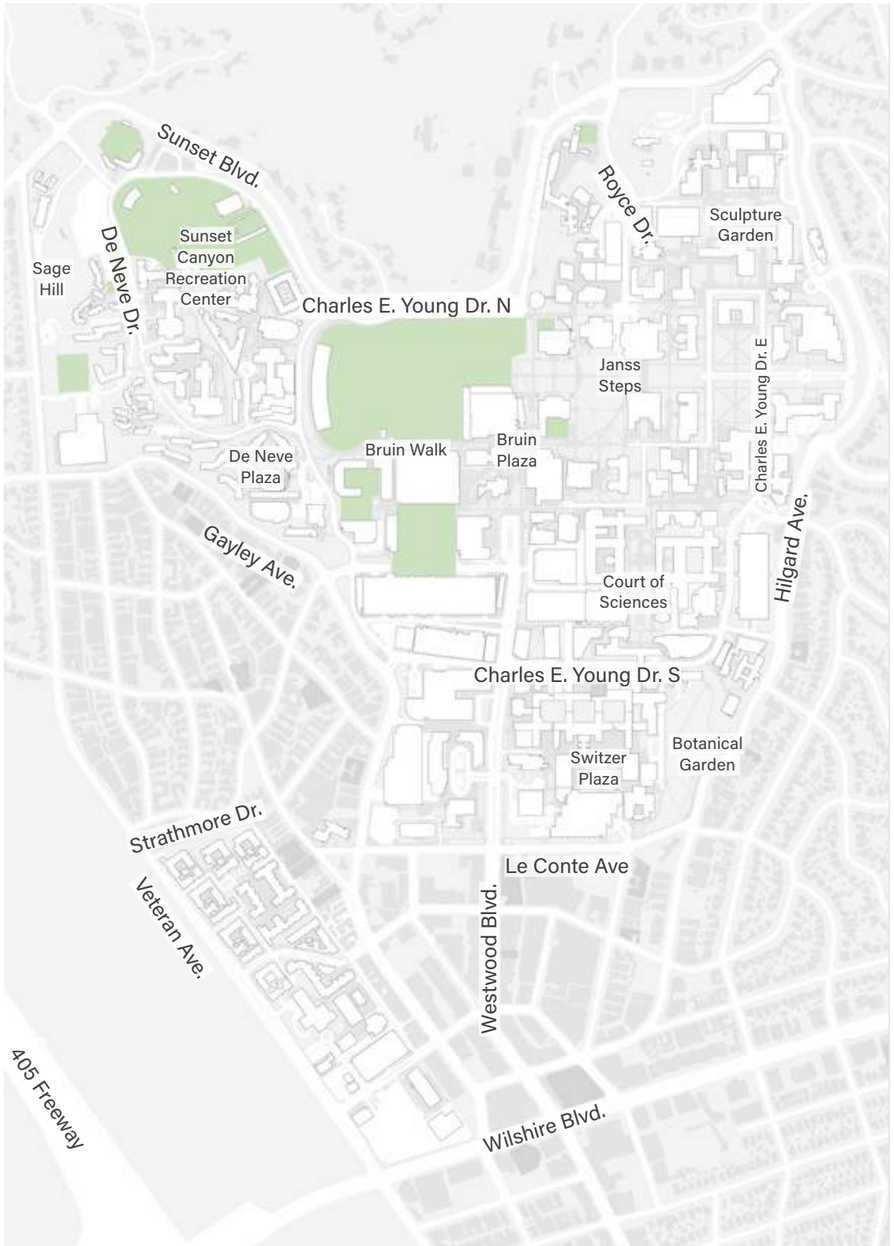
RECOMMENDATIONS

- Integrate lighting, signage and site furnishing that's complementary to UCLA's character to improve safety, functionality, and aesthetic of the buffers and entrances.
- Remove visually disturbing ivy screen along buffers and replace it with inviting and pleasant hedges or other screen in kind.
- Incrementally replace aging eucalyptus along the campus boundary with new evergreen trees (species selection should ensure low maintenance) that screen the street.
- Integrate the recommendations of this Campus Landscape Plan to future redevelopment projects, such as the CHS Parking Structure.
- Integrate other initiatives in the future design process, such as 2028 LA Olympic and Metro Extension Transit Project and mixed-use developments nearby.
- Protect and enhance key wildlife corridors along Sunset that connect Sage Hill to the Santa Monica Mountains.

Trees along campus's northern edge provide buffer from surrounding residential neighborhoods. Aging Eucalyptus require thinning/replacement.

The main campus entry at Le Conte and Westwood is very car-oriented and lacks a strong identity and arrival experience.

SPORTS AND RECREATION



CHARACTER AND FUNCTION

Areas designated for programmed and unprogrammed sports and recreation activities include campus athletics practices and events, as well as informal games. They include intramural turf fields, the football stadium, tennis courts, pools, the baseball field, basketball courts, the Sunset Canyon Recreation Center, and associated grounds used for sports and recreation administration, access, circulation, and spectatorship.

Core campus recreation is dominated by hardscape. During events, these spaces have very high traffic.

SPORTS

RECREATION

OBSERVATIONS

- Circulation paths are dominated by paving with limited planting and tree canopy to provide shade.
- Circulation and access points are unclear visually and lack signage and wayfinding.
- Underused space could better serve passive programming.
- Opportunities for big habitat patches exist around football stadium and at Sunset Canyon Recreation Center.
- Entrance to the sports fields lacks identity and character.

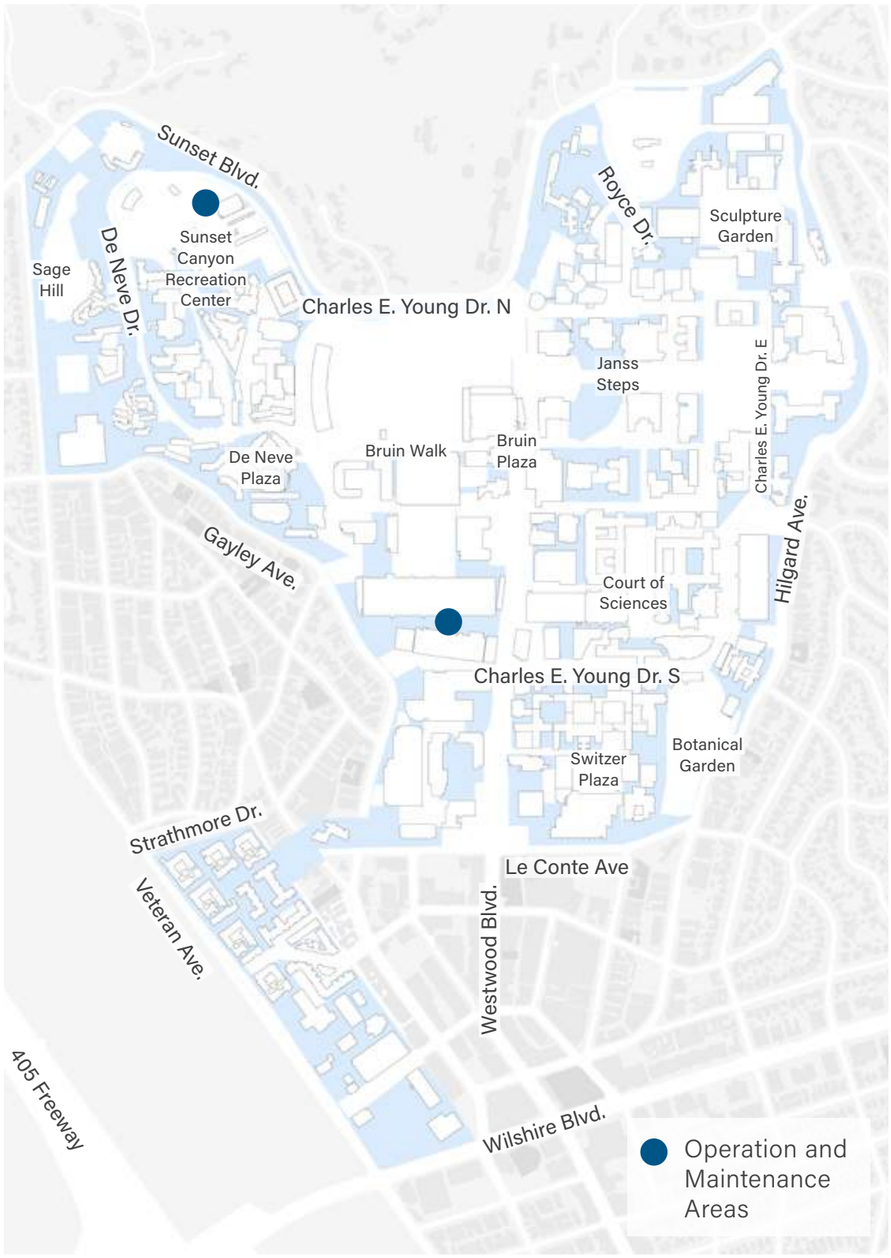
RECOMMENDATIONS

- Improve entrance experience to different sports fields.
- Provide additional tree canopy or shade structure for campus community.
- Provide flexible seating elements.
- Maintain appropriate amount of pavement and/or turf area to accommodate high foot traffic during large events.
- Create habitat patches along the buffers of some sports and recreation areas. See Biodiversity Enhancement section for more details.
- For areas that are on-structure, use unattached raised planters with seating elements to provide shade and spaces to socialize and linger.
- Implement the Sunset Recreation Area Master Plan. Integrate the Landscape Plan recommendations where appropriate.
- Create spaces for pick up sports.

Sunset Canyon Recreation Center

Los Angeles Tennis Center

CONNECTIVE SPACE



CHARACTER AND FUNCTION

Multifunctional spaces between, behind, or adjacent to buildings that serve as pedestrian pass-throughs, service and operation areas, surface parking, bike parking, or small planting areas.

Kerckhoff Hall

Music Library

OBSERVATIONS

- Connective spaces appear in various forms and characters. Detailing of these spaces sometimes does not complement the buildings.
- Landscape aesthetics are often neglected in service areas and back of house.
- Landscape design is often limited to lawn panels with hedges in planting areas adjacent to buildings.
- Design and implementation of connective spaces are often lower than other place types and the character is inconsistent and lacks a sense of place.
- Small turf areas are often underutilized.

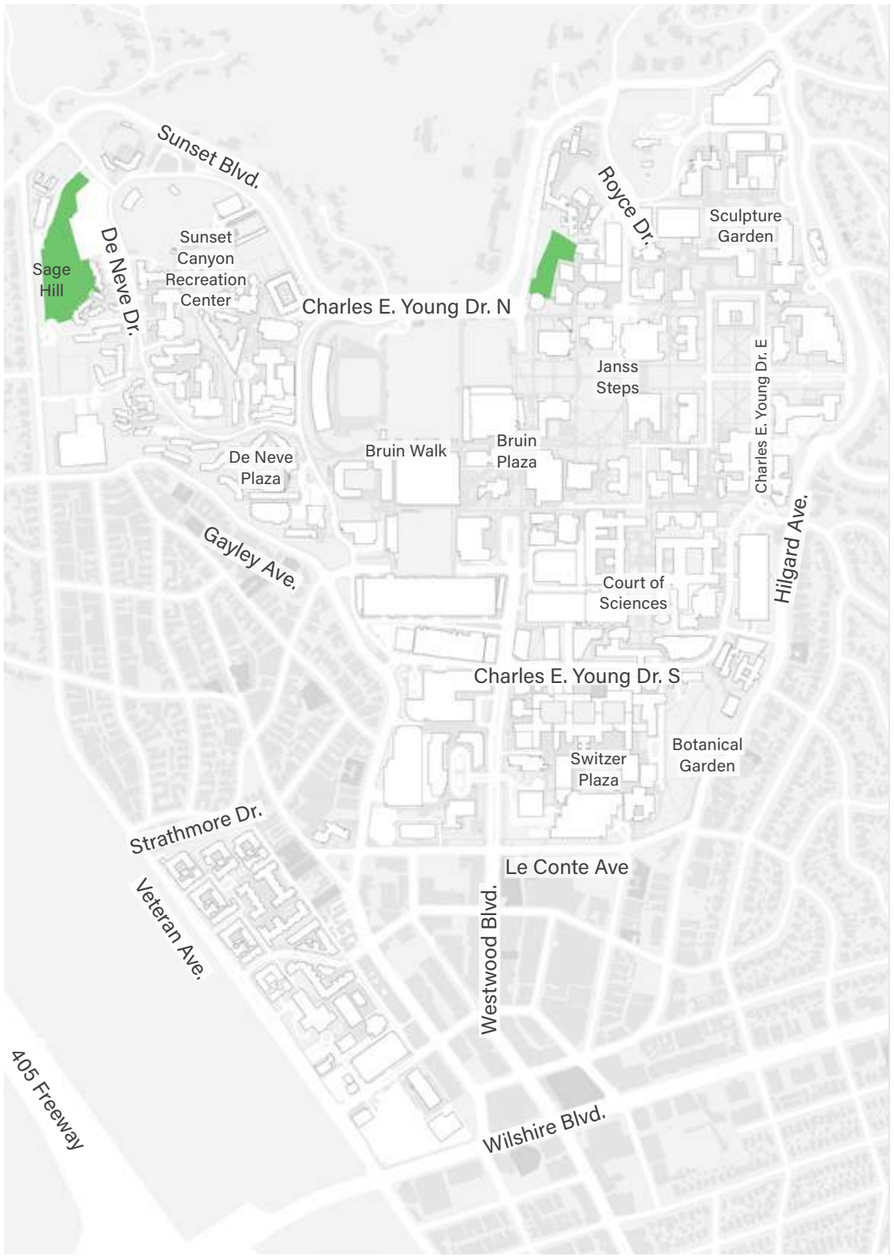
RECOMMENDATIONS

- Convert small turf areas to plantings with species identified on the planting zone plant palette to create greater visual interest, reduce water consumption, and increase habitat areas.
- Shift from existing, formal lawn panels with hedge toward a native landscape that is more informal. Historic identification should be preserved in the historic core. Layout of planting matches the character of the buildings.
- Follow planting zone guidelines to achieve consistent landscape character. Keep visual simplicity.
- Plant landscape zone appropriate canopy trees and understory landscape to create additional shade and improve human comfort.
- Enhance landscape and furnishing for better utilization, such as creating additional study spaces.
- When pedestrian flow overlaps with service vehicular access, maintain all functionalities while using consistent paving pattern, material, and planting design to make the space more pedestrian friendly.
- Reduce imperviousness in service and surface parking lots. Apply permeable paving where possible.
- Use bioswales to filter stormwater before it enters the stormwater drain. Improve water quality.
- Provide sufficient space for loading, outdoor storage, and screening for service areas and back of house while also improving the overarching aesthetics of the space.
- Provide larger nursery and green compost spaces on campus.
- Enhance wildlife corridors, stepping stones, or restored natural areas where appropriate.

Outdoor study space by Bunche Hall

Molecular Sciences frontage on Charles E Young Drive East

RESTORATION SITES



CHARACTER AND FUNCTION

Areas with high potential for biodiversity and/or an active focus on habitat restoration.

In these areas, programming is secondary to ecological function.

They are unique spaces to find solitude and connection to nature.

Sage Hill - Photo Credit: Travis Longcore

Sage Hill

OBSERVATIONS

- There are ongoing restoration projects led by UCLA faculty and students for both Sage Hill and Stone Canyon Creek.
- Sage Hill is proximate to a high concentration of student housing and receives relatively high amounts of winter sun.
- Restoration areas feel hidden and secret.
- They lack furnishings and are not easily navigated. They are isolated, unmarked, and have limited public access.
- Restoration areas contain both native and exotic species.

RECOMMENDATIONS

- Continue the ongoing restoration projects for both Sage Hill and Stone Canyon Creek areas led by UCLA faculty and students. See the research reports for more details.
- Expand the rich habitat of Sage Hill, creating a connection to Sunset Recreation Area Amphitheater and consistent planting within the Hitch Residential Suites and restoring other patches of natural vegetation south of Sage Hill and to the north along Sunset Blvd.
- Establish a new habitat area on the western slope between De Neve Drive and Sunset Amphitheater and at the corner of Gayley Avenue and Le Conte.
- Provide greater but limited connection to Sage Hill and Stone Canyon with the inclusion of an accessible path along the edge of the space with overlook seating areas without disrupting the sensitive habitat area.
- Implement restoration of oak woodlands at the Chancellor's residence, at the northwest corner of Royce Drive, and at Sycamore Court.
- Improve habitat connectivity between Stone Canyon Creek and the Chancellor's Residence and between Sage Hill and the Santa Monica Mountains.

Stone Canyon Creek

PROGRAMMING OF CAMPUS SPACES

OBSERVATIONS

- Events are administered by the UCLA Events Office and include student events orchestrated by registered campus organizations, departmental events, and external events like corporate private events, filming, and photography.
- Wilson Plaza and the Court of Sciences host large, formal events like commencement. De Neve Plaza, Bruin Plaza and Bruin Walk are sites commonly used for smaller, student-led events.
- Functional event space layout requirements include openness, level ground, connection to power and water, walkability, accessibility including by car, hydration stations, and fire lanes. Sometimes general walkways will be used for parking, particularly during filming events.
- Some spaces on campus that are commonly used for events are constrained by their layout and not designed functionally, such as the Court of Sciences North.
- To host large events, spaces have to be expansive, flat, and lack obstruction by trees or other elements. As a result, they often feel uninviting in scale and lack amenities for everyday programming and use.
- Turf areas lack resiliency in event spaces, not only due to high water and maintenance demands but because they are stressed by high traffic and require resodding.

Existing Programming


Informal Programming and Multiuse


Intimate Events

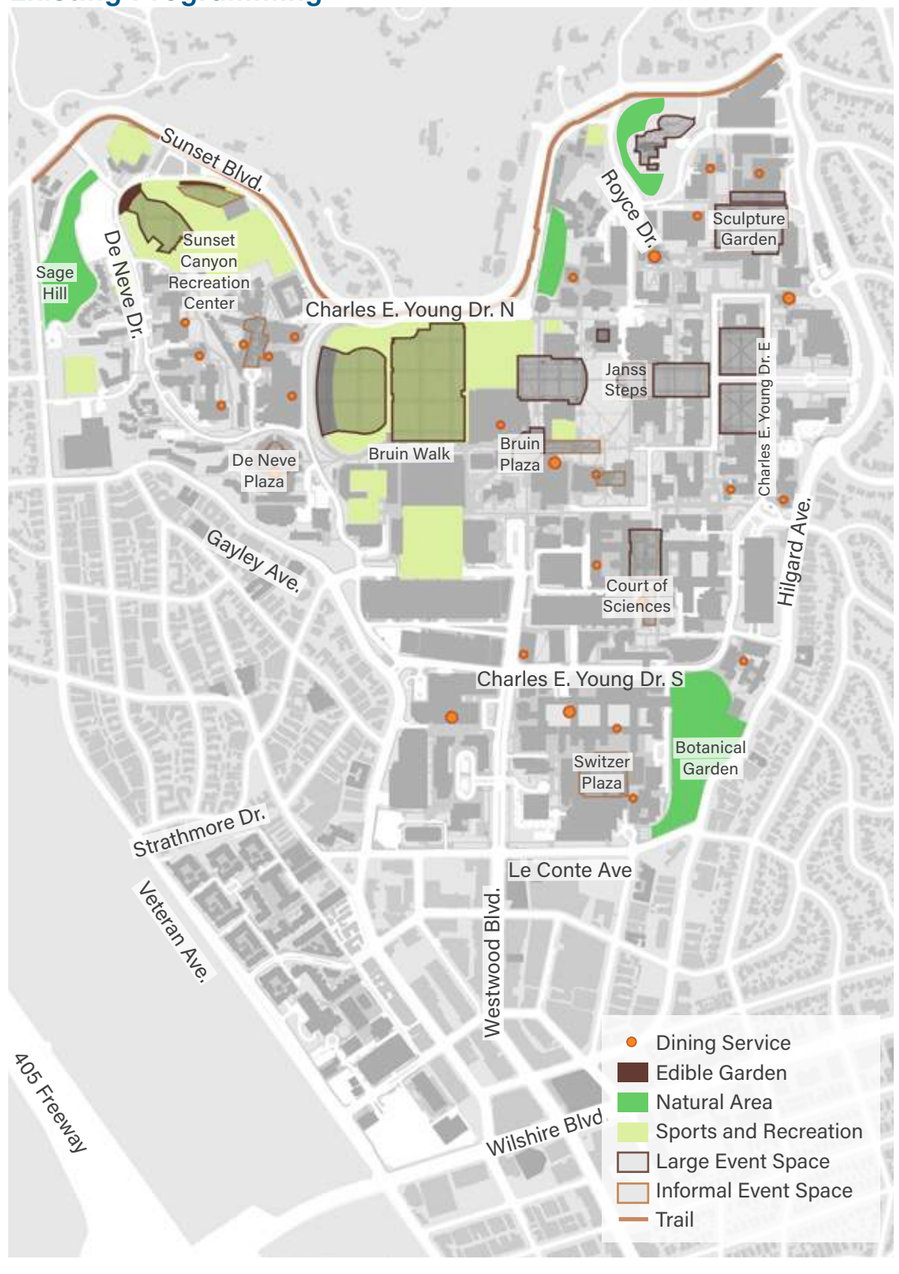

Outdoor Dining and Casal Gathering


Jogging and Exercise


Large Event Hosting


Film and Television Industry Shooting

Existing Programming



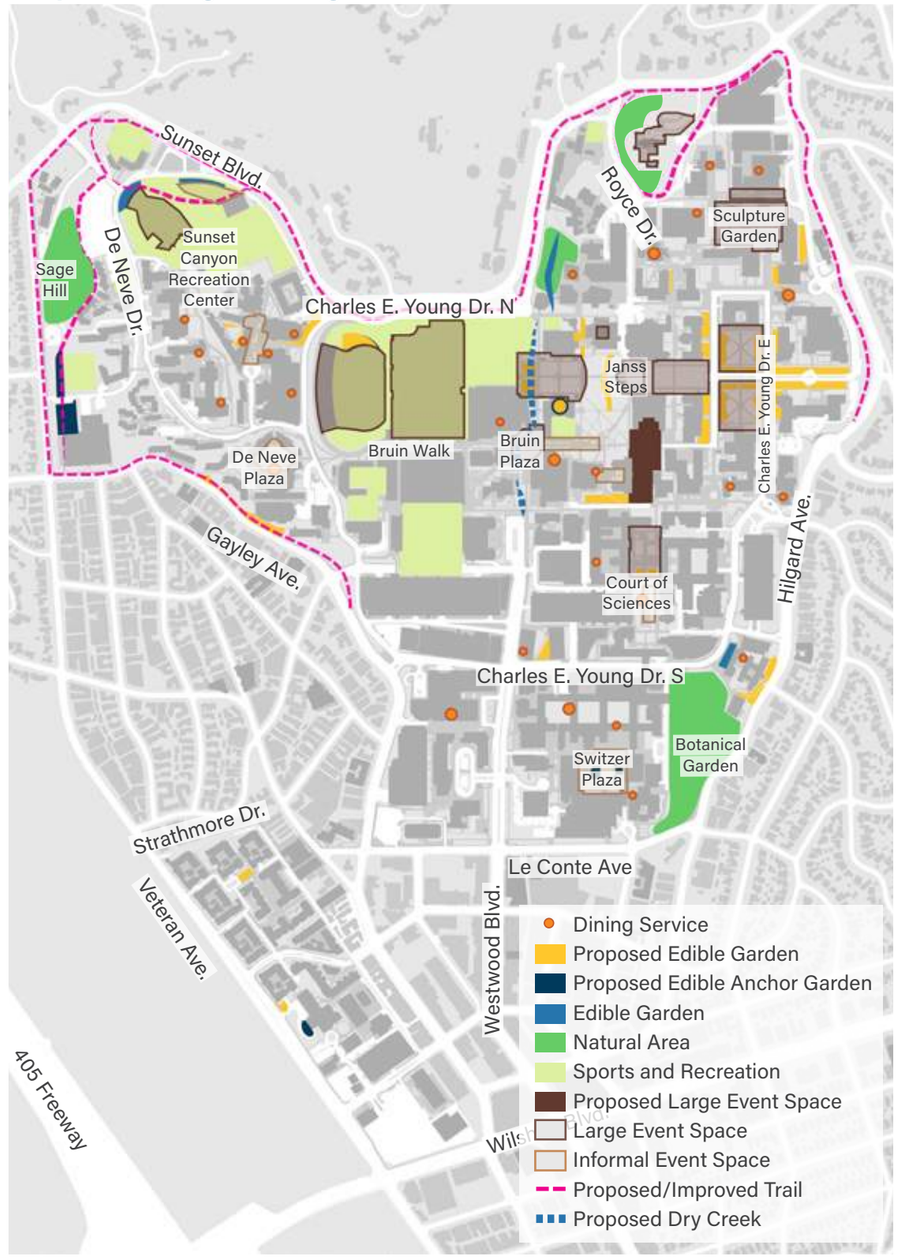
OBJECTIVES

- Promote flexible use and functionality.
- Foster diversity, wellness, culture, community building and learning in the landscape.
- Reduce maintenance requirements and encourage resiliency.

RECOMMENDATIONS

- Increase biodiversity, visual impact, and seasonal interest by creating mixed borders at the edges of expansive event lawns adjacent to pedestrian walkways.
- Improve spatial flexibility for when events are not being held. Include appropriately placed shade trees and secure but easily moveable furnishings to make spaces more welcoming in terms of their microclimate, scale, and capacity for daily programming. Consider fun, lightweight elements like hammock gardens and slacklines.
- Identify additional small event spaces on campus and increase opportunities for informal, student-led and interactive events such as tabling, outdoor classrooms, recreation classes, installations and exhibits, performances, religious practices and gatherings. Provide elements to support such programming such as pavilions, shade structures and small stages. Create an easy-to-navigate reservation system for the use of event spaces for informal events.
- Investigate the use of coordinated elements throughout the campus landscape that promote events such as signage.

Proposed Programming



STUDY SPACES

OBSERVATIONS

- There are currently 22 outdoor spaces identified on UCLA Residential Life website as student outdoor study spaces.
- During Covid, there are many indoor study spaces unavailable to the students. The need for outdoor study spaces is increasing.
- UCLA's Facilities Management and the USAC Facilities Commission identified additional underutilized turf areas on campus for conversion to study spaces or drought tolerant landscape.
- The UC policy on sustainable practices requires planning for replacement of underutilized turf areas. A number of areas have been converted to study spaces and/or drought tolerant landscape.
- Engagement results from the first workshop reveal that outdoor study spaces were ranked as the most popular program element people want to see more of on campus in the future.

OBJECTIVES

- Increase the number of outdoor study spaces on campus.
- Ensure furnishings and infrastructure support outdoor study space needs.
- Engage with students in the design and installation of outdoor study spaces.

Anderson School Courtyard

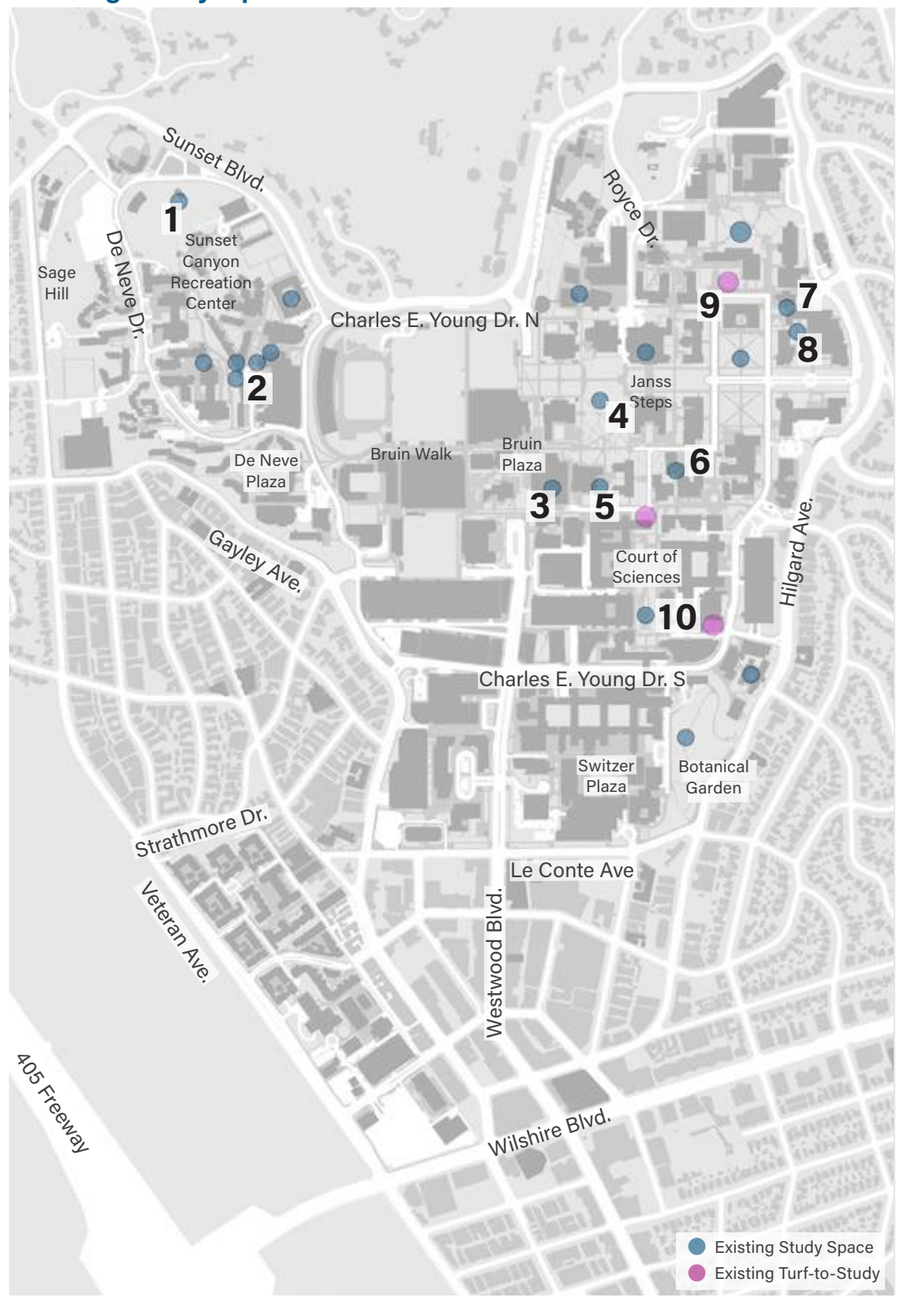
Delta Terrace Patio

South Campus Bomb shelter

Ralph and Shirley Shapiro Courtyard

1. Sunset Canyon Recreation Center is a quiet, park-like facility with tables and chairs.
2. The western residential area has highly concentrated study spaces at food service sites such as Cafe 1919, the Bruin Cafe, and Rendezvous.
3. Ackerman Union Terrace Patio is a sunny location.
4. The Janss Steps Lawn provides a grassy, digitally-disconnected study site.
5. Kerckhoff Patio is a high-traffic patio with study amenities.
6. The Physics and Astronomy Building is a quiet, weekday study location.
7. Lu Valle Commons has indoor and outdoor seating available.
8. The Ralph and Shirley Shapiro Courtyard is a tranquil study site.
9. Tables outside Bunche Hall are shaded with outlet amenities.
10. The South Campus Bomb shelter has indoor and outdoor study tables.

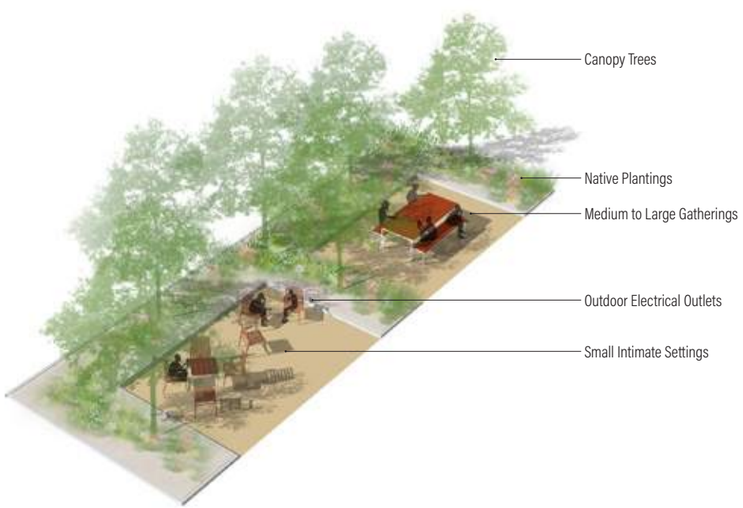
Existing Study Spaces



RECOMMENDATIONS

- Consider converting the underused spaces identified on the map into outdoor study spaces.
- Establish a student advisory committee to work with Facilities Management on the redesign of underused campus spaces with particular focus on identifying and installing potential study spaces.
- Provide shade, tables and seating, and electrical outlets. Consider light-weight, moveable furnishings for study spaces.
- Increase the visibility of study spaces through an online application and digital inventory where users can identify and navigate campus spaces. See the Green Spaces and Buildings team's Sustainability Action Research report for more information.
- Improve physical accessibility to study spaces through a comprehensive wayfinding, circulation, and transportation plan in close collaboration with the Disabled Students Union.

Elements of a Typical Outdoor Study Space



Menti survey results when UCLA stakeholders were asked:

"What program elements do you want to see more of on campus?"

Outdoor Study Spaces

Restoration Spaces

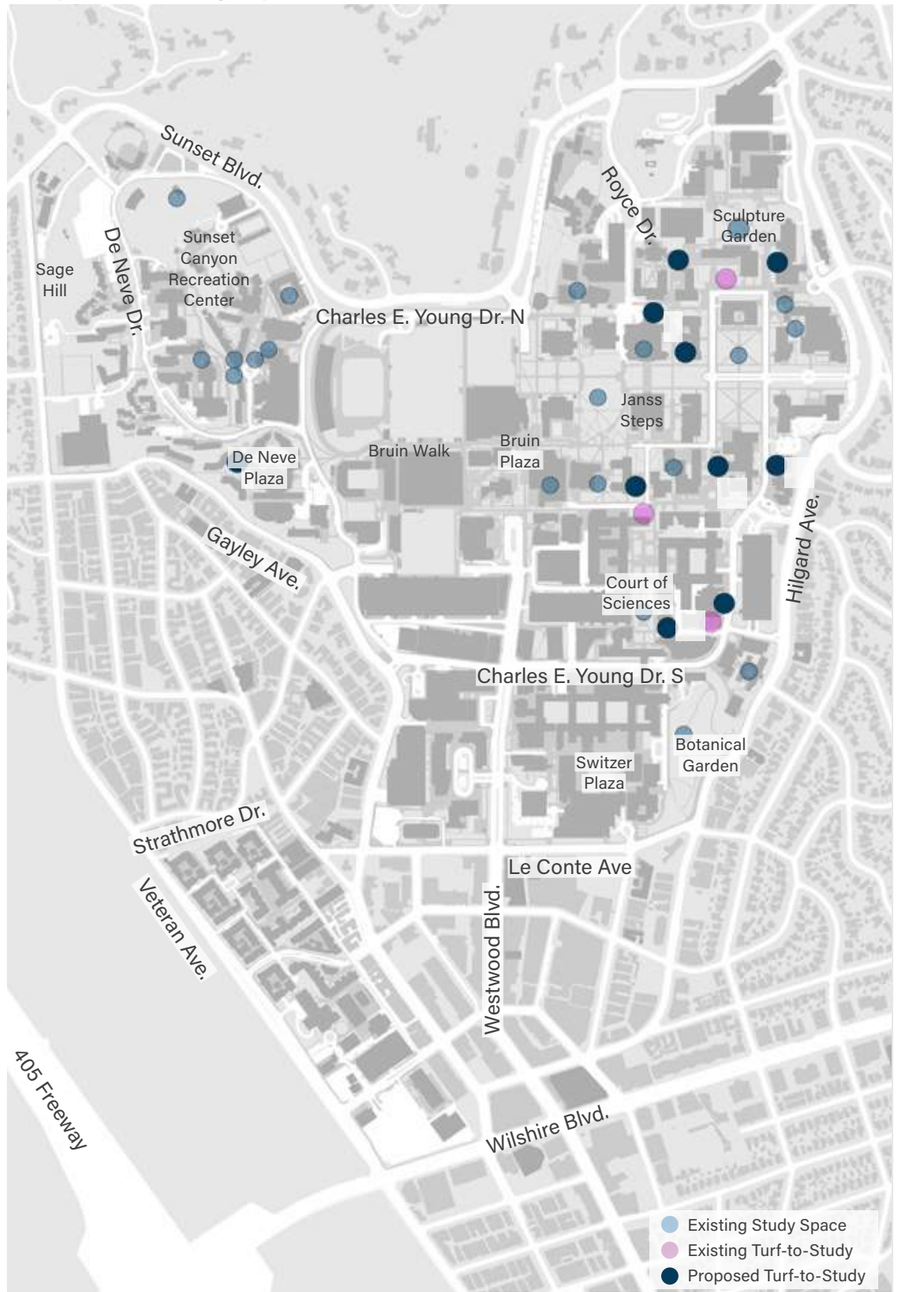
Edible Landscapes

Outdoor Eating / Cafes

Outdoor Classrooms

Mediation and Prayer Spaces

Proposed Study Spaces



EDIBLE CAMPUS

OBSERVATIONS

- Two community gardens are present on campus [DIG Garden and Semel Healthy Campus Initiative Garden] both at Sunset Canyon Recreation Center. An apiary sits above the Life Sciences building.
- A Global Food Initiative study prioritizes space for students who identify as Black, indigenous, and people of color (BIPOC) to connect to land and food.
- Student survey suggests that the UCLA student community wants to get involved with edible campus landscapes.
- Challenges associated with edible landscaping on campus include:
  - » Aesthetics and campus maintenance issues such as safety, pest-control, fruit litter, landscapes over structure, etc.
  - » Managing output and distribution.
  - » Environmental sustainability including water use and appropriate plant placement according to microclimate.
  - » Year-round engagement including oversight and operations.

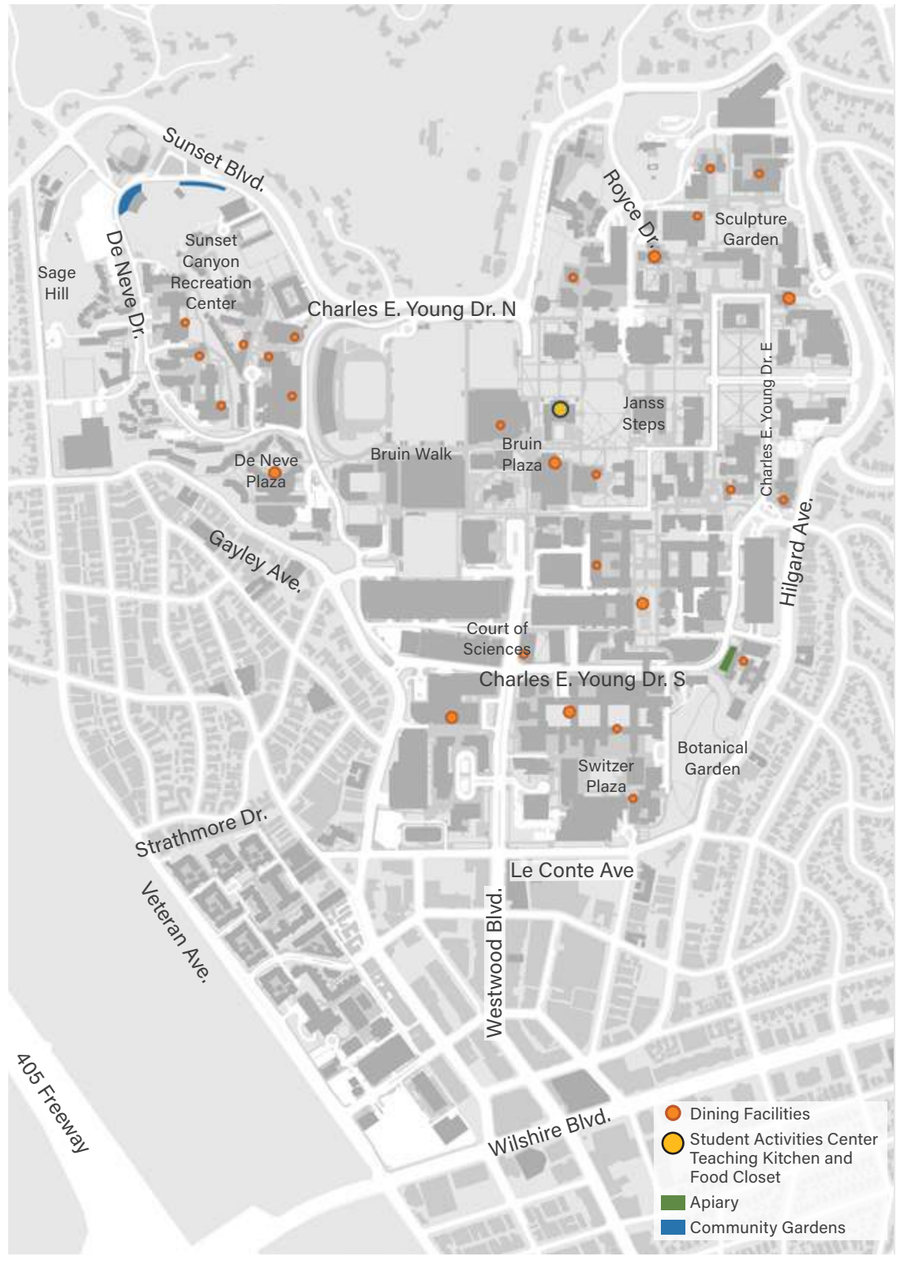
OBJECTIVES

- Meet the campus community's expressed desire for edible landscapes and programming.
- Promote democratic use of campus space.
- Enhance landscape learning and wellness, build community, and promote food security and environmental justice.

Edible Garden at Sunset Recreation Area

Edible Garden at DIG Garden

EXISTING CONDITION



RECOMMENDATIONS

What to grow?

- Fruit and nut trees, berry bushes, native edibles, herbs and veggie boxes/beds in select places.
- Mediterranean and native edibles for water efficiency.

How to grow?

- Establish a multifaceted engagement strategy to ensure caretaker continuity and accountability.
  - » For Anchor Gardens, paid position/s for students to be funded via sustainability or food security programs at UCLA, such as The Green Initiative Fund or the Global Food Initiative.
  - » For non-anchor gardens, a staff position will manage infrastructure, ensure crops are harvested, and distributed.
  - » Management responsibilities would be supported by engagement with clubs, student groups, volunteers, and classes.

Where to grow?

- Convert select underused turf spaces to edible landscapes.
- Establish accessible anchor gardens in high traffic areas for veggie boxes and beds. Establish distributed, ornamental edibles in high visibility areas throughout campus.
- Put the right plant in the right place using the Edible Landscape Matrix.

Additional considerations:

- Donate garden output to campus community experiencing food insecurity.
- Support learning through signage and programming including large harvest events and campus tours.
- Grow plants with significance for Tongva and diverse cultures.
- Promote beauty and connection between food growth and consumption by planting near dining spaces.
- Staff position should be considered for operations and engagement.
- Consider Integrated Pest Management and edible plants watering needs.

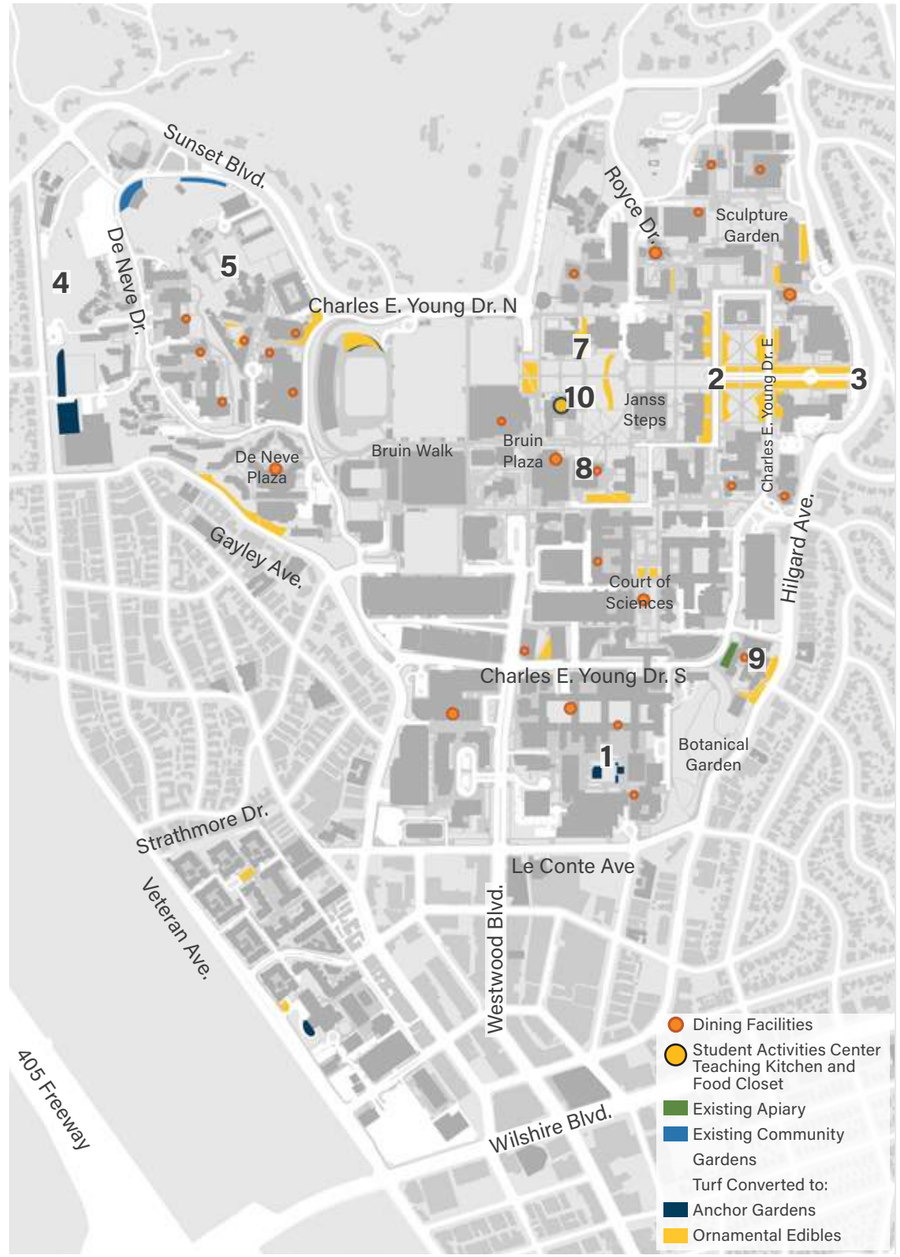
Edible Landscape Matrix

	Fruit and Nut Trees	Berry Bushes	Herb Planters	Native Edibles	Veggie Boxes and Beds
Sun/Heat Requirement	●	◒	◒	◒	●
Capacity for Steep Slope	●	●	○	●	○
Water Needs	●	●	◒	○	●
Maintenance Needs	●	◒	◒	○	●
Output/Harvest Needs	●	●	◒	◒	◒
Capacity for Formal Appearance	●	◒	◒	◒	○

○ Never
◒ Sometimes
● Always

1. Anchor garden at Switzer Plaza that conserves select turf for sports. Possible Diverse Cultural Garden site.
2. Native edible landscaping along the historic axis to integrate Indigenous stories and campus identity.
3. Tongva Garden site. Design, planning and management by tribal decision-making.
4. Indigenous land stewardship at Sage Hill [existing initiative]. Potential for edible plants.
5. Food forest at Sunset Canyon Recreation Center [existing proposal].
6. Food forest site.
7. Edible garden at Anderson Patio [proposed by The Net Impact Hub].
8. Edibles at Kerckhoff Patio including citrus and herbs [proposal by Graduate Architecture Group].
9. Edible landscaping near the existing apiary to support honeybees and integrate with adjacent Botanical Garden.
10. Distribute edible products to the Community Programs Office Food Closet.

PROPOSED CONDITION



TRADITIONAL ECOLOGICAL KNOWLEDGE

OBSERVATIONS

- UCLA recognizes the history of unequal relationships between tribal communities and historic settlers and in particular the Gabrielino/Tongva as original caretakers. Access to ancestral lands and the ability to practice caretaking of native plants and waters is important to native peoples and necessary for the education of future generations.
- UCLA and its Gabrielino/Tongva Tribal Partners are in the process of developing a formal agreement to strengthen and give greater meaning to UCLA land acknowledgment by establishing terms of collaboration in relation to outdoor spaces and plants.
- Areas on campus with particular association with Gabrielino/Tongva land caretaking needs include Sage Hill, the Botanical Garden, and the Reflection Garden at Founder's Rock. Additional spaces are being developed collaboratively between the Gabrielino/Tongva and UCLA, such as the Rolfe Courtyard and a garden by the Center for Study of Women.

OBJECTIVES

- Promote tribal land caretaking.
- Establish spaces for tribal partners to conduct land-based pedagogy and collaborate with the students and faculty of UCLA to generate education forums to create relationships that extend to the public.
- Incorporate indigenous practices into campus maintenance practices as a method of fulfilling UCLA's sustainability goals and reducing maintenance costs.
- Incorporate native plants and water systems more on campus and create literacy of the landscape.
- Respect the privacy of the cultural knowledge of Tribal Partners.


Oak - *Wiit*


Elderberry - *Huukat*


Willow - *Shaxaat*

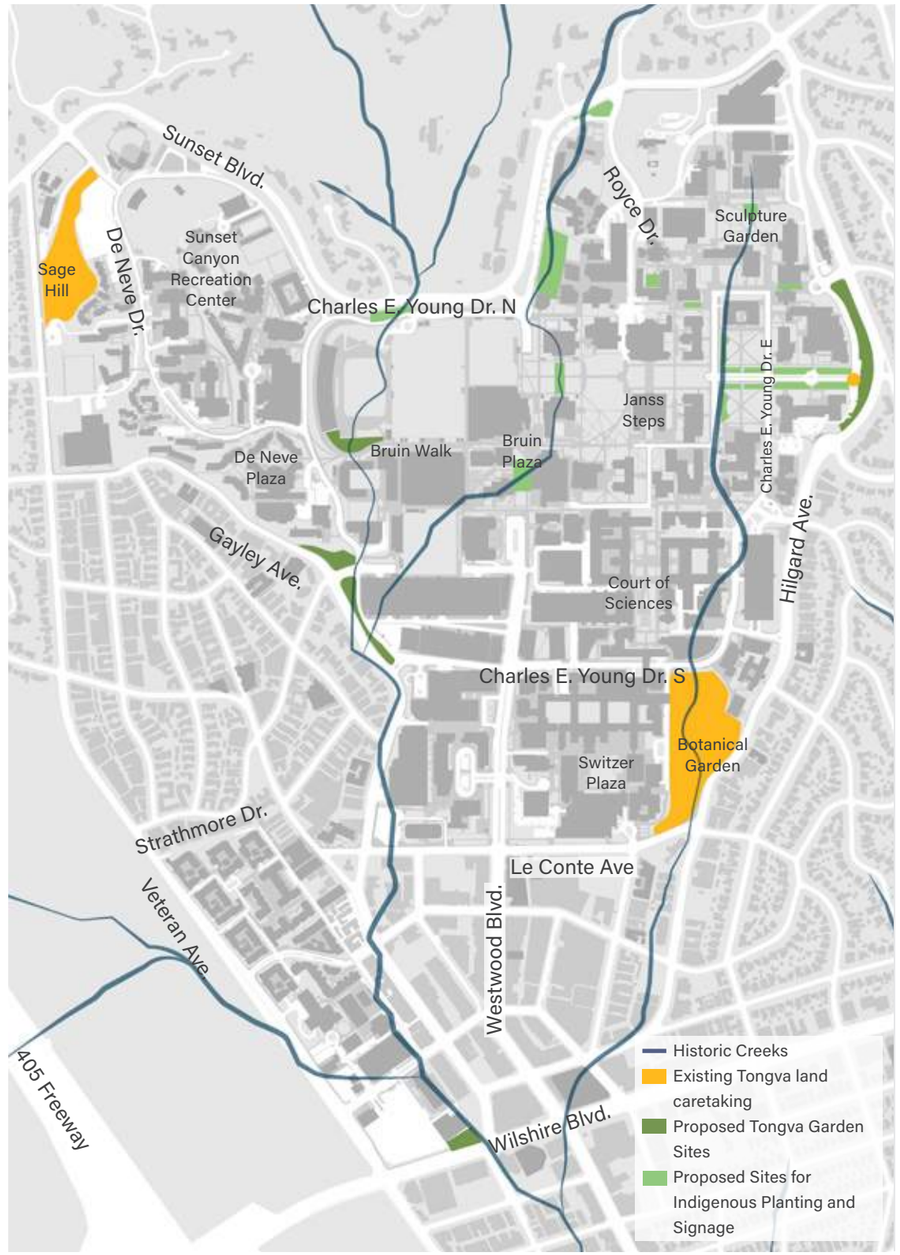

White Sage


Sagebrush - *Huruuvat*


Tule - *Piiro*


Mugwort - *Kwiash*


Juncus - *Shwaar/Swaar*



RECOMMENDATIONS

Maintenance

- Recruit a local native-plant focused organization to collaborate with the Gabrielino/Tongva to train UCLA's landscape maintenance staff on how to incorporate indigenous practices on campus.

Administration

- Encourage departments and units of the University that seek participation by the Gabrielino/Tongva in connection with land-based pedagogy to coordinate with the American Indian Studies Center and American Indian Studies Program in order to seek guidance about best practices in engaging tribal consultation. Establish formal protocol.
- Tribal partners will determine rules around photography and documentation of activities associated with ceremonial or other tribal events.

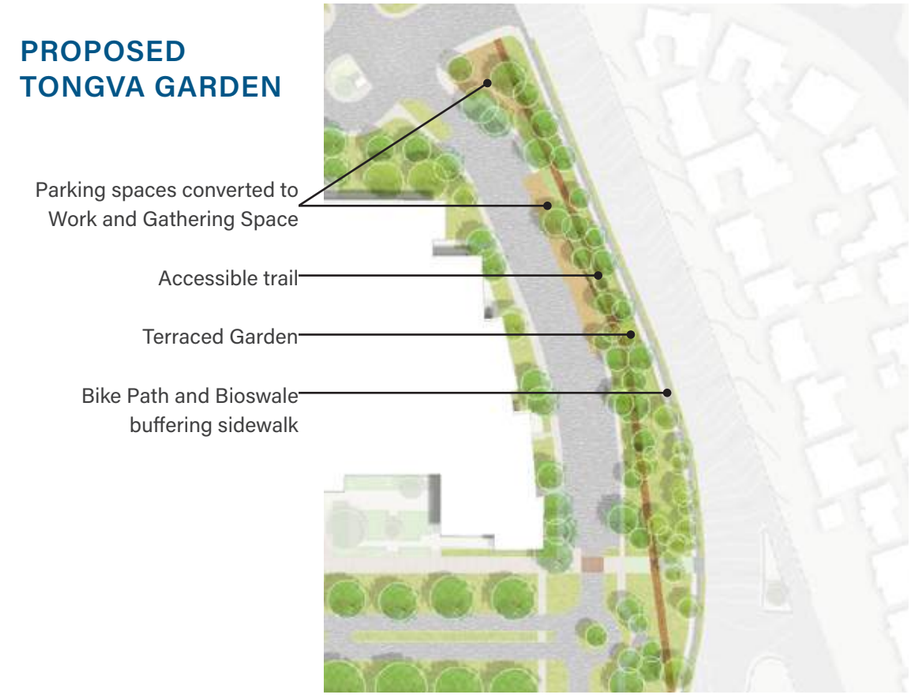
Programming

- Provide land access to tribal partners for caretaking, harvesting and gathering events as well as community workshops to make regalia, clapsticks or other aspects of Gabrielino/Tongva culture and to learn songs about food, culture, language, or other elements of importance.
- Work with Gabrielino/Tongva to place interpretive signage near native campus plantings that balances Indigenous cultural literacy with sensitivity to the privacy of the tribe's cultural knowledge.

Landscape Practices

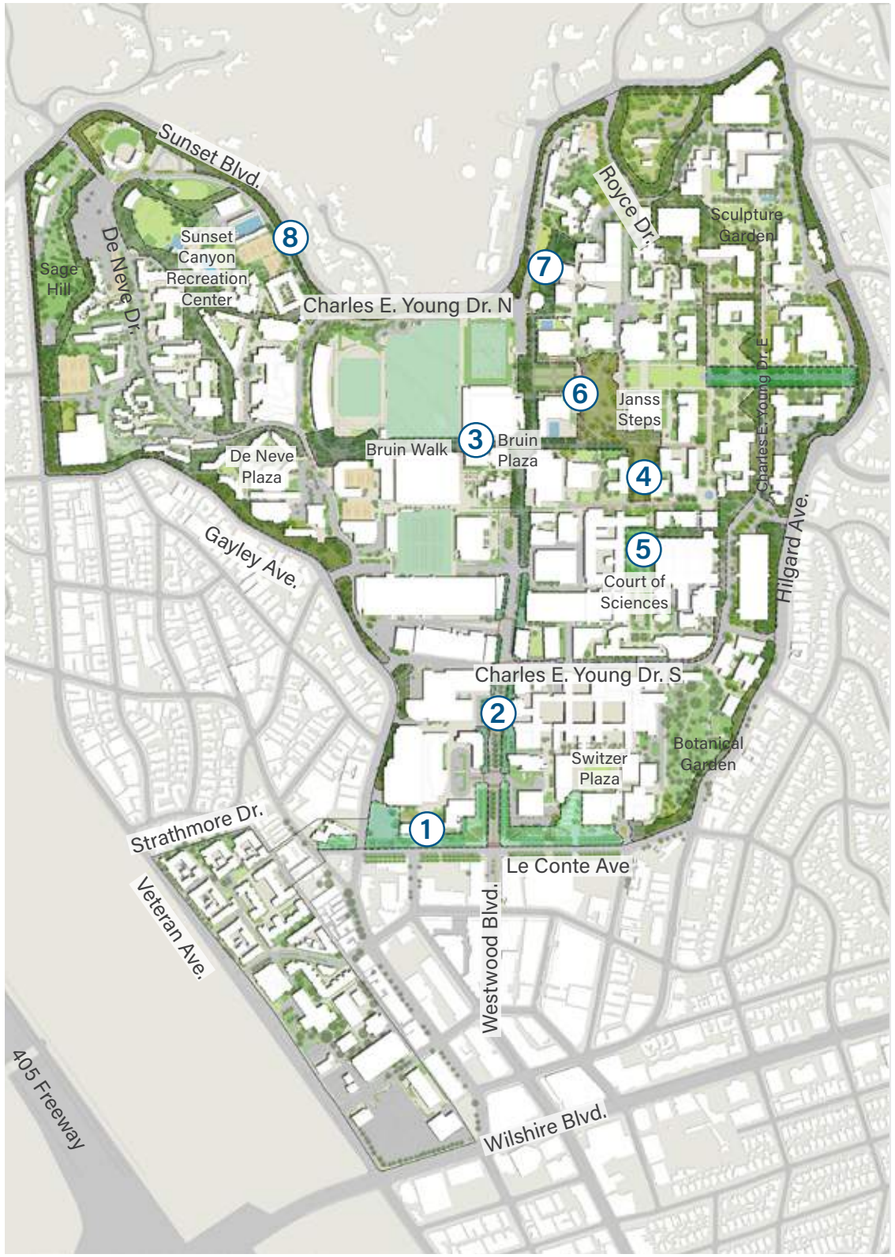
- Improve biodiversity. Replace habitat that supports invasive, non-natives with habitat for native species.
- Incorporate flood terracing and gravity-fed irrigation.
- Add green infrastructure and other passive measures to maintain/improve water quality and promote ground water recharge.
- Increase native plant use and edibles to support native wildlife, ecosystems, and Gabrielino/Tongva heritage. Consult further with Gabrielino/Tongva on incorporating cultural knowledge.
- Gabrielino/Tongva Garden
- Establish site(s) for tribal land access where tribal partners can practice caretaking, hold private and public events and workshops, and share intergenerational knowledge. Such places must include:
- Sovereign land stewardship
- Workspace to extract seeds from plants
- Gathering and event space
- Safety and accessibility for elders and children, including proximate parking areas
- Sufficient sun and water sources to grow native edibles
- The Center for the Study of Women/Streisand Center will be the home of a Rematriation Garden. A space for reflection will be created by planting native plants and engaging with the Gabrielino Tongva regarding important wellness plants through life cycles. There will be an opportunity for all to reflect on the land as a creative force and our embodied relationship to the area. Guided meditation and stories of strength will be available.

PROPOSED TONGVA GARDEN



Kuruvungna Sacred Springs - Photo Credit: Mishuana Goeman

KEY DESIGN AREAS



Key design areas were selected considering high-use areas, locations with special value regarding ecology, heritage, or programming, and other zones diagnosed as benefiting from improvements.

These spaces are used as case studies for how the recommendations of the Landscape Framework may unfold at the level of site design.

1. Le Conte Ave Entrance
2. Westwood Plaza
3. Bruinwalk and Bruin Plaza
4. Powell Library South Plaza
5. Court of Science North
6. Janss Steps and Election Walk
7. Dry Creek
8. Buffer Landscape and Trails

Existing Conditions

1. Le Conte Ave Entrance

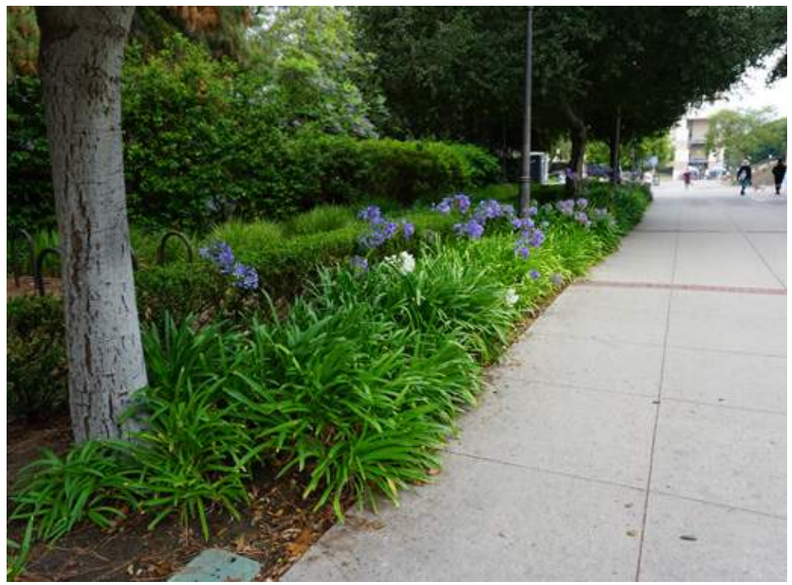
5. Court of Science North

2. Westwood Plaza

3. Bruinwalk and Bruin Plaza

4. Powell Library South Plaza

6. Janss Steps and Election Walk

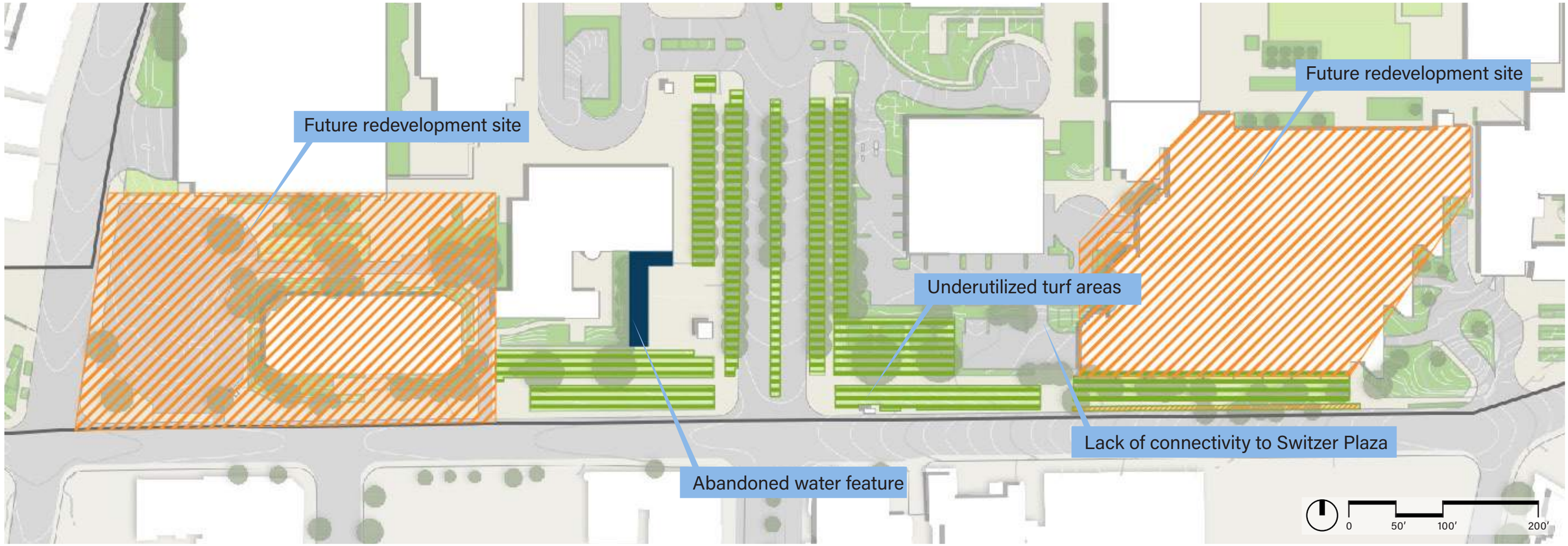


7. Dry Creek

8. Buffer Landscape and Trails

LE CONTE ENTRANCE

Existing Condition

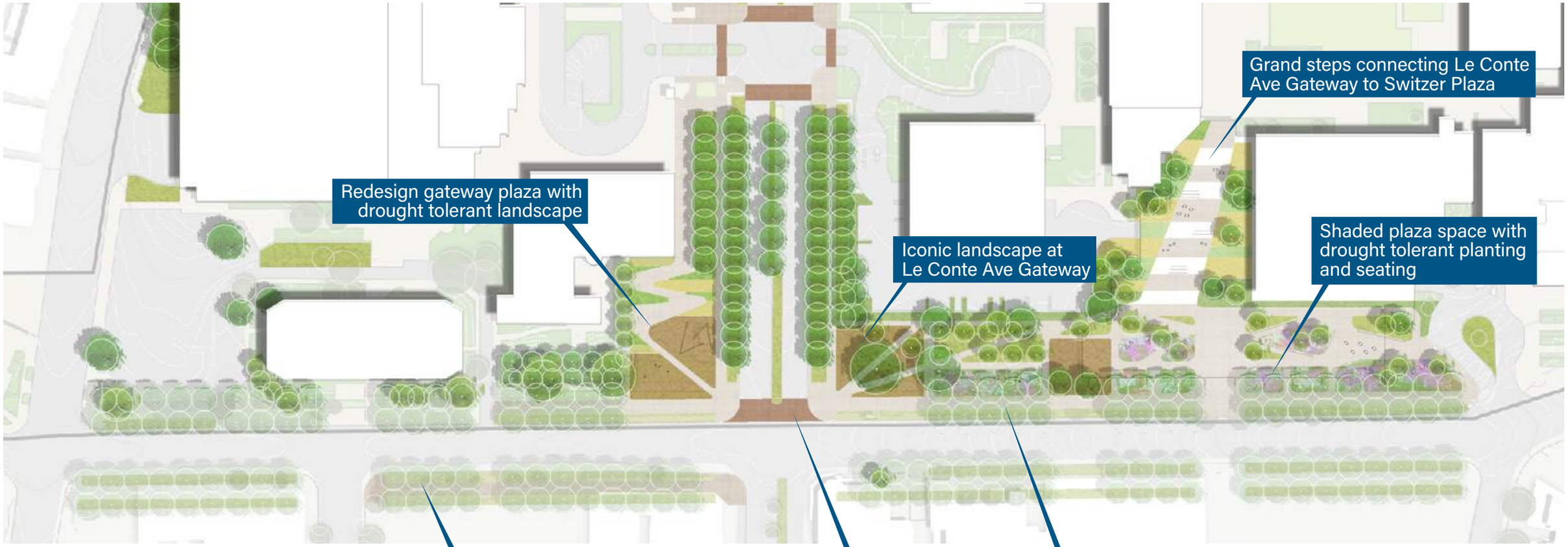


Observations

- Lack of identity as the primary entrance to the campus.
- Underutilized lawn panels.
- Water feature requires a lot of maintenance.
- Can potentially accommodate more programming.
- Several existing buildings are slated for redevelopment.
- Lack of connection to the Westwood Village.

Underutilized Turf
Existing Buildings Slated for Redevelopment
Area Lack of Shade
Existing Water Feature

Proposed Conceptual Design

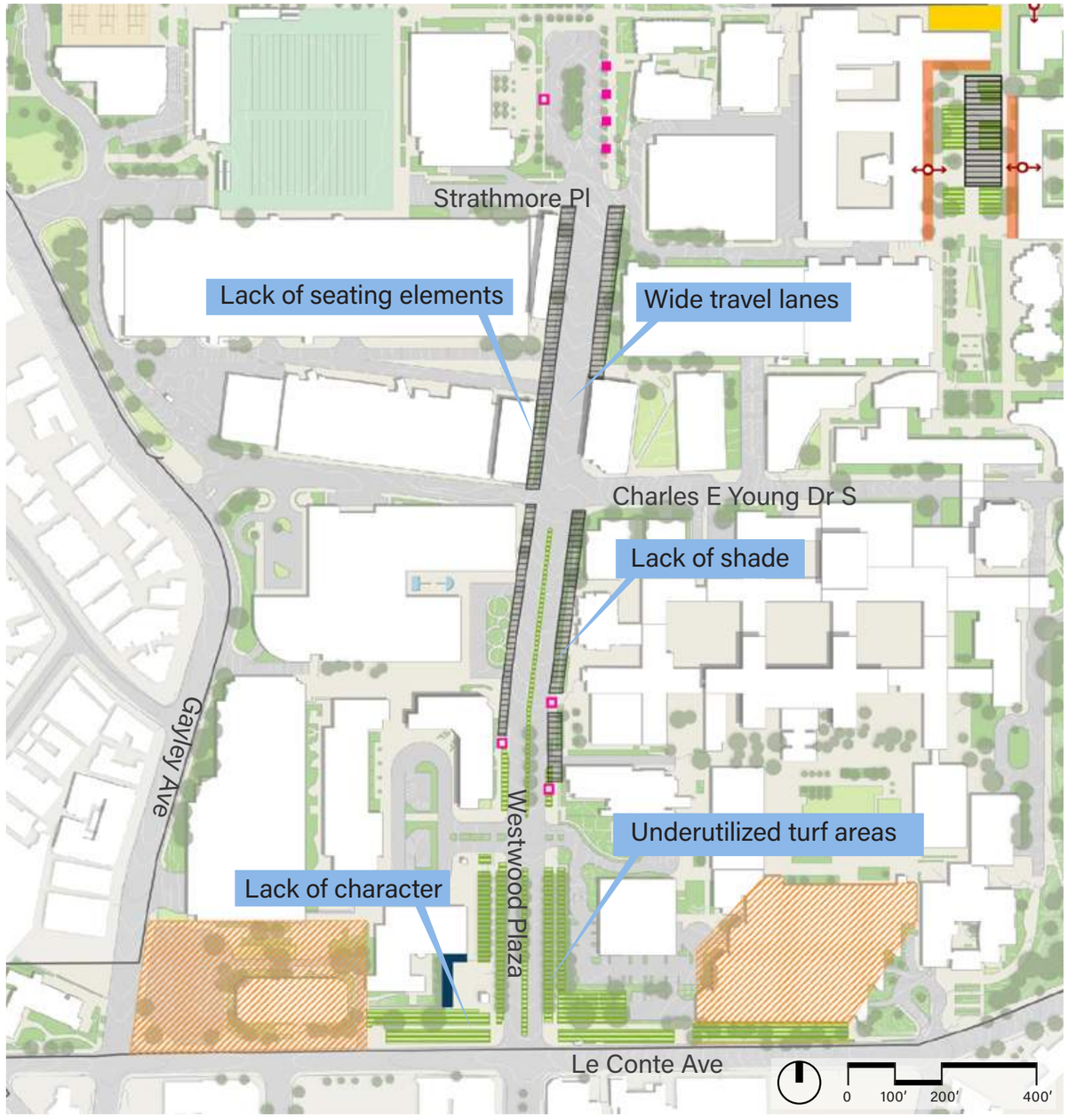


Recommendations

- Showcase the environmental principles behind UCLA's campus landscape.
- Provide for direct pedestrian movements between destinations.
- Connect CHS Plaza to Westwood and Le Conte with a new outdoor space.
- Provide a rhythm of plazas and tree groves along Le Conte with plaza spaces at the terminus to the Westwood Village Street grid.

WESTWOOD PLAZA CORRIDOR

Existing Condition

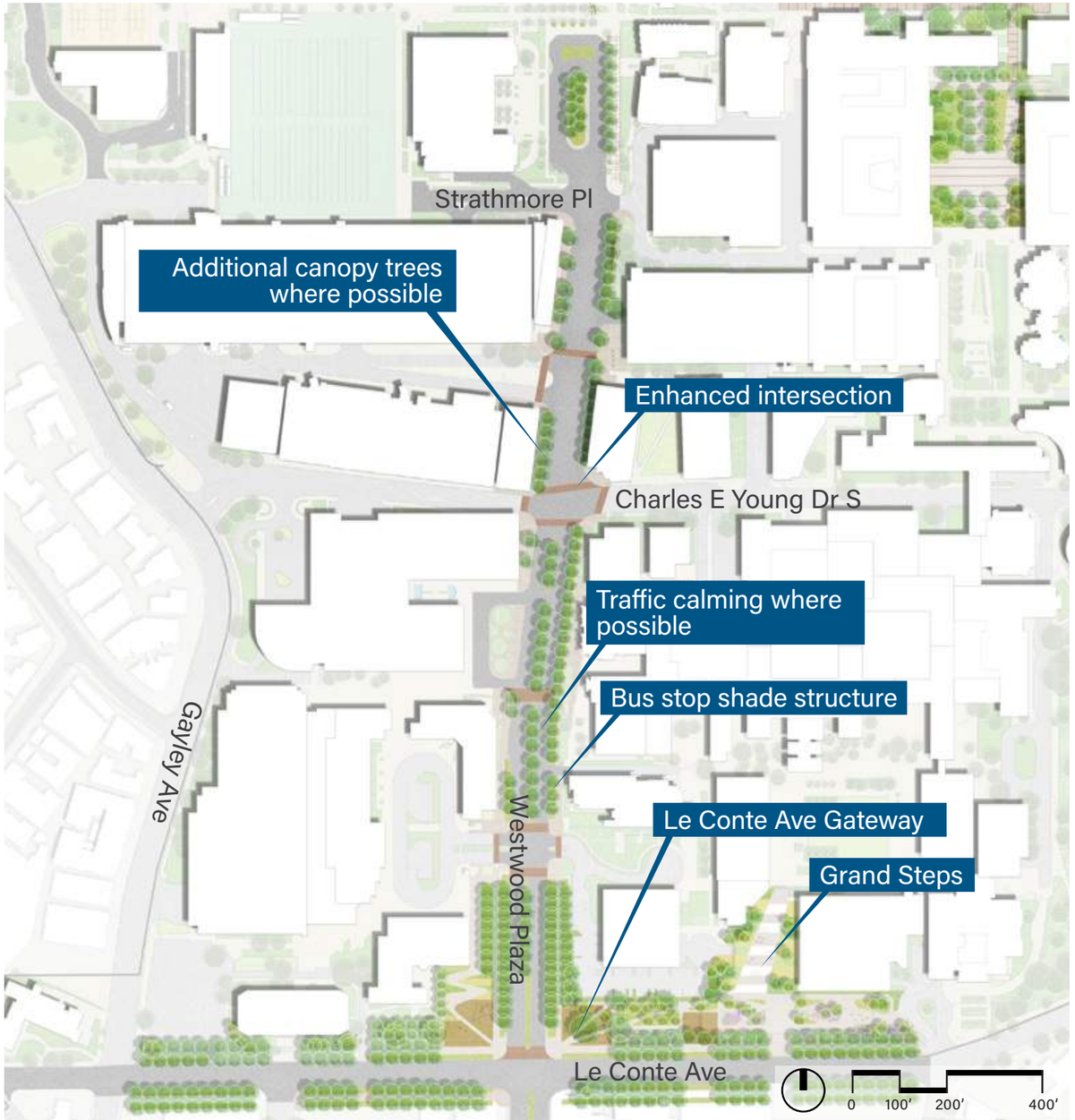


Observations

- Lack of shade, especially at a few bus stops.
- Lack of visual character.
- Parkways are covered mostly with turf.
- Pedestrian pass-through corridor. Lack of spaces for people to linger.

- Bus Stop with Shade Structure
- Bus Stop without Shade Structure
- Underutilized Turf
- Existing Buildings Slated for Redevelopment
- Area Lack of Shade
- Existing Water Feature

Proposed Conceptual Design

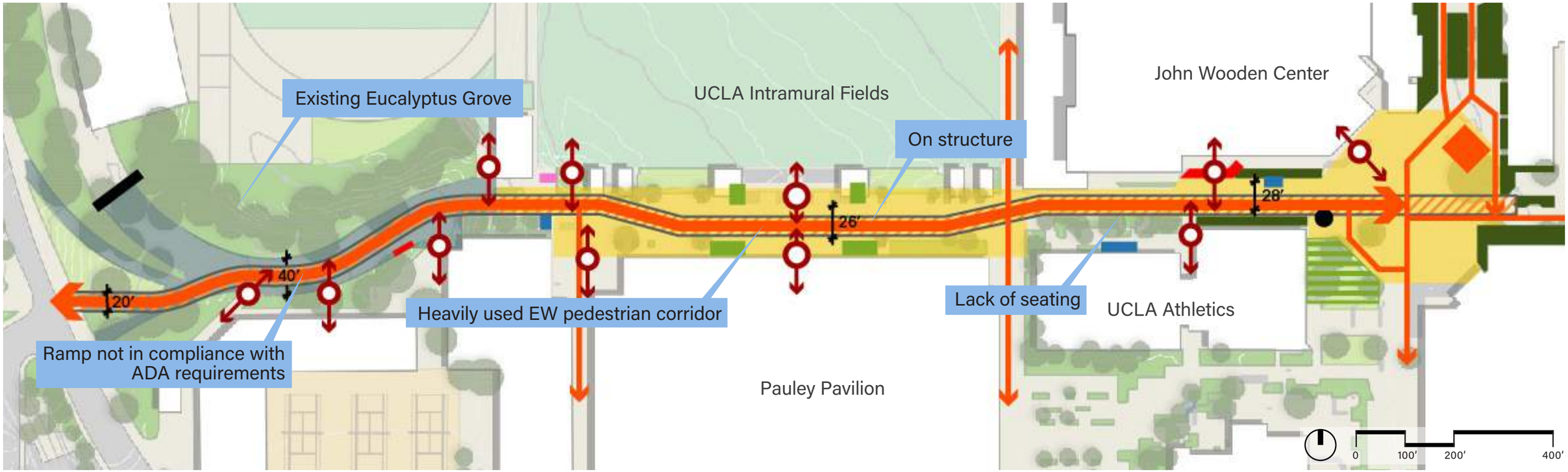


Recommendations

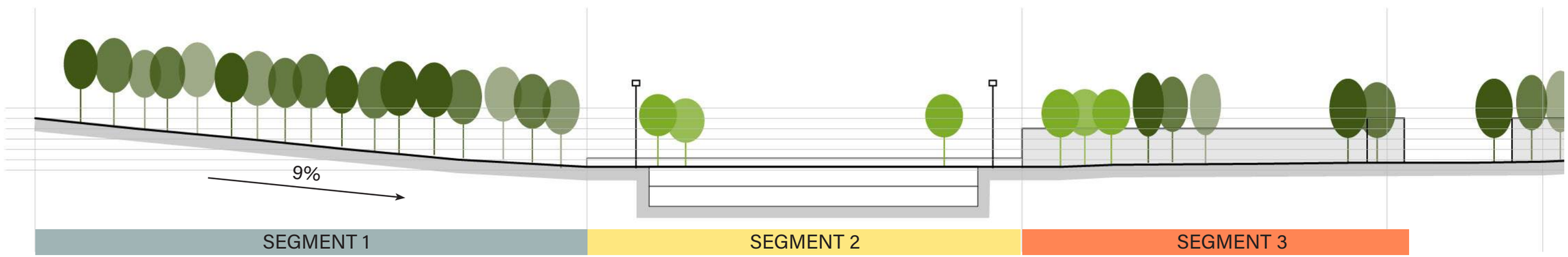
- Replace turf with native/drought-tolerant planting to improve legibility, achieve visual consistency and support habitat connectivity along this corridor.
- Plant additional trees where possible. Avoid conflict with underground utilities.
- Provide shade structures for bus stops that are currently lack of shade.
- Apply special paving at key intersections. Improve identity and entry experience.
- Provide additional furnishing and amenities near key intersections and bus stops. Make them pleasant spaces for people to linger and rest.

BRUIN PLAZA AND BRUINWALK

Existing Condition



SECTION



SEGMENT 1

Observations - Segment 1

- Buffer area shaded by Eucalyptus, Italian Stone Pines
- Large trees with small planter and compacted soil
- Approximately 9% slope, not ADA compliant
- 43 feet wide concrete walk with retaining walls and guardrails on both sides
- Lack of seating and other programmatic elements

SEGMENT 2

Observations - Segment 2

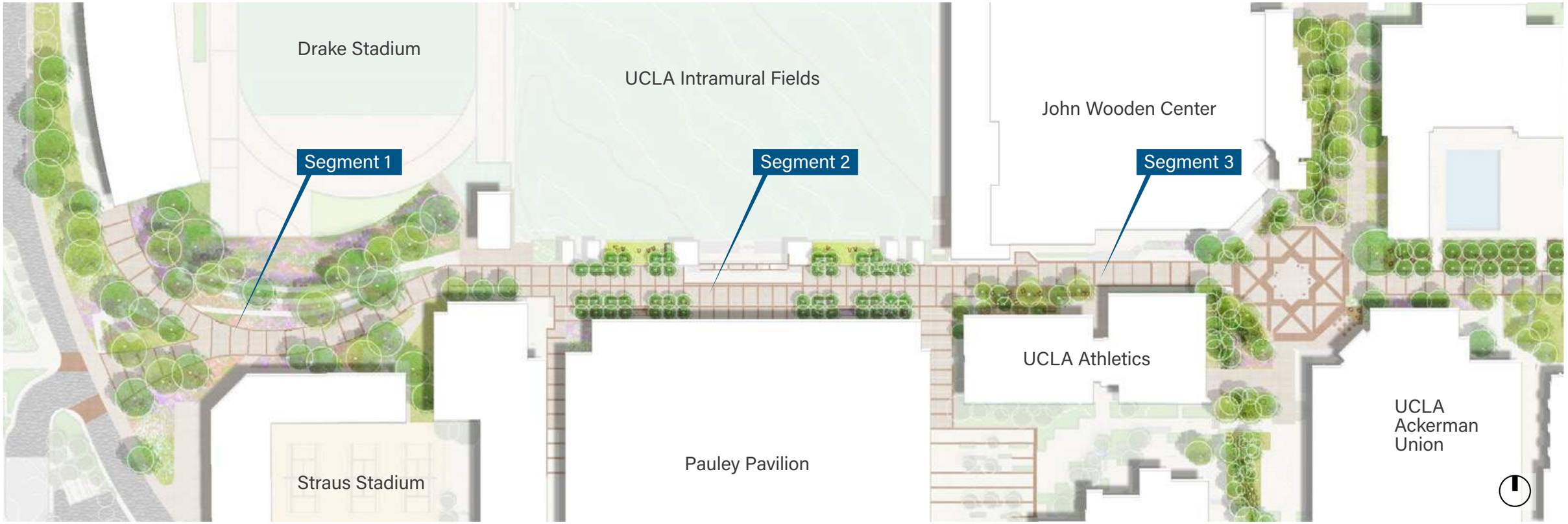
- A few sycamore trees with small canopies, lack of shade
- Underutilized lawn panels
- Lack of landscape character for sports field entrances
- Relatively flat and lowest area along the corridor
- Special paving with seating area
- Site elements are spread out

SEGMENT 3

Observations - Segment 3

- Pines and sycamores create shade
- Boxwood and hedges underneath
- Relatively flat
- Special paving
- Lack of seating

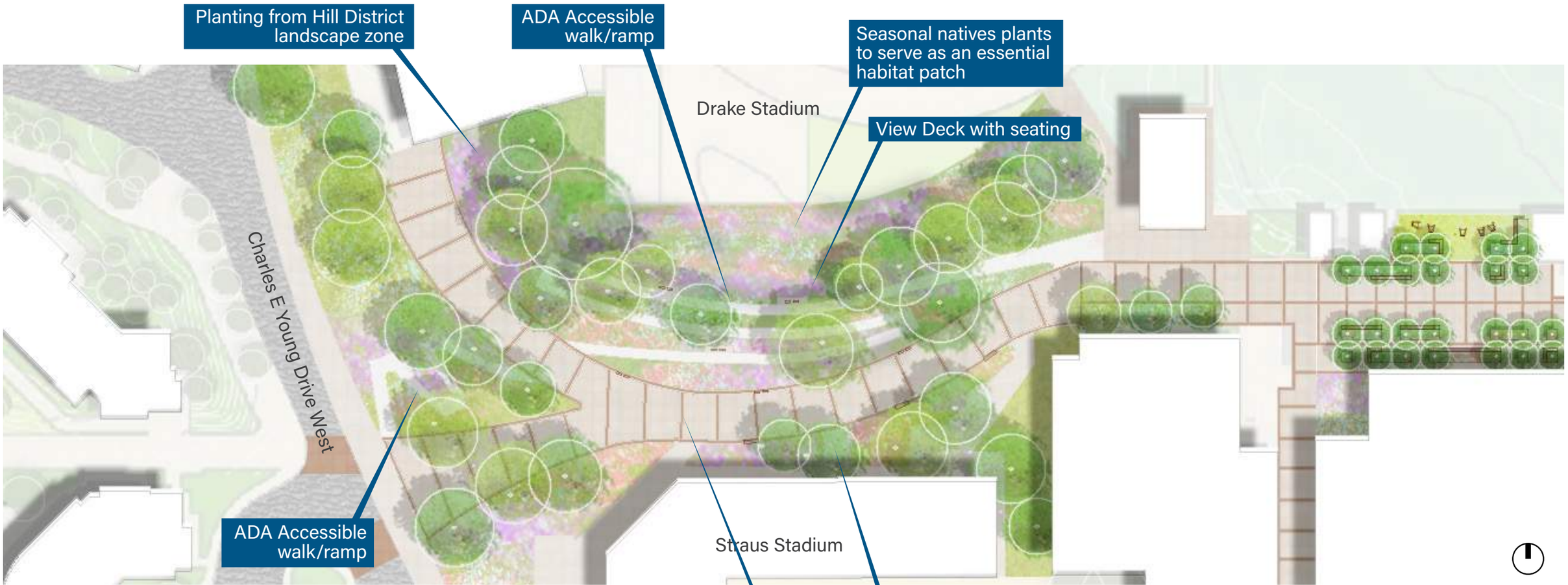
Proposed Conceptual Design: Bruin Walk - A Garden Walk



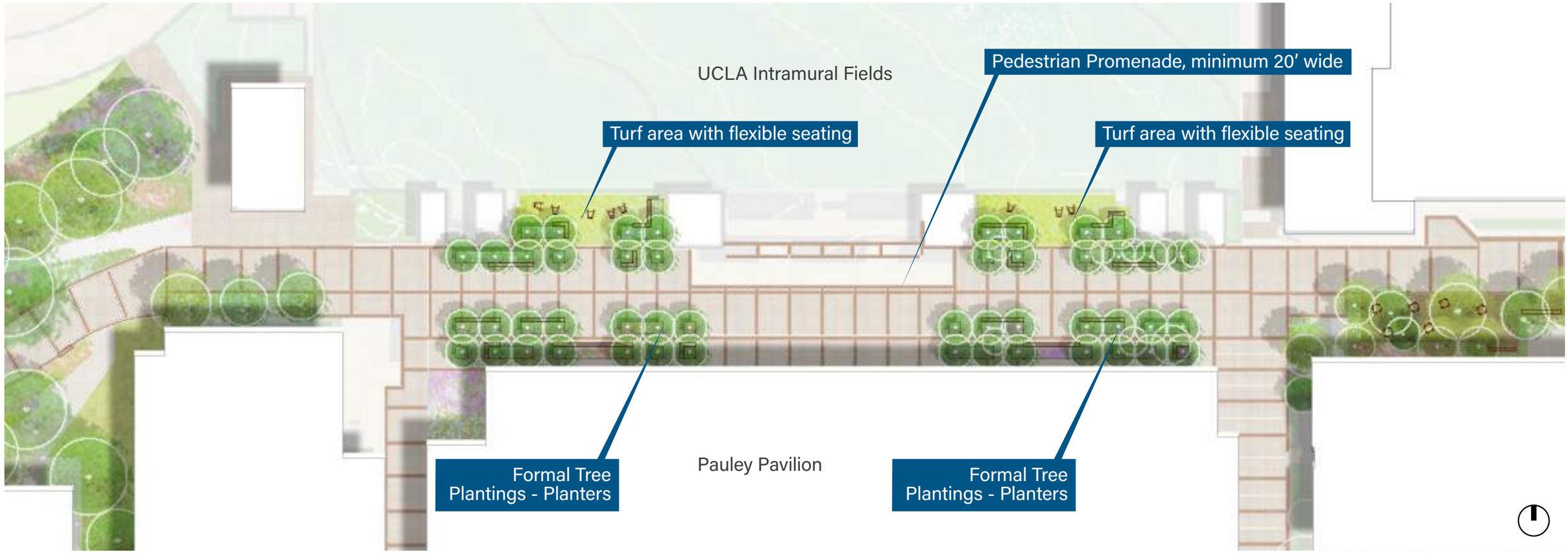
Recommendations

- Establish three Character Zones for Bruin Walk based on the existing conditions.
- Design Bruin Walk to be more than a “freeway” for pedestrians by incorporating activity nodes for relaxing, studying, events, eating, and people watching.
- Make Bruin Walk ADA accessible with a new walk and ramp providing overviews into Drake Stadium.
- Complement the entrance into Pauley Pavilion by flanking it with formal planting and activity nodes that can be used before games and events and that provide much needed shade.
- Wrap a bioswale around Bruin Plaza to provide for habitat and water quality and offering a place of respite and shade with a variety of seating options.
- Establish a consistent lighting strategy to reduce hot spots and low light conditions for the entire walk.

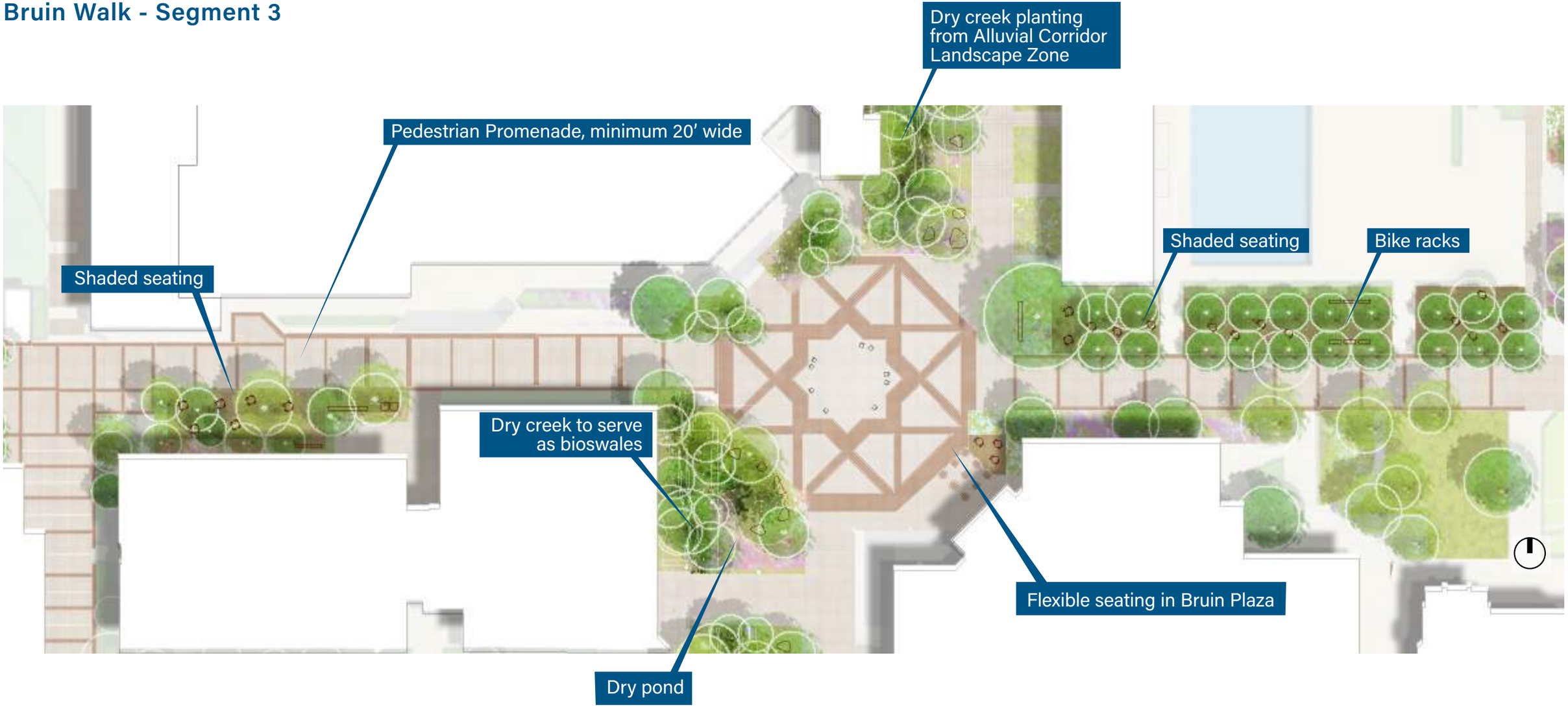
Bruin Walk - Segment 1



Bruin Walk - Segment 2

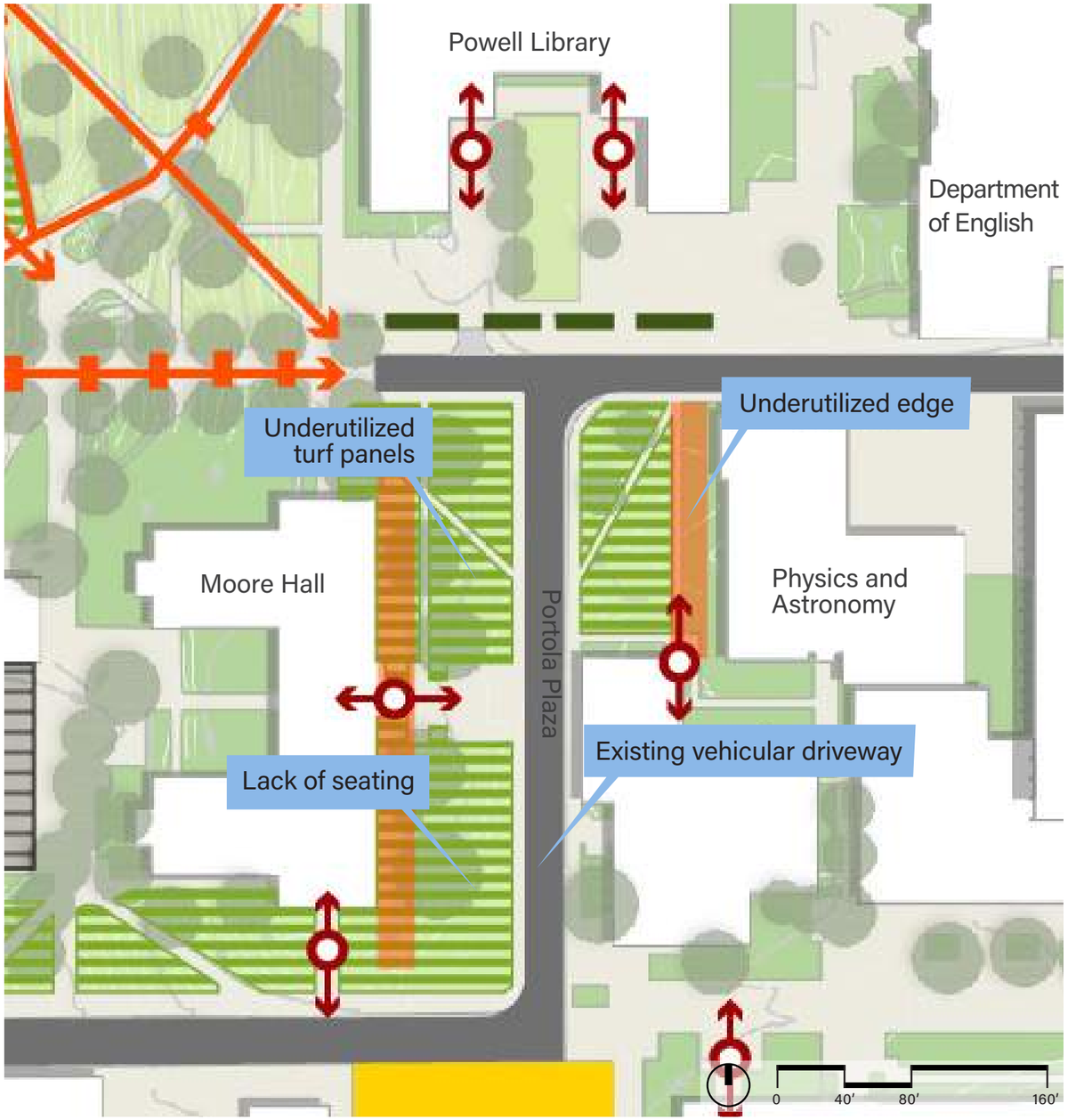


Bruin Walk - Segment 3



POWELL LIBRARY SOUTH PLAZA

Existing Condition

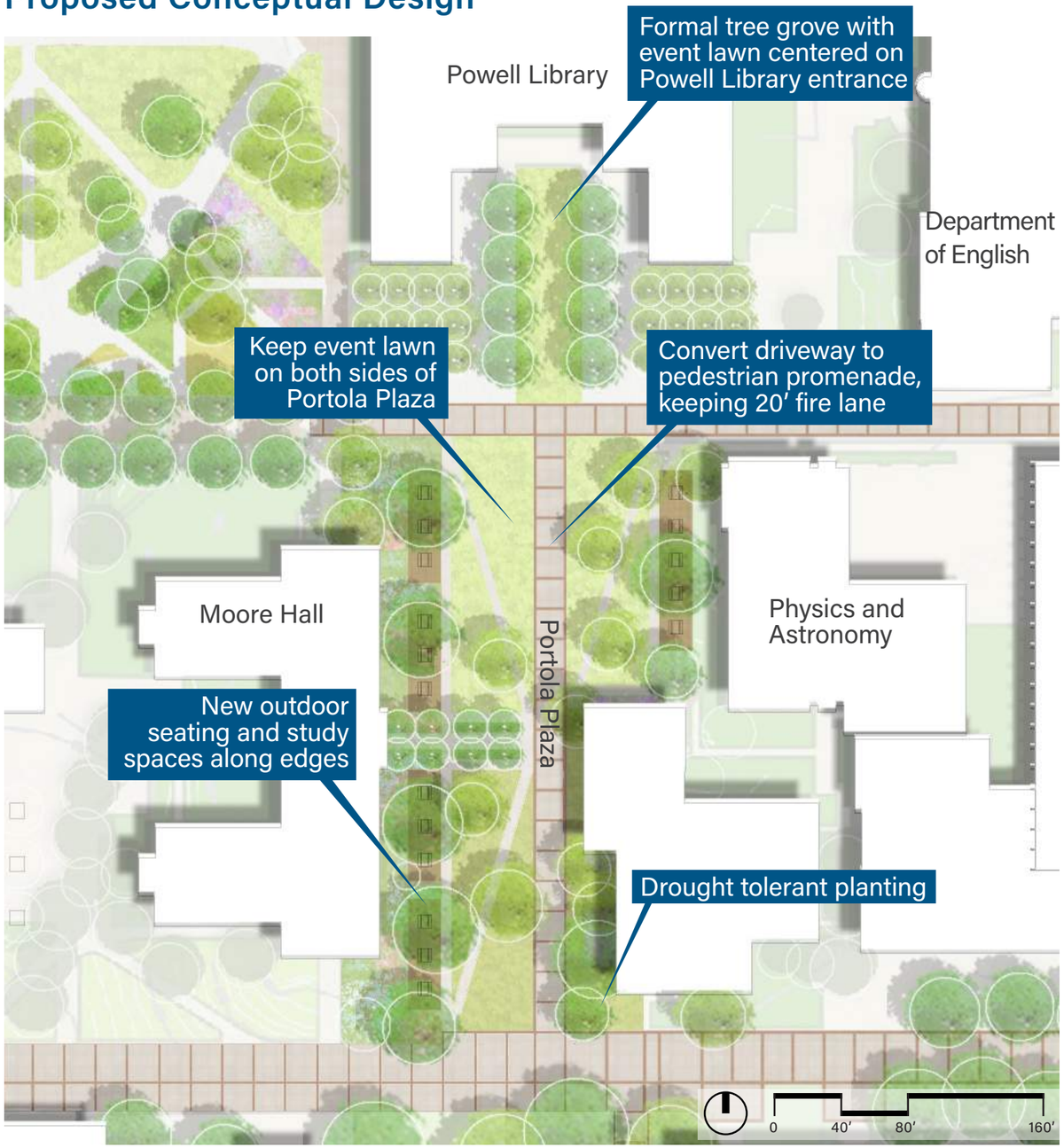


Observations

- Underutilized lawn panels.
- Lack of character.
- Portola Plaza vehicular access potentially will be reduced in the future.
- The current layout doesn't support large event.
- Fire truck access.

Underutilized Turf
Underutilized Edge
Area Lack of Shade
Existing Planter Wall
Building Entrance

Proposed Conceptual Design



Recommendations

- Complement the iconic architecture with a new plaza / quad space.
- Reduce the impact of vehicular circulation while still accommodating fire and delivery traffic.
- Provide new outdoor seating and study spaces with shade, seating, power and wi-fi.

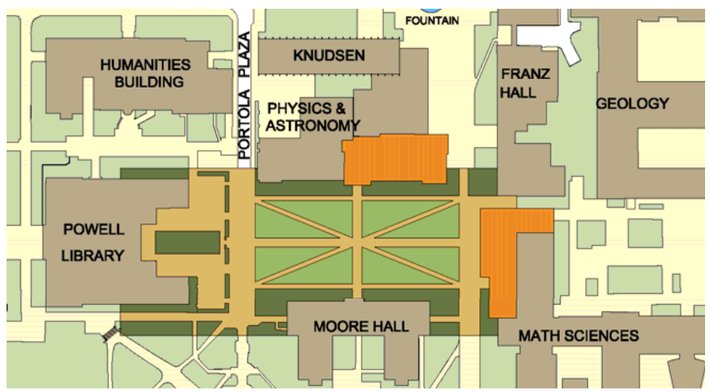
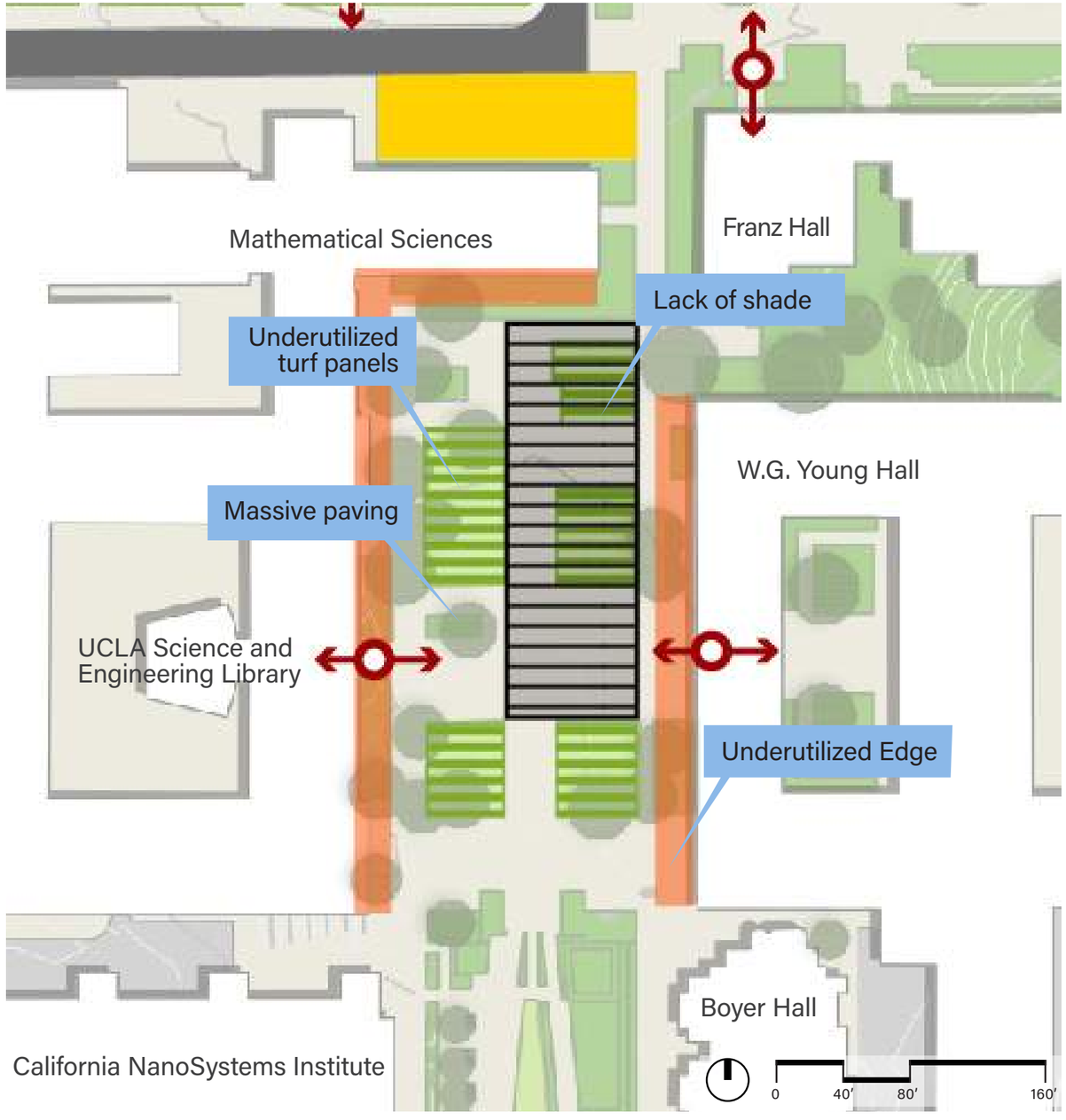


Diagram from Court of Sciences Planning Concept

COURT OF SCIENCES NORTH

Existing Condition

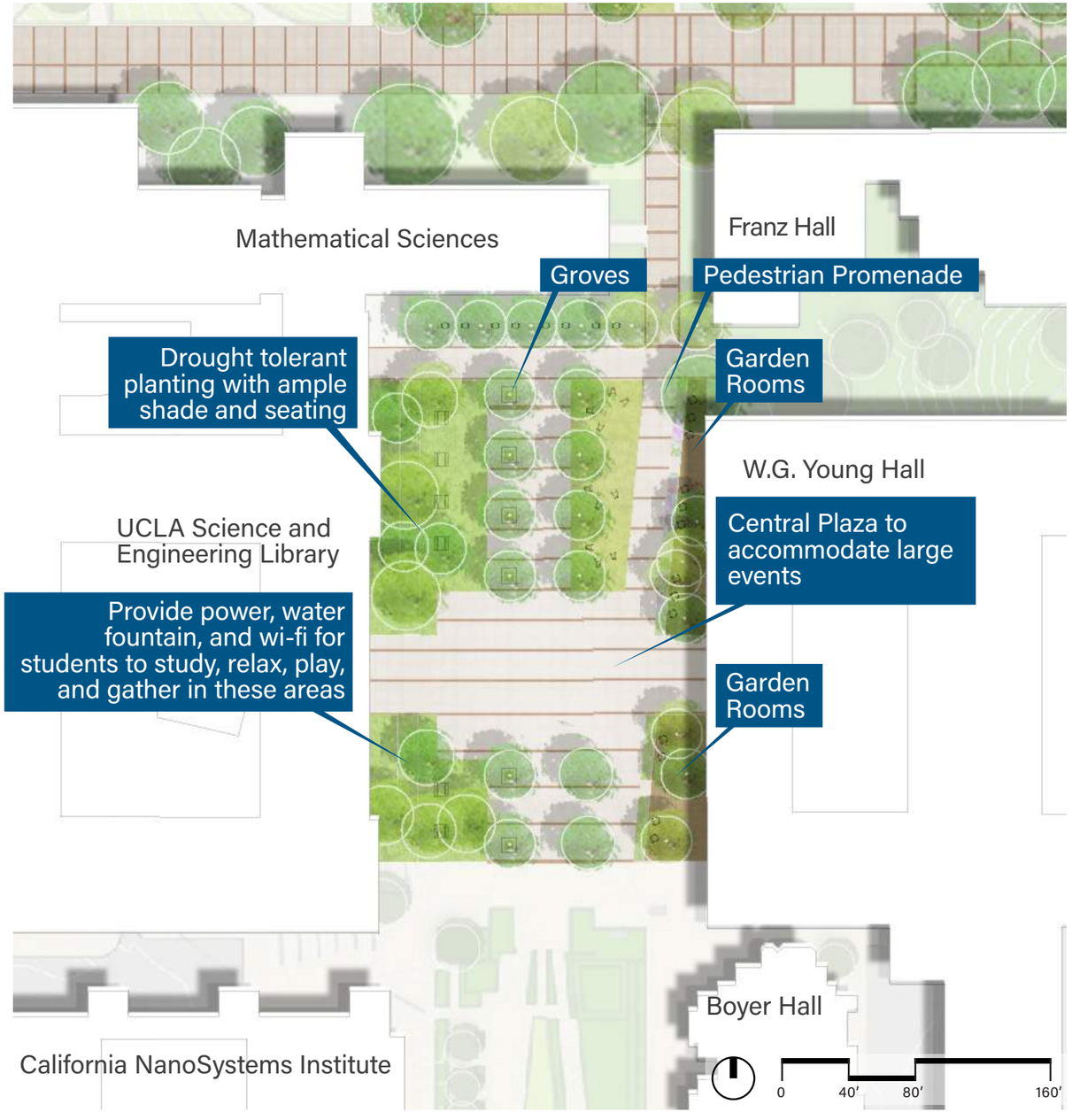


Observations

- Lack of shade.
- Lack of identity.
- The current layout does not support large event.
- Lack of furnishing, amenities, power, and water fountains to accommodate student-centered programming, such as study, waiting between classes and small group gathering.
- Underutilized lawn panels.
- Massive paving area.

Underutilized Turf
Underutilized Edge
Area Lack of Shade
Existing Planter Wall
Building Entrance

Proposed Conceptual Design

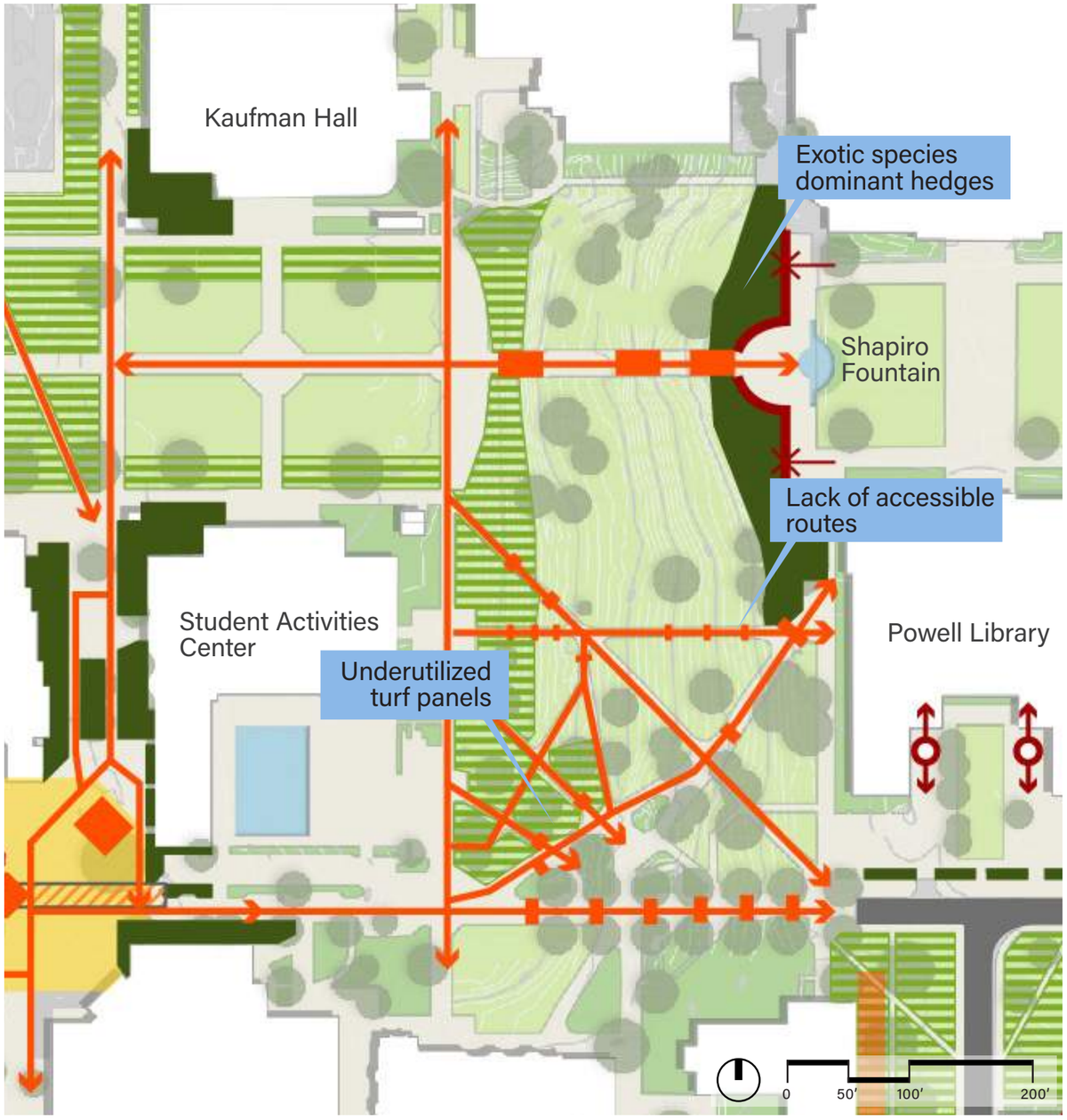


Recommendations

- Create a central plaza space that is centered on the entrances of Boelter Hall and Geology Building, hosting large events while keeping smooth pedestrian flow.
- Provide more shade and seating opportunities with the design of a tree allee. Use one tree species to achieve visual consistency.
- Use consistent and featured understory planting to guide pedestrian flow from Franz Hall to Court of Science South.
- Design the perimeters of the plaza as smaller garden rooms. Provide ample tree canopy, furniture, power, water fountain and wi-fi for students to study, relax, play, and gather in these areas.
- Keep a lawn area in the middle for casual social activities, which can also supplement the central plaza during large events.

JANSS STEPS & ELECTION WALK

Existing Condition

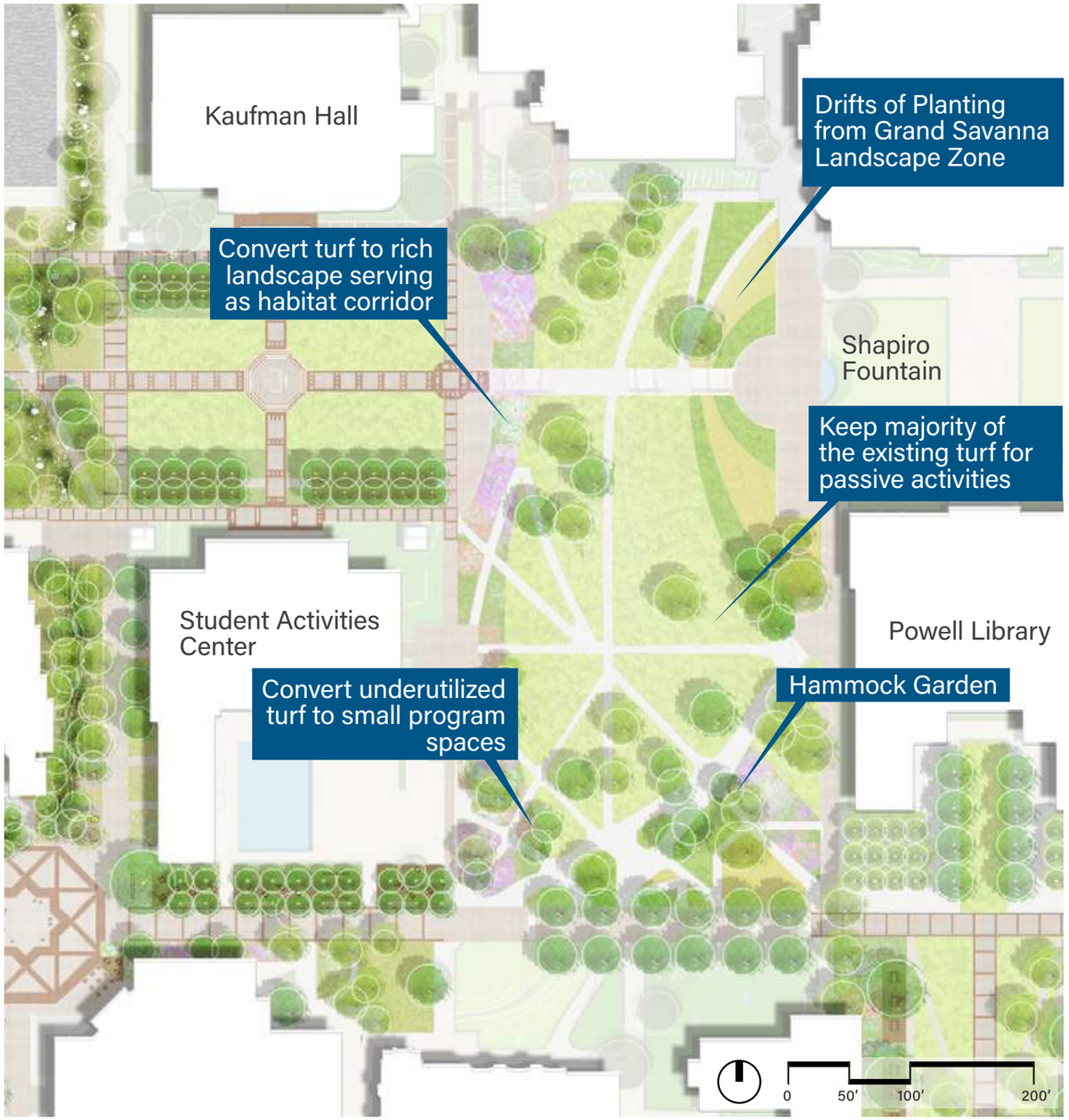


Observations

- Lack of direct and consistent ADA access.
- Some turf panels are underutilized.
- Janss Steps is part of the iconic historical axis that always has high media exposure.
- Current landscape contains mostly exotic species.
- Lack of furnishing and amenities to support a variety of programming.

Guardrail
Pedestrian Circulation
Steps
Over Pruned Hedge
Underutilized Turf

Proposed Conceptual Design

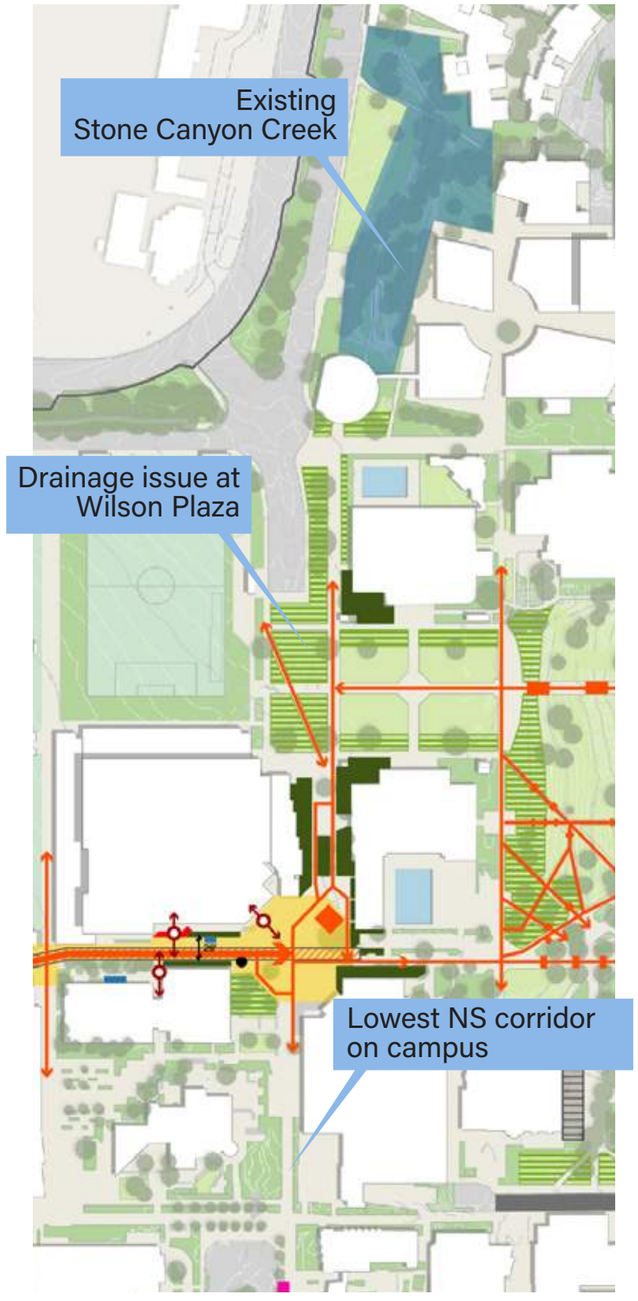


Recommendations

- Establish an ADA walk to the top of Janss Steps.
- Provide a habitat corridor connecting Stone Canyon to the Botanical Garden and beyond.
- Activate with appropriate program spaces, especially in Election Walk.
- Refresh the landscape with turf in key spaces and large panels of consistent low water plantings.

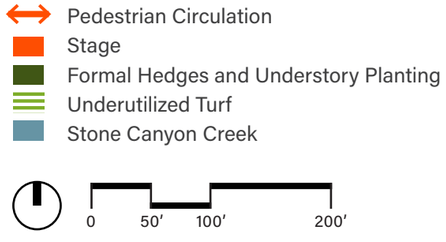
DRY CREEK: STONE CANYON CREEK TO WESTWOOD PLAZA

Existing Condition

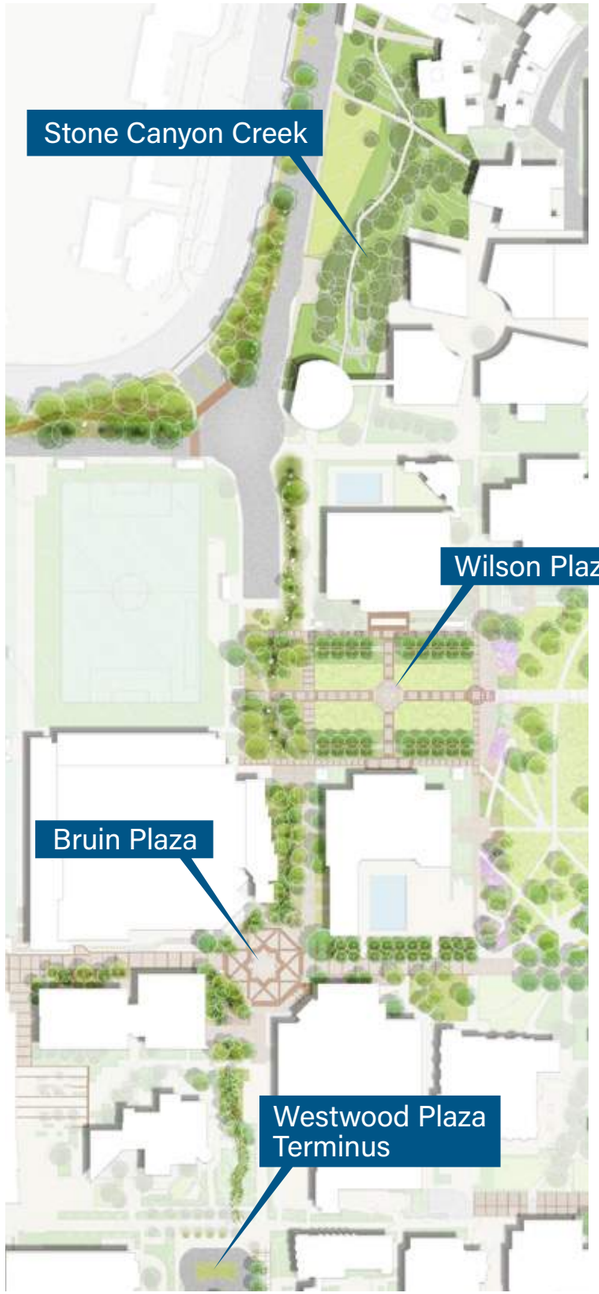


Observations

- Stone Canyon Creek is the only remnant from historical creek winding through this area
- Lowest area on campus. Drainage issues in Wilson Plaza and underground parking structure
- Ficus trees with boxwood and African lily underneath, all exotic species
- Underutilized lawn areas next to Wilson Plaza and Arts and Global Health Center
- Lack of seating and other small program areas



Proposed Conceptual Design

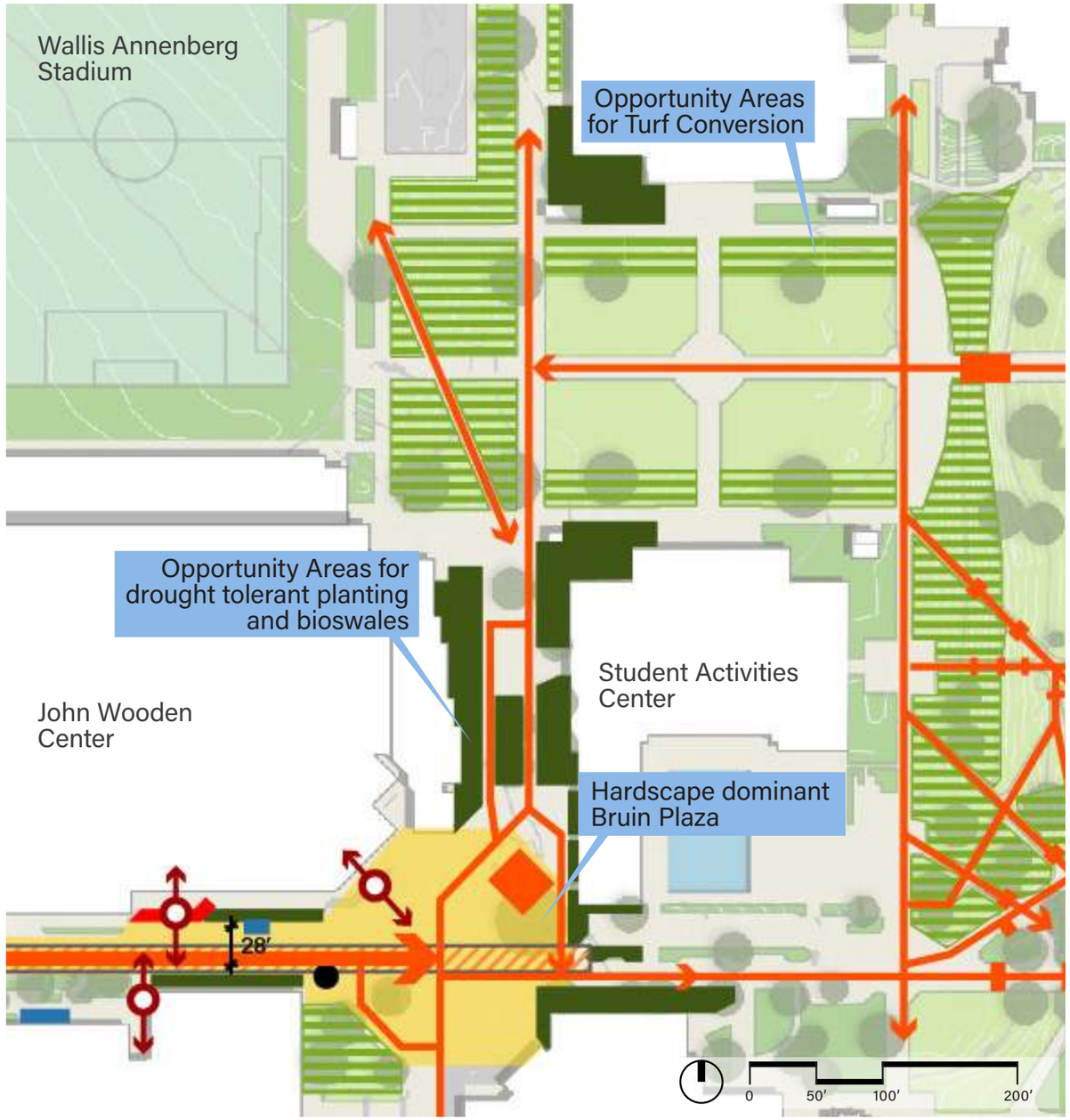


Recommendations

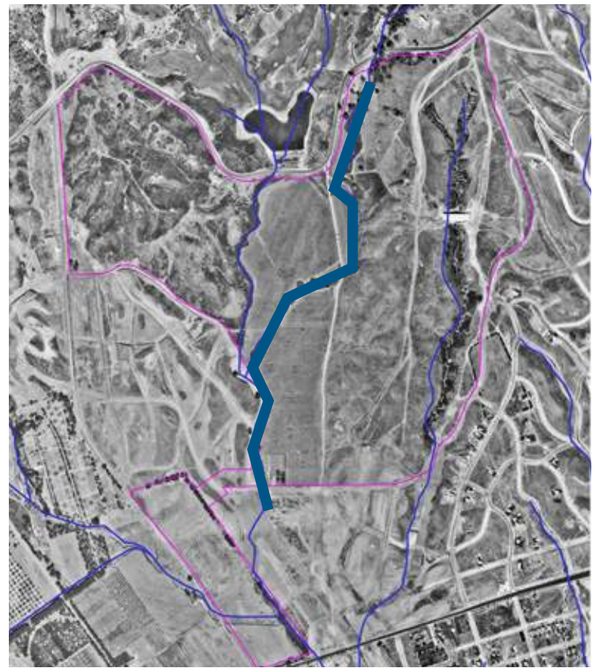
- Design a dry creek starting from Stone Canyon Creek, going through west side of Wilson Plaza, Bruin Plaza and terminate at Westwood Plaza.
- Dry creek becomes narrower at Wilson Plaza to accommodate heavy pedestrian flow, especially during large events.
- Provide movable furnishing along the dry creek to activate nodes for small social gatherings.
- Follow alluvial corridor planting zone guidelines and establish rich landscape structure.

DRY CREEK

Existing Condition

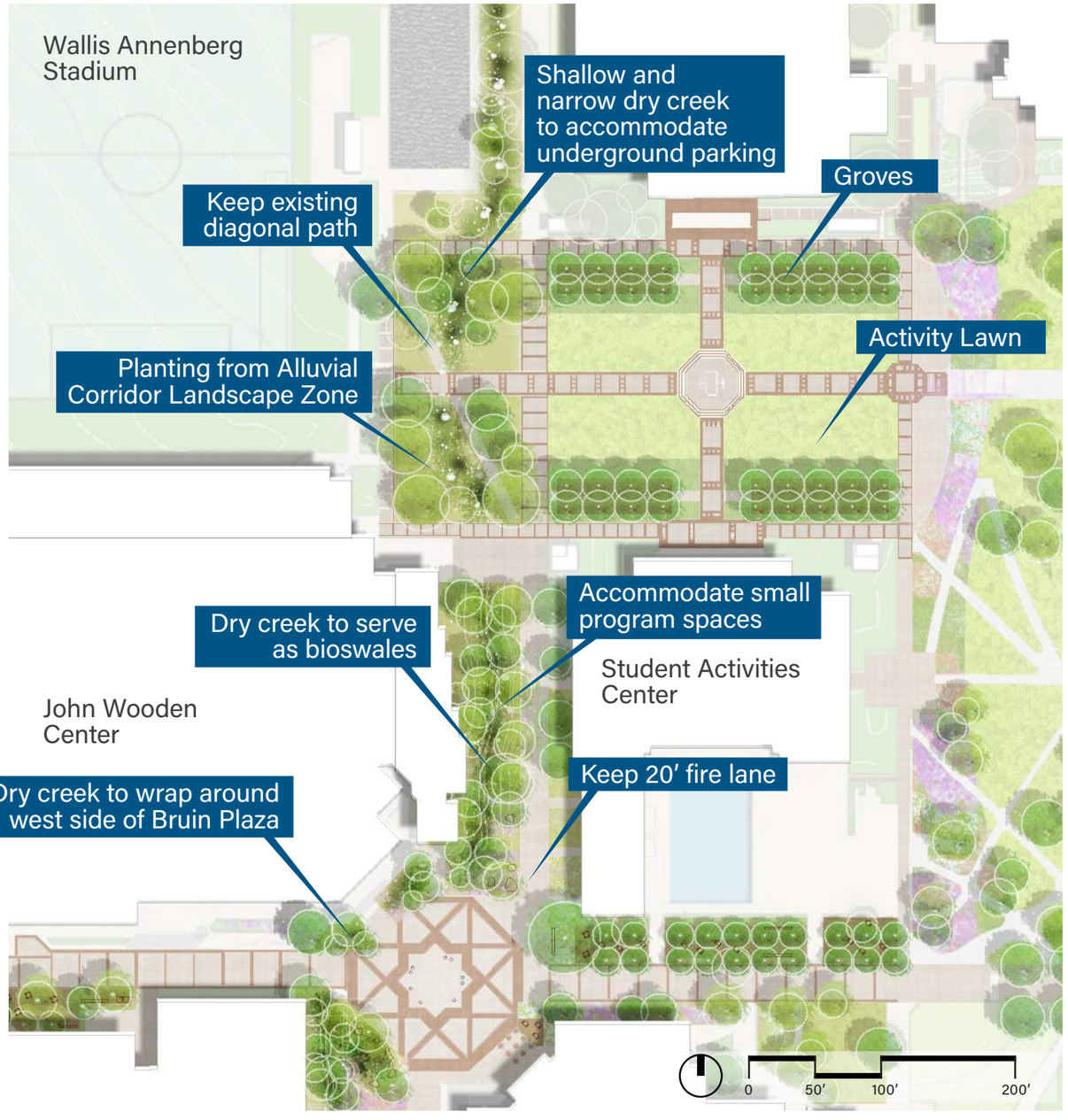


Pedestrian Circulation
Stage
Formal Hedges and Understory Planting
Underutilized Turf



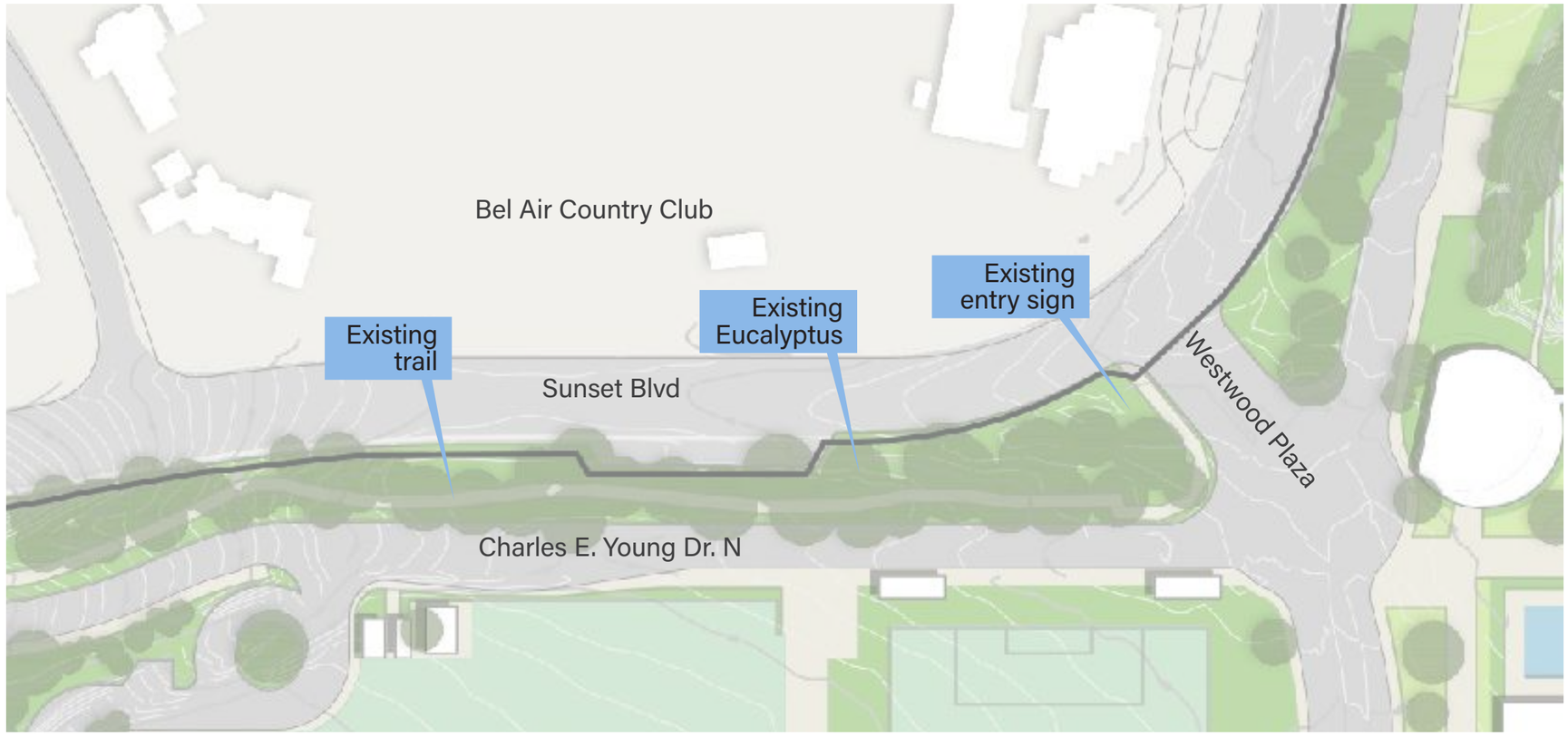
UCLA Historical Creeks

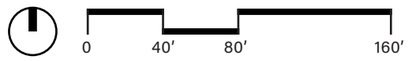
Proposed Conceptual Design



TRAIL AT SUNSET BLVD AND CHARLES E YOUNG DR NORTH

Existing Plan

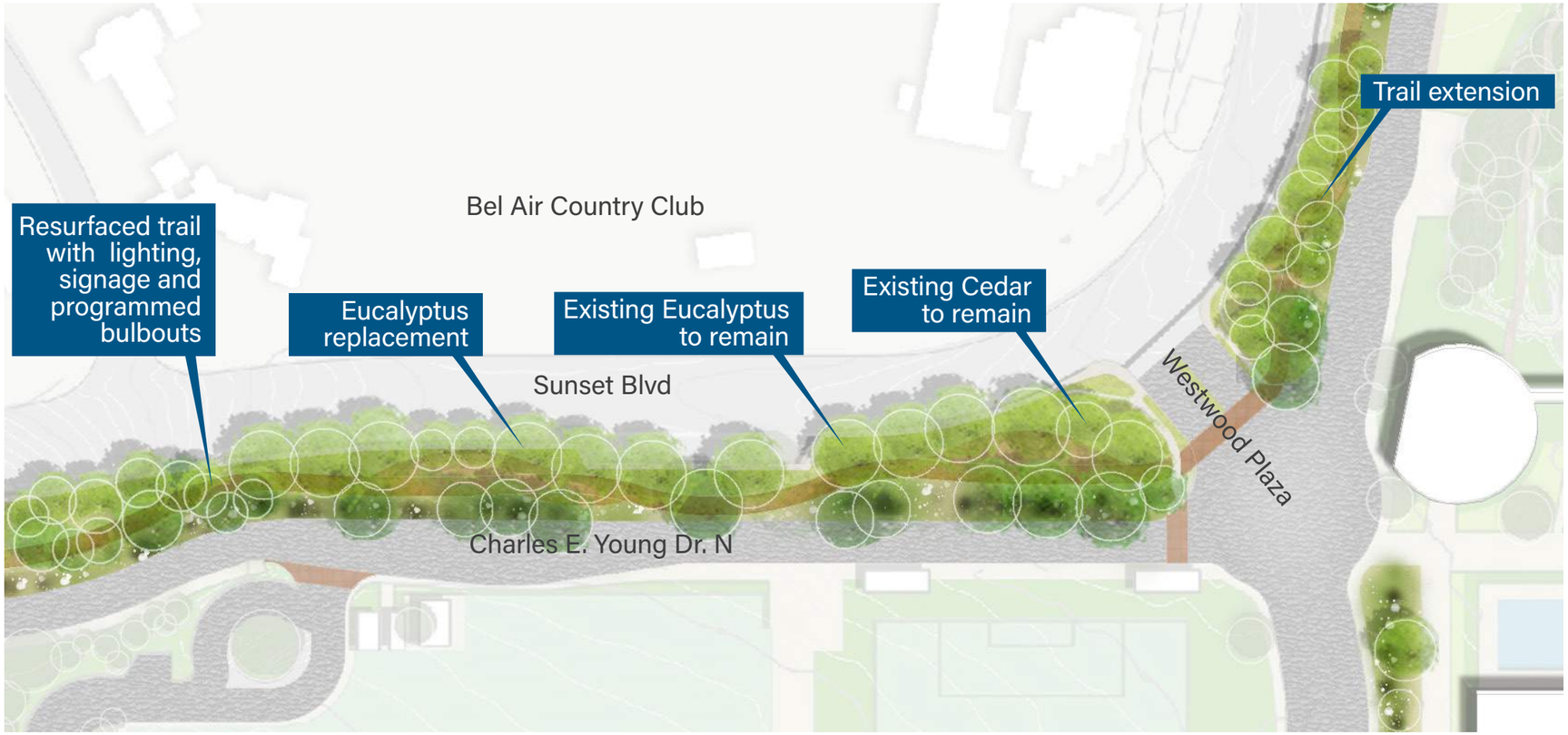


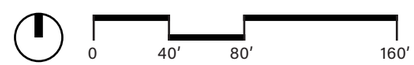


Observations

- Dominated by Eucalyptus and some Pine.
  Eucalyptus are over planted and problematic for safety.
  Stately Cedars at Westwood intersection.
- Narrow sidewalk with no amenities zone
  Streetlights with banners and some acorn lights
- Compacted earth trail with insufficient lighting and signage
- Formal, water intensive hedge in front of UCLA signs and around intersection
- Prevalence of ivy in understory, lack of mulch
- Stormwater issues coming off Sunset into campus; erosion

Proposed Plan





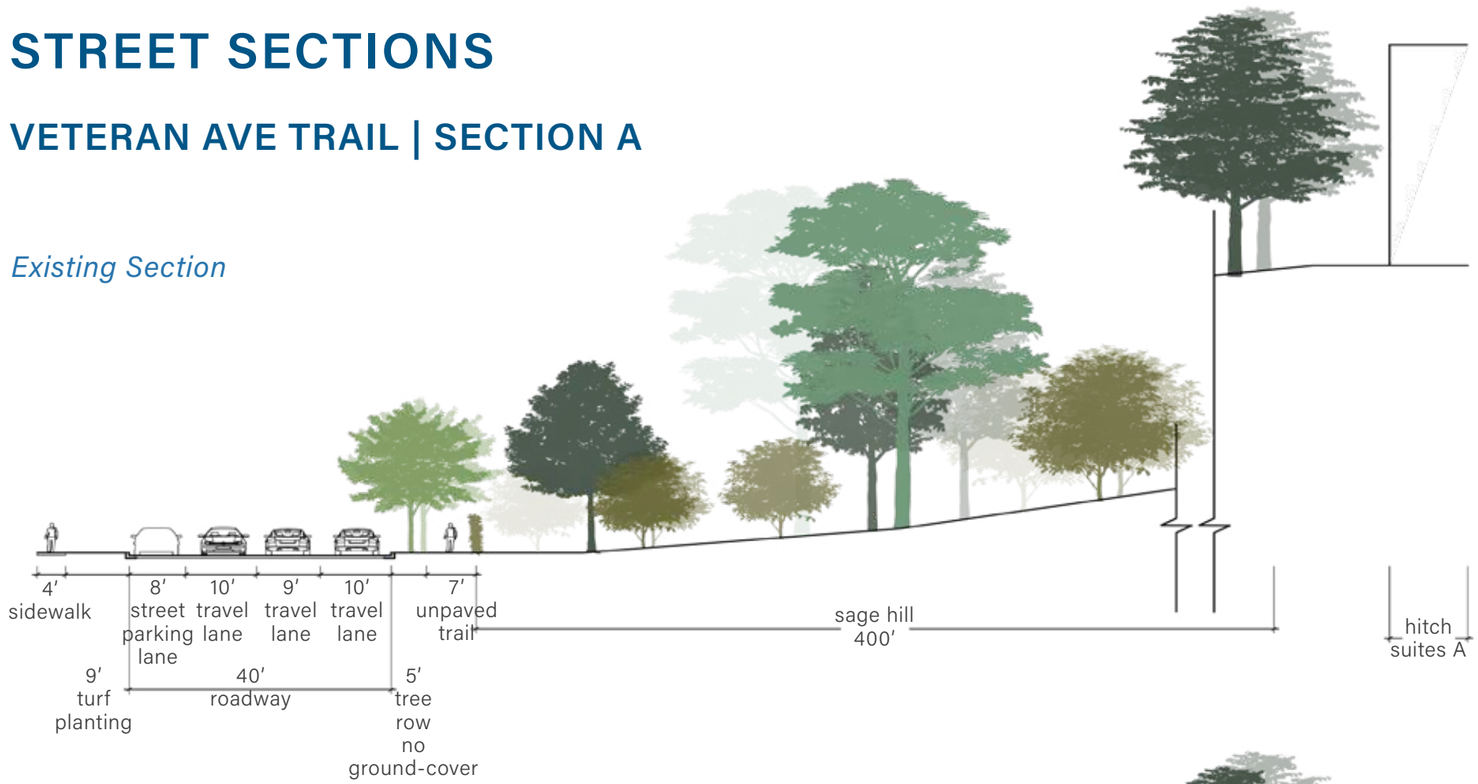
Recommendations

- Thin Eucalyptus south of the trail and install a bioswale for stormwater management.
- North of the trail, replace Eucalyptus with native, buffer tree like Catalina Iron Wood, California Walnut, Cottonwood, or other low light, "Alluvial Corridor Zone" species.
- Enhance understory planting. Remove ivy and incorporate native shrubs. Replace the formal hedge with more contemporary, water-wise planting.
- Remove sidewalk and widen trail. Extend trail east of Westwood Plaza.
- Add lighting along trail, bulbouts for program, interpretive signage, and special paving where the trail crosses Westwood.

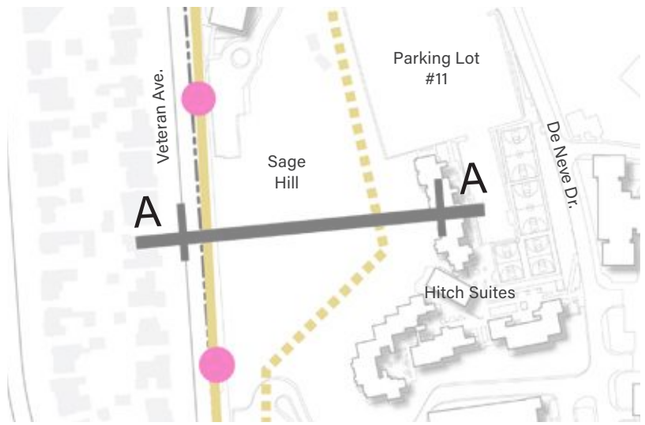
STREET SECTIONS

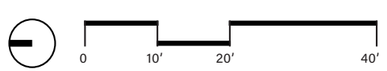
VETERAN AVE TRAIL | SECTION A

Existing Section



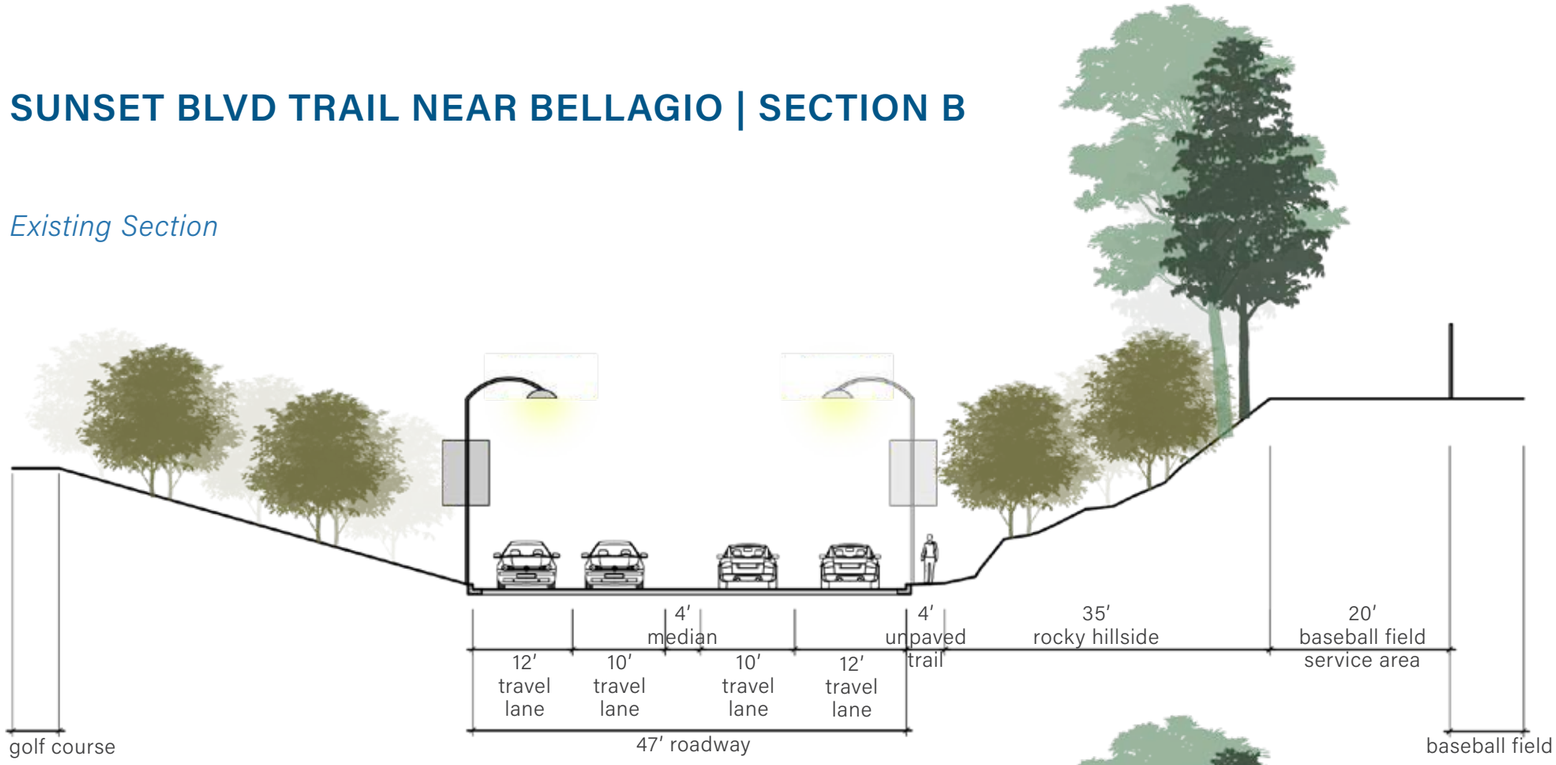
Proposed Section



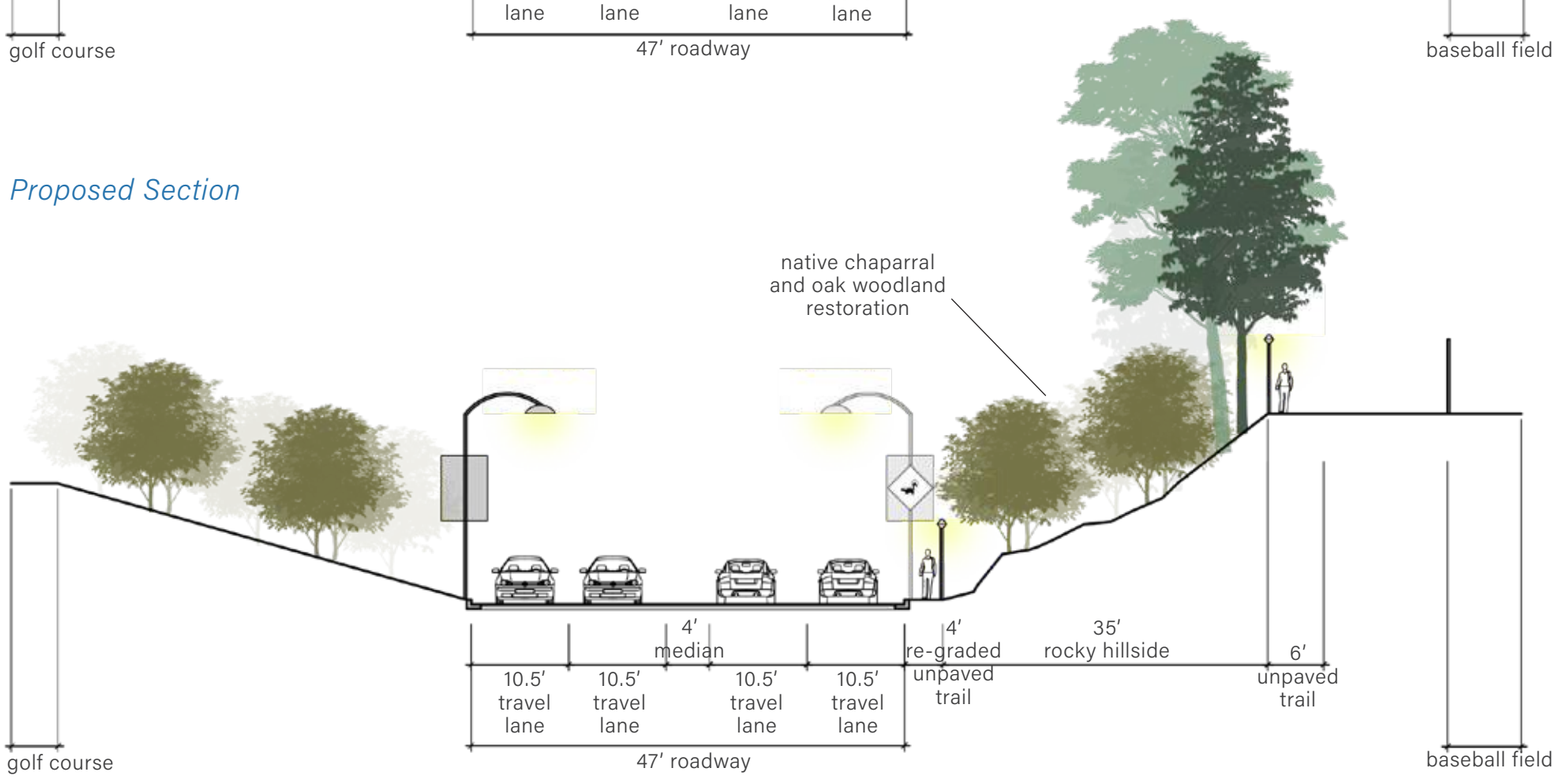


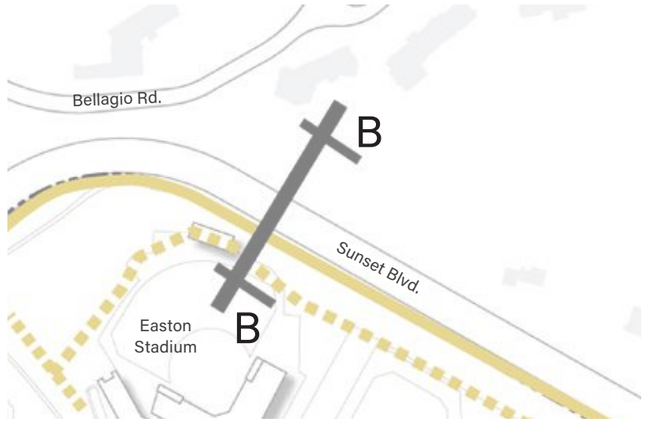
SUNSET BLVD TRAIL NEAR BELLAGIO | SECTION B

Existing Section

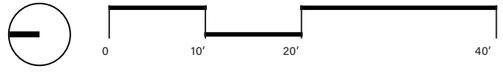


Proposed Section



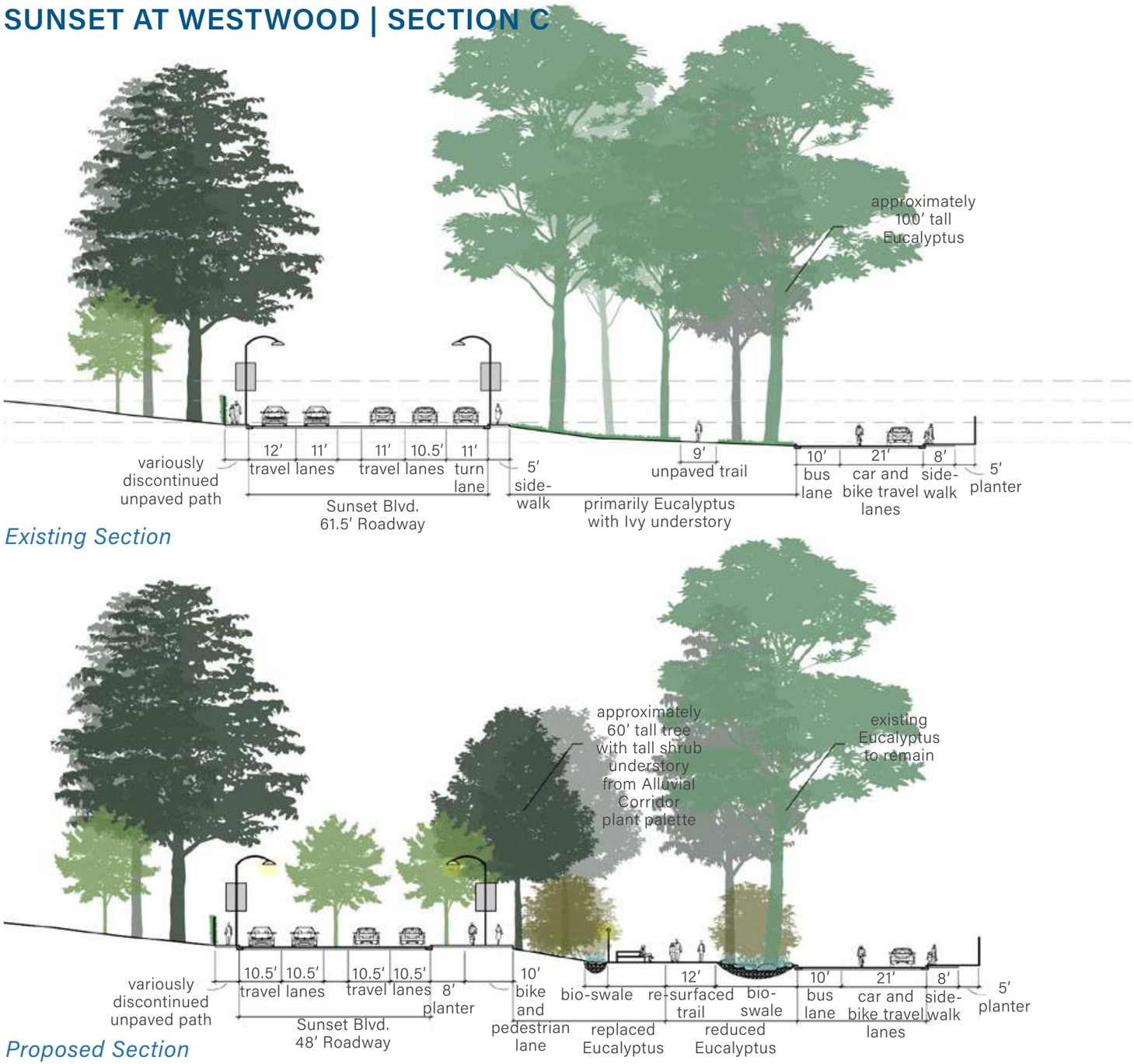


Essential wildlife linkage between Sage Hill and the Santa Monica Mountains. Design with sensitivity.



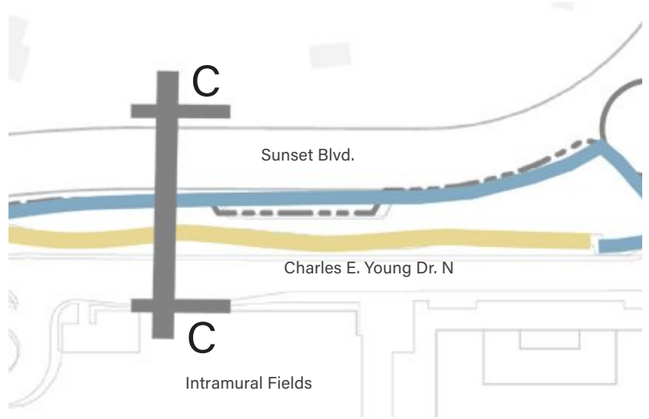
STREET SECTIONS

SUNSET AT WESTWOOD | SECTION C



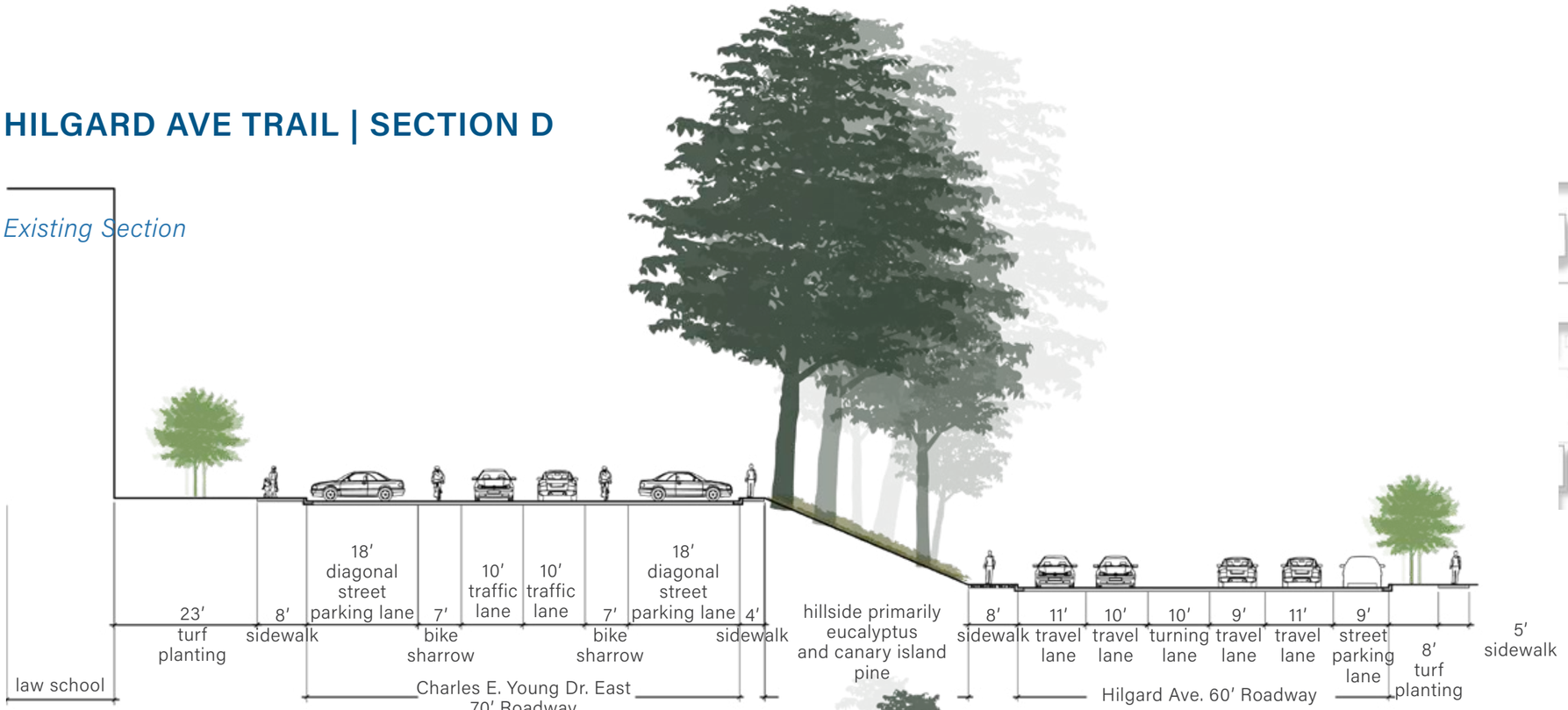
Existing Section

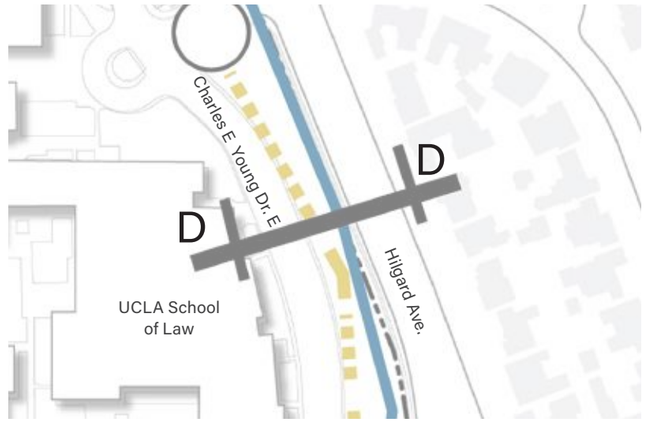
Proposed Section



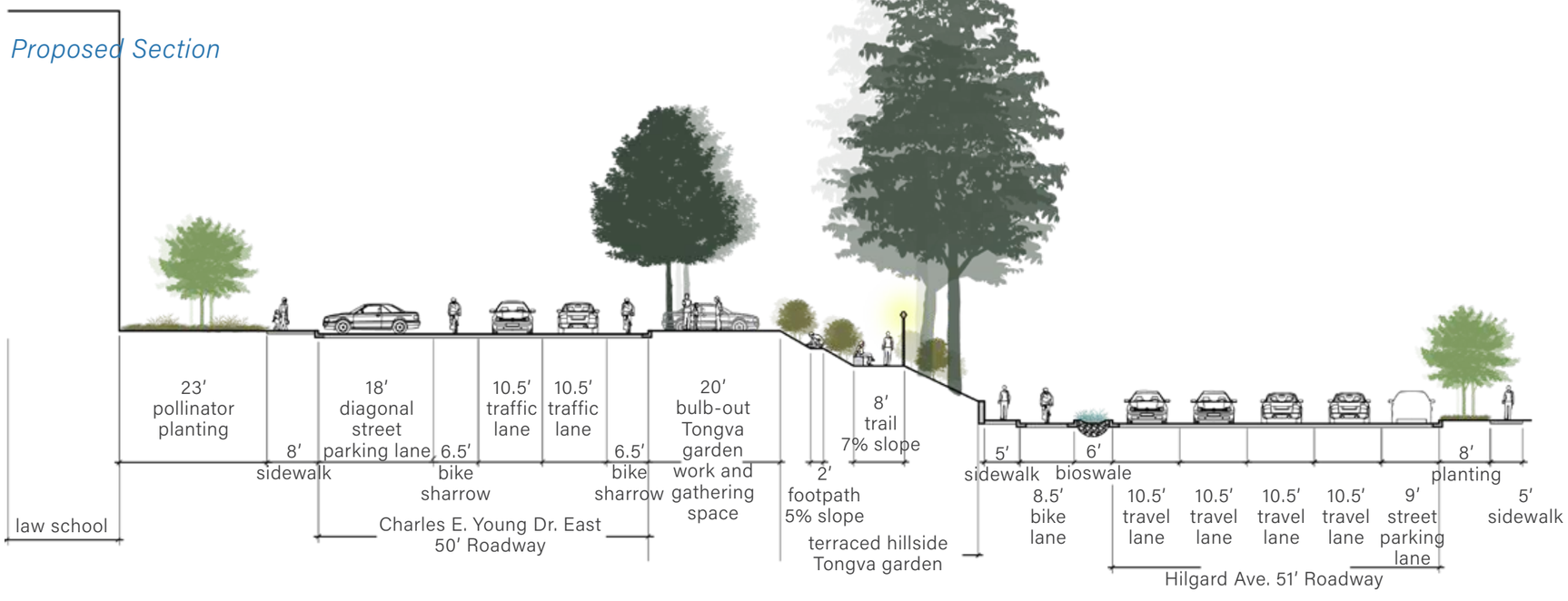
HILGARD AVE TRAIL | SECTION D

Existing Section





Proposed Section



- Existing Seating Areas
- Bike Racks
- Vending Machine
- Steps or Planters with People Sitting There
- Bricks
- Concrete
- Fire Lane
- Entries

3.3 CAMPUS PLANTING

- **Landscape Zones + Plant Palette**
  - Hill District
  - Alluvial Corridor
  - Grand Savanna
  - Urban Canyon
- **Conversion of Turf**
  - Priority areas
  - Design guidance


Grand
Savanna
Hilgard Ave.
Sunset Blvd.
Hill
District
Alluvial
Corridor
Urban
Canyon
Westwood Blvd.
Gayley Ave.
Le Conte Ave.
Veteran Ave.
Wilshire Blvd.
Urban
Canyon
Alluvial
Corridor
405 Freeway

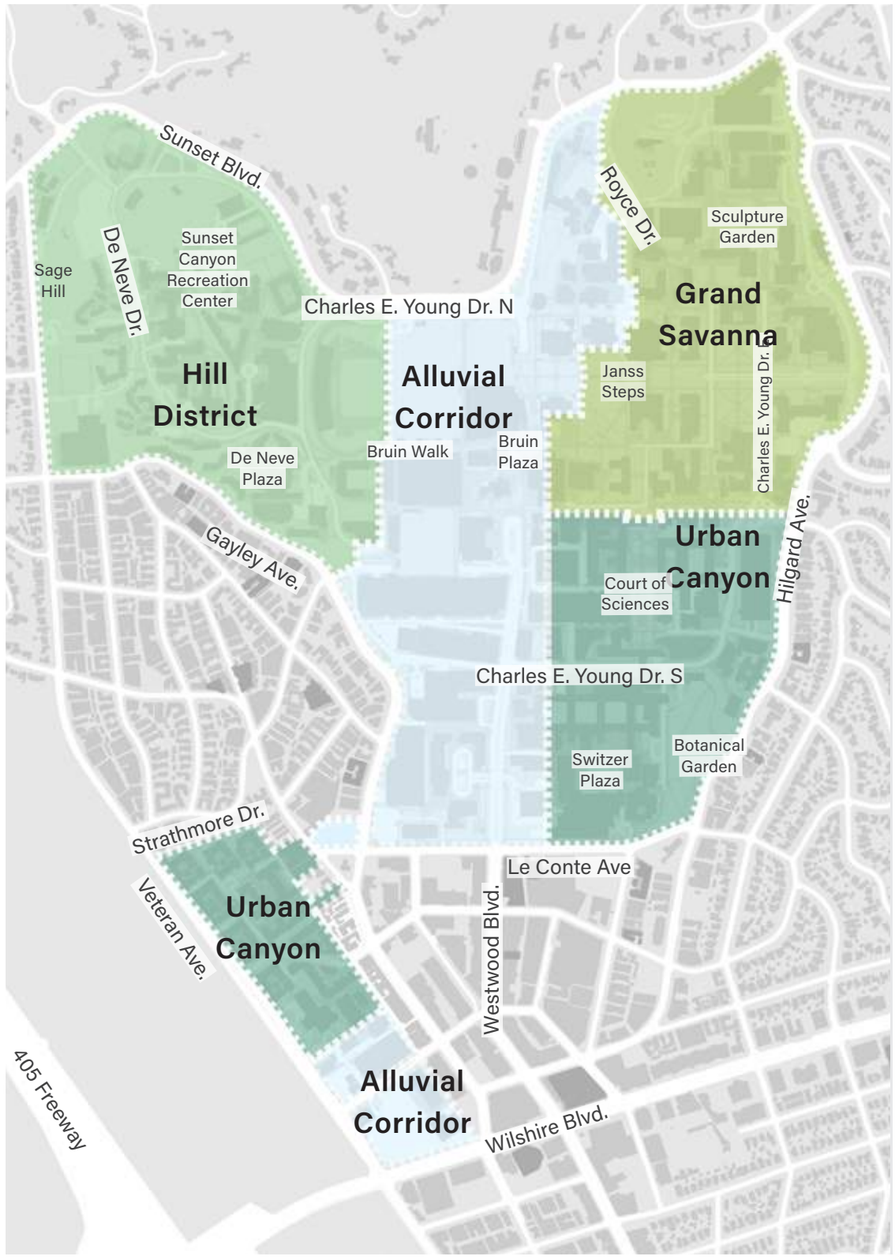
THIS IS UCLA LANDSCAPE

NOT ONLY	ALSO
DROUGHT TOLERANT	RESPECT HISTORIC ECOLOGY BLEND TO NATIVE PLANT COMMUNITIES
DIVERSIFIED	ESTABLISH DISTINCTIVE LANDSCAPE ZONES PROMOTE TRADITIONAL ECOLOGICAL KNOWLEDGE PROVIDE HABITAT VALUE
CLIMATE APPROPRIATE	MICRO-CLIMATE APPROPRIATE CONVERT UNDERUTILIZED TURF
CULTURALLY APPROPRIATE	PROTECT CULTURAL LANDSCAPE STRUCTURE ADAPT LESS SIGNIFICANT SITE ELEMENTS SUPPORT FLEXIBLE PROGRAMMING MAINTAIN LIMITED TURF FOR PROGRAMMING

LANDSCAPE ZONES

District-scale landscape zones are differentiated based on shared ecological conditions, which are the basis for unique landscape character recommendations, planting palettes, and sustainability opportunities. Unity between zones is addressed through unifying plant species and campus-wide ecological infrastructure, including a network of stormwater management and biodiversity connectivity measures. This approach will result in a more coordinated campus landscape, reduce maintenance costs, foster landscape literacy and connections with the land among the UCLA community, and allow the campus to be better managed as an ecosystem to maximize ecological benefits and conserve biodiversity. It aligns with and exemplifies the broader City of Los Angeles Ecotopes Framework, which strives to coordinate and optimize site-level ecologies toward a comprehensive, regional approach to biodiversity and landscape sustainability.

Landscape Zones



SITE ECOLOGY CONSIDERATIONS FOR PLANTING

Landscape Zone	Full Sun			Part Shade		Full Shade	Water Quality Features
Aspect	**Warm Aspects (west to southeast, flat)**	**Moderate aspects (east)**	**Cool Aspects (northeast to northwest)**	**Warm Aspects (west to southeast, flat)**	**Cool Aspects (northeast to northwest)**	**All aspects**	**Aspect considerations at left as appropriate**
Grand Savanna	Savanna or herbaceous and dry coastal sage scrub species	Woodland, savanna, or herbaceous and coastal sage scrub species	Woodland species	Woodland, shade tolerant shrubs, and herbaceous	Woodland, shade tolerant shrubs and herbaceous	Woodland, shade tolerant shrubs, and herbaceous	Consider *Juncus*-dominated bioswales that reflect natural wet meadow ecosystems within oak woodlands of the local mountains. Flatter terrain can be suitable for infiltration. Consider a bioswale along the east edge of Dickson Court reflecting the historic canyon that was filled in that location.
Alluvial Corridor	(All aspects generally flat) Alluvial fan sage scrub or willow scrub. Riparian woodland species where shade needed			(All aspects generally flat) Willow scrub or riparian woodland species		Riparian oak/mixed woodland and shade tolerant shrubs and herbaceous species	Reflect riparian woodland, willow, and aquatic ecosystems associated with alluvial plans and fans in the Santa Monica Mountains
Hill District	Dry chaparral, dry coastal sage scrub, or herbaceous species	Woodland, coastal sage scrub, or chaparral species	Woodland or chaparral species	Woodland, shade tolerant shrubs and herbaceous		Very shade tolerant woodland, shrubs and herbaceous species	Consider juncus-dominated bioswales that reflect natural shaded wet meadow ecosystems within oak woodlands. Water quality features in valley bottoms use riparian woodland or willow scrub-associated plantings
Urban Canyon	Dry woodland, coastal sage scrub, chaparral or herbaceous species	Woodland, coastal sage scrub, chaparral or herbaceous species	Woodland species	Canyon woodland and shade tolerant shrubs and herbaceous species		Canyon woodland and shade tolerant shrubs and herbaceous species	Consider juncus-dominated bioswales that reflect natural shaded wet meadow ecosystems within oak woodlands, riparian woodland, or willow scrub-associated plants

LANDSCAPE ZONES

OBSERVATIONS

Natural landforms provide the foundation for campus and have driven the character of development and landscapes over the campus's history. In response to these landforms, built features and uses over time reflect four distinct areas of campus that may be thought of and managed as unique urban ecosystems. Within the historic campus core, higher, naturally undulating terrain was graded and filled and monumental buildings were constructed with ample space between them for outdoor gathering with large lawns and trees. South of the historic core, newer construction has generally been more dense and taller, resulting in more shaded and compact landscapes. In the valley bottom along Westwood, flooding remains a problem and very large buildings predominate with extensive auto-oriented infrastructure between them. The "Hill" retains much of its natural undulating landform with large, intact patches of natural areas and planted landscapes between primarily residential uses. These distinct zones of natural and land use characteristics form the basis for landscape zone differentiation and associated recommendations.

Currently, the percentage of native plant species on campus is low. During site visits, the consultant team observed:

- Several examples of more climate-appropriate compositions have been installed on campus, some of which emphasize California native species.
- Some native species are thriving and even reproducing by seed, e.g., *Quercus agrifolia* and *Prunus ilicifolia*.
- A considerable number of Platanus racemosa are present throughout the campus, most of which are in good health. This is one of our region's most iconic native tree species.
- Many areas are defined by a healthy canopy of mature trees, particularly the historic core.
- Several impressive specimen trees dot the campus, e.g., *Tipuana tipu*, *Pinus pinea*, *Platanus racemosa*.
- There are a number of species uncommon in the LA region, e.g., *Kigelia pinnata*, *Calocedrus decurrens*, *Taxodium distichum*.
- Some species known to be invasive in our region are conspicuous in the planted landscape, e.g., *Vinca*, *Hedera*, *Lonicera japonica var. halliana*, *Stipa tenuissima*.
- Several woody species are reseeding and should be phased out of future plantings to avoid this maintenance issue: *Koelreuteria*, *Lonicera japonica*, *Cupaniopsis*, *Ulmus parviflora*

OBJECTIVES

- Develop four distinctive landscape zones responding to natural ecology, built features, and campus cultural uses.
- Unify the landscape zones through a network of ecological corridors and "unifying plant" species.

RECOMMENDATIONS

- For future landscape related projects, follow plant palettes designated for each zone to maintain and reinforce landscape character.
- Implement a series of capital improvement projects that are presented for each zone.
- Identify additional specific opportunities for landscape, sustainability, and biodiversity enhancement within each of zone.
- Provide data tools to be used during site-level plan implementation, including for plant species selection, green infrastructure design, and other landscape decisions.
- Use the key ecosystem factors and the specifics in the campus ecosystem analysis for future implementation.

CAMPUS ECOSYSTEM ANALYSIS

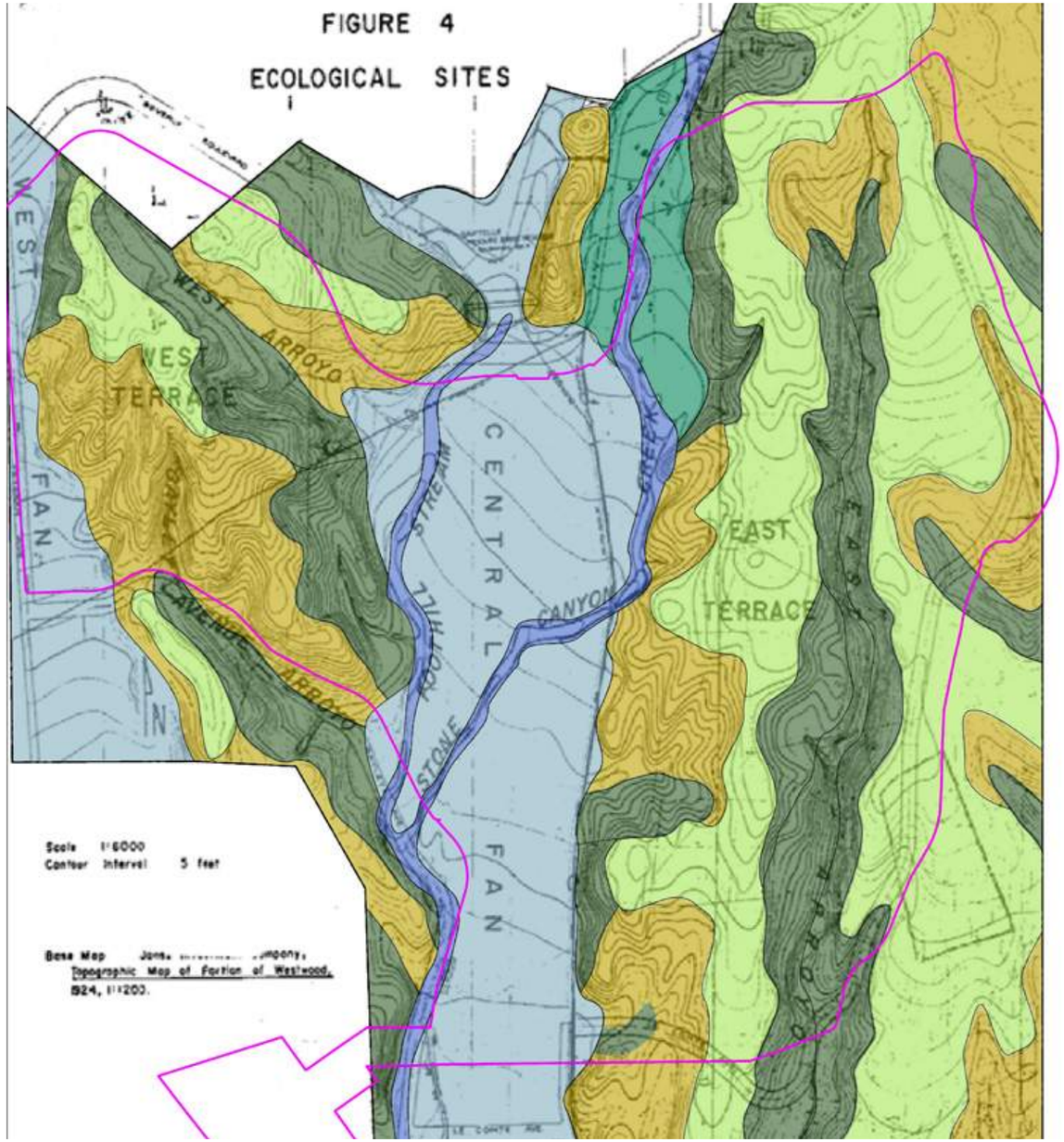
The natural, built, and cultural features of campus were classified in detail to support differentiation of the zones; identification of specific opportunities for landscape, sustainability, and biodiversity enhancement within them; and to provide data tools to be used during site-level master plan implementation, including for plant species selection, green infrastructure design, and other landscape decisions. The following pages present key ecosystem factors and their relevance to the plan and future implementation.

Historic ecology provides a useful guide for future ecosystem services and biodiversity enhancements on campus. Historical ecology mapping at right and the excerpt below from the UCLA thesis by Vogel (1968) presents a useful historical benchmark.

"Before the 75 years of modification as a university campus, UCLA's topography was much different. There were two terraces bisected by arroyos – the eastern would become the site of the central campus, the western eventually student housing. A central fan of alluvial sand deposited by Stone Canyon Creek separated the two terraces, and a second alluvial fan formed the western border of the campus. These features supported at least four distinct vegetation types. The arroyos and terraces were covered with fragrant coastal sage scrub and chaparral, interspersed with native grassland. Along Stone Canyon Creek and Foothill Stream were sand bars with rushes and willows, lined by grand sycamores. The upper banks of Stone Canyon Creek were covered with an oak woodland. While some of the native habitats had been disturbed when construction began on the campus in 1927, there remained examples of these vegetation types and their rich diversity of plants and animals."

Historical plant communities are partially products of physiographic conditions such as microclimate, soil, hydrology, and landform. The classification of physiographic zones and associated plant communities at the right has been modified somewhat from the original Vogel map to provide additional differentiation considering slope and aspect. Components of these physiographic features still remain across much of campus and form the basis for landscape zones and associated native plant palettes suitable for these conditions.

PHYSIOGRAPHIC ZONE	ECOSYSTEM AND FLORA
Alluvial Fan	Sage Scrub / Marsh / Riparian Woodland / Willow Scrub
Stream Terrace	Coast Live Oak / Riparian Woodland
Creekbed	Marsh / Riparian Woodland / Willow Scrub
Warm Aspect Terrace Slope	Dry Coastal Sage Scrub / Perennial Grassland / Oak Savanna
Terrace	Coastal Sage Scrub / Perennial Grassland / Coast Live Oak Woodland
Cool-Aspect Terrace Slope/Arroyo	Dry Mesic Coastal Sage Scrub / Chaparral / Coast Live Oak



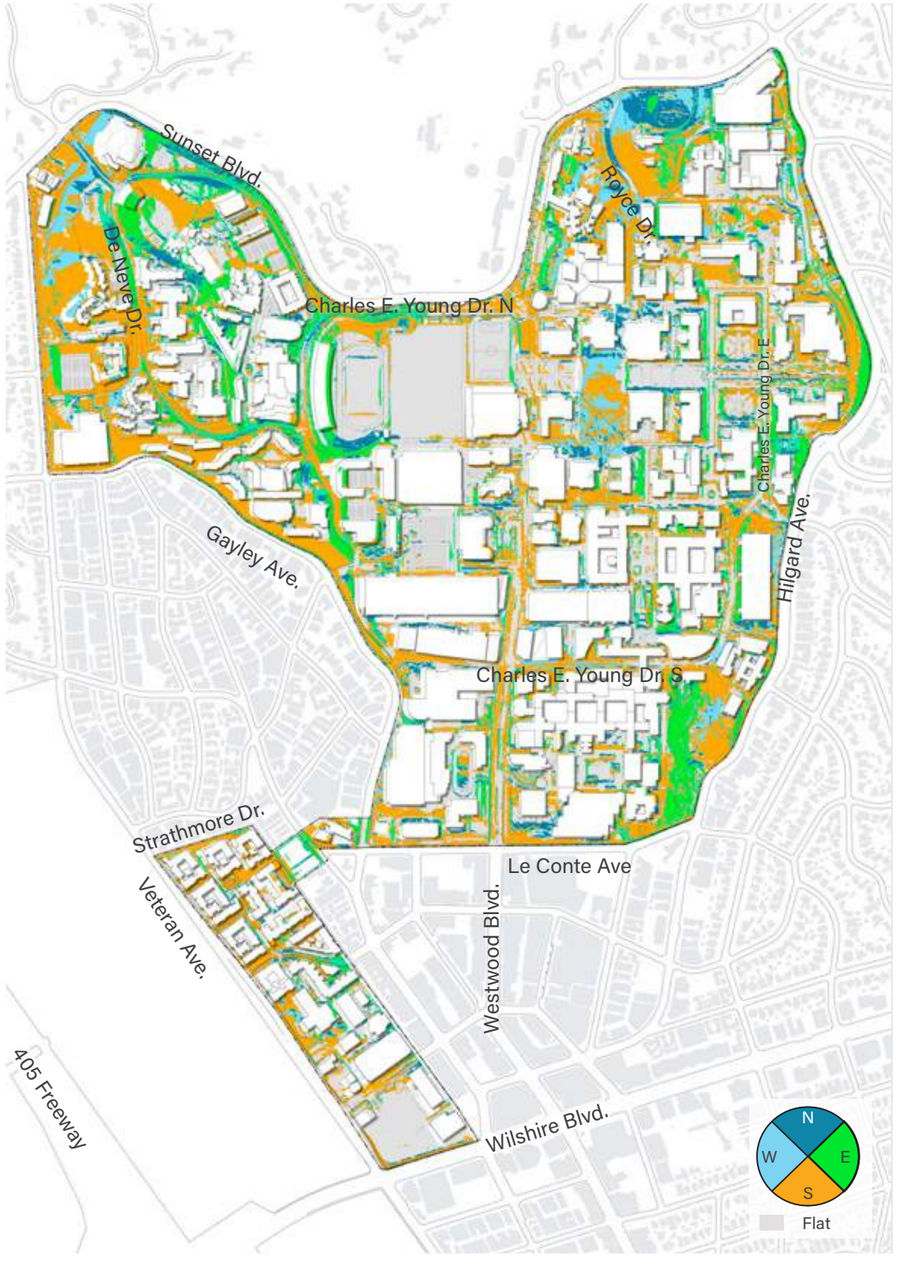
Source: Physiographic Zones - Historic Ecology Map is from Travis Longcore
Associate Adjunct Professor, Institute of the Environment and Sustainability, UCLA

LANDSCAPE ZONES

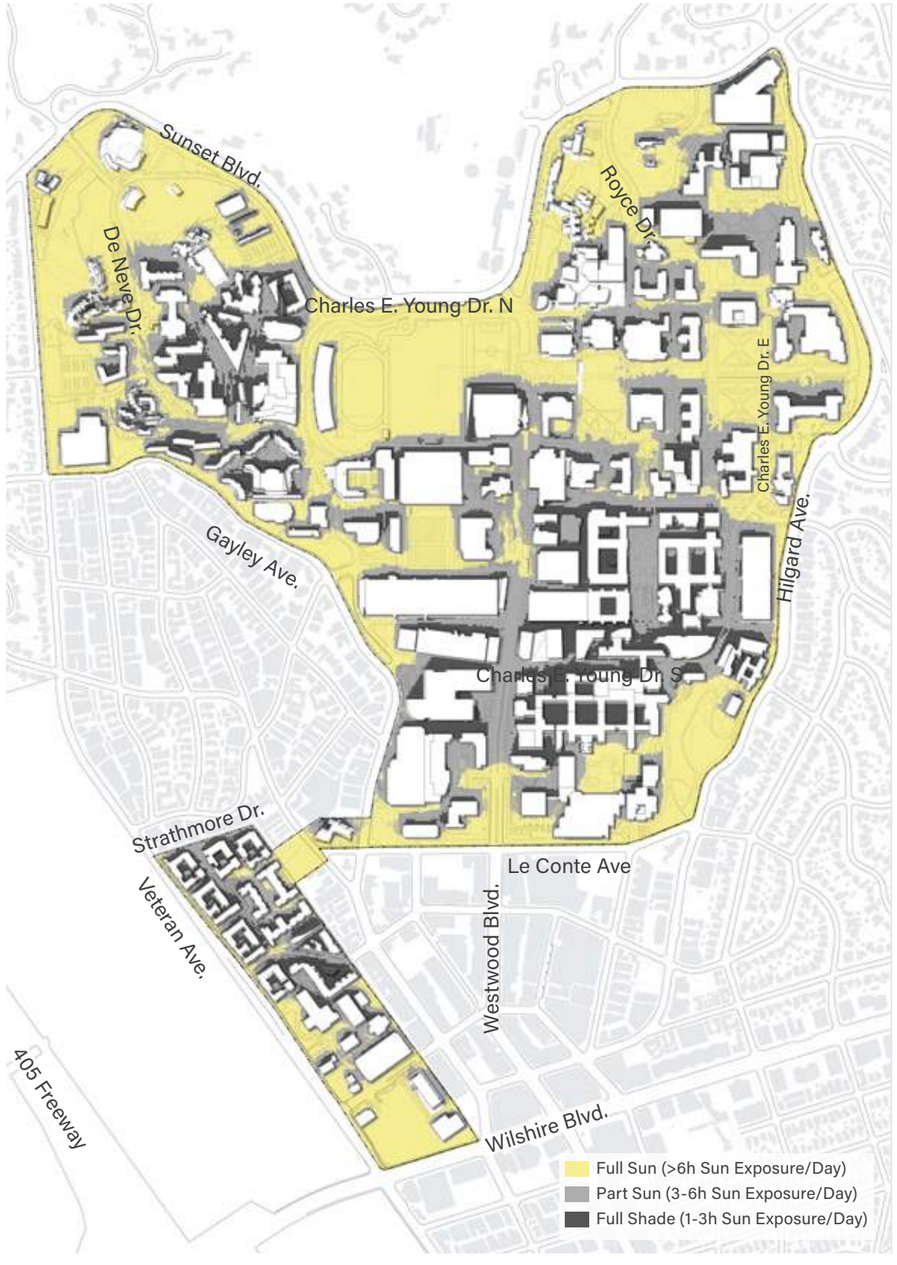
Aspect is the directional positioning of the ground surface. It is a key factor driving site microclimates and solar exposure that determine a plant's ability to meet its requirements for light, heat, and soil moisture. Most aspects on campus reflect the historic natural landform features or grading. Aspect is an especially important consideration for native plant landscapes that require natural rainfall or supplemental irrigation. Southerly and westerly aspects tend to be hotter and less moist due to high solar exposure, especially during the heat of the day. Northerly aspects are cooler and retain the most natural moisture. Easterly aspects are considered by some to be the most favorable for native plant landscapes in Los Angeles with their combination of good solar exposure and soil moisture during the cool season when many native coastal sage scrub species germinate and initiate growth.

Shade from buildings, trees, or topography also drives site microclimate, soil moisture, and plant suitability. Plant selection must consider the level of sun exposure at a site in terms of full sun, part shade, and full shade conditions. Additionally, the seasonality of shade conditions is also a key factor at UCLA because different native plant species tend to exhibit growth, emphasizing either the warm or cool season. Sun angles are lower during the cool season and therefore, shadows are much larger. The map at right presents shade from buildings and topography during the summer and winter but does not include tree shade.

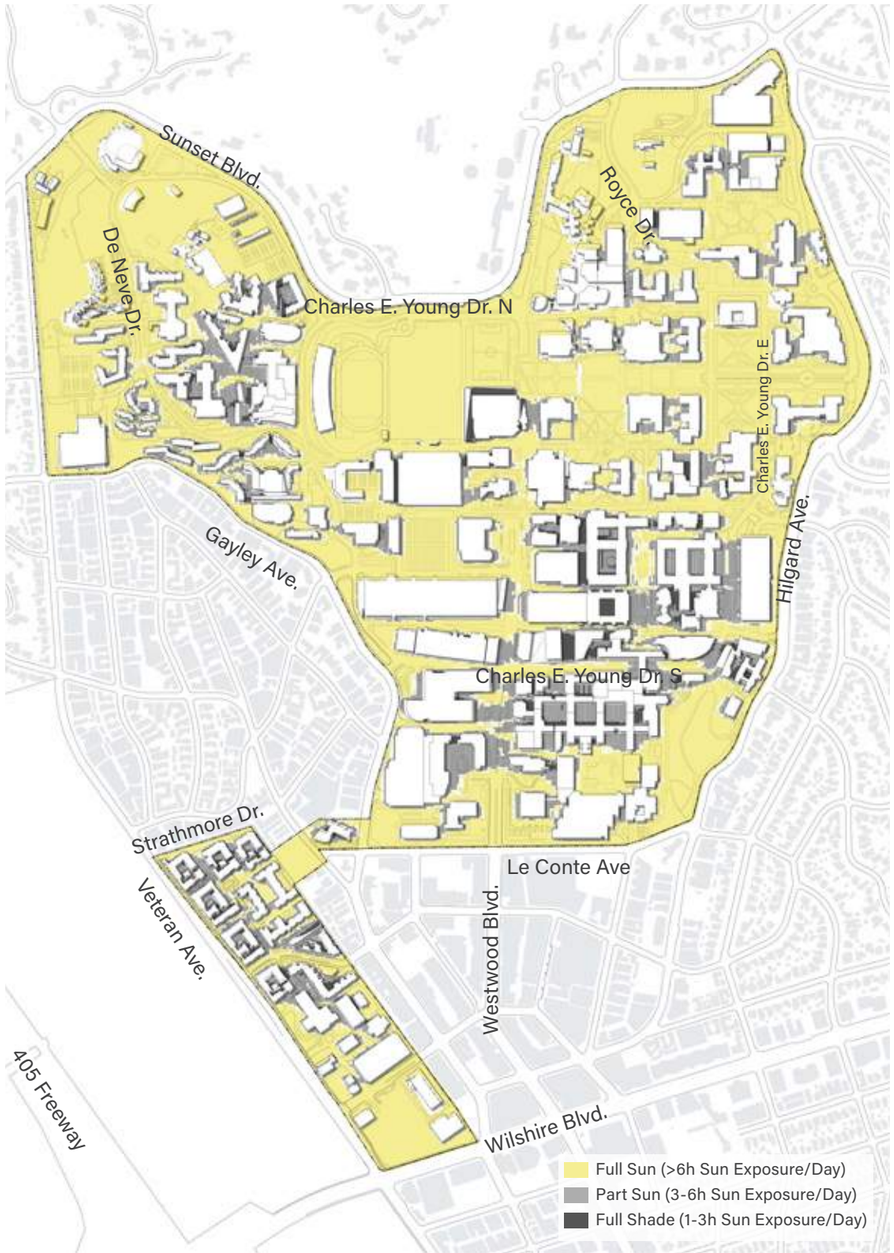
Aspect



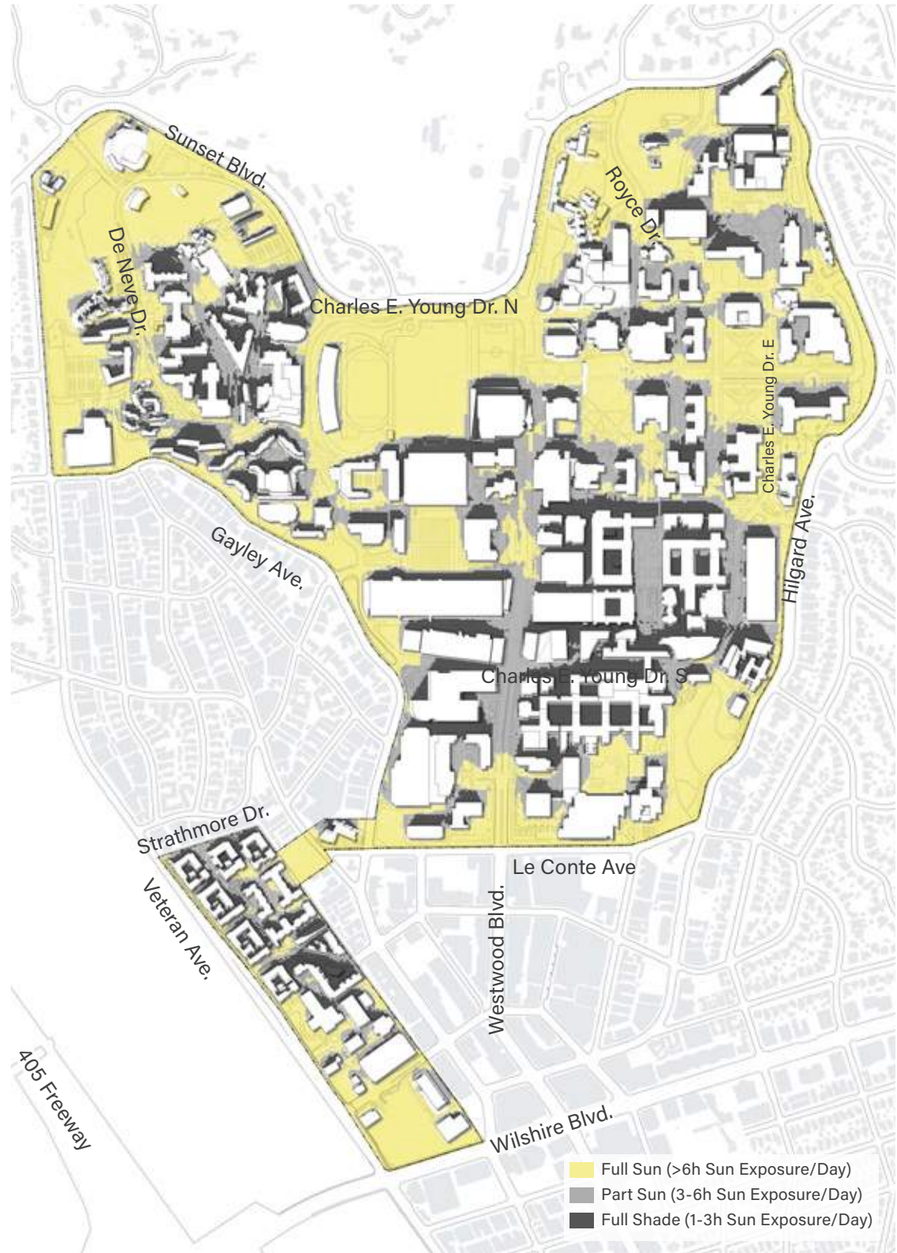
Sun/Shade Year Round



Summer Sun/Shade



Winter Sun/Shade

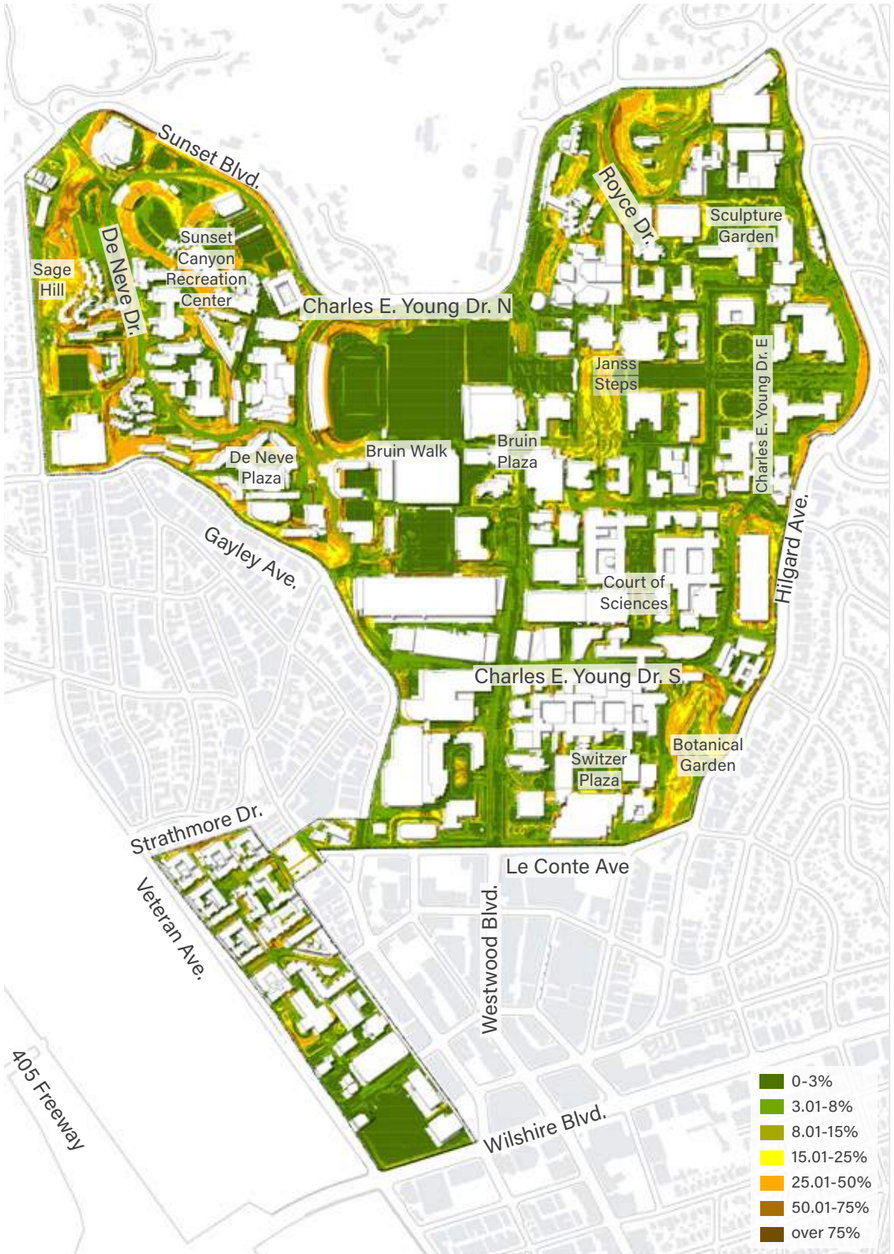


LANDSCAPE ZONES

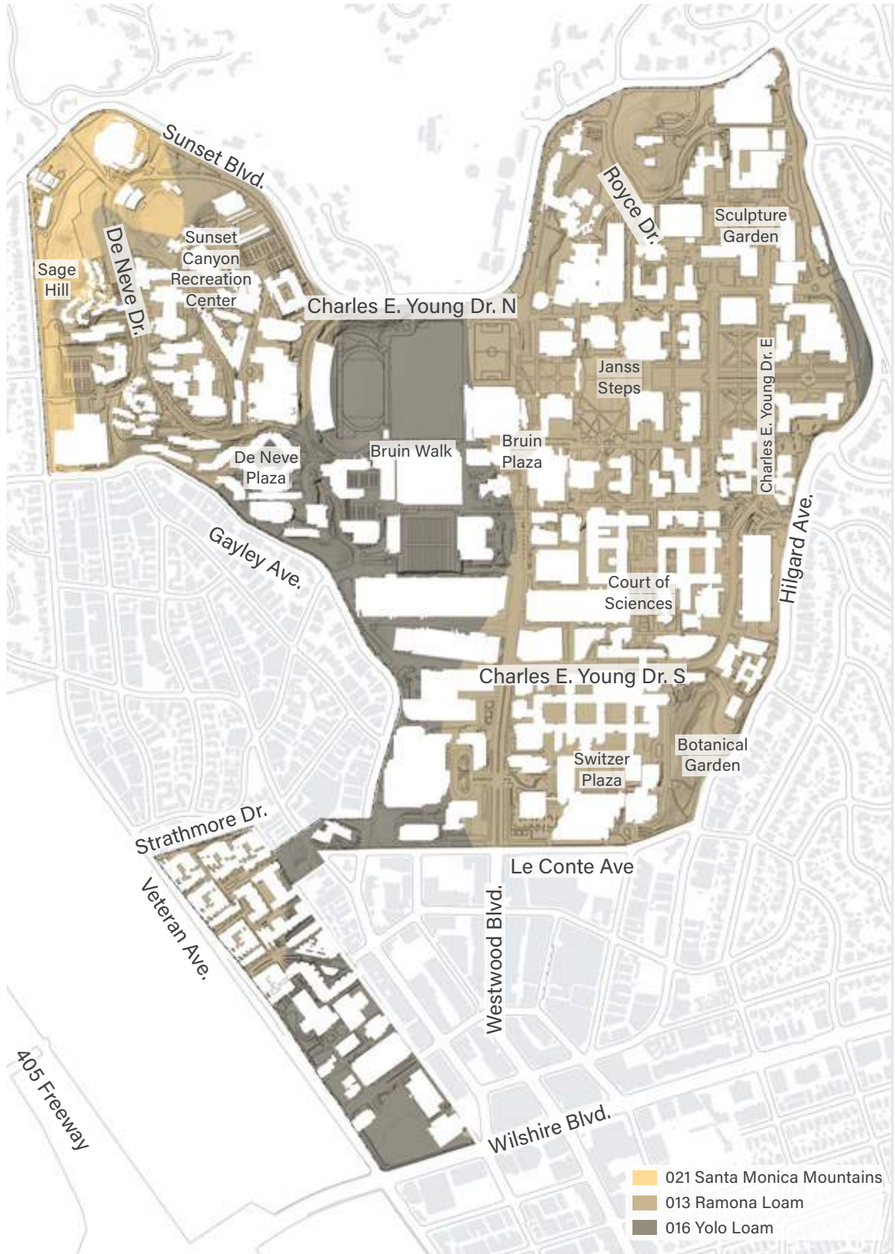
Soils are generally loamy, exhibiting a relatively even mix of sand, silt, and clay and providing generally favorable conditions for plant growth and groundwater infiltration. Soils within the flatter alluvial plain to the west of Westwood Blvd. are likely more coarse and well-drained. However, most soils on campus are likely highly compacted and fill soils of unknown origin are likely present. Compaction reduces infiltration potential and suitability for plant growth. Areas of intact natural soil profiles that have not been graded may be considered as sites with higher potential for ecological restoration.

Slope is also a key driver of soil moisture and solar exposure with important implications for plant species selection. Steeper slopes exhibit faster runoff of rainwater and more xeric soil conditions. Steeper slopes, especially those facing south and west may also have higher solar exposure further reducing soil moisture. For these reasons, irrigation demand for landscapes on steep slopes can be higher and should be reduced. Slope is also a key determinant of patterns of runoff and pedestrian movement and should be considered when laying out green infrastructure and circulation.

Slope



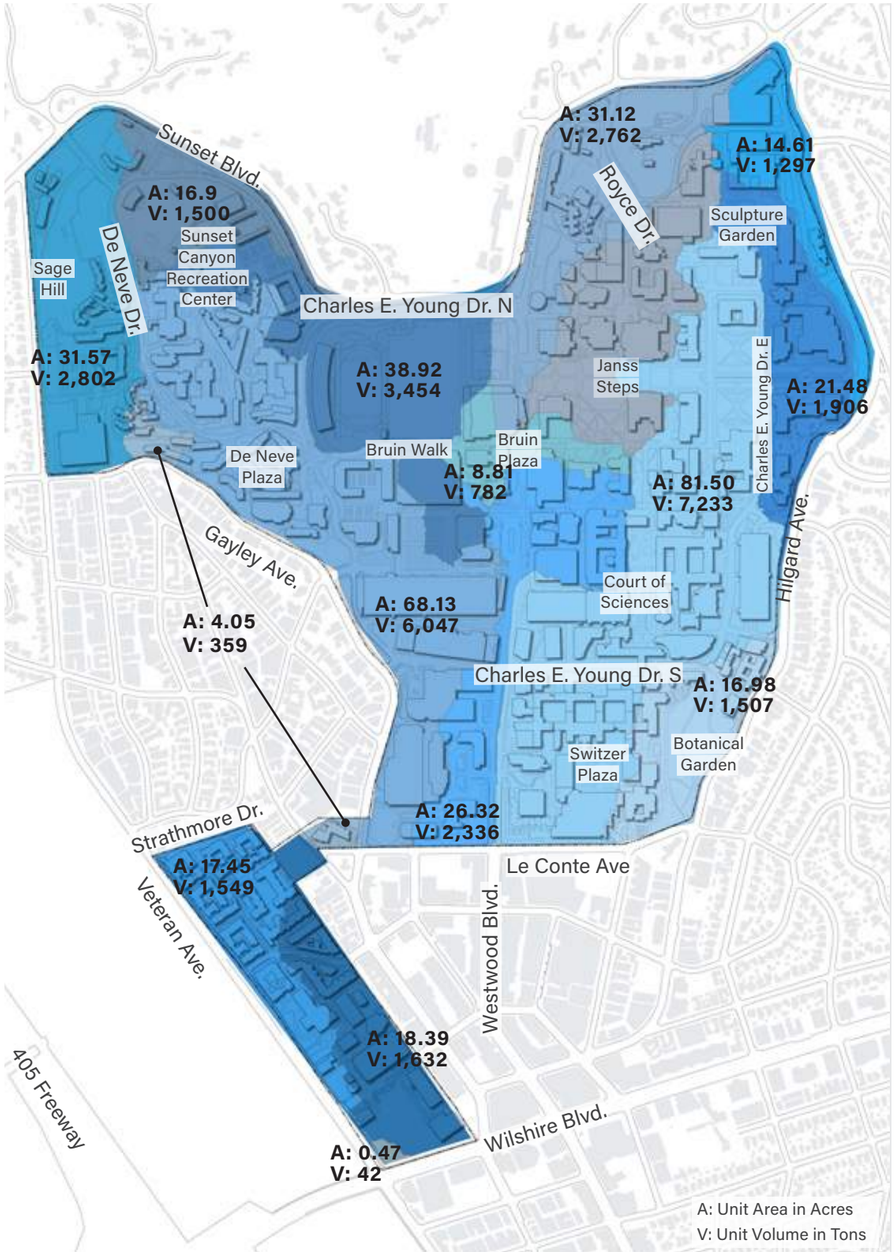
Soils



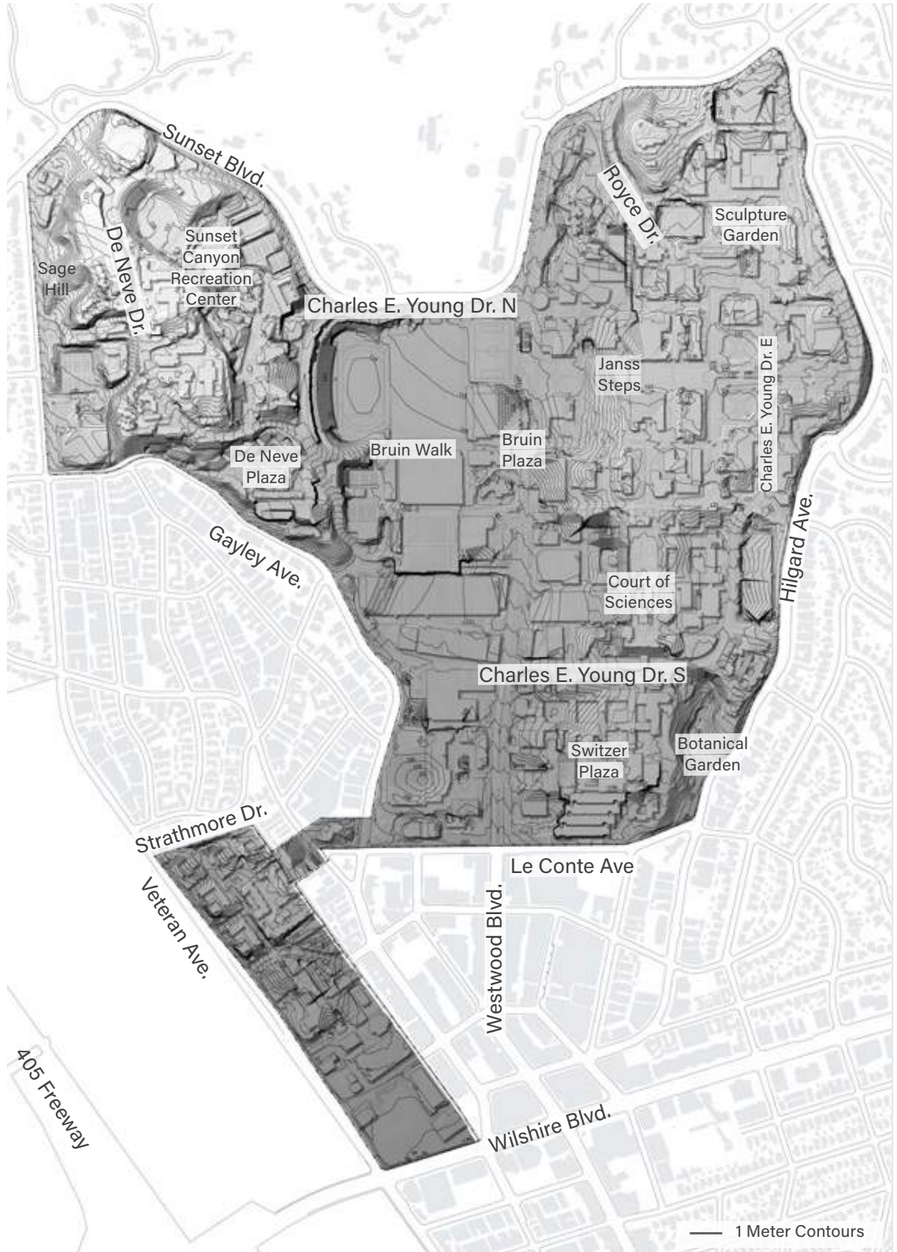
Micro-watersheds and topography may be used to distinguish capture areas for future stormwater management strategies. These micro-watersheds can also guide plant species selection, further differentiate landscape zones, and strengthen connections between them.

The measurements at right can provide general estimates for the average amount of rainfall received by each micro-watershed. It is assumed that UCLA receives an average of 14.67 inches of precipitation annually.

Watersheds



Topography

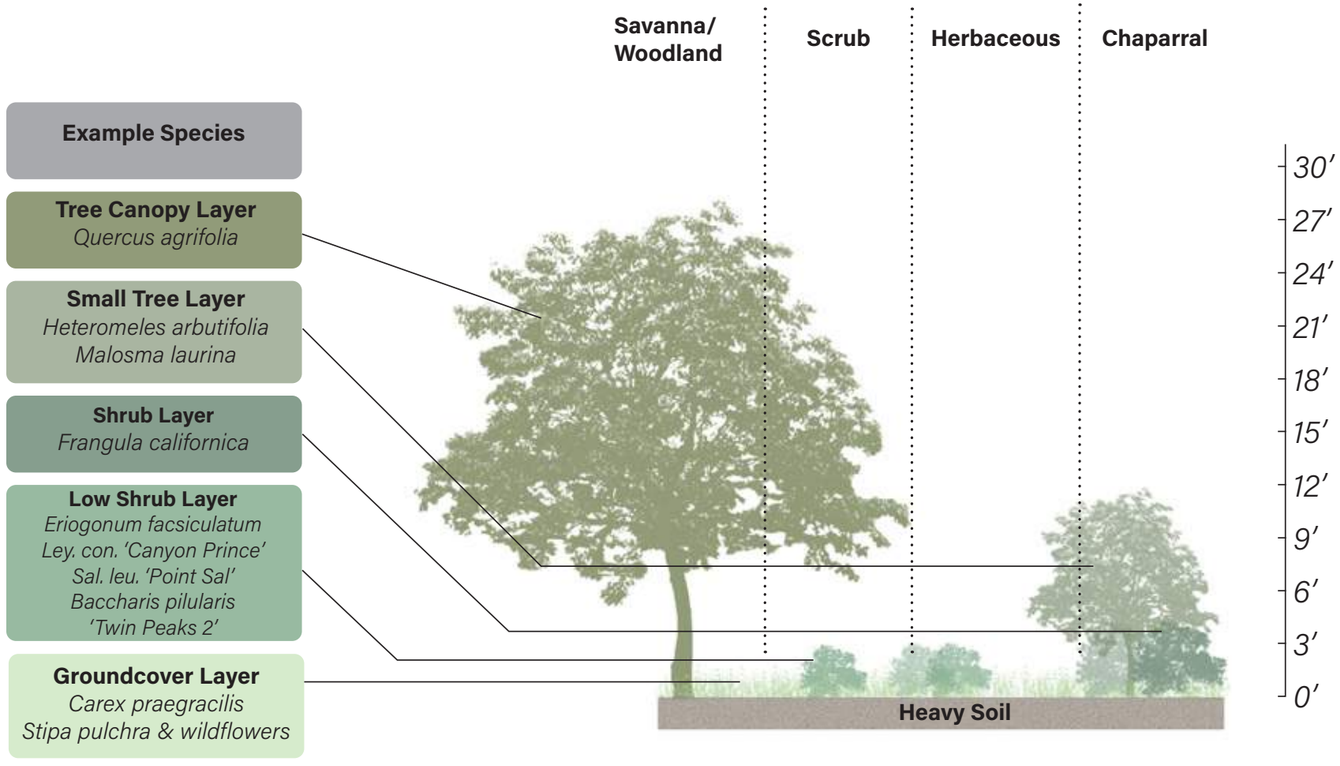


GRAND SAVANNA

LANDSCAPE STRUCTURE CONCEPT

The historic core is central to UCLA culture and student life. The grand savanna landscape concept is envisioned to integrate elements of the natural oak woodlands, grasslands, and coastal sage scrub plant communities that were present historically on site and in the surrounding area. A high tree canopy with low native grasses/shrubs, while preserving appropriate use of lawn, maintains the historic character with long views to iconic buildings and an open landscape feel.

Grand Savanna | General Landscape Character
(Width represents approximate portion of total zone)



PLANTING

Open feel, grand trees, long views beneath tree canopies, a rich groundcover layer with herbaceous and low to medium-height shrubs. Many native shrubs and grasses are summer-deciduous/cool-season growing. Spring will be the peak time for greenness and blooming.

BIODIVERSITY ENHANCEMENT

Reflects mature oak woodland/savanna, herbaceous meadow/under-story will support native bird species. Patches of coastal sage scrub and wildflowers support pollinators. Provide habitat stepping stones and partial corridors at key locations for urban-tolerant species.

MICROCLIMATE

This high terrain results in a relatively warm site with widely spaced buildings that allow for good light conditions to support native shrubs and groundcovers, except within shade from trees or buildings.

COMMUNITY ENGAGEMENT

The new landscape reflects a garden-like, timeless, and grand space. This savanna-like landscape may provide an innate connection to people per "prospect refuge theory." While still perceived as beautiful by many, natural shrub and herbaceous landscapes can look "dried and dormant" during the dry season, so care must be taken to build appreciation among the campus community.

NATURAL ANALOGS

BUILT ANALOGS

✻ Unifying Species

✻ Plants on Tongva List

Note: See appendix for full Tongva List.

SIGNATURE SPECIES (PARTIAL)

Coast Live Oak ✻
Quercus agrifolia

Engelmann Oak
Quercus engelmannii

Valley Oak
Quercus lobata

Torrey Pine
Pinus torreyana

Toyon ✻
Heteromeles arbutifolia

California Buckwheat ✻✻
Eriogonum fasciculatum

Ashy Leaf buckwheat
Eriogonum cinereum

Coyote bush
Baccharis pilularis

Purple Sage
Salvia leucophylla

Blue-eyed grass
Sisyrinchium bellum

Purple needlegrasses ✻
Stipa pulchra

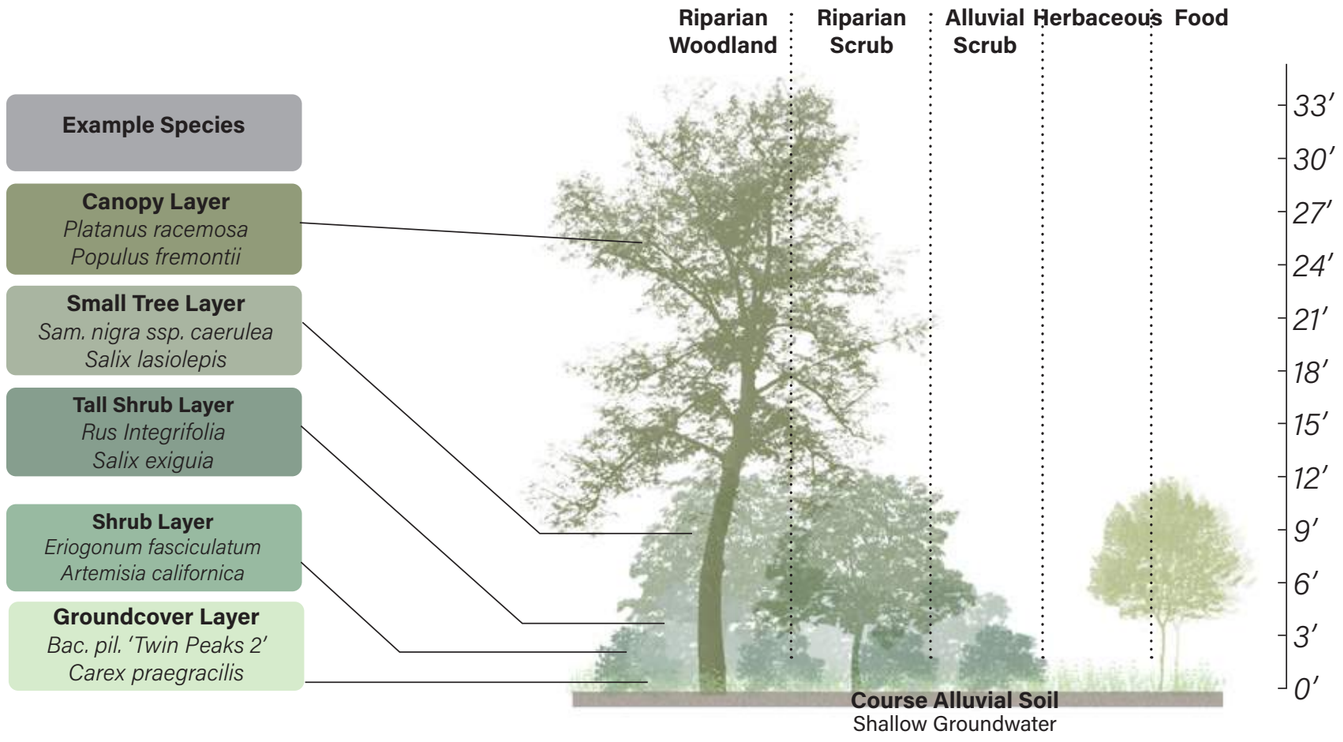
Dune Sedge/Meadow Sedge
Carex pansa/praegracilis

ALLUVIAL CORRIDOR

LANDSCAPE STRUCTURE CONCEPT

With naturally permeable alluvial soils present, and ongoing challenges with flooding, this water quality-oriented zone includes vegetation reflecting historic riparian ecosystems once present here. These ecosystems exhibit a dense, lush, and seasonally moist feel. Runoff from the entire campus may be directed here for treatment, infiltration, and aesthetic benefits through extensive use of bioswales, including a central bioswale connecting the remaining above-ground segment of Stone Canyon Creek near Sunset Blvd. to the Westwood campus entry in the south.

Alluvial Corridor | General Landscape Character
(Width represents approximate portion of total zone)



PLANTING

Winter deciduous riparian plants with a spring and summer growing season provide a more apparent fall seasonal change and winter dormancy period compared to coastal sage scrub species planned for higher terrain on campus. Alluvial fan sage scrub plant species are also appropriate in sunnier, hotter locations.

MICROCLIMATE

This low area of campus should be cooler in winter and may be the most suitable location for stone fruit trees on campus. The flat terrain results in high solar loading and relatively hot conditions in summer. Tree canopy should shade key areas of pedestrian use. Water features reflecting the historic Stone Canyon Creek may also be added to create cool microclimates.

BIODIVERSITY ENHANCEMENT

Planting that reflects riparian willow scrub, woodland, and alluvial fan scrub support associated bird and pollinator species. Water quality features, or potentially additional Stone-Canyon Creek daylighting, may provide ephemeral or perennial aquatic habitats to support wetland-associated species of amphibians and invertebrates.

COMMUNITY ENGAGEMENT

The water quality focus of this zone can provide educational and stewardship opportunities, including awareness of Stone Canyon Creek. The central bioswale feature may provide a major new campus identify feature and potential to raise awareness of the creek further up and downstream within the broader watershed.

NATURAL ANALOGS

BUILT ANALOGS

✻ Unifying Species

✻ Plants on Tongva List

Note: See appendix for full Tongva List.

SIGNATURE SPECIES (PARTIAL)

California Sycamore ✻
Platanus racemosa

Southern California Black Walnut
Juglans californica

Fremont Cottonwood
Populus fremontii

Arroyo Willow ✻
Salix lasiolepis

California Bush Sunflower
Encelia californica

California Wild Rose
Rosa californica

Mulefat
Baccharis salicifolia

Lemonade Berry ✻
Rhus integrifolia

Mugwort ✻
Artemisia douglasiana

California Goldenrod
Solidago californica

Basket Rush ✻
Juncus textilis

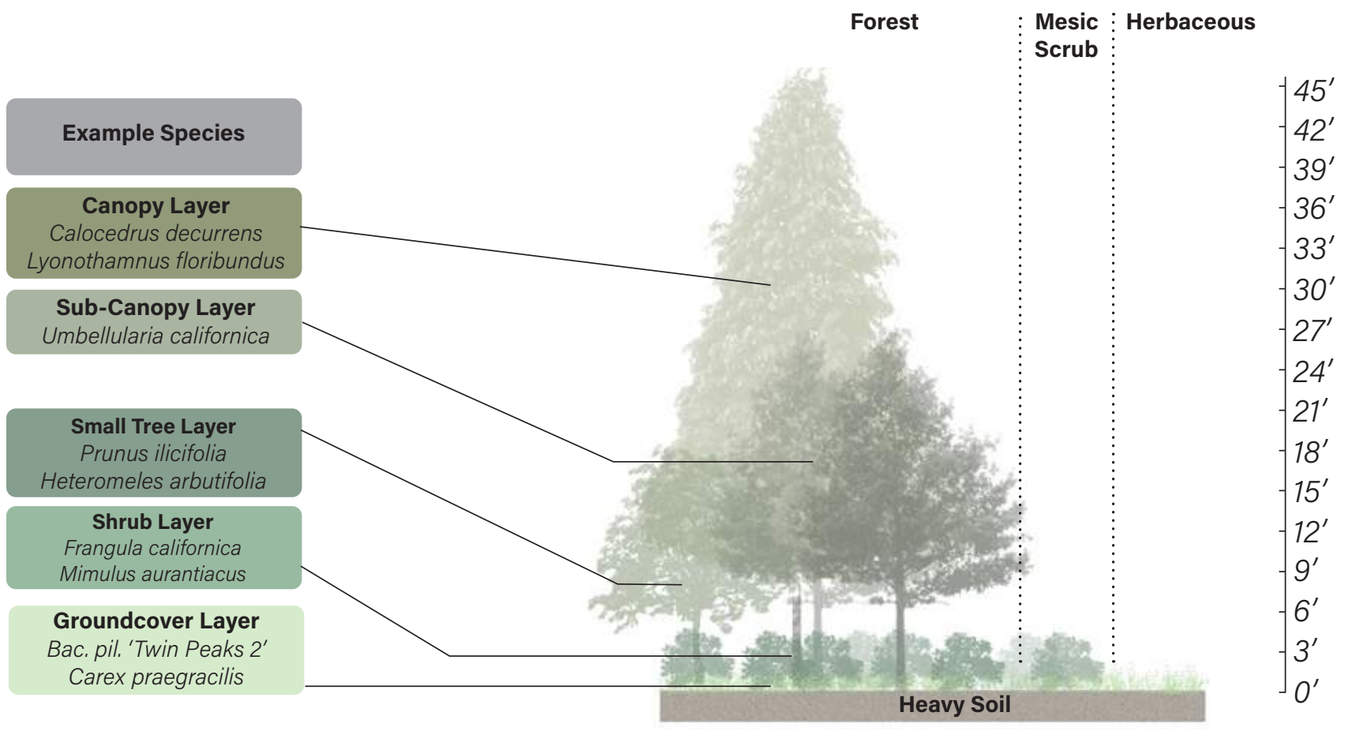
Giant Wild-rye
Elymus condensatus

URBAN CANYON

LANDSCAPE STRUCTURE CONCEPT

Densely-spaced, tall buildings result in extensive shade and part-shade conditions relative to other zones. These "canyon-like" conditions support opportunities for plant species adapted to shade and support a cool microclimate. A heavily forested "cathedral-like" canopy of tall-growing trees is envisioned that can also maximize biomass and carbon sequestration.

Urban Canyon | General Landscape Character
(Width represents approximate portion of total zone)



PLANTING

Species composition reflects the natural, low-elevation shaded canyons from the San Gabriel Mountains to the Channel Islands. Plant species adapted to part and full shade conditions dominate. These forested conditions provide a unique contrast to shrub-dominated landscapes in sunnier landscape zones.

MICROCLIMATE

With a tall tree canopy and building shade, this zone is cool in summer and moist and protected in winter. Cool, shady conditions benefit climate resiliency and outdoor comfort in a part of campus with the high year-around use.

BIODIVERSITY ENHANCEMENT

Densely vegetated conditions support forest and woodland-oriented bird species. Cool and moist conditions may support native salamanders and other unique shade-adapted species if designed appropriately. This zone is key to enhancing connectivity between the botanical gardens and campus habitat cores to the north and west.

COMMUNITY ENGAGEMENT

With the health campus in this zone, leveraging natural landscapes for healing, learning, contact with nature also represents a key opportunity. Increased building densities and heights are a trend in Los Angeles, making this approach a valuable precedent for native landscape applications region-wide.

NATURAL ANALOGS

BUILT ANALOGS

✻ Unifying Species

✻ Plants on Tongva List

Note: See appendix for full Tongva List.

SIGNATURE SPECIES (PARTIAL)

Incense Cedar
Calocedrus decurrens

Canyon Oak
Quercus chrysolepis

Coast Live Oak ✻
Quercus agrifolia

Island Ironwood
Lyonothamnus floribundus ssp. aspleniifolius

California Bay ✻
Umbellularia californica

California Barberry
Berberis pinnata

Hollyleaf Cherry
Prunus ilicifolia

Western Redbud
Cercis occidentalis

Coffeeberry
Frangula californica

Hummingbird Sage ✻ ✻
Salvia spathathea

Douglas Iris
Iris douglasiana

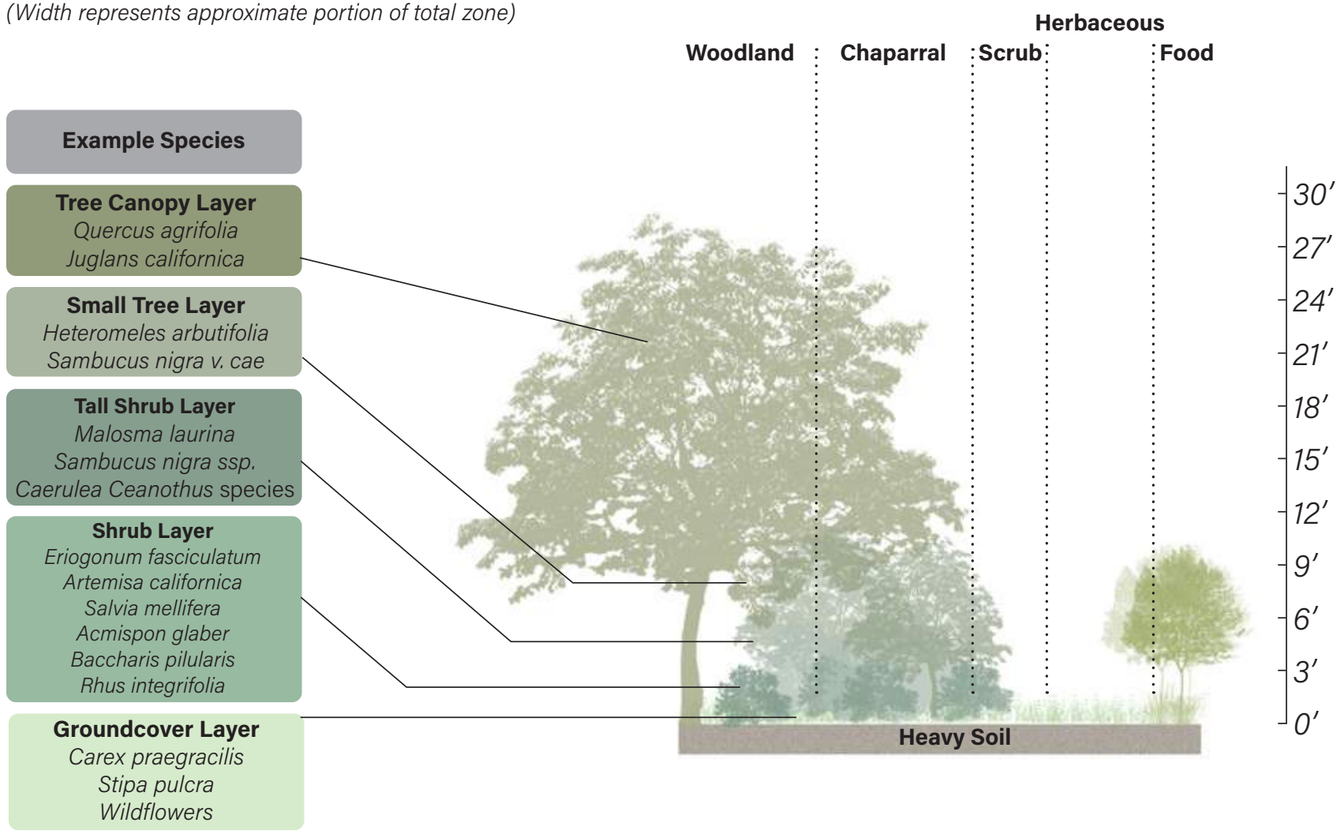
Catalina perfume
Ribes Viburnifolium

HILL DISTRICT

LANDSCAPE STRUCTURE CONCEPT

Diverse topography and large vegetated areas, support diverse planting conditions for native plants and opportunities for agriculture. Ecological diversity and sustainability are maximized here through extensive restoration opportunities and modern native plant landscapes. These densely vegetated landscapes foster students' connections with nature and agriculture close to their residences.

Hill District | General Landscape Character
(Width represents approximate portion of total zone)



PLANTING

Extensive opportunities to reflect all native plant communities, including chaparral, coastal sage scrub, grasslands, and oak woodlands, and diverse urban agriculture are present here.

MICROCLIMATE

This is a relatively warm microclimate due to high terrain, supporting agriculture opportunities. Good solar exposure may make some areas hot in summer and shading may be necessary for high-use areas, especially on south slopes. Diverse aspects and light conditions support the widest variety of plant species suitability on campus.

BIODIVERSITY ENHANCEMENT

Opportunity for major habitat restoration on hillsides surrounding the Sunset Canyon Recreation Center and densely vegetated areas south of the Sage Hill natural area. Maximize habitat connectivity with Sage Hill natural area on site and at key connections crossing Sunset Blvd.

COMMUNITY ENGAGEMENT

Native plant landscapes, restoration, and agriculture can connect students with nature near a place where they live while on campus. This can in turn foster conservation behavior and ecosystem awareness for generations of future leaders.

NATURAL ANALOGS

BUILT ANALOGS

✱ Unifying Species

✱ Plants on Tongva List

Note: See appendix for full Tongva List.

SIGNATURE SPECIES (PARTIAL)

Coastal Live Oak
Quercus agrifolia

Southern California Black Walnut
Juglans californica

Laurel Sumac
Malosma laurina

Sugar Bush
Rhus ovata

Blue Elderberry
Sambucus nigra spp. caerulea

California Sagebrush ✱
Artemisia californica

California Bush Sunflower
Encelia californica

Purple Sage
Salvia leucophylla

Toyon
Heteromeles arbutifolia

Bush Monkeyflower
Mimulus aurantiacus

California Buckwheat ✱
Eriogonum fasciculatum

Black Sage
Salvia mellifera

NON-FUNCTIONAL TURF CONVERSION

OBSERVATIONS

- Turf is a cornerstone of the classical university campus aesthetic. It also provides space for recreation, leisure, and events.
- An over-abundance of non-functional turf is a strain on resources with little value for biodiversity and high cost for maintenance.
- The UCLA community called for underused campus spaces to be sites for student-led programming.
- To achieve its sustainability goals, UCLA is committed to reducing turf on campus.

OBJECTIVES

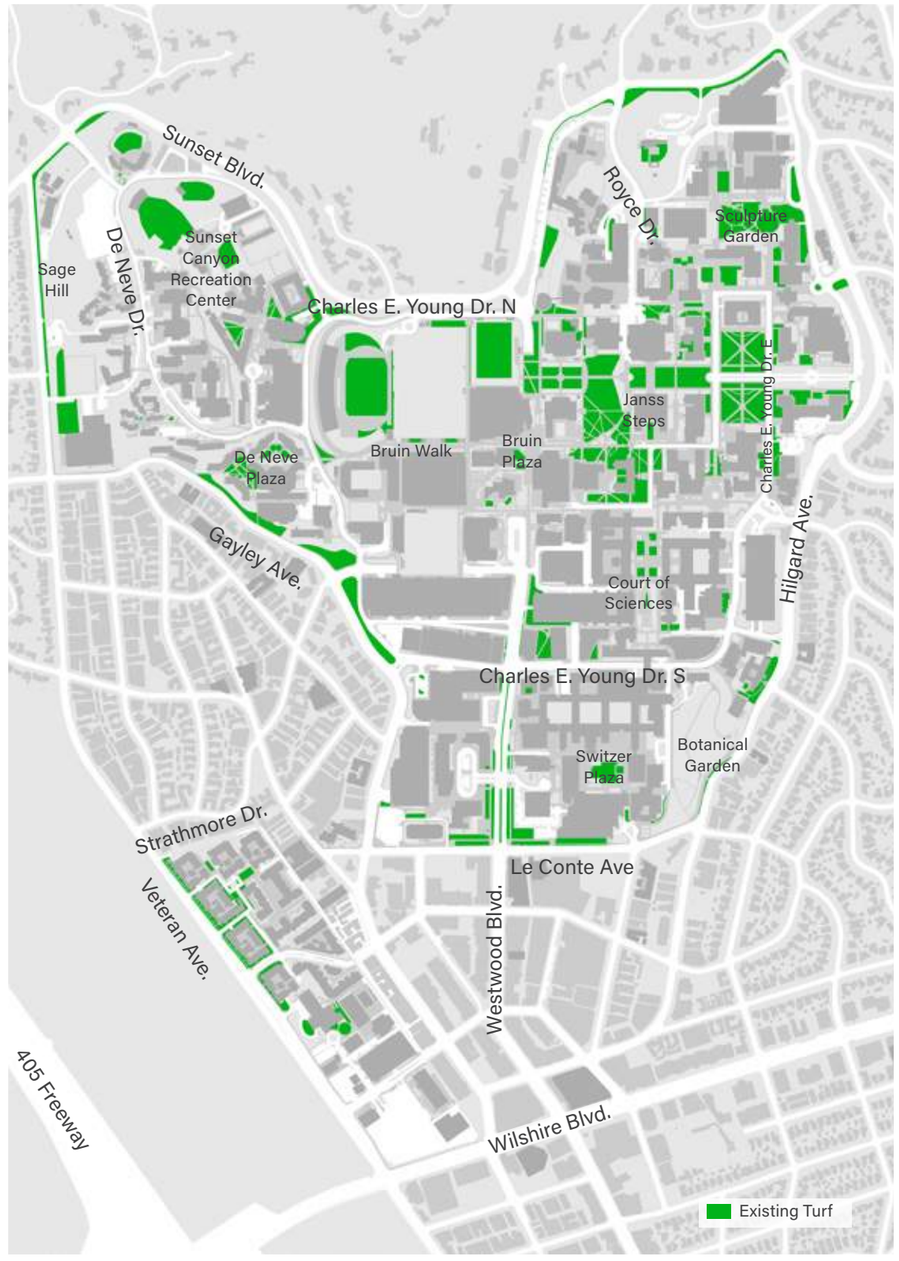
- Improve the environmental performance of the campus by lowering water use, improving stormwater treatment, and promoting biodiversity.
- Decrease landscape maintenance costs.
- Improve spatial efficiency and support landscape-related programming.

"What places on UCLA's campus do you want to see transformed?"

"What campus landscape trends are you excited about at UCLA?"

» Online community engagement results

EXISTING CONDITION



RECOMMENDATIONS

Select turf conversion sites appropriately.

- Non-functional turf areas identified on the proposed condition map will be converted to drought-tolerant planting or programmatic spaces.
- Turf areas serving as community spaces and/or providing programmatic benefits will remain.

Establish spaces that promote learning in the landscape, are flexible, and multi-use.

- Establish an administrative body to review student proposals for the design, implementation, and stewardship of turf replacement landscapes.
- Favor light-weight, moveable furnishings. Provide sufficient lighting and electrical outlets where feasible to power laptops and cell phones.

Ensure successful replacement landscapes.

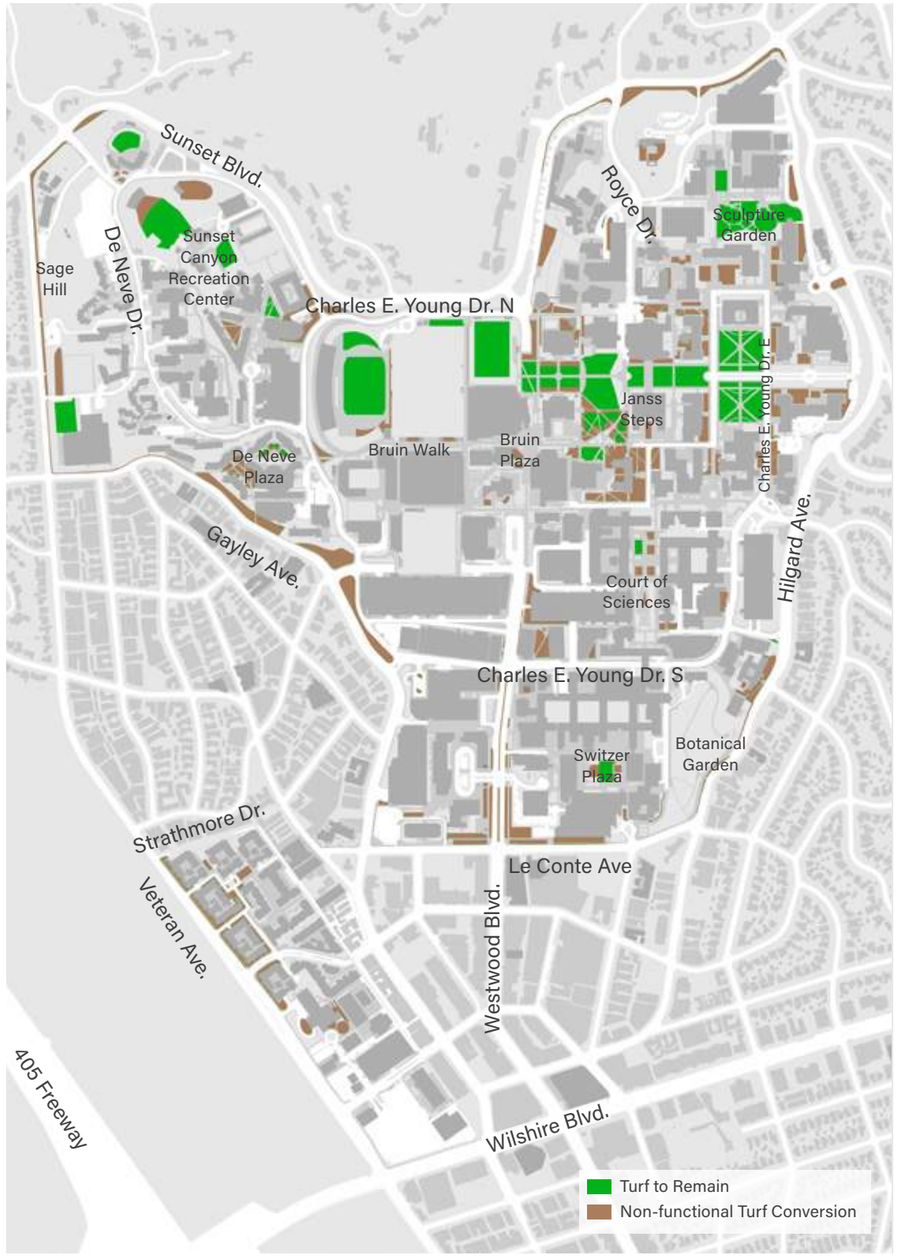
- Work closely with Campus Facilities, Housing and Hospitality to ensure new landscape proposals are achievable based on resources available and do not pose insurmountable maintenance challenges.
- Use the turf conversion matrix tool to select programmatic or planting landscapes based on a site's characteristics and maintenance needs. The proposed replacement landscapes are not mutually exclusive nor comprehensive. Alternative uses will arise based on the evolving needs of the campus community.

Turf Conversion Matrix

Site Condition	Stormwater Management	Native Plants	Pollinator Plants	Ornamental Edibles	Anchor Garden	Meditation Space	Recreation	Seating, Dining & Study Space	Classroom or Performance
	Planting	Planting	Planting	Planting	Programming	Programming	Programming	Programming	Programming
High Traffic	●	●	◪	◪	●	○	◪	◪	◪
Fragmentation	◪	●	●	◪	○	○	○	○	○
Excessive Sun	◪	●	●	◪	●	○	◪	◪	○
Insufficient Sun	◪	◪	○	○	○	◪	◪	◪	◪
Steep Slope	○	●	●	◪	○	○	○	○	○
Drainage	●	◪	◪	○	○	○	○	○	○
High Water Efficiency	●	●	◪	○	○	●	●	●	●

○ Never ◪ Sometimes ● Always

PROPOSED CONDITION



3.4 ENVIRONMENTAL SYSTEMS

- **Establishing Priority Habitat Linkages**
  - Existing patch size and quality
  - Proposed patch size and quality
  - Linkages and strategies
- **Outlining Best Practices for Landscape Restoration**
- **Stormwater Management**


Hilgard Ave.
Bel-Air
Country Club
Sunset Blvd.
Janss
Steps
Charles E. Young Dr. N
Bruin Walk
Sage
Hill
Court of
Sciences
Pauley
Pavilion
Botanical
Garden
Westwood Blvd.
Switzer
Plaza
Gayley Ave.
Le Conte Ave.
Veteran Ave.
Westwood
Village
Wilshire Blvd.
Los Angeles
National Cemetery
405 Freeway

BIODIVERSITY ENHANCEMENT

OBSERVATIONS

UCLA's campus landscapes have great potential for biodiversity enhancement. Such efforts can increase connections between the campus community and nature, which brings numerous benefits, including increased conservation behavior, mental and physical heath, and educational opportunities, among others. Enhancements can also support conservation and resilience of local and migratory native species, including those already living within some of UCLA's high quality natural areas at Sage Hill, Stone Canyon Creek, and the Chancellor's residence; and for species that migrate through LA such as many birds and butterflies. The plan also enhances biodiversity by building upon broader City-wide efforts, such as the LA Biodiversity Index and Ecotopes frameworks, to maximizing benefits of a coordinated regional approach while providing a valuable precedent for the region and beyond.

OBJECTIVES

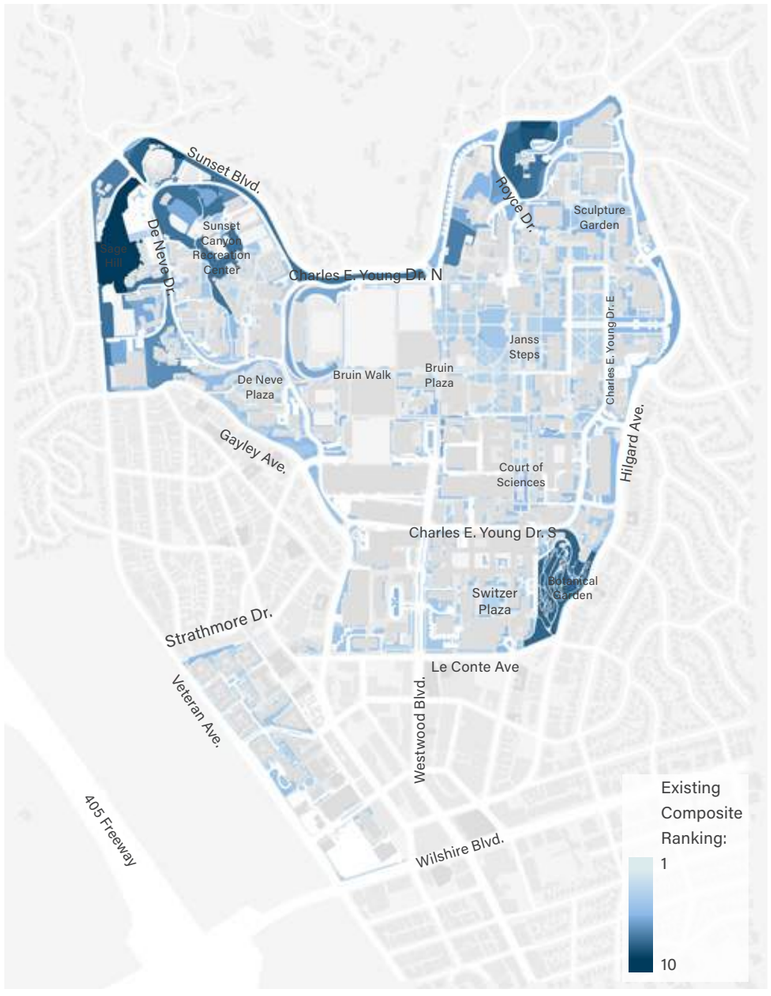
The following objectives for biodiversity enhancement have been integrated into the plan:

- Integrate project concepts and priorities from UCLA faculty, staff, and students
- Strive to be a local and international leader in biodiversity enhancement
- Establish quantitative targets for biodiversity improvement
- Support integration of native biodiversity into the culture and identity of UCLA
- Support biodiversity across all areas of campus as appropriate
- Support a connected network for biodiversity on and off-site starting with existing campus habitat core areas (e.g., Sage Hill, Chancellor's Residence, Mathias Botanical Garden, Stone Canyon Creek)

RECOMMENDATIONS

- Align with California's 30x30 Biodiversity objectives and target a 30% improvement biodiversity index score 2052 (full masterplan implementation)
- Provide refined implementation tools for biodiversity, including a biodiversity action plan oriented around specific target species and habitats for enhancement.

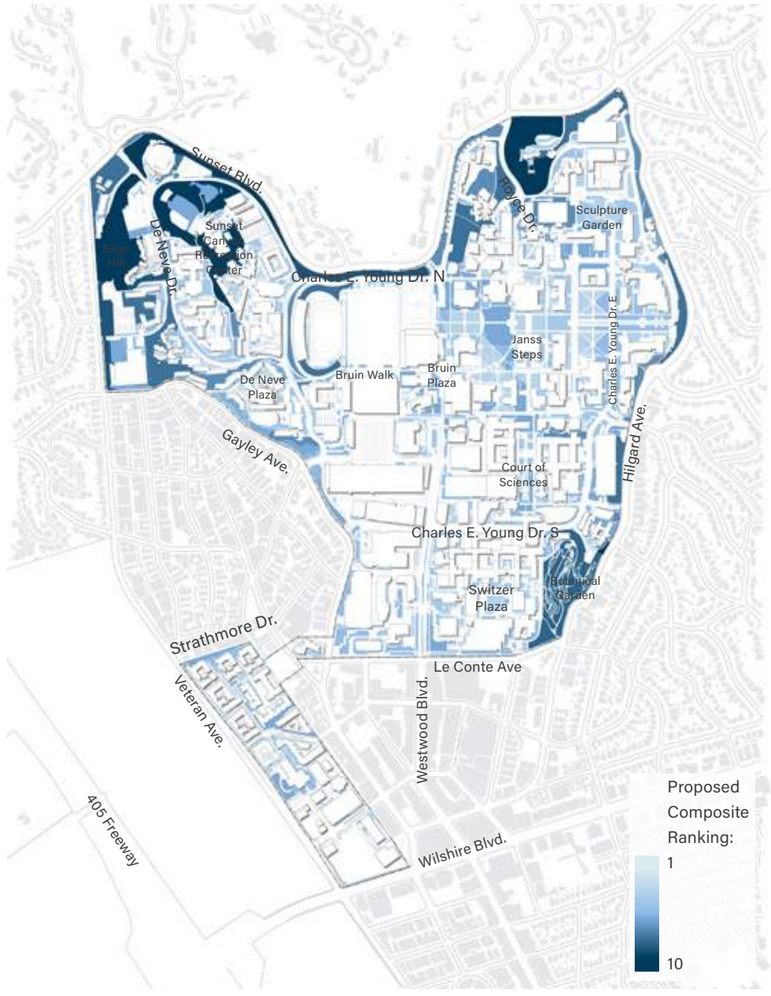
EXISTING BIODIVERSITY VALUE



Composite Score: 1.41 / 10

An estimate of the existing biodiversity value of campus landscapes provides a baseline from which future change can be measured. The "composite scoring" above combines scores for two biodiversity metrics, each scored on 5-point scale, Landscape Naturalness and Landscape Patch Size. Naturalness levels and their implications for future landscape management are described on the following page. Further details of this scoring system and targets for improvement are included in Appendix.

PROPOSED BIODIVERSITY VALUE

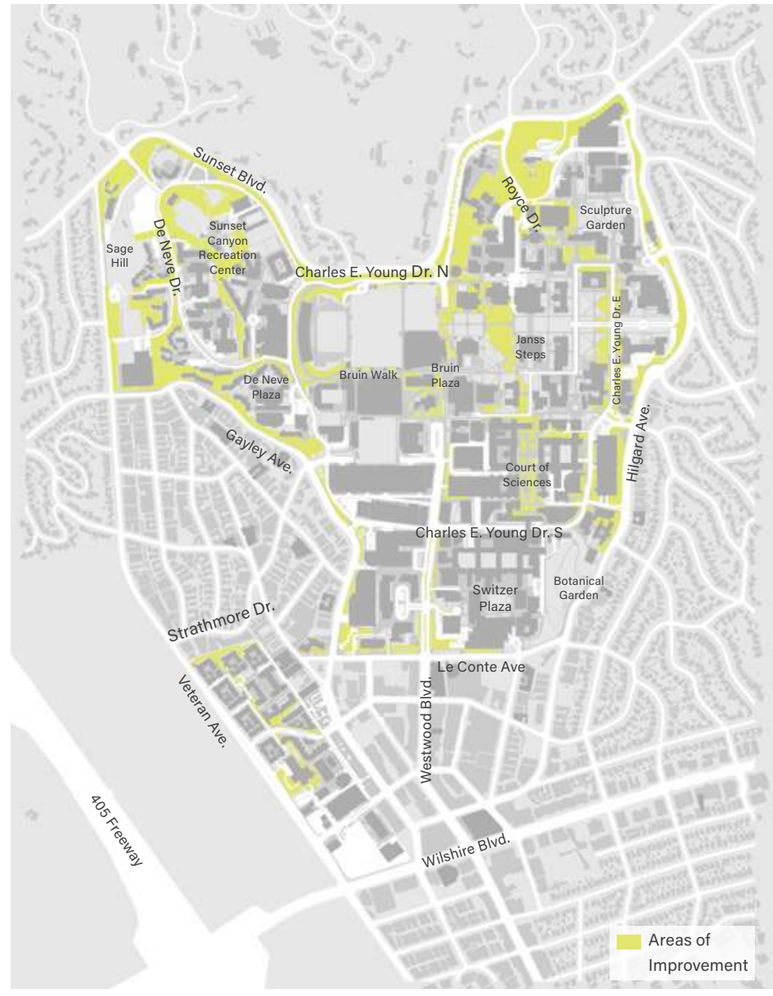


Composite Score: 1.65 / 10 (17% improvement from existing condition*)

At full plan buildout, the proposed enhancements and framework suggest that achieving a 30% improvement in biodiversity value of campus, in line with the California 30x30 objectives, is possible.

* Future score change is projected for the Priority Biodiversity Network only and does not include potential enhancements outside of the network. Additionally, this estimate only considers estimated improvements in landscape naturalness over time, and not potential increases in average patch size. These additional enhancements will be necessary to achieve the 30% improvement target.

PROPOSED PRIMARY BIODIVERSITY NETWORK



The map above highlights only the landscape areas planned for change (the "primary biodiversity network"). By concentrating enhancements into a connected network, greater benefits can be achieved including increased habitat connectivity between key habitat core areas such as Sage Hill and the Mathias Botanical Gardens. It should be noted, that this network is not a contiguous habitat corridor or restoration, instead it is a zone of enhancement using design measures compatible with the many other campus uses that will also occur within these areas of change.

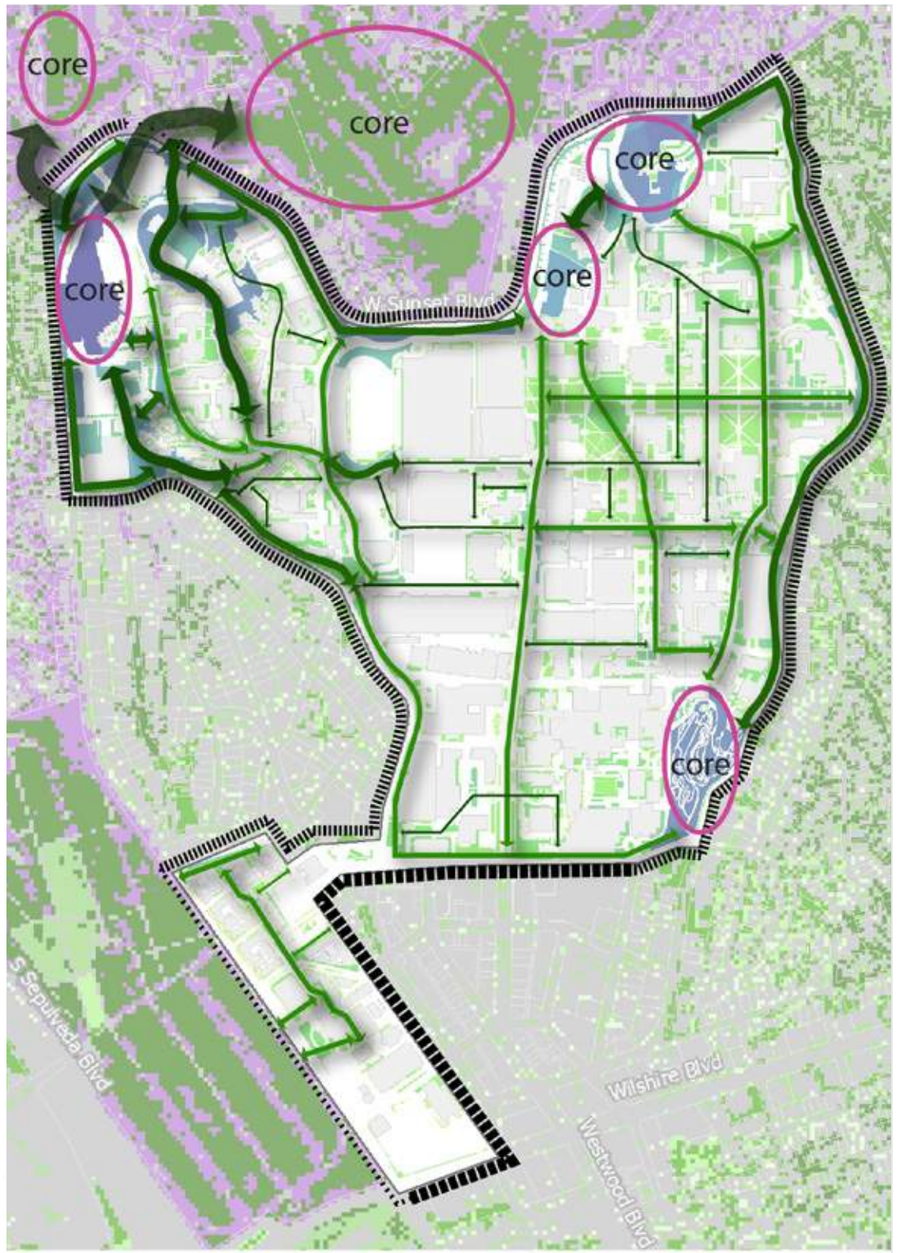
LANDSCAPE CONNECTIVITY AND NATURALNESS

Landscape **naturalness** is used as a general, plan-level measure of the biodiversity and habitat value of the campus and its surrounding landscape context. These datasets were created specifically for the UCLA Landscape plan project. Landscape naturalness supports identification of key areas for conservation and opportunities for enhancement. It also forms a basis for targeting quantitative levels of improvement in biodiversity.

Landscape **connectivity** is required to sustain fragmented populations of species within campus natural areas such as Sage Hill. Maintaining connectivity is especially important in anticipation of climate change impacts on natural areas where species suitability is expected to change, and ecosystems must adapt. Connectivity can also increase biodiversity in more developed areas of campus when combined with native plant landscape enhancements.

Protecting and enhancing connectivity between natural areas on campus is a key opportunity for the plan. Each landscape zone currently exhibits varying levels of connectivity, with the Hill district maintaining the highest amount and urban canyons and alluvial corridor the most constrained.

Landscape Connectivity



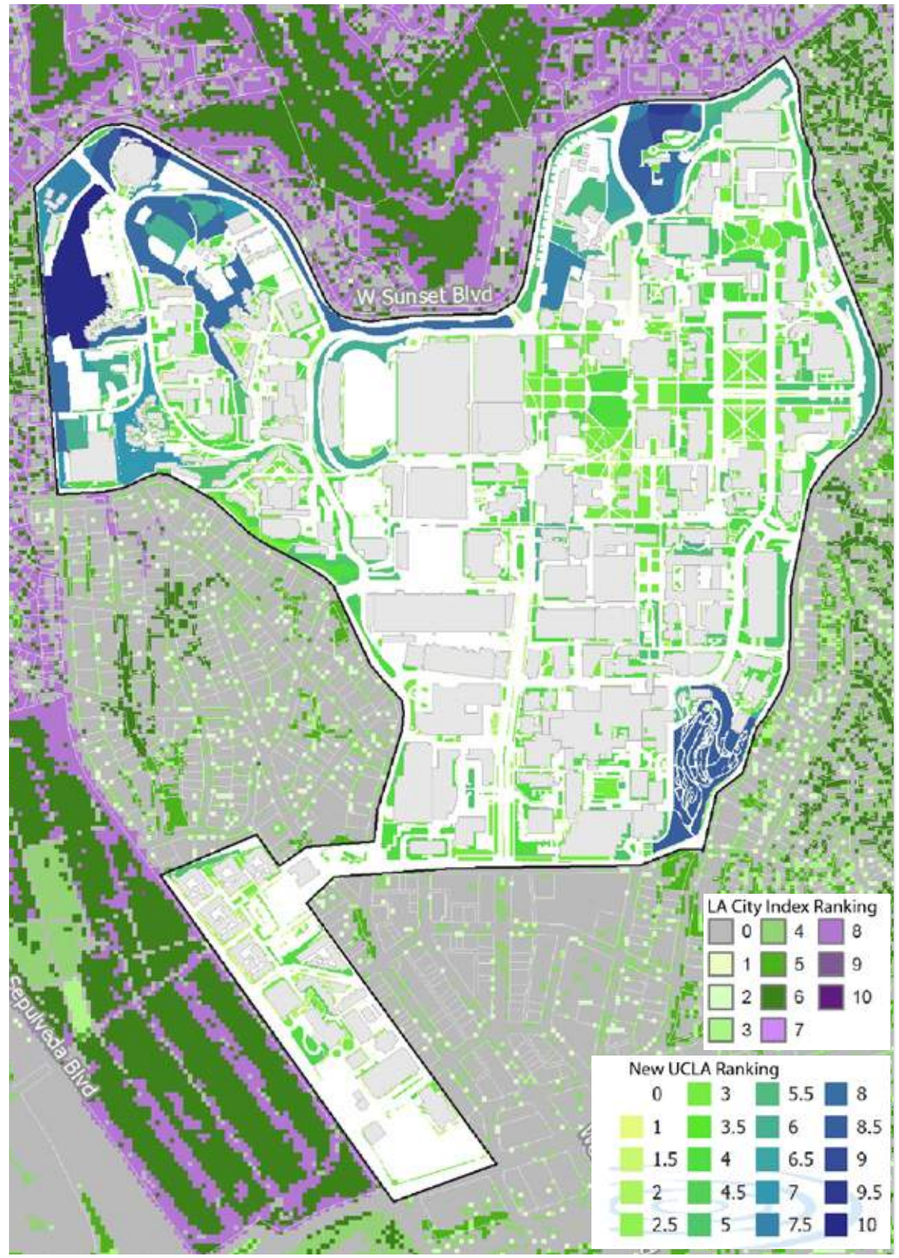
Off-site Connectivity

- Highly permeable boundary (no fences/walls)
- Moderate permeable boundary (permeable fences)
- Limited permeability (walls mostly contiguous)
- Very low permeability (commercial use)

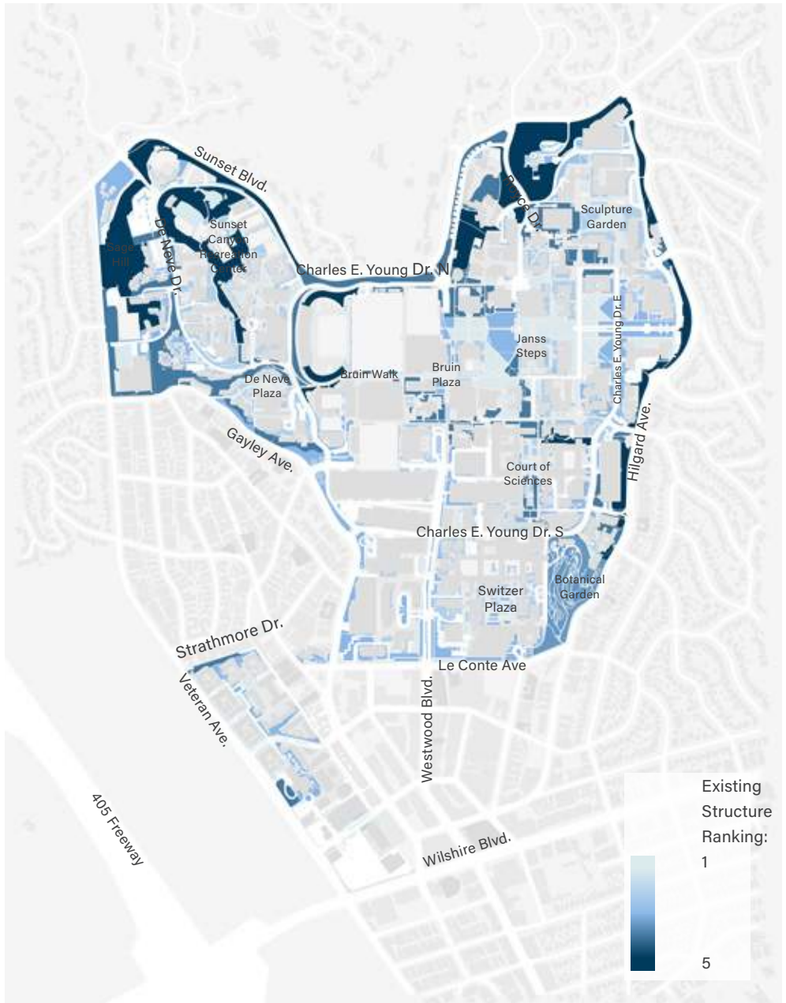
On-site Connectivity

- Essential linkage (connects to off-site cores)
- Primary linkage (high naturalness and connected to core)
- Secondary linkage (moderate naturalness)
- Tertiary linkage (opportunity for enhancement)
- Other linkage (limited opportunity for enhancement)

Landscape Naturalness



PLANNED LANDSCAPE CONNECTIVITY

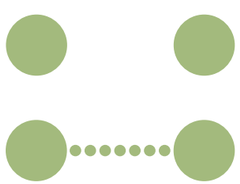


Much of the future improvement in biodiversity will be achieved by converting existing low-biodiversity value landscapes to high value landscapes by implementing habitat restoration or native planting. The map above shows the estimated average naturalness score per polygon following full buildout of the plan (scores are average for the polygon and polygons may include a mix of landscape design measures with various sub-scores for biodiversity).

Campus connectivity enhancement addresses the degree to which landscapes support movement of species within and between habitats on and off campus. The following considerations are relevant when designing all campus landscapes for connectivity.

- Concentrate native plant landscapes and biodiversity enhancements along the primary biodiversity network proposed but all areas of campus can contribute toward connectivity.
- The network does not need to be contiguous or of high landscape naturalness throughout. Habitat stepping stones and partial corridors are also valuable.
- Larger habitat stepping stones and wider corridors provide better habitat connectivity for more species than smaller patches and narrower corridors.
- While beneficial in all areas of campus, habitat friendly design treatments for buildings and other infrastructure adjacent to the primary biodiversity network should be prioritized, such as bird friendly glass treatments, reduced lighting, and noise pollution reduction, etc.
- Remove unnecessary fences and sidewalks that fragment habitats and landscapes, especially within the primary biodiversity network.
- Connectivity through built areas may be improved by creating under or overpasses at roads and sidewalks, traffic calming measures, green walls, or green roofs.
- Enhancing connectivity between Sage Hill and the adjacent large landscapes surrounding Sunset Canyon is a key opportunity.
- High quality patches should have two designated priority routes for connectivity to ensure redundancy of the network should one corridor become impeded.
- Two relatively high quality offsite connections exist near the northwest corner of campus. These should be protected and enhanced to support long-term resiliency of the campus biodiversity network.
- In the future, species-specific connectivity enhancements should be identified and appropriate design measures developed.

General Principles



Connectivity increases with patch proximity (enhance nearby high quality patches)

Increase habitat stepping stones between patches

Create partial corridors between patches

Create continuous corridors between patches

BIODIVERSITY ENHANCEMENT IMPLEMENTATION RECOMMENDATIONS

Biodiversity Planting Approach (Landscape Naturalness Score)	Wildlife Habitat	Maintenance Approach	Irrigation Approach	Lighting Approach	Connectivity	Edge Treatments	Adjacent Building Treatments	Community Engagement with Biodiversity
Ecological restoration (Score 5)	Top priority for the landscape area. Often supports non-urban tolerant species and sensitive species.	Tailored natural areas stewardship program.	For establishment period only as needed	No night lighting within restoration area	Maximize connectivity between adjacent patches to ensure resiliency. Providing two priority routes for connectivity is ideal	Controlled access or fencing often necessary to protect habitats.	Reduce all edge effects to the maximum extent possible	Provide educational signage and stewardship opportunities. Restoration provides opportunities strong connections with nature and associated benefits
Diverse, biodiversity-oriented native plant landscapes (Score 4)	Shared priority, often with aesthetics, maintenance, and sustainability, etc. Supports high diversity of urban tolerant native species and may support some non-urban tolerant species.	Seasonal landscape maintenance program to encourage healthy plant growth, reduce weeds, and maintain aesthetic objectives	Provide infrequent deep irrigations to supplement poor rain years and appearance during the dry season as needed	Sensitive lighting	Enhance connectivity with adjacent patches where possible through stepping stones or corridors	Tidy edges, such as borders or aesthetically appealing fencing enhance a cared for appearance, especially during periods of native plant dormancy	Bird collision reduction is a top priority. Minimize light and noise pollution	Provide educational signage and stewardship opportunities Allows community strong connections with natural processes and native species
Mixed native/non-native plants or mass planting of a single native plant species (Score 3)	Often a lower-level priority with top priority being aesthetics, water efficiency, water quality, etc. These landscapes can still be valuable for birds, pollinators, or connectivity, etc.	Seasonal landscape maintenance program to encourage healthy plant growth, reduce weeds, and maintain aesthetic objectives	Provide infrequent deep irrigations to supplement poor rain years and appearance during the dry season as needed	As appropriate considering competing non-biodiversity objectives	Connectivity is a lower priority but support it wherever possible	Tidy edges, such as borders or aesthetically appealing fencing enhance a cared for appearance, especially during periods of native plant dormancy	Bird collision reduction top priority. Minimize light pollution	Provide stewardship opportunities
Mixed non-native plantings. (Score 2)	Low priority, but these areas may provide some habitat value for pollinators, other fauna, and connectivity value	Maintain using Integrated Pest Management [IPM] approach and OMRI-certified products	As appropriate for species	As appropriate considering non-biodiversity objectives	All sites can provide some connectivity value	No recommendation	Bird collision reduction top priority everywhere	Not applicable
Mass plantings or monocultures of non-native species such as lawns (Score 1)	Low priority, but some lawn areas may provide connectivity value	Maintain using Integrated Pest Management [IPM] approach and OMRI-certified products	As appropriate for species	As appropriate considering non-biodiversity objectives	All sites can provide some connectivity value	Mowed strips or monocultures may be used as an edge treatment for higher value habitat areas	Bird collision reduction top priority everywhere	Not applicable
Hardscape or buildings (Score 0). *However, these features may also be enhanced for biodiversity such as providing habitat-friendly treatments for birds or wildlife connectivity measures*	Low priority but may be enhanced as bird habitat or to minimize edge effects on adjacent habitat by adding bird-friendly glass or reducing light pollution, etc.	Not cleaning glass helps prevent bird collisions, especially during the migration season.	Not applicable	Reduce light pollution whenever possible	Buildings and hardscape should reduce impediments to connectivity if in priority locations including under/overpasses, green walls/roofs, etc.	Not applicable	Bird collision reduction top priority everywhere	Educational programs and signage

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STORMWATER MANAGEMENT

OBSERVATIONS

- Existing green infrastructure (GI) and Best Management Practices (BMPs) are minimal for the campus scale. Most stormwater management relies on centralized catchment structures and grey conveyance.
- Several feasibility studies have been conducted for rooftop capture and re-use, but efforts to incorporate this have been slow.
- An underperforming swale is reported at engineering building VI.

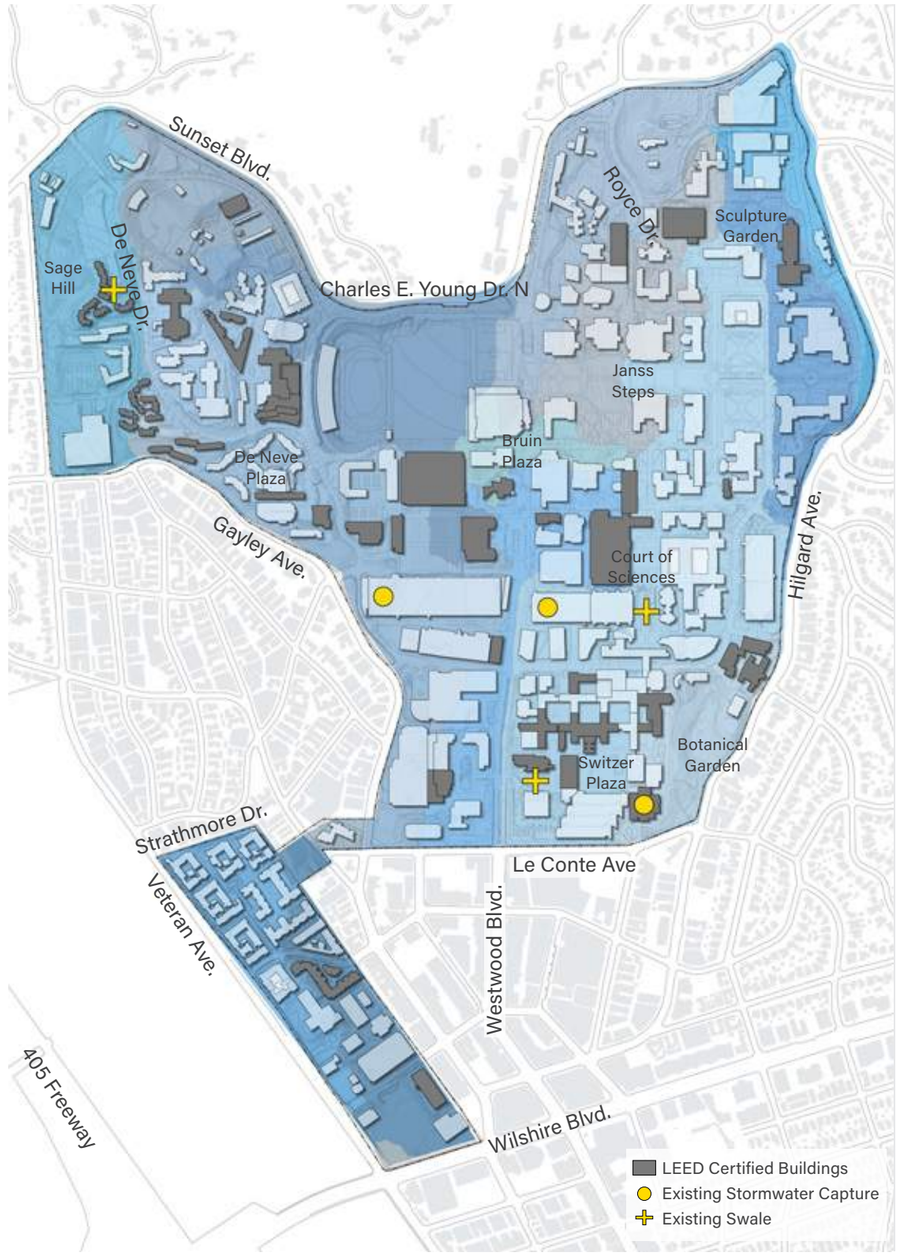
OBJECTIVES

- Reduce stormwater runoff losses during storm events through capture-and-reuse.
- Use GI as learning opportunity for regional Stormwater Management.
- Improve understanding of campus stormwater system and its contribution to on-site water re-use.

Storm sewer system captures most campus runoff

Existing capture and rescue initiatives

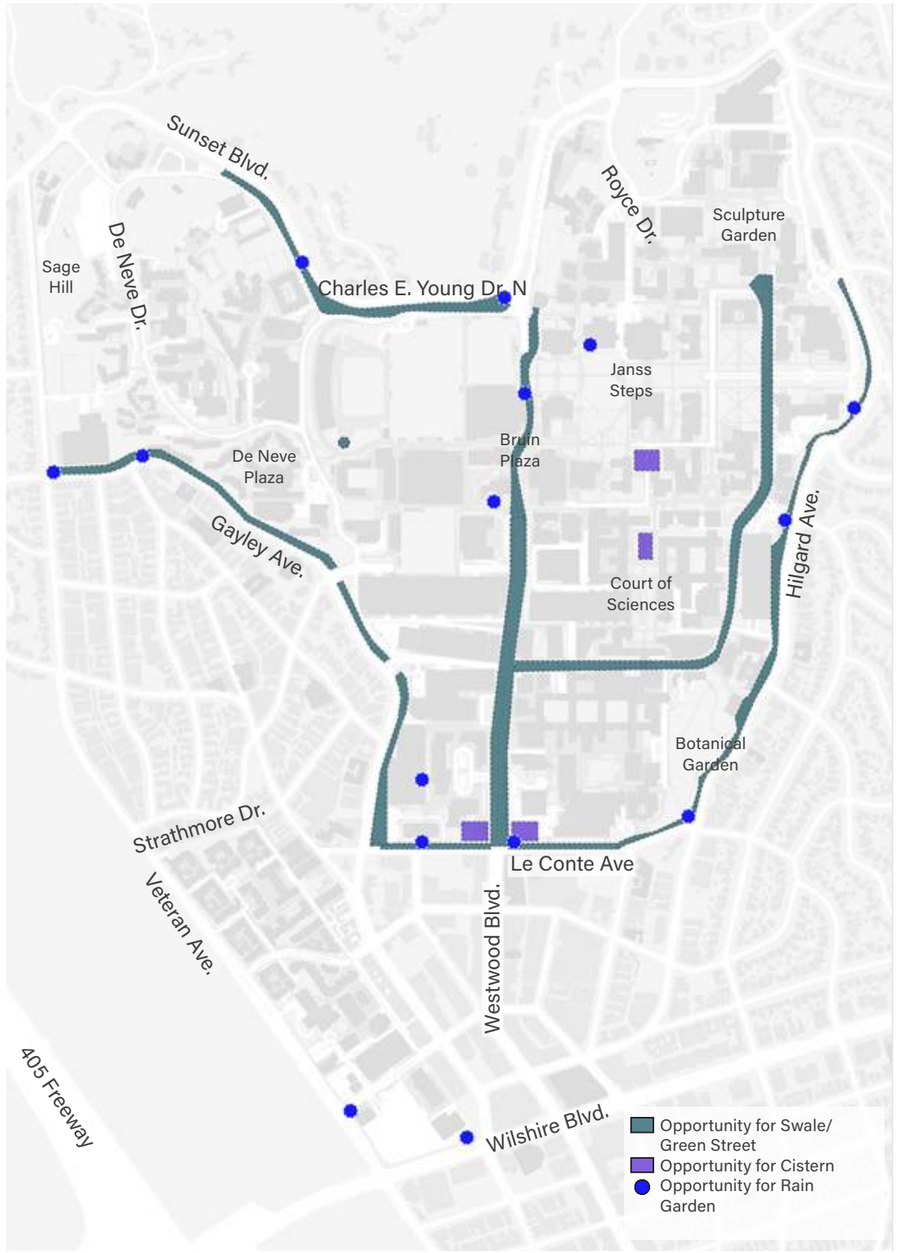
EXISTING CONDITION



RECOMMENDATIONS

- Select and place green infrastructure in low point of each micro-watershed.
- Reduce or limit impervious surfaces on new projects and use methods for low soil compaction and high infiltration.
- Incorporate more distributed surface BMPs into planting design to capture impervious surface runoff within micro-watersheds and recharge groundwater.
- Add signage to educate observers about the function of BMPs and GI for sustainable water use.
- Continue to promote re-use through irrigation.
- Elaborate on campus stormwater accounting and documentation to monitor changes in water capture and reuse - including the contributions of distributed, small-scale BMPs.
- Incorporate other sustainably designed water features that celebrate water as a limited resource in the LA region.
- Incorporate water capture elements such as large cisterns with signage. These could be used for irrigation.

PROPOSED AREAS OF INTEREST




that you are most excited about. Use RED dots
specific comments.
WALK AND BRUIN PLAZA
WESTWOOD PLAZA
Bruin Walk re-designed into three unique segments
ADA accessible hill area outside Drake Stadium with colorful blooms and view deck.
Central corridor integrated into Pauley Pavilion with outdoor study and event spaces.
Native planted Bruin Plaza with fun seating and integrated stormwater bioswale.
SUNSET BLVD AND YOUNG DR NORTH
DRY CREEK
D ELECTION WALK
Student Activities Center
Powell Library
LANDSCAPE ZONES
GRAND SAVANNAH
HILL DISTRICT
ALLUVIAL CORRIDOR
URBAN CANYON
Your feedback is welcome!
Please use sticky notes for comments.
UCLA
UCLA Health

4.0
Engagement

4.1 ENGAGEMENT OVERVIEW

The UCLA Landscape Framework Plan is the result of the input from various stakeholders. Design Workshop and the consultant team facilitated a series of meetings with the campus community, Ecology Task Force, advisory group and student groups. The team also met offsite with representatives from the Tongva tribe at the Tongva Springs to see firsthand how Traditional Ecological Knowledge is being implemented.

COMMUNITY MEETINGS

- Workshop 1: Online workshop using Mentimeter and Mural boards
- Workshop 2: In-person design charrette supplemented by online Mural boards
- Workshop 3: Online workshop using Mentimeter and in-person open house along Bruinwalk

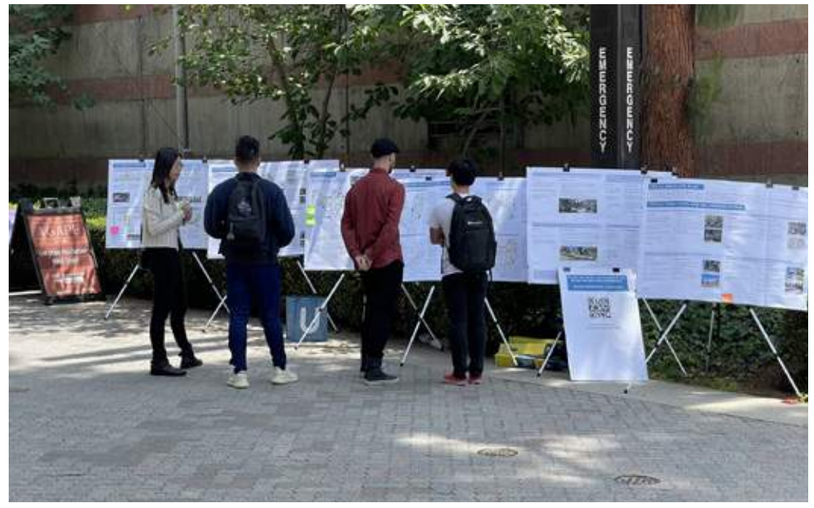
ADVISORY MEETINGS

- Landscape Ecology Focus Group
- Facilities Management
- Transportation
- Housing and Dining
- Events and Recreation
- Tongva Tribe

SUSTAINABILITY ACTION RESEARCH (SAR) STUDENT GROUPS

- Edible Landscapes
- Native Plants
- Underutilized Spaces

Workshop 2: Design Charrette Photo



Workshop 3: Open House

The following student projects were referenced when developing the Landscape Plan:

- Biodiversity Action Research Team Final Report, Spring 2015, Education for Sustainable Living Program
- Community Gardens Final Report, 2020 SAR
- Incorporating Edible Landscaping on UCLA's Campus, SAR 2021
- Green Buildings Team Final Report, SAR 2016
- Sustainable Lawn Management At UCLA, SAR 2020
- Native Landscaping Final Report, 2018 SAR
- Resilience Team Final Report, 2016 SAR
- Developing a Comprehensive Resilience Plan for UCLA, 2018 SAR
- Integrated Pest Management Final Report, 2017 SAR
- Development of the Nature Co-Lab: Sustainable Design for Mixed Use Purposes, SAR
- Sage Hill Final Research Report, 2016 SAR
- Biodiversity Restoration: Giving Sage Hill a Physical, Educational, and Digital Presence, 2017 SAR

WHAT SPECIFIC IMPROVEMENTS DO YOU WANT TO SEE FOR

CAMPUS QUADS, PLAZAS, AND COURT-YARDS?

hardscape improvement to be more consistent and cohesive

Bioswales, permeable surfaces (replacing current immpermeable surfaces.

More recycling containers in these areas

Even after years of work, people still get lost especially in medical sciences

shade, comfortable seating....diverse plantings

Technology capacity in the outdoor instruction areas--though that may be building issues?

Westwood edges around Garden are maintained and designed by the Garden in our strategic plan.

student gathering spaces

courtyards with more setting places

label tree names to create an arboretum like appearance.

Above comments were collected during engagement sessions using Mentimeter.

WHAT SPECIFIC IMPROVEMENTS DO YOU WANT TO SEE FOR

PEDESTRIAN CORRIDORS AND MULTI-MODAL CORRIDORS?

Facilities trucks use the pedestrian corridors, park wherever and some standards would be welcome

Same confirmation and clarification of designations - clearly follow the Bruin Walk path from Gayley Ave

recycling containers

pervious pavement

Signage would be helpful

Like the "take the stairs" sign, distance between destinations would be cool

For Pedestrian Corridors, I might identify if there any hazard trees in the area.

hydration stations, flex informational engagement spaces (tabling, etc), shade, permeable surfaces, bike/skateboard parking.

Above comments were collected during engagement sessions using Mentimeter.

WHAT SPECIFIC IMPROVEMENTS DO YOU WANT TO SEE FOR

SPORTS / RECREATION AND CONNECTIVE SPACES?

Edible plants in the planters esp.

multiuse of the small amount of rec space would be preferred. The artifical turf, is that area shared, I don't think so.

Perimeter to not be an Ivy screen but more welcoming

personal recreation areas - hammocks and slack lines

More recycling containers in trafficked areas

plants with low water usage

adjacent small "break out" spaces nearby with shade/tree canopy

Gathering places for student groups

Recreation includes Sycamore Park by Lot 17 and the tennis courts there.

hydration stations, bike parking, seating nooks, diverse native landscape (micro-habitats), edible trees and plants.

the transition areas are also opportunities for stopping, and resting

there isn't a place for pick up sports, the only "trail" is the Bruin Walk

Above comments were collected during engagement sessions using Mentimeter.

WHAT SPECIFIC IMPROVEMENTS DO YOU WANT TO SEE FOR

EDGE OPEN SPACES?

Buffer improvements should consider hard-packed dirt for runners, seperate lanes for Bikes?

More UCLA identifiers. Investment in nice retaining walls along Sunset. REmoval of unnecessary grass.

maybe working with westwood village to have some continuity for the approach to campus

Signage at gates could use Tongva names for Cardinal directions

For the buffer, native trees like Coast Live Oaks might be good for screening, shade, and native biodiversity in the future.

Maintain a timeless appearance.

the urban edge could be grander

Enrich wildlife corridor opportunity if possible

the sunset entries are really indicated by the street lights. a bit more UCLA branding would be nice

Above comments were collected during engagement sessions using Mentimeter.

WHAT SPECIFIC IMPROVEMENTS DO YOU WANT TO SEE FOR

RESTORATION / NATURAL SPACES?

Education places on traditional ecological knowledge

Hillsides along Gayley within constraints of fire safety and around SRLF

Dickson Court bridge

Oak grove at chancellor's residence -- understory species

Brush Management is key in these areas from a fire stewardship perspective. We are creating an SOP for campus with our Fire Marshal

There might be areas that are currently grass that could contain mini-native ecosystems (e.g. five native plants with signs) that could be used for education

Creation of interdisciplinary engagements

Along Sunset Blvd, the internal buffer edges around the Chancellors Residence. Along Hilgard

Above comments were collected during engagement sessions using Mentimeter.

5.0
Implementation

5.1 IMPLEMENTATION STRATEGIES

FOSTER UCLA LANDSCAPE CULTURAL CHANGE
BRANDING & IDENTITY

UCLA STAFF

GOALS, OBJECTIVES, AND RECOMMENDATIONS

- **LONG TERM DEVELOPMENT PLAN**
  OTHER PLANNING EFFORTS
- **REVIEW PROCESS**
- **OPERATIONS & MAINTENANCE**
  TOTAL ASSET MANAGEMENT
- **CURRICULUMS**
  RESEARCH PROJECTS

KEY DESIGN AREAS
SITE SPECIFIC IMPROVEMENTS

- **CAPITAL IMPROVEMENT PROJECT**
  - IN-HOUSE STAFF
  - OUTSIDE CONSULTANTS

STEP 1

DESIGN & PROGRAMMING

- PLACE TYPES
- PROGRAMMING
- DESIGN VISION FOR KEY DESIGN AREAS

STEP 2

CAMPUS PLANTING

- LANDSCAPE ZONE
- PLANT PALETTE
- TURF CONVERSION
- TREE RISK ASSESSMENT

STEP 3

BIODIVERSITY

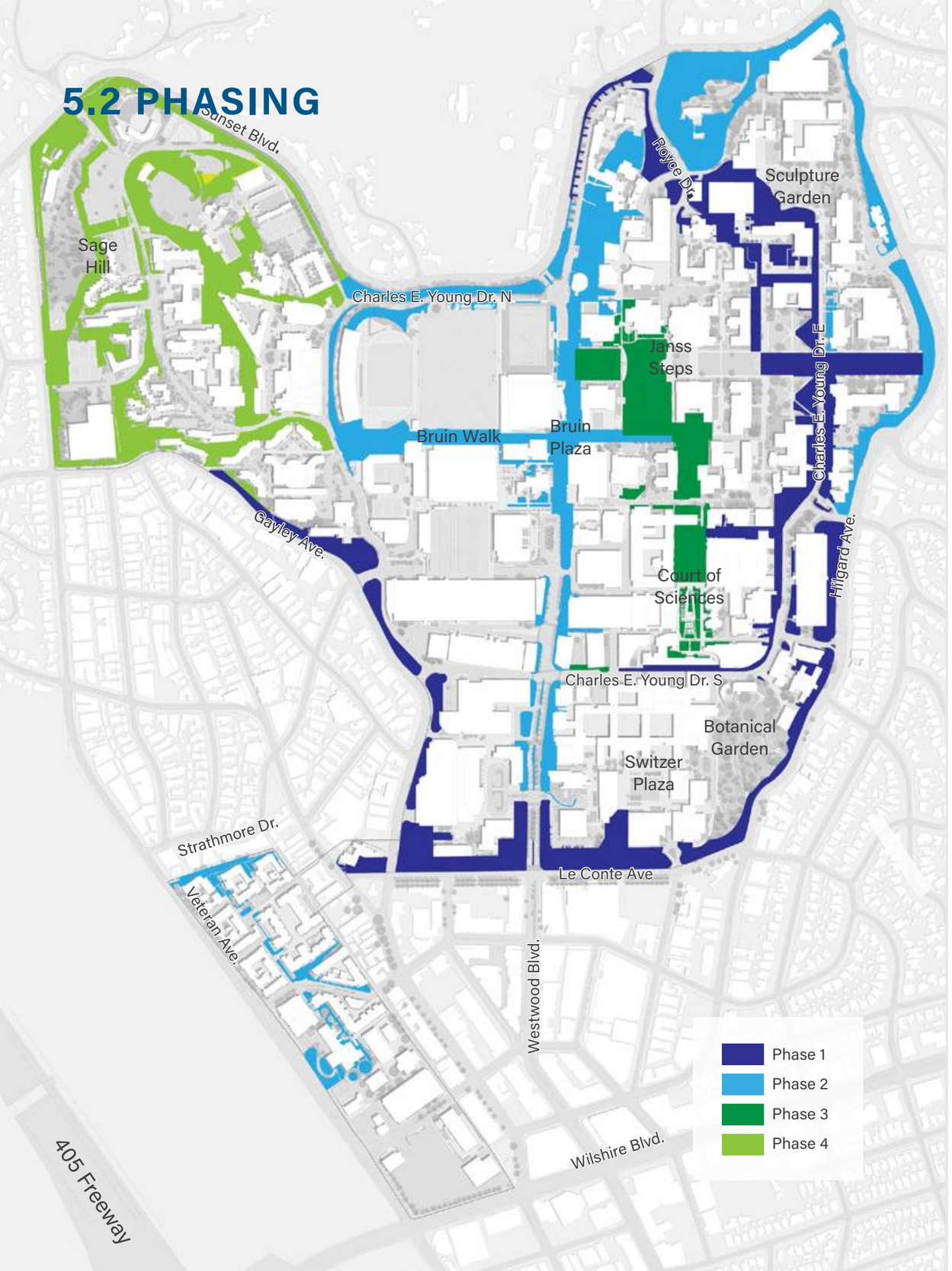
- HABITAT CORRIDOR
- HABITAT PATCH

UCLA FACULTY & STUDENTS

DESIGN AND CONSTRUCTION PROFESSIONS

SITE ELEMENTS
UCLA ARCHITECTURAL GUIDELINES

5.2 PHASING



PROPOSED CONCEPTUAL PHASING

- Phasing the UCLA Landscape starts with turf conversion and high risk tree removal and replanting.
- Once turf conversion and high risk trees are addressed it is recommended that UCLA implement a strategy of habitat linkages shown here. The goal is to link existing, high performing, large, contiguous landscape patches together. This strategy provides a visually connected landscape rather than a patchwork approach to landscape improvements.
- Phase 1 is focused on large turf conversation areas, improvements to the campus boundary along the southwest, south, and southeast edges of campus and providing habitat linkage between Bel Air Country Club and the Botanical Garden.
- Phase 2 strengthens the north/south linkages as well as improvements to Bruin Walk, Bruin Plaza, Westwood Plaza, and the northern and northeastern campus boundary.
- Phase 3 is focused on the linkages between Janss Steps and improvements to Wilson Plaza through to Court of Sciences.
- Phase 4 strengthens the landscape improvements to the Hill and the remaining campus boundary.
- Each of these four phases will be further broken down into sub-phases according to budgets. Over time this phasing plan will need to be revised.

IMMEDIATE ACTIONS	CHAMPION
EDUCATE UCLA STAFF ON THE LANDSCAPE PLAN	**SUSTAINABILITY** FACILITIES MANAGEMENT CAPITAL PROGRAMS
REVIEW AND MODIFY DESIGN REVIEW PROCESS	**CAPITAL PROGRAMS** FACILITIES MANAGEMENT
REVIEW AND MODIFY OPERATIONS AND MAINTENANCE BEST PRACTICES	**FACILITIES MANAGEMENT** HOUSING & HOSPITALITY
UNDERTAKE A CONDITION ASSESSMENT REPORT OF LANDSCAPE ELEMENTS, GOREFERENCE AND REFINE TOTAL ASSET MANAGEMENT ESTIMATE SEATING LIGHTING SIGNAGE TREE INVENTORY IRRIGATION	**FACILITIES MANAGEMENT** LANDSCAPE ARCHITECTURE EXTENSION PROGRAM CAPITAL PROGRAMS SUSTAINABILITY
TURF CONVERSION AND PLANTING PROJECTS ENTRY FOUNTAIN / ENTRY DESIGN	**FACILITIES MANAGEMENT** SUSTAINABILITY OFFICE CAPITAL PROGRAMS
SITE IMPROVEMENT PROJECTS COURT OF SCIENCE NORTH DRY CREEK	**CAPITAL PROGRAMS** **FACILITIES MANAGEMENT** FACULTY AND STUDENTS DEPARTMENTS

FUTURE PROJECTS

PHASE 1 (1 - 5 YEARS)

PLANNING PROJECTS

Campus-wide Tree Inventory

Campus-wide Urban Forest Management Plan

Campus-wide Accessibility and Pedestrian and Bicyclists Crossing Study

Campus-wide Stormwater/Green Infrastructure Plan

Sustainable Maintenance Practice Program

SITE IMPROVEMENT PROJECTS

Le Conte Entrance

Dickson Court Landscape

Underutilized Turf Conversion Part 1

Study Spaces

Edge and Secondary Entrance Improvement Part 1

Edible Gardens Part 1

Traditional Ecological Knowledge Part 1

Habitat Linkages Part 1

Internal Streets Part 1

PHASE 2 (5 - 10 YEARS)

PLANNING PROJECTS

Campus-wide Lighting Plan

Campus-wide Signage and Wayfinding Plan

Landscape Total Asset Management Program

Trail Network Study

Dry Creek Concept Feasibility Study

SITE IMPROVEMENT PROJECTS

Westwood Plaza Corridor

Dry Creek

Bruinwalk and Bruin Plaza

Southwest Housing Area Improvement

Underutilized Turf Conversion Part 2

Edge and Secondary Entrance Improvement Part 2

Edible Gardens Part 2

Traditional Ecological Knowledge Part 2

Habitat Linkages Part 2

Stormwater/Green Infrastructure Part 1

Internal Streets Part 2

City Streets Part 1

PHASE 3 (10 - 20 YEARS)

PLANNING PROJECTS

Campus-wide Cultural Landscape Assessment

Reclaimed Wastewater in Irrigation Program

Self-guided Tree Walk Program

SITE IMPROVEMENT PROJECTS

Dickson Court Landscape

Court of Science North

Powell Library South Plaza

Janss Steps

Wilson Plaza

Underutilized Turf Conversion Part 3

Habitat Linkages Part 3

Stormwater/Green Infrastructure Part 2

Filters and grates on all entrances to all regional stormwater infrastructure Installation

Internal Streets Part 3

City Streets Part 2

PHASE 4 (20 - 30 YEARS)

SITE IMPROVEMENT PROJECTS

Southwest Housing Area Improvement

Sunset Recreation Area Improvement

Edge and Secondary Entrance Improvement Part 3

Habitat Linkages Part 4

Stormwater/Green Infrastructure Part 3

On-campus Green Compost Site Design and Construction

City Streets Part 3

PRIORITIES

TURF CONVERSION

HIGH RISK TREES

BIODIVERSITY / HABITAT LINKAGES

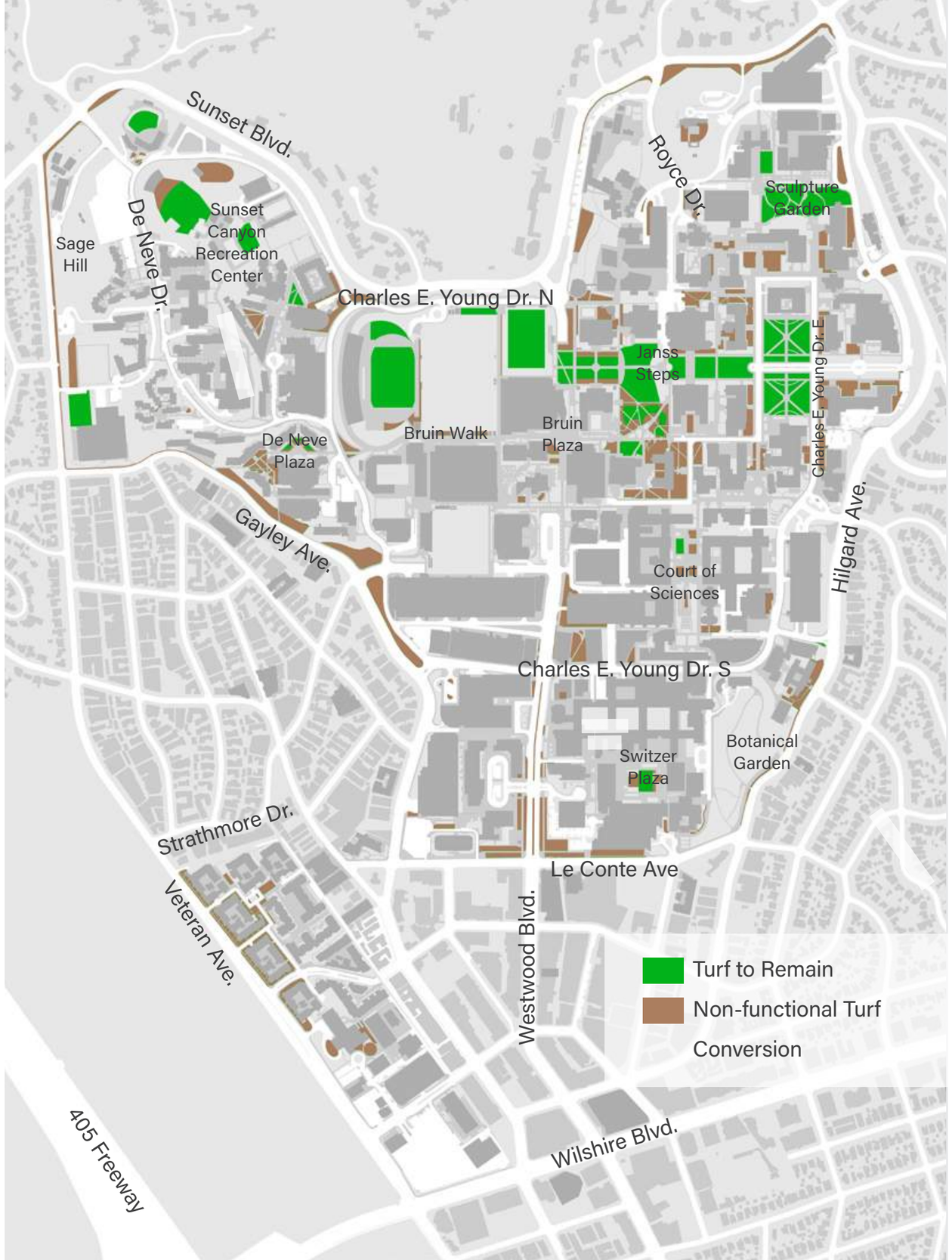
PLACES WITH HIGHEST USE AND GREATEST VISIBILITY

TURF CONVERSION

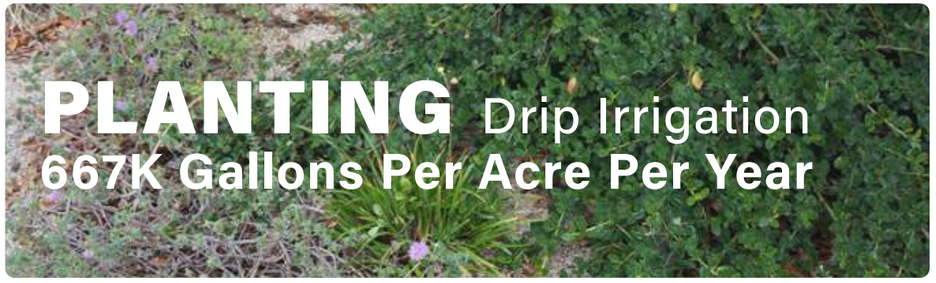
California is usually in a drought or at risk of one. Water for turf must be used sparingly. Turf areas that are not used for recreation and events and turf areas that serve only an aesthetic value are the priority areas for early turf conversion. Turf conversion is the best place to start implementing the UCLA Landscape Plan. Several turf areas supporting community spaces, park like spaces, and events will remain.

The Plan does not recommend using artificial turf for aesthetic spaces because of the following common issues:

- Surface Heat
- Drainage Issues
- Plastic Materials
- Cost of Installation



TURF CONVERSION WATER USE REDUCTION



EXISTING CONDITION

TURF IRRIGATION

47.6 M GALLONS PER YEAR

35 Acres of Turf

PROPOSED CONDITION

TURF IRRIGATION

15.0 M GALLONS PER YEAR

11 Acres of Turf to Remain

DRIP IRRIGATION

16.0 M GALLONS PER YEAR

24 Acres Turf Converted to Drought Tolerant Planting

TOTAL EXISTING WATER USE FOR TURF IRRIGATION

47.6 M GALLONS PER YEAR

TOTAL PROPOSED WATER USE AFTER TURF CONVERSION

31.0 M GALLONS PER YEAR

TOTAL WATER USE REDUCTION AFTER TURF CONVERSION

16.6 M GALLONS PER YEAR

HIGH WATER USE PLANTS TO DROUGHT TOLERANT PLANTS WATER USE REDUCTION

EXISTING CONDITION

ASSUMING 60% OF EXISTING PLANTING BEDS ARE USING SPRAY IRRIGATION

51.4 M GALLONS PER YEAR
53 Acres

PROPOSED CONDITION

KEEP 5% OF PLANTING BEDS AS SPRAY IRRIGATION

3.9 M GALLONS PER YEAR
4 Acres of Planting - Spray Irrigation

CONVERT THE 55% TO DRIP IRRIGATION

32.7 M GALLONS PER YEAR
49 Acres of Planting - Drip Irrigation

TOTAL EXISTING WATER USE FOR TURF IRRIGATION

51.4 M GALLONS PER YEAR

TOTAL PROPOSED WATER USE AFTER HIGH WATER USE PLANTS CONVERSION

36.6 M GALLONS PER YEAR

TOTAL WATER USE REDUCTION AFTER HIGH WATER USE PLANTS CONVERSION

14.8 M GALLONS PER YEAR

TURF CONVERSION WATER USE REDUCTION

16.6 M GALLONS PER YEAR

+

HIGH WATER USE PLANTS TO DROUGHT TOLERANT PLANTS WATER USE REDUCTION

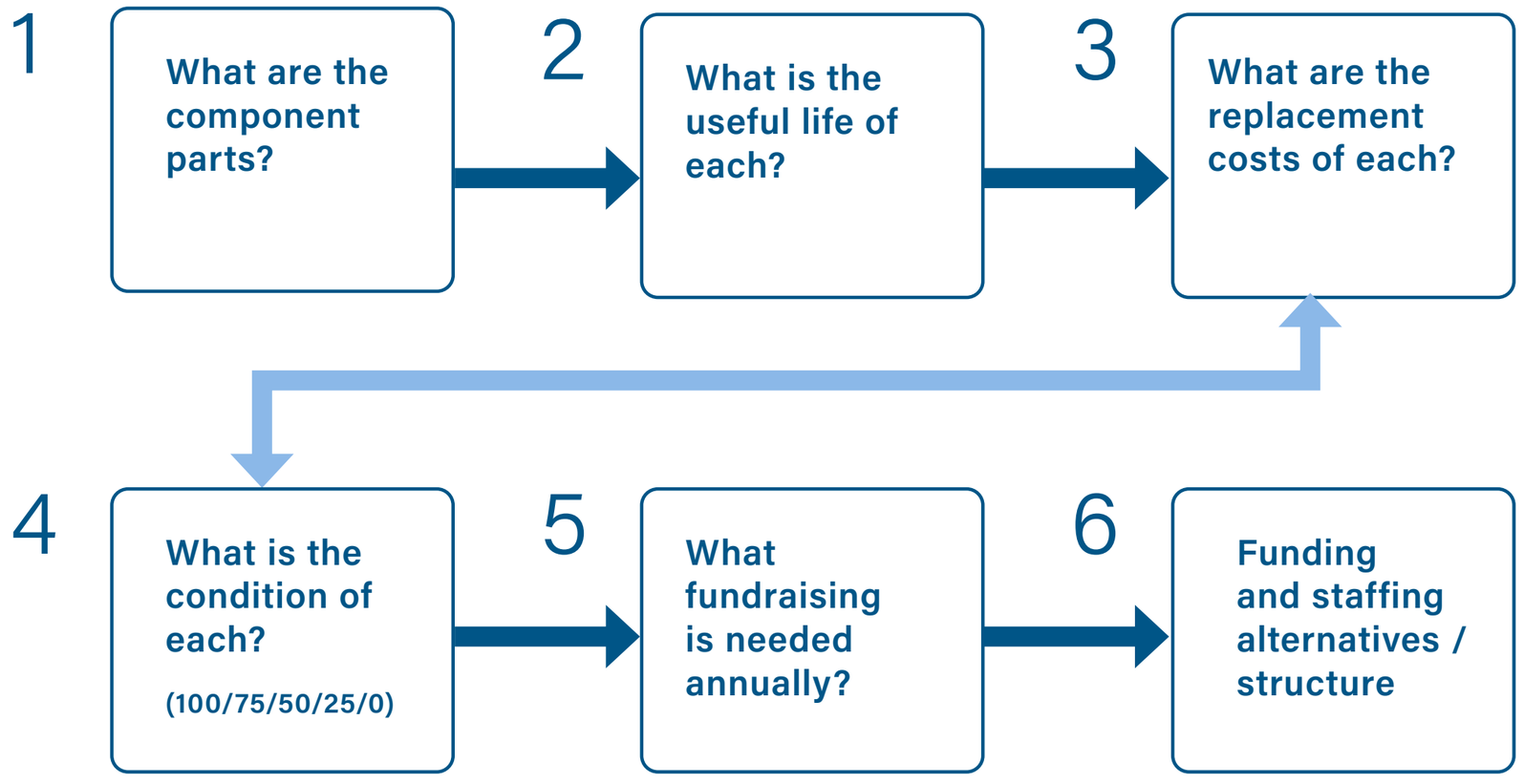
14.8 M GALLONS PER YEAR

↓

TOTAL IRRIGATION WATER USE REDUCTION

31.4M GALLONS PER YEAR

5.3 TOTAL ASSET MANAGEMENT



LANDSCAPE MAINTENANCE AND REPLACEMENT COSTS

EXPENDITURES

What is your true cost?

Capital Projects + Management / Maintenance Staffing + Deferred Maintenance (Depreciation)

POTENTIAL REVENUE

Where do you find the money?

General Revenue Fund + Student Fees + Earned Income + Philanthropy

LESS

Are there any offsets/savings?

Current Expenditures + Fee/Tax Offsets

NEEDED

What is the shortfall?

Additional Funding Needed

DETERMINE USEFUL LIFE

WHAT IS THE USEFUL LIFE OF THE CAMPUS LANDSCAPE?

50 Years?

75 Years?

100 Years?

More?

Less?

WHAT IS THE USEFUL LIFE OF THE CAMPUS LANDSCAPE?

100% new aesthetically and functionally

75% Modest loss of aesthetics and function

50% Improvements have reached a tipping point where irreversible decline will occur without reinvestment.

25% Marginal remaining aesthetic and functional value

0% functionally obsolete and unsafe

LANDSCAPE REPLACEMENT COST ESTIMATE

Campus Landscape Replacement Value

	Percentage of Total Land Area	Land Area (Square Feet)	Total Units***	Cost/Unit	Cost/SF*	Total Asset Costs**
Streets and Parking Surfaces	14%	2,526,480			$ 20	$ 50,529,600
Synthetic Turf	3%	479,160			$ 25	$ 11,979,000
Lawn	8%	1,524,600			$ 7	$ 10,672,200
Planting	21%	3,833,280			$ 50	$ 191,664,000
Hardscape	24%	4,399,560			$ 125	$ 549,945,000
Trees			30,000	$ 1,250		$ 37,500,000
Total Value of Landscape (not including underground utilities and buildings)	70%	12,763,080	30,000		$ 67	$ 852,289,800
Building Coverage	30%	5,488,560			n/a	

Annual Cost at Useful Life of 25 Year Depreciation	$ 34,091,592
Annual Cost at Useful Life of 50 Year Depreciation	$ 17,045,796
Annual Cost of Useful Life of 75 Year Depreciation	$ 11,363,864

Student Population	48,000
Landscape SF/Student	266
Annual Cost Per Student at Useful Life of 25 Years	$710
Annual Cost Per Student at Useful Life of 50 Years	$355
Annual Cost Per Student at Useful Life of 75 Years	$237

Notes:
* Cost / SF and Cost / Unit are based on comparisions from other projects and will need to be updated on a continious basis.
** Total asset costs are macro estimates based on estimated land areas.
*** A detailed tree survey will be required to verify this estimate of total trees

5.4 OPERATIONS AND MAINTENANCE

The purpose is to provide guidelines for achieving this goal throughout the living landscapes. By implementing the tenets of sustainable landscaping and through thoughtful stewardship, the maintenance staff will ensure that the UCLA campus is a dynamic, ecologically diverse, and healthy environment for all campus life.

Critical to the successful implementation of the guidelines are:

Resources to hire knowledgeable, skilled maintenance staff and to provide ongoing training

Resources for energy-efficient, low-polluting equipment and tools

Resources for plant replacements and essential gardening products

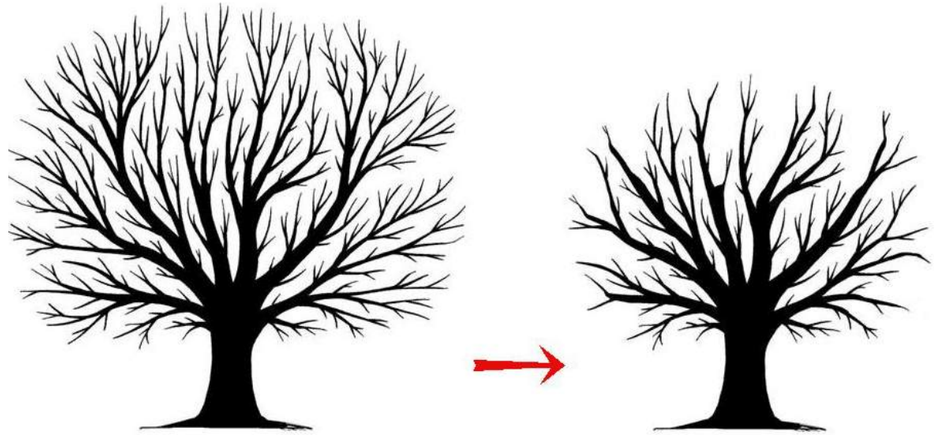
Collaboration between landscape designers and maintenance staff

Ecologically thoughtful design

MAINTENANCE RECOMMENDATIONS

- Convert non-functioning, narrow lawn panels into dynamic, diverse, climate-appropriate vegetation.
- Thin overplanted groves of trees by selectively removing weakest individuals. This will improve overall health of remaining specimens. Add shrubs to the understory to significantly increase habitat value, diversity, and visual interest.
- Create interpretive sign program for the trees on campus. Follow campus signage standards.
- Create a long-range urban forest canopy plan to ensure structural and botanical diversity.
- Renovate native plant landscapes that have failed - revise palette to ensure compatibility and provide more informed care. These changes will enhance aesthetic impact.
- Identify areas on campus where layers of historic landscape history are largely intact and renovate as needed while simultaneously implementing sustainable landscape practices. Gradually replace problematic [e.g., invasive, pest or disease-prone] species with more climate-appropriate taxa.
- Develop guidelines for sustainable landscape maintenance practices that encompass planting, weeding, watering, pruning, soil health, pest management, green waste management, etc.
- Avoid topping trees on the UCLA campus. Topping can lead to unacceptable risk.
- The area on the tree where the roots meet the trunk is known as the root crown. The situation that needs to be avoided is a “buried root crown”, the raising of the grade or the piling up of soil and debris in the root crown area. This can lead to decay in the trunk and prevent water and oxygen from reaching the roots.
- Establish a partnership with Theodore Payne Foundation whereby UCLA’s landscape teams receive training on native plant care.
- Move away from formal, clipped hedges where possible [without compromising cultural landscape history] toward informal, naturalistic hedges or mixed borders. This will reduce labor costs as well as green waste.
- Dramatically increase landscape sustainability by identifying a location on campus for green waste management to process and stockpile mulch from chipped trees and to generate compost, both of which for eventual use in campus landscapes. If space allows, recycle and compost food waste from campus eateries as well.
- Leave the leaves on the ground. Leaves form a natural mulch that helps suppress weeds and fertilizes the soil as it breaks down naturally. Excessive landscaping grooming is not good for wildlife, soil and carbon footprint.
- Establish policy to salvage wood when trees are removed or heavily pruned [barring insect or disease concerns], either to be chipped and recycled as mulch or repurposed for benches, sculpture, hügelkultur, indoor furniture, etc.
- Remove and replace invasive species.
- Ensure that the plan takes into consideration the botanic garden’s master plan and identifies opportunities for “cross pollination”.
- The sweeping lawn panels in the historic core are currently roped off. If access is prohibited for long periods of time, stop mowing and allow the grass to grow. A meadow-like greensward will be beautiful and will consume less resources. Mowing can resume when access is needed.

Appropriate Tree-Crown Reduction



MAINTENANCE

TREE CARE

Trees represent a significant investment and contribute in myriad ways to the overall character and ecology of the campus landscape. Ideally, all trees are surveyed continuously throughout the year to assess biotic, abiotic, or structural problems. Seasonal examination of root crowns, especially for trees on slopes, should be conducted to remove any soil or mulch that has accumulated in this zone, which often creates excessive moisture and poor gas exchange that may result in crown or root rot.

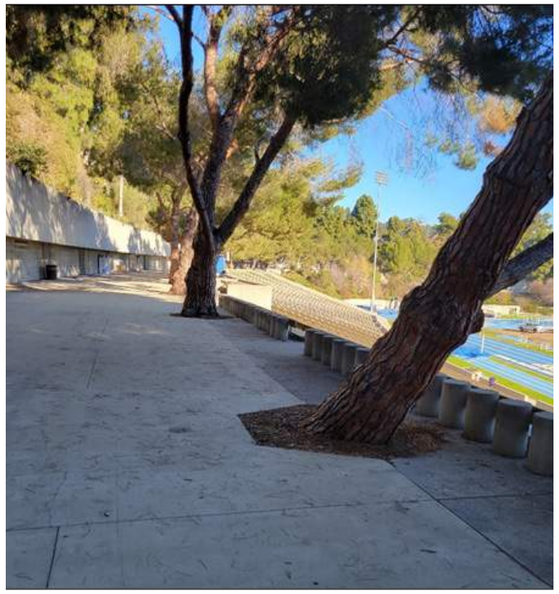
Trees rarely require annual pruning; if this becomes necessary, it often means that the wrong species was selected for the site. Rather, tree pruning should be performed only on an as-needed basis. Reasons to prune include: preserve view corridors; improve tree structure; promote healthy growth; increase light penetration for understory plants; clearance for vehicles, pedestrians, lighting, or signage; aesthetics; or to reduce or eliminate safety hazards. Note that dead branches that are neither hazardous nor aesthetically detrimental present potentially high habitat value. Consider retaining them rather than removal.

Trees should never be “topped” nor excessively pruned. No more than 25% of the living tissue in the canopy should be removed at any one time except for safety reasons. All pruning should adhere to the International Society of Arboriculture Tree Pruning Guidelines and American National Standards Institute (ANSI) A300 standards. If possible, retain wood chippings and salvageable branches or trunks for reuse on campus.

When to prune trees depends upon the species and the type of pruning. In all cases, avoid pruning from February through July, when birds are building and occupying their nests. Trees should be inspected for the presence of nesting wildlife prior to any pruning. Emergency pruning may be necessary whenever safety risks are observed, but such pruning should still comply with the above mentioned standards whenever possible.

Blue Gum Eucalyptus Grove Intramural Field

Italian Stone Pines Drake Stadium



TREE RECOMMENDATIONS

- Go beyond the Tree Risk Assessment and conduct a campus-wide tree inventory identifying all trees on campus.
- Create a long-range urban forest canopy plan to ensure structural and botanical diversity based on the planting zones described earlier in this plan.
- Do not plant low water shrubs and ground covers next to high water trees. Ensure that trees and surrounding shrubs are in the same irrigation zones. While the goal of this plan is to provide all low water plants for the campus in the short term, the priority should be on ensuring the preservation of trees regardless of their water needs.
- Increase the growing spaces for trees by selectively removing overcrowded trees. Trees should be spaced to allow for mature canopy size without the need for frequent tree pruning.
- Establish a program for recording and tracking pruning and maintenance for every UCLA tree.
- Incrementally replace Blue Gum Eucalyptus Grove with trees specified in the Plant Palette.
- Expand the growing space for the Drake Stadium Italian Stone Pines by at least two feet on all sides and replace the existing concrete within the driplines with pervious pavers.
- Expand the growing space for the Coral Trees north of the Sculpture Garden and replace the existing concrete within the driplines with pervious pavers.
- As turf conversion occurs ensure that UCLA’s trees are preserved by converting the irrigation from spray to drip irrigation. Drip irrigation should be located at least 4′ from tree trunk and ideally at the edges of the tree dripline.

TURF CARE

Some turf areas on campus fulfill essential functions. Sustainably manage them using the following methods.

- Use properly programmed smart controllers to ensure that irrigation systems are delivering water at maximum efficiency. It is all too common for lawns to be overwatered.
- Water in early morning.
- Adjust spray heads to avoid overspray on sidewalks or other hard surfaces.
- Ensure that water is penetrating at least three or four inches deep so that the roots are adequately hydrated.
- If runoff is a problem, use cycle-soak scheduling.
- Avoid excessive mowing. Longer leaf blades promote greater photosynthesis, which strengthens the roots and helps the turf withstand drought, pests, and diseases.
- Set the mowing height to the maximum recommended for each turf variety.
- Use electric mowers to conserve energy and reduce air and noise pollution. Where feasible, use mulching mowers and let the grass clippings decompose in place, thereby recycling valuable nutrients.
- Remove thatch layers that exceed ½" as this impedes water and nutrient penetration. Broadcast lawn seed if needed to fill in bare spots, topdress with a thin layer of compost, then water. Do not overfertilize and only use organic products.
- For compacted areas, aerate with either manual or electric aerators. Fill the resulting holes with compost. For high-traffic areas, consider aerating on an annual or semi-annual basis in spring and/or fall, when temperatures are generally cooler.
- Fertilize only with organic products and at the proper dose and frequency recommended for each turf variety. An annual topdress of 1/8" to 1/4" compost may be sufficient for some turf varieties.
- A weed-free turf is unrealistic on a large scale, however eliminating noxious weeds before they take hold is prudent since weeds compete with the turf for nutrients, moisture, and light. Some "weeds", such as clovers, provide habitat for beneficial insects and simultaneously fix nitrogen, which will reduce fertilizer demand. Clovers and other flowering plants can impart a more natural, meadow-like look that may be desirable in some areas.
- Thoroughly clean all equipment after use in each turf area to avoid spreading pathogens, weeds, or aggressive turf varieties from one site to another.

When a turf area needs to be renovated, it may be an opportunity to replace an existing, unsatisfactory variety with one that has reduced watering, mowing, and fertility requirements. Breeding programs at universities and nurseries continue to develop and release new varieties that have lower ecological footprints.

MAINTENANCE

SUSTAINABLE LANDSCAPING

There are many definitions for sustainable landscaping. In sum, a sustainably designed and tended landscape consumes minimal resources and creates minimal waste, thereby conserving energy, reducing air, water, and soil pollution, and achieves ecological balance. The following practices characterize this philosophy:

- Efficient use of water
- Integrated Pest Management (IPM)
- Proper pruning
- Use of environmentally safe products (certified by Organic Materials Review Institute, OMRI)
- Use of manual and electric equipment
- Use of mulch for weed control, water conservation, moderating soil temperature, etc.
- Use of compost to foster healthy plant growth and biologically dynamic soil food webs
- Green waste recycling

["Good practice of landscape architecture maintains that sustainability should be an integral part of the design process. The goals associated with creating a sustainable built environment include avoiding or otherwise minimizing the impacts on resources; conserving ecosystems; using renewable resources; avoiding waste where possible by reuse, recycling, and recovery; supporting the general realization of human potential and happiness; and creating healthy built environments and landscapes for present and future generations."

Dan Sullivan, ASLA, Whole Building Design Journal, June 2, 2009]

WATER MANAGEMENT

One of the most challenging aspects in tending living landscapes is watering. There is no one-size-fits-all method of irrigation. Companies continue to release new products that aim to improve overall efficiency; the maintenance staff will benefit by staying abreast of innovative tools and techniques.

There are many antiquated irrigation systems on campus and upgrading them as funds allow will significantly reduce water use, as will installation of new water-capture elements, transitioning away from impermeable surfaces when feasible, and improving soil health.

Weather-based smart controllers are the preferred technology for managing irrigation systems. To maximize efficiency, each zone must be accurately programmed to reflect plant type, soil type, sun exposure, slope, maturity of plants (newly installed or established), and precipitation rate for heads or emitters in that zone. Staff should use soil probes periodically to check moisture levels in the root zone rather than rely solely on automated systems.

Although some conventional turf areas and other plantings require consistent irrigation year-round, future plantings on campus will heavily lean toward plants that thrive with minimal water during the dry summer months once established. These plants are native to regions possessing a Mediterranean climate, which is characterized by cool, moist winters and warm, dry summers. Even plants adapted to dry summers, however, will likely need supplemental irrigation during the establishment phase (a plant is generally considered to be established once it has tripled in size after installation). Planting date, seasonal rainfall, and initial plant size influence the length of this establishment period. When prolonged dry spells occur during the rainy season, supplemental irrigation will be necessary during these periods to insure successful establishment as well as sustained healthy growth in subsequent years. Trying to make up for winter droughts during our normally dry summers is neither advisable nor appropriate as growth of Mediterranean-climate plants naturally slows or stops in summer, resuming with the onset of rain in autumn.

The importance of regularly monitoring irrigation systems for any landscape cannot be overstated. These systems must be routinely inspected to identify broken, misdirected, or clogged spray heads or drip lines. Heads may become blocked over time as plants grow, requiring either judicious pruning, entire plant removal, or adjustments to the heads.

Once new plants are established, watering schedules will need to be adjusted accordingly to avoid overwatering. In addition, it is wise to expect and plan for the fact that some plants will need to be replaced due to natural senescence, physical damage, or unforeseen pest or disease problems. When new plants are added to a mature planting, they will likely require hand watering during establishment so that older plants are not overwatered. Periodic monitoring of plant health and soil moisture levels is necessary over the life of any landscape.

SOIL MANAGEMENT

Soils are the foundation of all gardens. Nurturing the living organisms that comprise the soil food web will foster healthy plant growth. To be effective, tailor fertilization and mulch programs to each distinct plant composition on campus rather than a one-size-fits-all approach.

For new projects and areas under renovation, it is advisable to submit soil samples to a reputable lab prior to installing new plants. This will identify and address any problems at the outset, such as extreme pH levels, nutrient deficiencies or toxicities, insufficient organic content, compaction issues, etc. Conduct a biological soil test as well to assess the status of the soil food web. If amendments are indicated, use organic products During construction and renovation of landscapes, it is required to reserve and protect topsoil.

Many California native and other mediterranean-climate plants have evolved in soils that are low in nutrients and where little to no organic matter accumulates on the soil surface, e.g. plants from chaparral, coastal scrub, and desert plant communities. Inorganic mulch or a thin layer of organic mulch is suitable for these plantings. In contrast, plants that occur in woodland and forest communities where leaf litter accumulates and slowly decomposes, benefit from a more generous layer of organic mulch. Plants that require regular irrigation and high fertility levels also benefit from a layer of organic mulch.

Mulch is used to suppress weeds, retain soil moisture and thereby reduce water demand, cover drip irrigation lines, curb erosion, reduce dust levels, and moderate temperature extremes in the soil. As it breaks down, organic mulches add nutrients and help improve soil structure. The frequency of application will depend upon the type of mulch used and the irrigation schedule. As plants grow, they shed their older leaves and may eventually cover the ground, creating a self-sustaining layer of mulch. As a result, supplemental mulch may no longer be necessary.

Whether organic or inorganic, all mulch should be clean and free from disease pathogens, pests, and weeds. It should be evenly spread and generally two to three inches deep, taking care to avoid mulch buildup around the crowns of woody plants or smothering sensitive species when applied. In areas where wildflowers are desirable, avoid mulch in order to maximize seed germination. Bare soil is also desirable when trying to provide habitat for ground-nesting bees, wasps, and other insects.

If signs of nutrient deficiency appear, determine the type of deficiency before applying any fertilizer. In general, a top dressing of high-quality compost or slow-release organic fertilizer may be appropriate, but only on an as-needed basis.

GREEN WASTE MANAGEMENT

UCLA currently does not have a dedicated space on campus to recycle green waste. Identifying a site for this would reduce the carbon footprint to collect and haul this waste offsite and import processed mulch or compost. If devoting space for compost production is not feasible, space for stockpiling wood chips generated from campus trimmings is worth considering in order to efficiently reuse this free material on campus. The goal is to reduce the amount of waste that leaves the campus by recycling as much of it as possible. Woody material that is free of pests and diseases can be chipped and used as mulch in areas where a uniform, commercial-grade mulch is not essential. Purchasing the latter can then be reserved for more highly visible areas.

Assuming that space for large-scale composting is unavailable, a modest onsite composting program may be practical. Students have expressed a strong desire for more edible plants on campus and they may be very willing to participate in managing a compost operation, especially if it is located near student housing.

Alternatively, the university should explore the feasibility of developing a comprehensive green waste recycling program with Athens, their current waste management company, to take all food, landscape waste and process it into organic compost for use on campus.

MAINTENANCE

PEST MANAGEMENT

Plants and animals have evolved complex relationships and land managers need to understand the relationships for the plants under their care if they want to be responsible stewards. Integrated pest management - IPM - is a time-honored method that acknowledges these co-dependencies. Well-designed landscapes will ideally prevent or at least minimize the likelihood of incurring pest problems. It is anticipated that thoughtful design, combined with increased native plant diversity on campus and the beneficial wildlife that they attract and support, will culminate in ecological balance among the plantings. Low levels of infestations are accepted with the understanding that doing so helps maintain this balance between natural predators (e.g. birds, beneficial insects, lizards) and pests. There are numerous publications that explain IPM programs in detail; see citations below.

PRUNING

Thoughtful planting design will minimize pruning demand over the life of a landscape. This means that designers take into account a plant's natural character and genetic destiny as they create planting compositions. In other words, plants will be given sufficient space to attain their mature size without the need for constant pruning. Exceptions include plants used for clipped hedges, espalier, topiary, vines trained on supports, etc. Occasional pruning may be desirable to improve plant health, promote flowering or fruiting, for rejuvenation, or for aesthetics. Horticultural knowledge of individual plant needs combined with design intent will inform these decisions.

WEED MANAGEMENT

Weeds are an inevitable part of garden care. As with IPM, the goal is to have a multi-pronged approach that uses conventional herbicides as a last resort. Prioritizing weed control will help to reduce water usage and pest infestations as well as enhance the overall aesthetics of the campus landscape. By tackling weeds that are in flower before their seeds have a chance to ripen, preventing the spread of rhizomatous species, and working from the outside in – combatting new infestations before they have a chance to gain a foothold – weed management will be far less onerous.

PREVENTING

Preventing weeds from becoming established in the first place is the most cost-effective strategy. This requires eliminating weeds from beds under renovation before installing new plants, ensuring that purchased container-grown plants are weed-free, and cleaning all equipment used in bed preparation and subsequent care to avoid introducing weeds from other parts of campus. Physical barriers can prevent aggressive ornamental plants from spreading outside of their designated areas.

PROTECTING

Protecting planted areas from weed encroachment can be accomplished by maintaining a consistent, continuous layer of mulch; installing physical barriers; or removing colonizing weeds by pulling, hoeing, flaming, or organic herbicides (e.g. horticultural vinegar, citric acid, corn gluten meal). Timing and technique should match the target weed.

ERADICATION

Eradication applies to areas that are already weed-infested. Hand pulling can be successful, albeit labor- intensive. Sheet mulching initially requires substantial time and materials but is effective for particularly pernicious weeds (e.g. bermudagrass) when trying to avoid using herbicides. Solarization may be effective on a small scale in areas that receive full sun but it should not be used where tree roots are present. It also may require follow-up hand weeding of deeply rooted weeds that often reappear after the plastic sheeting is removed.

OTHER GENERAL RECOMMENDATIONS

- Replace problematic (e.g., invasive, pest or disease-prone) species with more climate-appropriate taxa.
- Move away from formal, clipped hedges where possible (without compromising historical landscapes) toward informal, naturalistic hedges, or mixed borders. This will reduce labor costs as well as green waste.
- Establish a policy to salvage wood when trees are removed or heavily pruned (barring insect or disease infestations), either to be chipped and recycled as mulch or repurposed for benches, sculpture, hügelkultur, indoor furniture, etc.
- When lawn panels are roped off to rejuvenate damaged turf, stop or significantly decrease mowing. The resulting meadow-like greensward will consume less resources and likely provide greater habitat value. Regular mowing can resume when the turf has recovered and access is reopened.
- Consider designating some low-traffic turf areas as “lazy lawns”, allowing the grass to become more meadow-like. Maintain mowed pathways through these areas to provide comfortable access, changing the route with each mowing to minimize compaction.
- Thin overplanted groves of trees by selectively removing weakest individuals. This will improve overall health of remaining specimens. Add shrubs to the understory to significantly increase habitat value, diversity, and visual interest.

References:

Sustainable Landscaping in California, University of California Division of Agriculture and Natural Resources, ANR Publication #8504, March 2014.

American National Standard for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management - Standard Practices (Pruning), 2017.

Best Management Practices – Pruning, 3rd Edition, 2019, by Lilly, Gilman, and Smiley.

IRRIGATION

OBSERVATIONS

- The UCLA Campus in many ways serves as a model of institutional water conservation practice implementation. Many of the initiatives recommended to large water consumers have been implemented throughout the campus. These include:
- Replacement of existing irrigation controllers with smart, weather-enabled controllers accessible via cell phone for easy remote operation by staff
- Required specification and installation of a range of water saving equipment such as:
  - » Pressure regulated sprinkler heads
  - » Master valves installed at water supply connections
  - » Smart controller upgrades
- Required implementation of water conservation system design approaches
  - » Point source drip irrigation installed in planting beds
  - » Targeted turf grass removal to transition to lower water use area types such as study areas, planting beds, and bioswales
- Exploration of alternative water source development through rainwater harvesting or building water source harvesting
- The UCLA maintenance models an admirable commitment to on-going irrigation system maintenance to the extent possible focusing on key water saving practices such as:
  - » Monthly irrigation system checks
  - » Proactive maintenance and water conservation
- Currently, the university is unable to track actual irrigation water use for the vast majority, if not all, of the campus. Current irrigation water supply appears to be largely drawn from a series of building, potable water systems and many systems are interconnected at the main and sub main levels.
- Rainwater harvesting tanks are rarely used since rainfall in Los Angeles is scarce.
- Sand and clay are reportedly the primary constituents of on-site soil.
- Soil nutrient levels are low which negatively impacts attempts to grow healthy plant material while reducing supplementary water via irrigation.
- Synthetic fertilizers, which the University would like to move beyond in favor of organic/non-toxic practices, further inhibit soil health & increase water requirements to maintain ideal plant health and performance.

OBJECTIVES

- Increase efficiency and performance of campus irrigation system
- Reduce water needs to meet sustainability goals
- Improve soil health

IRRIGATION

IRRIGATION RECOMMENDATIONS

Metric Based Water Use Management

- This allows for significant water supply redundancy.
- Research from Hines indicates that many large institutional clients can save upwards of 25% of lost water annually through implementation of this type of system software.
- As water becomes more expensive, the University will be compelled to monitor specific irrigation water use and have the tools in place to track, save, and conserve while maintaining vital, healthy plants.
- The downside to this system approach is that it becomes very complicated and expensive to flow monitor irrigation system water use and/or to use time and water saving software intelligence to:

  - » Monitor, measure, and report water use as compared to a site or campus level baseline of performance.
  - » Balancing budgets, plant health, and sites maintenance becomes very difficult to measure.
  - » Automatically search for, identify, and alert
  - » Maintenance to areas of water loss in the system
  - » Automatically isolate potions of a system which maybe leaking until a report can be made.

- Targeted increases in organic materials in the soil aid in water retention, soil biome development and diversity, and nutrient enhancement

  - » For every 1% organic material added to the soil, the University can potentially retain 30,000 gallons of water per acre.
  - » Recommend 5%-7% organic materials for turf areas. At 5%, this is equivalent to building a 150,000-gallon storage tank in the top 6-inches of soil.