

A photograph of a tree-lined path in an arboretum. The path is paved and runs through a dense canopy of green trees. The trees are mature and have thick trunks. The path leads towards a white fence and a building in the distance. The text is overlaid in the center of the image.

**ARBORETUM
AND ASSOCIATED LANDS
AREA PLAN
August 2003**

TABLE OF CONTENTS

Acknowledgements

Executive Summary

I.	Introduction	
	A. Purpose	1
	B. Plan Goals, Objectives and Recommended Actions	1
	C. Conceptual Plan Summary	4
	D. Process	6
II.	History & Background	
	A. A Place Apart	7
	B. Early Plans for the Arboretum	7
	C. The Past Fifteen Years	10
III.	Plan Hierarchy	
	A. Levels of Planning	15
	B. Arboretum Area Boundaries	16
	C. Community Plan/General Use Permit	18
	1. Definition of Campus Open Space	18
	2. Allowable Uses	18
	3. Development Policies	18
	4. Water Quality	19
	5. Jurisdictional Wetland	19
IV.	Environmental Influences	
	A. Physical Context	20
	B. Existing Conditions	20
	1. Climate	20
	2. Geology	20
	3. Wildlife	20
	4. Vegetation	22
	5. Hydrology, Topography and Storm Water Management	25

V.	Land Use/Infrastructure	
	A. Existing Land Use	28
	B. Adjacent Land Uses	30
	C. Existing Visual Character	32
	D. Existing Infrastructure	34
	1. Electrical	34
	2. Sewer, Water, Gas	36
	3. Pedestrian/Bike Circulation	38
	4. Vehicular Circulation	40
	5. Edge Conditions	42
VI.	The Conceptual Plan	
	A. Opportunities & Constraints	44
	B. Objectives & Recommended Actions	44
	C. The Arboretum Plan	48
	1. Circulation & Parking	50
	2. Landscape	51
	3. Education	51
	4. Recreation	52
	5. Edge Conditions	52
VII.	Implementation	54

Bibliography

ILLUSTRATIONS

Figure 1:	Arboretum Conceptual Plan	5
Figure 2:	Arboretum Timeline	11
Figure 3:	Arboretum Area Boundaries	17
Figure 4:	Open Space Context	21
Figure 5:	Existing Site Landscaping & Vegetation	23
Figure 6:	Existing Site Hydrology & Topography	27
Figure 7:	Existing Land Use: Special Features & Activities	29
Figure 8:	Existing Adjacent Land Uses	31
Figure 9:	Visual Character	33
Figure 10:	Site Lighting – Overview	35
Figure 11:	Utilities	37
Figure 12:	Existing Bike/Pedestrian Circulation	39
Figure 13:	Existing Vehicular Circulation & Parking	41
Figure 14:	Existing Edge Treatments	43
Figure 15:	Opportunities & Constraints	45
Figure 16:	Implementation	55

ACKNOWLEDGEMENTS

This plan is the result of a joint effort by a diverse group of people over the course of a year. The University Architect/Planning Office (UA/PO) has guided this effort with the University Committee on Land & Building Development (UCLBD) serving as representatives of the University community. In addition to the working group, a technical resource group provided valuable input on a range of issues in their areas of expertise. Participants included:

UA/PO

David Neuman, University Architect
Cathy Blake, Assistant Director, University Architect/Planning Office
Christine de Chutkowski, staff, University Architect/Planning Office

UCLBD

Bob Tatum, Chair, UCLBD, & faculty member, Dept. of Civil & Environmental Engineering
Amy Guy, undergraduate student
Joan Karlin, Office of the Vice Provost for Student Affairs
Amy Ladd, faculty member, Dept. of Orthopedics
John Merryman, emeritus faculty member, School of Law
Peter Stansky, faculty member, History Dept.
Kristoffer Walker, graduate student
Ellen Woods, Office of the Vice Provost for Undergraduate Education
Stephen Yelderman, undergraduate student

RESOURCE GROUP

Therese Brekke, University Architect/Planning Office, Community Planner
Julie Cain, Engineering Library, Operations Manager
Charles Carter, University Architect/Planning Office, Community Development
Tom Derry, Public Safety
Herb Fong, Facilities Operations, Grounds Dept.
Rosa González, Diversity & Access Office
Brodie Hamilton, Parking & Transportation
Laura Jones, University Architect/Planning Office, Campus Archaeologist
Alan Launer, University Architect/Planning Office, Conservation Biologist
Jay Marianowits, Dept. of Maps & Records
Dave Muffly, Magic, Inc.
Ray Purpur, Dept. of Athletics
Kelly Rohlf, Facilities Operations, Civil Engineer
Denni Diane Woodward, Office of the Dean of Students

EXECUTIVE SUMMARY

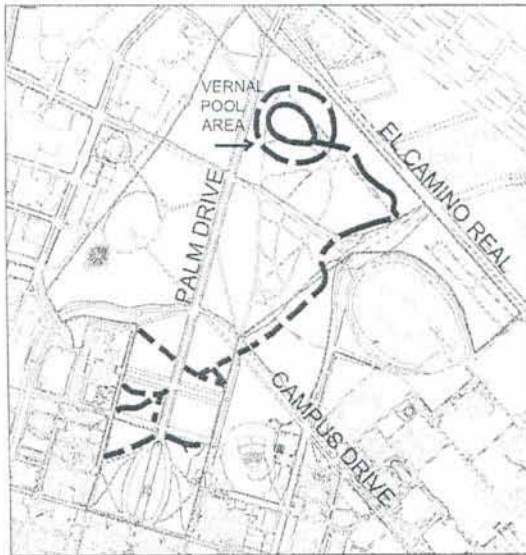
The Arboretum and Associated Lands Area Plan (henceforth called the Arboretum Area Plan) update is the result a year long effort by the University Committee on Land and Building Development (UCLBD) working with the University Architect / Planning Office (UA/PO) and other campus stakeholders and technical staff. It is intended to guide future actions in the Arboretum in response to current conditions, the 2000 Stanford University Community Plan and General Use Permit (CP/GUP), city and county issues, and proposed adjacent development. The plan does not necessarily require immediate action, but it was the opinion of the project team that improvements to the Arboretum would be desirable.

The general conclusions relative to the Arboretum were to provide modest interventions to better define, restore and clean up the area, without trying to alter its basic character or function in any dramatic way. The group valued it as an undeveloped refuge in contrast to the central campus, and enjoyed the “sense of discovery” provided by its various features.

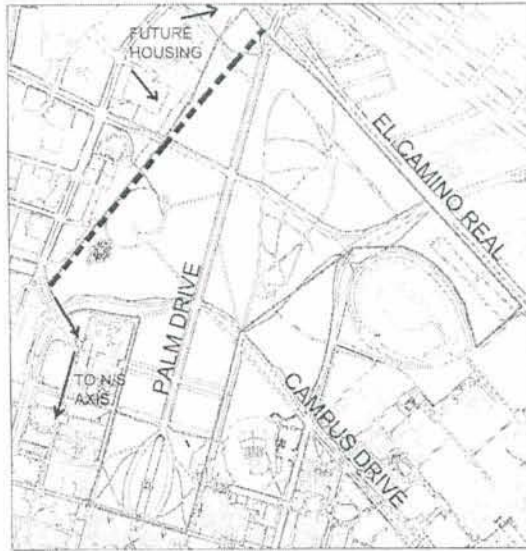
Specifically the following goals were identified:

- Document the current physical conditions
- Review current land uses
- Identify general program areas for enhancement
- Plan for future allowable land uses within the Arboretum
- Plan for the impacts of future adjacent development
- Develop vegetation concepts for ongoing maintenance, replacement, and/or improvement
- Integrate drainage, storm water management, and water retention functions
- Develop updated circulation and parking concepts
- Develop greater ties between the Arboretum and the University’s academic mission

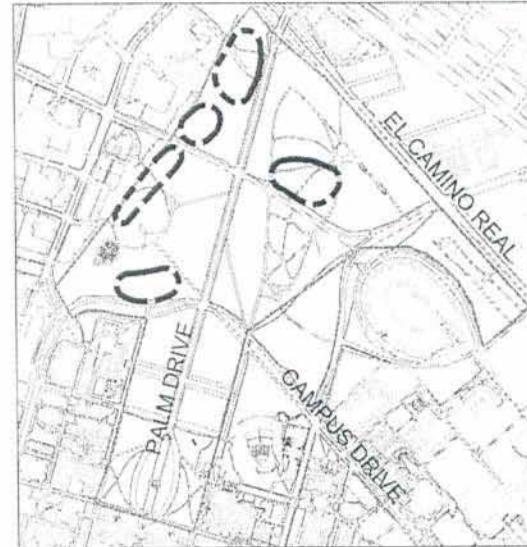
Based on research, analysis, site visits, interviews with stakeholders and technical staff and personal experiences, the following emerge as primary recommendations:



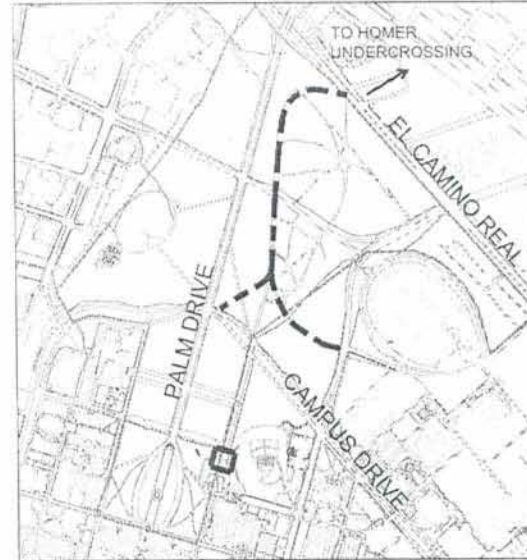
A. Improve channels and vernal pool area to better accommodate new county storm water requirements for filtration and cleansing, and to provide a visual and destination amenity with seasonal wetland plantings, paths and picnic facilities.



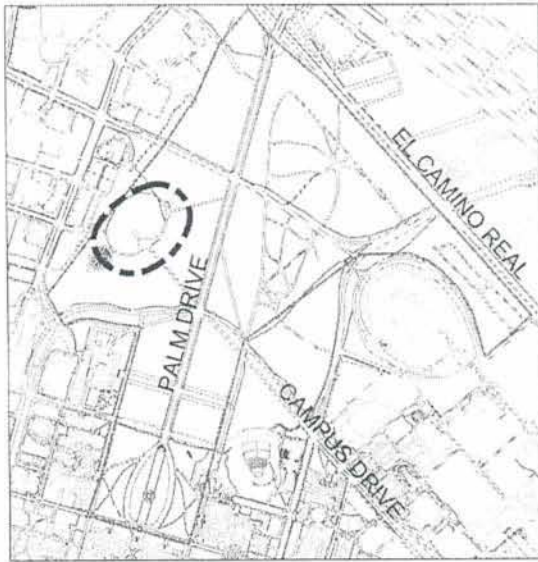
C. Develop a new lit pathway along the western Arboretum edge connecting from Palm Drive/El Camino to the North/South Axis. This will provide an off-road bike and pedestrian connection through the campus and adjacent to future housing to/from downtown Palo Alto.



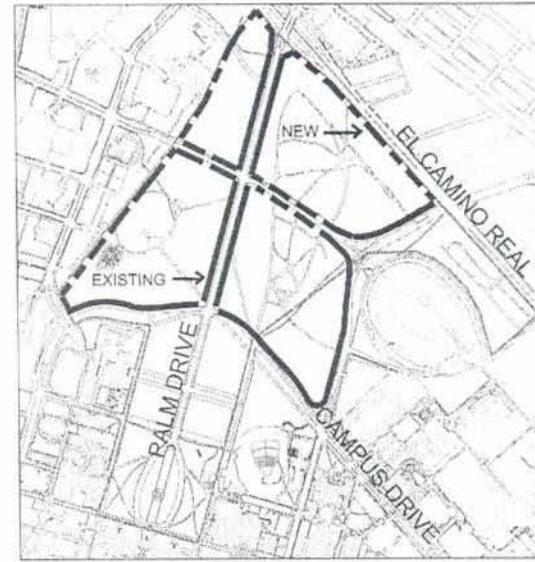
B. Restore degraded or declining landscape areas.



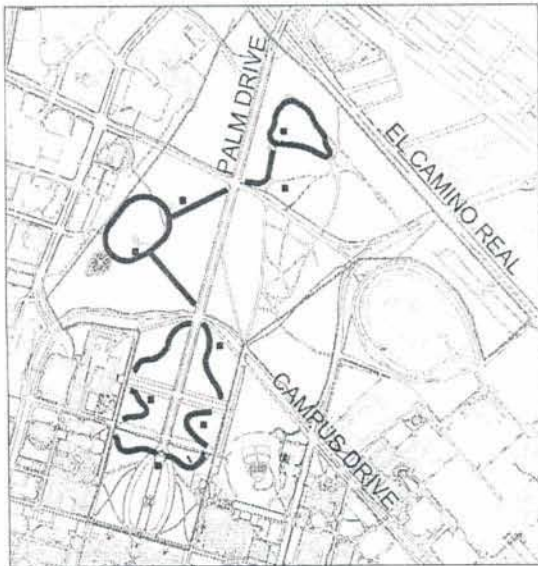
D. Phase out daily parking on Lasuen between Campus Drive and Arboretum Road. Replace with improved bike path connecting to new Palo Alto Homer/ Caltrain undercrossing bike route, expanded visitor parking adjacent to Littlefield, and future off-site parking structure construction.



E. Restore circular pathway and landscape in the area surrounding the Mausoleum to original plans, retaining character as a historic district within the Arboretum.



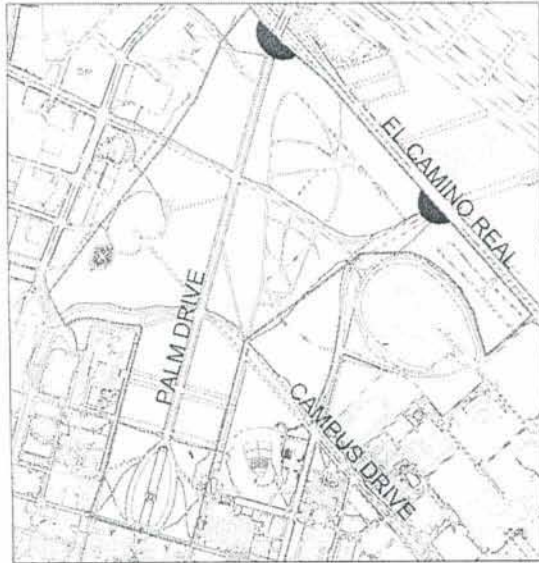
F. Adopt bollard and chain as the common edge definer for the Arboretum and install as necessary along roads and perimeter zones to control vehicular access into the Arboretum.



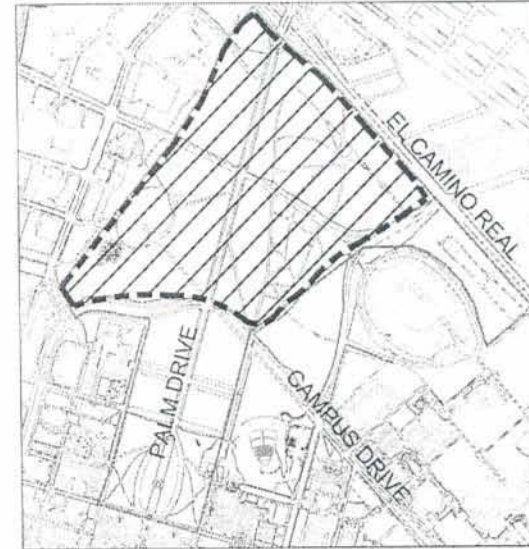
G. Develop interpretive signs and paths to provide access to various artworks, historic and natural features, focused in the area between the museum and the business school.



H. Replace the existing deteriorating PAR course (exercise circuit) with a new layout adjacent to the medical center and future housing and along the new pathway proposed.



I. Improve landscape at Palm Drive and Galvez intersections with El Camino to signify entry into Stanford.



J. Expand the planting palette in the Arboretum to include a broader representation of California natives and other unique trees and lower story plantings.

While the preceding recommendations are listed in order of priority, it was felt that they all play a role in making the Arboretum a healthy, inviting and visual symbol of Stanford. It is assumed that these, as well as other elements covered in the following plan, would be accomplished as University funding, priorities and development needs evolve. It is further assumed that funds for these improvements will come from a variety of sources including the Stanford Infrastructure Program—Campus (SIP-C) and Transportation (SIP-T), maintenance and operations programs, storm water improvement programs, third party grants and donor contributions.

I. INTRODUCTION

A. Purpose

This Arboretum Area Plan is intended as a guide for land use, maintenance, and facility improvement decisions for the university's Arboretum and Associated Lands. The overall area consists of approximately 185 acres of open wooded land located generally between El Camino Real and Serra Mall, and between Galvez Street and Quarry Road. Recommendations in this document are consistent with the policies and conditions of the 2000 Stanford University Community Plan (SUCP) and General Use Permit (GUP). This report is an update of the 1992 Arboretum Region Plan and incorporates some of the previous plan's background information.

While this last Plan focused in large part on the condition of the Arboretum vegetation, the current study is driven by pressures and issues that have been developing over the past ten years. Examples of these include: general parking on unimproved roadways lighting requests; special event parking; definition of edges and access; future building proposals on adjacent land; treatment of El Camino Real and Arboretum Road; connection to bike trails and underpasses proposed by the City of Palo Alto; additions of outdoor art; storm drainage retention; jogging trails; a general deterioration and construction yard remnants in some locations; partial restoration of the Mausoleum/Cactus Garden area; and a general increase in population in the campus areas surrounding the Arboretum; e.g. Department of Athletics, Physical Education and Recreation (DAPER), Stanford University Medical Center (SUMC) and Stanford Shopping Center.

B. Plan Objectives and Recommended Actions

Plan goals and objectives for this Plan were developed by a Working Group including members of the University Committee on Land and Building Development (UCLBD) and the University Architect/Planning Office (UA/PO) staff, following input from other stakeholders and a Technical Resources Group which included representatives from: Facilities Operations, Public Safety, DAPER, Dean of Students, Parking and Transportation Services and others to gather information for planned, necessary and/or desired improvements to the Arboretum.

Following a process of inventory, assessment and evaluation, specific objectives and recommended actions were developed. These fell into eleven general categories which are summarized in the following table and illustrated in Figure 1, Conceptual Plan.

Objectives	Recommended Actions
1. CHARACTER: Preserve rural quality of the Arboretum	<ul style="list-style-type: none"> • Upgrade landscape as needed with California native and other unique plant materials • Maintain casual character of paths and plantings • Maintain wildlife habitats for birds and ground animals
2. DISCOVERY: Reinforce the qualities that create a sense of separation and discovery	<ul style="list-style-type: none"> • Minimize overuse and/or over development of the Arboretum areas
3. SAFETY: Reinforce safety in the Arboretum for users and visitors	<ul style="list-style-type: none"> • Clear low brush and tree branches to provide visibility for police surveillance • Maintain paths in good condition for bicyclists and pedestrians. • Provide adequate lighting along designated safe routes.
4. INFRASTRUCTURE Maintain and augment existing infrastructure, particularly storm water management features	<ul style="list-style-type: none"> • Plan for improved storm water purification features in Arboretum as potential runoff mitigation for academic campus development. • Develop channels and pools consistent with naturalistic rural Arboretum character • Plant drainage features with native California riparian plants
5. LANDSCAPE: Improve degraded landscape and add diversity in plantings	<ul style="list-style-type: none"> • Identify areas for renewal and selective infill planting • Expand native California plant palette to add variety • Develop wetland planting at vernal pool area and drainage channels
6. CONNECTIONS: Improve and augment connections to and through the Arboretum	<ul style="list-style-type: none"> • Provide link from bike/pedestrian path to proposed Homer crossing alignment in Palo Alto • Upgrade existing bike/pedestrian path along Lasuen • Create new lit north/south bike/pedestrian path along border with Medical Center and proposed housing connecting Palm/El Camino to North/South Axis
7. VEHICLES: Limit automobiles and their access in Arboretum	<ul style="list-style-type: none"> • Phase-out unimproved parking along Lasuen between Campus Drive and Arboretum Road • Continue use of certain areas in the Arboretum for special event parking, football parking, and Pow Wow • Define vehicle parking and access with bollards and chain • Develop expanded visitor parking lot adjacent to Littlefield Center

Objectives	Recommended Actions
8. HISTORY: Preserve historic features and inform visitors about the significance of its features	<ul style="list-style-type: none"> • Develop Historic District within the Arboretum around the Mausoleum • Introduce interpretive signs at key locations of historic significance. • Maintain historically significant features including Mausoleum, Angel of Grief, cedar lane path, and Cactus Garden
9. EDGES: Reinforce and improve Arboretum edge conditions	<ul style="list-style-type: none"> • Reinforce existing rose edge planting along El Camino and Palms and Manzanita on Palm Drive • Replace existing chainlink fence with consistent bollard and chain treatment • Improve landscape conditions at primary campus entries at Palm and Galvez to reinforce their roles as gateways into campus
10. EDUCATION: Encourage use of Arboretum and related lands as a teaching tool	<ul style="list-style-type: none"> • Introduce interpretive signs • Create new walking paths to provide access to cultural, art and natural features in panel in front of the museum • Encourage academic department and/or class involvement in plant ecology, systems and restorations • Create a recreational walking path in the vernal pool area
11. RECREATION Maintain and augment existing recreational features	<ul style="list-style-type: none"> • Replace existing deteriorating PAR course with new layout adjacent to the Medical Center and future housing • Add picnic area at vernal pool area and at Native American Pow Wow dance site • Maintain existing jogging path, picnic areas and informal volleyball in Oval lawn area

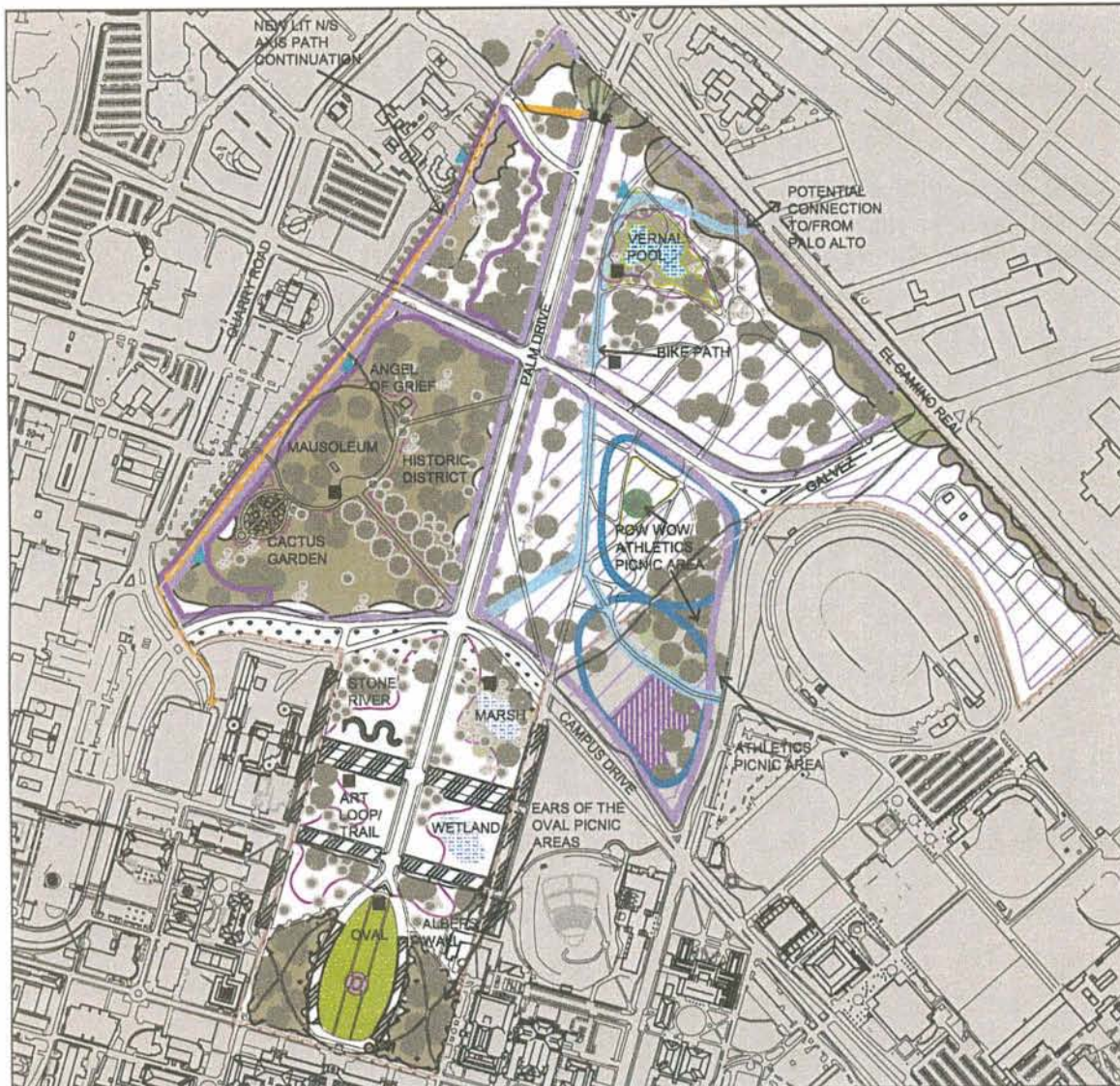
C. Conceptual Plan Summary

Figure 1, Conceptual Plan

The Conceptual Plan includes existing features as well as proposed improvements to be made to the Arboretum as outlined in the preceding table. In general, the plan relative to the Arboretum is to provide modest interventions to better define, restore and clean up the area, without trying to alter its basic character or function in a dramatic way. The Arboretum is valued as an undeveloped refuge, in contrast to the more urban central campus, providing a sense of discovery as one happens upon its various features.

Specific improvements proposed are summarized as follows:

- Improve channels and vernal pool area .
- Restore degraded or declining landscape areas.
- Develop pathway along the western Arboretum edge connecting from Palm Drive/El Camino to the North/South Axis.
- Phase out daily parking on Lasuen between Campus Drive and Arboretum Road and replace with improved bike path connecting to Palo Alto and expanded visitor parking adjacent to the Littlefield Center.
- Restore circular pathway and historic landscape in the area surrounding the Mausoleum.
- Install bollard and chain as the common edge definer for the Arboretum.
- Develop interpretive signs and path to provide access to artworks, historic and natural features.
- Replace the deteriorating PAR course with a new layout adjacent to the medical center and future housing.
- Improve landscape at Palm and Galvez campus entries.
- Expand the planting palette in the Arboretum to include a broader representation of plants, particularly California natives.



- 1. Character**
 - Upgrade landscape (trees & shrubs)
 - Wildflowers
- 2. Discovery**
 - Ears of the Oval picnic area
 - Athletics picnic area
 - Art/nature & vernal pool loops
 - Cactus Garden
 - Mausoleum
 - Angel of Grief
 - Stone River
 - Albers Wall
 - Memorial Marsh
- 3. Safety**
 - Emergency towers (New/along upgraded path)
- 4. Infrastructure**
 - Vernal pool area and channel improvements
- 5. Landscape**
 - Upgrade degraded landscape
 - Special entry treatment
 - Oval flowers
 - Oval lawn
- 6. Connections**
 - Primary pedestrian/bike path upgrade w/lighting (new)
 - Upgraded Lasuen corridor pedestrian/bike path (w/out lighting)
- 7. Vehicles**
 - Vehicle parking
 - Football parking
 - Special event parking
 - Phase out Lasuen parking
 - Restrict access w/appropriate vehicle controls
- 8. History**
 - Founder's Day walk
 - Establish Historic District
- 9. Edge**
 - El Camino & Quarry edge planting
 - Consistent bollard and chain treatment
- 10. Education**
 - Interpretive signs
- 11. Recreation**
 - Par course (relocated)
 - Pow Wow grasses
 - Jogging path

Arboretum & Associated Areas Plan

Figure 1: Arboretum Conceptual Plan 0 800'

D. Process

This study was initiated by researching the archives, then walking relevant areas taking notes and photographs. General conditions were noted. Consideration was given to the impact of present and future land uses in adjacent areas. Also noted were the general conditions of the following features: vegetation, pavement, existing recreation equipment, and the network of drainage ditches. Patterns of use were observed and recorded: e.g., jogging, solitary walking, dog walking, illegally parked cars, trash left after an event, etc. Additionally, wildlife was observed including: ground squirrel population, egrets and herons attracted by the wet areas, and raptors present in the tall trees, supported by available prey.

Conditions and features of the Arboretum areas were inventoried and recorded in the form of illustrations and maps. This inventory and preliminary assessment was reviewed with the UCLBD Working Group. Out of a series of meetings the general recommendations of this Plan were developed and are illustrated in the following pages.

II. HISTORY & BACKGROUND

A. A Place Apart

When the Stanfords founded the University, they chose a site that lay far from the established urban centers of San Francisco and San Jose. Furthermore, they laid the cornerstone of the original Quadrangle in the center of the level land on their Palo Alto farm. These decisions established the University as “a place apart” from everyday life, a physical retreat for a community of scholars. The separateness is preserved today by the open lands and fields, most notably the Arboretum, that buffer the central campus from surrounding roads and cities. Passing through the Arboretum, the traveler makes a passage from the noisy everyday world, through a quiet, unmanicured landscape, to the academic heart, where the activity again becomes intense, but is of a different character.

This philosophy is best summarized in the following passage from the 1989 Stanford University *Landscape Design Guidelines*:

“By preserving the campus as a unified separate place, we preserve its focus...Just as a work of art increases in drama and meaning by a careful tension between its parts, the Stanford landscape derives much of its power from the juxtaposition of opposites. The original stone Quadrangle, representing the height of culture and order, set in the midst of unmanicured fields, established this dramatic tension...The spare, unruly Arboretum contrasts with the ordered line of Palm Drive. This juxtaposition remains today.”

B. Early Plans for the Arboretum

As early as 1880, Senator Stanford had drawn up a plan for a new residence on the Stock Farm that was to have been on the site of the present Mausoleum. On that plan there was indicated a “Proposed Lake” to the southeast of the house, amidst a large “Arboretum.” A later plan, dated 1883, shows the proposed house location in an oval with an adjacent oval that had been laid out as a small garden with formal parterres (the present Cactus Garden).

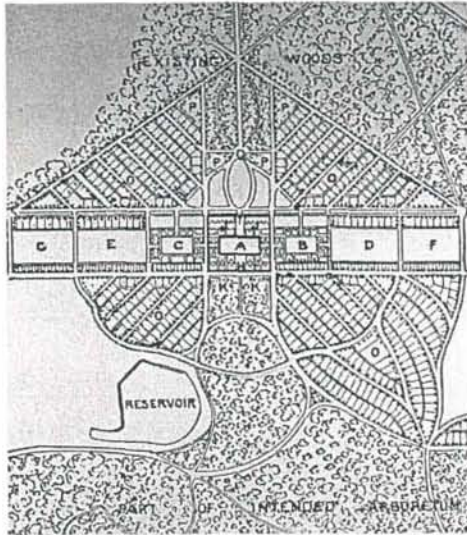
Stanford’s original plan was two-fold: to create a park to surround the new house, and as a scientific experiment, to prove that all manner of plants from around the world could grow in California, if irrigation was provided. Stanford constantly promoted California as an agricultural paradise and was determined to put his money behind proving it.

Rudolph Ulrich (the landscape designer responsible for the Arizona Garden) worked on the Stanford Arboretum throughout 1884. Ulrich most likely did the bulk of the work of putting the Arboretum together. A newspaper article reported that 12,000 trees were planted that year.

Stanford later, 1886, enlisted landscape architect Frederick Law Olmsted to work on the plans for the University. In his design for the campus, Olmsted called Stanford's Arboretum "The Park" and proposed the addition of a true arboretum on the land south of the Main Quad. In a letter to Senator Stanford dated April 12, 1888, Frederick Law Olmsted indicated that the plans for the University being prepared at that time would show "considerable variation from the original general plan and an extension of it to include on one side an arboretum and several hundred acres of forest plantations on the foothills, and on the other an avenue to a proposed railway station." From this it is clear that a very ambitious scheme for an arboretum had been contemplated from early on. Stanford himself had publicly stated that an arboretum was to be an important part of his university. The formal avenue from the railway station seems to have been Senator Stanford's idea, but according to a plan dated February 11, 1887, Olmsted apparently originally planned for it to proceed up to the Quad through a "park." This "park" being Stanford's Arboretum.

From a memorandum dated December 4, 1888 relating to the design that Olmsted was planning, he communicated his desire "that there shall be exhibited to advantage all the trees and woody plant (sic) of the world that may be expected to grow to mature natural forms under the climatic and other conditions of the locality." Further, from the "Notes Explanatory of the Leading Motives of the Plan" (text accompanying the General Plan for the University, dated 1888), Olmsted indicated that "all land within the limits of the Plan not to be presently occupied...are, as soon as practicable, to be closely planted. The plantations are to be afterwards thinned, before they become crowded, and clearings to be made among them, as, from time to time, space is wanted for buildings...the landscape and the architectural design have in view ideals that pertain rather to the South than to the North of Europe or to the Atlantic States." Olmsted argued with Stanford over the choice of plant material, preferring Mediterranean plants over exotics.

Based on this idea of a true arboretum, Thomas H. Douglas was hired in December 1888 to begin work on it. Douglas spent the next three years (1889-1891) collecting seeds and cuttings for the new arboretum as well as maintaining Stanford's Arboretum (Olmsted's "Park"). John McLaren (the superintendent of Golden Gate Park) provided a list of recommended plants to Olmsted, and he and Douglas swapped seeds and cuttings between Golden Gate Park and the already existing Stanford Arboretum.



Within several months, Stanford reversed his decision about the additional arboretum and the forest, and told Douglas to instead plant out an orchard on the site where the botanical garden and new arboretum were to have been planted. This site was directly behind the site of Memorial Church and Douglas started preparing the ground in that area for an orchard.

Olmsted's Arboretum never happened. The thousands of plants that Douglas started in his three-year tenure went into campus landscaping and (most likely) faculty gardens and the original Stanford Arboretum. The Arboretum we know today is all Stanford's Arboretum. It was in place long before the University was built. It received top care and attention from Douglas until some point in 1892. That is probably the last time it had the full attention of one person focusing on it. Douglas had anywhere from 2 to 40 men out working on various projects, one of which was thinning the eucalypti (which were planted as a nurse crop).

There were several plans during the teens and 1920's to totally restore the original Arboretum; John McLaren, Professor Leroy Abrams (Botany), and landscape engineer/architect Gardner Dailey did a massive and scientific replanting plan for the entire Arboretum in 1923.

C. The Past Fifteen Years

Figure 2, Arboretum Timeline

Over the years, the physical condition of the Arboretum has gradually declined. This decline has been particularly marked by the onset of an insect infestation that began in 1991. The combined impact of a prolonged drought and two different insect infestations (the Eucalyptus long-horned borer & the lerp gum psyllid), has significantly damaged the eucalyptus tree population in the Arboretum.

There have also been a number of improvements made in the Arboretum over the past fifteen years. In 1992 an Oak Revegetation program was initiated and since then over 400 oak seedlings have been planted. Although the oak revegetation plan has been fairly successful, the plan to revegetate the understory planting has lagged behind.

In 1994, the University's main entry to campus, Palm Drive, was reconstructed. The renewed Palm Drive improved long-standing drainage problems while implementing a design feature (granite curbs) of the original Olmsted plan. Several areas of historic significance, namely the Mausoleum, the Angel of Grief, and the Cactus Garden, have all been restored in the period between 1994 and 2000. Bootleg parking along Lasuen north of Campus Drive was signed as "C" parking in 1995-96, but remained otherwise unimproved (i.e. no tree protection, curbs, walk, lighting, or drainage system). In 1998, Museum Way parking was improved and landscaped to both provide better access to the Museum and the Business School, and to blend better within the Arboretum landscape. Bollard and chain has been added at the edges of portions of the arboretum to define the boundaries and to protect vegetation, and in 2002-3 to replace the deteriorating chain link fences.



Memorial Marsh

1988 Memorial Marsh

The development of Memorial Marsh was a result of a joint effort by planners, biologists, engineers, and conservationists. Memorial Marsh was developed as a permanent pond to help solve drainage problems while also creating a place for wildlife habitat and a resource as an outdoor classroom.

1991 Vernal Pool

The vernal pool is a continuation of the efforts begun in 1988 with the creation of Memorial Marsh to manage stormwater runoff in a more eco-friendly manner and to create wildlife habitat, as well as solve longstanding drainage problems along Palm Drive.

1991 Eucalyptus Long-Horned Borer Infestation

The Eucalyptus long-horned borer (*Phoracantha semipunctata*) was introduced into the country in 1990. Within a year of the insect pest's introduction in San Diego, it had migrated to Northern California. Between 1991-92 it was estimated that Stanford had already lost about 300 of the century-old eucalyptus trees on campus to the borer. To combat the problem, in the spring and summer of 1992, the University released parasitic wasps, natural predators of the borer, into the arboretum.

1992 Arboretum Revitalization Effort Begun

The significant decline in the eucalyptus population triggered a revitalization effort in the arboretum. The effort officially got started with a tree planting by the Friends of the Arboretum on April 11, 1992. The Friends of the Arboretum planted two dozen oaks and bay laurels near the intersection of Lasuen Street and Campus Drive.

1992 Arboretum Oak Revegetation

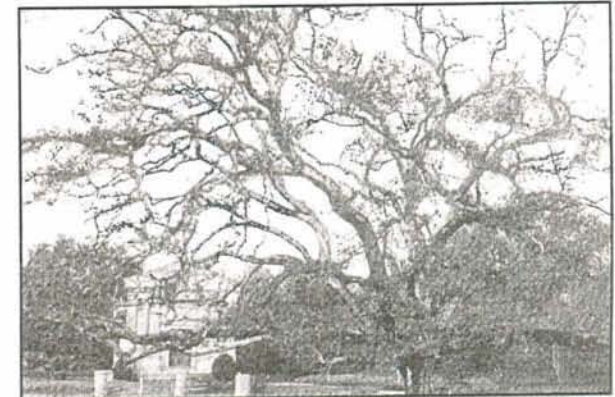
Magic Inc. was contracted by the Stanford Planning Office to begin a revegetation effort in the arboretum. The effort began with the planting of 50 Coast live oaks in areas along the perimeter of the northeast quadrant of the arboretum. The plantings were intended to replace diseased and aging eucalyptus, and to provide visual screening.



Oak Revegetation Effort

1993 The Death of the Mausoleum Heritage Oak

A massive 300-year-old oak which stood next to the Mausoleum succumbed to disease and old age and was cut down on August 30, 1993. At its peak, the Coast live oak (*Quercus agrifolia*) stood at 70 feet with a canopy spread of 120 feet, and a trunk diameter at breast height of 55 inches. The Heritage oak was replaced by a 20-foot tall oak transplanted from a site at the Stanford Research Park where it grew on a Hetch Hetchy right-of-way.



Mausoleum Heritage Oak

1994 Palm Drive Reconstruction

Over the summer of 1994 the university's ceremonial entry road, Palm Drive, was completely rebuilt. The newly rebuilt road incorporated granite curbs, as originally specified in Frederick Law Olmsted's 1888 campus plan and fixed long-standing drainage problems.



Palm Drive Reconstruction



1996 Mausoleum Planting

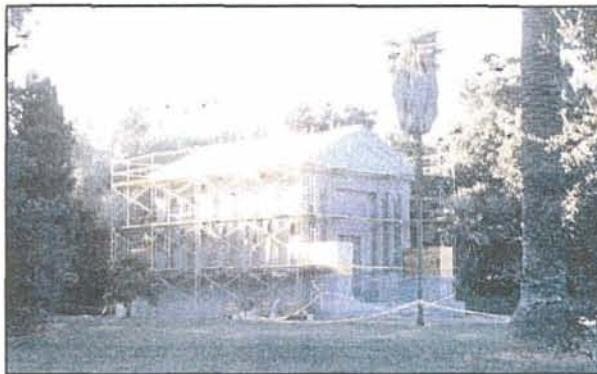
Crape myrtles (*Lagerstroemia indica*) and Paperbark maples (*Acer griseum*) located in the mausoleum lawn were transplanted from Lomita Mall. Guadalupe palms (*Brahea edulis*) on the north side of the mausoleum were transplanted from the construction site of the Science and Engineering Quad.

1997 Cactus Garden Restoration

The Cactus Garden, originally known as the Arizona Garden, was established in 1880-1883. The original garden design was by landscape designer, Rudolf Ulrich. Ulrich brought all of the plants for the garden from Sonora, Mexico. Over the years the garden fell into disrepair. In 1997 a restoration project was initiated and efforts (primarily volunteer) have significantly improved the landscape.



Cactus Garden



Mausoleum Restoration

1997 Mausoleum Restoration Complete

The Stanford Family Mausoleum was built in 1889. Over the years since its construction, the building had deteriorated to the degree that restoration was necessary. Stanford hired an architectural conservator to assess the condition of the structure and to make treatment recommendations. The restoration effort began with a general cleaning of the stone to remove lichens, salts and other soil from the stone. Cracked joints were sealed, the surrounding gravel pathway was regraded for proper drainage, and the sphynx sculptures, damaged by vandalism, were repaired. Finally, the exterior was treated with a sealant that repels stains and prevents graffiti from entering the stone.

1998 Red Gum Lerp Psyllid Infestation

The Red gum lerp psyllid (*Glycaspis brimblecombei*) infestation on campus was first observed in the summer of 1998. The psyllid attacks the Red gum, as well as more than 25 additional varieties of eucalyptus. In the fall of 2000, a parasitoid of the Red gum lerp psyllid was released in the arboretum as part of a pest management program.

1998 Stanford Family Statue Installed in Arboretum

Stanford family statue was created in 1899 by artist Larkin Meade. Over the years, it has been placed on view at the following locations: 1900-Center of Main Quad, 1902-Memorial Court, 1915-Museum Lobby, unspecified duration of time-Art Gallery porch, 1978-storage at Bon Air Siding. It now resides in the Arboretum near the Mausoleum.



Stanford Family Statue



1998 Museum Way Parking

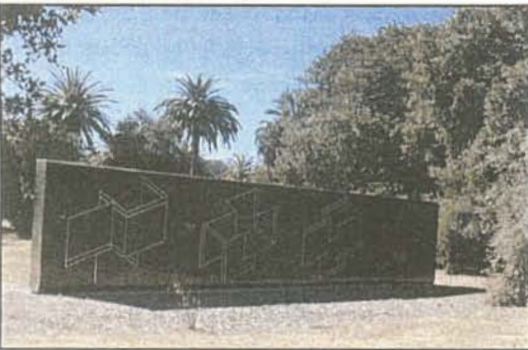
The Museum Way street width was decreased and two lit paths were added to parallel the street on both sides. Existing parking was reconfigured and 83 spaces were added. New planting was added alongside the paths and included shade trees. Planting along the perimeter consisted of tall native bunchgrasses to screen the cars and blend with the Arboretum landscape.



Museum Way

1999 Albers Wall Relocation

The Stanford Wall, more commonly known as the Albers Wall, is a brick, steel, and granite artwork created by Josef Albers. The wall is approximately 60' long and 9' high. In 1999 it was relocated from Lomita Mall to its present location in the open area northwest of the Littlefield building.



2000 Stanford University General Use Permit Approved

The Stanford University Community Plan and General Use Permit was approved by Santa Clara County in December 2000, officially designating the Arboretum/Oval as Campus Open Space.

2000 Angel of Grief Restoration Completed

The Angel of Grief sculpture marks the grave of Henry Clay Lathrop, Jane Lathrop Stanford's brother, who died after a long illness in her San Francisco home in 1899. The urn containing his ashes was moved to the Arboretum in 1902 with the sculpture of the angel installed above the crypt. The original angel sculpture and a marble cupola that covered it were destroyed in the 1906 earthquake and the angel was replaced in 1908. In 1995 Stanford commissioned a condition survey and treatment plan from an architectural conservator.

The restoration project team considered the full restoration of the sculpture, fence and terrazzo pavement and concluded that the cost was prohibitively expensive. Further archival research revealed that the terrazzo pavement was a later addition: the mound had originally been landscaped with turf. Following consultation with the the Board of the Stanford Historical Society, the project team determined to remove the terrazzo pavement and replace it with drought-tolerant, ornamental landscaping. The project required the demolition of the terrazzo pavement and curb, the repair and reinstallation of the wrought iron fence, installation of irrigation and planting of the mound, and finally cleaning and repair to the angel sculpture. A Swiss stonemason, Marcel Machler, carved the replacement arm from matching Carrera marble and recarved the angel's wingtips.



Angel of Grief

2001 Stone River

British artist Andy Goldsworthy created Stone River. The work is a 320-foot long sculpture made of sandstone from university buildings destroyed in the 1906 and 1989 earthquakes.



2003 Bollard and Chain

The deteriorating chain link fence along El Camino Real was replaced with a bollard and chain similar to Palm Drive, to reinforce the arboretum edge and to begin to create a consistent treatment for all boundaries of the arboretum.



III. PLAN HIERARCHY

A. Levels of Planning

There are four general levels of Stanford planning applicable to the Arboretum:

Land Use Planning: This is the broadest planning level. It guides the future development of the contiguous 8,200 acres of Stanford lands. Our current land use plan for Stanford University lands in Santa Clara County is defined in the *2000 Stanford University Community Plan (SUCP)*, (illustrated on the SUCP Figure 2.2, *Land Use Designations*). The Arboretum lies within the Campus Open Space category.

Campus Planning: Planning at this level focuses on the Central Campus; the area bounded generally by El Camino Real, Stanford Avenue/Page Mill Road, Junipero Serra Boulevard, and Sand Hill Road. The *2002 Campus Planning Report* describes the Arboretum and its fit within the larger campus context including future use of adjacent lands and campus systems.

Area Planning: Area planning provides a framework in which building projects intersect with campus plans. The current Arboretum Plan falls into this category.

Site Planning: This level of planning relates most specifically to facility projects in the establishment of the site-specific parameters for individual projects. Projects that emerge from this plan will be developed as individual site plans with site-specific design guidelines.



B. Arboretum Area Boundaries

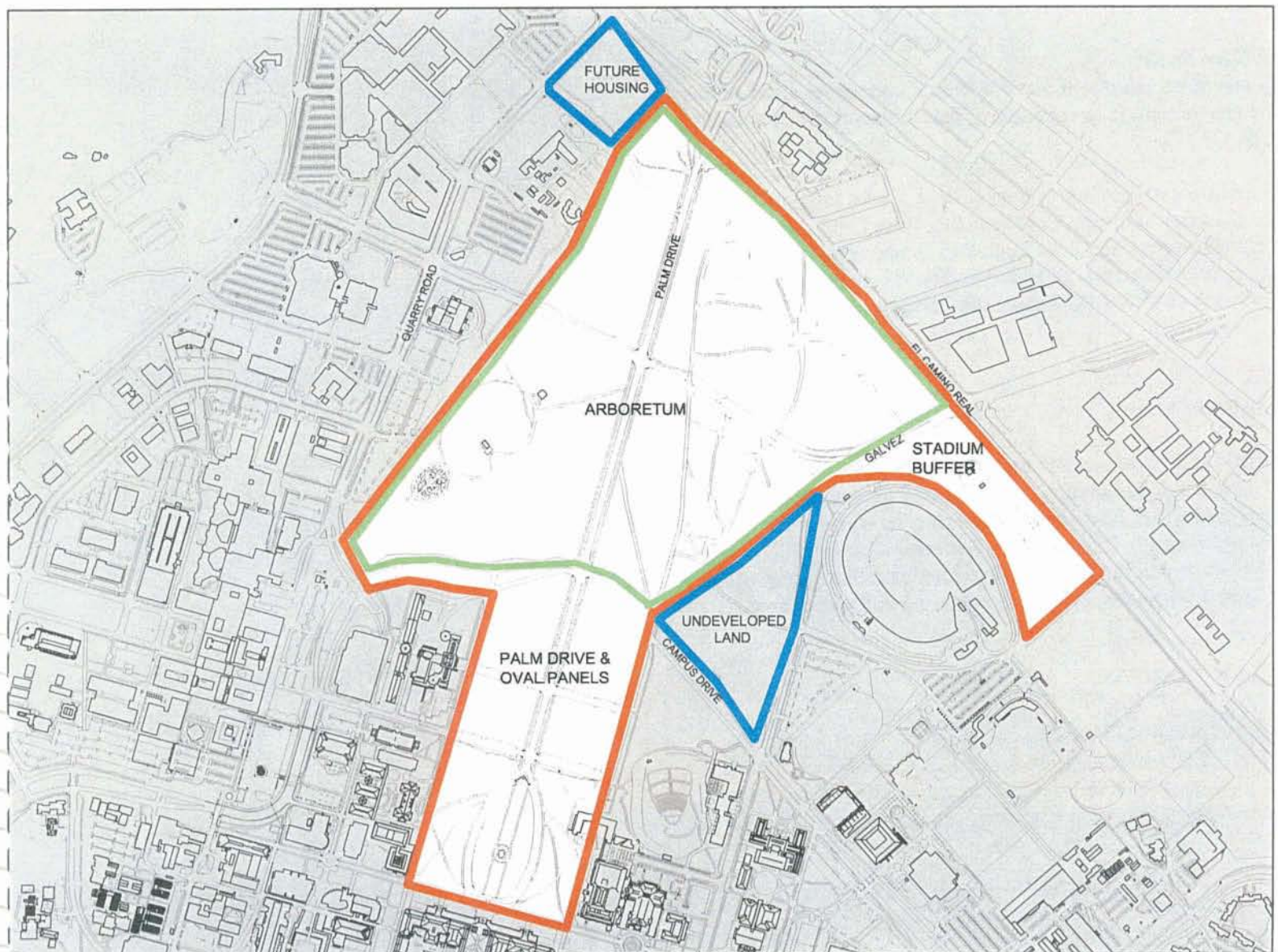
Figure 3, Arboretum Area Boundaries

Archival research has revealed that the actual boundary of the Arboretum has changed over time due to land use and roadway configurations. The current day Arboretum is described in the *Stanford University Community Plan (SUCP)* within the land use designation of “Campus Open Space.”




The SUCP boundaries which coincide with the boundaries of this study are: “Campus Open Space” and “Open Space within the Academic Growth Boundary.” The difference between the SUCP’s boundaries and those of this study is that the SUCP open space designations extend to include areas around Lake Lagunita and small areas in and around the faculty housing section of campus.

For the purposes of this plan, the traditional Arboretum is defined as “Arboretum,” in the plan (outlined in green, Figure 3). The Area Plan also addresses peripheral areas (called “Associated Lands”) that are currently in open space. The “Associated Lands” of this study refer to the following: Palm Drive and Oval panels; and the Stadium buffer. Two additional parcels, Toyon Field (in the SUCP as Undeveloped Land) and the corner site at Quarry Road and El Camino Real (Future Student Housing), are located but not specifically addressed as a part of this Arboretum Area Plan.

The following conditions and policies of the SUCP included for convenience and reference are specific to the SUCP and may not apply equally to all areas of this study. Therefore, when considering these policies to make planning and design decisions in the Arboretum, one should always refer to the full SUCP document.



LEGEND

-  SUCP* Campus Open Space
-  SUCP Undeveloped Lands
-  Stanford Arboretum

Study Area:

- Arboretum
- Stadium Buffer
- Palm Drive & Oval Panels
- Undeveloped Lands

* SUCP: Stanford University Community Plan



Figure 3: Arboretum Area Boundaries



C. Community Plan/General Use Permit (GUP)

When considering land use decisions in the Arboretum, the *December 2000 Stanford University Community Plan* (SUCP) and General Use Permit Conditions of Approval, adopted as a part of the Stanford University General Use Permit, are the overriding governing documents. Specific references and policies relevant to the Arboretum are described below:

1. Definition of Campus Open Space

The Arboretum region is unique on campus in that it is largely undeveloped and is meant to remain that way. Its value and purpose is as open space. This designation of *Campus Open Space* is clearly outlined in the SUCP.

The Campus Open Space designation applies to open spaces essential to the historic form and character of the campus (including Palm Drive, the Oval, the Arboretum, the Red Barn area, and Lake Lagunita). It also applies to designated parks within faculty/staff residential neighborhoods and to significant resource conservation areas such as wetland or habitat conservation areas within the central campus.

2. Allowable Uses

Under the discussion of "Allowable Uses," the aforementioned document states the following:

Uses must retain land in open space, and must be consistent with the individual character of each area included in this designation. These areas shall be maintained as park-like areas, unimproved open space, landscape buffers, riparian corridors, and conservation areas. Temporary activities of a limited nature that are in keeping with the open space character are also permitted. Examples include limited duration special events or general recreational activities, such as those regularly occurring in the Oval area.

3. Development Policies

Development policies state:

No new permanent, above ground buildings or structures for occupancy are permitted. Landscaping structures or features, such as walls, fences, arbors, fountains, and statues or other forms of public art, are allowed. Temporary structures associated with appropriate temporary activities may be allowed, such

as concession stands, tents, or similar structures. However, no temporary use which results in the degradation of biological resources is permitted.

4. Water Quality

According to the *Stanford University Community Plan* (December 2000), water quality is significantly improved by the use of “natural” treatment facilities (such as drainage ditches, the marsh, and the jurisdictional wetland) that currently exist in the Arboretum.

A critical feature of efforts to improve regional water quality is the existence of functioning wetlands and surrounding vegetated areas. Wetlands and associated vegetated areas act to reduce erosion, absorb runoff, and reduce the intensity of flood events. Natural areas contribute to water quality of both surface water features and underground aquifers. This function adds to the County and Stanford’s interest in the protection of riparian areas through streamside buffers and in the protection of central-campus wetlands, particularly in the Arboretum and around Lake Lagunita.

5. Jurisdictional Wetland

If jurisdictional wetlands or other waters of the U.S. will be unavoidably lost as a result of project activities, Stanford shall obtain appropriate authorization from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. In coordination with the U.S. Army Corps of Engineers, any wetlands or other waters of the U.S. that are lost as a result of future development in the project area shall be replaced through the creation, preservation, or restoration of wetlands or other waters of the U.S. of at least equal function and value to those that are lost.

IV. ENVIRONMENTAL INFLUENCES

A. Physical Context

Figure 4, Open Space Context

The area is bounded and divided by roads. The region is well served by these roads, but it is also overly subdivided by them, and somewhat separated from the Central Campus. The Arboretum is also part of a larger campus and regional open space system. This open space connects generally around the perimeter of the campus and along Campus Drive. It extends from the main Arboretum area, along the border with El Camino Real, around the Campus Drive loop to the Foothills, over to the Golf Course and continues along Sand Hill Road and San Francisquito Creek.

B. Existing Conditions

1. Climate

The climate in the Arboretum area is Mediterranean--winters are cool and moist, and summers are mostly warm and dry. Prevailing winds are from the northwest with storm winds normally coming from the southeast. Daily mean temperatures are usually between 32° F and 94° F. Sporadically the Arboretum experiences unusual cold temperatures between 10 and 20° F or very hot temperatures over 100° F. The site receives an average of 22 inches of rain per year, with January being the wettest month (average of 3.38 inches) and July the driest (0.01 inch).

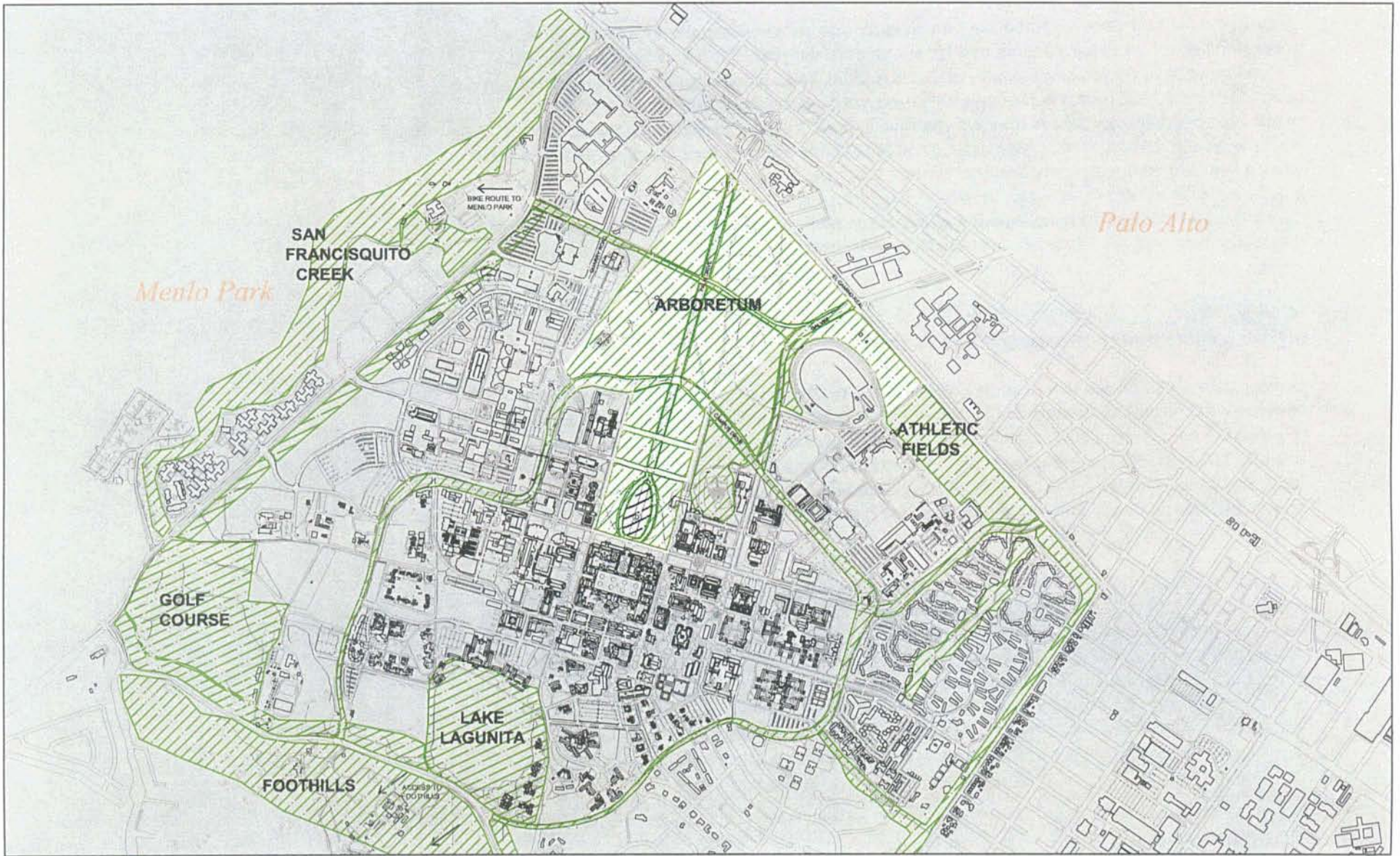
2. Geology

The soil types present are Pleasanton Loam and Pleasanton Gravelly Loam. Both of these soils overlay a gravelly loam subsoil, with moderately slow subsoil permeability. The land on which the present Arboretum is located slopes minimally and drains poorly; this, combined with the various roads acting as dams has historically caused the region to experience regular flooding during heavy winter rains.

Seismically, the Arboretum region is classified as USGS Earthquake Zone C – very strong intensity. This is the same for most all of the Central Campus.

3. Wildlife

As large as the Arboretum is, it is highly modified and isolated from other areas of similar habitat value in other parts of the campus. It therefore has little in the way of species diversity, and the species that are found there are primarily those which are common to the suburbs: various birds,



bats, ground squirrels, and an occasional raccoon or skunk. Yearly disking done as a fire-prevention measure destroys a certain amount of ground squirrel habitat and ground squirrels. Other than the occasional appearance of a few California tiger salamanders, there are no rare or threatened species in the region.

Although, relatively speaking, there isn't much in the way of wildlife in the Arboretum, there are a fair number of bird species present at different times of the year. The list of birds includes the following: red-shouldered hawk, red-tailed hawk, merlin, band-tailed pigeon, great horned owl, allen's hummingbird, rufous hummingbird, red-breasted sapsucker, yellow-rumped warbler, white-crowned sparrow, golden-crowned sparrow, bullock's oriole, pacific-slope flycatcher, cedar waxwing, hooded oriole, great egret, great blue heron, sharp-shinned hawk, mourning dove, anna's hummingbird, acorn woodpecker, western scrub jay, american robin, european starling, california towhee, dark-eyed junco, brewer's blackbird, brown-headed cowbird, house finch, lesser goldfinch, house sparrow, nuttall's woodpecker, mallard, song sparrow, wilson; red-winged blackbird, barn owl, varied thrush, townsend's warbler, townsend; western tanager, hutton's vireo.

4. Vegetation

Figure 5, Existing Site Landscaping & Vegetation













Arboretum vegetation is a mix of some California native plants with a predominance of exotic species, most notably the Tasmanian blue gum (*Eucalyptus globulus*). The shrubs and non-woody plants are dominated by drought tolerant usually exotic weedy species. Many of these trees are close to 100 years old and are at the end of their natural lifespan. A significant number of the trees are diseased or dying as a result of prolonged stress because of repeated frosts, droughts, and insect infestations. As a result, revegetation efforts have focused on a greater reliance on native vegetation over exotic species.

Although the dominant woody species is the Tasmanian blue gum, there is some variety of tree species in the Arboretum, including a number of different eucalyptus species, a great many Coast live oaks (*Quercus agrifolia*), and a dramatic allee of Deodar cedars (*Cedrus deodara*) that extends roughly from the intersection of Palm Drive and Campus Drive to the Mausoleum. The ceremonial tree that symbolizes entry to the university is the Date palm (*Phoenix canariensis*) which majestically and formally lines Palm Drive and the oval. The Hackberry (*Celtis sinensis*) lines the Museum Way walks. Additional natives include: Valley oaks (*Quercus lobata*); Buckeyes (*Aesculus californica*); California sycamores (*Platanus racemosa*); Big-leaf maples



LEGEND

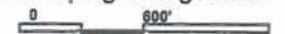
Vegetation

-  Tree canopy
-  Eucalyptus
-  Oaks
-  Palms
-  Oaks (revegetation effort)
-  Cedar allee
-  Hackberry
-  Oval lawn
-  Oval flowers
-  Wildflowers
-  Cactus garden
-  Marsh Vegetation

Note: Tree locations are generalized, not exact.



Figure 5: Existing Site Landscaping & Vegetation



(*Acer macrophyllum*); Blue oaks (*Quercus douglasii*); and California bay (*Umbellularia californica*).

The understory in the region is dominated by Wild oats (*Avena fatua*), but is richly populated with annual and perennial forbs. This herbaceous carpet is so characteristic of the undeveloped landscape in coastal California that many people read it as native, even though it is composed almost exclusively of naturalized exotic and often weedy species. Over the last ten years there has been a concerted effort to include more native species in the understory planting. One example is the use of California tall native bunchgrasses surrounding the Museum Way parking and lower species in the open areas. There is also a general policy of planting drought tolerant species in dryer areas and herbaceous plantings in the wetter drainage areas.

One significant program to improve the Arboretum vegetation, however, has been the oak reforestation program initiated by Stanford University and implemented with Magic, Inc., a group that coordinates volunteer efforts. According to the *Stanford University Community Plan* (December 2000):

The oak reforestation program is perhaps the best-known habitat restoration program on campus, involving Stanford, non-profit organizations, and numerous volunteers from the campus and neighboring communities. This program was initiated by Stanford in the early 1980s, following the preparation of a Vegetation Management Plan in 1983 which found a lack of young oak trees and a decline in mature trees in the natural areas on the campus. After several years of operation in the foothills, the reforestation program has been extended to the Arboretum (beginning in 1992), and it has also involved reintroduction of native understory shrubs, grasses and forbs (broadleaf herbs) in addition to oaks. The oak reforestation program is an excellent example of comprehensive land stewardship and management that restores habitat and contributes to the knowledge of the natural environment.

5. Hydrology, Topography, & Storm water Management

Figure 6, Existing Site Hydrology & Topography

The slopes in the area are minimal, from 0 to 2% (with 2% being the minimum for positive drainage). The soils are only moderately permeable, especially when wet, and the subsoil is even less so. The land falls gradually in a northeasterly direction, and the existing drainage outlet for storm water is located at the northeast corner of the Arboretum at the intersection of Galvez and El Camino.

In the panel of the Arboretum bounded by Lasuen Street, Palm Drive, Campus Drive and Museum Way, several drainage ditches and swales feed into an artificial pond called Memorial Marsh, the outfall channel of which flows through the Arboretum.

In the winter of 1990-91 an additional drainage project was implemented in the Arboretum; the Vernal Pool project. Vernal Pools are basins that fill with rainwater and form seasonal wetlands. If conditions are favorable, these temporary wetlands are ringed with wildflowers that persist until the ground dries out. The Vernal Pool Project was installed to the north of Memorial Marsh, between Arboretum Road and El Camino Real, just east of Palm Drive. It created a new drop inlet and culvert from Palm Drive, under the remains of old Lasuen Street, to the retention basin. Although this area was originally planted, very little of what was originally planted remains today and the pond itself may not be functioning as a true vernal pool. In the past few years drainage improvements have been made in the Arboretum to be consistent with the 2003 Storm Drainage Overland Flow Master Plan. These improvements have enabled the Arboretum to handle additional water that is being directed to it from campus areas to the south and west.

The Army Corps of Engineers has identified one jurisdictional wetland in the Arboretum, approximately 0.86 acre in size. When the parking and circulation were formalized along Museum Way between Lomita and Lasuen a 0.33 acre portion of wetland was created as part of the project mitigation.

The Arboretum provides several functions specifically related to storm water conveyance which could be modified to also address surface water quality. The Arboretum currently contains several significant drainage ditches that are functional elements of the campus storm drain system. The most notable points for flow entering the Arboretum are at Lasuen Mall, Lomita Mall, Roth Way, and the Museum. Water spills out of the piped storm drainage at these major points and a variety of smaller points into channels that pass through the Arboretum to return to the piped system at El

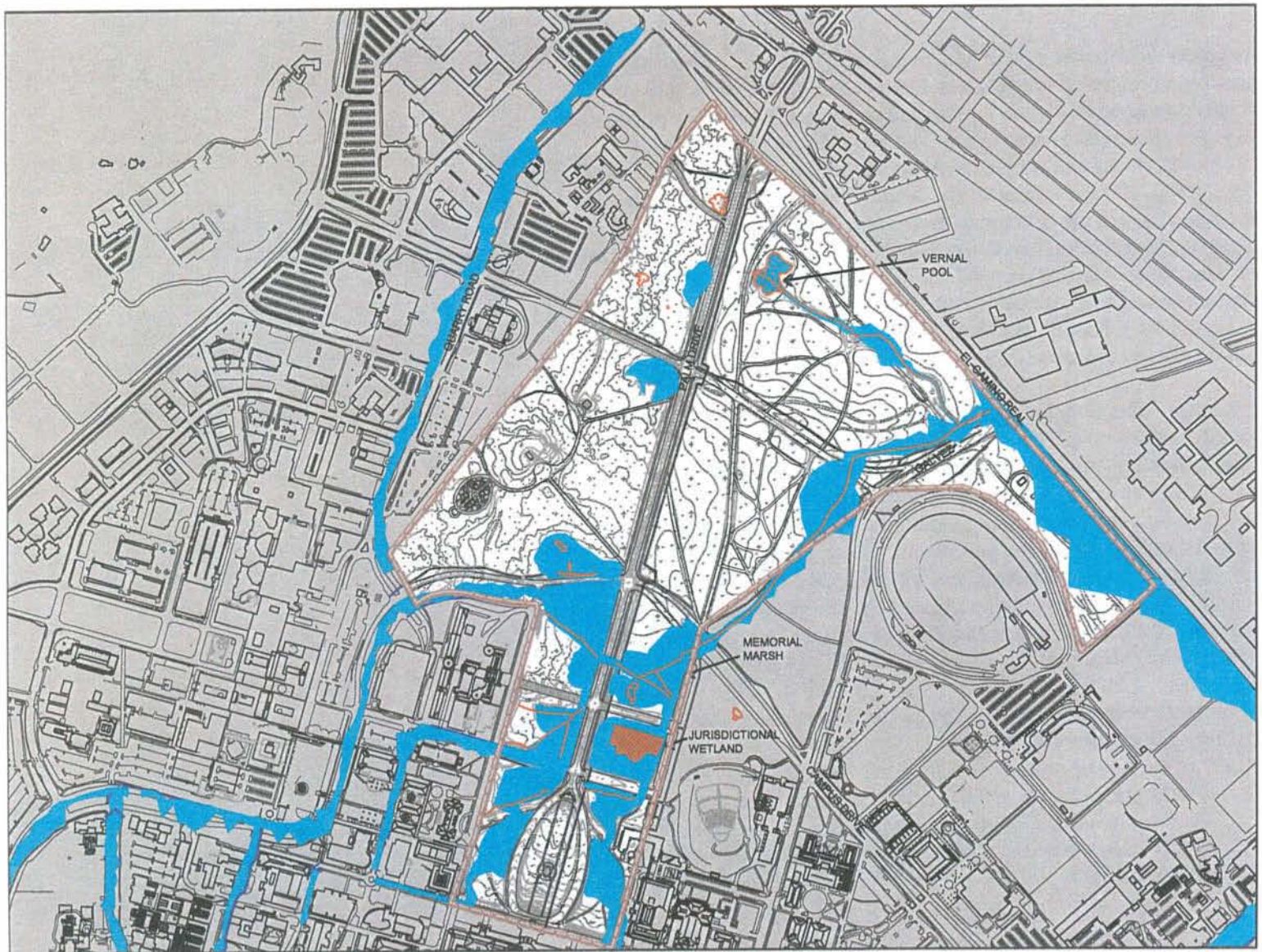
Camino Real and Galvez Street. The ditches have closed culverts (pipes or boxes) under the roads to allow transmission of the flows downstream.

Many of the culverts are undersized and back water up into the Arboretum during medium-sized storms (less than 10 year). The specific capacity of any one culvert has not been established but preliminary data have been collected. The higher flows cause ponding in the Arboretum and overland release of flows. The ponding helps improve water quality by allowing sediment to settle, rather than flow further downstream. Effective ponding occurs at events well below the 100-year event and cannot be credited for attenuating the 100-year event.

The Arboretum contains a wide variety of conveyance features that vary in size, vegetation, and slope. The channels that are simply earth-lined ditches and are well maintained by flood control standards (clean of debris and smooth) provide relatively efficient transport capability yet because they are mostly bare earth, have a modest potential for contributing silt and sediment to the channel through soil erosion.

The channels that have acquired vegetation and in some cases, have been classified as habitat become relatively less efficient in transporting water but may start to have less potential to contribute erosion because the sides and bottom are stabilized by vegetation. Some water quality benefits start to become possible because where the water slows, sediment can drop out and additionally, as the low flows move through grasses and other vegetation, absorption of contaminants occurs. The major water pollution aspect of storm water is heavy metals and these often bind with sediment so that things that remove sediment remove contaminants.

The Arboretum currently provides adequate storm water conveyance and some treatment. However, it is performing these functions somewhat inefficiently. These functions could be optimized in order to accrue credit for further development of the campus to comply with pending C3 requirements being imposed by the Regional Water Quality Control Board. The C3 provision refers to a requirement to reduce storm water pollution. The features that may be required to enhance water quality would be designed so as to be consistent with the open space objectives for the Arboretum.



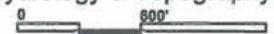
LEGEND

Hydrology

-  Drainage swale
-  Overland flow path



Figure 6: Existing Site Hydrology & Topography



V. LAND USE/INFRASTRUCTURE

A. Existing Land Use

Figure 7, Existing Land Use: Special Features & Activities

The Arboretum currently supports the following types of activities and land uses: open space, recreation, special event parking, storm water management, historic features, wildlife habitat, special events, ceremonial arrival to campus, circulation, limited parking, artwork. The primary planning designation for this area of campus is open space. This provides for both active and passive recreational uses. The most visible and perhaps most popular of these recreational areas is the Oval. Throughout the year the Oval is used for activities ranging from volleyball or frisbee, to sunbathing. Other recreational facilities in the Arboretum include the jogging track in the area bounded by Palm Drive, Campus Drive, Arboretum Road, and Galvez Street, and the old exercise course. Passive recreational uses include picnicking, bird watching, and dog walking, among others. Members of the Stanford community also use it as a place for quiet contemplation. Additionally, once a month, a group of volunteers comes to the Arboretum to work in the Cactus Garden to garden, restore, and maintain the space.

Organized occasional events in the Arboretum that bring in a large number of visitors to the campus are the annual Native American Pow Wow celebration (second weekend in May) with an estimated attendance of 30,000; parking/tailgating for football games (select weekends from September through November), with an estimated per game attendance of between 20,000-50,000; and special event parking for other events such as Parent's Weekend, Freshman Orientation, etc. Other occasional uses are: overflow parking for the car show; use of a small parcel of land in the stadium buffer area for a Christmas tree lot; wildflower planting in Campus Drive median and in portions of the ears of the oval; the annual Founder's Day celebration and walk. Permanent features/uses are: the Cactus Garden and Mausoleum area, the Athletics Picnic/Tailgate area, the Vernal Pool, Memorial Marsh, and a jurisdictional wetland.

Structures on Arboretum lands include: the entry gates on Palm Drive; the Mausoleum and the Angel of Grief; two small restroom buildings, one along Galvez (roughly between Nelson and Arboretum roads) and the other in the area between the stadium and El Camino Real east of Galvez; a portion of the Littlefield Center building; and the Athletics Department seasonal sports signs. Artwork sited in the Arboretum Area includes: the Josef Albers' "Stanford Wall", Andy Goldsworthy's "Stone River"; Charles Ginnever's "Three Graces" and "Chicago Triangles"; and the Larkin Mead's "Stanford Family Statue".

Site Elements:



1. Cactus Garden



2. Mausoleum



3. Angel of Grief



4. Stone River



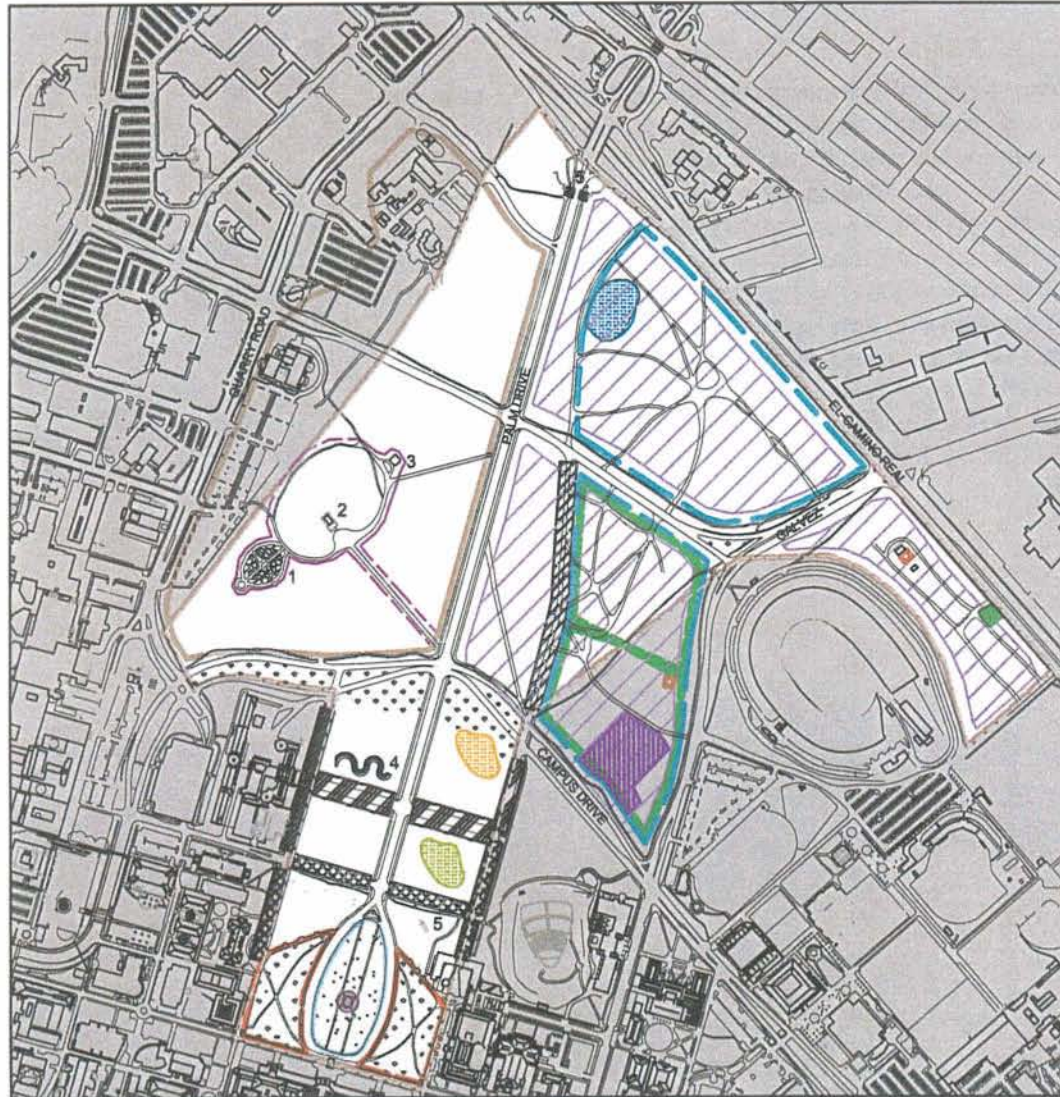
5. Stanford/Albers Wall



6. Campus Entry



Arboretum & Associated Areas Plan



LEGEND / Site Use:













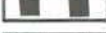








-  Metered parking
-  A parking
-  C parking
-  Unimproved C parking
-  Founders Day Area
-  Restrooms
-  Active recreation
-  Football/event overflow parking
-  Special event parking
-  Parcourse
-  Pow wow
-  Jogging path
-  Entrance gates
-  Wildflowers
-  The Oval
-  The "Ears" of the Oval picnic area
-  Oval Flower display
-  Christmas tree lot
-  Vernal Pool
-  Memorial Marsh
-  Jurisdictional Wetland

Figure 7: Existing Land Use: Special Features & Activities



B. Adjacent Land Uses

Figure 8, Existing & Adjacent Land Uses

Land uses adjacent to the Arboretum are: A variety of commercial and public facilities along El Camino Real in the City of Palo Alto; Athletics, Frost Amphitheater, and the Graduate School of Business (GSB) to the east; the Main Quad to the south; Cantor Art Center and Medical Center to the west.

Two significant future land use changes currently proposed which would affect the Arboretum are: new adjacent medical resident and post doc housing to the west on two sites off of Quarry Road and a new Performing Arts Center to the east adjacent to the Frost Amphitheater. The two housing sites for postdoctoral fellows and medical residents will provide for 350-420 new units. These new housing units have been approved by the Santa Clara County Planning Office as outlined in the Stanford University General Use Permit Conditions of Approval. The location of the parcels is on either side of the Hoover Pavilion. The Performing Arts Center site was explored in a 2000 study but is not proposed for near-term development due to a shortage of funds. A future Performing Arts Center would act as a counterpart to the Museum, as a second major public facility at the opposite end of Museum Way. In addition to adding walks or paths at the edges, the El Camino Real edge will be developed consistent with the City of Palo Alto's plan for the streetscape improvements for El Camino Real and the Stanford plan to be completed in accordance with the Community Plan.

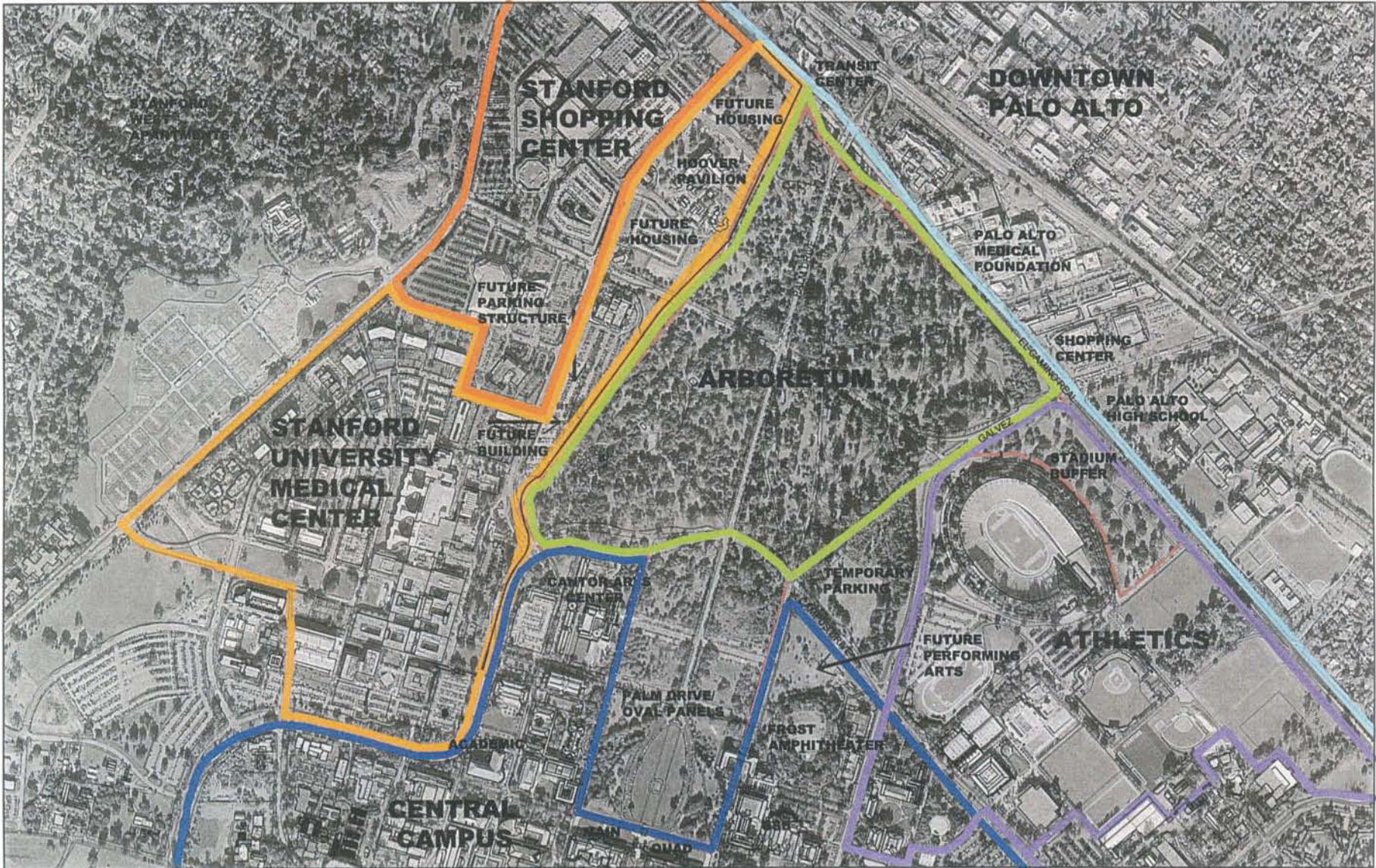


Figure 8: Existing Adjacent Land Uses



C. Existing Visual Character

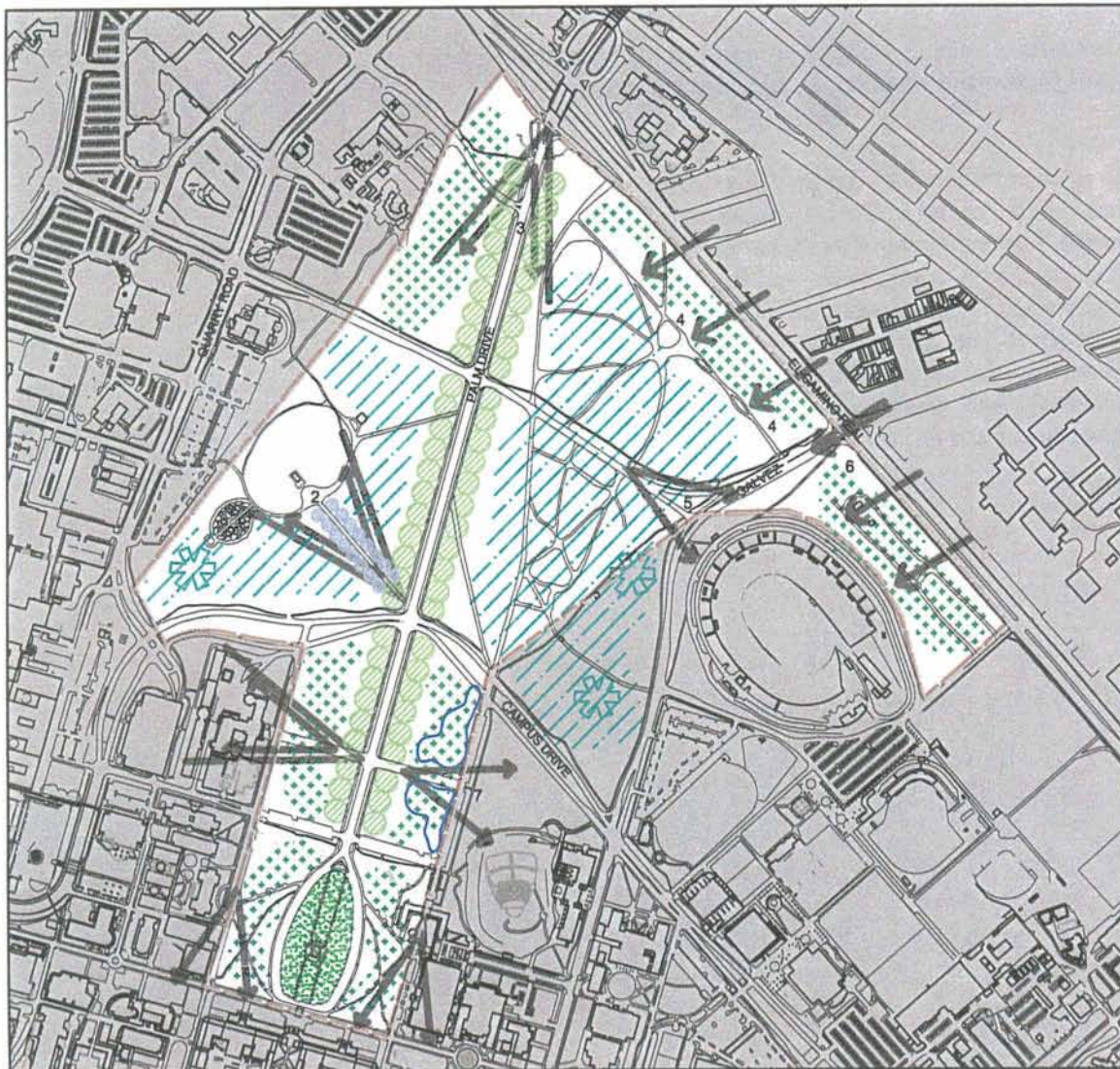
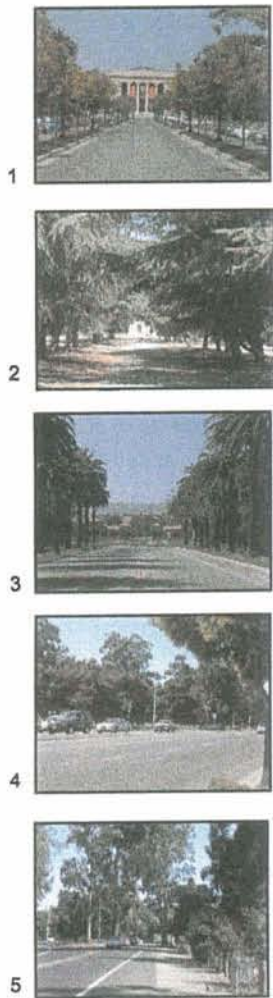
Figure 9, Visual Character

The most significant views of the Arboretum occur both to and from adjacent land use elements. Certainly the most impressive is the view up Palm Drive toward the Main Quad. The main entry to campus was designed to create a heightened sense of drama. There is a processional aspect of moving through the different spaces: first the tree-lined street with the Arboretum to either side, to the openness of the oval, and then through the arch to the inner quad and church, with the foothills as backdrop.

The campus structure is built on a formal geometry and an important part of this are the axes of the original Frederick Law Olmsted plan that define certain areas. Three important visual axes (in addition to Palm Drive) are Serra Mall, Lomita Mall and Lasuen Mall. These are in the process of being restored to provide visual as well as functional connections across campus.

Several other view corridors have been enhanced over the last ten years including the view toward the Museum along Museum Way and the view to the Mausoleum along the cedar-lined path extending from the Palm/Campus Drive intersection. The Stanford Stadium is the dominant visual feature from Arboretum and Galvez Roads.

For many people in the surrounding community who don't have a specific need or reason to come on campus, the view of the entrance gates, the buffer of oak trees along El Camino Real, and the view down Palm Drive towards the foothills defines the University.



LEGEND

Views

- 1. View to Cantor Art Center
- 2. View to Mausoleum
- 3. Ceremonial entry to campus & views to Main Quad & Memorial Church
- 4. Views in from El Camino Real
- 5. Main view to stadium

Potential Views

- 6. Secondary campus entry view to stadium & arboretum
- 7. View to future performing arts center
- 8. Lasuen Mall view to Main Quad
- 9. Lomita Mall view corridor

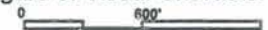
General Character

- Predominantly oaks
- Predominantly mature thinning eucalyptus
- Palm lined corridor with walk and manzanita
- Cedar allee with paved path
- Significant stand of eucalyptus
- Manicured lawn/shrubs
- Marsh vegetation



Arboretum & Associated Areas Plan

Figure 9: Visual Character



D. Existing Infrastructure

Figure 10, Site Lighting – Overview

Figure 11, Utilities

Figure 12, Existing Bike/Pedestrian Circulation

Figure 13, Existing Vehicular Circulation and Parking

Figure 14, Edge Conditions

Infrastructure in the Arboretum consists of existing lighting, utilities, paved and unpaved paths for bicyclists and pedestrians, roads (active and abandoned), and edge treatments.

1. Electrical and Lighting

Traditionally, the majority of the Arboretum has not been lit. The practice of keeping this area of campus unlit is to maintain its rural character and to discourage use after daylight hours where police surveillance would be limited. The only areas of the Arboretum that are lit are the primary safe routes of Palm Drive and Campus Drive, as well as the parking areas along Roth and Museum Way, and along Lomita Drive and Lasuen (south of Campus Drive). There is an electrical line along Palm Drive for streetlights and blue emergency towers. Electrical lines also run along Roth Way, Museum Way, Campus Drive and Lasuen south of Campus Drive. A communications line runs adjacent to the path which extends roughly from the intersection of Lasuen and Campus Drive, diagonally to Palm Drive.



Lighting Key

- Acom
- Floodlight
- Gardco
- Holophane 350
- Kiosk
- Roadway
- Teardrop
- Tree Light
- Miscellaneous
- Cobra Heads on El Camino



Figure 10: Site Lighting - Overview



2. Sewer, Water, and Gas

A sewer line extends along Museum Way, down Lasuen to the area near the “vernal pool.” From this point the sewer line runs below the footpath in an east/west direction.

An existing water line runs in an established utility corridor along the boundary with the Medical Center and under Arboretum Road. Irrigation exists in the narrow planting beds on either side of Palm Drive, in the Oval, near the Mausoleum, on both sides of Museum Way around the parking, and along the edge at El Camino Real. There is no chilled water or steam in the Arboretum. There is an extensive storm drain system in the Arboretum which is discussed in greater detail in the Section IV, Environmental Influences, and illustrated in Figure 11. There are two gas lines in the Arboretum: one that runs along Campus Drive and extends along the path straight to the Mausoleum, and one that runs along Arboretum Road.



CIVIL

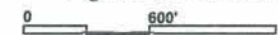
- BUILDINGS, VARIOUS FEATURES
- LINEN UTILITY BLOCK MAPS
- GRIDS
- TOPO
- LANDSCAPE FEATURES

UTILITIES

- ELECTRICAL
- STREET LIGHTING
- COMMUNICATIONS/
FIRE ALARM
- CHILLED WATER
- SEARSVILLE
WATER
- DOMESTIC WATER
- STEAM
- STORM DRAIN
- GAS
- SEWER
- FIRE- WATER CONNECTIONS
- STEAM TUNNELS



Figure 11: Utilities



3. Pedestrian/Bike Circulation

Primary bicycle and pedestrian circulation is along Palm Drive and Campus Drive.

Secondary routes bisect the Arboretum in several places such as along the path to the Mausoleum and from the intersection of Galvez and Arboretum Road over to Lasuen. Per the Department of Public Safety, the recommended safe routes are along Palm Drive and Campus Drive.

There are also a number of informal pathways throughout the arboretum. These are unlit, and some, but not all, are paved. Walkways exist along some of the bordering streets, but in many cases these are either incomplete, or on one side of the street only.

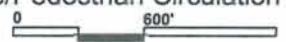
A new undercrossing for bikes is proposed by the City of Palo Alto at Homer as a way for cyclists to cross the railroad to get to and from Stanford and other areas south of Alma.



- LEGEND**
- Primary bike route
 - Secondary bike route
 - - - Campus Safe Route
 - Emergency phone tower
 - - - Informal paved path
 - ✱ Entries to/from Palo Alto



Figure 12: Existing Bike/Pedestrian Circulation



4. Vehicular Circulation

The primary vehicular route through the Arboretum is Palm Drive which runs north-south through its center. It forms a visual axis to the Main Quad, Memorial Church and the foothills and is the ceremonial entry to Campus. Other major vehicular routes are Campus Drive, Arboretum Road, and on the perimeter Galvez and Quarry Roads. Secondary roads include Palo Road, Museum Way, Lomita Drive, Lasuen Street and Roth Way.

The Marguerite runs up Palm Drive to Museum Way, then from Museum along Lomita to Roth Way. There are also routes on Galvez, Serra Mall, Quarry and El Camino. Service vehicles are instructed to take Galvez, Arboretum Road, and Campus Drive as their primary routes and to avoid Palm Drive. Truck routes are identified on Arboretum Road, Galvez Street, and Campus Drive.

A significant land use in the Arboretum is parking. There are several different types of parking in the Arboretum. The main parking categories are: unimproved parking along Lasuen Street, football parking, special event parking, "A," "C," and metered parking near the Oval and on both Roth, and Museum Way. Visitor parking is located along Lomita in front of the Museum.



- LEGEND**
- Primary route
 - Secondary route
 - Marguerite routes
 - Marguerite stop
 - Truck service routes
 - Metered parking
 - A parking
 - C parking
 - Unimproved C parking
 - Football overflow parking (select weekends from Sept.-Nov.)
 - Pow wow event parking (second weekend in May)
 - Special event temporary parking



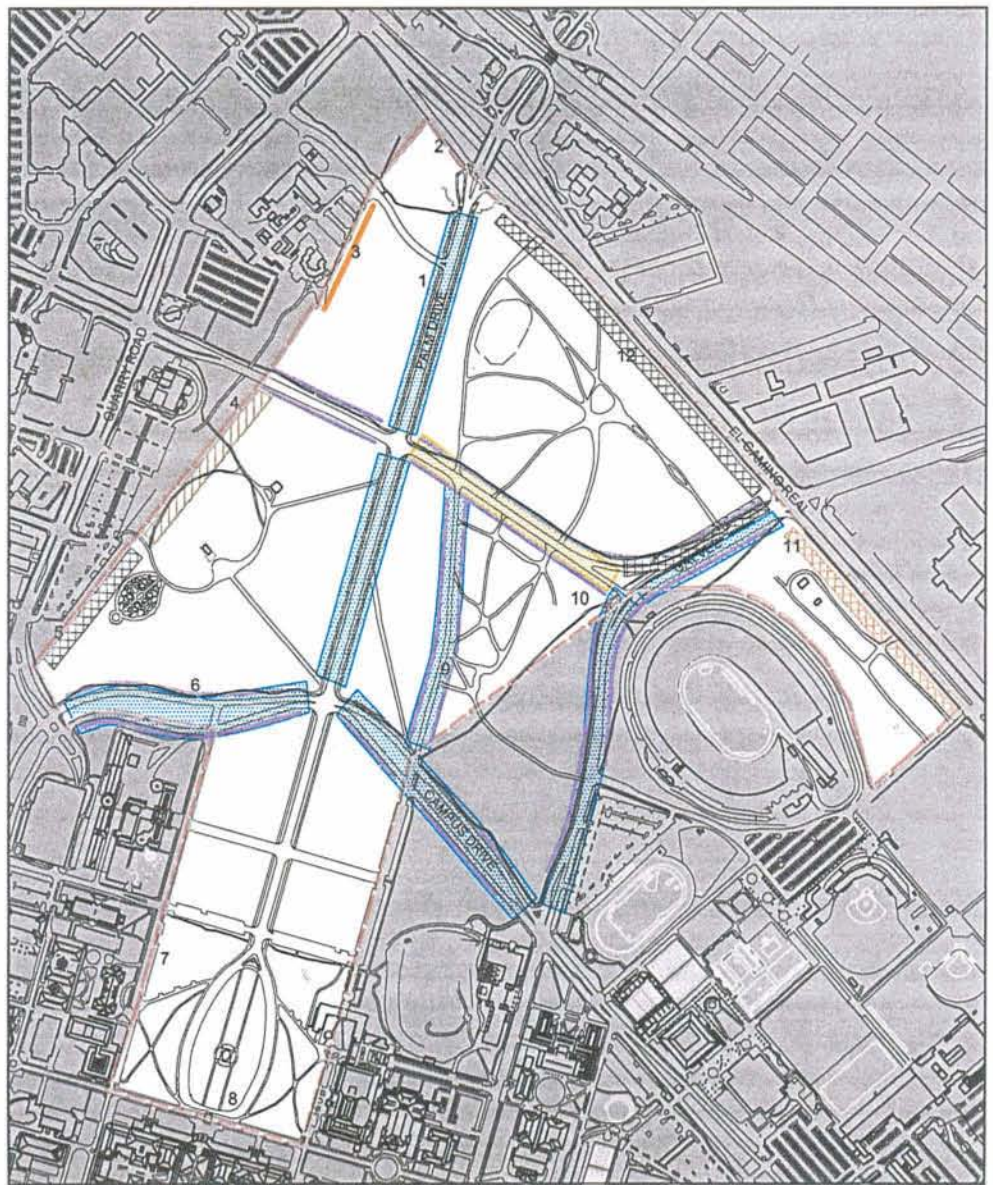
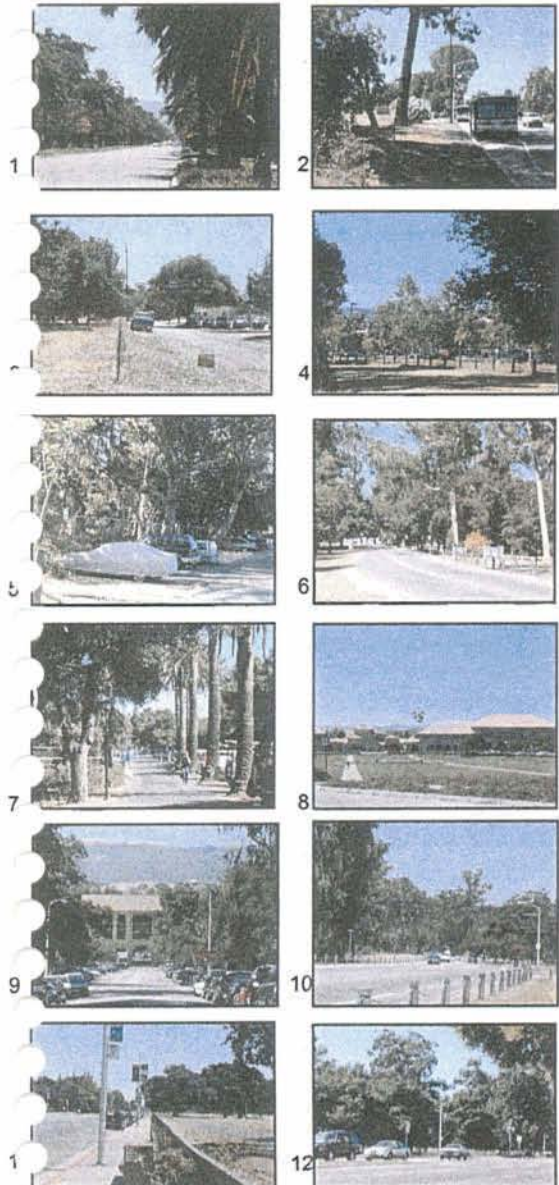
5. Edge Conditions

Edge conditions vary as you move around the Arboretum. Along the “public face” of the Arboretum on El Camino Real, the edge treatment has been a chain-link fence with rose vines backed by a buffer of oak trees with some pockets of large eucalyptus. Along the east side of the Arboretum on Galvez Street, the edge consists of bollard and chain backed by a large stand of eucalyptus. In between the bollard and chain and the eucalyptus are a staggered row of oak saplings. This row of saplings does not extend along the entire length of the road. On Campus Drive there is a consistent bollard and chain fence with a mixture of oak, eucalyptus and cedar trees beyond.

Looking north from Serra Mall, the Oval area is more urban and developed. The predominant treatment is a walk with ceanothus edge planting behind which is open lawn, parking, or wooded picnic areas within the ‘ears of the oval’. North of the oval area, adjacent to Campus Drive the arboretum edge is bollard and chain.

Along the west side of the Arboretum the fence treatment changes to low wood railing to a temporary construction fence. Installed over an unimproved utility corridor there is a wide swath of open land between the fence and the plantings.

Edge treatment along the interior roads and Palm Drive consists of bollard and chain except on Arboretum Road where there are bollards only, with no chain, and in some places no fence treatment at all. Along Palm Drive and in the Oval area, the edge is defined by raised granite curbs. There are concrete curbs along El Camino, and on Museum Way. All other edges are flush with the pavement.



LEGEND

Bollards

 Bollard & chain

 Bollard w/out chain

Fences

 Chainlink

 Corten steel

 Wood

 Construction fence (temporary)

Other

 No curb

Arboretum & Associated Areas Plan

Figure 14: Existing Edge Treatments



VI. THE CONCEPTUAL PLAN

A. Opportunities and Constraints

Figure 15, Opportunities & Constraints













The process conducted involved observation, note taking, interviews with members of the UCLBD, stakeholders, and technical team advisors, and the creation of illustrations to graphically depict existing conditions and specific areas of concern and interest. To summarize all of the issues under consideration and desires future improvements, an illustration was created showing the various opportunities and constraints of the site relative to the identified goals.

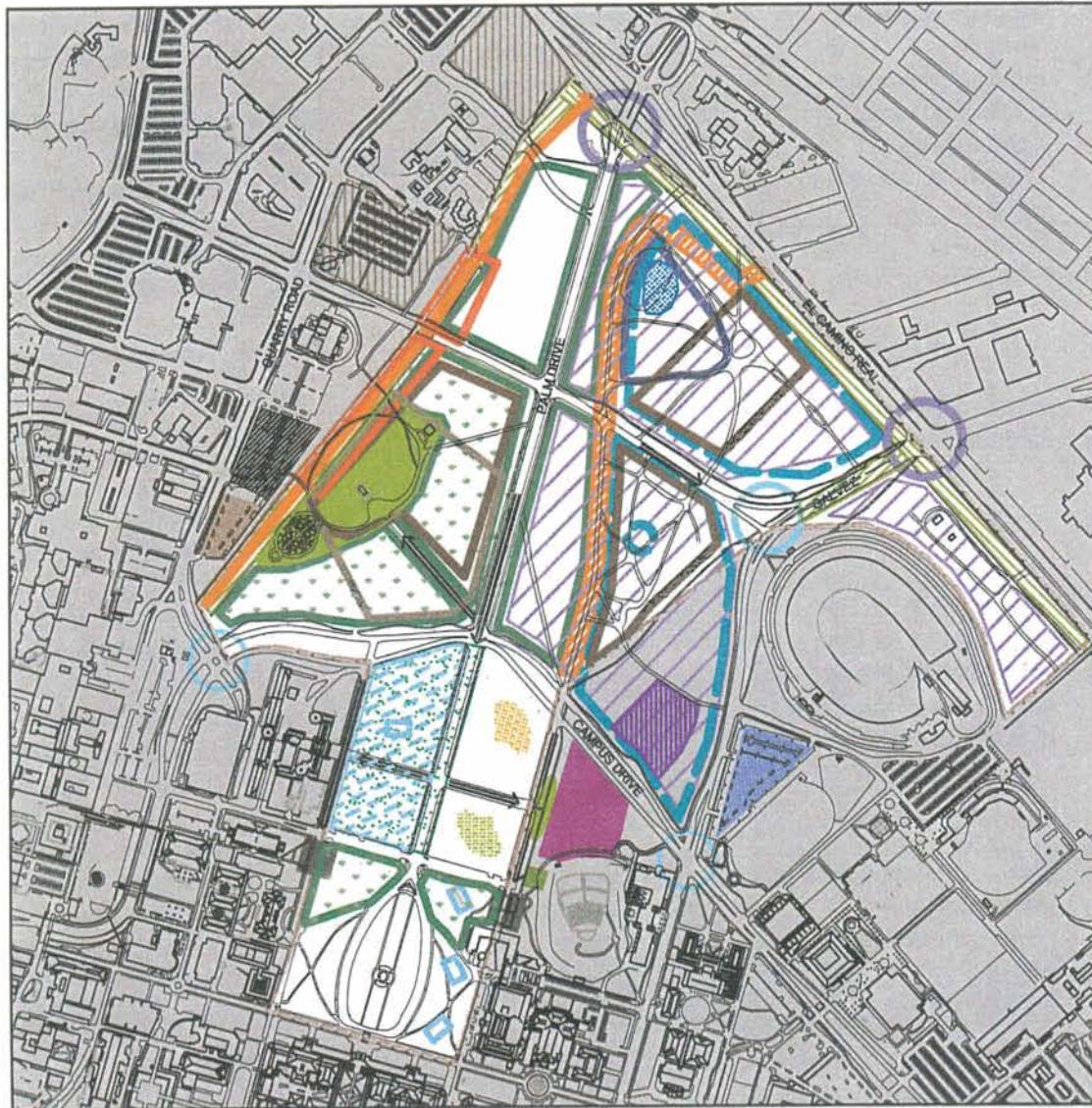
B. Objectives and Recommended Actions

Although many issues were discussed during the course of the plan development, the main areas of interest and concern are identified in the table that follows.

It was generally agreed among members of the Working Group that special event parking, although in many ways a significant constraint, should remain as a use of the area. Other issues concerning circulation involved new bicycle/pedestrian routes for better access through the Arboretum and phasing out of unimproved parking in the Arboretum. The construction of a new bike/pedestrian path along the west side of the Arboretum, along with an upgraded bike/pedestrian path along Lasuen Street should greatly improve connections for both bicyclists and pedestrians and for future residents. Additional opportunities for improvement involved a stronger delineation of the Arboretum edge through the use of a consistent fence treatment (bollard and chain), and a general improvement of the landscape, particularly where it has been degraded either through natural attrition and/or by damaging uses such as construction activities, temporary parking, bootleg roads, etc.. A new element proposed for the Arboretum is the inclusion of interpretive signs and trail connections.

Constraints/Issues:

- Pow wow event parking & dance circle (2nd weekend in May) 
- Football parking (select weekends from Sept.-Nov.) 
- Special event temporary parking 
- Future housing 
- Future building 
- Future performing arts center 
- Future Medical Center parking structure 
- Past construction site/ degraded conditions 
- Outdoor Art 
- Jurisdictional wetland 
- Vernal Pool 
- Memorial Marsh 



LEGEND

Opportunities:















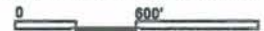
- Intersections improvements 
- Entry improvements 
- Edge/screen improvements 
- East bike path connector to Palo Alto 
- West bike path connector from Palo Alto to to N/S axis 
- Maintain/improve view corridors 
- Opportunities for useable open space 
- Opportunities for outdoor art 
- Opportunities for vernal pool area development 
- Opportunities for specimen tree planting 
- Opportunities for new gardens 
- Frost entry plaza upgrades 
- Historic area Landscape upgrades 
- Lomita/Lasuen parking reconfiguration 



Figure 15: Opportunities & Constraints



Following a process of inventory, assessment and evaluation, specific objectives and recommended actions were developed. These are summarized in the following table:

Objectives	Opportunities	Constraints	Recommended Actions
1. CHARACTER: Preserve rural quality of the Arboretum	<ul style="list-style-type: none"> • Upgrade degraded landscape • Improve planting at Vernal Pool area • Reinforce water channels with wetland plantings 	<ul style="list-style-type: none"> • Parking use by DAPER & Special Events • Special event use: Pow Wow, Football 	<ul style="list-style-type: none"> • Upgrade landscape as needed with California native and other unique plant materials • Maintain casual character of paths and plantings • Maintain wildlife habitats for birds and ground animals
2. DISCOVERY: Reinforce the qualities that create a sense of separation and discovery	<ul style="list-style-type: none"> • Outdoor art • New walking trails 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Minimize overuse and/or over-development of the Arboretum areas • Design modest trail improvements to blend with existing open space
3. SAFETY: Reinforce the safety in the Arboretum for users and visitors	<ul style="list-style-type: none"> • Path improvements • Lighting upgrades 	<ul style="list-style-type: none"> • Size of area to monitor • Open access/no regulation as to who can use space • Homeless camps • Off leash dog walking 	<ul style="list-style-type: none"> • Clear low brush to provide visibility for police surveillance • Maintain paths in good condition for bicyclists and pedestrians. • Provide adequate lighting along designated safe routes.
4. INFRASTRUCTURE Maintain and augment existing infrastructure, particularly storm water management features	<ul style="list-style-type: none"> • Storm water management projects • Mitigation of offsite campus development in Arboretum drainage 	<ul style="list-style-type: none"> • Landscape character and impacts of construction • Land use requirements for drainage devices 	<ul style="list-style-type: none"> • Explore improved storm water cleansing features in Arboretum as potential mitigation for academic campus development • Develop channels and pools consistent with naturalistic rural Arboretum character • Plant drainage features with native California riparian plants
5. LANDSCAPE: Improve degraded landscape and add greater diversity in plantings	<ul style="list-style-type: none"> • Create more traditional arboretum • New specimen tree planting • New gardens 	<ul style="list-style-type: none"> • Limited irrigation • Increased maintenance costs 	<ul style="list-style-type: none"> • Identify areas for renewal and selective infill planting • Expand plant palette to add variety • Develop wetland planting at vernal pool area and drainage channels

Objectives	Opportunities	Constraints	Recommended Actions
6. CONNECTIONS: Improve and augment connections to and through the Arboretum	<ul style="list-style-type: none"> • New bike/pedestrian paths • Improved intersections 	<ul style="list-style-type: none"> • Limited number of safe crossings at intersections • Focus of travel on designated safe routes 	<ul style="list-style-type: none"> • Provide link from bike/pedestrian path to proposed Homer crossing alignment in Palo Alto • Upgrade existing bike/pedestrian path along Lasuen • Create new lit north/south bike/pedestrian path along border with Medical Center and proposed housing connecting Palm/El Camino to North/South Axis
7. VEHICLES: Limit automobiles and their access in Arboretum	<ul style="list-style-type: none"> • Removal of unimproved parking on Lasuen • Expanded area for arrival parking at Littlefield Center and Lomita at Roth 	<ul style="list-style-type: none"> • Necessary replacement parking • Parking demand 	<ul style="list-style-type: none"> • Phase-out unimproved parking along Lasuen between Campus Drive and Arboretum Road • Continue use of certain areas in the Arboretum for special event parking, football parking, and Pow Wow • Define vehicle parking and access with bollards and/or bollards and chain • Develop expanded visitor parking lot adjacent to Littlefield Center
8. HISTORY: Preserve historic features and inform visitors about the significance of its features	<ul style="list-style-type: none"> • Introduce interpretive signs • Identify historic features • Restore plantings according to original plans around Mausoleum 	<ul style="list-style-type: none"> • Maintenance costs for signs and landscape 	<ul style="list-style-type: none"> • Develop Historic District within the Arboretum around the Mausoleum • Introduce interpretive signs at key locations of historic significance. • Maintain historically significant features including Mausoleum, Angel of Grief, cedar lane path, and Cactus Garden
9. EDGES: Reinforce and improve Arboretum edge conditions	<ul style="list-style-type: none"> • Upgrade degraded landscape • Upgrade degraded fence material • Entry improvements 	<ul style="list-style-type: none"> • Potential impact by proposed adjacent housing • Limited irrigation 	<ul style="list-style-type: none"> • Reinforce existing rose edge planting along El Camino and Palms and Manzanita on Palm Drive • Replace existing chain-link fence with consistent bollard and chain treatment • Improve landscape conditions at primary campus entries at Palm and Galvez to reinforce their roles as gateways into campus

Objectives	Opportunities	Constraints	Recommended Actions
10. EDUCATION: Encourage use of Arboretum and related lands as a teaching tool	<ul style="list-style-type: none"> • New interpretive signage • New signed paths • New outdoor art • Use of storm water management or other biological features of Arboretum as educational tools 	<ul style="list-style-type: none"> • Requires coordination with academic programs • Maintenance costs 	<ul style="list-style-type: none"> • Introduce interpretive signs • Create new walking paths to provide access to cultural, art and natural features in panel in front of the museum • Encourage academic department and/or class involvement in plant ecology, systems and restorations • Create a recreational walking path in the vernal pool area
11. RECREATION Maintain and augment existing recreational features	<ul style="list-style-type: none"> • PAR course reconfiguration • New or improved picnic facilities • Existing recreation 	<ul style="list-style-type: none"> • Potential conflicts between uses 	<ul style="list-style-type: none"> • Replace existing deteriorating PAR course with new layout adjacent to the Medical Center and future housing • Add picnic area at vernal pool area and at Native American Pow Wow dance site • Maintain existing jogging path, picnic areas and informal volleyball in Oval lawn area

C. The Arboretum Plan

Figure 1, Conceptual Plan

This Area Plan program defines specific allowable uses by category and uses this as framework to determine further action as funding and University-wide priorities allow. The main areas of change or improvement are: Circulation and Parking, Landscape, Education, Recreation, Trails, Edge Conditions. The program elements are outlined in general terms, followed by specific action items which are bulleted.



- 1. Character**
 - Upgrade landscape (trees & shrubs)
 - Wildflowers
- 2. Discovery**
 - Ears of the Oval picnic area
 - Athletics picnic area
 - Art/nature & vernal pool loops
 - Cactus Garden
 - Mausoleum
 - Angel of Grief
 - Stone River
 - Albers Wall
 - Memorial Marsh
- 3. Safety**
 - Emergency towers (New/along upgraded path)
- 4. Infrastructure**
 - Vernal pool area and channel improvements
- 5. Landscape**
 - Upgrade degraded landscape
 - Special entry treatment
 - Oval flowers
 - Oval lawn
- 6. Connections**
 - Primary pedestrian/bike path upgrade w/lighting (new)
 - Upgraded Lasuen corridor pedestrian/bike path (w/out lighting)
- 7. Vehicles**
 - Vehicle parking
 - Football parking
 - Special event parking
 - Phase out Lasuen parking
 - Restrict access w/appropriate vehicle controls
- 8. History**
 - Founder's Day walk
 - Establish Historic District
- 9. Edge**
 - El Camino & Quarry edge planting
 - Consistent bollard and chain treatment
- 10. Education**
 - Interpretive signs
- 11. Recreation**
 - Par course (relocated)
 - Pow Wow grasses
 - Jogging path

1. Circulation and Parking

Parking and circulation are significant elements that will shape future plans for the Arboretum. The biggest issue under discussion was the decision to phase out the unimproved parking in the Arboretum by removing the parking along Lasuen between Campus Drive and Arboretum Road and to convert it into a bike/pedestrian path. This connection would serve as a significant new travel route for bicyclists and pedestrians coming to and from campus via the new City of Palo Alto Homer Avenue underpass. The second major connection would be a newly constructed path along the west side of the Arboretum at the boundary of the Arboretum and the development of the Medical Center. This new bike/pedestrian path will serve anyone going from the Medical Center (or campus) into downtown Palo Alto (as well as to the transit hub at the Caltrain Depot). It will also serve as a primary travel route for future residences that will be adjacent to the path that will connect to the regional North/South axis leading through the Sciences and Engineering (SEQ) part of campus. In the interest of safety, this newly constructed path will be a lit path and will include blue emergency towers. In keeping with established practice, however, the majority of the area within the Arboretum will remain unlit. Nighttime users of the Arboretum will still be encouraged to use Palm Drive and Campus Drive as their primary safe routes per the recommendation of the department of Public Safety.

- Phase-out unimproved parking along Lasuen Street
- Upgrade bicycle/pedestrian connections through the Arboretum by narrowing Lasuen north of Campus Drive to path-width and connect path from Galvez and Palm Drive to new City of Palo Alto Homer Avenue underpass
- Realign portion of existing Lasuen that extends from the Vernal Pool area to El Camino Real to support the Homer bike/pedestrian connection
- Create new vehicle and bicycle parking court at Littlefield/Frost entry on Lasuen
- Create new lit bicycle/pedestrian route along boundary with the Medical Center
- Complete sidewalks or paths along Arboretum Road and El Camino Real
- Incorporate bike lanes on all major roads through the Arboretum

2. Landscape

Primary landscape improvements include a more consistent treatment of the Arboretum edge. The proposed vocabulary for this edge treatment is a uniform bollard and chain for the Arboretum proper. The stadium buffer will continue the coretex steel fence that marks the Stanford El Camino edge excepting the Arboretum. Although the landscape within the Arboretum will be preserved in a more naturalistic style, the main entries at Palm Drive and Galvez Street will be planted in a slightly more formal style to reinforce their role as gateways into the campus. Deteriorated sections of the Arboretum should also be replanted incorporating a larger variety of California native trees, shrubs and ground covers. Opportunities for new or restored gardens may also be considered, primarily in the area surrounding the vernal pool and around the Mausoleum where volunteers currently care for the Cactus Garden. Waterways can be reinforced with riparian plantings. Where appropriate, new specimen trees should also be added.

- Continue oak revitalization efforts to supplant trees that are diseased or have died.
- Augment understory planting where landscape has become degraded
- Re-landscape vernal pool with riparian plants
- Reinforce drainage areas with riparian plantings
- Plant entries at the intersection of Palm Drive/El Camino Real, Galvez/El Camino Real with a more formal landscape treatment
- Introduce new native tree specimens in open space areas proximate to trails

3. Education

As would be expected in an academic environment, education was an important issue in discussions regarding improvements to the Arboretum. The Working Group recommended that interpretive signs be added as a means of educating users about this open space. The signs should address issues relating to the natural environment, convey some history of the campus, and educate users about the outdoor art in this area of campus. Departments across campus should also be encouraged to discover ways in which to participate in restoration efforts and to use the Arboretum as a teaching tool.

- Include interpretive signs at specific locations throughout the Arboretum to convey information about: campus history, artwork, natural features (at Vernal Pool, Memorial Marsh and other similar locations)
- Solicit department participation in planting restoration, water management, wildlife, or other areas of relevant academic value

4. Recreation

Many participants in the Working Group for the Arboretum Area Plan spoke about the importance of the Arboretum as a place to relax. To improve conditions in the Arboretum for recreational use, it was recommended that a few new informal walks and small picnic areas be created. The proposed areas for these new walks are around the vernal pool and in the panels in front of the Museum. The jogging track will be maintained, and it was recommended that the par course be upgraded and reconfigured.

- Reconfigure and re-install new par course (exercise circuit) stations
- Create new art and nature loop walks
- Upgrade Athletic Picnic Area through the addition of mulch, planting, picnic tables
- Upgrade Ears of the Oval Picnic Area through the addition of mulch, planting
- Create Vernal Pool Picnic Area through the addition of mulch, tables, planting
- Maintain native grasses in central circular area used during Pow Wow, potentially to be used for picnicking during the remainder of the year.

5. Edge Conditions

The goal for the improved Arboretum edge is to augment the existing planting and have a consistent vocabulary of bollard and chain fencing. In addition to adding walks or paths at the edges, the El Camino Real edge will be developed consistent with the City of Palo Alto's plan for the streetscape improvements for El Camino Real and the Stanford plan to be completed in accordance with the Community Plan.

- Install consistent bollard & chain for edge definition
- Upgrade/add planting along edge to visually reinforce the boundary
- Coordinate with the City of Palo Alto and Stanford plans for the El Camino Real project

The goal of this Area Plan has been to inventory and assess current conditions in the Arboretum and to define improvements to be made over time. Although this is a fairly large, well-loved, and visible area of campus, it generally receives less attention than more populated portions of the campus. This plan defines focus or use areas that would allow a higher level of use and instill a greater value to specific areas within the larger Arboretum open space.



VII. IMPLEMENTATION

Figure 16, Implementation

Implementation of this plan will occur over time as funding is available and specific program elements are triggered. As each project is identified, specific boundaries and budgets will be identified and submitted for approval through the standard Stanford Form 1 process. General maintenance will need to be addressed through the Facilities Operations Grounds department as a part of their annual budgetary and programming processes.

Potential specific projects are identified in the executive summary and include:

- A. Improvement of channels and vernal pool area.
- B. Restoration of degraded or declining landscape areas.
- C. Development of western edge pathway and lighting.
- D. Conversion of Lasuen (north of Campus Drive) parking to bike/pedestrian route.
- E. Restoration of Mausoleum area path and landscape.
- F. Completion of bollard and chain along arboretum edges.
- G. Development of path and interpretive signs for historic, natural and cultural features.
- H. Relocation and upgrade of par course/exercise circuit.
- I. Improvement of campus entries at Palm Drive and Galvez Street.
- J. Infill and expansion of existing plant palette in the Arboretum

Possible funding sources for these projects include: SIP, private donors, maintenance and operations utility/utility programs, research grants and individual department programs that may have specific needs, for example: the Museum and the Outdoor Art Program, the Graduate School of Business.



- A** Vernal pool area landscape
- B** Degraded landscape restoration
- C** West edge / medical center pathway
- D** Bikeway / Homer connection / parking relocation
- E** Mausoleum landscape restoration
- F** Bollard & chain edge treatment
- G** Art & environment walk / interpretive signs
- H** Par course relocation
- I** Palm Drive & Galvez entries
- J** Expanded planting species



BIBLIOGRAPHY

Architectural Resources Group. *The Angel of Grief Condition Survey*. November 1996.

Architectural Resources Group. *The Stanford Mausoleum Condition Survey*. November 1996.

Cain, Julie. Arizona Garden and Arboretum, 1879-1905. *Sandstone & Tile. Volume 27, No.2*. Stanford Historical Society. Spring/Summer 2003.

City of Palo Alto. *Embracing the New Century, 1998-2010 Comprehensive Plan*. [Land & Circulation Map].

Magic, Inc. [report] *Oak Habitat Regeneration on Stanford University Lands 1995-96*.

Santa Clara County Planning Office. *Stanford University Community Plan*. December 2000. (Adopted by the Santa Clara County Board of Supervisors, December 12, 2000)

Santa Clara County Planning Office. *Stanford University General Use Permit: Conditions of Approval*. (Approved December 12, 2000)

Santa Clara County Planning Office. *Stanford University General Use Permit*. 1 September 1999 – 31 August 2000.

Stanford Historical Society 2001. *A Chronology of Stanford University & Its Founders 1824-2000*. May 2001.

Stanford University Planning Office. *Campus Planning Report 2002*. February 2002

Stanford University Planning Office. *Stanford University Landscape Design Guidelines*. March 1989.

Turner, Paul V. *The Founders and the Architects: The Design of Stanford University*. Stanford: Department of Art History, Stanford University, 1976.

Websites:

<http://grounds.stanford.edu>

<http://www-library.stanford.edu/dept/physics/news/thestanfordarizonagarden>

http://www.stanfordalumni.org/birdsite/pix/maps_arboretum_birds_m.html