

Campus Core Capacity Study

University of
California,
Santa Cruz

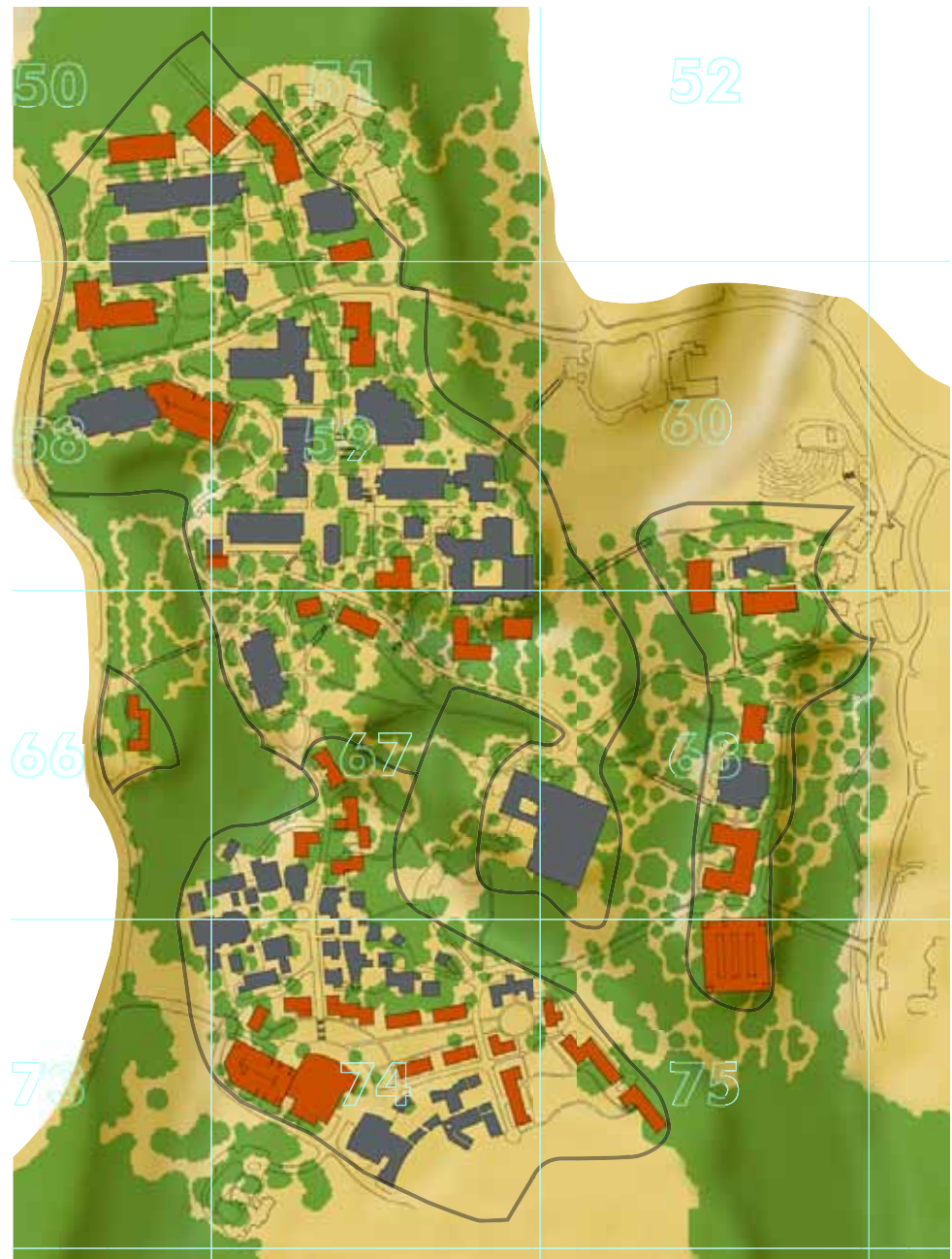


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Executive Summary



UC Santa Cruz Campus Core Capacity Study

- Capacity Findings
- Circulation
- Open Space
- Next Steps

This study analyzes potential development of the University of California, Santa Cruz to accommodate future growth in its Campus Core. It evaluates and assigns theoretical capacity potential based on scale and density that fits contextually with the existing built environment, and that considers and respects the campus natural setting.

CAPACITY FINDINGS

- This study indicates that the Campus Core is nearing its “build-out” capacity
- Approximately 1,250,000 outside gross square feet (ogsf) is currently built or under construction in Campus Core
- There is the potential to accommodate 33 new buildings in the Campus Core with a theoretical capacity of 836,000 ogsf
- This additional capacity could increase density of Core by approximately 75%
- The majority of additional capacity is in small buildings (22 of 33)
- The 33 potential new

buildings include:

- 4 buildings of 60,000+ ogsf each
- 7 buildings of 25,000-56,000 ogsf each
- 22 buildings of 6,000-23,000 ogsf each
- It is unlikely that the campus could achieve the theoretical capacity because:
 - Location mismatches limit site suitability (potential building sites may not be adjacent to program needs)
 - Site specific environmental and other site factors - such as infrastructure or storm drainage considerations - could reduce capacity
- The ability to infill this quantity of additional ogsf will require confirmation of infrastructure capacities by area and by system
- Actual capacity will also be affected by parking and circulation strategies and other factors

The academic divisions located in the Core forecast programmatic growth of approximately 621,000 ogsf through the year 2011.^{E-1} An additional 120,000 ogsf for academic services, classrooms, sup-

port, and library space raises projected demand to 742,000 ogsf. This equates to an increase approaching 60 percent over its current 1,250,000 ogsf.

Divisional adjacency needs and sites consumed by unforeseen future needs are likely to further reduce the actual capacity for divisional expansion. These factors may require the University to consider options beyond the Campus Core to satisfy future needs for additional facilities.^{E-2}

CIRCULATION

As the Campus Core intensifies in facility development and the campus population grows, the University should place increased emphasis on a functionally sound pedestrian, bicycle, and transit friendly environment. This means that personal vehicles would utilize peripheral parking areas served by the UCSC shuttle system, and pedestrian and bicycle pathways. Given this context, the capacity analysis assumes a transit circulation loop around the Campus Core and peripheral commuter

^{E-1}The divisions in the Campus Core include Arts, Engineering and Natural Sciences, as well as Libraries, Academic Support and Classrooms. Humanities and Social Sciences are primarily housed in areas designated for Colleges and Graduate Housing. Humanities and Social Sciences divisions project growth of an additional 179,000 ogsf. Amounts of additional square feet for academic and research provided by Planning and Budget. (Summer 2002)

^{E-2} This is also contingent on the role of the Colleges in campus growth.



E-1 Patterns of Development

This study evaluates the existing Campus Core (A) potential to accommodate patterns of future development (B)

and event parking areas. It also clarifies points of service, and emphasizes pedestrian linkages.

Under these assumptions, parking at the periphery of the Campus Core would increase from its current 1,400 spaces to 1,900 spaces based on the removal of selected surface parking and the construction of three parking structures.

OPEN SPACE

The signature quality of the UCSC campus is its extraordinary open spaces and natural environment. In balance with the intensification of the Campus Core's built environment, this study identifies areas of open space to preserve the campus' unique connection with the natural environment and to maintain a broad spectrum of outdoor experiences in the Campus Core.

This study also recognizes the importance of developed outdoor spaces at pedestrian crossroads as places for collegial interaction and orientation.

NEXT STEPS

The Campus Core Capacity Study is the first of a series of steps in the planning and design process to plan for growth for UCSC. The success of the new facilities will rest on a multitude of programmatic, physical, and fiscal factors that require further detailed study and guidance. For example:

- The academic divisions will need to evaluate how the identified site programs work with their projected growth
- Infrastructure capacity analysis will need to be completed to validate density assumptions
- Circulation and parking assumptions will need to be analyzed and validated
- Growth goals beyond 2010 will need to be established and evaluated in light of remaining core capacity
- Fundamental assumptions about scale, density and open space will need to be reviewed and accepted by the appropriate campus planning committee(s) and principal officers
- Area planning will need to be done to comprehensively address variables related to program objectives, site, circulation, etc.
- Strategic plans and mechanisms to reserve sites for their optimal uses will need to be established
- Financial strategies will be needed to develop supporting infrastructure base and other needs such as parking and pedestrian circulation
- Capacity assumptions will need to be refined based on more specific environmental information.

1

Overview & Methodology



UC Santa Cruz Campus Core Capacity Study

- Study Objectives
- Background
- Methodology

The University of California, Santa Cruz future is committed to building facilities capable of meeting the demands of teaching, research, and public service.

This Campus Core Capacity Study assists in the determination of the extent the UCSC Campus Core is able to accommodate future development consistent with the University of California Santa Cruz's (UCSC) high quality of planning and design in the advancement of its mission.

STUDY OBJECTIVES

This study provides a framework to guide future program adjacencies and building siting decisions by

- Establishing potential building sites for future growth
- Proposing distinct open space areas and circulation patterns to facilitate navigation of the campus
- Identifying opportunities to create a hierarchy of open spaces
- Providing a planning framework that creates a cohesive, congruent, memorable, and high-

quality built environment with a distinct sense of place, supportive of the University's mission.

BACKGROUND

The Campus Core Capacity Study is a compendium document to the physical capacity study of the north campus completed for the Growth and Stewardship Task Force in May 2002 titled, UC Santa Cruz Growth and Stewardship Planning, Working Draft. That study primarily compares the residential development capacities of the undeveloped North Campus with a group of "infill" sites in and around the existing colleges. As that effort neared completion, it was clear that a similar capacity study needed to be prepared for the anticipated growth in the academic and research programs and academic support functions for the Campus Core.

1988 LRDP

The following excerpts from the 1988 Long Range Development Plan (LRDP) for the campus focus on areas pertinent to this capacity study.

LRDP ORGANIZING PRINCIPLES

The following excerpts are from the LRDP Organizing Principles:

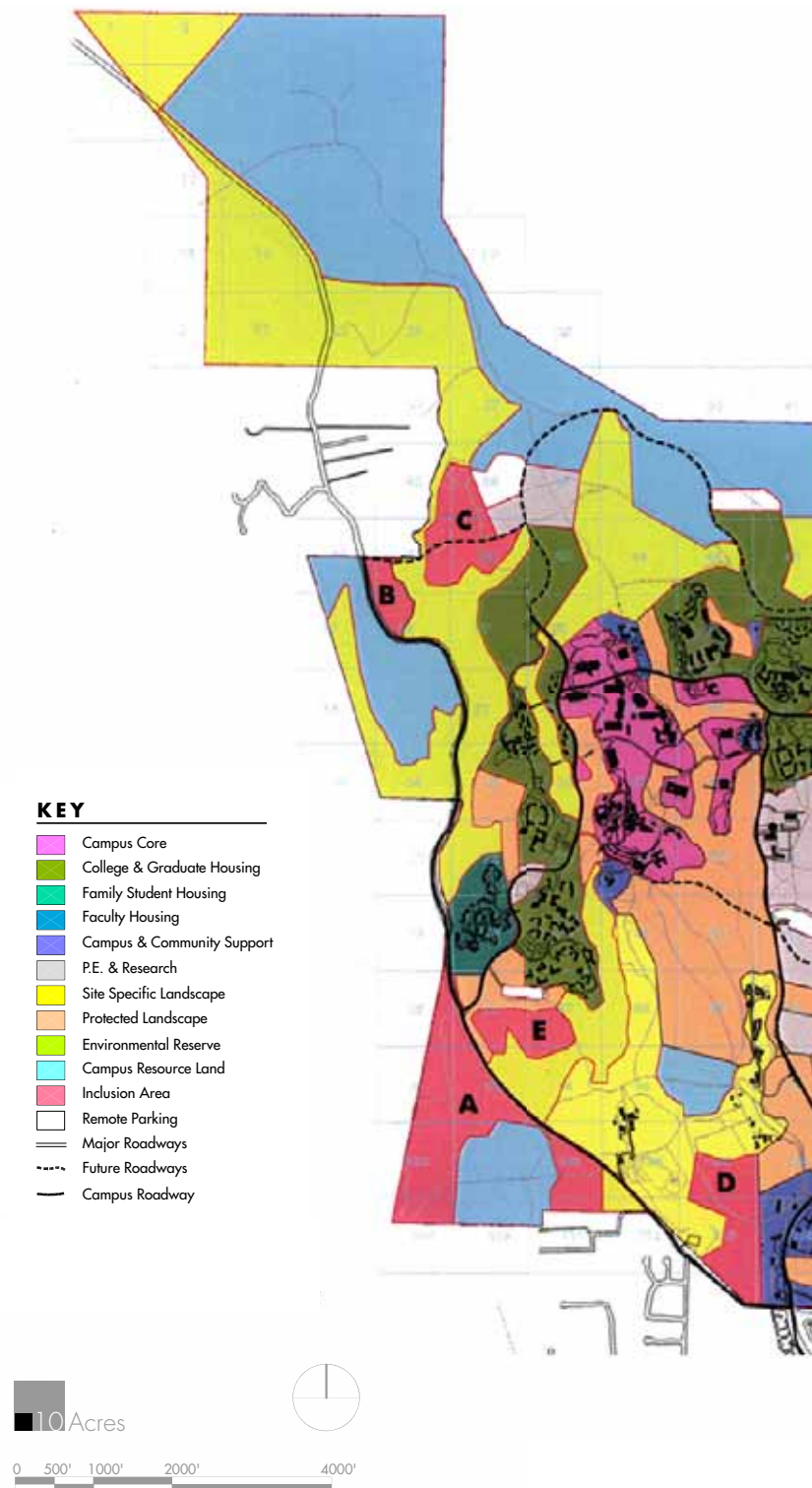
Configuration of Core and Colleges

"...development pattern of the campus will continue to be a core of administration and science buildings surrounded by an arc of colleges..."

Infill and Clustering of Campus Components

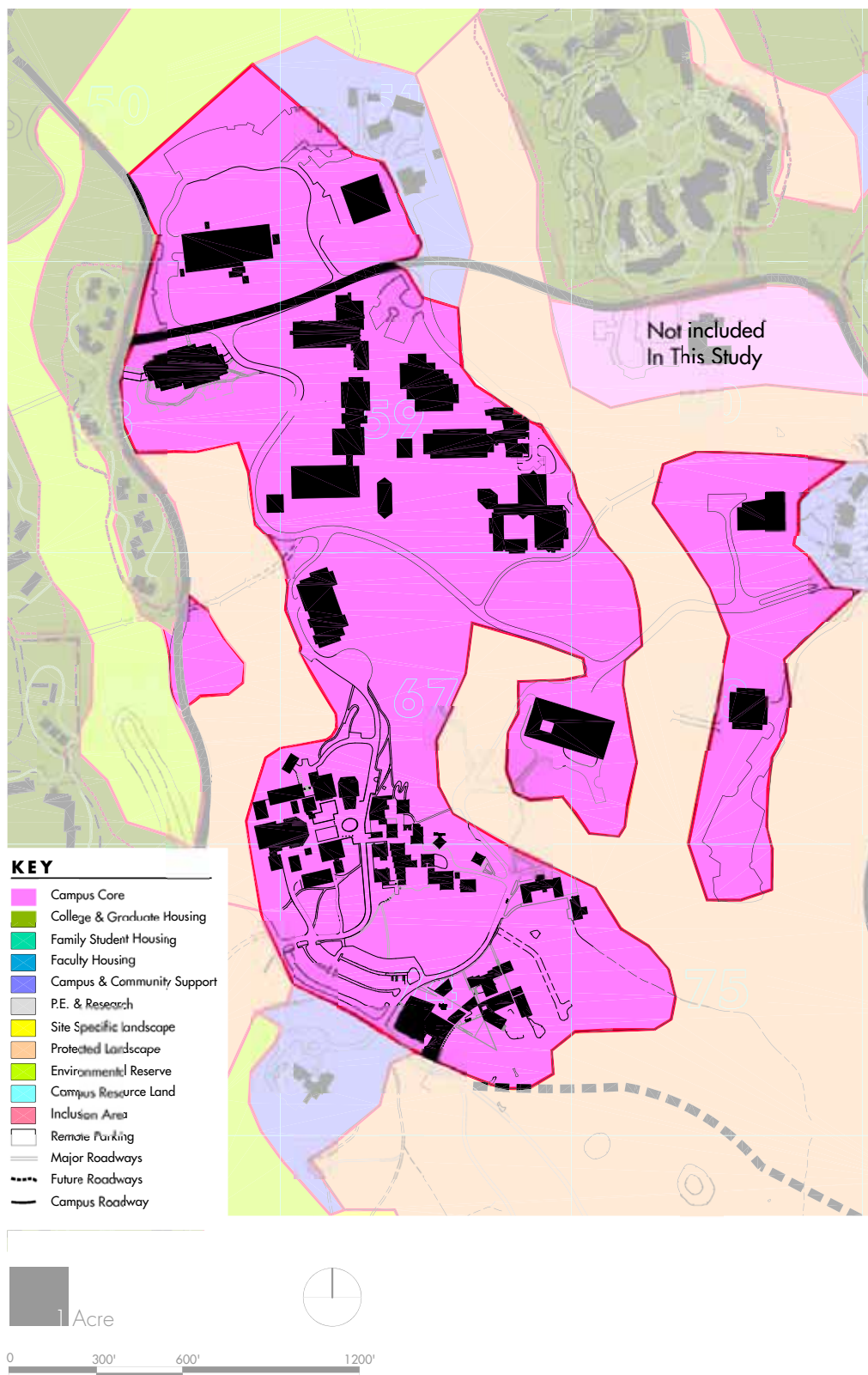
"The 1988 LRDP will, to the maximum extent feasible, rely on infill and clustering of facilities in order to allow efficient land use, support pedestrian and shuttle travel, facilitate servicing of buildings, promote interaction among affiliates of various colleges and disciplines, avoid sprawl of buildings throughout campus, and allow retention of valuable visual and environmental amenities. New development in the Campus Core will follow a pattern of careful infill, with further concentration of existing uses in the area."

1-1 Land Use
 1988 Long Range
 Development Plan Land
 Use Designations



1-2 Campus Core Study Area

This study investigates development capacity in the Campus Core as defined by the 1988 Long Range Development Plan (exclusive of the area occupied by the Cowell Health Center).





1-3 Kerr Meadow

This study identifies Kerr Meadow as permanent open space, siting new facilities adjacent to the meadow.

In both the Campus Core and in the colleges, efficiency in land use should be achieved, in part by reducing building footprints and increasing building height. However, buildings built in forested areas should not generally protrude above the surrounding tree canopy, and in all areas unduly monumental or rigid development pattern should be avoided because they are unsympathetic to the natural environment."

Pedestrian Circulation

"The central campus should function as much as possible as a pedestrian campus, where people find it possible and desirable to walk from one side of the campus to the opposite side. To make the campus as "pedestrian friendly" as possible, improvements to the pedestrian system will be pursued, a vehicle-free "pedestrian spine" will be developed through the center of the campus along Steinhart Way, and pedestrian activity centers will be defined and developed."

Community Access Area

"The UC Santa Cruz campus is a resource not only for students and faculty but also for the surrounding community. Most of the community-oriented events on campus take place in facilities at the southern boundary of the Campus Core. These facilities include: the East Field House, the Performing Arts complex, McHenry Library, University House, and the Baskin Visual Arts complex. The Student Center and University Club are also planned for construction in this area, which the LRDP recognizes as a Community Access Area.

The campus will attempt to site new buildings that are important destinations for off-campus visitors in the Community Access Area. Adequate signage, parking and pedestrian pathways will be developed to serve these facilities. The construction of the Meyer Drive Extension another important component of a campus design that would make the area easily accessible to the public. The Community Access Area, however, includes important

visual ecological amenities.

Therefore, buildings located there will be carefully sited to preserve wildlife habitats, natural vegetation and views to and from the area."

Areas Not Planned for Development

"A consideration of the natural attributes of various parts of the campus was an important criterion in determining which lands could be developed and which would remain largely or wholly undeveloped. The following principles were utilized as guidelines in making this determination:

- *Protect slopes greater than 20% from substantial development*
- *Protect ravines and canyons from disturbance*
- *Maintain extensive contiguous grasslands by concentrating necessary development at the perimeter of these areas, where the forest can form a backdrop*
- *Retain the continuity of wildlife corridors*

1-4 Places of Interaction

Developed open space adjacent to existing and new facilities provide opportunities for interaction among the students, faculty, and staff.



Protected Landscapes are established to maintain special campus landscapes and to protect environmental resources (including wildlife corridors and vegetation with ecological or aesthetic importance)."

LRDP Description of Campus Core Land Use

Approximately 102 acres within the central campus area circumscribed by the loop road system of Hagar, Heller, McLaughlin, and Meyer drives are designated Campus Core. The Campus Core will continue to be the focus of centralized instructional resources and research space on campus. Those academic facilities with major spatial and infrastructure requirements, such as science laboratories and libraries, are particularly appropriate for location in the Campus Core.

Some facilities that must be accessible to the campus community as a whole will also be located in the Campus Core. Based on these criteria, facilities to accommodate the following program elements will be the principal projects sited in the Campus Core:

- *General Administration*
- *General Academic*
- *Services and Classrooms*
- *Academic Support*
- *Natural Sciences*
- *Social Sciences (especially laboratory research facilities), Arts*
- *Library Expansion*
- *Public Services (including the University Club)*
- *Student Services (including a Student Center and Graduate Center), and*
- *Some Logistical Services functions (possibly including Physical Planning)*

The boundary of the Campus Core area to the south of and east of the Student Center may be adjusted to accommodate future uses consistent with the Campus Core designation, provided that the boundary of the area is not extended further to the east and the overall area of Campus Core in the immediate vicinity is not increased."

The Campus Core Capacity Study gives form to the planning principles voiced in the 1988 LRDP, however, some of the alternatives in this study would call for amendments to the LRDP land use boundaries.



1-5 Natural Open Space

The campus offers unique opportunities to locate facilities in close proximity to natural open space.

METHODOLOGY

The Study subdivides the Campus Core into three study areas:

- Campus Core **North**
- Campus Core **South**
- Campus Core **East**

Campus Core North includes a small island of the Campus Core along Heller Drive. The study did not assess the Campus Core area directly adjacent to the Cowell Student Health Center.

The UCSC planning staff identified a total of 18 sites for evaluation of potential development of new facilities in the Campus Core based on the following criteria:

- Land designated as Campus Core in the 1988 LRDP
- Existing main circulation patterns remain constant
- Existing buildings remain
- No sites significantly impacting slopes greater than 20%

The study reserves two key areas as open spaces for the campus. A portion of the undeveloped area between Kerr Hall and McHenry Library is set aside as a unique component of the

campus landscape.

Recognizing the pastoral quality of this space and the need for respite at the center of the developed campus, the study recommends designating the Kerr Meadow as Protected Landscape in the LRDP.

Similarly, the study recommends re-designating a portion of the Campus Core South near the arts center as Protected Landscape due to the area's visual sensitivity that would be significantly compromised by new facilities.

The 18 original sites yielded a total of 24 new building locations. Building layouts identified for each site avoid existing main utility runs, minimize tree removal by retaining all prime tree and forest stands¹⁻¹, address existing circulation networks, and minimize potential grading and land disturbance.

Previous campus reports on geology and soils were consulted prior to the assessment, and development patterns were adjusted to avoid problematic features. The outside gross square foot building capacity

of each site reflects a reasonable footprint and building height. For some sites, alternatives were considered including areas outside of the Campus Core.

Planning assumptions were developed in response to the LRDP "Organizing Principles" to guide this study. In addition, planning exclusions identify other unknown factors outside the scope of the study that may ultimately limit growth capacity.

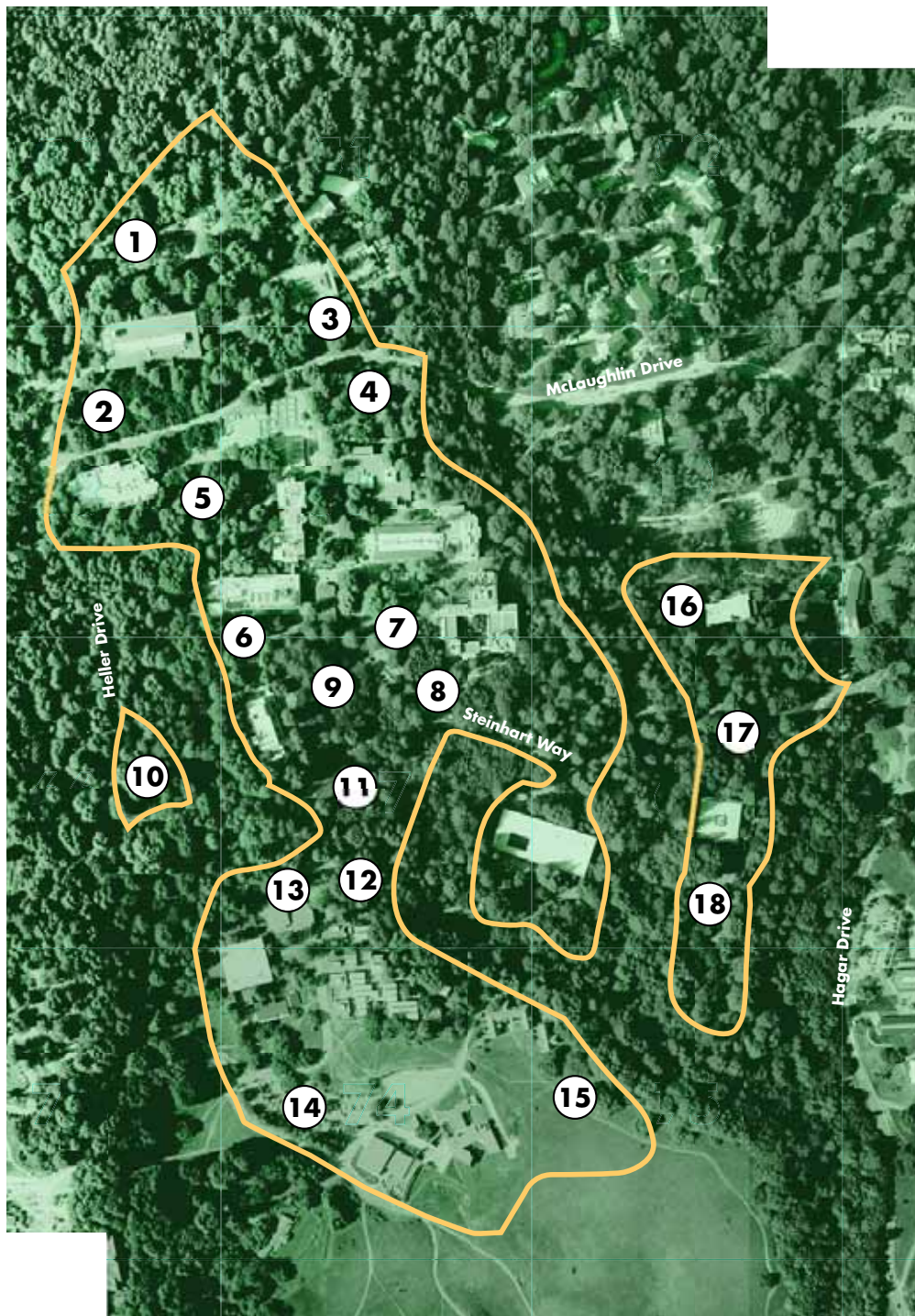
Assumptions and exclusions are neither comprehensive nor complete, but are used in this study to guide the physical layout and siting of potential buildings. The considerations noted below are incorporated in the analysis of the building layouts and site design and thus affect the total build-out capacity of the campus.

¹⁻¹ 1987 McBride Analysis of Vegetation and Management Program

1-6 Core Campus Subareas

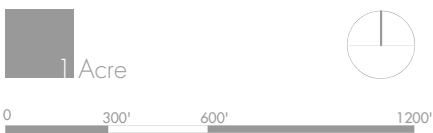
The study examines three subareas of the Core Campus: North, South, and East.





1-7 Campus Core Study Sites

This study investigates 18 sites in the Campus Core and concludes potential to accommodate up to 33 additional buildings and three new parking structures.



LEGEND

- Core Study Area
- 1 Core Sites

1-8 Campus Connections

Bridges create critical linkages within the Campus Core and to the surrounding Colleges and supportive campus facilities.



Planning Considerations

The Campus Core is the primary academic and administrative center of the campus, housing portions of or full programs for:

- J. Baskin School of Engineering
- Division of Natural Sciences
- Division of Social Sciences
- Division of the Arts
- Campus Administration
- Student Affairs
- University Library

In addition, a major classroom building is located in the Core.

The total Campus Core comprises 102 acres, 95 acres without the Cowell Student Health Center site. Of this area, 15 acres have a slope greater than 20%, which is considered undevelopable under the LRDP. The Campus Core contains a footprint of 1,250,000 built square feet (ogsf) ¹⁻²

The Campus Core is not a single continuous area of land. The LRDP identifies four separate areas with this designation. Each of these areas is separated from other

areas of the Campus Core by significant natural features. This limits flexibility in terms of growth by division and creates severe ruptures in campus circulation patterns. This study examines three of the four areas. For purposes of this study, the areas are identified as:

- **Core North**
- **Core South**
- **Core East**

This capacity study incorporates the following planning considerations:

- Maximize the development potential complementary to the campus' environment
- Develop facilities in clusters to create gathering spaces
- Develop adjacent to existing buildings for program-efficient adjacencies where feasible
- Maintain building height in scale with neighboring buildings in areas and no higher than the surrounding trees

Planning Exclusions

This capacity study did not include the following:

- Specific demands of divisional programs
- Site specific geotechnical, biological, or cultural survey
- Cumulative impacts likely to be caused by development
- Campus Core designated land adjacent to the Cowell Health Center
- Construction or operational cost premiums for sites

¹⁻² Planned development includes the Engineering building and an addition to the McHenry Library.

1-9 Slope Analysis

Slopes are steepest at the ravines that run through the Campus Core. Gentler slopes exist in large portions of the North Campus.

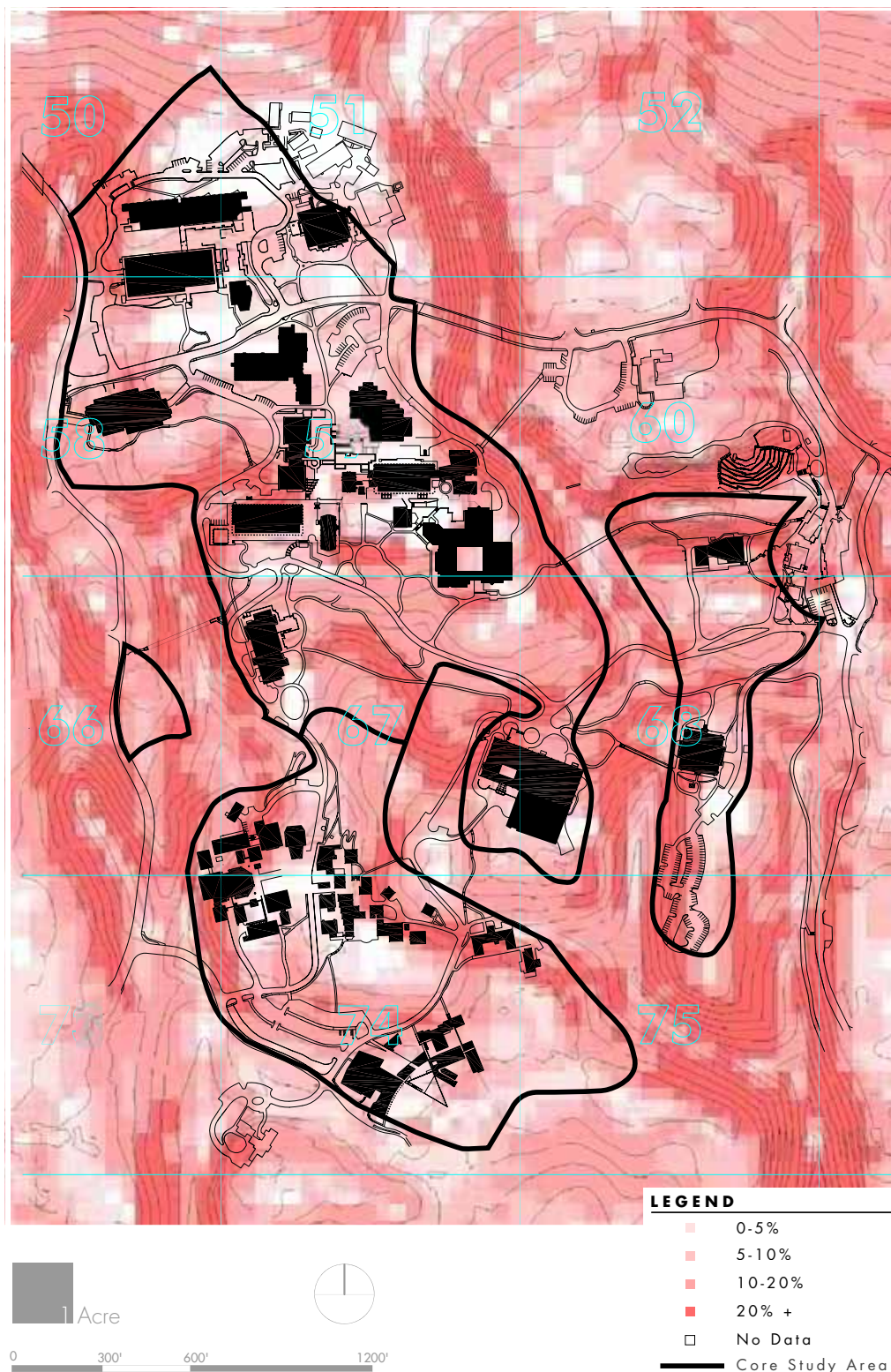
LEGEND

- 0-5%
- 5-10%
- 10-20%
- 20% +
- No Data



1-10 Campus Core Study Area Slope Analysis

Siting new building in the 100-acre study area minimizes significant changes to the 15 acres of land with slopes greater than 20%.





1-11 Developed Open Space

Developed open space associated with building forecourts and plazas offers a wide spectrum of user interaction.

Open Space Considerations

Campus Core open space and other developed exterior spaces are critical to the success of the campus by providing opportunities for interdisciplinary scholarly activity. Around the country, university campuses are defined as much by their outdoor places as they are by their buildings. This campus is no exception due to the wealth of open spaces that characterize UCSC's unique environment.

The Campus Core in particular reveals the signature quality of this campus. Within a ten minute walk one experiences unique scenery that includes deep redwoods, a traverse across a ravine, an intimate courtyard, the dappled light of oak woodlands, vistas across the Monterey Bay, or the bustle of activity on Science Hill or Quarry Plaza.

No other campus in the country has this range of open space experiences. This is both an opportunity and a challenge to the process of creating a hierarchy of outdoor spaces as a key component of the academic setting.

The distinctive campus topography and north-south ravines that define the Campus Core boundaries are significant to the UCSC experience. The extensive tree cover, understory plant assemblage, and variety of microclimates provide unique experiences in a campus environment.

Preservation of the natural physical setting, while developing building patterns, is framed by the following considerations:

- Clarification of the hierarchy of open space areas within the Campus Core
- Optimization of exterior spaces when developing footprint configurations
- Recognition of the importance of external spaces as a component in academic and social interaction
- Sensitive siting of new buildings, roads, and paths to preserve significant tree groupings
- Minimum grading on slopes greater than 20%
- Preservation and enhancement of campus views
- Achieving a complementary balance between built and natural environments

1-12 Oak Woodlands

Oak woodlands contrast with redwood groves on campus, illustrating the diversity of the natural open space the campus offers.



Circulation Considerations

The circulation networks are the connective tissue among and between campus functional spaces. Whether one is walking, bicycling or riding in a vehicle, it is critical for the campus circulation system to function well and to foster positive collegial interaction.

The successful build-out of the Campus Core will depend on careful development of an intertwined system of paths and roads that connect and serve functional open spaces among buildings and between programmatic clusters.

In brief, circulation considerations include the following:

- Integrate pedestrian, vehicular, bicycle, transit, and service circulation systems
- Create a safe pedestrian environment free from conflicts with other modes of transportation
- Enhance the user's experience through improvements to open spaces, particularly at points of destination
- Reserve sites for structured parking as parking lots become building sites
- Collect cars in parking facilities at perimeter of the Campus Core
- Create a looped road around the Campus Core to enhance transit service
- Define a north-south pedestrian walk from the Engineering Building to the Music Center by connecting a series of varied open spaces
- Create a bicycle path network and supporting parking facilities within the Core



1-13 Existing Campus Core Building Pattern

Pattern of existing buildings, tree cover, roads, and paths



LEGEND

- Existing Campus Core Buildings
- Buildings Outside Campus Core
- Core Study Area

1-14 Potential Campus Core Building Pattern

Pattern of existing and proposed buildings, tree cover, roads, and paths



1-15 Existing Open Space Patterns



LEGEND-Existing

- ① Kerr Meadow
- Ravines
- Natural Open Space
- Meadows
- Developed Open Space
- Buildings Outside Campus Core
- Core Study Area



**1-16 Proposed
Open Space
Patterns**

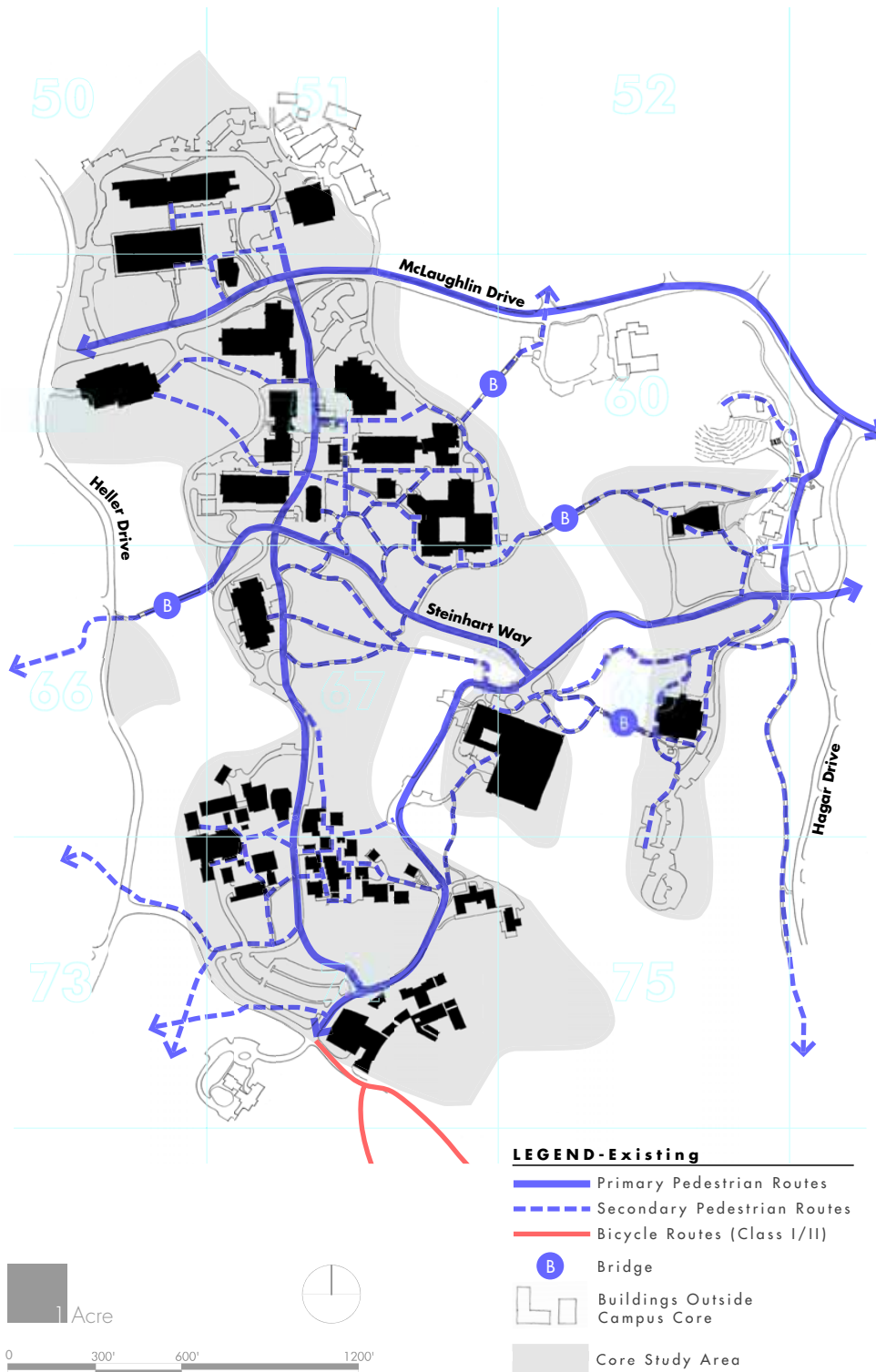


LEGEND-Proposed

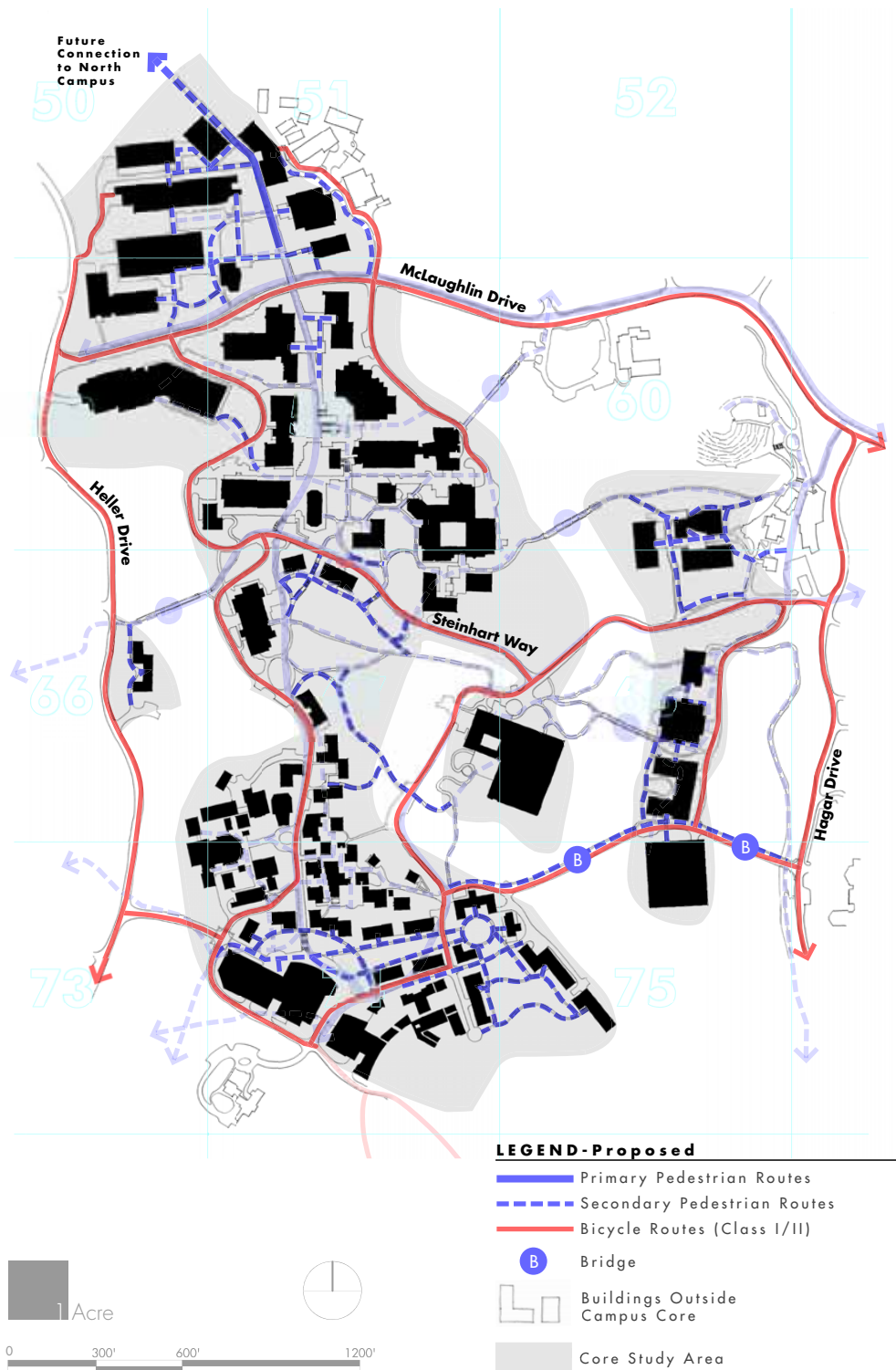
① Kerr Meadow	Ravines
	Natural Open Space
	Protected Landscape
	Developed Open Space
	Existing Developed Open Space
	Buildings Outside Campus Core
	Core Study Area



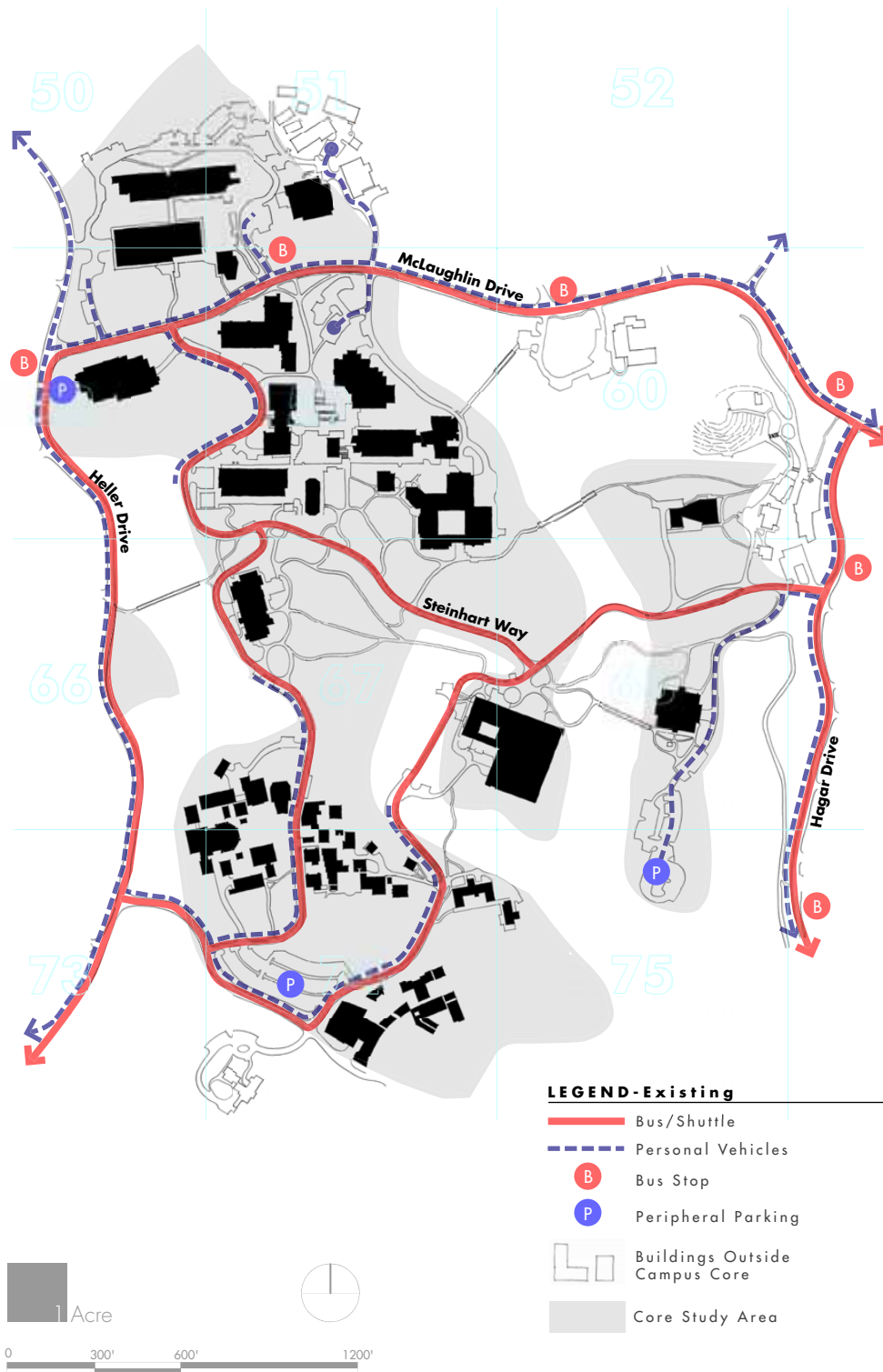
1-17 Existing Pedestrian and Bicycle Circulation



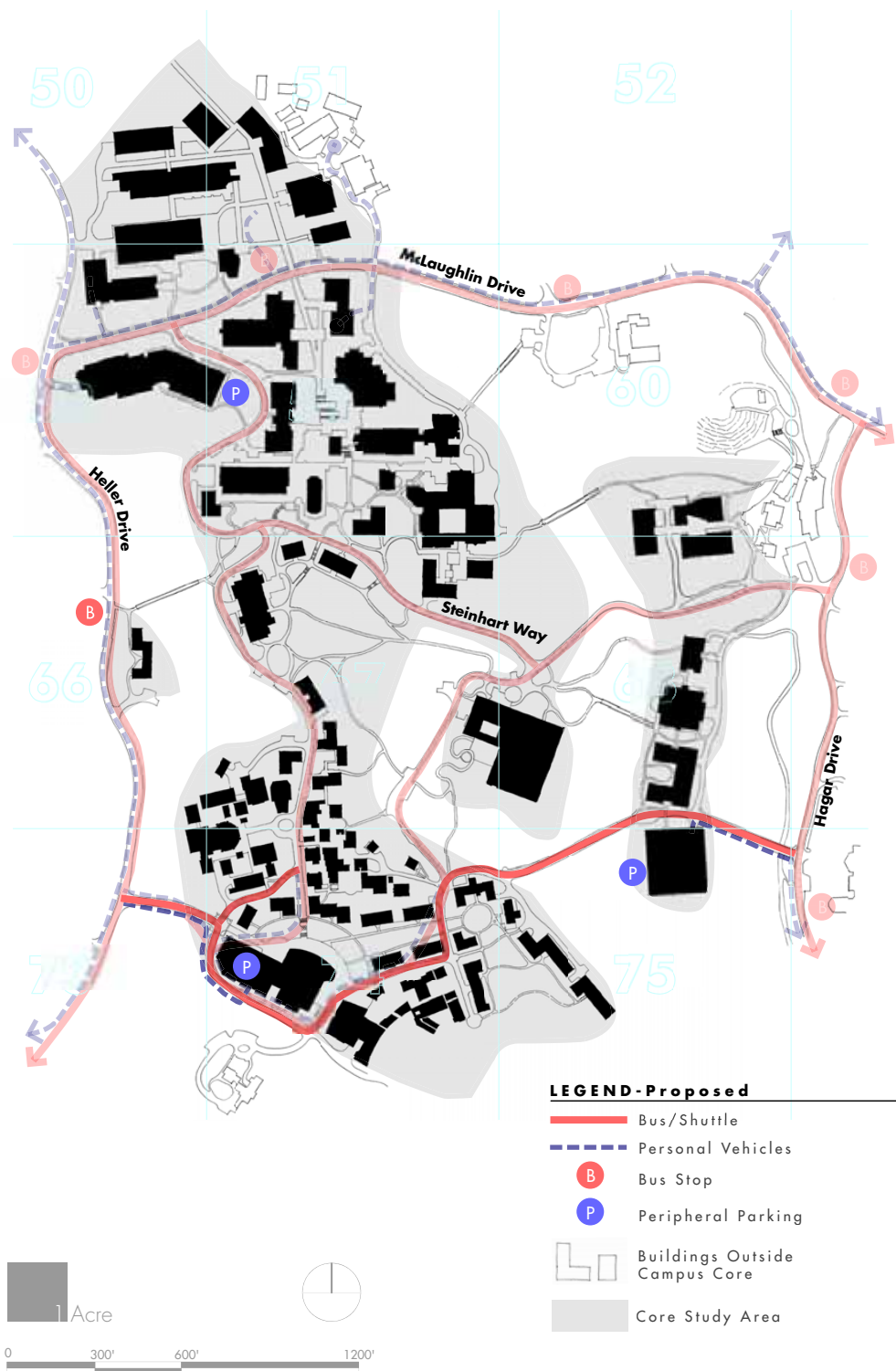
1-18 Proposed Pedestrian and Bicycle Circulation



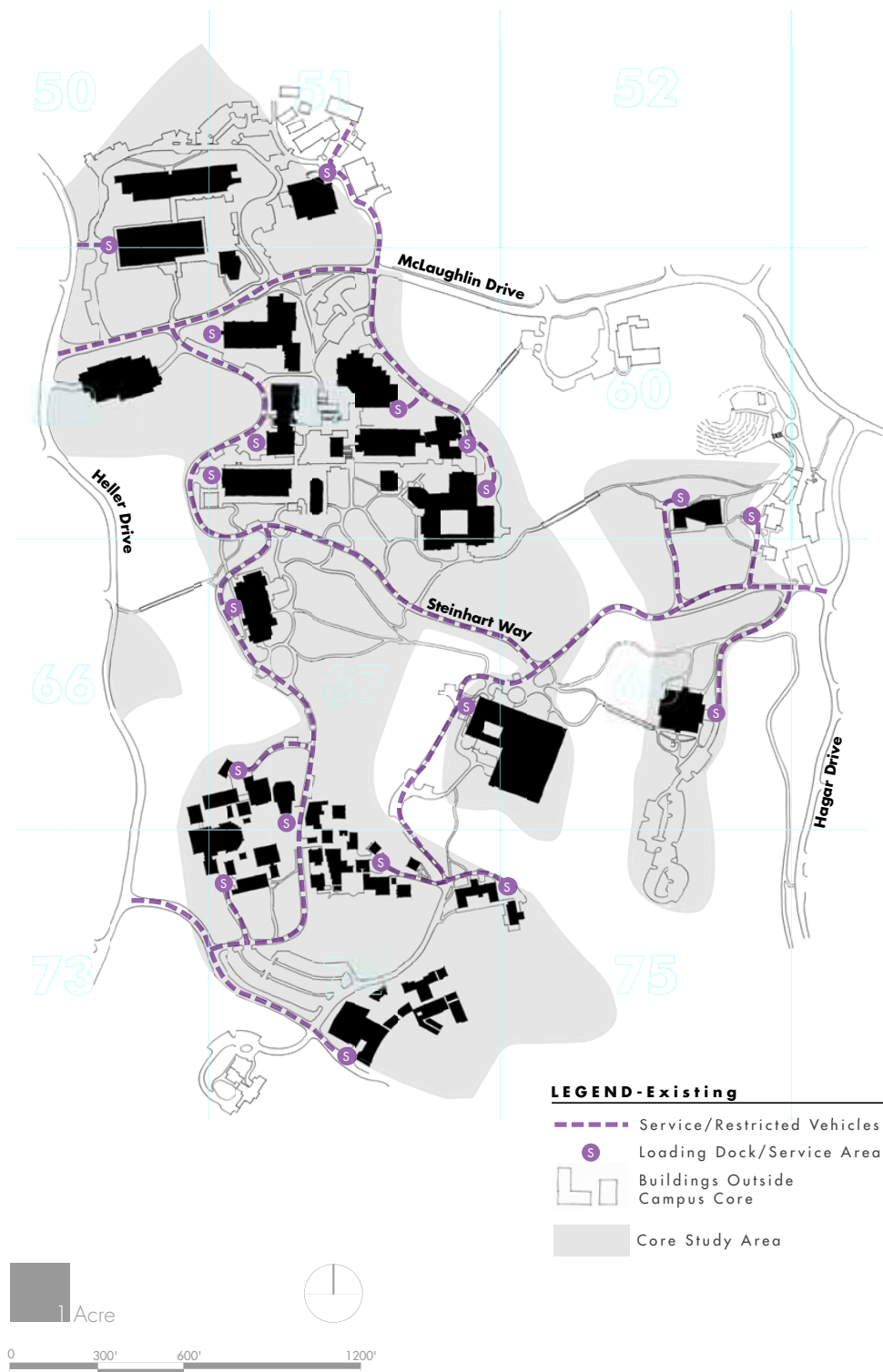
1-19 Existing Vehicular Circulation



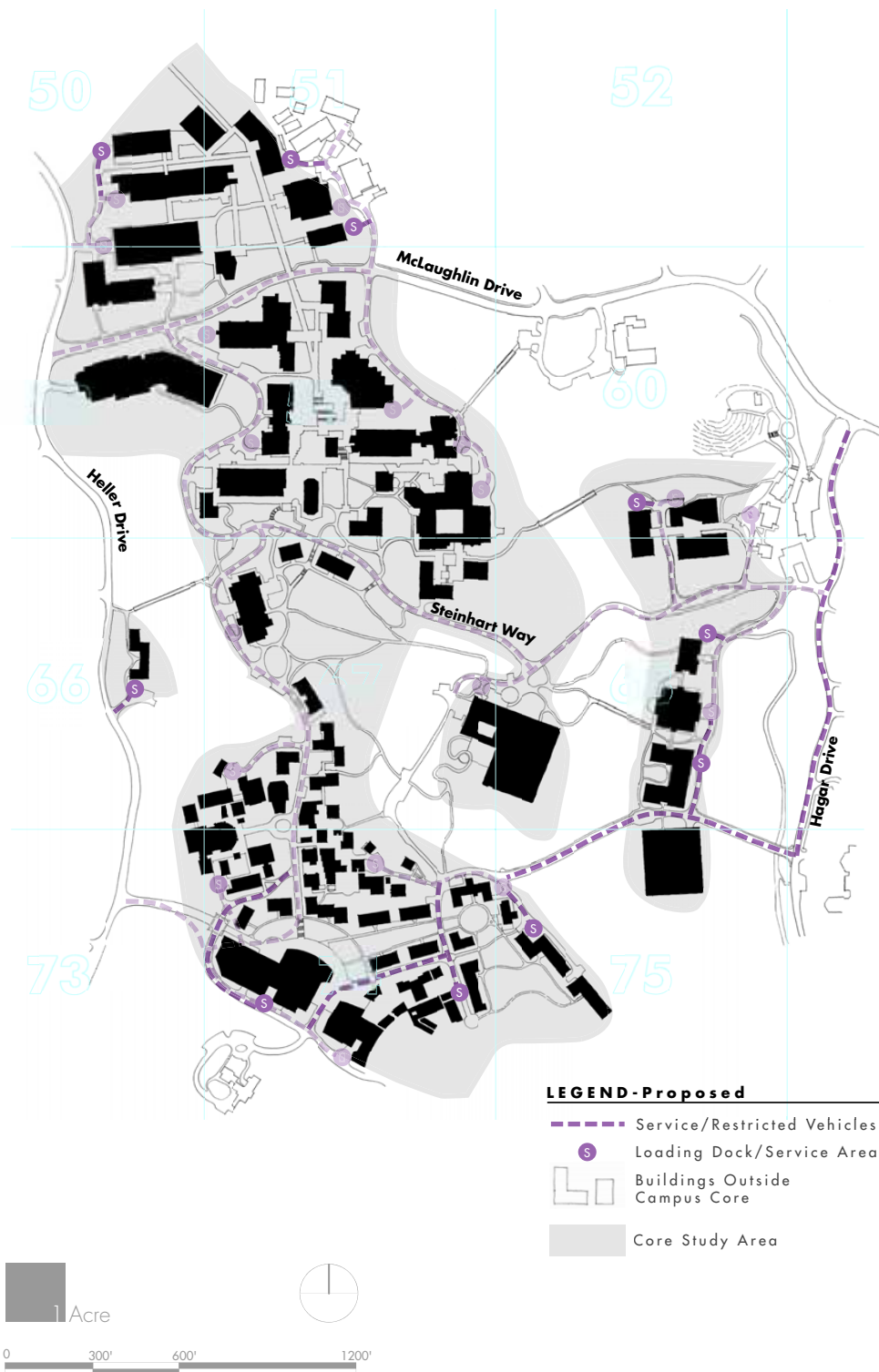
1-20 Proposed Vehicular Circulation



1-21 Existing Service/Restricted Vehicular Circulation



1-22 Proposed Service/Restricted Vehicular Circulation



2

Site Capacity Findings



UC Santa Cruz Campus Core Capacity Study

- Divisional Growth Findings
- Core North - Sites 1-9
- Core South - Sites 10-15
- Core East- Sites 16-18
- Next Steps

The Campus Core has the potential to accommodate an additional 836,000 outside gross square feet (ogsf).

There is also capacity for 1,400 new structured parking spaces for a total of 1,900 spaces in the Campus Core - a net gain of 500 spaces.

This capacity study concludes that the campus is able to accommodate currently projected growth in the Campus Core. As the Campus Core approaches its development capacity, it is critical that future growth accommodation be contemplated and planned comprehensively to maximize the Core's development potential, while enhancing the character and quality of environment it offers to the UCSC community.

While there is space to accommodate the projected square footage, divisional needs for adjacencies, or "set asides", for future Organized Research Units (ORU) and projected growth of Social Sciences may limit specific areas of program growth in the Campus Core sooner than the raw numbers suggest.

DIVISIONAL GROWTH FINDINGS

The following provides an overview of findings specific to each division occupying space in the Campus Core:

Natural Sciences Core North

- Projected need of additional facilities = 222,000 ogsf

Space for growth of this division is contingent on the growth projections of Engineering and program adjacency requirements. Depending on the scale of future ORU development, there could be enough space in the Core North or Core East to accommodate growth through the 1988 LRDP build-out. However, with a finite area of available land, options are more limited for this division.

Engineering Core North

- Projected need of additional facilities = 110,000 ogsf

The study identifies three sites north of McLaughlin adjacent to Baskin Engineering and the new Engineering building currently under construction.

Depending on the scale of future ORU development, these sites could satisfy the school's needs through the 1988 LRDP build-out and beyond. However, reserving these sites for Engineering will limit potential Natural Sciences division growth.

Arts Core South

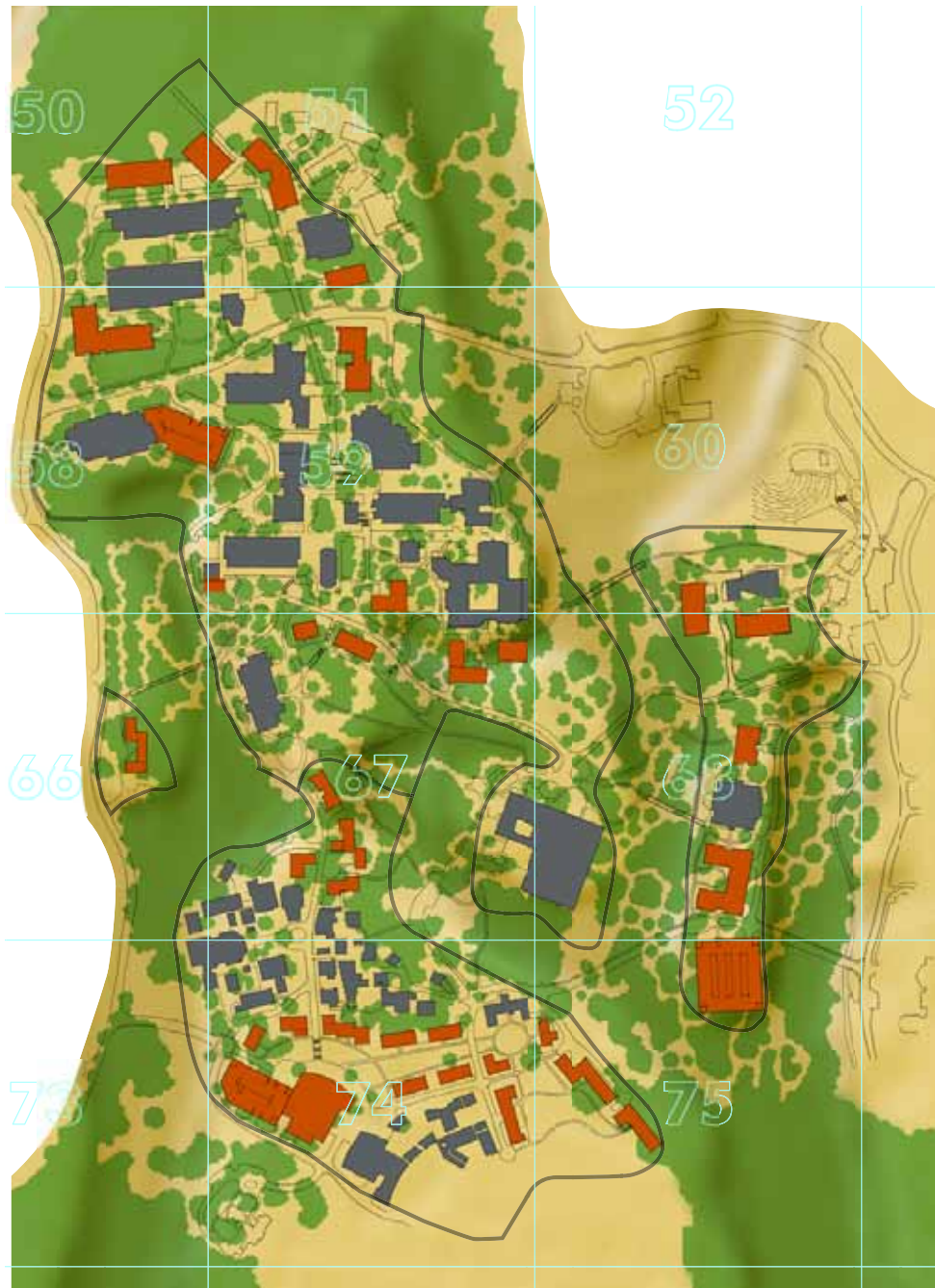
- Projected need of additional facilities = 111,000 ogsf

Future projects should consider two-and three-story buildings as a way of maximizing available land. Decisions related to development in the meadow and the potential Meyer Drive Extension may impact growth potential beyond the current 1988 LRDP envelope.

This division has space to grow through the 1988 LRDP build-out, particularly if a parking garage can be located along Heller in the land designated as Protected Landscape.

2-1 Potential Additional Facilities

Illustrative of potential building pattern with proposed new facilities highlighted in red

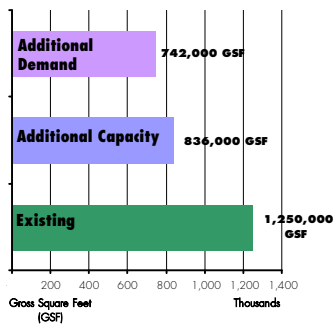


LEGEND

- Existing Buildings
- Potential Buildings
- Buildings Outside Campus Core
- Core Study Area

2-2 Site Capacity Core North, South, and East

The Campus Core has an additional capacity of 836,000 ogsf, approximately 100,000 ogsf in excess of demand projected through the year 2011. This indicates that the Campus Core will near its "build-out" condition by 2011 if all of the projected program is directed to and accommodated in the Campus Core.



Site	Building					Structured Parking	
	Area (GSF)	No. of Floors	Total Area (GSF)	Total Area by Site (GSF)	Total Area by Core Zone (GSF)	No. of Spaces	No. of Levels
North	1A	15,000	4	60,000			
	1B	11,700	4	47,000			
	1C	16,500	4	66,000	173,000		
	2	22,800	3-4	80,000	80,000		
	3	7,500	3	23,000	23,000		
	4	13,400	4	54,000	54,000		
	5					500	6
	6	2,800	2	6,000	6,000		
	7	7,700	2-3	19,000	19,000		
South	8A	9,000	4	36,000			
	8B	5,100	4	20,000	56,000		
	9A	5,000	2	10,000			
	9B	9,200	2	18,000	28,000	439,000	
	10	6,600	2-3	17,000	17,000		
	11	5,000	2	10,000	10,000		
	12A	6,800	2-3	17,000			
	12B	3,600	2-3	9,000	26,000		
	13	4,300	3	13,000	13,000		
East	14A	2,800	3	8,000			
	14B	3,800	3	11,000			
	14C	6,600	2-3	17,000			
	14D	4,000	3	12,000			
	14E	4,000	3	12,000			
	14F	4,000	2	8,000			
	14G	4,000	2	8,000			
	14H	n.a.	n.a.	50,000	126,000		
	14I					350	5
	15A	9,600	2	19,000			
	15B	7,400	2	15,000			
	15C	3,000	2	6,000			
	15D	7,600	2	15,000	55,000	247,000	
East	16A	11,250	3	34,000			
	16B	12,750	2	26,000	60,000		
	17	8,400	3	25,000	25,000		
	18	21,600	2-4	65,000	65,000		
	18				150,000	550	5

Total, Base Scheme Only (Rounded) = 836,000 ogsf

1,400 spaces

2-3 Projected Need for Divisions and Other Services Through 2011

The total projected need for divisional growth and other services is 742,000 ogsf.

Division	I&R Space	ORU Space	Subtotals	Core North	Core South	Core East	Not Assigned
Arts	88,500	22,500	111,000		111,000		
Humanities	25,500	7,500	33,000				33,000
Natural Sciences	177,000	45,000	222,000	222,000			
Engineering	94,500	15,000	110,000	110,000			
Social Sciences	115,500	30,000	146,000				146,000
Divisional Subtotal: 622,000							
Other							
Academic Services/Classrooms			24,000				24,000
Academic Support			78,000				78,000
Libraries			18,000				18,000
Other Subtotal: 120,000							
Subtotals by Subarea				332,000	111,000	0	299,000

Total Projected Demand Through 2011

742,000 ogsf

2-4 Campus Core North

Illustrative of potential building pattern with new facilities highlighted in red



Key Map

LEGEND

- Existing Buildings
- Potential Buildings
- Buildings Outside Campus Core
- Core Study Area
- Potential Building Site

2-5 Pedestrian Challenges

The steep topography in the Campus Core often requires pedestrian circulation and developed open space to traverse changes in elevation.



Social Sciences Not Assigned

- Projected need of additional facilities = 146,000 ogsf

Traditionally, the Social Sciences division is housed in the Colleges, not requiring specialized facilities offered in the Campus Core. The exception is Environmental Studies which has space in the Campus Core due to the interdisciplinary nature of this program. Recent trends in the Social Sciences at UCSC point to the potential consolidation of the Division into facilities separate from the Colleges. This indicates the need to develop space for the division within the Campus Core that would impact potential space for other divisions. The division expansion opportunities require further investigation.

Humanities Not Assigned

- Projected need of additional facilities.= 33,000 ogsf

This division, as with the Social Sciences, has been located in the Colleges, not significantly impacting the Campus Core. However, the

increased interdisciplinary direction of this program may require facilities in the Campus Core. The division expansion opportunities require further investigation.

CORE NORTH SITES 1 - 9

- Potential additional capacity = 439,000 ogsf.

The Core North planning area is occupied primarily by Science and Engineering program elements. It is bounded to the west by Heller Drive and portions of the Moore Creek ravine, and on the east by a branch of Jordan Gulch. The southern boundary is approximately south of Kerr Hall and the McHenry Library. At the northern boundary, the North Core abuts the Environmental Reserve and Campus and Community Support.

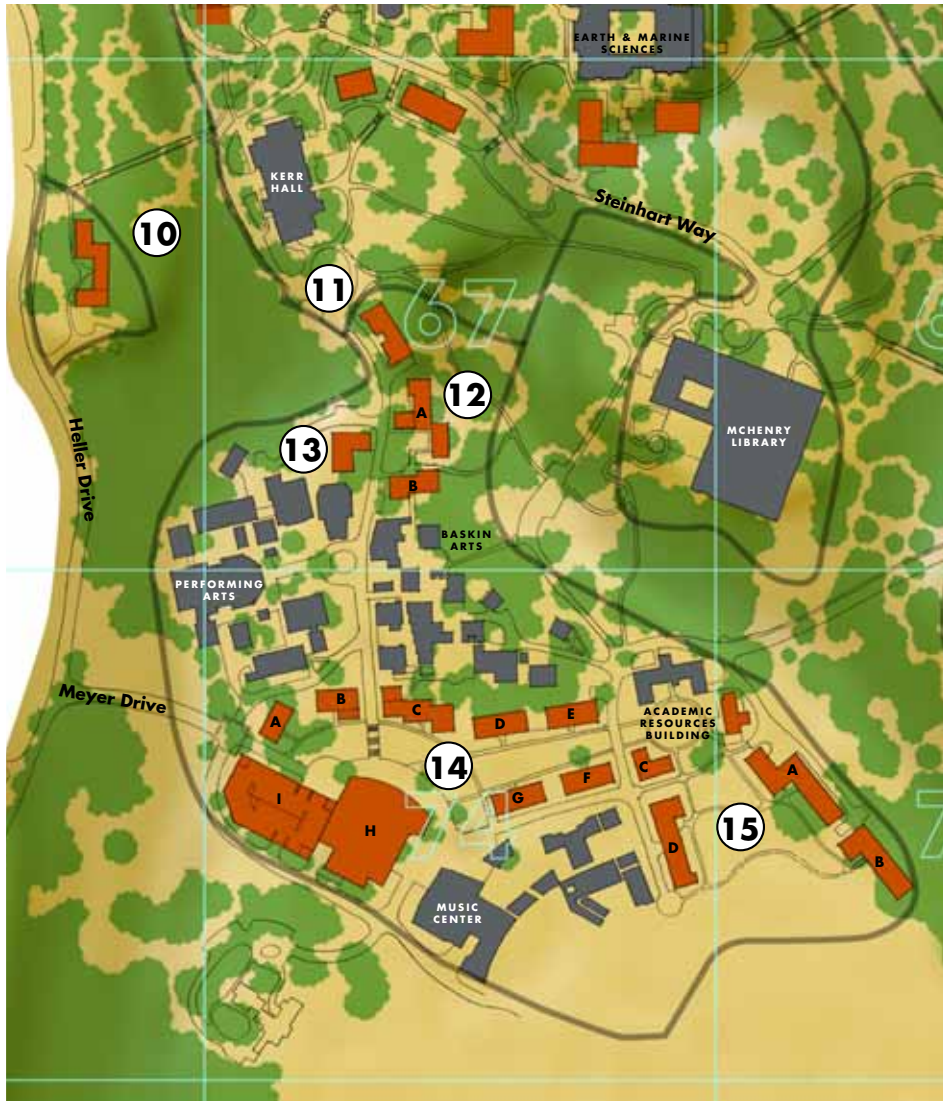
The northern area includes the small island of Campus Core along Heller Drive as well as Kerr Hall and McHenry Library.

McLaughlin Drive runs east-west through this part of the Campus Core, allowing for good transit access to the

center of the area. However, this road also interferes with easy and safe pedestrian movement. The Core North is well served by service roads around its perimeter. This service-free zone runs north-south, defining one of the campus's most pedestrian-oriented areas. Buildings located along this pedestrian axis can have a clear "front" and "back" door hierarchy.

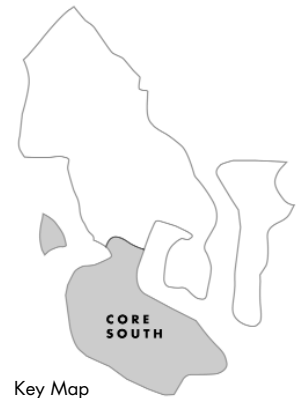
A site adjacent to the Core West Parking structure has been set aside to replace parking removed by the projects and to provide parking for the additional academic and staff population in the area.

From a campus-wide perspective, the Kerr Meadow between Kerr and McHenry is a significant element in the fabric of the campus. It serves as a key transition between the Sciences and the Arts and is at the cross axis of north-south and east - west pedestrian circulation corridors.



2-6 Campus Core South

Illustrative of potential building pattern with new facilities highlighted in red



Key Map



LEGEND

	Existing Buildings		Core Study Area
	Potential Buildings		Potential Building Site
	Buildings Outside Campus Core		

2-7 Permanent Meadows

The meadow southwest of the Music Center will be designated as permanent open space.



CORE SOUTH SITES 10 - 15

- Potential additional capacity = 247,000 ogsf.

The Core South is comprised of two areas. The southern portion is occupied primarily by the Arts division and includes performing arts and community access facilities. The island of Campus Core along Heller Drive has a good pedestrian connection with Kerr Hall and is on a main vehicular route, Heller Drive. The land (1.75 acres) is otherwise isolated from other academic functions. While the capacity for development is not great, it could serve programmatically as an annex to Kerr for administrative functions, if Kerr becomes an administrative hub. It could also be an excellent site for an ORU should Kerr remain an academic building.

The southern portion of South Core serves as both an academic and a public outreach function. Due to the public events component of the performing arts program and the desired capacity of this area for academic development, the base recom-

mendation resulted in a 350 car parking structure. Recognizing the potential need of higher parking capacity, the study looked at two alternative parking scenarios - illustrated on the following page - one of which includes areas outside the Campus Core. Based on these alternatives, the study recommends further investigation of an approach that includes trading Campus Core designated meadow land for the Protected Landscape along Heller Drive.

The other issue evident in a review of the Arts area is low density of existing development in relation to other areas of the developed campus. This study recommends that future development for the Arts focuses on infill of two- and three-story buildings to minimize sprawl.

To support the success of a north-south pedestrian spine and a connection to Hagar via the Hahn peninsula, vehicular and pedestrian circulation should be clarified in this area. The performing arts complex could form a powerful terminus at the end

of the north-south pedestrian spine. The east-west circulation of pedestrians and/or vehicles requires further investigation to determine the solution with the greatest clarity and the least conflict between cars and people.

The study looked at two alternatives in the northern part of this planning area as illustrated on the following page.



LEGEND

	Existing Buildings		Bus/Shuttle
	Potential Buildings		Service/Restricted Vehicles
	Buildings Outside Campus Core		Personal Vehicles
	Primary Pedestrian Routes		Peripheral Parking
	Secondary Pedestrian Routes		Loading Dock/Service Area
			Core Study Area

2-8 Alternative A Campus Core South

This alternative keeps all development within the Campus Core land designation.

The alternative studies the siting of a large parking garage that prohibits development of a large performance space while forcing additional development onto the great meadow.

Net change based on this alternative

- Facilities = 63,000 ogsf **less**
- Parking = 350 spaces **additional**



LEGEND

	Existing Buildings		Bus/Shuttle
	Potential Buildings		Service/Restricted Vehicles
	Buildings Outside Campus Core		Personal Vehicles
	Primary Pedestrian Routes		Peripheral Parking
	Secondary Pedestrian Routes		Loading Dock/Service Area
			Core Study Area

2-9 Alternative B Campus Core South

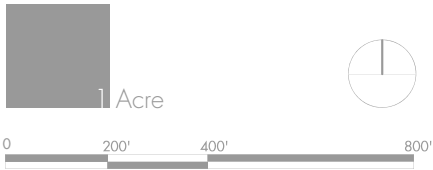
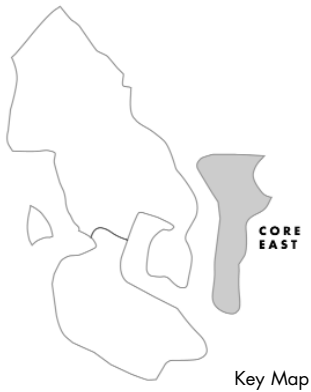
This alternative allows development beyond the Campus Core land designation.

The alternative shows a large parking structure with good access from Heller Drive and ample space for divisional expansion, including a performance space. However, this would require development in the protected landscape.

Net change based on this alternative

- Facilities = 8,200 ogsf **less**
- Parking = 600 spaces **additional**

2-10 Campus Core East
Illustrative of potential building pattern with new facilities highlighted in red



LEGEND	
	Existing Buildings
	Potential Buildings
	Buildings Outside Campus Core
	Core Study Area
	Potential Building Site



2-11 Campus Shuttles

The importance and the resulting responsibilities of the UCSC campus shuttle system will increase to address the expanded facilities projected in the near future for the Campus Core

CORE EAST SITES 16 - 18

- Potential additional capacity = 150,000 ogsf.

Currently two buildings occupy Core East: the Hahn Student Services and the Classroom Unit. This study identifies the potential for the Core East to add a parking structure of 500 spaces as well as four new buildings equating to 150,000 ogsf. These new facilities will be capable of addressing the projected needs of academic services, classrooms, and support.

Of the three Campus Core study areas, this is the most difficult to access. At the north end of this attenuated area, the classroom building sits on an elevated knoll. To the south, the "Hahn Peninsula" is a long and sloping piece of land bounded on the east and west by two ravines of Jordan Gulch.

Unlike the Core North area, the developable zone is too narrow to allow for clear separation of pedestrians, service and traffic. With the burgeoning student activity center located at Quarry Plaza, overlapping pedestrian and vehicular circulation in this area could become acute and raises long-term safety concerns.

The existing pedestrian bridge from the Earth & Marine Science building to the Classroom Building provides a link from the sciences area to the building locations on the Core East.

There is a single point of access to the peninsula from the east at Steinhart Way. Pedestrian access to the peninsula from the west is limited to the footbridge that links to the McHenry Library. Any significant development of this area requires careful evaluation and the accommodation of pedestrian, service and vehicular access to the southern end of the peninsula.

This study shows a vehicular-pedestrian bridge connecting Hagar Drive to a new parking structure located to the south of the Hahn Student Services Building. An additional vehicular-pedestrian bridge is required from the Hahn Peninsula to connect to the performing arts area.

The bridge to Hagar removes private vehicles from the Hahn service road and provides access to a parking structure at the perimeter of the core. The parking structure with two bridges might also serve public functions at the arts area and OPERS.

Further study must resolve the choice between the Meyer Drive extension proposed by the 1988 LRDP and the two-bridge proposal in the 1993 Implementation Program.

2-12 Development Opportunities

Existing parking lots offer opportunities for new facilities and parking structures.



NEXT STEPS

The Campus Core Capacity Study is the first of a series of steps in the planning and design process to accommodate growth for UCSC. As the Campus Core becomes more densely developed, the formative paradigm of the campus continues to evolve.

The natural environment of UCSC remains a powerful force in the campus community's daily experience. The successful build-out of the Campus Core depends on careful consideration of an intertwined system of paths and roads that connect and serve functional open spaces among buildings and between programmatic clusters.

Questions to Answer

Many questions remain regarding the sequence, method, and the physical and programmatic capacity beyond this planning horizon. The following questions should be considered in the next steps:

- Can the campus wait until the Campus Core is "built out" to expand?
- Should portions of the Campus Core be reserved for growth of a division at the exclusion of another division's need for expansion area? (e.g., Engineering and Natural Sciences)
- Should the Social Sciences Division grow inside or outside the Campus Core?
- How do cost premiums associated with non-academic development impact capacity of the academic divisions in the Campus Core? (eg: parking structures, administrative space)
- Should a new east-west link between the southwestern colleges/Arts and Quarry Plaza/OPERS be built?

Recommendations of Further Study

As next steps this study recommends the following series of area and campus infrastructure studies:

- **Divisional Growth**
Identify Program Elements within Campus Core based on divisional growth
- **Adjacent Program Needs**
Identify program needs of elements adjacent to the Campus Core including those of the Colleges, Graduate Housing, and Campus and Community Support areas
- **Arts Division Area**
Prepare an Arts Division Area Plan to refine program elements, develop a physical master plan, assess potential development and its impact on the fabric of the campus, proposed pedestrian, bicycle, and vehicular circulation routes and parking

- **Science Hill Division Area**
Prepare a Science Hill Division Area Plan to reflect the same level of specificity described above for the Arts Division
- **Pedestrian Circulation and Open Space**
Prepare a plan to establish implementation strategies for pedestrian infrastructure, particularly Science Walk, Steinhart Way and east-west pedestrian connections from Oakes College to Quarry Plaza and OPERS facilities
- **Vehicle Circulation and Parking**
Prepare a plan to include additional east-west connections and parking at the periphery of the Campus Core
- **Bicycle Circulation and Parking**
Finalize improvements and strategy to increase bicycle use
- **Drainage**
Revise the Drainage Master Plan to include impacts of increased development on drainage and downstream habitats
- **LRDP Amendments**
Identify and process LRDP amendments, including the redesignation of key open spaces and land uses to maximize campus function and quality

Contributors

UC Santa Cruz Campus Core Capacity Study

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