

**ADDENDUM #10** to the

**UC BERKELEY 2020 LONG RANGE DEVELOPMENT PLAN  
ENVIRONMENTAL IMPACT REPORT**

for the

HAAS NORTH ADDITION AND

GIRTON HALL MOVE

**PROJECT LOCATION:**

UC BERKELEY CAMPUS PARK; UC BERKELEY HILL CAMPUS – BOTANICAL GARDEN

**COUNTY:**

ALAMEDA COUNTY, CALIFORNIA

**PROGRAM EIR:**

UC BERKELEY 2020 LONG RANGE DEVELOPMENT PLAN EIR, CERTIFIED BY THE REGENTS JANUARY 2005, SCH #2003082131; AS UPDATED BY LRDP AMENDMENT #1 TO ADDRESS CLIMATE CHANGE AND ACCOMPANYING ADDENDUM #5 TO THE 2020 LRDP EIR

**SCH #2003082131**

AUGUST 13, 2013

Capital Projects  
Physical and Environmental Planning  
300 A&E Building #1382  
Berkeley CA 94720-1382

## I. INTRODUCTION

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### PROJECT OBJECTIVES

Planned to accomplish goals and objectives of the UC Berkeley 2020 Long Range Development Plan, the Haas North Addition and Girton Hall move are also planned to meet several key project-specific objectives:

1. Provide facilities in compliance with the University Policy on Seismic Safety and current codes, through new construction (Haas North Addition) and rehabilitation of an existing building (Girton).
2. Provide the Haas School with new and expanded facilities needed for its current program and mission. The Haas complex, completed in 1995, is increasingly unable to accommodate the growing program needs of the Haas School. The new building would provide additional space designed to meet current Haas teaching and other program needs.
3. Provide the Haas School with new facilities without increasing University of California debt, by employing the donor development model under terms and conditions to be approved by the University.
4. Provide the UC Botanical Garden with a new, fully accessible, indoor multi-purpose facility suitable for a variety of event and educational uses to help enhance both the Garden programs and its public service mission and revenue generating activities;
5. Complete the new Haas Academic building prior to August 2015 (fall semester).
6. Implement policies of the 2020 LRDP, including among others:
  - Seismic safety policies: Eliminate poor and very poor seismic ratings in campus buildings through renovation or replacement.
  - Collaborative and interactive program policies: Build a campus that fosters intellectual synergy and collaborative endeavor within and across disciplines. Create places of interaction at key nodes of activity.
  - Stewardship policies: Plan every new project to represent the optimal investment of land and capital in the future of the campus. Plan every project as a model of resource conservation and environmental stewardship. Maintain and enhance the image of the campus, and preserve our historic legacy of landscape and architecture. Preserve and maintain significant views, natural areas, and open spaces.
  - Access policies: Ensure the University provides full access to users at all levels of mobility.

- Sustainability policies: Minimize energy use in travel to and within the campus; optimize the use, and adaptive reuse, of existing facilities; plan, operate, and construct the project to support achievement of campus greenhouse gas emission reduction targets.

## **PROPOSED ACTION**

In order to accomplish key objectives, the University of California, Berkeley proposes to move Girton Hall from its current location to a new site in the Botanical Garden in Strawberry Canyon, and to construct a new North Addition to the Haas School complex on the current Girton Hall site (herein “the project” refers alternately to the combined Haas and Girton actions, and to those actions separately as well).

The new Haas North Addition building will provide the Haas School with expanded space for its teaching and research functions, as well as improved facilities for interaction within the school. The North Addition responds to the the physical facilities recommendations of the Haas Strategic Plan, completed in February 2010, the Haas 2009 Master Space Plan, and the Haas Business Case Analysis completed in July, 2012. The new building would address the recommendations of these plans and analysis by providing a new, six-story (73,185 gsf, 45,335 asf) structure to expand the Haas complex to the north, and address the School’s most critical space needs—instructional space, group study spaces, event space, and café/communal space.

As described further below (see Project Description section) the project will combine history with innovation by re-using and refurbishing the existing Girton Hall building for program space serving the Botanical Gardens. Girton Hall is on the National Register of Historic Places.

## **ENVIRONMENTAL REVIEW SUMMARY**

The UC Berkeley 2020 LRDP EIR indicated that projects implementing the 2020 LRDP would be examined to determine whether subsequent project-specific environmental documents are required. The 2020 LRDP EIR states:

CEQA and the CEQA Guidelines state that subsequent projects should be examined in light of the program-level EIR to determine whether subsequent project-specific environmental documents must be prepared. If no new significant effects would occur, all significant effects have been adequately addressed, and no new mitigation measures would be required, subsequent projects within the scope of the 2020 LRDP could rely on the environmental analysis presented in the program-level EIR, and no subsequent environmental documents would be required; otherwise, project-specific environmental documents must be prepared (2020 LRDP EIR Vol I page 1-2).

The use of the 2020 LRDP EIR in project review was also specifically addressed in the first Thematic Response to comments received on the 2020 LRDP Draft EIR (2020 LRDP EIR Vol 3a, page 11.1-1). There, the document reiterated the text quoted above, and explained:

Projects subsequently proposed must be examined for consistency with the program as described in the 2020 LRDP and with the environmental impact analysis contained in the 2020 LRDP EIR; if new environmental impacts would occur, or if new mitigation measures would be required, an additional environmental document would be prepared.

In accordance with CEQA (Public Resources Code Section 21000 et seq.), and the University of California Procedures for Implementation of CEQA, this document evaluates the proposed project in contrast to anticipated development described and analyzed in the 2020 LRDP EIR. Based on the documentation included herein, the University finds the potential impacts from construction and operation of the Haas North Addition and Girton Hall move do not constitute new information of substantial importance regarding significant environmental impacts. Construction and operation of the Haas North Addition and Girton Hall move would not cause new significant effects upon any environmental topic area.

No significant changes to the circumstances of the 2020 LRDP or to the 2020 LRDP itself have occurred. There is no new information of substantial importance not known at the time the 2020 LRDP EIR was certified and amended by Amendment #1 regarding greenhouse gas emissions and climate change (addressed in Addendum #5 to the 2020 LRDP EIR, see [www.cp.berkeley.edu/LRDP/2020LRDP/ClimateChange.htm](http://www.cp.berkeley.edu/LRDP/2020LRDP/ClimateChange.htm)) that indicates new significant effects, or that previously examined effects will be substantially more severe than described in the 2020 LRDP EIR. No mitigation measures or alternatives considerably different from those analyzed in the 2020 LRDP EIR are known at this time that would substantially reduce one or more significant effects on the environment identified in the 2020 LRDP EIR. The University has completed other 2020 LRDP EIR addenda to document projects tiered from the EIR; therefore, this would be Addendum #10 to the 2020 LRDP EIR.

## **PROJECT-RELATED APPROVALS**

This document analyzes and documents the impacts of the proposed project and all discretionary and ministerial actions associated with the project. Consistent with Sections 15050 and 15367 of the CEQA Guidelines, the University of California is designated as Lead Agency and will use this Addendum in assessing the effects of the actions detailed above.

Responsible agencies are those agencies that may have discretionary approval over one or more actions involved with the development of a proposed project. The campus consults with the City of Berkeley and with the state Office of Historic Preservation with regard to the move of historic Girton Hall; however, these agencies do not have discretionary approval over any aspect of the project.

## **DOCUMENT ORGANIZATION**

This document is organized for easy use and reference. To help the reader locate information of particular interest, the following table of contents is provided. Figures referenced in each section appear at the end of each section.

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## II. PROJECT DESCRIPTION

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### PROJECT LOCATION

UC Berkeley is located in the City of Berkeley, approximately ten miles east of San Francisco. See Figure II.1, Regional Location. Interstate 80, Highway 13, Highway 24, and Interstate 580 provide regional vehicular access to the campus. Regional transit access is provided by Bay Area Rapid Transit District (BART) and Alameda-Contra Costa Transit (AC Transit).

The Haas North Addition project site is on the eastern edge of the Central Campus Park. The wedge-shaped site is bounded on the east side by Gayley Road, on the north by South Drive, on the west by College Way, and on the south by the existing buildings of the Haas School of Business complex. The site has three existing features: Girton Hall, a 1911 wooden assembly hall constructed for the use of women students and converted into a campus childcare facility in 1970; a mixed grove of California Live Oak and Coastal Redwood trees; a fenced, outdoor play yard associated with the child care center.

The Regents of the University of California own the property. To the east, the project faces Gayley, a major north south traffic corridor entirely on University property that is part of the perimeter vehicle circulation network around the UC Berkeley campus and forms both a symbolic and functional edge between the Central Campus Park and Hill Area properties and facilities owned by the University. See Figure II.2 and II.3, project location and site photos.

Across Gayley Road to the northeast the site sits downhill from the Hearst Greek Theatre. To the north it faces Lewis Hall and adjacent buildings of the College of Chemistry complex. To the south, across College Way, an internal campus road, it faces the Women's Faculty Club, located in a grove of trees. Strawberry Creek also crosses the site in a buried culvert, and re-surfaces just north of the Women's Faculty Club.

The Girton Hall relocation project site is in the Botanical Gardens in Strawberry Canyon, east of and above the Central Campus Park. The Botanical Gardens is a fenced site bisected by the upper reaches of Strawberry Creek and containing a number of small structures. The Girton site is a roughly wedge-shaped piece of land just southwest and downhill from the main entrance, west of the visitor center facilities, and east of the main Garden internal access road that descends into the creek ravine

## **SITE PLAN DESCRIPTION**

The Haas North Addition project would insert a six story new construction building into the west/southwest portion of the site, angling to follow the curve of College Way on the west side of the Haas complex. At its south the Addition would open to the existing courtyard of the Haas complex; on its north/northeast, it would lie adjacent to an existing campus access road, South Drive, which would remain in place.

The Girton Hall relocation would move Girton Hall to the Botanical Garden site which has previously been designated in garden master plan studies for new building use.

## **LANDSCAPE DESCRIPTION**

The Haas North Addition project site itself and the hill area to the immediate east, across Gayley Road, is designated in the LRDP as rustic hill woodlands, comprising a mosaic of California Live Oak, eucalyptus, redwood, and other species – see 2020 LRDP Figure 7, page 40; see also Figure 12, page 64. As further described below, the project would remove some trees and also replant native trees in greater numbers, maintaining the woodland character of the Haas North Addition site.

The existing site currently contains Girton Hall, an irregularly shaped fenced play yard, pathway access to Girton and the Haas School complex from the north, including an accessible ramp, and plantings of live oak and redwood. Ground cover is primarily ivy and low shrubbery. Several redwoods that were previously on the site were removed in recent years during renovation of the play yard. The site is close to level at its lower, western, end and then above Girton slopes steeply up to Gayley Road on the east.

The site includes a wooded hill of matured redwood and oak trees, bounded by Gayley Road to the east, Girton Road to the north, College Way to the west, and the Haas School of Business to the south. The site generally slopes down from east to west with 34' grade difference between College Way and Gayley Road and 19' grade difference between College Way and the Haas main courtyard. Girton Hall, designed by Julia Morgan, is now used for child care and is located at the center of the site. Its associated playground occupies the northwest corner of the site. The Haas main courtyard is accessible from the southeast and southwest gateways off of Gayley Road and at the intersection of Optometry Lane and College Way, respectively. However, there is currently no accessible gateway from the northwest corner of the campus except for a discreet accessible pathway that routes by Girton Hall through the grove from the north. Strawberry Creek runs through the site in a culvert and is daylighted at the west of the site under College Way.

At this time, the percentage of impervious surfaces is anticipated to increase over existing conditions. However, in accordance with the 2020 LRDP and programmatic EIR, the project will achieve net zero increase by retaining the change in runoff between pre and post development. Based on the regional soil map, the site soil are not suitable for infiltration. Several stormwater retention strategies are under consideration including cistern and green roof. A vegetated swale between the New Addition and the Plaza will help manage the site runoff (Hallanan and GLS, personal communication, July 8, 2013).

Currently, the Strawberry Creek Culvert Bypass and the Strawberry Creek Culvert run through the site. The Strawberry Creek Culvert Bypass will remain but part of the Strawberry Creek Culvert Bypass will be relocated away from the New Addition footprint between the New Addition and the Business School plaza under a separate campus-wide utility relocation project.

To accommodate the new building, the Haas North Addition project requires the relocation of Girton Hall and the removal of seventeen trees. Two of them are oak trees with 18" and 24" diameter trunks, fourteen are redwood trees with trunks ranging from 14" to 48" in diameter, and one 14" diameter trunk alder. In addition to these seventeen trees within the project boundary, seven trees are removed due to the campus wide utility relocation project. Two of the trees to be removed, both coastal redwoods, are designated as specimens per the campus landscape architect. A 3:1 ratio is required for mitigation. The replacement oak and redwood trees can potentially be planted along Girton Drive, west of the new Addition and along the new accessible ramp at College Way (Hallanan and GLS, personal communication, July 8, 2013).

The existing stair connecting the main courtyard and College Way will be replaced by an accessible ramp that meanders around the existing mature oak and redwood tree, a grand stair and a terrace overlook overlooking the wooded Strawberry Creek Corridor and Women's Faculty Club. The College Way sidewalk, west of Cheit Hall will be upgraded into a tree lined street with bike parking and a new parallel accessible parking stall, replacing the existing one that services Cheit Hall (Hallanan and GLS, personal communication, July 8, 2013). A new accessible entrance located at College Way will provide accessibility to the courtyard while serving as the main entrance to the new academic building (source: CEQA template submittal, Hallanan, Perkins & Will, GLS, February 2013). The North Addition project would be set back 70 feet from Gayley Road, in accordance with LRDP campus park design guidelines (see 2020 LRDP, p. 66; Hallanan and GLS, personal communication, July 8, 2013).

All exterior site new lighting will be shielded to minimize light spillage and atmospheric light pollution. Lighting along College Way and Girton Road will remain with the campus standard light fixture. Plaza lighting would match new lighting in the new Haas Business School courtyard (source: CEQA template submittal, Hallanan, Perkins & Will, GLS, February 2013).

The project will provide bike parking in accordance with the UC Bike Plan requirement for 10% of peak occupancy. Bike parking for 125 new spaces, including some secured bike parking, will be distributed throughout the Haas campus. Potential locations will be at Cronk Gate along the east side of the building, at Fisher Gate at southwest side of the building and at the New Addition along College Way. Some or all of the bike parking will be covered and secured (Hallanan, July 8, 2013, personal communication). Vehicle and disabled parking would be along College Way. Loading would be along the west side of the New Addition.

The proposed Girton relocation site is within the Botanical Gardens in a zone entirely altered from the original natural conditions of hillside grassland with introduced exotic plantings. The site is on a slope above Strawberry Creek, and bordered by the two main garden interior access roads / circulation routes. The site has been planted and cultivated in anticipation of eventually being built upon. As such, there are no specimen plants in the proposed Girton footprint, including access pathways, that cannot be either relocated within the Garden or is a duplicative specimen that does not require relocation.

The proposed location within the Botanical Garden allows for an accessible path of travel from the main entrance of the Botanical Garden to a new front door at the east end of the building. The landscape plan is being developed in concert with the Botanical Garden and will incorporate both existing plantings and new plant material that will blend with the adjacent California Zone of the Garden (Edwards, personal communication, June 2013).

## BUILDING DESCRIPTION

### HAAS NORTH ADDITION

The proposed Haas North Addition would be a freestanding, new construction, building of 73,185 gsf. The building would rise six stories on its western side and incorporate both tiered and open plan classrooms, meeting spaces, breakout / study rooms for small groups, study space, meeting rooms and a courtyard level café. The building would have a flat roof; mechanical equipment would be housed in a basement level. The lower floors on the west and south sides, at roadway and plaza level, would form a largely glass base to open the common areas / café to the outdoor spaces of interaction, while the upper floors would have alternating windows and solid panels of cast concrete and terra cotta, with some glass expanses at the location of breakout rooms.

The North Addition would be adjoined by a northerly extension of the existing Haas complex courtyard which would better open the site to the west and also provide a direct, accessible, path of travel into the complex and courtyard, replacing the current path and ramp system that provides courtyard access from the north.

- The building has six stories and a mechanical equipment basement, and follows the site topography
- At College Way, a two-story entrance lobby and stair connects the building's two public levels: the Lower Level and the Courtyard Level
- The single story entrance directly from the Courtyard includes a Café and upper public lobby
- The two lower levels are respectively 16 feet high, while Levels 3-5 are 14 feet high to accommodate either tiered or flat floor teaching spaces and break rooms
- The top floor Event Space is 14 feet high, and is set back behind a 9-foot-high canopy

The architecture of the Haas North Addition would draw its expression from the existing Haas School and be responsive to campus design guidelines established in the Physical Design Framework (discussed further below) featuring:

- Tripartite expression: bottom, middle and top
- Roof line matches height of existing Haas Bakar Building
- Vertical recessed punched windows
- Bay window
- Glassy lobby on lower and courtyard level
- Terraces and outdoor spaces that take advantage of the beautiful site
- Terra cotta (cf. Li Ka Shing building) panels. Facades of the North Building are a light-colored tone related to the existing Haas School
- Materially the terra cotta and board form concrete relate directly to the existing Haas School
- Glare from the facades is not anticipated
- Concrete base

(source: CEQA template submittal, Hallanan, Perkins & Will, GLS, February 2013).

## GIRTON HALL

Girton Hall is an historic structure, designed in the Bay Area craftsman style by Julia Morgan. It is listed both on the National Register of Historic Places and as a City of Berkeley Landmark. However, this is not its original site, nor its original use: the building was originally located further east and moved to its current site in 1946.

The building was designed and constructed in 1911 to provide a social and cultural venue dedicated to women students and their activities. It served this purpose until 1969, when the building was repurposed as a child care facility, now serving up to 15 children. This operation is scheduled to be relocated to a new, larger child care facility now under construction on a site south of campus.

Girton Hall, approximately 1,650 square feet, would be relocated and renovated to largely match its current form, with a number of small interventions. The existing main entrance to the building is not accessible, due to three stairs that rise from the entry vestibule to the main floor. This condition would remain intact, but a new main entrance would be created at the opposite end of the building by providing a level-in pathway to a new door inserted into what was originally an exterior porch and is now a glass-enclosed office. This room opens directly to the main room.

As funding becomes available, the existing kitchen and storage areas of the building would be reconfigured to provide a modern kitchen and an accessible restroom, both opening off the main room.

The existing fireplace / chimney of the building, which was rebuilt and strengthened during the 1977 seismic upgrades, would be again reconstructed, in a design closer to the original design, as identified from early interior photographs.

A large outdoor deck would be provided on the downhill side of the building, replacing the current narrow wooden deck. This deck would be accessible from the main room, and would be designed to generally follow in scale and character Julia Morgan's original design for a rear terrace at the original 1911 site.

The project would thus comprise: a large, central, room; a side room which would also function as the new main entrance; the original entrance door and vestibule; two uni-sex restrooms, one of them accessible; a small kitchenette; an outdoor deck connected by two sets of French doors to the central room.

## PROGRAM DESCRIPTION

### PROJECT DRIVERS – HAAS NORTH ADDITION

The project is driven by several factors:

- The Haas complex is increasingly unable to accommodate the growing program needs of the Haas School. Conference rooms have been converted to offices, larger spaces have been broken into smaller units, and the clarity of the original spatial organization has been lost.
- External program reviews in 2007 and 2010 noted the deficiencies in space as a significant obstacle to continued excellence, and described the Haas complex as below the standard set by top-tier schools such as Chicago, Wharton, Kellogg, Stanford, and Michigan.

- The spatial organization and layout of the Haas complex today do not support the spontaneous interactions, collaborative endeavors, and community functions which are integral to the culture and identity of the school.
- The size and configuration of many program spaces, particularly instructional spaces, no longer support current practices, work-styles, and cohort sizes, which require a mix of tiered and flat classrooms of varying sizes, as well as spaces designed for group and team work. The Haas School is substantially deficient in these spaces compared to its public and private peer schools.

In response, the Haas Strategic Plan completed in February 2010 designated “Transform Our Haas Campus” as one of its 3 strategic initiatives, in order to address these deficiencies. The Plan incorporates the findings of the 2009 Master Space Plan, which reviewed the original complex and its organization, described how its use has changed over time, and then analyzed present conditions in terms of changes in culture, practices, and requirements. When adjusted to include more recently defined program needs, the net space deficit in the Haas School complex itself (excluding offsite locations) was estimated at 75,500 asf.

A review of alternative capital investment strategies led to the current two-phase strategy:

**Phase 1** Construction of a new six-story building (73,185 gsf, 45,335 asf) to expand the Haas complex to the north, to address the School’s most critical space needs: instructional space, group study spaces, event space, and café/communal space. The site is currently occupied by Girton Hall (1,654 gsf), to be relocated to a new site in the UC Berkeley Botanical Garden.

**Phase 2** Renovation of the Student Services Building (97,100 gsf) to integrate and optimize student service and executive education spaces; reconfigure the library and locate computing adjacent to the library; and provide new laboratory spaces for behavioral research, computer based experiments, and the Center for Teaching Excellence.

This action, and the balance of this description with regard to the Haas North Addition effort, is confined to Phase 1, the new building, as well as the prior relocation of Girton Hall to a new site at the UC Botanical Garden. Phase 2 work, when funded, would be within the envelope of existing buildings.

## PROJECT DRIVERS – GIRTON HALL

The existing Botanical Garden conference center is a popular and heavily used facility for a wide variety of campus and public events. The heavy demand on this facility has severely impacted internal and overlapping uses of the conference center, as revenue generating activities must take priority for the Garden to be financially viable. The addition of Girton Hall would allow multiple simultaneous events to be scheduled, within the overarching constraint of available parking at the Botanical Garden. Girton Hall would be proposed to house:

- Garden sponsored academic and administrative events
- Campus (and LBNL) related seminars
- Professional societies or nonprofit garden-related group meetings (e.g., Carnivorous Plant Society, Aroid Society, local garden clubs, California Fish & Wildlife, Center for Plant Conservation, etc.)
- Departmental retreats

- Cal alumni events
- Conferences and retreats serving the local business community
- Private events such as family celebrations of weddings, birthdays, anniversaries and memorials.

The relocated Girton Hall would also serve as a resource for our extensive educational outreach programs, including children and adult tours. Typically, these groups attend the Botanical Garden during the academic year in fall-winter-early spring, when inclement weather is to be expected. As a weather contingency, the Botanical Garden would use this inside ‘retreat’ space during severe weather conditions. The same weather-related contingency use would also support site rentals that use our outdoor spaces (e.g, rose garden or redwood grove). Weather contingent space would minimize income-loss due to cancellation.

Garden leadership aspires to add to their rental income by renting Girton Hall for small events, such as meetings, during the week when the parking demand is low. Depending upon the size of the event, they could have concurrent events in Girton Hall and the Conference Center. It is expected the likely the event in the Conference Center would be a garden staff meeting or educational program. For example, the Garden could have a meeting rental in Girton Hall at the same time as its summer camp, Green Stuff, is in session in the Conference Center. The Garden does not have rental space available during the summer weeks when Green Stuff is in session, which limits income potential. The Garden currently does not, nor does it anticipate, booking simultaneous weddings or other large occupancy uses, as parking constraints would likely detract from the overall ambiance of the Garden experience. The Garden would not plan to hold concurrent events on weekends, when the campus shuttle is not available.

#### **PROGRAM – HAAS NORTH ADDITION**

The instructional space program for the new building, shown in the table below, combines a balance of tiered and flat ‘flex’ classrooms of varying sizes as well as group study rooms and other collaborative venues.

**Table I: Haas North Addition – Proposed Program**

	ASF	ASF	ASF	ASF	ASF	ASF	ASF	Totals
Tiered classroom 140		3,450						3,450
Tiered classroom 76				4,200	4,200	2,100		10,500
Tiered classroom 56		1,900	1,900					3,800
Flex classroom 50 *				1,750	1,750	1,750		5,250
Flex classroom 78						2,220		2,220
Breakout/study 6-8		560	470	1,535	1,535	1,710	495	6,305
Open study		1,320	950	825	825	825	1,080	5,825
Event space							4,785	4,785
Kitchen							700	700
Café			2,500					2,500
<i>ASF</i>	0	7,230	5,820	8,310	8,310	8,605	7,060	45,335
<b>GSF</b>	<b>2,250</b>	<b>12,000</b>	<b>11,400</b>	<b>12,725</b>	<b>12,650</b>	<b>12,650</b>	<b>9,510</b>	<b>73,185</b>

\* All flex 50s are divisible into two flex 25s.  
 Source: Perkins & Will, 19 June 2013 CEQA submittal

The consolidation of instructional spaces into the new building would then, in Phase 2, facilitate the renovation of spaces within the Student Services Building to house other program functions.

**GIRTON HALL PROGRAM**

Girton Hall is proposed to be moved to a new site at the UC Botanical Garden; see graphics package, attached. In this location, the building would be used for a range of functions more closely aligned with its original purpose, as described below.

Girton Hall is listed on the National and California Registers, and is a City of Berkeley landmark. Its identified historic significance is based on its association to “social history,” and for its being the work of an important architect, Julia Morgan. Girton Hall is in fact the only building entirely of her authorship constructed specifically for the campus (she collaborated with Bernard Maybeck on Hearst Gymnasium).

The proposed new site is located near the recently updated front entrance of the UC Botanical Garden, in an area currently occupied with planting from the Garden’s Mexican collection. The site has been considered as a building site in several earlier architectural designs for a new Garden entrance. As a result, the plantings within the proposed site are largely duplicated in other collection areas within the Garden, and many of the most important components are also amenable to relocation.

Prior to 1923, Girton Hall stood on a bucolic, woodland site overlooking Strawberry Creek, along a narrow lane heading up to Strawberry Canyon. In 1923, California Memorial Stadium was constructed in the adjoining natural area to the south of Girton Hall. The roadway past Girton Hall was then converted into a loop to Piedmont Way. Girton was later moved to its current site in 1946.

In the proposed site plan, the elevated back (deck) side of the building would overlook the Garden's extensive native California plant collection. This native California setting next to Strawberry Creek would be highly appropriate for a Julia Morgan rustic structure, in terms of design and her history in the Bay Area, and reminiscent of the building's original setting.

The Botanical Garden intends to use the building as a single space. That is, the main hall is the assignable room, and the remainder of the space in the building supports the function programmed for the main hall. There would not be concurrent, planned uses further sub-dividing the facility.

**Table 2: Girton Hall at the Botanical Garden – Proposed Program**

Room Description	Function	Size (ASF)
Main Hall	Assembly Space/multi-purpose room	988
Covered Porch	ADA entry and building foyer	283
Corner Restroom	toilet adjacent to existing entry	76
Center Restroom	ADA compliant toilet w/ high-low fountains	91
Kitchen	Galley kitchen with sink	147
Deck	Exterior uncovered assembly space	643
Storage	Storeroom accessible to deck	0
TOTAL COVERED ASF		1,585 ASF
TOTAL UNCOVERED ASF		643 ASF

**Table 3: Girton Hall at the Botanical Garden – Anticipated Use**

Programmatic Use	ASF Utilized	% of use	Hours per week (max)*	Hours per week (typ)**
Conference	1159 + 300 deck	20	10	8
Receptions	1159 + 300 deck	25	12.5	10
Exhibitions (Bot. Garden)	1159	15	7.5	6
Educational Programs (classroom)	1159	10	5	4
Retreats	1159 + 300 deck	10	5	4
Internal meetings (Bot. Garden)	876	18	9	7
Unused			0	10
	Total	100%	49 hrs.	49 hrs.

\* Assumes 7 hours/day 7 days per week

\*\* Assumes 80% utilization factor over 49 hour week

## SUSTAINABLE DESIGN

Sustainable design has been integral to planning of the Haas North Addition and Girton Hall Move projects. The Haas North Addition project is currently targeting LEED Gold certification through the incorporation of a number of green building strategies, including:

- Concentrating growth on sites served by existing infrastructure: the Haas site is in a highly serviced area of the Campus with ample site utilities
- Relocation and reuse of an existing historic building (Girton Hall), maintaining exterior and interior walls, roofs, windows and floors wherever possible

- The sites are well served by transit, no parking is added by the project, and new bike parking will be provided
- Design for net-zero increase in stormwater runoff
- Limiting night sky light pollution from site lighting
- Fundamental commissioning of building systems
- Energy efficient mechanical system and high performance building envelope
- Shading devices to temper solar heat gain
- Efficient lighting systems
- Design for excellent acoustics
- Design that supports views, daylighting and incorporates operable windows where appropriate
- Connection to the outdoors by providing a balcony at every floor
- Use of water saving toilets and bathroom fixtures
- Recycling and salvaging of construction materials
- Selection of materials to support good indoor air quality
- Use of materials with recycled content (such as steel and fly ash concrete) and regional materials (concrete and dry wall)
- An environmental education component that celebrates the green building features

Additional concepts being studied include:

- Digital displays of real-time energy data for verification and user feedback to provide accountability and incentives for saving energy
- A vegetated roof to reduce stormwater impacts, temper the building heating and cooling loads, provide habitat for birds and limit the impacts of the urban heat island effect (Haas North Addition only)
- Rainwater harvesting for use in non-potable fixtures to reduce building water consumption and stormwater impacts

## PARKING SUPPLY

Currently, there is one disabled and seven regular parking spaces, two of which serve the childcare facilities at the Haas North Addition site. Only the disabled parallel parking space will be replaced at College Way. The two spaces serving the childcare facility at this location will not be needed when the childcare programs are relocated from Girton in Fall, 2013 (Hallanan and GLS, personal communication, July 8, 2013).

Parking needs of the Haas complex would be served by the general campus supply, including lots and garages located on and at the periphery of the Central Campus Park. The Southeast Campus Integrated Projects EIR contemplates construction of a large, multi-level, parking structure with playing field on top, east of the Haas site on the Maxwell Family Field site. This would provide 400 to 500 new parking spaces. If this project proceeds it would provide additional parking within the immediate environs of the Haas complex, but that parking is not required for, or in advance of, the proposed Haas North Addition project.

Parking needs at the Girton relocation site in Strawberry Canyon will be met by the existing Botanical Gardens parking lot which provides parking both for campus permit holders, and day / hourly visitors. Some of the expanded Garden activities for which Girton Hall would be used—such as weddings,

celebrations, social gatherings, and educational programs--would be evening or weekend events, when the Botanical Garden parking lot is not in high demand / use by permit holders.

In addition, the Botanical Garden is adjacent to, and a stop on, campus operated Hill Area shuttle bus routes which regularly traverse Centennial Drive. With one transfer at Mining Circle shuttle bus users can reach the Botanical Gardens from the downtown Berkeley BART station and the network of AC Transit bus lines. The shuttles also connect to other hill area parking lots serving the general public, at the top of Strawberry Canyon adjacent to the Lawrence Hall of Science. No changes are currently planned for the Hill shuttle or these existing parking lots which would substantially diminish parking / transit access to the Garden.

The Botanical Garden has a fee-based visitor lot which accommodates 72 cars, with the potential to add 10 additional cars through the use of attendant (stacked) parking. The 10 additional stacked cars does not represent the maximum capacity of the lot if it were fully stack parked, merely the number of spaces that special events can obtain above and beyond the marked spaces when the current maximum of 40 reservable spaces are included in the stacked parking system. The remaining 32 spaces could be stacked parked, adding, potentially, 8 to 10 additional car parking spaces. However, stack parking is not practical for general garden visitor, who enter and leave the Garden at differing times. Stack parking is most practical for events during which a group arrives and departs at the same time (events). The Botanical Garden parking lot, available for use by Hill and Central Campus permit holders, is available to the public during all operating hours as well, thus this is a shared use lot. There are limited parking spaces within LBNL that are used by up to 8 Botanical Garden staff, through an informal agreement, subject to revocation with reasonable notice.

The elevation of the Garden entrance is approximately 760' above sea level, with the Downtown Berkeley BART station and Memorial Stadium at 200' and 400' above sea level, respectively). The elevation change makes access by pedestrians and bicyclists relatively unappealing, resulting in vehicles being the dominant mode of transportation to the Garden. There is no dedicated bike lane on any portion of Centennial Drive, further reducing its functionality as a viable bike route.

There is limited AC Transit bus service to the Lawrence Hall of Science, approximately ½ mile uphill from the Garden, but the terminal stop is at 1140' above sea level, requiring a 380 foot descent and 380 foot ascent over a relatively short distance, which is far more strenuous a walk that considered "walkable" by normal transportation standards as reflected in walkability scores for private home real estate evaluations (Zillow.com). Moreover, Centennial drive has a substandard "side walk" leading up Centennial, with much of the distance too narrow for oncoming, single-file pedestrians to pass one another without slowing and stepping aside. In portions, the sidewalk is non-existent, forcing pedestrians into the vehicle traffic lane for short distances. There is no sidewalk from the Lawrence Hall of Science down Centennial, and the few walkers use a dirt shoulder or must walk in the vehicle lane to cover this stretch of road.

Given the steep terrain, limited width of road prism and the use of lower Centennial Drive as a "spillway" for the storm water detention dam at sign post #7, widening Centennial Drive would likely be extremely costly and would not overcome the elevation change deterrent for both bicyclists and pedestrians.

The campus shuttle, with runs on a 30 minute schedule on weekdays is lightly used by the public, and mainly used by campus affiliates (for whom passage is free). Key limiting factors for increasing shuttle usage on weekdays is the shuttle route and fee structure of the campus shuttle system. Currently, the Hill line serving

Centennial Drive facilities has its lower terminus at the Hearst Mining Circle (380' asl), which is a 180' elevation gain from the downtown BART station over a ½ mile distance. While there is Campus Shuttle service between BART and the Mining Circle, public patrons must transfer and pay a \$1 fare for each leg of the trip. Thus, a round-trip via campus shuttle is comprised of four \$1 shuttle trips (2 up, 2 down). Providing transfers could increase ridership by decreasing the per person cost from \$4/RT to \$2/RT.

Peak parking utilization is reached during special Garden events, and frequently during Spring and Summer weekend days during with a wedding or reception is booked for the Garden's conference center. Through administrative controls, the Garden limits weddings and other special events to reserve up to 40 of 72 public parking spaces (55% of capacity) with the option of stack parking 10 additional vehicles. At least 32 parking spaces are available on a first-come, first served basis in a period of peak Garden occupancy.

### **ANTICIPATED CONSTRUCTION IMPACTS**

Construction of the project would require relocation of Girton Hall from the current site to the Botanical Garden site. It would require demolition of the existing Girton Hall fireplace, chimney, foundation, adjacent child care play yard, and portions of site pathways and staircases. Trees would be trimmed and tied back to facilitate the move along Stadium Rim Way; other trees would be removed as described in the landscape description, above. Please see the graphics package for a map of the proposed building move route.

As with any campus project, demolition and construction will result in noise and vibration.

Construction of the project will also require excavation shoring and temporary structural and excavation. Commonly major construction operations are coordinated to help reduce impacts in the vicinity and on campus. When timelines are more established, the contractor would coordinate with both the city and the University to limit overlap of work that requires, for example, intensive trucking.

Girton Hall will be disassembled into as many as four sections to be moved by truck to the Botanical Garden, and will be reassembled there on site. The move will require temporary roadway closures, primarily on University owned property, but possibly also affecting some City streets adjoining those roads. The move schedule and route will be arranged with campus and City authorities to minimize impacts on campus and community activities. Building moves of this type are often done during quiet weekend or holiday periods when traffic and surrounding activities are minimal.

### **LRDP ENVIRONMENTAL IMPACT REPORT MEASURES INCORPORATED INTO PROJECT**

As planned and proposed, the project (and therefore, this project description) incorporates measures and best practices established in the programmatic environmental impact report for the UC Berkeley 2020 Long Range Development Plan. Please see Part VI., below.

## **III. PLAN AND POLICY CONTEXT**

Contents of this section:

CONSISTENCY WITH THE 2020 LRDP (2005)

CONSISTENCY WITH THE PHYSICAL DESIGN FRAMEWORK

The proposed move of Girton Hall and construction of the Haas North Addition has been presented, considered and discussed in campus contexts, as set forth below:

- The project has been reviewed by the campus Design Review Committee, and the Girton Hall move was endorsed at the Committee's meeting of March, 2013. The DRC has also reviewed and advised on the general siting and design character of the Haas North Addition at meetings in September 2011, May of 2012, and February of 2013.
- The Haas North Addition project was reviewed by the campus Seismic Review Committee on June 25, 2013. The structural system consists of a five-story concrete structure with a one-story partial mechanical basement and topped by a one-story steel structure. The current structural design utilizes concrete shear walls for the concrete-framed structure and steel moment frames at the one-story steel penthouse. The SRC expressed no major concerns or objections; further review will occur later in the year.
- The relocation of Girton Hall was reviewed with staff to the Seismic Review Committee and the structural design will be in accordance with campus requirements (Edwards, personal communication, July 8, 2013).
- The relocation of Girton Hall and plans for its rehabilitation have been shared with the State Historic Preservation Office as of June 2013. In a letter dated August 6, 2013, the SHPO stated the opinion:

...that Girton Hall can be disassembled, moved, reassembled, and rehabilitated in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. UCB and its design team has taken great care in preparing the documents submitted to this office, paying particular attention to the integrity issue posed by moving a historic building. The SHPO agrees that integrity of location and setting have already been compromised, and that moving Girton Hall to the Botanical Garden location will not compromise those aspects of integrity to the point that the building will no longer be eligible for listing in the NRHP.
- Recognizing the potential of the project to have an adverse effect upon a significant historic resource, the relocation of Girton Hall was presented to the City of Berkeley's Landmarks Preservation Commission in April, 2013. The Commission was supportive of the project and the permanent preservation of Girton Hall at the Botanical Garden site.

### **CONSISTENCY WITH THE 2020 LRDP (2005)**

The Haas North Addition is proposed as partial implementation of the UC Berkeley 2020 Long Range Development Plan (2020 LRDP). Adopted by the Regents in January 2005, the 2020 LRDP describes both the scope and nature of development proposed to meet the goals of the University through academic year 2020-2021, including projections of growth in both campus headcount and campus space during this timeframe. The 2020 LRDP also prescribes a comprehensive set of principles, policies, and guidelines to inform the location, scale and design of individual capital projects. These include Location Guidelines, which establish priorities for the location of campus functions, and the City Environs Framework, establishing the design framework relevant at the proposed project site. See the 2020 LRDP EIR, Volume 1, page 3.1-47.

The 2020 LRDP distinguishes between the 180 acre Campus Park; the Hill Campus consisting of roughly 1000 acres east of the Campus Park; and the City Environs defined as blocks adjacent to campus, other

Berkeley sites, and the 2020 LRDP housing zone. The LRDP designates the Central Campus Park as the appropriate location for direct teaching facilities, such as the Haas North Addition, and encourages the location of ancillary facilities such as Girton Hall outside the Central Campus Park. The project conforms to the 2020 LRDP Location Guidelines, which prioritize locations on the Central Campus for academic and teaching facilities. See the 2020 LRDP EIR, Volume 1, page 3.1-61.

The 2020 LRDP notes that:

*Enrollment is only one of many drivers for growth at UC Berkeley. New academic initiatives and continued growth in research also create demand for more space on and around campus. While some of this demand can be met through renovation of existing buildings, new buildings are also required, particularly for programs that demand high performance infrastructure and other advanced features renovated space cannot provide. (2020 LRDP, page 15)*

The sites for the project are governed by the 2020 LRDP. The project would be located in the area designated in the 2020 LRDP as the Campus Park, and the Hill Campus. The 2020 LRDP anticipated up to 1 million net new gross square feet of academic and support space would be developed on the Campus Park over the lifetime of the 2020 LRDP, and over 2.2 million net new gross square feet within the entire area governed by the 2020 LRDP (2020 LRDP EIR Vol 3a, 3.1-14). These growth envelopes were analyzed in the 2020 LRDP EIR. As shown in Tables 2 and 3 below, the project would result in space levels below levels anticipated in the 2020 LRDP.

**Table 4: Comparison of Project to 2020 LRDP Program: Space**

	# Gross Square Feet		% total LRDP GSF
	By project	totals	
Max New Academic and Support GSF in 2020 LRDP		2,200,000	100%
Max new Academic and Support GSF due to other projects	733,689		33%
Max new Academic and Support GSF due to Haas North Addition	73,185		0.03%
Net new Academic and Support GSF remaining		1,393,126	63%

Source: UC Berkeley Capital Projects/Facilities Services, July 2013

**Table 5: Comparison of Project to 2020 LRDP Program Campus Park: Space**

	# Gross Square Feet		% total Area GSF
	By project	#	
Max New Academic and Support GSF in 2020 LRDP		1,000,000	100%
Max new Academic and Support GSF due to other projects		312,629	31%
Max new Academic and Support GSF due to Haas North Addition (73,185 minus 1650 for Girton Hall move)	71,535		0.07%
Net new Academic and Support GSF remaining		616,726	61%

Source: UC Berkeley Capital Projects/Facilities Services, July 2013

The 2020 LRDP also provided for the addition of up to 100,000 gsf of space in the Hill Campus; the move of the 1650 square foot Girton Hall would be the first element of LRDP-related improvements to occur in the Hill Campus.

The following **2020 LRDP Objectives** are particularly relevant to the proposed project:

**Provide the space, technology and infrastructure we require to excel in education, research, and public service.**

The proposed project would provide much needed space for the teaching and related functions of the Haas School; the addition of Girton Hall to the available facilities at the Botanical Garden will aid education, outreach, and public service efforts of the Botanical Garden.

**Build a campus that fosters intellectual synergy and collaborative endeavors both within and across disciplines.**

The Haas North Addition will foster intellectual synergy and collaboration within the business school and its allied departments by providing an expanded and modernized range of teaching and interactive spaces.

The Girton Hall relocation will provide the Botanical Garden with a much needed, flexible, indoor event and program space which will also be available to the broader campus community for leasing for meetings, gatherings, retreats, and events. This sort of small event space is in high demand in the campus community, and departments often resort to renting off campus and sometimes quite distant locations for these types of program uses. Girton will provide another facility, similar to portions of the Faculty Clubs and Alumni House, where campus departments can hold events.

**Plan every new project to represent the optimal investment of land and capital in the future of the campus.**

The Haas North Addition will not substantially detract from existing campus open space but will convert a small portion of open space, immediately proximate to major existing facilities, into a site to support the programs in those facilities. It will locate needed facilities for the Haas School immediately adjacent to the existing school, rather than remotely. At its new site Girton Hall will not remove or impact significant specimen plants but will allow the Garden to realize master plan goals at its site.

**Plan every new project as a model of resource conservation and environmental stewardship.**

Policies under this objective include incorporating sustainable design principles into capital investment decisions; designing new campus buildings to a standard equivalent to LEED 2.1; and designing new campus laboratory buildings to a standard equivalent to LEED 2.1 and LABS 21 environmental performance criteria. UC Berkeley 2020 LRDP Addendum #5, incorporated herein by reference, describes the many activities the campus undertakes to reduce resource consumption. All University construction is subject to the Policy on Sustainable Practices (<http://www.ucop.edu/facil/sustain/>) which include green building design practices. The project includes reuse of an existing building. The project does not include parking dedicated to the program uses; the site is well served by campus shuttle lines.

**Maintain and enhance the image and experience of the campus, and preserve our historic legacy of landscape and architecture.**

The historically important image and experience of the campus is commonly considered to be its historic core, characterized by an original complex of buildings designed by the first campus architect, John Galen Howard. As noted in the UC Berkeley Physical Design Framework, the Campus Park retains an important legacy of natural and formal open spaces, as well as numerous historic buildings and ensembles (UC Berkeley Physical Design Framework, pp. 7-10).

The proposed project would retain and reuse an existing historic building (Girton Hall) and the Haas North Addition would be constructed outside the classical campus core.

**Accommodate new and growing academic programs primarily through more intensive use of University owned land on and adjacent to the Campus Park.**

**Prioritize Campus Park space for programs that directly engage students in instruction and research.**

The Haas North Addition project would address both these policies by expanding the amount of modern, program-driven space available to the teaching programs of the Haas School in an addition incorporated into a small footprint of land immediately adjacent to the existing Haas complex.

Given its prime location on the Campus Park, the project site for the Haas North Addition is presently underutilized by the 1654 gsf Girton Hall. Although the site was not explicitly designated as a potential project site at the time the LRDP was written, the proposed use is entirely congruent with this policy and with the LRDP Location Guidelines. Most of the site (including the building interior, deck, and adjacent outdoor play area) is also currently restricted to use by a relatively small cohort of children and childcare staff; thus, it is not a commonly used open space by the general campus public.

Girton Hall is an historic structure listed both on the National Register of Historic Places and as a City of Berkeley Landmark. However, this is not its original site, nor its original use: the building was originally located further east and moved to its current site in 1946. Built originally as a social and cultural venue for women students, Girton Hall is now used as a child care facility for up to 15 children: this operation is scheduled to be relocated to a new, larger child care facility now under construction. Development of a new building on the project site, to provide state-of-the-art instructional spaces, conforms to the priorities established in the LRDP and the Physical Design Framework (see below).

The LRDP provides (table 3, page 22) that during the lifetime of the LRDP up to 1,000,000 gross square feet of additional academic and support space may be added to the Central Campus Park, and up to 100,000 additional gross square feet in the Hill Area. The additional square footage of the Haas North Addition would be accommodated within these limits, as well as the small amount of additional building square footage the Girton relocation would add to the Hill Area.

The LRDP also provides (page 31) a policy that the campus should “**Create places of interaction at key nodes of activity.**”

The project would enhance existing, and create new, places of outdoor interaction at the Haas complex, with the common areas of the new addition, including café, facing out onto renovated or new construction outdoor spaces and major pedestrian circulation routes.

As prescribed in the Hill Area Framework of the LRDP, the campus should: **“Maintain the hill campus as a natural resource for research, education, and recreation, with focused development on suitable sites”**

The relocation of Girton Hall would represent just such a small, focused, development that would enhance an existing research / education facility in the Hill Area.

The LRDP additionally states (page 54) that projects should **“Ensure the future management of, and investments in, the Ecological Study Area and the Botanical Garden are integrated and synergistic.”**

The Girton relocation project will be integrated with existing Garden programs and facilities plans / needs there, and would be synergistic with those programs.

An additional policy (page 59) notes that projects should **“Maintain the visual primacy of the natural landscape in the Hill Campus.”**

“New building projects should conform to the contours of the land, and grading should be minimized. Project landscaping should utilize native plant materials and reflect the rustic style of adjacent natural areas, and should incorporate the fire management provisions described below. Buildings should be clustered to minimize site disturbance, and should utilize articulated volumes to reduce the perception of building mass. Exterior colors and materials should be selected to help the buildings blend into rather than contrast with the landscape.”

The Girton relocation will reflect this expectation, incorporating a low, residentially scaled, building made up of three articulated volumes, into the existing landscape. The existing dark brown exterior of the building will blend into the natural landscaping.

In design guidelines prepared for the LRDP, the LRDP additionally specifies (page 66) for **GAYLEY & PIEDMONT FRONTAGES** that “One of the most memorable aspects of the campus is its setting at the base of the East Bay hills, and Gayley Road should be reinforced as the 'seam' linking the campus with the hill landscape. Each building should be set back an average of 40' from the curbline to accommodate an informal landscape treatment along both sides of the roadway. While building edges should be articulated to vary the setback depth, no portion of a building should be closer than 20' to the curbline.”

The Haas North Addition, as proposed, will not intrude into the desired setback zones. In addition, the site of the addition at the base of a steep slope descending from Gayley Road will reduce the apparent height of the six-story building when seen from Gayley Road.

The landscape design of the project was reviewed by the Campus Landscape Architect and campus Design Review Committee at their meeting of July 11, 2013. The project ensures consistency with this policy by

reinforcing the “seam” of woodland connection and reflecting an informal landscape treatment along Gayley Road itself.

Also in the design guidelines discussion of **PLACES OF INTERACTION** (page 67) the LRDP states “Ground level spaces in each building facing a place of interaction should house functions with a high frequency of human presence and public activity, such as lounges, libraries, cafes, display spaces, and walk-up services. The main building entrance should be located in the facade facing the place of interaction.”

This is planned for the Haas North Addition. The Haas complex café will be located on the courtyard level of the addition, and the main entrance will face the courtyard.

In discussion of **GROUND FLOOR SPACES** (page 69) the LRDP design guidelines state “Guideline G.5 prescribes specific programming for buildings facing Places of Interaction and at the City Interface. However, the program of every new building on campus should seek to optimize its contribution to the quality of campus life. The ground level spaces of each building should be reserved for its most public functions, and those spaces facing public areas should be as transparent as the program allows. Main entry lobbies should be designed as inviting places for waiting and engagement, with features commensurate with the scale and functions of the building.”

The Haas North addition ground floor will optimize public functions, including the café, and transparency to the adjacent open spaces.

**GUIDELINE G.15 FLOOR HEIGHTS** “Each new building in the Campus Park should have a floor-to-floor height of at least 15', in order to accommodate a wide range of instruction and research functions and the infrastructure they require. A greater height on the ground floor may be desirable to accommodate larger public and assembly spaces, such as libraries or lecture halls.”

The floor to floor height of the North Addition will be 16 feet on the main (entrance) level, 13 feet on the three classroom floors, and 17 feet on the top, event space level. Dropped ceilings will result in effective floor to ceiling heights of 12 feet on the entry level, and 10 feet on the entry level.

**GUIDELINE G.16 FLOOR CONFIGURATION** “Each new building should be configured to accommodate a broad range of functions. The need to provide for a specific program in the near term must be balanced against the rapid pace of cultural and technological change, and the long lives of campus buildings. In general, a building width of 75-80' can accommodate a variety of office, lab and classroom layouts.”

**GUIDELINE G.17 INTERNAL PARTITIONS** “Each new building should be designed to consolidate fixed, immovable elements at the core and perimeter. and minimize or eliminate such elements elsewhere. Spaces should be demised with easily reconfigurable partitions.”

**GUIDELINE G.18 TOP FLOOR SPACES** “In tall buildings, particularly those with a view to the west, at least some top floor space with views should be reserved for conference/event rooms available for use by the entire campus. This is an emerging campus tradition, begun in Barrows and

continuing through Wurster, Tan and Haas, and should be encouraged as a way to foster intellectual collaboration.”

The North Addition varies in width from approximately 53 to 64 feet. This is slightly smaller than the ideal range, but wide enough to accommodate a flexible interior. Fixed, immobile, elements include staircases which will be located at the outer corners of the building. The elevator core is adjacent to a central lobby on each floor, allowing flexible layout within the two wings. The initial layout will include both large, tiered, classroom spaces and smaller breakout and meeting rooms on the classroom floors. Although a number of interior shear walls are necessary for the building, they are being positioned so there is maximum flexibility for future rearrangement of rooms and interior partitions to accommodate changing pedagogical needs, particularly on the classroom levels.

### **CONSISTENCY WITH THE PHYSICAL DESIGN FRAMEWORK**

The UC Berkeley Physical Design Framework, accepted by the Regents in Nov 2009, includes principles for both land use and architecture, built upon on the policies and guidelines in the 2020 Long Range Development Plan. Please see the discussion above regarding consistency of the projects with the 2020 LRDP.

- Compose new buildings primarily of orthogonal forms with orthogonal relationships to existing buildings. (Physical Design Framework, p. 33)

As shown in the graphics package, the building retains an orthogonal relationship to the existing Haas complex, creating a visual terminus and spatial enclosure for the central plaza, but then the northwest portion of the building bends to also frame and define the curve of College Way.

- Design buildings over 3 stories to include an articulated base, middle, and top: variations in color, texture, or wall/window ratio may be used to articulate base and top. (Physical Design Framework, p. 33)
- Compose facades primarily of solid walls and punched windows that respect the structural grid.
- Use glass walls primarily for special features or spaces, or where program merits greater transparency.
- Clad solid walls primarily in stone or cast materials with sand texture and integral color.

As shown in the elevations and perspectives in the graphics package, the proposed building has a clear tripart composition, with surface treatments informed by program as well as design. A mix of cast concrete (classrooms) and glass walls (café and lobby) is used to distinguish the base from the middle, which is clad in a mix of terra cotta with punched windows (classrooms) and glass walls (study/ breakout rooms). The more transparent breakout rooms, as well as the café, face and observe the plaza, enhancing safety and security. The top floor, housing the event facility, is clad in glass and recessed from the lower floors to create a distinct ‘top’.

- Buildings outside the classical core may have flat roofs [but] finish parapets with articulated cornices. (Physical Design Framework, p. 34)

- Conceal roof equipment with enclosures integral to the building architecture. (Physical Design Framework, p. 34)

The cornice is enhanced by a projecting shade structure, and mechanical equipment is housed entirely in the basement.

With respect to architectural style, the dominant tradition on the Berkeley campus is the neoclassical tradition seen in the classical core. However, as the Framework points out, the project site - as well as the existing Haas complex - are outside the classical core and more closely identified with the picturesque tradition, with its origins in the craftsman style. While the architecture of the project does not try to imitate this style, it respects and complements both the tradition in general and the Haas complex in particular.

As shown in the elevations, the new building is slightly lower in height than the neighboring Bakar and Cheit buildings: cornice lines on the new building roughly align with eave lines on the existing pitched-roof buildings, and the form of the building is articulated to reduce its perceived mass and create the more intimate, human scale characteristic of the picturesque tradition.

## **IV. 2020 LRDP ENVIRONMENTAL IMPACT REPORT – IMPACT SUMMARY AND PROJECT-RELATED ANALYSIS**

### **AESTHETICS**

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP at UC Berkeley would not result in new significant aesthetic impacts (2020 LRDP FEIR Vol. 1, 4.1-15 to 4.1-19); nor would the 2020 LRDP make a cumulatively considerable contribution to adverse aesthetic impacts (2020 LRDP FEIR Vol. 1, 4.1-22 to 4.1-24).

The project will not impact any important scenic vistas as defined in the 2020 LRDP. The Haas North Addition will primarily be visible from the immediately adjacent areas, and because of the steep slope of the hillside, the lower floors will be below the level of Gayley Road. Girton Hall will be within the interior of the Botanical Garden and will be visible from some adjacent publicly accessible hillsides and ridgelines, but because of the small scale of the building and surrounding Garden plantings, will appear as a residentially scaled structure in the landscape and will be visually compatible with the other small scale buildings of the Garden.

There are no other scenic vistas in the vicinity of the project and no impact will occur. See 2020 LRDP EIR analysis, Vol 1, 4.1-17 through 4.1- 24, as amended by Vol 3A, 9.1-6 to 9.1-7.

Project lighting is being designed to include shields and other devices to minimize light spillage and atmospheric light pollution, and reflective surfaces would be minimized, as prescribed in the 2020 LRDP EIR (Mitigations AES-3a, AES-3b).

The Botanical Garden staff have advised that no specimen trees occur on the Girton project site, and none would be adversely affected by the project.

As mentioned in the Project Description above, the Campus Landscape Architect has advised that there are two specimen trees, both coastal redwoods, on the Haas North Addition site; one has a 36 inch trunk diameter, and the other a 48 inch trunk. Both will be removed as part of the project. The Campus Landscape Architect has advised that to mitigate this loss and other possible impacts on the campus landscape the landscape plan for the new building include plantings of evergreen trees, possibly including the two species presently on site (redwood and coast live oak) and be designed to reconnect, as the current landscaping does, the riparian woodland that lines the Strawberry Creek channel with the hillside woodland above Gayley Road (verbal communication from Jim Horner, April 17, 2013).

The project also has the potential to affect the overarching canopy of trees, primarily coast live oak, along the Girton relocation route between the Central Campus Park and the Botanical Garden. Of particular interest are the groves of live oaks on either side of Stadium Rimway Road, from the vicinity of Bowles Hall to the lower end of Centennial Drive. The Campus Landscape Architect, project architect, and a surveyor have inspected this route and devised a plan to segment Girton Hall for the move so the structure can be taken between the trees without significant tree removals or pruning required that would adversely alter the visual character of this roadway. (verbal communication from Jim Horner, April 17, 2013).

As described in Section III – Plan and Policy Context, in November 2009 UC Berkeley presented to the University of California Regents a proposed Physical Design Framework, providing design guidance to projects implementing the 2020 LRDP. The project is consistent with the Physical Design Framework (PDF) in its use of a Central Campus Park site for a University function that involves teaching operations; improves paving, planting and lighting with the project street frontages; brings vibrant place making to north edge of the Haas School complex; eliminates rooftop equipment with a basement mechanical room; and other areas of alignment.

Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding the 2020 LRDP with respect to aesthetic issues that were not adequately analyzed and, as necessary, mitigated, and no new information is available. The proposed project would not alter the findings of the 2020 LRDP EIR with regard to Aesthetics.

Cumulatively, the 2020 LRDP EIR noted that projects implementing the 2020 LRDP, in combination with other foreseeable projects, would result in visual changes. The project is not a considerable contribution to any degradation of the visual character of the campus and environs, nor does it adversely affect scenic vistas, as examined in the 2020 LRDP EIR (2020 LRDP EIR p. 4.1-22).

## AIR QUALITY

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, guided by compliance with local regulations, campus policies and programs to reduce emissions and risk of toxic air contaminant releases, and incorporating existing best practices and 2020 LRDP FEIR mitigation measures would, with one exception, not result in new significant air quality impacts (2020 LRDP FEIR Vol. 1 p. 4.220 to 4.226). As the one exception, the 2020 LRDP FEIR conservatively estimated that the Bay Area Air Quality Management District's (BAAQMD) Clean Air Plan did not include an increment for growth at UC Berkeley, and found that campus growth overall may not comply with the Clean Air Plan, and may result in a

cumulatively considerable increase in nonattainment pollutants that conflicts with the Clean Air Plan (2020 LRDP FEIR Vol. 1).

In May of 2011, the BAAQMD published updated Air Quality Guidelines for the California Environmental Quality Act. Although thresholds of significance proposed by BAAQMD are currently under appeal and not an approved measure of a project's air quality impacts, the proposed project would not exceed screening criteria levels for criteria pollutants and precursors: see, for example, comparable statistics at Government land use type (civic center) (BAAQMD CEQA Air Quality Guidelines page 3-3). Implementation of 2020 LRDP EIR continuing best practices complies with BAAQMD's previous programs (1999 CEQA Guidelines) and therefore under local criteria the project would not exceed screening thresholds for air quality. As described further below, UC Berkeley has a qualified (meeting BAAQMD's criteria) GHG Reduction Strategy; further, UC Berkeley implements basic construction-related mitigation measures substantially similar to those recommended by BAAQMD (BAAQMD CEQA Air Quality Guidelines page 8-3; see also page 3-5).

The proposed project would include re-location and use of an existing building, and construction of new building and related elements. The only demolition involved in the project would be removal of the existing foundation of Girton Hall and the existing play yard adjacent to Girton.

The action proposed herein would not result in new air quality impacts not previously considered; would not contribute to significant environmental impacts previously identified in the 2020 LRDP FEIR, and will not result in those impacts being more severe than as described in the 2020 LRDP FEIR. No additional mitigation measures have been identified that would further lessen the previously identified impact, and no additional analysis is required.

Implementation of the 2020 LRDP would not impede or conflict with the emissions reductions targets and strategies prescribed in or developed to implement AB 32, given the provisions of the 2020 LRDP and campus best practices. The proposed project would not alter these findings. Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP development with respect to air quality that were not adequately analyzed and, as necessary, mitigated, and no new information is available.

The 2020 LRDP EIR found traffic associated with development under the 2020 LRDP would not contribute to a cumulatively considerable increase in or expose receptors to substantial CO concentrations. Using measured CO concentrations associated with peak hour vehicle volumes for the intersection of Mission Boulevard and Jackson Street/Foothill Boulevard in Hayward as a 'worst-case' comparable in the same air basin as the campus, the 2020 LRDP EIR found changes at local intersections resulting from implementation of the 2020 LRDP would not result in significant impacts.

Cumulatively, the 2020 LRDP EIR noted that projects implementing the 2020 LRDP, in combination with other foreseeable projects, may result in a cumulatively considerable increase in nonattainment pollutants that conflicts with the Clean Air Plan (2020 LRDP FEIR Vol. 1 p. 4.231) and could contribute to a cumulatively considerable increase in toxic air contaminants, primarily from diesel particulate matter, from stationary and area sources (2020 LRDP FEIR Vol 1 p. 4.2-33). Neither the Girton relocation nor the new Haas North Addition would be a significant source of pollutants, TACs or diesel particulate matter. Construction --

including minor demolition -- activities required to implement the 2020 LRDP would be controlled by best management practices in accordance with air district guidance and the proposed project would not result in cumulatively considerable air quality impacts related to construction.

## BIOLOGICAL RESOURCES

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, incorporating existing best practices and 2020 LRDP FEIR mitigation measures, would not result in new significant impacts upon biological resources (2020 LRDP FEIR Vol. 1, 4.322 to 4.330). As mentioned in the Project Description above, the Campus Landscape Architect has advised that there are two specimen trees, both coastal redwoods, on the Haas North Addition site; one has a 36 inch trunk diameter, and the other a 48 inch trunk. Both will be removed as part of the project. The Campus Landscape Architect has advised that to mitigate this loss and other possible impacts on the campus landscape the landscape plan for the new building include plantings of evergreen trees, possibly including the two species presently on site (redwood and coast live oak) and be designed to reconnect, as the current landscaping does, the riparian woodland that lines the Strawberry Creek channel with the hillside woodland above Gayley Road (verbal communication from Jim Horner, April 17, 2013).

The proposed project, including construction and operation of the new Haas North Addition, would not result in new or more severe impacts than analyzed in the 2020 LRDP FEIR, nor contribute to cumulatively significant adverse effects upon biological resources. The project would comply with all relevant biology mitigation measures from the 2020 LRDP EIR. The 2020 LRDP EIR found that the Adjacent Blocks, including the Project site, 'occur in urbanized areas with little or no remaining natural vegetation and limited wildlife habitat values. No sensitive natural communities, special status species, wetlands or important wildlife movement corridors occur in these zones' (2020 LRDP EIR Vol 1, 4.3-18 to 4.3-19). A pre-construction nesting survey would be completed prior to construction, consistent with LRDP Mitigation Measure BIO-1-a (see Table 5). As with other projects at urban sites, any infrastructure activities associated with servicing the Haas North Addition site project would occur in previously developed street and roadway sites only. The modest infrastructure needed for Girton Hall at its relocation site would be integrated with the existing Botanical Garden infrastructure.

Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP development with respect to biological resources that were not adequately analyzed and, as necessary, mitigated, and no new information is available.

Cumulatively, the 2020 LRDP EIR noted that projects implementing the 2020 LRDP, incorporating biology best practices and mitigation measures, in combination with other foreseeable projects, would not have a significant adverse effect on special-status species or sensitive natural communities, jurisdictional wetlands, wildlife corridors and movement opportunities, or wildlife nursery sites (2020 LRDP FEIR Vol 1 p. 4.3-35-4.3-37). The proposed project would not alter these conclusions.

## CLIMATE CHANGE

As previously explained herein, the 2020 LRDP was amended to reference the campus climate action plan, a stringent campus greenhouse gas reduction strategy, in July, 2009, and the 2020 LRDP EIR was amended to consider how implementation of the 2020 LRDP impacts climate change / greenhouse gas emissions. Implementation of the 2020 LRDP would not impede or conflict with the emissions reductions targets and strategies prescribed in or developed to implement AB 32, given the provisions of the 2020 LRDP and campus best practices (2020 LRDP EIR Addendum #5, page 45).

As part of the LRDP EIR addendum #5 prepared in accordance with CEQA to consider the LRDP climate change amendment, construction period (including demolition) emissions for UC Berkeley were calculated, assuming 1 million gross square feet of new space under development, or 45.9 acres under construction at UC Berkeley over a twelve-month period. Modeling shows that annual CO<sub>2</sub> emissions of 1,264 metric tons results from construction activities of this scale. For comparison, emissions associated with campus water consumption were 1,955 metric tons of carbon dioxide equivalent in 2007. Construction at the two project sites, including demolition and development of new space would be well within the one million square feet of new space under development analyzed in the 2020 LRDP EIR and 2020 LRDP EIR Addendum #5.

The project would not be a major source of greenhouse gas emissions. The project is planned, designed and would be managed to comply with the University Policy on Sustainable Practices, and incorporates best practices and specific design elements outlined in Section II as partial implementation, including reuse of an existing building, recycling and salvage of construction materials, use of operable windows, low flow toilets, and commissioning of building systems. Further, the project implements the 2020 LRDP as amended and would not generate greenhouse gas emissions in a manner that significantly impacts the environment. Lead agencies, including municipalities, counties, and universities, have adopted climate action plans in an effort to meet state mandated greenhouse gas reduction targets through comprehensive efforts. Where the focus of CEQA is commonly on the physical impact of a single new development proposal, on-going pre-existing operations are often the greatest contributors of greenhouse gas emissions.

Cumulatively, the 2020 LRDP EIR determined that the impact of implementation of the 2020 LRDP, with incorporation of all best practices and implementation of UC Berkeley's Climate Action Plan, on cumulative climate change would be less than significant. (2020 LRDP EIR Addendum #5, page 55). The proposed project would not alter these conclusions.

## **CULTURAL RESOURCES**

In the 2020 LRDP EIR, the numerous historical resources located within the geographic scope of the 2020 LRDP were divided into two separate categories: Primary Historical Resources and Secondary Historical Resources. Primary Historical Resources include those listed on the California Register of Historical Resources. Secondary Historical Resources include resources listed on local registers, as well as resources listed on the state Inventory. Secondary Historical Resources are presumed significant unless a preponderance of evidence demonstrates otherwise. Historic resources covered here include buildings, sites (which include landscapes), structures (such as bridges), and objects (such as Founders' Rock). Girton Hall, by virtue of its designation on the National Register of Historic Places, is a Primary Historical Resource.

The 2020 LRDP FEIR noted that under certain circumstances, projects developed under the 2020 LRDP could cause substantial adverse changes in the significance of historical resources, which would remain a

significant and unavoidable impact despite recordation of the resource (2020 LRDP FEIR Vol. 1, 4.455). Move of a historic building commonly is considered to significantly impact the historic character of the resource; given the importance of original siting to the character of a building, moving buildings is considered a substantial adverse change to the resources, equivalent to demolishing them under the state Public Resources Code section 5020.1(q).

As noted above, although Girton Hall was moved to its current site in 1946 it continues to retain its historic significance. The University believes the sensitive move of the building to a new context and use more resonant with its original context and purpose will also allow Girton Hall to retain its historic significance with implementation of the proposed project.

In 2011 the University commissioned a Historic Structures Report on Girton Hall, prepared by consultant Mark Hulbert. The report identified significant character defining and historic features of the building, and is being used by the project design team in the planning for the Girton Hall relocation and refurbishment. Alterations planned for Girton Hall, including provision of an accessible entry and restroom, have been designed to avoid impact to the character-defining historic features, and some of the proposed elements of the relocated building, including a rebuilt chimney and new deck, would bring the refurbished structure closer to its original character. The design team for the project is employing a historic architect for the Girton work.

Historically both the Haas North Addition site and the proposed Girton site in the Botanical Gardens lie in a zone of possible sensitive pre-historic archaeological resources along the natural watercourse of Strawberry Creek. However, the Haas North Addition site landform has been substantially modified over the years by the construction of Gayley Road and culverting of Strawberry Creek through the site, and the Botanical Garden site has been extensively gardened for nearly nine decades. Given these factors, archaeological materials would not be anticipated at the project site; nonetheless, contractors would be notified that they are required to watch for potential archaeological artifacts and to notify UC Berkeley if any are found, in accordance with best practices. See 2020 LRDP EIR Mitigation Measures and Best Practices incorporated into the project, item CUL-4-a through c.

Cumulatively, the 2020 LRDP EIR noted that projects implementing the 2020 LRDP, incorporating cultural resource best practices and mitigation measures, in combination with other foreseeable projects, could contribute to the cumulative reduction and/or degradation of the resource base of historical or archaeological resources, a significant and unavoidable impact (2020 LRDP FEIR Vol 1 p. 4.4-61). The proposed project would not alter these conclusions.

## **GEOLOGY, SEISMICITY AND SOILS**

The Haas Building site is located on the east side of the Central Campus, about 100 feet west of the intersection of Stadium Rim Way and Gayley Road, and directly northwest of the Haas School of Business, in Berkeley, California. The site is approximately 525 feet northeast and approximately 19 miles west-southwest of the Hayward and San Andreas Faults, respectively (AMEC, Preliminary Draft Geotechnical Report, p. 6).

The site is roughly 150 feet by 200 feet, and the existing surface grades range from about elevation 340 feet (UCB datum) to 355 feet, generally sloping down toward the southwest across the proposed building

footprint. The project site is underlain by sandstone; soils underlying the site include fill, native alluvial soils, and bedrock (AMEC, Preliminary Draft Geotechnical Report, p. 6, 7, 10).

Two existing underground concrete culverts, known as Big Inch and Little Inch, are present running east to west across the site. Little Inch is being relocated toward the south and outside the building footprint as a component of other utility upgrades serving the site and the vicinity; Big Inch would be left in place. Big Inch ranges between 11 and 14 feet below the existing ground surface, and Little Inch ranges between about 14 and 22 feet below ground surface in the vicinity of the site. The Big Inch and Little Inch culvert backfill may be as much as about 22 feet thick beneath the site. The culvert backfill material is expected to be predominantly clayey fill materials, and is not expected to be susceptible to liquefaction. The draft geotechnical report concludes that “hazard due to potential soil liquefaction at the Haas Building site is low to moderate (p. 11). The final report will include recommendations that would be incorporated into the final project to address all soils and seismic safety concerns.

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, incorporating existing best practices and 2020 LRDP FEIR mitigation measures, would not result in new significant impacts in the area of geology, seismicity, or soils (2020 LRDP FEIR Vol. 1 p. 4.517 to 4.524). Planning and design for Haas North Addition and Girton Hall relocation have incorporated all applicable Geology, Seismicity and Soils mitigation measures and best practices.

The proposed site for Girton Hall at the Botanical Garden is approximately .75 miles west of the Hayward Fault. Reference reviews show no indication of geologic instability at the site in the historic past. The site was occupied in the 1900s by a Dairy and associated buildings, as well as by a camp of the Civilian Conservation Corps. The principal geologic hazard at the site is strong earthquake groundshaking, a hazard shared by sites throughout the region. The site is judged to be geologically stable, without a landslide concern. The site is not within an Alquist-Priolo fault hazard zone (Draft Geotechnical Investigation Report, Girton Hall Relocation, A3GEO, April 2013).

The Haas North Addition structure will be designed to provide a life-safety (LS) level of performance for the design basis earthquake loading, which is consistent with a hazard level that has a 10% probability of exceedance in 50 years. Designed to these criteria, the structure would have a “Good” rating (source: Tipping Mar, CEQA template submittal).

The Haas North Addition project was reviewed by the campus Seismic Review Committee on June 25, 2013. The structural system consists of a five-story concrete structure with a one-story partial mechanical basement and topped by a one-story steel structure. The current structural design utilizes concrete shear walls for the concrete-framed structure and steel moment frames at the one-story steel penthouse. The SRC expressed no major concerns or objections; further review will occur later in the year.

Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP development with respect to geology, seismicity and soils that were not adequately analyzed and, as necessary, mitigated, and no new information is available.

Cumulatively, the 2020 LRDP EIR noted that projects implementing the 2020 LRDP, incorporating geology, seismicity and soils best practices and mitigation measures, in combination with other foreseeable projects,

would have less than significant impacts due to fault rupture, seismic ground shaking or ground failure, landslides, soil erosion, or risk due to expansive soils or unstable soils or geologic units (2020 LRDP FEIR Vol 1 p. 4.5-23-24). The proposed project would not alter these conclusions.

## GREENHOUSE GASES

See discussion under Climate Change, above.

## HAZARDOUS MATERIALS

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, incorporating existing best practices and 2020 LRDP FEIR mitigation measures, would not result in new significant hazardous materials related impacts (2020 LRDP FEIR Vol. 1 p. 4.620 to 4.635).

In accordance with regulation and campus best practices, Girton Hall would be abated prior to relocation, including removal of any asbestos, lead paint, or mercury containing lighting fixtures; however, no hazardous materials have been identified in the building at present. Girton Hall underwent renovation in 2011 to upgrade the facility for child care use.

The proposed project entails construction and operation to house an existing program that is not a significant source or user of hazardous materials. The project therefore would not create a new significant hazard not analyzed in the 2020 LRDP FEIR, and would not result in more severe significant impacts than analyzed in the 2020 LRDP FEIR. Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP development with respect to hazardous materials that were not adequately analyzed and, as necessary, mitigated, and no new information is available. No additional mitigation measures have been identified that would further lessen any previously identified impact, and no additional analysis is required.

Cumulatively, the 2020 LRDP EIR noted that projects implementing the 2020 LRDP, incorporating hazardous materials best practices and mitigation measures, in combination with other foreseeable projects, would not significantly increase hazards to the public or the environment associated with the use and transport of hazardous materials and the generation of hazardous waste (2020 LRDP FEIR Vol 1 p. 4.6-33). The proposed project would not alter these conclusions.

## HYDROLOGY AND WATER QUALITY

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, incorporating existing best practices and 2020 LRDP FEIR mitigation measures, would not result in new significant impacts upon hydrology and water quality (2020 LRDP FEIR Vol. 1, 4.724 to 4.735) Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP development with respect to hydrology and water quality that were not adequately analyzed and, as necessary, mitigated, and no new information is available.

The Haas North Addition site is partially impervious because of the existing building, but the new construction would expand the area of impervious coverage. The proposed project will achieve net zero increase in stormwater runoff in accordance with the 2020 LRDP and programmatic EIR by retaining the

change in runoff between pre and post development. Based on the regional soil map, the site soil are not suitable for infiltration. Several stormwater retention strategies are under consideration including cistern and green roof. A vegetated swale between the New Addition and the Plaza will help manage the site runoff. Currently, the Strawberry Creek Culvert Bypass and the Strawberry Creek Culvert run through the site. The Strawberry Creek Culvert Bypass will remain but part of the Strawberry Creek Culvert Bypass will be relocated away from the New Addition footprint between the New Addition and the Business School plaza under a separate campus wide utility relocation project (Hallanan and GLS, July 8, 2013, personal communication).

After the proposed project, runoff from the site would be managed in part by on-site retention.

Because Strawberry Creek is culverted here, the project is outside the 100-year flood zone, as illustrated on Figure 4.7-2 of the 2020 LRDP EIR Vol 1, 4.7-13.

The Girton relocation would incorporate stormwater management into the design of the project to avoid creating additional runoff from the roof and terrace areas of the relocated building. Its Hill Campus site is outside the 100-year flood zone. The location at the Botanical Garden is largely pervious. It is anticipated that stormwater runoff would be directed to landscaped areas and absorbed into the ground. Paths to the relocated building will be of decomposed granite, a pervious material.

The proposed project would incorporate applicable LRDP mitigation measures and best practices and it would be subject to review by the campus department of Environment, Health and Safety to ensure construction practices reduce groundwater or dewatering impacts. As designed, runoff from new hardscape would be filtered to reduce pollutant loading in accordance with regulatory standards. The proposed project would not alter 2020 LRDP FEIR conclusions with respect to hydrology and water quality. No additional mitigation measures have been identified that would further lessen the previously identified impacts, and no additional analysis is required.

Cumulatively, the 2020 LRDP EIR noted that projects implementing the 2020 LRDP, incorporating hydrology best practices and mitigation measures, in combination with other foreseeable projects, would not significantly increase surface runoff, wastewater discharge, would not substantially lower the groundwater table, would not violate existing surface water quality standards or wastewater discharge requirements, would not substantially contribute sediments or pollutants to stormwater runoff, would not contribute a cumulatively considerable amount to exceedances of the capacity of storm- water drainage systems, and would not contribute a cumulatively considerable amount to impedances or redirection of flows within the 100 year flood hazard area (2020 LRDP FEIR Vol 1 p. 4.7-33-35). The proposed project would not alter these conclusions.

## LAND USE

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, incorporating existing best practices and 2020 LRDP FEIR mitigation measures, would not result in new significant land use impacts (2020 LRDP FEIR Vol. 1, 4.815 to 4.821). The 2020 LRDP Location Guidelines prioritize uses by land use zone and the site for the proposed project conforms to the 2020 LRDP location guidelines.

Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP development with respect to land use that were not adequately analyzed and, as necessary, mitigated, and no new information is available. No additional mitigation measures have been identified that would further lessen the previously identified impact, and no additional analysis is required.

Cumulatively, the 2020 LRDP EIR noted that projects implementing the 2020 LRDP would not conflict with local land use regulations such that a significant cumulative incompatibility is created with adjacent land uses, nor conflict with applicable policies adopted for the purpose of avoiding or mitigating an environmental impact (2020 LRDP FEIR Vol 1 p. 4.8-20). The project would not alter these conclusions.

## **NOISE**

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, even with incorporation of existing best practices and 2020 LRDP FEIR mitigation measures, could result in significant noise impacts resulting from demolition and construction activities (2020 LRDP FEIR Vol. 1, 4.916 to 4.925).

Prior to commencement of noisy construction, UC Berkeley posts construction notices, and would contact project neighbors to provide them with construction information prior to start of construction, implementing 2020 LRDP Continuing Best Practice NOI-4-b.

Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP development with respect to noise that were not adequately analyzed and, as necessary, mitigated, and no new information is available. No additional mitigation measures have been identified that would further lessen the previously identified impact, and no additional analysis is required.

Cumulatively, the 2020 LRDP EIR generally noted that projects implementing the 2020 LRDP, incorporating noise best practices and mitigation measures, in combination with other foreseeable projects, would not result in a substantial permanent, temporary or periodic increase in ambient noise levels, or expose people to or generate excessive ground-borne vibration or ground borne noise levels (2020 LRDP FEIR Vol 1 p. 4.6-24). The 2020 LRDP EIR noted that implementation of the 2020 LRDP would expose people to noise levels in excess of established standards by way of construction noise, a significant and unavoidable impact (2020 LRDP FEIR Vol 1 p. 4.6-24). The project would not alter these conclusions.

## **POPULATION AND HOUSING**

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, incorporating existing best practices and 2020 LRDP FEIR mitigation measures, would not result in new significant impacts related to population and housing (2020 LRDP FEIR Vol. 1 p. 4.1010 to 4.1019). The proposed project would not result in new or more severe impacts than analyzed in the 2020 LRDP FEIR. The proposal does not add population and does not involve housing.

Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP development with respect to population and housing that were

not adequately analyzed and, as necessary, mitigated, and no new information is available. No additional mitigation measures have been identified that would further lessen the previously identified impacts, and no additional analysis is required.

The 2020 LRDP EIR concluded that implementation of the 2020 LRDP in combination with other reasonably foreseeable projects would induce population growth in the Bay Area, but the contribution of the 2020 LRDP would not be cumulatively considerable (2020 LRDP FEIR Vol 1 p. 4.10-19). The proposed project would not alter this conclusion.

## **PUBLIC SERVICES**

Police services for campus properties are primarily provided by the University of California Police Department (UCPD). The Berkeley Fire Department (BFD) provides fire protection and emergency medical services to the western half of the Campus Park and to the Adjacent Blocks and Southside. In May of 2005 the Chancellor and the Mayor of the City of Berkeley signed an agreement earmarking \$600,000 annually in campus funds to the City of Berkeley to support emergency and fire protection. UC Berkeley directly employs fire marshals who are responsible for fire prevention activities, including fire and life safety inspections of campus buildings for code compliance, fire and evacuation drills, and development of self-help educational materials.

In cooperation with the campus fire marshal, UC Berkeley Capital Projects is conducting water pressure testing at the Botanical Garden to ensure sufficient water pressure for fire fighting at the location of the new Girton Hall. The project includes installation of sprinkler systems internal to Girton Hall and external, under the eaves of the building, as an additional fire suppression measure. The hill campus site is also close to Alameda County fire station number 19, located at Lawrence Berkeley National Laboratory.

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, incorporating existing best practices and 2020 LRDP FEIR mitigation measures, would not result in new significant impacts upon public services (2020 LRDP FEIR Vol. 1, 4.1111 to 4.1115; 4.1110; 4.1126 to 4.1128; 4.1132 to 4.1133). The proposed project does not alter assumptions of the 2020 LRDP with regard to recreational facilities, emergency access and emergency services demand, or schools. The proposed project would not result in new or more severe impacts than analyzed in the 2020 LRDP FEIR.

Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP development with respect to public services that were not adequately analyzed and, as necessary, mitigated, and no new information is available. No additional mitigation measures have been identified that would further lessen the previously identified impacts, and no additional analysis is required.

The 2020 LRDP EIR concluded that implementation of the 2020 LRDP would not contribute to cumulatively significant adverse public services effects related to construction of public service facilities, deterioration of recreation facilities, exposure to risk of fires, interference with emergency response and evacuation, or emergency access constraints (2020 LRDP FEIR Vol 1 p. 4.11-32 to 33). The proposed project would not alter this conclusion.

## TRAFFIC AND TRANSPORTATION

Both vehicular and bicycle access to the Haas North Addition will be by College Way. Vehicular deliveries to the North Addition via Gayley Road will travel down Optometry Lane and proceed north up College Way to a right turn at Girton Hall Road; proceed to the loading dock at the back of the new building and proceed to the east up Girton Hall Way to Gayley Road to exit after making a delivery.

Girton Drive will remain open for vehicular access. All service vehicles that service the New Addition, including cafe food delivery and catering van, fire truck, garbage and recycling trucks, maintenance vehicles and delivery trucks will access the site from College Way, access the loading dock of Girton Drive and exit the to the east from Girton Drive to Gayley Road. Travel routes for other existing deliveries to adjacent Hildebrand Hall will not be interrupted (Hallanan, July 8, 2013 personal communication).

Servicing vehicles, typically catering vans and furniture rental trucks, are used during special events at the UC Botanical Garden. A conservative estimate is 2 truck round trip service vehicle trips per special event, with a peak season average of 2.5 events per week. This indicates a service vehicle peak load of 5 to 6 round trips per week, during the spring and summer months.

As described in the Parking Supply discussion in the Project Description, above, parking will remain the limiting factor for the number of special events at the Botanical Garden, and events are currently booked at or near peak capacity as a function of demand, no net increase in servicing vehicle trips are anticipated with the addition of Girton Hall to the Botanical Garden. The special events will, however, be distributed between both the existing conference center and Girton Hall, allowing the “non-event” uses, such as meetings, exhibits and small classes to be held concurrent with events. These uses would benefit from being held in an improved location, as many of these functions currently occur in primitive or inadequately sized auxiliary spaces in the Botanical Garden.

Due to steep slopes the Botanical Garden is typically accessed by motorized vehicle. An existing bike rack inside the entrance to the Garden is never full (personal communication, Edwards and Licht, July 8, 2013). If additional bicycle racks become needed, they would be added.

As noted in the 2020 LRDP EIR (see page F.1-8 and F.1-9 in Volume 2) the primary factor for estimating vehicle trip generation is an anticipated increase in population, but the number of parking spaces provided also contributes to the overall project trip generation studied. The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, incorporating existing best practices and 2020 LRDP FEIR mitigation measures, would as a whole result in some significant impacts upon traffic and transportation, specifically upon indicated intersections and roadways, due to increases in population and parking supply (2020 LRDP FEIR Vol. 1, 4.12-48 to 4.12-54; Vol. 2 Section F). The proposed project does not include a component adding parking or employee population.

No additional mitigation measures have been identified that would further lessen the previously identified impacts, and no additional analysis is required.

Since certification of the 2020 LRDP FEIR, additional parking supply and demand studies have been completed that could alter some of the parking assumptions in the 2020 LRDP; however, at this time, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP

development with respect to transportation that were not adequately analyzed and, as necessary, mitigated, and no other new information is available. No additional mitigation measures have been identified that would further lessen the previously identified impact, and no additional analysis is required.

The 2020 LRDP EIR concluded that cumulative construction-related traffic and parking may exacerbate parking capacity concerns, congestion conditions or create unsafe conditions for pedestrians or bicyclists, but with on-going implementation of best practices and mitigation measures by all agencies, construction-related traffic impacts would not be significant (2020 LRDP FEIR Vol 1 p. 4.12-59). The proposed project would not alter the cumulative impact conclusions of the 2020 LRDP FEIR.

## **UTILITIES AND SERVICE SYSTEMS**

The project would replace existing obsolete facilities in Girton Hall with modern low flow fixtures. The new construction Haas North Addition would incorporate modern water reduction technology.

The 2020 LRDP EIR also noted localized clusters of new development could exceed the capacity of individual sub-basins, and incorporated measures to minimize possible collection capacity impacts, including project-by-project analysis of sewer system capacity considerations (Best Practices USS-2.1-b and USS-2.1-d through USS-2.1-e).

In 1990 the City of Berkeley agreed to upgrade its sewer system as required to serve development proposed by the 1990 LRDP. UC Berkeley paid more than \$3 million to the city to support these improvements. As further support of this effort, in May of 2005 the UC Berkeley Chancellor and the mayor of the City of Berkeley signed an agreement earmarking \$200,000 annually in campus funds to the City of Berkeley to support sewer and storm drain infrastructure projects. The project a subset of the total net new academic and support program space anticipated under the 2020 LRDP EIR.

The project represents a small percent of the total net new academic and support program space anticipated under the 2020 LRDP, and the 2020 LRDP EIR found this growth is not anticipated to result in the need for new or altered energy production and/or transmission facilities (2020 LRDP EIR Vol 1, 4.13-25). The project is designed to exceed Title 24 energy conservation requirements by 20% and incorporates energy efficient design elements. Recyclable contents and building materials will be removed during abatement. In this manner, truck trips would be reduced and reuse goals achieved. In addition, to meet campus recycling goals, the project will provide sufficient space and equipment to promote recycling.

The 2020 LRDP FEIR concluded that projects implemented as part of the 2020 LRDP, incorporating existing best practices and 2020 LRDP FEIR mitigation measures, would not result in new significant utilities and service systems impacts (2020 LRDP FEIR Vol. 1, 4.13-5, 4.13-10 to 4.13-12, 4.13-15 to 4.13-16, 4.13-18, 4.13-21 to 4.13-22, 4.13-25 to 4.13-28).

Since certification of the 2020 LRDP FEIR, there have been no substantial changes to the 2020 LRDP or to the circumstances surrounding 2020 LRDP development with respect to utilities and service systems that were not adequately analyzed and, as necessary, mitigated, and no new information is available. No additional mitigation measures have been identified that would further lessen the previously identified impacts, and no additional analysis is required.

Based on the foregoing, the proposed project would not result in new or more severe significant impacts not previously addressed in the 2020 LRDP EIR; none of the circumstances that would require preparation of a subsequent or supplemental EIR under CEQA exists.

The 2020 LRDP EIR evaluated whether the 2020 LRDP, in combination with other University and non-University projects, would result in cumulative impacts on utilities and service systems, concluding that the potential need for new or altered conveyance systems for wastewater or stormwater would not have significant impacts (2020 LRDP FEIR Vol 1 p. 4.13-28). The proposed project would not alter the cumulative impact conclusions of the 2020 LRDP FEIR.

## **V. 2020 LRDP EIR MITIGATION MEASURES AND CONTINUING BEST PRACTICES INCORPORATED INTO PROJECT AS PROPOSED**

### **Aesthetics**

**Continuing Best Practice AES-1-a:** New projects in the Campus Park would as a general rule conform to the Campus Park Guidelines. While the Guidelines would not preclude alternate design concepts when such concepts present the best solution for a particular site, UC Berkeley would not depart from the Guidelines except for solutions of extraordinary quality.

**Continuing Best Practice AES-1-b:** Major new campus projects would continue to be reviewed at each stage of design by the UC Berkeley Design Review Committee. The provisions of the 2020 LRDP, as well as project specific design guidelines prepared for each such project, would guide these reviews.

**Continuing Best Practice AES-1-c:** New Hill Campus projects would as a general rule conform to the design principles established in the Hill Campus Framework. While these principles would not preclude alternate design concepts when such concepts present the best solution for a particular site, the University would not depart from these principles except for solutions of extraordinary quality.

**Continuing Best Practice AES-1-e:** UC Berkeley would make informational presentations of all major projects in the City Environs in Berkeley to the Berkeley Planning Commission and, if relevant, the Berkeley Landmarks Preservation Commission for comment prior to schematic design review by the UC Berkeley Design Review Committee. Major projects in the City Environs in Oakland would similarly be presented to the Oakland Planning Commission and, if relevant, to the Oakland Landmarks Preservation Advisory Board. Whenever a project in the City Environs is under consideration by the UC Berkeley DRC, a staff representative designated by the city in which it is located would be invited to attend and comment on the project.

**Continuing Best Practice AES-1-f:** Each individual project built in the City Environs under the 2020 LRDP would be assessed to determine whether it could pose potential significant aesthetic impacts not anticipated in the 2020 LRDP, and if so, the project would be subject to further evaluation under CEQA.

**LRDP Mitigation Measure AES-3-a:** Lighting for new development projects would be designed to include shields and cut-offs that minimize light spillage onto unintended surfaces, and to minimize atmospheric light

pollution. The only exception to this principle would be in those areas within the Campus Park where such features would be incompatible with the visual and/or historic character of the area.

**LRDP Mitigation Measure AES-3-b:** As part of the design review procedures described in the above Continuing Best Practices, light and glare would be given specific consideration, and measures incorporated into the project design to minimize both. In general, exterior surfaces would not be reflective: architectural screens and shading devices are preferable to reflective glass.

### **Air Quality**

**Continuing Best Practice AIR-1:** UC Berkeley shall continue to implement the same or equivalent alternative transit programs, striving to improve the campus mode split and reduce the use of single occupant vehicles among students, staff, faculty and visitors to campus.

**Continuing Best Practice AIR-4-a:** UC Berkeley shall continue to include in all construction contracts the measures specified below to reduce fugitive dust impacts:

All disturbed areas, including quarry product piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using tarps, water, (non-toxic) chemical stabilizer/suppressant, or vegetative ground cover.

All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or (nontoxic) chemical stabilizer/suppressant.

When quarry product or trash materials are transported off-site, all material shall be covered, or at least two feet of freeboard space from the top of the container shall be maintained.

**LRDP Mitigation Measure AIR-4-a:** In addition, UC Berkeley shall include in all construction contracts the measures specified below to reduce fugitive dust impacts, including but not limited to the following:

All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

When demolishing buildings, water shall be applied to all exterior surfaces of the building for dust suppression.

All operations shall limit or expeditiously remove the accumulation of mud or dirt from paved areas of construction sites and from adjacent public streets as necessary. See also CBP HYD 1-b.

Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions by utilizing sufficient water or by covering.

Limit traffic speeds on unpaved roads to 15 mph.

Water blasting shall be used in lieu of dry sand blasting wherever feasible.

Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with slopes over one percent.

To the extent feasible, limit area subject to excavation, grading, and other construction activity at any one time.

Replant vegetation in disturbed areas as quickly as possible.

**Continuing Best Practice AIR-4-b:** UC Berkeley shall continue to implement the following control measure to reduce emissions of diesel particulate matter and ozone precursors from construction equipment exhaust:

Minimize idling time when construction equipment is not in use.

**LRDP Mitigation Measure AIR-4-b:** UC Berkeley shall implement the following control measures to reduce emissions of diesel particulate matter and ozone precursors from construction equipment exhaust:

To the extent that equipment is available and cost effective, UC Berkeley shall require contractors to use alternatives to diesel fuel, retrofit existing engines in construction equipment and employ diesel particulate matter exhaust filtration devices.

To the extent practicable, manage operation of heavy-duty equipment to reduce emissions, including the use of particulate traps.

**Continuing Best Practice AIR-5:** UC Berkeley will continue to implement transportation control measures such as supporting voluntary trip-reduction programs, ridesharing, and implementing improvements to bicycle facilities.

## Biological Resources

**LRDP Mitigation Measure BIO-1-a:** UC Berkeley will, to the full feasible extent, avoid the disturbance or removal of nests of raptors and other special-status bird species when in active use. A pre-construction nesting survey for loggerhead shrike or raptors, covering a 100 yard perimeter of the project site, would be conducted during the months of March through July prior to commencement of any project that may impact suitable nesting habitat on the Campus Park and Hill Campus. The survey would be conducted by a qualified biologist no more than 30 days prior to initiation of disturbance to potential nesting habitat. In the Hill Campus, surveys would be conducted for new construction projects involving removal of trees and other natural vegetation. In the Campus Park, surveys would be conducted for construction projects involving removal of mature trees within 100 feet of a Natural Area, Strawberry Creek, and the Hill Campus. If any of these species are found within the survey area, grading and construction in the area would not commence, or would continue only after the nests are protected by an adequate setback approved by a qualified biologist. To the full feasible extent, the nest location would be preserved, and alteration would only be allowed if a qualified biologist verifies that birds have either not begun egg-laying and incubation, or that the juveniles from those nests are foraging independently and capable of survival. A pre-construction survey is not required if construction activities commence during the non-nesting season (August through February).

**LRDP Mitigation Measure BIO-1-b:** UC Berkeley will, to the full feasible extent, avoid the remote potential for direct mortality of special-status bats and destruction of maternal roosts. A pre-construction roosting survey for special-status bat species, covering the project site and any affected buildings, would be

conducted during the months of March through August prior to commencement of any project that may impact suitable maternal roosting habitat on the Campus Park and Hill Campus. The survey would be conducted by a qualified biologist no more than 30 days prior to initiation of disturbance to potential roosting habitat. In the Hill Campus, surveys would be conducted for new construction projects prior to grading, vegetation removal, and remodel or demolition of buildings with isolated attics and other suitable roosting habitat. In the Campus Park, surveys would be conducted for construction projects prior to remodel or demolition of buildings with isolated attics. If any maternal roosts are detected during the months of March through August, construction activities would not commence, or would continue only after the roost is protected by an adequate setback approved by a qualified biologist. To the full feasible extent, the maternal roost location would be preserved, and alteration would only be allowed if a qualified biologist verifies that bats have completed rearing young, that the juveniles are foraging independently and capable of survival, and bats have been subsequently passively excluded from the roost location. A pre-construction survey is not required if construction activities commence outside the maternal roosting season (September through February).

**LRDP Mitigation Measure BIO-1-c:** During planning and feasibility studies prior to development of specific projects or adoption of management plans in the Hill Campus, a habitat assessment would be conducted by a qualified biologist to assess any potential impacts on special-status species. Detailed surveys would be conducted during the appropriate season where necessary to confirm presence or absence of any special-status species. Where required to avoid a substantial adverse effect on such species, in consultation with the CDFG and the USFWS feasible changes to schedule, siting and design of projects or management plans would be developed and implemented.

**Continuing Best Practice BIO-1-a:** UC Berkeley will continue to implement the Campus Specimen Tree Program to reduce adverse effects to specimen trees and flora. Replacement landscaping will be provided where specimen resources are adversely affected, either through salvage and relocation of existing trees and shrubs or through new plantings of the same genetic strain, as directed by the Campus Landscape Architect.

**Continuing Best Practice BIO-1-b:** Implementation of the 2020 LRDP, particularly the Campus Park Guidelines, as well as the Landscape Master Plan and project-specific design guidelines, would provide for stewardship of existing landscaping, and use of replacement and expanded tree and shrub plantings to preserve and enhance the Campus Park landscape. Coast live oak and other native plantings would continue to be used in future landscaping, serving to partially replace any trees lost as a result of projects implemented under the 2020 LRDP.

**Continuing Best Practice BIO-1-c:** Because trees and other vegetation require routine maintenance, as trees age and become senescent, UC Berkeley would continue to undertake trimming, thinning, or removal, particularly if trees become a safety hazard. Vegetation in the Hill Campus requires continuing management for fire safety, habitat enhancement, and other objectives. This may include removal of mature trees such as native live oaks and non-native plantings of eucalyptus and pine.

**Continuing Best Practice BIO-2-a:** Implementation of the 2020 LRDP, including provisions that ensure proposed projects on the Campus Park will be designed to avoid Natural Preserves and provide for protection and enhancement of riparian habitat along Strawberry Creek as prescribed in the Campus Park Design Guidelines, will avoid substantial adverse effect on riparian habitat or sensitive natural communities.

The Natural Preserves are comprised of two subzones: the riparian areas along the streamcourse, and other rustic woodlands adjacent to these riparian areas. The riparian areas are dominated by native and naturalized plants forming dense woodlands along the streamcourse: their width may vary in response to local conditions, but in general should be at least 100', centered on the streamcourse. Management of the Natural Preserves will be based on ecological principles, including replacing invasive exotic plants with native plants suited to this biotic zone, replacing unhealthy plants and plants at the ends of their natural lives, and preserving and enhancing the habitat value of the zone, as prescribed in the 2020 LRDP.

**Continuing Best Practice BIO-2-b:** The Strawberry Creek Management Plan will continue to be revised and implemented, in consultation with CDFG, to include recommendations for habitat restoration and enhancement along specific segments of the creek on both the Campus Park and Hill Campus. This will include minimum development setbacks, targets on invasive species controls, appropriate native plantings, and in-channel habitat improvements such as retention of large woody debris and creation of a refugio and deep plunge pools where feasible.

**Continuing Best Practice BIO-2-c:** During planning and feasibility studies prior to development of specific projects or implementation of management plans in the Hill Campus, a habitat assessment will be conducted by a qualified biologist to identify and minimize potential impacts on riparian habitat, freshwater seeps, and native grassland sensitive natural communities. Detailed surveys will be conducted at appropriate times where necessary to confirm and map the extent of any sensitive natural communities. Where required to avoid a substantial adverse effect on such communities, in consultation with the CDFG, feasible changes to schedule, siting and design of projects or management plans will be developed and implemented.

**Continuing Best Practice BIO-3:** Proposed projects on the Campus Park and Hill Campus will be designed to avoid designated jurisdictional wetlands and waters along the Strawberry Creek channel. As necessary, wetlands will be mapped and the extent of jurisdictional waters verified by the Corps during planning and feasibility studies prior to development of specific projects or implementation of management plans in the Hill Campus. When unavoidable, any modifications to Strawberry Creek and other jurisdictional waters will be coordinated with jurisdictional agencies, including the CDFG, Corps, and the RWQCB as necessary.

**Continuing Best Practice BIO-4-a:** Proposed projects in the Hill Campus will be designed to avoid obstructing important established wildlife corridors to the full feasible extent. Before any new fencing is installed for security purposes, UC Berkeley will consider the effect of such fencing on opportunities for wildlife movement, and will avoid new or expanded fencing which would obstruct important established movement corridors.

**Continuing Best Practice BIO-4-b:** During planning and feasibility studies prior to development of specific projects or implementation of management plans in the Hill Campus, a habitat assessment will be conducted by a qualified biologist to identify and minimize potential impacts on wildlife movement opportunities, including avoidance of new fencing across Strawberry Creek and tributary drainages.

### **Climate Change**

**Continuing Best Practice CLI-1 :** UC Berkeley would continue to implement provisions of the UC Policy on Sustainable Practices including, but not limited to: Green Building Design; Clean Energy Standards;

Climate Protection Practices; Sustainable Transportation Practices; Sustainable Operations; Recycling and Waste Management; and Environmentally Preferable Purchasing Practices.

**Continuing Best Practice CLI-2 :** UC Berkeley would continue to implement energy conservation measures (such as energy-efficient lighting and microprocessor-controlled HVAC equipment) to reduce the demand for electricity and natural gas. The energy conservation measures may be subject to modification as new technologies are developed or if current technologies become obsolete through replacement.

**Continuing Best Practice CLI-3:** UC Berkeley would continue to annually monitor and report upon its progress toward its greenhouse gas emission targets. UC Berkeley would continue to report actions undertaken in the past year, and update its climate action plan annually to specify actions that UC Berkeley is planning to undertake in the current year and future years to achieve emission targets.

### **Cultural Resources**

**Continuing Best Practice CUL-1:** In the event that paleontological resource evidence or a unique geological feature is identified during project planning or construction, the work would stop immediately and the find would be protected until its significance can be determined by a qualified paleontologist or geologist. If the resource is determined to be a “unique resource,” a mitigation plan would be formulated and implemented to appropriately protect the significance of the resource by preservation, documentation, and/or removal, prior to recommencing activities.

**Continuing Best Practice CUL-2-a:** If a project could cause a substantial adverse change in features that convey the significance of a primary or secondary resource, an Historic Structures Assessment (HSA) would be prepared. Recommendations of the HSA made in accordance with the Secretary of the Interior’s Standards would be implemented, in consultation with the UC Berkeley Design Review Committee and the State Historic Preservation Office, such that the integrity of the significant resource is preserved and protected. Copies of all reports would be filed in the University Archives/Bancroft Library.

**Continuing Best Practice CUL-2-b:** For projects with the potential to cause adverse changes in the significance of historical resources, UC Berkeley would make informational presentations of all major projects in the City Environs in Berkeley to the Berkeley Planning Commission and the Berkeley Landmarks Preservation Commission for comment prior to schematic design review by the UC Berkeley Design Review Committee. Such projects in the City Environs in Oakland would similarly be presented to the Oakland Planning Commission and the Oakland Landmarks Preservation Advisory Board.

**LRDP Mitigation Measure CUL-3:** If, in furtherance of the educational mission of the University, a project would require the demolition of a primary or secondary resource, or the alteration of such a resource in a manner not in conformance with the Secretary of the Interior’s Standards, the resource would be recorded to archival standards prior to its demolition or alteration.

**LRDP Mitigation Measure CUL-4-a:** UC Berkeley will create an internal document: a UCB Campus Archaeological Resources Sensitivity Map. The map will identify only the general locations of known and potential archaeological resources within the 2020 LRDP planning area. For the Hill Campus, the map will indicate the areas along drainages as being areas of high potential for the presence of archaeological resources. If any project would affect a resource, then either the project will be sited to avoid the location or, in

consultation with a qualified archaeologist, UC Berkeley will determine the level of archaeological investigation that is appropriate for the project site and activity, prior to any construction or demolition activities.

**LRDP Mitigation Measure CUL-4-b:** If a resource is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 35 feet of the find shall cease. UC Berkeley shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the deposit, and assessment of the remainder of the site within the project area to determine whether the resource is significant and would be affected by the project, as outlined in Continuing Best Practice CUL-3-a. UC Berkeley would implement the recommendations of the archaeologist.

**Continuing Best Practice CUL-4-b:** In the event human or suspected human remains are discovered, UC Berkeley would notify the County Coroner who would determine whether the remains are subject to his or her authority. The Coroner would notify the Native American Heritage Commission if the remains are Native American. UC Berkeley would comply with the provisions of Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(d) regarding identification and involvement of the Native American Most Likely Descendant and with the provisions of the California Native American Graves Protection and Repatriation Act to ensure that the remains and any associated artifacts recovered are repatriated to the appropriate group, if requested.

**Continuing Best Practice CUL-4-c:** Prior to disturbing the soil, contractors shall be notified that they are required to watch for potential archaeological sites and artifacts and to notify UC Berkeley if any are found. In the event of a find, UC Berkeley shall implement LRDP Mitigation Measure CUL-4-b.

**LRDP Mitigation Measure CUL-5:** If, in furtherance of the educational mission of the University, a project would require damage to or demolition of a significant archaeological resource, a qualified archaeologist shall, in consultation with UC Berkeley:

Prepare a research design and archaeological data recovery plan that would attempt to capture those categories of data for which the site is significant, and implement the data recovery plan prior to or during development of the site.

Perform appropriate technical analyses, prepare a full written report and file it with the appropriate information center and provide for the permanent curation of recovered materials.

### **Geology, Seismicity and Soils**

**Continuing Best Practice GEO-1-a:** UC Berkeley will continue to comply with the CBC and the *University Policy on Seismic Safety*.

**Continuing Best Practice GEO-1-b:** Site-specific geotechnical studies will be conducted under the supervision of a California Registered Engineering Geologist or licensed geotechnical engineer and UC Berkeley will incorporate recommendations for geotechnical hazard prevention and abatement into project design.

**Continuing Best Practice GEO-1-c:** The Seismic Review Committee (SRC) shall continue to review all seismic and structural engineering design for new and renovated existing buildings on campus and ensure that it conforms to the California Building Code and the *University Policy on Seismic Safety*.

**Continuing Best Practice GEO-1-d:** UC Berkeley shall continue to use site-specific seismic ground motion specifications developed for analysis and design of campus projects. The information provides much greater detail than conventional codes and is used for performance-based analyses.

**Continuing Best Practice GEO-1-f:** Through the Office of Emergency Preparedness, UC Berkeley will continue to implement programs and projects in emergency planning, training, response, and recovery. Each campus building housing Berkeley students, faculty and staff has a Building Coordinator who prepares building response plans and coordinates education and planning for all building occupants.

**Continuing Best Practice GEO-1-g:** As stipulated in the *University Policy on Seismic Safety*, the design parameters for specific site peak acceleration and structural reinforcement will be determined by the geotechnical and structural engineer for each new or rehabilitation project proposed under the 2020 LRDP. The acceptable level of actual damage that could be sustained by specific structures would be calculated based on geotechnical information obtained at the specific building site.

**Continuing Best Practice GEO-1-i:** The site-specific geotechnical studies conducted under GEO-1-b will include an assessment of landslide hazard, including seismic vibration and other factors contributing to slope stability.

**Continuing Best Practice GEO-2:** Campus construction projects with potential to cause erosion or sediment loss, or discharge of other pollutants, would include the campus Stormwater Pollution Prevention Specification. This specification includes by reference the “Manual of Standards for Erosion and Sediment Control” of the Association of Bay Area Governments and requires that each large and exterior project develop an Erosion Control Plan.

## **Hazardous Materials**

**Continuing Best Practice HAZ-1:** UC Berkeley shall continue to implement the same (or equivalent) health and safety plans, programs, practices and procedures related to the use, storage, disposal, or transportation of hazardous materials and wastes (including chemical, radioactive, and biohazardous materials and waste) during the 2020 LRDP planning horizon. These include, but are not necessarily limited to, requirements for safe transportation of hazardous materials, EH&S training programs, the Hazard Communication Program, publication and promulgation of drain disposal guidelines, the requirement that laboratories have Chemical Hygiene Plans, the Chemical Inventory Database, the Toxic Use Reduction Program, the Aboveground Storage Tank Spill Prevention Control and Countermeasure Plan, monitoring of underground storage tanks, hazardous waste disposal policies, the Chemical Exchange Program, the Hazardous Waste Minimization Program, the Biosafety Program, the Medical Waste Management Program, and the Radiation Safety Program. These programs may be subject to modification as more stringent standards are developed or if the programs become obsolete through replacement by other programs that incorporate similar health and safety protection measures.

**Continuing Best Practice HAZ-2:** UC Berkeley shall continue to implement the same (or equivalent) programs related to laboratory animal use during the 2020 LRDP planning horizon, including, but not necessarily limited to, compliance with U.S. Public Health Service Regulations, the National Research Council Guide for the Care and Use of Laboratory Animals, and Animal Welfare Act regulations. These programs may be subject to modification as more stringent standards are developed or if the programs become obsolete through replacement by other programs that incorporate similar health and safety protection measures.

**Continuing Best Practice HAZ-3:** UC Berkeley shall continue to implement the same (or equivalent) programs related to transgenic materials use during the 2020 LRDP planning horizon, including, but not necessarily limited to, compliance with the NIH Guidelines for Research Involving Recombinant DNA Molecules, USDA requirements for open field-based research involving transgenic plants, and requiring registration with EH&S for all research involving transgenic plants. These programs may be subject to modification as more stringent standards are developed or if the programs become obsolete through replacement by other programs that incorporate similar health and safety protection measures.

**Continuing Best Practice HAZ-4:** UC Berkeley shall continue to perform site histories and due diligence assessments of all sites where ground-disturbing construction is proposed, to assess the potential for soil and groundwater contamination resulting from past or current site land uses at the site or in the vicinity. The investigation will include review of regulatory records, historical maps and other historical documents, and inspection of current site conditions. UC Berkeley would act to protect the health and safety of workers or others potentially exposed should hazardous site conditions be found.

**Continuing Best Practice HAZ-5:** UC Berkeley shall continue to perform hazardous materials surveys prior to capital projects in existing campus buildings. The campus shall continue to comply with federal, state, and local regulations governing the abatement and handling of hazardous building materials and each project shall address this requirement in all construction.

### **Hydrology and Water Quality**

**Continuing Best Practice HYD-1-a:** During the plan check review process and construction phase monitoring, UC Berkeley (EH&S) will verify that the proposed project complies with all applicable requirements and BMPs.

**Continuing Best Practice HYD-1-b:** UC Berkeley shall continue implementing an urban runoff management program containing BMPs as published in the Strawberry Creek Management Plan, and as developed through the campus municipal Stormwater Management Plan completed for its pending Phase II MS4 NPDES permit. UC Berkeley will continue to comply with the NPDES stormwater permitting requirements by implementing construction and post construction control measures and BMPs required by project-specific SWPPPs and, upon its approval, by the Phase II SWMP to control pollution. Stormwater Pollution Prevention Plans would be prepared as required by the appropriate regulatory agencies including the Regional Water Quality Control Board and where applicable, according to the UC Berkeley Stormwater Pollution Prevention Specification to prevent discharge of pollutants and to minimize sedimentation resulting from construction and the transport of soils by construction vehicles.

**Continuing Best Practice HYD-1-c:** UC Berkeley shall maintain a campus-wide educational program regarding safe use and disposal of facilities maintenance chemicals and laboratory chemicals, to prevent discharge of these pollutants to Strawberry Creek and the campus storm drains.

**Continuing Best Practice HYD-1-d:** UC Berkeley shall continue to implement the campus Drain Disposal Policy and Drain Disposal Guidelines which provide inspection, training, and oversight on use of the drains for chemical disposal for academic and research laboratories as well as shops and physical plant operations, to prevent harm to the sanitary sewer system.

**Continuing Best Practice HYD-2-a:** In addition to Hydrology Continuing Best Practices 1-a and 1-b above, UC Berkeley will continue to review each development project, to determine whether project runoff would increase pollutant loading. If it is determined that pollutant loading could lead to a violation of the Basin Plan, UC Berkeley would design and implement the necessary improvements to treat stormwater. Such improvements could include grassy swales, detention ponds, continuous centrifugal system units, catch basin oil filters, disconnected downspouts and stormwater planter boxes.

**Continuing Best Practice HYD-2-c:** Landscaped areas of development sites shall be designed to absorb runoff from rooftops and walkways. The Campus Landscape Architect shall ensure that open or porous paving systems be included in project designs wherever feasible, to minimize impervious surfaces and absorb runoff.

**Continuing Best Practice HYD-2-d:** UC Berkeley shall continue to develop and implement the recommendations of the Strawberry Creek Management Plan and its updates, and construct improvements as appropriate. These recommendations include, but shall not be limited to, minimization of the amount of land exposed at any one time during construction as feasible; use of temporary vegetation or mulch to stabilize critical areas where construction staging activities must be carried out prior to permanent cover of exposed lands; installation of permanent vegetation and erosion control structures as soon as practical; protection and retention of natural vegetation; and implementation of post-construction structural and non-structural water quality control techniques.

**Continuing Best Practice HYD-3:** In addition to Hydrology Continuing Best Practices 1-a, 1-b, 2-a and 2-c above, UC Berkeley will continue to review each development project, to determine whether rainwater infiltration to groundwater is affected. If it is determined that existing infiltration rates would be adversely affected, UC Berkeley would design and implement the necessary improvements to retain and infiltrate stormwater. Such improvements could include retention basins to collect and retain runoff, grassy swales, infiltration galleries, planter boxes, permeable pavement, or other retention methods. The goal of the improvement should be to ensure that there is no net decrease in the amount of water recharged to groundwater that serves as freshwater replenishment to Strawberry Creek. The improvement should maintain the volume of flows and times of concentration from any given site at pre-development conditions.

**Continuing Best Practice HYD-4-a:** In addition to Hydrology Continuing Best Practices 1-a, 1-b and 2-c, the campus storm drain system would be maintained and cleaned to accommodate existing runoff.

**Continuing Best Practice HYD-4-c:** Development that encroaches on creek channels and riparian zones would be prohibited. Creek channels would be preserved and enhanced, especially in the Campus Park area.

An undisturbed buffer zone would be maintained between proposed 2020 LRDP projects and creek channels.

**Continuing Best Practice HYD-4-e:** UC Berkeley shall continue to manage runoff into storm drain systems such that the aggregate effect of projects implementing the 2020 LRDP is no net increase in runoff over existing conditions.

**LRDP Mitigation Measure HYD-5:** In addition to Hydrology Continuing Best Practices 1-a, 1-b, 2-c, 4-a, 4-c and 4-e, projects proposed with potential to alter drainage patterns in the Hill Campus would be accompanied by a hydrologic modification analysis, and would incorporate a plan to prevent increases of flow from the newly developed site, preventing downstream flooding and substantial siltation and erosion.

**LRDP Mitigation Measure HYD-6:** In addition to implementation of LRDP Mitigation Measure HYD-5, prior to final design, UC Berkeley will review the plans for all structures to be constructed in the 100-year floodplain for compliance with FEMA requirements for nonresidential structures. This review will include a hydrologic study and recommendations to eliminate any potential impacts to the 100-year floodplain. For structures placed within the 100-year floodplain, flood control devices will be utilized in each development to direct flows toward areas where flood hazards will be minimal. These actions would ensure that the implementation of the 2020 LRDP would not impede or redirect flows in a manner that results in flooding.

## Land Use

**Continuing Best Practice LU-2-a:** New projects in the Campus Park would as a general rule conform to the Campus Park Guidelines. The Guidelines include specific provisions to ensure projects at the city interface create a graceful transition from campus to city.

**Continuing Best Practice LU-2-b:** UC Berkeley would make informational presentations of all major projects in the City Environs in Berkeley to the Berkeley Planning Commission and, if relevant, the Berkeley Landmarks Preservation Commission for comment prior to schematic design review by the UC Berkeley Design Review Committee. Major projects in the City Environs in Oakland would similarly be presented to the Oakland Planning Commission and, if relevant, to the Oakland Landmarks Preservation Advisory Board. Whenever a project in the City Environs is under consideration by the UC Berkeley DRC, a staff representative designated by the city in which it is located would be invited to attend and comment on the project.

**Continuing Best Practice LU-2-c:** Each individual project built in the Hill Campus or the City Environs under the 2020 LRDP would be assessed to determine whether it could pose potential significant land use impacts not anticipated in the 2020 LRDP, and if so, the project would be subject to further evaluation under CEQA. In general, a project in the Hill Campus or the City Environs would be assumed to have the potential for significant land use impacts if it:

- Includes a use that is not permitted within the city general plan designation for the project site, or
- Has a greater number of stories and/or lesser setback dimensions than could be permitted for a project under the relevant city zoning ordinance as of July 2003.

## Noise

**Continuing Best Practice NOI-2:** Mechanical equipment selection and building design shielding would be used, as appropriate, so that noise levels from future building operations would not exceed the City of Berkeley Noise Ordinance limits for commercial areas or residential zones as measured on any commercial or residential property in the area surrounding a project proposed to implement the 2020 LRDP. Controls that would typically be incorporated to attain this outcome include selection of quiet equipment, sound attenuators on fans, sound attenuator packages for cooling towers and emergency generators, acoustical screen walls, and equipment enclosures.

**LRDP Mitigation Measure NOI-3:** The University would comply with building standards that reduce noise impacts to residents of University housing to the full feasible extent; additionally, any housing built in areas where noise exposure levels exceed  $60 L_{dn}$  would incorporate design features to minimize noise exposures to occupants.

**Continuing Best Practice NOI-4-a:** The following measures would be included in all construction projects:

Construction activities will be limited to a schedule that minimizes disruption to uses surrounding the project site as much as possible. Construction outside the Campus Park area will be scheduled within the allowable construction hours designated in the noise ordinance of the local jurisdiction to the full feasible extent, and exceptions will be avoided except where necessary.

As feasible, construction equipment will be required to be muffled or controlled.

The intensity of potential noise sources will be reduced where feasible by selection of quieter equipment (e.g. gas or electric equipment instead of diesel powered, low noise air compressors).

Functions such as concrete mixing and equipment repair will be performed off-site whenever possible.

For projects requiring pile driving:

With approval of the project structural engineer, pile holes will be pre-drilled to minimize the number of impacts necessary to seat the pile.

Pile driving will be scheduled to have the least impact on nearby sensitive receptors.

Pile drivers with the best available noise control technology will be used. For example, pile driving noise control may be achieved by shrouding the pile hammer point of impact, by placing resilient padding directly on top of the pile cap, and/or by reducing exhaust noise with a sound-absorbing muffler.

Alternatives to impact hammers, such as oscillating or rotating pile installation systems, will be used where possible.

**Continuing Best Practice NOI-4-b:** UC Berkeley will continue to precede all new construction projects with community outreach and notification, with the purpose of ensuring that the mutual needs of the particular construction project and of those impacted by construction noise are met, to the extent feasible.

**LRDP Mitigation Measure NOI-5:** The following measures will be implemented to mitigate construction vibration:

UC Berkeley will conduct a pre-construction survey prior to the start of pile driving. The survey will address susceptibility ratings of structures, proximity of sensitive receivers and equipment/operations, and surrounding soil conditions. This survey will document existing conditions as a baseline for determining changes subsequent to pile driving.

UC Berkeley will establish a vibration checklist for determining whether or not vibration is an issue for a particular project.

Prior to conducting vibration-causing construction, UC Berkeley will evaluate whether alternative methods are available, such as:

- Using an alternative to impact pile driving such as vibratory pile drivers or oscillating or rotating pile installation methods.
- Jetting or partial jetting of piles into place using a water injection at the tip of the pile.

If vibration monitoring is deemed necessary, the number, type, and location of vibration sensors would be determined by UC Berkeley.

## **Public Services**

**Continuing Best Practice PUB-1.1:** UCPD would continue its partnership with the City of Berkeley police department to review service levels in the City Environs.

**Continuing Best Practice PUB-2.1-a:** UC Berkeley would continue to comply with Title 19 of the California Code of Regulations, which mandates firebreaks of up to 100 feet around buildings or structures in, upon or adjoining any mountainous, forested, brush- or grass-covered lands.

**Continuing Best Practice PUB-2.1-b:** UC Berkeley would continue on-going implementation of the Hill Area Fire Fuel Management Program.

**Continuing Best Practice PUB-2.1-c:** UC Berkeley would continue to plan and implement programs to reduce risk of wildland fires, including plan review and construction inspection programs that ensure that campus projects incorporate fire prevention measures.

**Continuing Best Practice PUB-2.1-d:** UC Berkeley would continue to plan and collaborate with other agencies through participation in the Hills Emergency Forum.

**Continuing Best Practice PUB-2.3:** UC Berkeley would continue its partnership with LBNL, ACFD, and the City of Berkeley to ensure adequate fire and emergency service levels to the campus and UC facilities. This partnership shall include consultation on the adequacy of emergency access routes to all new University buildings.

**LRDP Mitigation Measure PUB-2.4-a:** In order to ensure adequate access for emergency vehicles when construction projects would result in temporary lane or roadway closures, campus project management staff

would consult with the UCPD, campus EH&S, the BFD and ACFD to evaluate alternative travel routes and temporary lane or roadway closures prior to the start of construction activity. UC Berkeley will ensure the selected alternative travel routes are not impeded by UC Berkeley activities.

**LRDP Mitigation Measure PUB-2.4-b:** To the extent feasible, the University would maintain at least one unobstructed lane in both directions on campus roadways at all times, including during construction. At any time only a single lane is available due to construction-related road closures, the University would provide a temporary traffic signal, signal carriers (i.e. flagpersons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway, UC Berkeley would provide signage indicating alternative routes. In the case of Centennial Drive, any complete road closure would be limited to brief interruptions of traffic required by construction operations.

### **Transportation and Traffic**

**Continuing Best Practice TRA-1-b:** UC Berkeley will continue to do strategic bicycle access planning. Issues addressed include bicycle access, circulation and amenities with the goal of increasing bicycle commuting and safety. Planning considers issues such as bicycle access to the campus from adjacent streets and public transit; bicycle, vehicle, and pedestrian interaction; bicycle parking; bicycle safety; incentive programs; education and enforcement; campus bicycle routes; and amenities such as showers. The scoping and budgeting of individual projects will include consideration of improvements to bicycle access.

**Continuing Best Practice TRA-3-a:** Early in construction period planning UC Berkeley shall meet with the contractor for each construction project to describe and establish best practices for reducing construction-period impacts on circulation and parking in the vicinity of the project site.

**Continuing Best Practice TRA-3-b:** For each construction project, UC Berkeley will require the prime contractor to prepare a Construction Traffic Management Plan which will include the following elements:

Proposed truck routes to be used, consistent with the City truck route map.

Construction hours, including limits on the number of truck trips during the a.m. and p.m. peak traffic periods (7:00 – 9:00 a.m. and 4:00 – 6:00 p.m.), if conditions demonstrate the need.

Proposed employee parking plan (number of spaces and planned locations).

Proposed construction equipment and materials staging areas, demonstrating minimal conflicts with circulation patterns.

Expected traffic detours needed, planned duration of each, and traffic control plans for each.

**Continuing Best Practice TRA-3-c:** UC Berkeley will manage project schedules to minimize the overlap of excavation or other heavy truck activity periods that have the potential to combine impacts on traffic loads and street system capacity, to the extent feasible.

**Continuing Best Practice TRA-3-d:** UC Berkeley will reimburse the City of Berkeley for its fair share of costs associated with damage to City streets from University construction activities, provided that the City adopts a policy for such reimbursements applicable to all development projects within Berkeley.

**Continuing Best Practice TRA-5:** The University shall continue to work to coordinate local transit services as new academic buildings, parking facilities, and campus housing are completed, in order to accommodate changing demand locations or added demand.

**LRDP Mitigation Measure TRA-6-b:** The University will work with the City of Berkeley to design and, on a fair share basis, install a signal at the Durant Avenue/Piedmont Avenue intersection, when a signal warrant analysis shows the signal is needed. The University will contribute fair share funding for a periodic (annual or biennial) signal warrant check at this and other impact intersections, to allow the City to determine when a signal is warranted. With the implementation of this mitigation measure, the intersection will operate at LOS B during both AM and PM peak hours.

**LRDP Mitigation Measure TRA-7:** The University will work with the City of Berkeley to design and, on a fair share basis, install a signal at the Bancroft Way/ Piedmont Avenue intersection, and provide an exclusive left-turn lane and an exclusive through lane on the northbound approach. The University will contribute fair share funding for a periodic (annual or biennial) signal warrant check at this and other impact intersections, to allow the City to determine when a signal and the associated capacity improvements are warranted. With the implementation of this mitigation measure, the intersection would operate at LOS B during both AM and PM peak hours.

#### Utilities and Service Systems

**Continuing Best Practice USS-1.1:** For campus development that increases water demand, UC Berkeley would continue to evaluate the size of existing distribution lines as well as pressure of the specific feed affected by development on a project-by-project basis, and necessary improvements would be incorporated into the scope of work for each project to maintain current service and performance levels. The design of the water distribution system, including fire flow, for new buildings would be coordinated among UC Berkeley staff, EBMUD, and the Berkeley Fire Department.

**Continuing Best Practice USS-2.1-a:** UC Berkeley will promote and expand the central energy management system (EMS), to tie building water meters into the system for flow monitoring.

**Continuing Best Practice USS-2.1-b:** UC Berkeley will analyze water and sewer systems on a project-by-project basis to determine specific capacity considerations in the planning of any project proposed under the 2020 LRDP.

**Continuing Best Practice USS-2.1-c:** UC Berkeley will continue and expand programs retrofitting plumbing in high-occupancy buildings, and seek funding for these programs from EBMUD or other outside agencies as appropriate.

**Continuing Best Practice USS-2.1-d:** UC Berkeley will continue to incorporate specific water conservation measures into project design to reduce water consumption and wastewater generation. This could include the use of special air-flow aerators, water-saving shower heads, flush cycle reducers, low-volume toilets, weather based or evapotranspiration irrigation controllers, drip irrigation systems, the use of drought resistant plantings in landscaped areas, and collaboration with EBMUD to explore suitable uses of recycled water.

**Continuing Best Practice USS-3.1:** UC Berkeley shall continue to manage runoff into storm drain systems such that the aggregate effect of projects implementing the 2020 LRDP is no net increase in runoff over existing conditions.

**LRDP Mitigation Measure USS-3.2:** In addition to Best Practice USS-3.1, projects proposed with potential to alter drainage patterns in the Hill Campus would be accompanied by a hydrologic modification analysis, and would incorporate a plan to prevent increases of flow from the project site, preventing downstream flooding and substantial siltation and erosion.

**Continuing Best Practice USS-5.1:** UC Berkeley would continue to implement a solid waste reduction and recycling program designed to reduce the total quantity of campus solid waste that is disposed of in landfills during implementation of the 2020 LRDP.

**Continuing Best Practice USS-5.2:** In accordance with the Regents-adopted green building policy and the policies of the 2020 LRDP, the University would develop a method to quantify solid waste diversion. Contractors working for the University would be required under their contracts to report their solid waste diversion according to the University's waste management reporting requirements.

**LRDP Mitigation Measure USS-5.2:** Contractors on future UC Berkeley projects implemented under the 2020 LRDP will be required to recycle or salvage at least 50% of construction, demolition, or land clearing waste. Calculations may be done by weight or volume, but must be consistent throughout.