General Biological Resources and Sensitive Species Update
UCI Long Range Development Plan
Irvine, Orange County, California

Prepared for:

University of California, Irvine Campus
Office of Campus and Environmental Planning

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January 15, 2007

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SECTION 1:
INTRODUCTION

At the request of the University of California, Irvine (UCI), Office of Campus and Environmental Planning, Michael Brandman Associates (MBA) has prepared this biological resources update study for the UCI Long Range Development Plan (LRDP) Update. MBA conducted a review of previous biological studies of the UCI Campus and performed reconnaissance level biological surveys of the remaining undeveloped and partially developed areas of the Campus that are designated for environmental review as part of the current LRDP (2006). This report provides an updated baseline of the existing biological resources in the relevant planning areas and presents current plant community maps and descriptions of existing conditions. Based on current conditions, updated evaluations of the potential for designated special status wildlife and plant species to occur within the study area are also provided.

For the purpose of this review and update, the individual land use Planning Areas or planning zones that may contain biological resources are collectively referred to as the Study Area. Since these undeveloped, or partly developed, Planning Areas are irregularly distributed around the campus, for convenience, the Study Area is divided into four distinct sub-areas of the UCI Campus based on their geographic location as depicted on Exhibit 1 and as listed below:

- North Campus Area
- West Campus Area
- East Campus - Northern Area
- East Campus - Southern Area

In order to characterize and consider existing biological resources adjacent to potential future development sites, the Study Area also extends beyond designated Planning Areas to include strips and patches of preserved open space that lie immediately adjacent to or between the designated Planning Areas. The individual Planning Areas and their proposed land uses are specifically distinguished on the UCI Proposed Land Use Plan (May 2006) map. This exhibit is provided for reference as Attachment A.

Source: Terraserver.

Michael Brandman Associates

NORTH

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Exhibit 1
Study Areas Map

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UNIVERSITY OF CALIFORNIA, IRVINE CAMPUS
UCI LONG RANGE DEVELOPMENT PLAN
GENERAL BIOLOGICAL RESOURCES AND SENSITIVE SPECIES UPDATE

SECTION 2:
METHODS

Existing documentation of biological resources provided by the UCI Office of Campus and Environmental Planning was reviewed with regard to all of the previous environmental conditions and within the current LRDP Study Area. A list of this documentation can be found in Section 8 below. Information regarding biological resources identified as present or potentially present in the Study Area or immediate vicinity, was considered with regard to its relevance to the Study Area and whether updates were warranted.

Field surveys of the Study Area were conducted in May and June 2006 by MBA senior biologist Scott Crawford and resource ecologist Scott Holbrook. Survey efforts focused on plant community mapping, characterizing general conditions in both disturbed and natural areas identifying sensitive resources and evaluating habitat suitability for special status species. All plant communities and disturbed or developed areas were mapped on aerial photographs taken in 2005.

SECTION 3:
EXISTING CONDITIONS

The following descriptions accompany the updated mapping of remaining undeveloped and partially developed Planning Areas being evaluated in the UCI LRDP Update. The Study Area consists of those areas proposed for various land use designations and identified as Planning Areas as indicated in the project description and shown on the Proposed Land Use Plan (May 2006).

The current habitat mapping encompasses undeveloped portions of the UCI campus that are being considered for proposed land use designations as well as adjacent open space areas that may be indirectly affected by future development. Natural open space areas such as the UCI Ecological Preserve and the San Joaquin Freshwater Marsh Reserve are outside of the proposed Planning Areas and will not likely be directly affected by future construction activity. Therefore, these areas were not included in the updated plant community mapping. However, current mapping does include several ribbons of preserved Open Space where such areas lie directly adjacent to or between designated Planning Areas where future active use, development, or road construction may be proposed under the updated LRDP.

Plant community and land use classifications utilized for this update generally follow the classification schemes used in UCI's previous biological studies. The plant communities and non-habitat areas identified during the mapping effort for this update are broadly categorized under four general headings or types:

- Natural Upland
- Natural Riparian/Wetland
- Non-native/Disturbed
- Developed

3.1 - NATURAL UPLAND PLANT COMMUNITIES

3.1.1 - Coastal Sage Scrub

In Southern California, the coastal sage scrub plant community is typically comprised of perennial low-growing, woody, drought-deciduous shrubs, and may also include native cacti and exhibit an understory consisting of native and/or ruderal (weedy) herbaceous elements. This plant community generally occurs on relatively thin or rocky soils. In coastal Orange County, the most common dominant shrub species in this plant community include California sagebrush (*Artemisia californica*),

California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), California encelia (*Encelia californica*), goldenbush (*Isocoma menziesii*), monkeyflower (*Mimulus aurantiacus*), coyote bush (*Baccharis pilularis*) and prickly pear cactus (*Opuntia littoralis*).

On the UCI Campus, several sub-types of the coastal sage scrub plant community occur in a few localities in the Study Area and are distinguished by the presence of one or more particularly dominant shrub species. The largest and most diverse patches of coastal sage scrub occur in the UCI Ecological Preserve, which has been described in previous biological studies but lies outside the current Study Area. Two distinct sub-types of coastal sage scrub represented in the Study Area, and described below, include:

- Chenopod (saltbush) scrub
- Coyote bush scrub

Also, patches of coastal sage scrub vegetation that are in the process of being restored are mapped within the buffer zone between the North Campus Study Area and the San Joaquin Freshwater Marsh. Areas where coastal sage scrub restoration is in progress are indicated on Exhibit 2A.

3.1.2 - Chenopod Scrub

Small patches of chenopod scrub, or saltbush scrub, occur on the closed landfill site in the western part of the North Campus, adjacent to Macarthur Boulevard and Fairchild Road. This sub-type of coastal sage scrub consists of low to moderately dense patches dominated by Brewer's saltbush (*Atriplex lentiformis* ssp. *breweri*), also known as quailbush. This sub-type of coastal scrub is so named because the dominant shrub species is in the Chenopodiaceae (Goosefoot) Family.

This community occurs along the north and west sides of the North Campus Area.

3.1.3 - Coyote Bush Scrub

This sub-type of coastal sage scrub is comprised of a shrub layer of nearly monotypic stands of coyote bush, a native evergreen shrub, exhibiting at least 20 to 30 percent or greater shrub cover. Patches of coyote bush scrub tend to exhibit low diversity in terms of native shrub species and usually contain substantial amounts of non-native grass and ruderal herbs. Coyote bush scrub offers low to moderate habitat value as compared to the moderate to relatively high habitat value associated with more diverse stands of coastal sage scrub.

3.1.4 - Coast Live Oak - Planted

This map unit identifies a small grove of four native coast live oak trees planted in a single location in the buffer zone next to the San Joaquin Freshwater Marsh.

3.2 - NATURAL RIPARIAN/WETLAND COMMUNITIES

Riparian and wetland plant communities are generally associated with and are dependent upon streambeds or other water bodies. The representative plant species are typically well adapted to a hydrological regime ranging from permanent or semi-permanent inundation to occasional soil saturation at or near the surface during and after precipitation events. Riparian and wetland habitats occur in several prominent drainage courses or low-lying depressions where natural runoff is carried or contained. These habitats generally provide important habitat values such as foraging areas, water sources, cover, and nesting opportunities for a wide diversity of wildlife species.

3.2.1 - Mule Fat Scrub

This community occurs in small patches and narrow ribbons along streambeds and washes that tend to dry out quickly after storm events. This riparian habitat type consists primarily of mule fat (*Baccharis salicifolia*), with scattered willows (*Salix* spp.), and coyote bush, along with occasional Mexican elderberry (*Sambucus mexicana*) forming the shrub canopy. In most areas, the understory contains upland grasses and forbs, such as wild oats (*Avena* spp.) and mustards (*Brassica* spp. and *Hirschfeldia* spp.). In areas where mule fat is particularly dense or where substantial scouring has occurred, the understory component of this habitat may be sparsely vegetated or absent.

3.2.2 - Willow Riparian

Willow trees dominate this densely vegetated riparian woodland plant community. Willow riparian habitats on campus occur in the natural drainages or low-lying depressions, and around ponded areas in the San Joaquin Freshwater Marsh Reserve. Understory vegetation is sparse in this riparian habitat where the canopy layer is dense, shading out low-growing herbs. Where the canopy layer is broken or thin, mule fat provides most of the shrub layer. Herbaceous species may include native cattail (*Typha latifolia*) and bulrush (*Scirpus* spp.) in areas subject to frequent or long-term saturation. In some areas, non-native exotic species may be common to dominant. These species include castor bean (*Ricinis communis*), tamarisk (*Tamarisk ramosissima*), poison hemlock (*Conium maculatum*), watercress (*Nasturtium officinale*), and Spanish daisy (*Pulicaria paludosa*).

3.2.3 - Herbaceous Wetland

An oval-shaped patch of natural herbaceous wetland habitat occurs in the southern part of the East Campus, just northeast of Anteater Drive where it intersects Culver Drive. This wetland area is conventionally classified as an alkali meadow habitat in this study because it is ephemeral (seasonally wet) rather than perennially saturated and based on the dominant vegetation. Two of the most common species present, alkali heath (*Frankenia salina*), and saltgrass (*Distichlis spicata*), are characteristic of alkali meadows. Other common to dominant species present include yerba mansa (*Anemopsis californica*) and non-native Spanish daisy, as well as several native and non-native annual grasses and ruderal herbs, such as bristly ox-tongue (*Picris echioides*), curly dock (*Rumex crispus*), rabbit's foot grass (*Polypogon monspeliensis*), and Harding grass (*Phalaris aquatica*).

Collectively, these hydrophytic, water-loving species are typically characteristic of frequently saturated wet meadows. Two clusters of willow trees, mapped as Willow Riparian, also occur in this wetland habitat area. The subject wetland area is entirely contained within designated open space along Culver Drive.

3.2.4 - Riparian Woodland - Restored

A restored riparian woodland community is located on the south-facing slope of an existing drainage feature that occurs beyond the boundary of a designated planning area in the East Campus. The vegetation associated within this community is a mix of willow riparian and mule fat scrub habitat. The vegetation has been planted as part of a restoration project. This plant community is located within the southern portion of the East-Campus North Study Area.

3.3 - NON-NATIVE/DISTURBED AREAS

This broad category includes habitats that are primarily composed of non-native introduced species, particularly annual grasses and other ruderal (weedy) herbs. Areas that have been disturbed, either by past agricultural practices or by other activities, typically exhibit vegetation dominated by non-native species or may substantially lack vegetation. It is important to note that non-native grassland and recently cleared areas may contain scattered patches of native vegetation. In grassland communities, native species include native perennial grasses and occasional specimens and clusters of native shrubs and sub-shrubs.

In general, as noted in the previous campus-wide update of biological resources prepared by Psomas (1995), "much of the existing open space on the UCI campus has been extensively disturbed by past grazing, grading, and/or disking activities. These past disturbances have stimulated the establishment

and spread of non-native flora which has displaced native vegetation." The grassland areas throughout the campus are indicative of the disturbance due to historic land uses.

3.3.1 - Non-Native Grassland

Non-native grassland, a prevalent community throughout California, is generally characterized by a dense to sparse cover of non-native, annual grasses often associated with numerous weedy species as well as some native annual forbs (wildflowers), especially in years of plentiful rain. Seed germination occurs with the onset of winter rains. Some plant growth occurs in winter, but most growth and flowering occurs in the spring. Plants then die in the summer, and persist as seeds in the uppermost layers of soil until the next rainy season. Dominant plant genera typically found within non-native grasslands include bromes (*Bromus* spp.), wild oats, fescues (*Vulpia* spp.), and barleys (*Hordeum* spp.)

The non-native grassland community is the most common vegetation type throughout the Study Area and exhibits considerable variation in characteristic vegetation. Previous studies have termed the grassland community on campus as "cis-montane introduced grassland" or simply "grassland." The description of the grassland community provided in the 1995 LRDP EIR remains accurate as it describes the variants in this plant community observed through the current Study Area as well as identifying the wildlife that occur. Occasional patches of native perennial grasses such as purple needlegrass (*Nassella pulchra*), and/or shrub species indicative of early stages in the successional development of coastal sage scrub habitat also occur through the matrix of non-native grasses and ruderal forbs. Several species that may indicate an early "sere" or successional stage of coastal sage scrub development that occur in scattered areas through less disturbed grassland areas include deerweed (*Lotus scoparius*), big gumplant (*Grindelia robusta*), fascicled tarweed (*Deinandra fasciculata*), coyote bush, and goldenbush.

Non-Native Grassland/Upland Scrub Ecotone

The grassland/scrub community is an ecotonal sub-type or plant assemblage characterized by an open (i.e., relatively sparse) cover of shrubs within a grassland matrix where the shrub components typically contribute less than about 20 percent of the total vegetative cover. The dominant vegetation consists of non-native annual grasses, along with some native bunchgrasses, ruderal forbs, and small subshrubs such as fascicled tarweed, deerweed, and big gumplant. Representative shrub species such as coyote bush, goldenbush, buckwheat, and sagebrush comprise the less common shrub elements of this plant community. Small patches of this ecotonal vegetation occur in the East Campus and West Campus Study Areas. In the West Campus, this community is characterized by the presence of

relatively dense patches of deerweed, and is thus classified as Non-native Grassland/Deerweed. In the East Campus study area, this vegetation occurs in preserved open space.

3.3.2 - Disturbed

Areas classified as "disturbed" are generally barren or exhibit sparse vegetative cover consisting mainly of ruderal species that typically appear after severe disturbance or clearing. Typical opportunistic weeds that occur in disturbed areas include Russian thistle or "tumbleweed" (*Salsola tragus*), tocalote (*Centaurea melitensis*), and some native weedy forbs such as telegraph weed (*Heterotheca grandiflora*), fascicled tarweed and non-native annual grasses. Disturbed areas include dirt roads and other recently graded areas and provide little or no habitat value to most wildlife species.

Ruderal/Disturbed

A somewhat atypical disturbed area occurs in the East Campus – Southern Area, north of Anteater Drive. This particular patch area, classified as "ruderal/disturbed," supports a variety of exotic weeds such as mustard, tocalote, castor bean, tree tobacco and Russian thistle, but also contains a sparse cover of native shrubs including coyote bush, goldenbush (*Isocoma menziesii*), deerweed, and fascicled tarweed. This area, which appears to be used as a dumpsite, also contains piles of debris and vehicle traffic as evidence of continuing disturbance. However, the area supports many patches of relatively dense, predominantly ruderal vegetation, unlike other disturbed areas that are only very sparsely vegetated. The presence of a more dense vegetation provides more than the minimal habitat value associated with other, relatively barren disturbed areas.

3.3.3 - Eucalyptus, Pepper Trees

This classification is used to describe single large specimens or clusters of mature non-native Eucalyptus trees and an occasional Peruvian pepper tree (*Schinus molle*). These trees, introduced from Australia or South America, are commonly used for ornamental landscaping. In Southern California, eucalyptus and pepper trees can spread into natural areas and may be considered exotic invasive elements because they may displace native vegetation. Yet these tall trees provide cover and perching opportunities and are sometimes used as nest sites by hawks, owls, and other raptors (birds of prey). Therefore, while eucalyptus and pepper trees and stands are not considered to be biologically significant in terms of the overall habitat value associated with them, their potential use by nesting birds must be recognized.

3.3.4 - Oak and Sycamore Restoration/Non-Native Grassland

This classification is used to identify a particular area where native coast live oak (*Quercus agrifolia*) and western sycamore (*Platanus racemosa*) trees have been intentionally planted in a non-native grassland area located in preserved open space between two designated planning areas in the West Campus Study area. Eventually this area should exhibit characteristics of a natural woodland habitat. At the time of the survey, the majority of the planted trees were not yet large enough to provide substantial canopy cover or nest opportunities.

3.4 - DEVELOPED AREAS

This classification generally includes areas that contain existing buildings, roadways, and related infrastructure improvements. Areas mapped as "developed" may also include strips of ornamental landscaping and recently graded areas, and sites that are presently under construction.

3.4.1 - Construction

Locations with in the Study Area that are presently graded or were used for equipment staging at the time of this report are indicated as Construction.

3.4.2 - Ornamental Landscape

Areas identified as ornamental landscape occur along roadsides, on graded slopes and around the perimeter of existing developed areas. Typically, ornamental species include a wide variety of exotic trees, shrubs, and flowering plants that are installed and maintained to provide a desired function, such as erosion control, ground cover, or shade, and to be aesthetically appealing.

On Campus, however, recently landscaped areas intentionally incorporate native trees such as western sycamore and coast live oak, and drought-tolerant species such as coyote bush to reduce water use and increase biological values. Ornamental landscaping typically provides only limited habitat value, primarily as cover and perching opportunities for birds and common terrestrial wildlife that are normally found in and associated with developed areas. On Campus, while wildlife values are still limited, the use of native species provides somewhat greater value to local wildlife in terms of foraging opportunities, and may function as a buffer between active use areas and areas preserved as natural open space.

SECTION 4:
AREA-SPECIFIC CONDITIONS

The most recent comprehensive biological assessment and natural communities mapping effort for the entire campus was prepared for the 1995 LRDP Circulation and Open Space Amendment Final Environmental Impact Report (FEIR) (Psomas Associates 1995). That study provides much of the baseline information for this update and is a primary reference for comparison with current conditions. Additionally, other environmental documents have been prepared for various projects in the past. Following is a brief discussion of the previous documentation associated with the Campus, previous conditions and a discussion of current conditions.

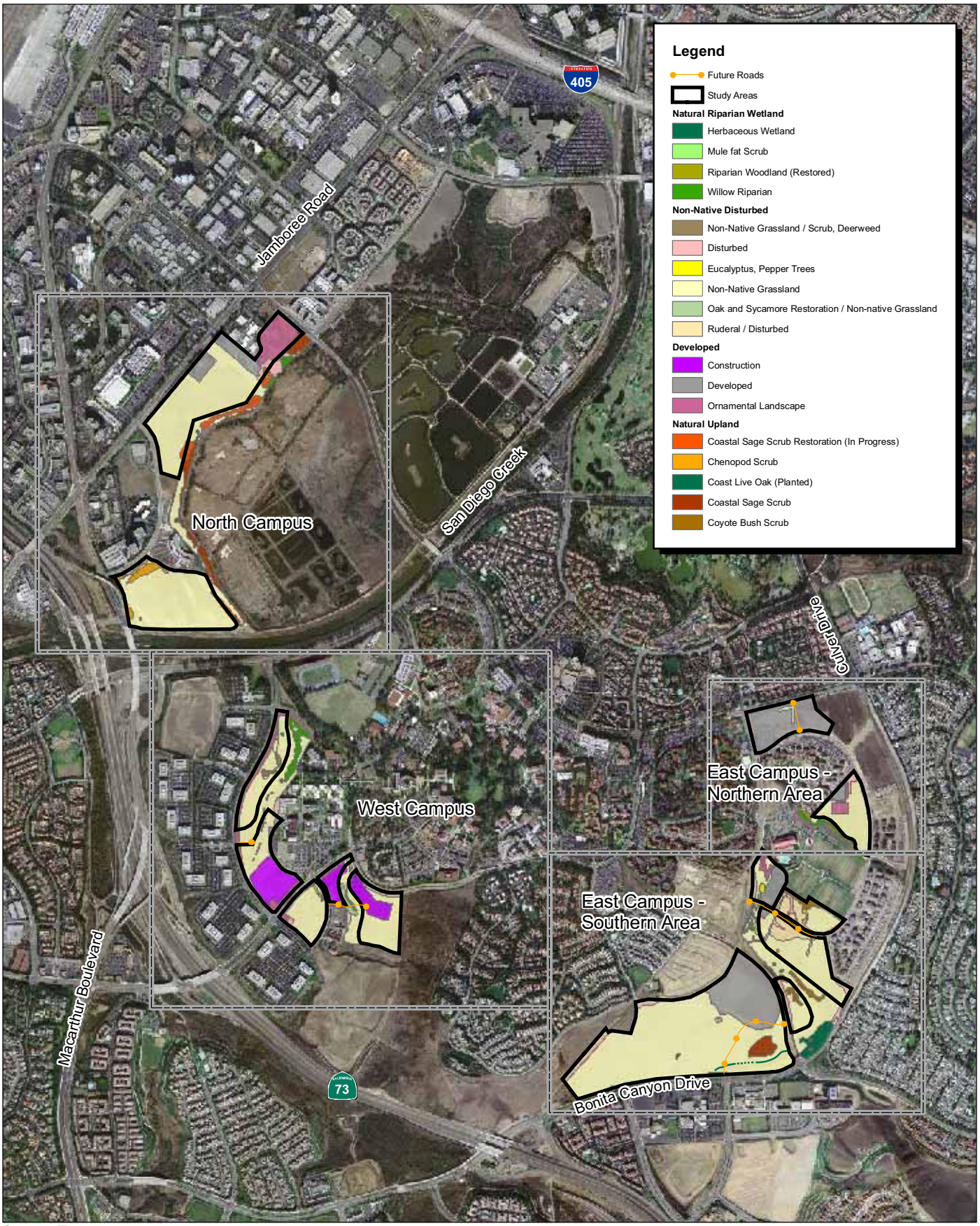
Exhibit 2 is a key map for the distribution of natural habitats and existing disturbed or development areas as they presently occur within the specific Planning Areas in the North Campus Area, West Campus Area, East Campus - Northern Area, and East Campus - Southern Area.

4.1 - NORTH CAMPUS AREA

Biological studies of the north campus were conducted in 1991, or earlier, are contained or referenced in the North Campus Mixed-Use Development FEIR (1991). Much of the North Campus Area was also re-examined as part of the update of biological studies prepared for the LRDP Circulation and Open Space Amendment FEIR (1995).

Conditions have changed little since 1991 within the North Campus Area as depicted on Exhibit 2A. The limits of the 150 foot-wide buffer zone between designated Planning Areas in the North Campus Area and the San Joaquin Freshwater Marsh Reserve are outlined in yellow. The remaining undeveloped property in the North Campus Area is still appropriately characterized as non-native grassland with limited native vegetation. However, relatively recent or ongoing efforts to introduce or restore native coastal sage scrub vegetation within the adjacent buffer zone by UCI faculty and students as a part of research projects have increased the distribution of this native upland vegetation within the buffer area between the Planning Areas and the San Joaquin Freshwater Marsh Reserve.

The grassland community in the North Campus Area, east of Jamboree Road, exhibits relatively low diversity and is primarily dominated by non-native annual grasses such as wild oats, bromes, and hare barley, as well as a prevalence of ruderal (weedy) herbs and forbs, particularly mustard, fennel, and artichoke thistle (*Cynara cardunculus)*. Previous studies conducted for the North Campus Area



Source: Terraserver.

NORTH

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Michael Brandman Associates

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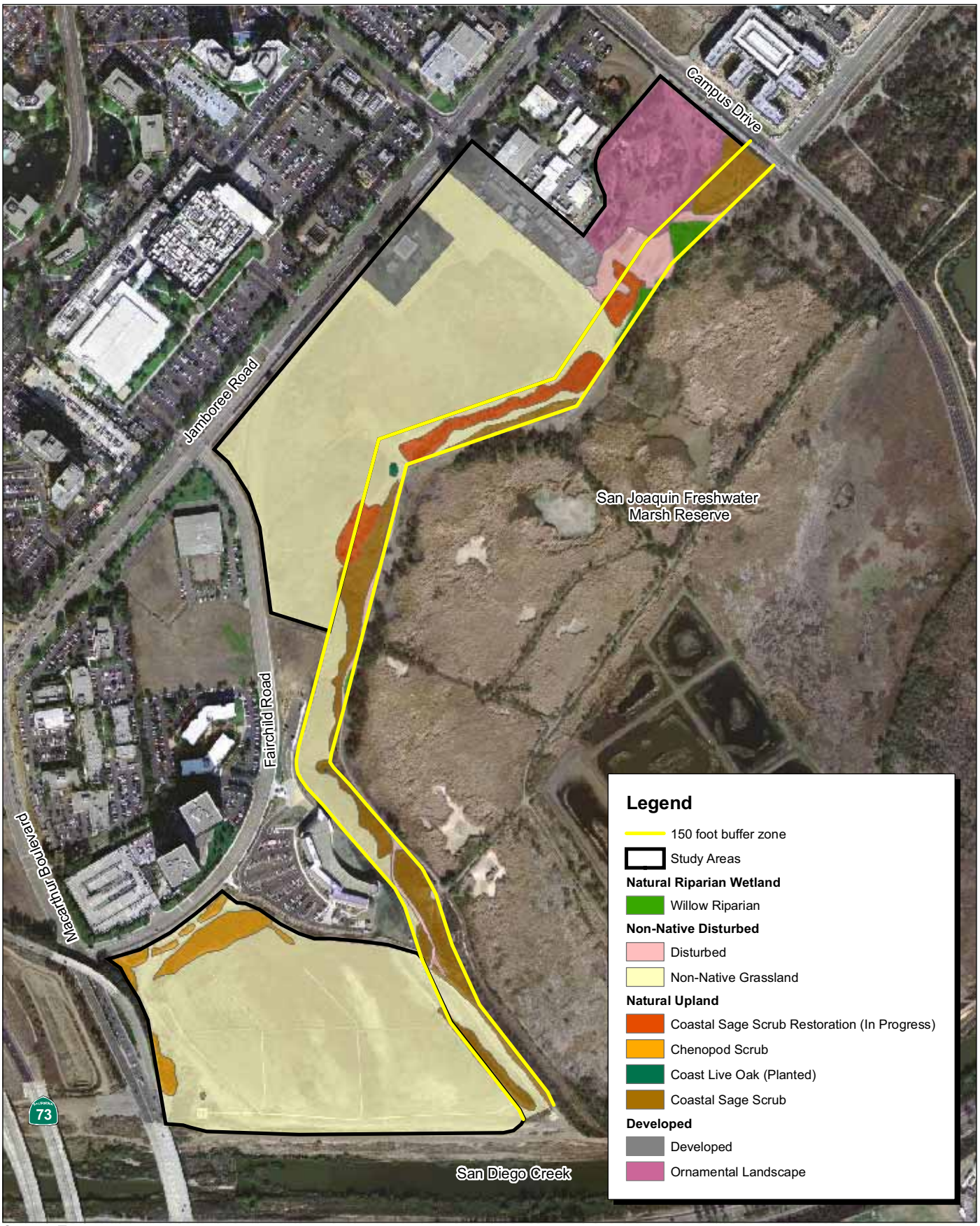
Exhibit 2
Plant Communities Key Map

UNIVERSITY OF CALIFORNIA, IRVINE CAMPUS
UCI LONG RANGE DEVELOPMENT PLAN
GENERAL BIOLOGICAL RESOURCES AND SENSITIVE SPECIES UPDATE



Source: Terraserver.

NORTH

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Feet

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Exhibit 2A
North Campus
Plant Communities Map

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UCI LONG RANGE DEVELOPMENT PLAN
GENERAL BIOLOGICAL RESOURCES AND SENSITIVE SPECIES UPDATE

describe the grassland community in this area as the least diverse grassland habitat on the campus in terms of its value to wildlife but also recognized that the area provides foraging and potential breeding habitat for various common mammals, birds, and reptiles.

Mammals recorded to occur or are expected onsite include desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*), and harvest mouse (*Reithrodontomys megalotis*).

Common grassland birds observed were as western meadowlark (*Sturnella neglecta*), western kingbird (*Tyrannus verticalis*), lesser goldfinch (*Carduelis psaltria*), white-crowned sparrow (*Zonotrichia leucophrys*), European starling (*Sturnus vulgaris*), house finch (*Carpodacus mexicanus*), and brown-headed cowbird (*Molothrus ater*).

Reptiles noted as present include gopher snake (*Pituophis melanoleucus*), western fence lizard (*Sceloporus occidentalis*), common kingsnake (*Lampropeltis zonata*), coachwhip (*Masticophis flagellum*), side-blotched lizard (*Uta stansburiana*) and western skink (*Eumeces skiltonianus*).

The area is reportedly utilized for foraging by raptors such as red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), and American kestrel (*Falco sparverius*) and provides a foraging area for large mammals such as coyote (*Canis latrans*) and bobcat (*Lynx rufus*) that may occasionally traverse the adjacent open space associated with the San Joaquin Freshwater Marsh Reserve and San Diego Creek.

The northeast corner of the North Campus Area is occupied by planted areas within the UCI Arboretum and is mapped as ornamental landscape. As with many landscaped areas, although not considered a biologically significant resource, this artificially maintained area offers cover and foraging opportunities to birds, small mammals and reptiles, usually those species that are common in urban developed areas.

A small patch of intact natural coastal sage scrub habitat lies next to the southeast edge of the Arboretum mostly within the 150 foot-wide designated buffer zone. This mapped area extends into a corner of the artificially landscaped area to include a planted area of the Arboretum where coastal sage scrub habitat appears to have been introduced.

Coastal sage scrub also occurs naturally in linear patches on south and east-facing slopes within the buffer zone between the northern Planning Area and the San Joaquin Freshwater Marsh Reserve. In addition, previous or ongoing efforts to introduce or restore additional patches of coastal sage scrub within the buffer zone are also indicated on Exhibit 2A in dark orange. Four coast live oak trees are shown in dark green in the buffer zone.

The grassland habitat on the southerly section of the North Campus Area, between Fairchild Road and the San Joaquin Freshwater Marsh Reserve, occupies a closed landfill site. This habitat exhibits less dense coverage by grasses, ruderal herbs and occasional low-growing shrubs and includes large patch areas that are sparsely vegetated or relatively barren.

Several patches of chenopod scrub, consisting of open to moderately dense cover by Brewer's saltbush, also occur on the closed landfill site near Fairchild Road and Macarthur Boulevard.

4.1.1 - Special Status Species

No special status plant species have been observed or are considered potentially present within the North Campus Area.

Several special status animals have been observed or may be expected to occur in the immediate vicinity of the North Campus Area. These species include those that are primarily associated with the extensive wetland and riparian habitat in the San Joaquin Freshwater Marsh Reserve, species that may use the adjacent buffer zone, and species that may occasionally forage within the grassland vegetation there. Due to the degraded and disturbed condition of the grasslands in the North Campus Area, it is considered unlikely that the area provides nesting habitat for any special status animals. However, the possibility that special status bird species including burrowing owl (*Athene cunicularia*), northern harrier (*Circus cyaneus*), and horned lark (*Eremophila alpestris*), could nest and breed within the North Campus Area cannot be entirely ruled out in the absence of focused surveys. It is also possible that a few special status species associated with coastal sage scrub habitat in the region including California gnatcatcher (*Polioptila californica*), orange-throated whiptail (*Aspidoscelis hyperythra*), and rufous-crowned sparrow (*Aimophila ruficeps*), may forage or breed within the buffer zone.

In addition, several species of sensitive raptors may occasionally forage in the grasslands in the North Campus Area, including:

- White-tailed kite (*Elanus leucurus*)
- Peregrine falcon (*Falco peregrinus*)

- Prairie falcon (*Falco mexicanus*)
- Cooper's hawk (*Accipiter cooperi*)
- Short-eared owl (*Asio flammeus*)
- Long-eared owl (*Asio otus*)

Swainson's hawk (*Buteo swainsoni*) and golden eagle (*Aquila chrysaetos*) have also been reported as rare visitors foraging in the general area including the North Campus Area.

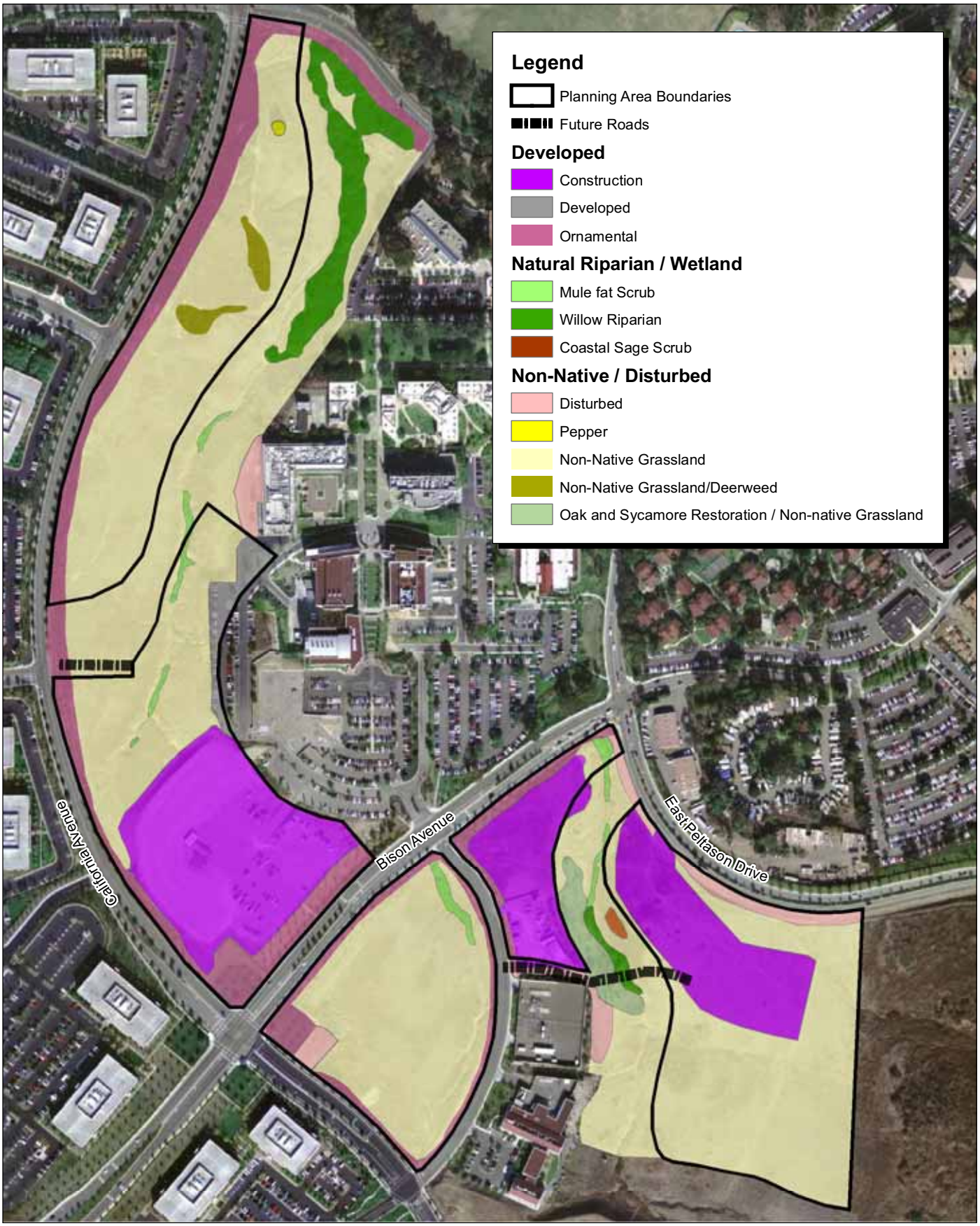
4.1.2 - Jurisdictional Areas

Several small drainage features leading from the upland areas within the North Campus Area through the buffer zone toward the San Joaquin Freshwater Marsh Reserve were depicted as non-jurisdictional features or upland swales by Psomas (1998). Field observation during the current study confirms that these indistinct features are properly characterized as swales that conduct overland sheet flow, and do not constitute jurisdictional "waters," due the absence of any observable bed or banks.

4.2 - WEST CAMPUS AREA

Exhibit 2B depicts plant communities and areas currently graded and under construction within several planning areas in the West Campus Area. Most areas within the West Campus planning areas consist of non-native grassland and recently graded construction areas. Strips of ornamental landscaping occur along the perimeter of the planning areas along the existing roadways. As required under the previous LRDP, landscape plantings emphasized California native drought-tolerant species, particularly coyote brush (*Baccharis pilularis*) in this area.

It is evident that most of the remaining grassland vegetation in the West Campus has not been subject to disturbance for some time, based on the relatively common presence of native forbs, particularly deerweed and gumplant (*Grindelia robusta*) and occasional patches of native perennial grasses, such as purple needlegrass. A few individual specimens and very small clusters of native buckwheat and sagebrush, occur in widely scattered locations within the non-native grassland plant community but these elements do not represent a distinct plant community. However, two stands of low-growing native shrubs occur on the low hill west of California Avenue that may be classified separately due to the presence of at least 20 to 40 percent cover by native forbs and sub-shrubs. Although non-native grasses and ruderal herbs are still prevalent in these two patches, deerweed is co-dominant along with occasional goldenbush and fascicled tarweed and several small patches of native saltgrass. This plant assemblage is classified as Non-native Grassland/Deerweed, to indicate this as an early successional form of upland scrub habitat. However, at the current stage of development, these patches do not



Source: Terraserver (2004).

NORTH

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Feet

Michael Brandman Associates

Exhibit 2B
West Campus
Plant Communities Map

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represent coastal sage scrub since the larger woody shrub species or cacti typically associated with that sensitive native community are completely lacking.

Segments of three natural drainage courses occur in the West Campus Area, and each support patches of mule fat scrub. Willow riparian also occurs in preserved open space in segments of the two larger drainages. Native oak and sycamore trees appear to have been planted for habitat restoration within the open space south of the intersection of Bison Avenue and East Peltason Drive.

4.2.1 - Special Status Species

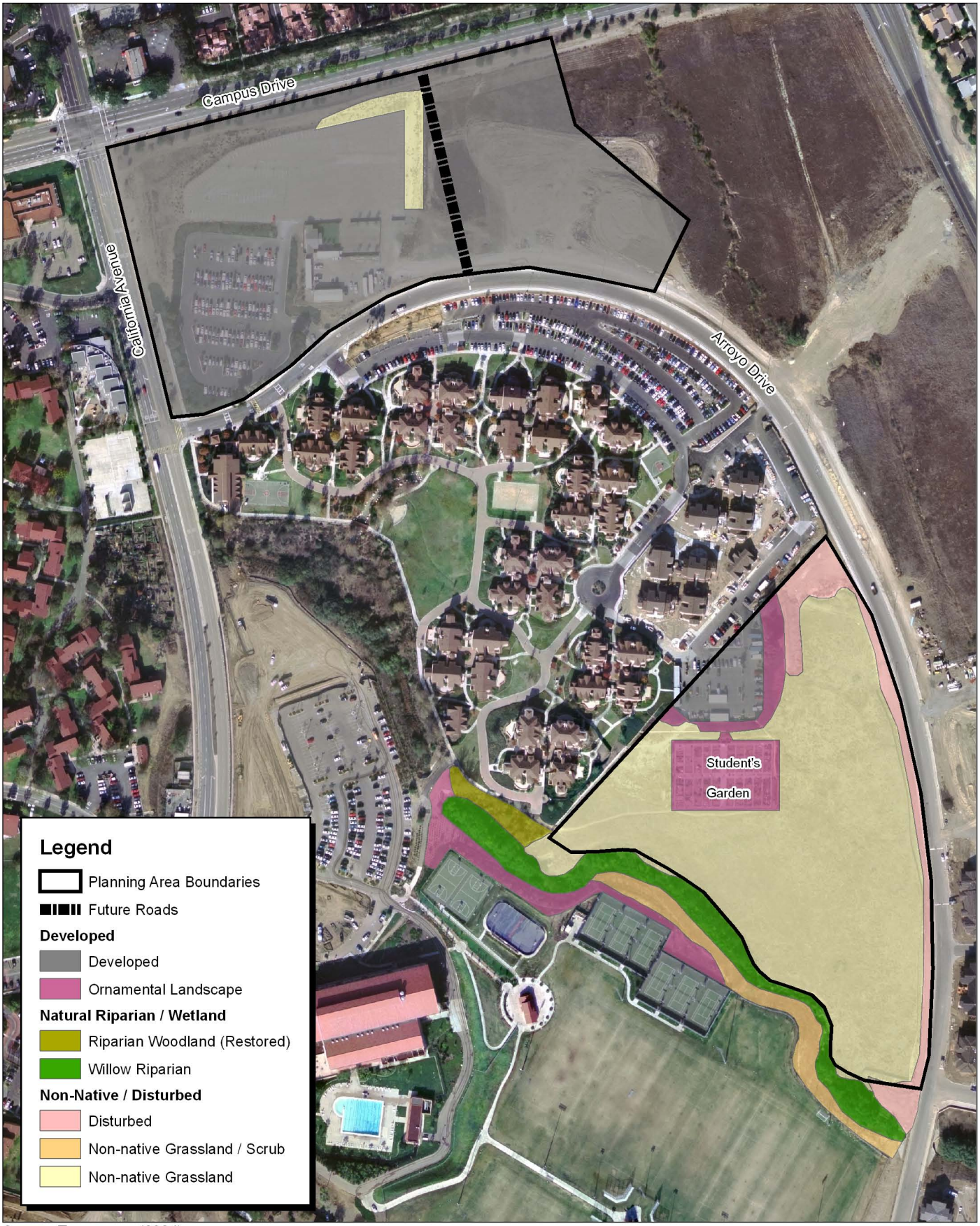
The limited size and the relatively isolated and disturbed condition of the undeveloped portion of the West Campus Area reduces the likelihood that special status species may occur therein. Sensitive species known from the vicinity include southern tarplant (*Centromadia parryi* ssp. *australis*), California gnatcatcher, grasshopper sparrow, burrowing owl, and rufous crowned sparrow. None of these species are currently known or expected to occur in the West Campus Area. A burrowing owl was briefly observed in the West Campus area near the Ecological Reserve in 1998 but abandoned the area soon after initial observation.

4.2.2 - Jurisdictional Areas

Most of the lengths of the two larger natural drainage courses in this area occur primarily in the designated open spaces between proposed planning areas. However, segments of these drainages which lie partly within designated land use planning areas may be impacted by future development. Each of these streambed areas are expected to fall under the regulatory jurisdiction of the United States Army Corp of Engineers (USACE), the California Department of Fish and Game (CDFG), and the Regional Water Quality Control Board (RWQCB). Impacts to these areas will require permit acquisition from these resource agencies prior to project development.

4.3 - EAST CAMPUS - NORTHERN AREA

The East Campus – Northern Area includes two separate planning areas being considered in the current LRDP as outlined on Exhibit 2C. Biological studies conducted for the East Campus Students Recreation Center Environmental Impact Report (EIR) (1997) and the East Campus Student Apartments EIR (2001) were reviewed and their findings are incorporated by reference for this update. The northernmost Planning Area, adjacent to Campus Drive and California Avenue, was covered the East Campus Student Apartments EIR, while the Planning Area to the south, just west of Arroyo Drive covered in the East Campus Student Recreation Center EIR.



Source: Terraserver (2004).

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Michael Brandman Associates

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Exhibit 2C
East Campus - Northern Area
Plant Communities Map

UNIVERSITY OF CALIFORNIA, IRVINE CAMPUS
UCI LONG RANGE DEVELOPMENT PLAN
GENERAL BIOLOGICAL RESOURCES AND SENSITIVE SPECIES UPDATE

The northern Planning Area just south of Campus Drive is almost entirely developed or recently graded and is entirely surrounded by existing developed areas. A very limited patch area of ruderal (weedy) grassland remains near the center of this Planning Area. Although some evidence of ground squirrel activity is present, this area contains no potentially significant biological resources.

The southern Planning Area just west of Arroyo Drive includes a small developed area on the north side bordered by ornamental landscaping and an area used for gardening by campus residents. The rest of this section of the Study Area supports a non-native grassland community. The grassland area is dominated by annual grasses and ruderal herbaceous species along with widely scattered clumps of remnant native shrubs such as coyote bush and sagebrush. Similar habitat identified within the East Campus Student Apartments EIR was classified as "disturbed/ruderal." This definition is also appropriate for the area mapped as non-native grassland on Exhibit 2C, since non-native ruderal vegetation is prevalent and the area appears to be disturbed, presumably due to periodic mowing for weed abatement.

A paved walkway separates a serpentine strip of willow riparian habitat from the southwest side of the southern Planning Area. This willow riparian community, much of which has been established through UCI habitat mitigation and restoration efforts, occurs along a natural drainage course within preserved open space. Existing active recreational areas occur to the south. This drainage course and associated riparian woodland vegetation meets both state and federal definitions for jurisdictional waters, but is not anticipated to be directly affected by proposed land uses.

4.3.1 - Special Status Species

The limited size, relative isolation, and disturbed condition of undeveloped portions of the East Campus - Northern Area reduces the likelihood that special status species may occur therein. However, burrowing owl and southern tarplant (*Centromadia parryi* ssp. *australis*), could still occur within the disturbed grassland area. A few southern tarplant specimens were found during the 2001 study in an area that has since been developed. Substantial populations of this plant were also observed further south on the East Campus - Southern Area as discussed in the next section. Due to the known presence of this plant species in the immediate vicinity it is considered potentially present within the grassland area in the southern Planning Area. Impacts to this species, if any, may not be considered significant if substantial viable populations are preserved elsewhere on campus.

Burrowing owls have not been observed in the East Campus - Northern Area since 1990. However, the remnant patch of disturbed grassland may still provide suitable habitat for this species. Moreover, previous observations of burrowing owl and their nests in the immediate vicinity indicate that their

potential presence in remaining undeveloped areas this part of the East Campus may not be ruled out without first conducting focused surveys.

The grassland community may afford limited foraging opportunities to raptor species, including those noted above as potential foragers over the North Campus Area. An occupied white-tailed kite nest was observed in 1995 within a narrow riparian strip just east of the northern Planning Area and outside the current Study Area. This nest site was not noted during the subsequent 2001 study. The area containing the nest site has since been developed and, although the riparian strip was retained, the nest it not likely to be active.

4.3.2 - Jurisdictional Areas

There are no jurisdictional drainage features within the LRDP planning area boundary within this study area. As noted above, there is a single jurisdictional drainage feature within the East-Campus Northern Area, but is located south of the planning area boundary as depicted on Exhibit 2C. The drainage feature contains a mix of willow riparian, riparian woodland, and ornamental vegetation and if impacted would require permit acquisition from appropriate regulatory agencies.

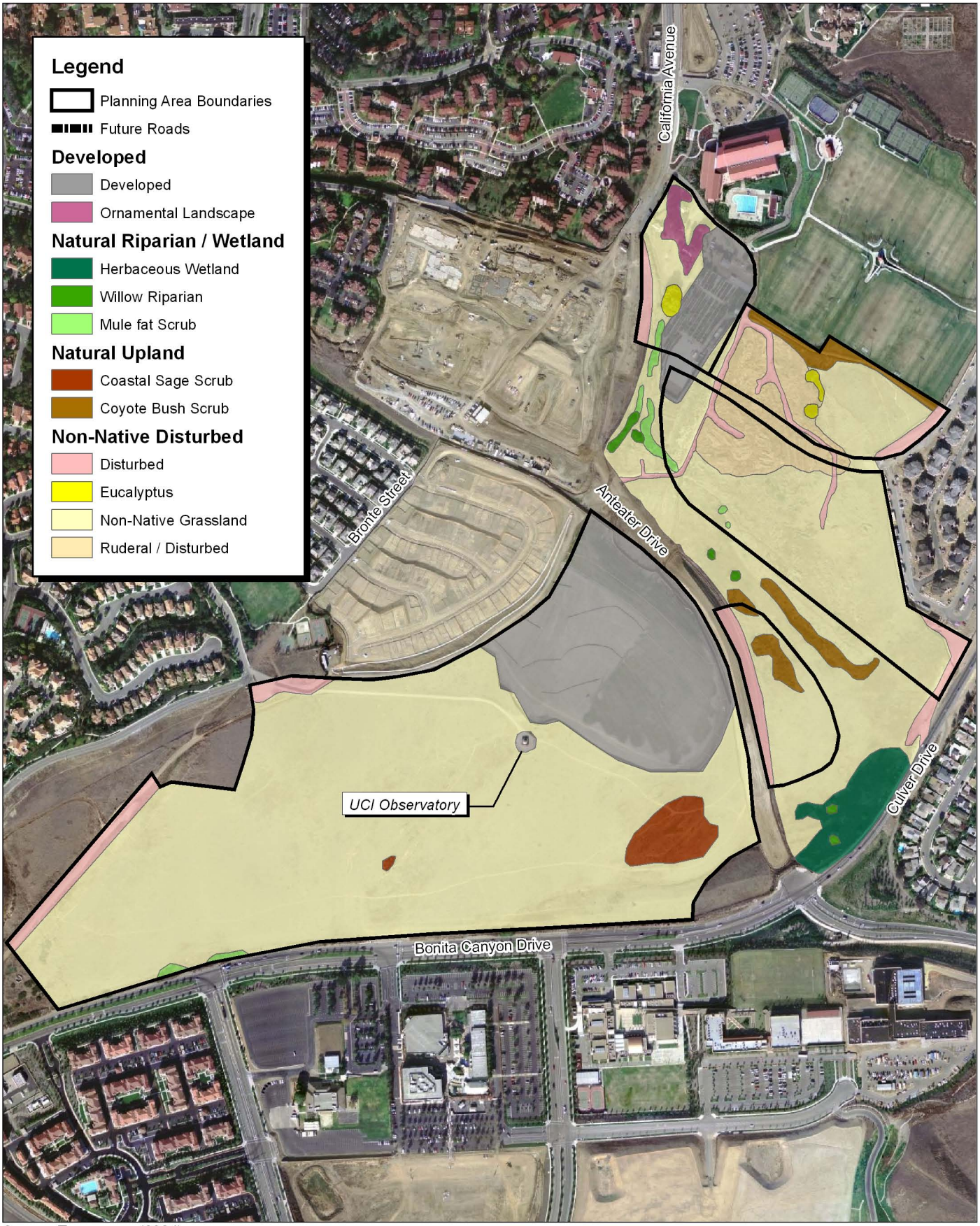
As it lies within preserved open space, this jurisdictional feature is not anticipated to be directly affected by proposed future land uses. No other drainages or features that may be potentially subject to regulatory jurisdiction occur in Northern Area of the East Campus.

4.4 - EAST CAMPUS - SOUTHERN AREA

Exhibit 2D depicts developed areas and plant communities within the East Campus – Southern Area. The biological study for the East Campus Student Recreation Center EIR included part of this area. Construction of Anteater Road, referred to as the "southern radial road" in previous documents, has been completed since the aerial photograph used as the base map for Exhibit 2D was taken in early 2005, as have the residential developments which appear as graded areas northwest of the current Planning Area.

4.4.1 - Areas East of Anteater Drive

The area east of Anteater Drive includes several separate Planning Areas and an S-shaped band of preserved open space. Much of this area exhibits non-native grassland and disturbed upland habitats along with a few scattered patches of coyote bush scrub. Non-native grassland habitat in this area varies from dense stands of mustard to open grassland with occasional native shrubs and other exotic species such as artichoke thistle, tree tobacco (*Nicotiana glauca*), and patches of castor bean (*Ricinus*



Source: Terraserver (2004).

NORTH

600 300 0 600

Feet

Michael Brandman Associates

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Exhibit 2D
East Campus - Southern Area
Plant Communities Map

UNIVERSITY OF CALIFORNIA, IRVINE CAMPUS
UCI LONG RANGE DEVELOPMENT PLAN
GENERAL BIOLOGICAL RESOURCES AND SENSITIVE SPECIES UPDATE

communis). A broad bottomed drainage swale occurs within the preserved open space, starting from high ground about 400 feet west of Culver Drive, and trending downward to the northwest into a few patches of mule fat scrub and willow trees. The southern end of the preserved open space, along Culver Drive, contains a patch of herbaceous wetland characterized as an alkali meadow habitat as discussed above under Existing Conditions.

The most northerly Planning Area is substantially developed, containing several small structures, an active nursery, and parking areas. This area also contains ornamental landscaped areas including several large pine and eucalyptus trees.

Areas mapped as disturbed on Exhibit 2D, represent dirt roads, graded slopes, and cleared areas adjacent to recently constructed roadways. A large patch area mapped as ruderal/disturbed straddles a potential future road alignment that would connect Arroyo Drive from its current terminus to California Avenue. This ruderal/disturbed area supports a variety of exotic weeds such as mustard, tocalote, castor bean, tree tobacco and Russian thistle, but also contains a sparse cover of native shrubs including coyote bush, goldenbush (*Isocoma menziesii*), deerweed (*Lotus scoparius*), and fascicled tarweed.

Special Status Species

This highly disturbed area appears to have been used for stockpiling of dirt and green waste. However, populations of southern tarplant, a California Native Plant Society (CNPS) list 1B plant species, were observed in this area during the mapping effort for this update, particularly along the unpaved access roads through the dumpsite.

Jurisdictional Areas

A narrow, artificially constructed, earthen-bottomed drainage course lies just inside the entire northern edge of Open Space/Recreation-21, where it borders the active recreation area in Open Space/Recreation-20. It appears that this drainage course was intentionally planted with coyote bush, and is mapped as coyote bush scrub since this shrub species dominates the drainage area, along with occasional mule fat.

4.4.2 - Areas West of Anteater Drive

A large section of the Planning Area just west of Anteater Drive, has been graded for construction and is mapped as developed. Most of the remaining undeveloped land in this Planning Area is comprised of non-native grassland, including stands of ruderal forbs dominated by mustard or

artichoke thistle, as well as areas dominated by annual grasses and scattered patches of native grasses and occasional native shrubs.

A single patch of coastal sage scrub occurs on the south-facing hillside overlooking Bonita Canyon Drive just west of Anteater Drive. This habitat area contains a single stand of prickly pear cactus within a larger patch of open shrub cover consisting of relatively low-growing sagebrush, with occasional buckwheat (*Eriogonum fasciculatum*), coyote bush, goldenbush, and fascicled tarweed.

Special Status Species

The limited size, relatively isolated and disturbed condition of the Planning Area west of Anteater Drive reduces the likelihood that special status species may occur therein. California gnatcatcher, grasshopper sparrow, burrowing owl, and rufous crowned sparrow are not known to occur in the area and are not likely to occupy this portion of the Campus although these species could occasionally forge or disperse throughout the area. Southern tarplant is considered potentially present in areas subject to recent disturbance.

Jurisdictional Areas

A remnant swale occurs immediately west of Anteater Road near the intersection with Bonita Canyon Drive that may occasionally convey flows from the adjacent wetland located further to the east. There are several additional upland swales further to the west. All upland swales within this portion of the East Campus convey flows into storm drains along Bonita Canyon Drive. The swales do not exhibit sufficient evidence of flow, such as bed, bank, and ordinary high water mark, to be considered jurisdictional by USACE or CDFG.

SECTION 5:
SPECIAL STATUS SPECIES

Sensitive, or "special status" species are those plants and animals occurring or potentially occurring on the project site that are endangered or rare, per CEQA and its Guidelines, or are of current local, regional or State concern. Legal protection for sensitive species varies widely, from the relatively comprehensive protection extended to species formally "Listed" as threatened or endangered by State or federal resource agencies to no legal status at present. The California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), local agencies, and special interest groups such as the California Native Plant Society (CNPS) publish watch lists of species that are believed to be declining; these lists often describe the general nature and perceived severity of the decline. In addition, recently published findings and preliminary results of ongoing research provide a basis for consideration of species that are candidates for State and/or federal listing. Finally, species that are clearly not rare or threatened statewide or regionally, but whose local populations are sparse, rapidly dwindling or otherwise unstable, may be considered to be of "local interest."

Based on a review of the California Natural Diversity Database (CNDDB) and CNPS sensitive species lists for the *Irvine, California* United States Geological Survey (USGS) 7.5-minute topographic quadrangles and review of previous studies, MBA has compiled and updated information regarding sensitive plants and wildlife species that may occur within the current Study Area. Tables 1 and 2, below, list the species considered, their current federal and state status, required habitat, and conclusions regarding each species' potential to occur based on the literature review and existing conditions in the Study Area.

5.1 - SENSITIVE PLANT SPECIES

Based on the literature review, four sensitive plant species were considered with regard to their potential presence in the Study Area. Brief discussions of each of these species are presented below and in Table 1.

5.1.1 - Mesa Brodiaea

This species was documented within the West Campus Area by Chambers Group in 1993. However, the classification of Southern California populations of this plant as a distinct species has recently been deemed invalid. Therefore, this element is no longer designated or considered a sensitive species. Moreover, the population previously identified within the West Campus Area is believed to

Table 1: Special Status Plant Species

Species		Status				Preferred Habitat	Life Form	Blooming Period	Potential to Occur / Known Occurrence / Suitable Habitat
Scientific Name	Common Name	USFWS	CDFG	CNPS	NCCP				
*Brodiaea jolonensis**	Mesa brodiaea	–	–	–	N/A	Grassland, coastal scrub,	Herbaceous perennial from bulb.	April-June	**Invalid taxon -** Taxonomic classification of Southern California specimens are deemed invalid and are no longer designated as a sensitive element. Documented occurrence near the West Campus Study Area extirpated by previous construction.
Dudleya multicaulis	Many-stemmed Dudleya	–	–	1B	CC	Coastal sage scrub, rock outcrops.	Succulent perennial from corm	May - June	**Low to Moderate –** Known from Ecological Preserve, and a single isolated population on Main Campus. Low potentially to occur in coastal sage scrub and coastal sage scrub/non-native grassland.
Centromadia parryi ssp. australis	Southern Tarplant	–	–	1B	NC	Grassland, Alkali Meadow, Disturbed Areas, and periphery of salt marsh.	Large shrub-like annual herb.	June - Sept.	**Present -** Population identified on the East Campus – Southern Area.
Harpagonella palmeri	Palmer's grapplinghook	–	–	4	NC	Clay and cobbly clay soils in open coastal sage scrub, chaparral, and grasslands.	Diminutive annual herb	Mar.-May	**Low Potential to Occur -** Marginally suitable habitat in East Campus and West Campus Study Areas and in the buffer zone between the North Campus and the San Joaquin Freshwater Marsh Reserve.

Table 1 (cont.): Special Status Plant Species

Species		Status				Preferred Habitat	Life Form	Blooming Period	Potential to Occur / Known Occurrence / Suitable Habitat
Scientific Name	Common Name	USFWS	CDFG	CNPS	NCCP				

United States Fish and Wildlife Service
FE Federal Endangered
FT Federal Threatened
PE Proposed Endangered
PT Proposed Threatened
FC Federal Candidate
FSC Species of Concern*
*No longer recognized as a federal designation.

California Department of Fish and Game
CE California Endangered
CT California Threatened
CR California Rare

California Native Plant Society
1A Plants presumed extinct in California.
1B Plants rare, threatened, or endangered in California and elsewhere.
2 Plants rare, threatened, or endangered in California, but more common elsewhere.
3 Plants about which we need more information.
4 Plants of limited distribution.

Natural Communities Conservation Plan
C Covered
CC Conditionally Covered
NC Not Covered
N/A Not Applicable (taxon invalid)

Not Likely to Occur - There are no present or historical records of the species occurring on or in the immediate vicinity, (within 3 miles) of the Project Site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the Site.

Low Potential to Occur - There is a historical record of the species in the vicinity of the Project Site and potentially suitable habitat on Site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The Site is above or below the recognized elevation limits for this species.

Moderate Potential to Occur - The diagnostic habitats associated with the species occur on or in the immediate vicinity of the Project Site, but there is not a recorded occurrence of the species within the immediate vicinity (within 3 miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.

High Potential to Occur - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the Project Site (within 3 miles).

Species Present - The species was observed on the Project Site at the time of the survey or during a previous biological survey.

have been removed by previous development. This plant has no legal status and does not require any consideration under CEQA.

5.1.2 - Many-Stemmed Dudleya

This species is well documented within the existing conservation area known as the Ecological Preserve located just east of the West Campus Study Area. Only a few isolated individuals have been observed within the currently developed portions of the Campus. Based on the many years of focused botanical surveys conducted within the Campus, it is considered unlikely that this species is present outside documented sites. However, the possibility that many-stemmed dudleya could occur in association with the small patch of coastal sage scrub habitat in the East Campus – Southern Study Area cannot be entirely ruled out in the absence of focused surveys. This species is conditionally covered under the current NCCP and may not require additional mitigation if found outside the designated Ecological Preserve which lies within the NCCP Reserve.

5.1.3 - Southern Tarplant

This species is known to occur in the East Campus Study Area and may occur elsewhere on Campus in isolated locations. This species has no legal protection and is not covered under the current NCCP. This species is known to occur in large numbers within the local vicinity and impacts to the population onsite may not constitute a significant impact. Although impacts to southern tarplant associated with future development on the Campus would be considered adverse, they would not be expected to reduce regional populations to less than a self-sustaining level. Therefore, impacts to this species are not considered significant.

5.1.4 - Palmer's Grappling Hook

This species has not been recorded to occur within the Study Area and there is only marginally suitable habitat in East Campus Area, West Campus Area, and San Joaquin Freshwater Marsh Reserve buffer zone. If present, impacts to remnant populations would be considered adverse, but would not reduce regional population levels to less than a self-sustaining level. Therefore, potential impacts to this species, although adverse, are not considered significant.

5.2 - SENSITIVE WILDLIFE SPECIES

Sensitive wildlife species documented within or in the vicinity of the Study Area are presented in Table 2. The determination of the potential for each species to occur within the Study Area was based on the presence and quality of required habitat components within the Study Area.

Table 2: Special Status Wildlife Species

Species		Status			Required Habitat	Potential to Occur / Known Occurrence / Suitable Habitat
Scientific Name	Common Name	Federal	State	NCCP		
Invertebrates						
Branchinecta sandiegonensis	San Diego fairy shrimp	FE	CNDDB	CC	Vernal pools	**Not Likely to Occur -** Potentially suitable habitat removed by construction of California Avenue through West Campus Area.
Danaus plexippus	Monarch butterfly	–	CNNDB	NC	(Wintering sites) Eucalyptus, Monterey pine, cypress groves.	**Moderate Potential to Occur -** to utilize patches of eucalyptus in East Campus Area.
Reptiles						
Aspidoscelis hyperythra	Orange-throated whiptail	–	CSC	C	May be found in low-elevation coastal scrub, chaparral, and valley-foothill hardwood; prefers sandy washes with patches of brush and rocks.	**Low Potential to Occur -** Marginally suitable habitat present over limited areas of coastal sage scrub and coastal sage scrub/non-native grassland in West Campus and both East Campus Areas
Aspidoscelis tigris stejnegeri	Coastal western whiptail	–	CNDDB	C	Inhabits deserts and semiarid areas with sparse vegetation and open areas.	**Low Potential to Occur -** Marginally suitable habitat present over limited areas of coastal sage scrub and coastal sage scrub/non-native grassland in West Campus and both East Campus Areas
Crotalus ruber ruber	Red-diamond rattlesnake	–	CSC	C	Coastal sage scrub, rocky hillsides, and outcrops.	**Low Potential to Occur -** Marginally suitable habitat present over limited areas of coastal sage scrub and coastal sage scrub/non-native grassland in West Campus and both East Campus Areas
Diadophis punctatus modestus	San Bernardino ringneck snake	–	CNDDB	C	Scrub, chaparral, native grassland, and woodland communities.	**Low Potential to Occur -** Marginally suitable habitat present over limited areas of coastal sage scrub and coastal sage scrub/non-native grassland in West Campus and both East Campus Areas
Lampropeltis zonata	California mountain kingsnake	–	CSC	NC	Coniferous forest, oak-pine woodlands, riparian woodland, chaparral, manzanita, and coastal sage scrub.	**Not Likely to Occur -** Marginal quality coastal sage scrub occurs onsite, however the species is not known to occur in the area.

Table 2 (cont.): Special Status Wildlife Species

Species		Status			Required Habitat	Potential to Occur / Known Occurrence / Suitable Habitat
Scientific Name	Common Name	Federal	State	NCCP		
Reptiles (cont.)						
Phrynosoma coronatum (*blainvillei* population)	San Diego horned lizard	–	CSC	C	Sandy soil with low vegetation coastal sage scrub and chaparral with friable, rocky or shallow sandy soils that support native harvester ants.	**Low Potential to Occur -** Marginally suitable habitat present over limited areas of coastal sage scrub and coastal sage scrub/non-native grassland in West Campus and both East Campus Areas
Salvadora hexalepis virgultea	Coast patch-nosed snake	–	CSS	NC	Scrub (desert), coastal chaparral, washes, sandy flats, and rocky areas.	**Low Potential to Occur -** Marginally suitable habitat present over limited areas of coastal sage scrub and coastal sage scrub/non-native grassland in West Campus and both East Campus Areas.
Birds						
Accipiter cooperi	Cooper's hawk	–	CSC	NC	(Nesting) Dense canopied evergreen and deciduous forests or in riparian woodlands.	**High Potential to Occur -** Suitable habitat present within the Study Area. Although this species is typically found in woodlands, it has been known to occur in residential developments with plenty of ornamental trees.
Accipiter striatus	Sharp-shinned hawk	–	CSC	C	(Nesting) Boreal coniferous and mixed deciduous forests, and open woodlands near bushy and riparian areas, tropical cloud forests, mountainous pine forests, savanna woodlands, and urban areas.	**Low Potential to Occur -** Marginally suitable habitat present over limited areas of riparian habitat in West Campus and both East Campus Areas.
Aimophila ruficeps canescens	Southern California. rufous-crowned sparrow	–	CSC	C	Open coastal sage scrub, open chaparral, and in other dry habitats.	**High Potential to Occur -** Expected to occur in suitable coastal sage scrub/non-native grassland habitat onsite.
Amphispiza belli belli	Bell's sage sparrow	–	CSC	NC	Chaparral and coastal sage scrub, prefers relatively open cover.	**High Potential to Occur -** Expected to occur occasionally in suitable coastal sage scrub/non-native grassland habitat onsite.

Table 2 (cont.): Special Status Wildlife Species

Species		Status			Required Habitat	Potential to Occur / Known Occurrence / Suitable Habitat
Scientific Name	Common Name	Federal	State	NCCP		
Birds (cont.)						
Ammodramus savannarum	Grasshopper sparrow	–	CNDDB	NC	Dense, dry or well-drained grasslands, especially native grassland with a mix of grasses and forbs for foraging and nesting.	**Low Potential to Occur -** Marginally suitable habitat present in limited areas. No direct habitat connectivity to occupied areas. Not known to occur onsite.
Aquila chrysaetos	Golden eagle	–	CSC, FP	CC	Open terrain of deserts, mountains, plateaus and steppes cut by canyons, gullies or outcrops.	**Low Potential to Occur -** Marginally suitable nesting habitat present over limited areas of the West Campus and both East Campus Areas. Possible foraging habitat.
Asio flammeus	Short-eared owl	–	CSC	NC	(Nesting) Grassland, marsh.	**Not Likely to Occur -** Observed in Ecological Preserve (1995). No recent records. Potential foraging habitat onsite. No nesting habitat.
Asio otus	Long-eared owl	–	CSC	NC	(Nesting) Riparian habitats and oak thickets used for breeding.	**Not Likely to Occur -** Potentially foraging habitat present, no suitable nesting habitat.
Athene cunicularia hypugaea	Western burrowing owl	–	CSC	NC	(Burrows) Open, dry grasslands, deserts and scrublands with low growing vegetation.	**High Potential to Occur -** Previously observed within the West Campus and both East Campus Areas. There has been no recent recorded occurrence, and all previously occupied habitat has been developed.
Buteo regalis	Ferruginous hawk	FSC	CSC	NC	(Wintering) Arid to semiarid regions, as well as grasslands and agricultural areas.	**Low Potential to Occur -** Expected to occur occasionally in fall and winter, foraging in grasslands and coastal sage scrub/non-native grasslands; does not nest in Orange County. No recent recorded occurrences.
Buteo swainsoni	Swainson's hawk	–	ST	NC	(Nesting) Open grasslands, prairies, farmlands, and deserts.	**High Potential to Occur -** Previously observed over North Campus Area. Expected to occur occasionally during migration; does not nest in Orange County.

Table 2 (cont.): Special Status Wildlife Species

Species		Status			Required Habitat	Potential to Occur / Known Occurrence / Suitable Habitat
Scientific Name	Common Name	Federal	State	NCCP		
Birds (cont.)						
Campylorhynchus brunneicapillus sandiegensis	Coastal cactus wren	–	CSC	C	Coastal sage scrub containing cactus.	**Low Potential to Occur -** A single cactus patch in East Campus - Southern Area, west of Anteater Drive. No habitat connectivity to occupied habitats. Observed within the Reserve Area.
Circus cyaneus	Northern harrier	–	CSC	C	(Nesting) Winter resident. Inhabits marshlands and often forages over grasslands and fields.	**Present** - Observed foraging in Ecological Preserve and San Joaquin Freshwater Marsh Reserve.
Dendroica petechia brewsteri	California yellow warbler	–	CSC	NC	(Nesting) Multi-layered riparian scrub or willow woodland.	**Not Likely to Occur -** Not observed in the Study Area. Low potential to occur within West Campus and both East Campus Areas. No nesting habitat present.
Elanus leucurus	White-tailed kite	–	FP	NC	(Nesting) Grassland, open woodland, marshes, partially cleared lands, cultivated fields, mostly lowland situations. Nests in trees, often near marshes.	**Present** - Observed foraging over grasslands and San Joaquin Freshwater Marsh Reserve. Nest site reported (1995), outside current Study Area in East Campus - Northern Area. Area since developed.
Empidonax traillii extimus	Southwestern willow flycatcher	FE	SE	CC	(Nesting) Extensive riparian woodland.	**Not Likely to Occur -** No suitable riparian habitat present within the Study Area. Not known to occur in the area.
Eremophila alpestris actia	California horned lark	–	CSC	NC	Grassland, agricultural areas and in open areas of scrub and chaparral.	**Present** - Observed in the West Campus Area (1995). Moderate to high potential to occur in grasslands throughout Study Area.
Falco columbarius	Merlin	–	CSC	NC	(Wintering) Wide variety of habitats including marshes, deserts, seacoasts, near coastal lakes and lagoons, open woodlands.	**Low Potential to Occur -** Marginally suitable foraging habitat present over limited portions of the West Campus and both East Campus Areas. Not known to occur in the area.
Falco mexicanus	Prairie falcon	–	CSC	CC	(Nesting) Potentially occurs very rarely in fall and winter; nesting not expected.	**Not Likely to Occur -** Potentially foraging habitat present, no suitable nesting habitat.

Table 2 (cont.): Special Status Wildlife Species

Species		Status			Required Habitat	Potential to Occur / Known Occurrence / Suitable Habitat
Scientific Name	Common Name	Federal	State	NCCP		
Birds (cont.)						
Falco peregrinus anatum	American peregrine falcon	D	SE, FP	C	(Nesting) Nest on cliffs and infrequently on tall buildings. Often observed along rivers or near large bodies of water.	**Not Likely to Occur** - No suitable nesting habitat present within the Study Area. Not known to occur in the area. Potential for occasional foraging.
Icteria virens	Yellow-breasted chat	–	CSC	NC	(Nesting) Multi-layered riparian scrub or willow woodland.	**Not Likely to Occur** - Not observed in the Study Area. Low potential to occur within West Campus and both East Campus Areas. No nesting habitat present.
Lanius ludovicianus	Loggerhead shrike	–	CSC	NC	Grassland, sage scrub.	**Present** - Observed in San Joaquin Freshwater Mash buffer zone (Holbrook 1988). Moderate potential to occur in grasslands, scrub, and riparian patches throughout the Study Area.
Polioptila californica californica	Coastal California gnatcatcher	FT	CSC	C	Requires sage scrub habitat for nesting, uses and adjacent non-sage scrub, such as grassland, chaparral, riparian scrub, for foraging and dispersal.	**Moderate Potential to Occur** - Suitable habitat present in limited areas, West Campus Area enclosed by development and exposed to noise and activity. No direct habitat connectivity to occupied areas.
Vireo bellii pusillus	Least Bell's vireo	FE	SE	CC	Migratory summer resident of cottonwood-willow forest, oak woodland, shrubby thickets, and dry washes with willow thickets at the edges.	**Not Likely to Occur** - Not observed in the Study Area. Known from Bonita Reservoir, south of the Study Area. Low potential to occur in large willow riparian woodland habitat in preserved open space in San Joaquin Freshwater Marsh Reserve and patches adjacent to West Campus and both East Campus Areas.

Table 2 (cont.): Special Status Wildlife Species

Species		Status			Required Habitat	Potential to Occur / Known Occurrence / Suitable Habitat
Scientific Name	Common Name	Federal	State	NCCP		
Mammals						
Lepus californicus bennettii	San Diego black-tailed jackrabbit	–	CSC	NC	Grasslands and scrub areas.	**Present** - Observed in the East Campus Areas. Moderate to high potential to occur in grasslands throughout current the Study Area.
Neotoma lepida intermedia	San Diego desert woodrat	–	CSC	C	Coastal sage scrub, chaparral, woodlands, and desert areas	**High Potential to Occur** - Expected to occur in suitable coastal sage scrub/non-native grassland habitat onsite.

Federal
FE Federal Endangered
FT Federal Threatened
FSC Federal Species of Concern
PFT Proposed Federal Threatened
C Candidate for Federal Listing
D Delisted

State
SE State Endangered
ST State Threatened
FP Fully Protected
CSC California Species of Concern
CNDDB Tracked within the California Natural Diversity Database

Natural Communities Conservation Plan
C Covered
CC Conditionally Covered
NC Not Covered

Not Likely to Occur - There are no present or historical records of the species occurring on or in the immediate vicinity, (within 3 miles) of the Project Site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the Site.

Low Potential to Occur - There is a historical record of the species in the vicinity of the Project Site and potentially suitable habitat on Site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The Site is above or below the recognized elevation limits for this species.

Moderate Potential to Occur - The diagnostic habitats associated with the species occur on or in the immediate vicinity of the Project Site, but there is not a recorded occurrence of the species within the immediate vicinity (within 3 miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.

High Potential to Occur - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the Project Site (within 3 miles).

Species Present - The species was observed on the Project Site at the time of the survey or during a previous biological survey.

There are nine California species of concern that have been recorded to occur within the Campus or have a high potential to occur within the Study Area. These species are typically associated with disturbed grassland habitats, which occur within all of the Study Areas. These species are not legally protected under the Federal or State Endangered Species Act. However, based on CEQA guidelines, these species require a project specific evaluation in order to determine if potential project impacts are considered significant. Therefore, impacts to individuals of these species may be considered significant under CEQA guidelines on a case-by-base basis.

Six California species of concern are not likely to occur onsite due to a lack of suitable habitat or the species is not considered locally present within the vicinity of the Study Area including California mountain kingsnake (*Lampropeltis zonata*), prairie falcon (*Falco mexicanus*), short-eared owl (*Asio flammeus*), long-eared owl (*Asio otus*), California yellow warbler (*Dendroica petechia brewsteri*), and yellow-breasted chat (*Icteria virens*)

5.2.1 - Coastal California Gnatcatcher

The coastal California gnatcatcher (*Polioptila californica californica*) is a federally threatened and CDFG species of concern species primarily found in coastal sage scrub habitat. This species is covered under the NCCP which mitigates for take on non-Reserve lands. A substantial area of occupied habitat in the UCI Ecological Preserve lies within the NCCP Reserve system. Only small patches of marginally suitable habitat remain in the Study Area, and impacts to these areas, although adverse, are not considered significant in light of the NCCP. Removal of small patches of coastal sage scrub habitat would not be expected to substantially reduce the local population of California gnatcatchers to less than self-sustaining levels.

5.2.2 - Fully Protected Species

The white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*) are fully-protected species, which is a state-list that pre-dates the ESA. These species were not considered for federal or state listing as threatened or endangered, but still remain on the original fully protected species list. As fully protected species, there are no incidental take permits issued for potential impacts for these species. Impacts to nesting white-tailed kites are considered a significant impact and this species is not covered under the NCCP. Impacts to nesting golden eagles are also considered a significant impact and this species is conditionally covered under the NCCP

5.2.3 - Burrowing Owl

The burrowing owl is a California state species of concern and is currently being considered for listing with the state and federal agencies due to their alarming decline in the past 30 years.

Burrowing owls are small crepuscular owls, which use rodent burrows for nesting and roosting. They inhabit grasslands and prairies and often prefer areas with some disturbance and/or berms or drainages. These open space areas are required for clear visibility surrounding active burrows.

The Study Area contains a number of features that provide suitable burrowing owl habitat: flat, open, valley floor plains occupied by non-native grassland, including ruderal areas, and scrub habitat. No burrowing owls were observed during the field visit; however, burrowing owls have been recorded in both the East and West Campus Areas. This species is not covered under the NCCP and therefore impacts to this species would be considered significant.

5.2.4 - Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is a state threatened species recorded to occur within the North Campus portion of the Study Area. The species is commonly found in open grasslands, prairies, farmlands, and deserts. Although this species is not known to nest in Orange County, the potential for this species to next within the Study Area can not be completely ruled out. Therefore, impacts to nesting Swainson's hawk are considered significant.

5.2.5 - Sensitive Reptiles

The Campus contains marginally suitable habitat for a number of sensitive reptile species. Orange-throated whiptail (*Aspidoscelis hyperythra*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), and red-diamond rattlesnake (*Crotalus ruber ruber*) are all considered California species of concern, have a low potential to occur onsite, and are all covered under the NCCP. Coastal western whiptail (*Aspidoscelis tigris stejnegeri*) and San Bernardino ringneck snake (*Diadophis punctatus modestus*) are also covered under the NCCP, but are not listed on any formal sensitive species list. Coast patch-nosed snake (*Salvadora hexalepis virgultea*) and California mountain kingsnake (*Lampropeltis zonata*) are California species of concern and are not covered under the NCCP. These sensitive reptile species all have a low potential to occur or are not likely to occur within the Study Area due to the relatively low habitat suitablility and the lack of connectivity with more suitable habitat in the vicinity. Impacts to the above-mentioned sensitive reptile species are not considered potentially significant.

5.2.6 - Sensitive Birds

The Campus contains marginally suitable habitat for a number of sensitive avian species. Sharp-shinned hawk (*Accipiter striatus*) is considered a California species of concern, has a low potential to occur onsite, and is covered under the NCCP. Grasshopper sparrow (*Ammodramus savannarum*) is

also covered under the NCCP, but is not listed on any formal sensitive species list. Ferruginous hawk (*Buteo regalis*) and merlin (*Falco columbarius*) are California species of concern and are not covered under the NCCP. These sensitive bird species have a low potential to occur due to the relatively low habitat suitablility and the lack of connectivity with more suitable habitat in the vicinity. Also, there are no recorded occurrences of these species within the Study Area and/or immediate vicinity. Impacts to these sensitive bird species are not considered potentially significant.

5.2.7 - Sensitive Mammals

Portions of the campus contain suitable habitat for San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) and San Diego desert woodrat (*Neotoma lepida intermedia*). These sensitive mammal species have a high potential to occur or are present within the coastal sage scrub habitat within the Study Area or adjacent open space areas. These species are consistently observed in coastal sage scrub habitat throughout the local vicinity. These species are considered sensitive due to the regional decline of coastal sage scrub, and are currently listed as California Species of special Concern by CDFG. As sensitive species, they require independent evaluation on a project by project basis under the CEQA process.

The coastal sage scrub habitat within the planning areas is considered moderate to low quality and has no direct connectivity to adjacent coastal sage scrub habitat. It is likely that a few individuals may utilize the habitat within the planning area for foraging, but due to the relatively small patch size, it is not likely that the habitat is large enough to support a population of either of these species. The high quality coastal sage scrub habitat is located within existing open space areas and will not be directly impacted based on the current planning areas. Impacts to the above-mentioned sensitive mammal species are not considered potentially significant.

5.3 - NESTING BIRDS

The Study Area contains suitable nesting habitat for several avian species. Therefore, pursuant to the MBTA and California Fish and Game Code, removal of trees, shrubs, or other features that provide potential nesting habitat for protected species should be conducted outside the avian nesting season. The nesting season generally extends from early February through August, but can vary slightly from year to year based upon seasonal weather conditions.

If suitable nesting habitat for protected species must be removed during the nesting season, a qualified biologist should conduct a breeding-bird survey to identify any potential nesting activity. If active nests are observed, construction activities that may cause a nest to fail will be prohibited until

the nestlings have fledged. All construction activity within the vicinity of active nests must be conducted in the presence of a qualified biological monitor. Construction activity may encroach into the buffer area at the discretion of the monitor.

5.4 - JURISDICTIONAL AREAS

Based on the current conditions within the assessment area, there are several drainage features that are under the jurisdiction of USACE, CDFG, and RWQCB. Section 404, 401, and 1602 permits will be required prior to commencement of development if any of the jurisdictional drainages are within the grading footprint of the Study Areas.

SECTION 6:
MITIGATION SUMMARY

Implementation of mitigation measures set forth in the 1989 LRDP and refined in the subsequent LRDP Circulation and Open Space Amendment (1995) will reduce or eliminate a variety of potentially significant impacts to biological resources associated with proposed future land uses being considered in the Current LRDP. Moreover, adherence to the conservation provisions established in the NCCP, including protection of NCCP Reserve Lands on Campus (e.g., the Ecological Preserve) and implementation of measures to minimize or avoid impacts to sensitive resources during construction provide further mitigation.

The Study Area is located within the NCCP/HCP area for the Coastal Orange County Sub Region. Additionally, portions of the Study Area are located within or adjacent to areas designated as part of the "Reserve System," which is subject to restrictions identified in Section 4.1-4.3 and Sections 5.1 to 5.3 of the NCCP/HCP Implementation Agreement. The NCCP/HCP requires the implementation of certain minimization measures during construction to minimize potential impacts to sensitive species that have a high potential or are known to occupy a site. Additionally, 10 of the 42 species that are covered under the NCCP/HCP are subject to specific conditions. The measures set forth for construction minimization and conditionally covered species are summarized in Section 10.0 of the NCCP/HCP Mitigation and Implementation Agreement Monitoring Plan.

Further consideration of the following issues may also be warranted to assure that potential impacts to resources are avoided or mitigated to the extent feasible.

6.1 - NATIVE GRASSLAND

In the Study Area, particularly in the West Campus Study Area, it appears that native grasses are becoming reestablished in the Non-native Grassland, and may eventually contribute to the relative cover of the vegetation that it may be appropriate to characterize patches as Native Grassland. Native Grasslands have dwindled considerably in the State and are typically considered a sensitive resource in Southern California. Therefore, as the native grass components of existing grassland vegetation on the Campus increases over time, it may be prudent to re-survey grassland areas prior to construction and to consider providing mitigation if such resources reestablish in these areas and are significantly impacted by future development.

6.2 - BURROWING OWL

Due to the presence of suitable habitat for burrowing owl, pre-construction surveys for this species are recommended to be conducted prior to any ground disturbing activities within 300 feet of suitable habitat. Suitable habitat includes non-native grassland, ruderal (weedy) areas, and scrub habitat

6.3 - NESTING BIRDS

To avoid any direct impacts to migratory birds, removal of habitat supporting active nests must occur outside of the breeding season for these species, January 15 through July 31. If removal of habitat must occur during the breeding season, the applicant shall retain a qualified biologist to conduct pre-construction surveys for nesting birds protected under the State Fish and Game Code and the federal Migratory Bird Treaty Act. Pre-construction surveys are recommended to be performed within 10 calendar days of commencing construction-related activities, including removal of vegetation. No active nests should be removed or disturbed until nestlings have fledged or the nest is abandoned.

SECTION 7:
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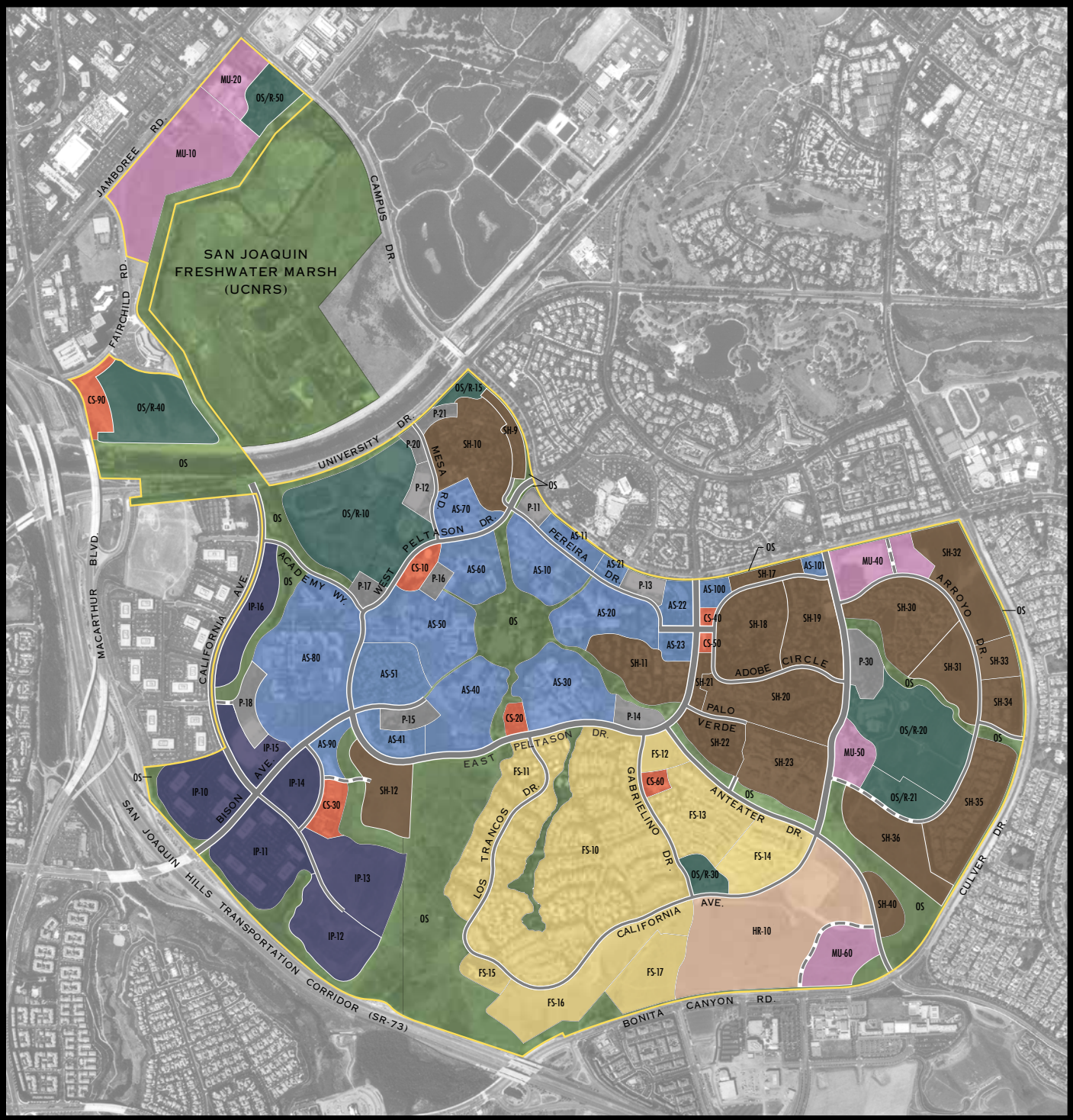
Attachment A:
UCI Proposed Land Use Plan

LONG RANGE DEVELOPMENT PLAN



- ACADEMIC & SUPPORT
- CAMPUS SUPPORT SERVICES
- INCOME PRODUCING INCLUSION AREA
- MIXED USE
- PARKING
- STUDENT HOUSING
- FACULTY/STAFF HOUSING
- HOUSING RESERVE
- OPEN SPACE–RECREATION
- OPEN SPACE–OTHER

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SCALE IN FEET

PROPOSED LAND USE PLAN

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