

## 12 | Archaeological Resources



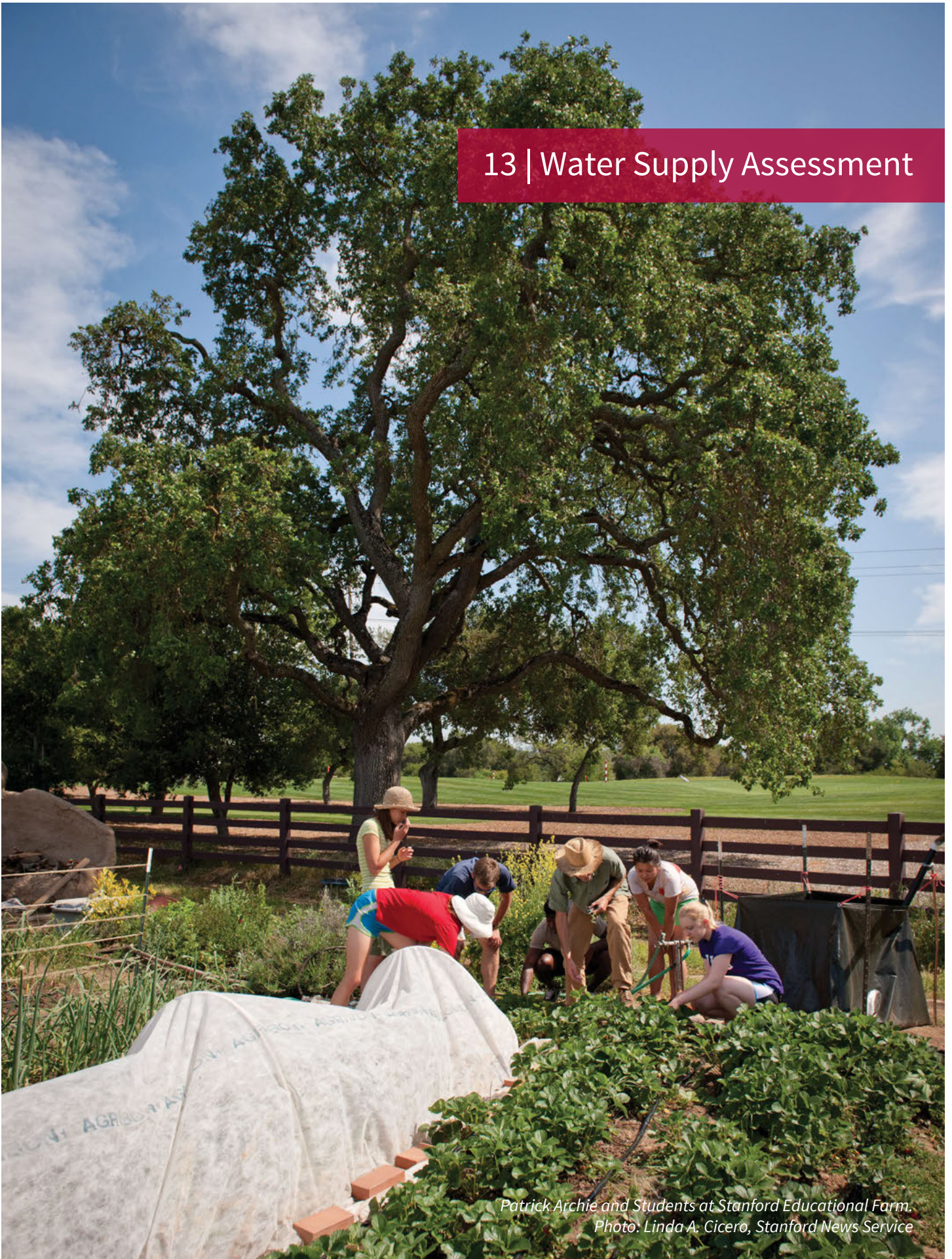
2009 archaeology dig at the site of former Men's Gymnasium.  
Photo: Linda A. Cicero, Stanford News Service

## 12 | Archaeological Resources

### NOTE

Due to the State requirement that archaeological locations be kept confidential, the archaeological resources map is on file at the County Planning Office, but is not available for public review.

## 13 | Water Supply Assessment



*Patrick Archie and Students at Stanford Educational Farm.  
Photo: Linda A. Cicero, Stanford News Service*

**WATER SUPPLY ASSESSMENT**  
**FOR THE**  
**STANFORD 2018 GENERAL USE PERMIT**

Prepared by  
**STANFORD UNIVERSITY**

and

**Schaaf & Wheeler**  
CONSULTING CIVIL ENGINEERS

FOR  
**SANTA CLARA COUNTY**

**November 2016**

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SANTA CLARA, CA 95050

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**Table i. Acronyms Used in this Report**

<b>Acronym</b>	<b>Description</b>
ac-ft, AF	Acre-feet
ac-ft/yr, AFY	Acre-feet/year
ccf, hcf	Hundred cubic feet
gpd	Gallons per day
gpcd	Gallons per capita day, or gallons per person per day
gsf	Gross square feet
mgd	Million gallons per day
sq-ft, sf	Square feet
USF	Usable square foot
BAWSCA	Bay Area Water Supply & Conservation Agency
BMP	Best management practice
CEF	Central Energy Facility
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CIMIS	California Irrigation Management Information System
CIWQS	California Integrated Water Quality System Project
CWC	California Water Code
DDW	SWRCB Division of Drinking Water
DMM	Demand management measure
DRIP	Drought Implementation Plan
DWR	California Department of Water Resources
ET	Evapotranspiration
EIR	Environmental Impact Report
eWRIMS	Electronic Water Rights Information Management System
GUP	General Use Permit
ISG	Individual Supply Guarantee
ISL	Interim Supply Limitation
LAFCO	Local Agency Formation Commission
RWQCP	Regional Water Quality Control Plant
SB	California Senate Bill
SCVWD	Santa Clara Valley Water District
SFPUC	San Francisco Public Utilities Commission
SWRCB	State Water Resources Control Board
UWMP	Urban Water Management Plan
WBIC	Weather Based Irrigation Controller
WSA	Water Supply Assessment
WVS	Written Verification of Supply



**Table ii. Units of Measure Used in this Report**

<b>Unit</b>	<b>Equals</b>
1 acre-foot	= 43,560 cubic feet = 325,851 gallons
1 cubic foot	= 7.48 gallons
1 CCF	= 100 cubic feet = 748 gallons
1 MGD	= 1,000,000 gallons/day = 1,120 acre-feet / year

## Summary of Water Supply Assessment

**Project:** Stanford 2018 GUP, Santa Clara County, California

This Water Supply Assessment (WSA) has been prepared pursuant to the requirements of Senate Bill 610 (Chap. 643, Statutes of 2001), Water Code §§ 10910-10915. The WSA evaluates whether there will be sufficient water supplies to meet the water demands of development under Stanford University's proposed 2018 General Use Permit (2018 GUP). Under the 2018 GUP, Stanford proposes to add 2.275 million gross square feet (gsf) of academic and academic support space and 3,150 housing units/beds, of which no more than 550 would be faculty/staff units, during the period from 2018 to 2035. For purposes of this WSA, it is assumed that the new housing under the 2018 GUP would include 550 faculty/staff units and 2,600 student beds. As explained below, the estimated total potable water demands of the Stanford University campus at project buildout are calculated at 2.44 million gallons per day (mgd). This is substantially below Stanford's long-term Individual Supply Guarantee of 3.03 mgd of potable water from the San Francisco Public Utilities Commission (SFPUC). In addition to potable demand, the total estimated non-potable water demands (for landscape irrigation use) at project buildout are calculated at approximately 1.35 mgd, which can be met through a combination of non-potable local surface supplies and groundwater. Based on the analysis that follows, the WSA concludes that there will be sufficient supplies to serve the water needs of the 2018 GUP during normal, single dry and multiple dry water years over a 20-year projection.

This WSA is being prepared for approval by Santa Clara County (County), as the lead agency under the California Environmental Quality Act (CEQA) for the environmental review of the 2018 GUP Project. The WSA will be included in the County's Environmental Impact Report (EIR) for the 2018 GUP.

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## **Section 1 - Introduction**

### **1.1 Project Overview**

The 2018 GUP is located in unincorporated Santa Clara County on the existing Stanford University campus and adjacent Stanford lands. Under the 2018 GUP, Stanford proposes to add 2.275 million gsf of academic and academic support space and 3,150 housing units/beds, of which no more than 550 would be faculty/staff units, during the period from 2018 to 2035. For purposes of this WSA, it is assumed that the new housing under the 2018 GUP would include 550 faculty/staff units and 2,600 student beds. Further description of the 2018 GUP is provided in Section 2.0 below.

Potable water supply for Stanford is provided by the SFPUC. Non-potable supply, which is used primarily for irrigation, is obtained from Stanford's local surface water sources and groundwater wells.

### **1.2 Purpose of Water Supply Assessment**

This WSA is being prepared pursuant to the requirements of Senate Bill 610 (2001). Under this law, a WSA is required for any "project" that is subject to CEQA and that meets certain criteria, including a proposed residential development of more than 500 dwelling units. See Water Code §§ 10910(a), 10912(a). The 2018 GUP is subject to CEQA, and the County is preparing an EIR for the project. Further, the 2018 GUP meets the criteria for preparing a WSA under SB 610, as it will add more than 500 dwelling units in addition to other proposed development. As a result, a WSA is required, and it will be incorporated into the County's EIR for the 2018 GUP.

The purpose of the WSA is to evaluate whether "the total projected water supplies, determined to be available ... for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses." Water Code § 10910(c)(4).

### **1.3 Identification of "Public Water Systems" Serving the Project**

There is no identified "public water system" serving the Stanford campus. As a result, the County, as the CEQA Lead Agency for the 2018 GUP, is responsible for preparation and approval of the WSA. See Water Code § 10910(b), (c)(4).

Stanford University currently has three sources of water supply: (1) water purchased wholesale from the SFPUC, (2) groundwater, and (3) local surface supplies.

The SFPUC acts as a "public water system" with respect to its retail customers in the City and County of San Francisco, but it does not serve as a "public water agency" when it provides water to its wholesale customers (such as Stanford University), who are responsible for supplying water to the ultimate end users. Further, Stanford University, as a private entity that does not

serve the general public, does not constitute a “public water system.” As a result, the County is responsible for preparation and approval of the WSA with respect to potable water provided by SFPUC to Stanford to serve the 2018 GUP Project. As a reference, Figure 1-1 shows the SFPUC Wholesale Service Area.

**Figure 1-1: SFPUC Wholesale Service Area**

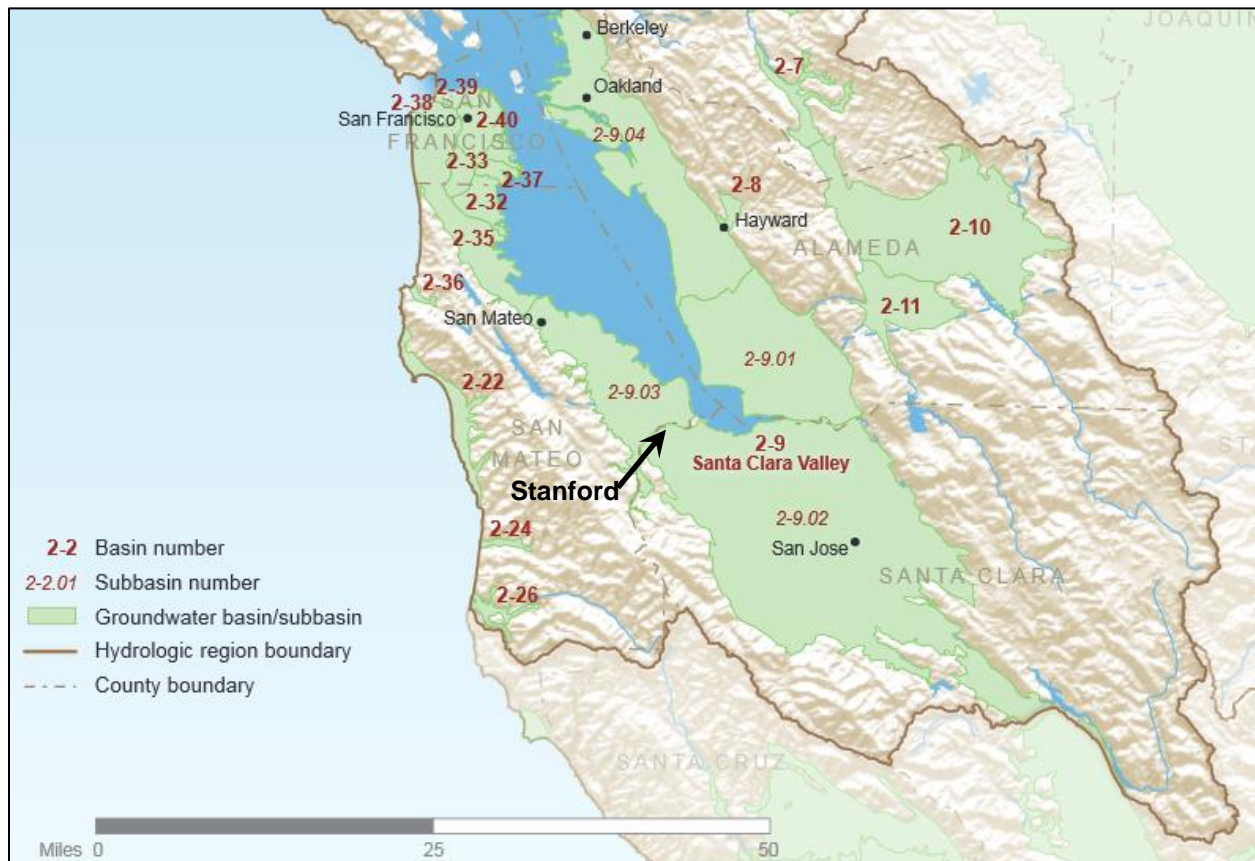


Stanford is Service Area 27, labeled in green. (Source: SFPUC 2015 UWMP)

With respect to groundwater (which is discussed further in Section 4.1.2 below), Stanford operates and maintains five active wells. These wells withdraw groundwater from the San Francisquito Cone, part of the Santa Clara Valley Groundwater Basin. Although the Santa Clara Valley Water District (SCVWD) oversees groundwater resources within the County and assesses a pumping fee for each acre foot of groundwater withdrawn, it does not serve as a “public water system” with respect to Stanford’s withdrawal of groundwater from its campus wells pursuant to its water rights. As a result, the County is responsible for preparation and approval of the WSA

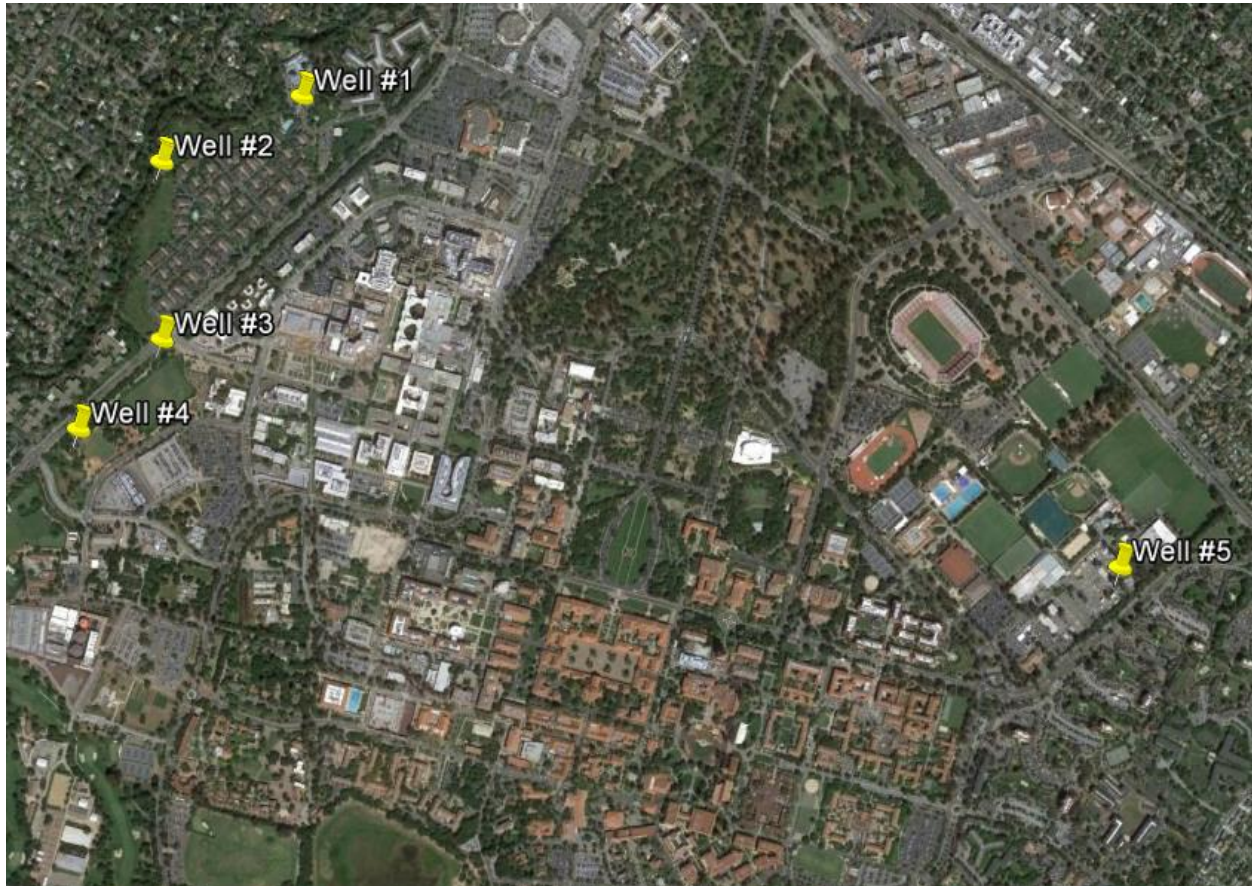
with respect to Stanford's groundwater usage for the 2018 GUP Project. As a reference, Figure 1-2 below shows groundwater basins and subbasins located in the southern portion of the San Francisco Bay Hydrologic Region. Stanford is located in the Santa Clara Valley groundwater basin, at the boundary of the San Mateo Plain and Santa Clara Plain subbasins. Figure 1-3 below shows the location of Stanford's five groundwater wells.

**Figure 1-2: Alluvial Groundwater Basins and Subbasins within the southern San Francisco Bay Hydrologic Region**



Subbasin 2-9.03 is the San Mateo Plain; Subbasin 2-9.02 is the Santa Clara Plain (Source: Bulletin 118)

With respect to local surface supplies (which are discussed in Section 4.1.3, below, and which are depicted in Figure 1-4, below), Stanford has surface water rights and diversion licenses under which it operates two reservoirs: Searsville Reservoir on Corte Madera Creek, and Felt Reservoir adjacent to Los Trancos Creek. These reservoirs are used to provide non-potable supplies for purposes of irrigation and backup fire protection. There is no “public water system” associated with Stanford's exercise of its water rights with respect to these local surface supplies. As a result, the County is responsible for preparation and approval of the WSA with respect to usage of local surface water supplies to serve the 2018 GUP.

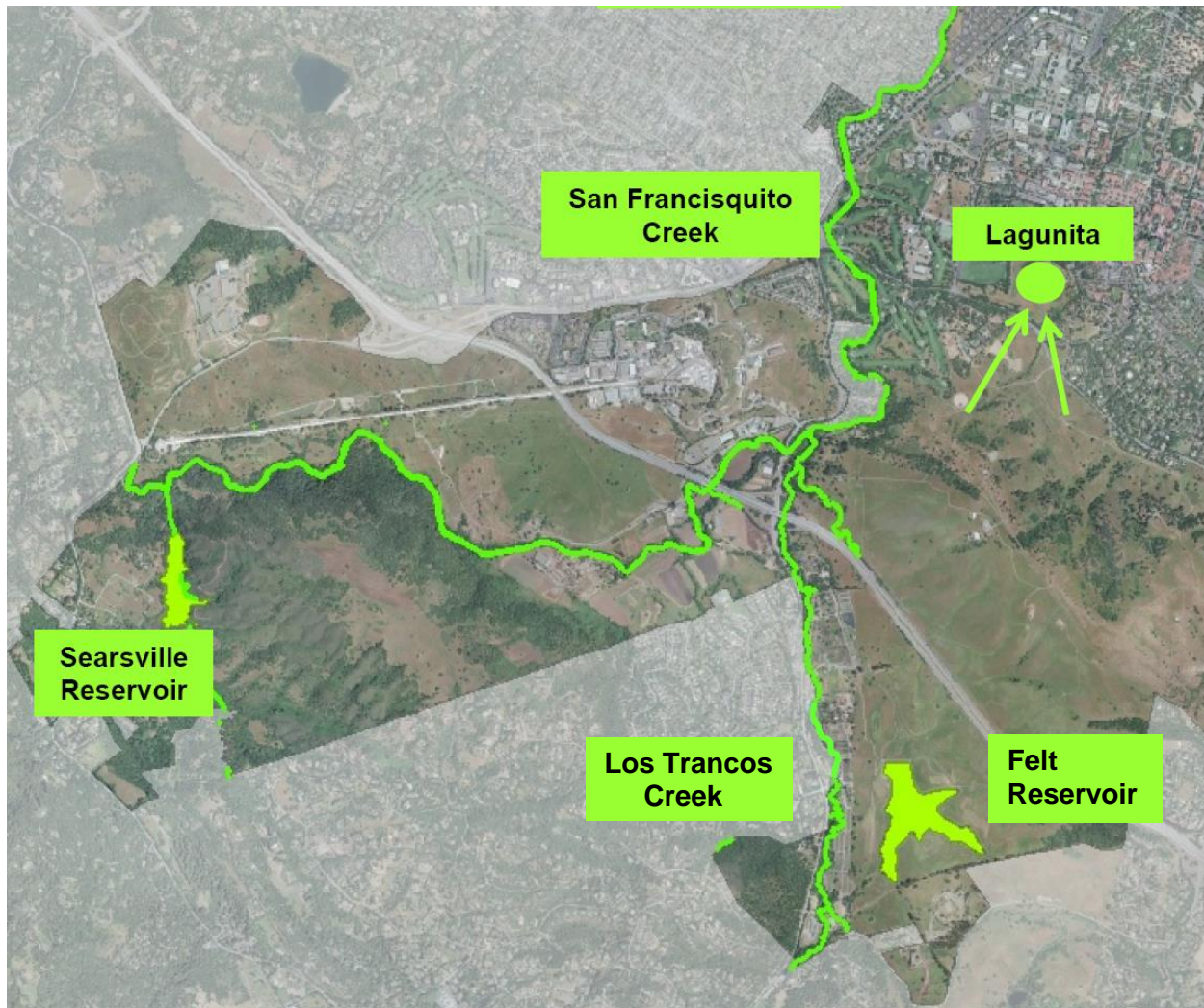
**Figure 1-3: Stanford Groundwater Production Wells**

#### **1.4 Relationship of WSA to SFPUC and SCVWD Urban Water Management Plans**

The California Urban Water Management Planning Act (Water Code §§ 10610-10656) requires urban water suppliers meeting certain criteria to prepare plans (urban water management plans or UWMPs) on a five-year, ongoing basis. An UWMP must demonstrate the continued ability of the provider to serve customers with water supplies that meet current and future expected demands under normal, single dry, and multiple dry year scenarios. These plans must also include the assessment of urban water conservation measures and wastewater recycling. Pursuant to Water Code § 10632, the plans must also include a water shortage contingency plan outlining how the water provider will manage water shortages, including shortages of up to fifty percent (50%) of their normal supplies, and catastrophic interruptions of water supply. Stanford is not required to prepare an UWMP, but it provides usage statistics and demand projections to the SFPUC and SCVWD, who incorporate this data into their respective UWMPs. The SFPUC adopted its 2015 UWMP in June 2016 and the SCVWD adopted its 2015 UWMP in May 2016. The 2015 UWMPs project demands through the year 2040. The 2015 UWMPs do not

specifically address the water demands for the 2018 GUP, which are analyzed in this WSA, but the future water demands projected in those documents are consistent with this study. The SFPUC UWMP includes Stanford's potable water demand projection of 2.40 mgd in 2035 and 2.70 mgd in 2040, while this study projects a potable water demand of 2.44 mgd. The SCVWD UWMP includes Stanford's total water demand projection of 4,300 AFY in 2035 and 4,700 AFY in 2040. This study projects a future total water demand of 4,620 AFY.

**Figure 1-4: Stanford Reservoirs and Creeks**



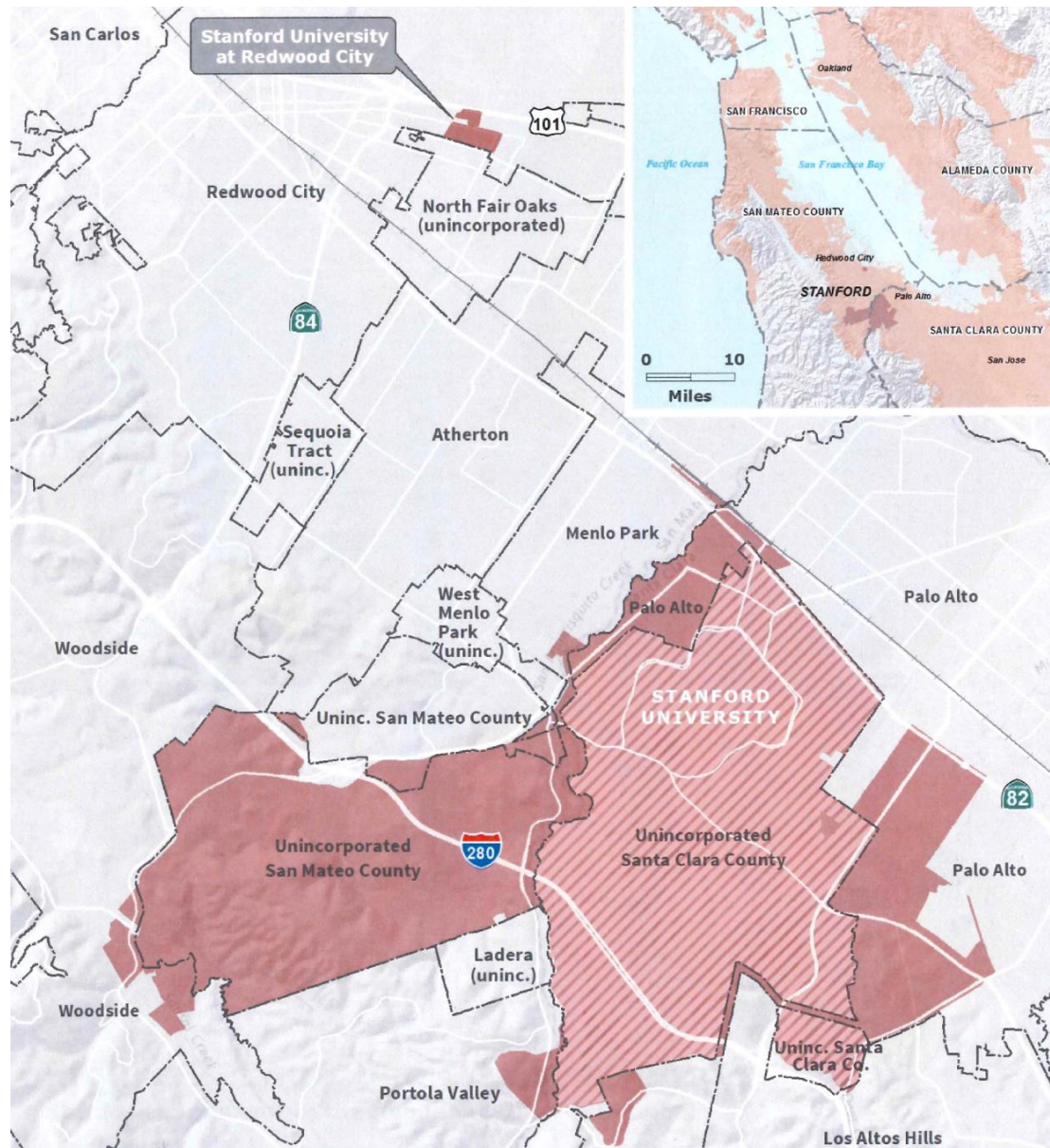
Source: Stanford University, Stanford's Water Resources presentation

## Section 2 - Project Description and Water Demands

### 2.1 Project Description

The Stanford University campus occupies over 8,000 acres of land straddling the San Mateo – Santa Clara County line. Stanford’s main campus is located in Santa Clara County, while other lands are located in the City of Palo Alto, unincorporated San Mateo County, and the cities of Menlo Park, Portola Valley, and Woodside. Stanford also owns discontinuous property in the city of Redwood City (Stanford University at Redwood City). Campus, city, and county boundaries are shown in Figure 2-1.

**Figure 2-1: Stanford University Lands**



*Hatched area shows Stanford lands located in unincorporated Santa Clara County.*



Under the 2018 GUP, Stanford proposes to add 2.275 million gsf of academic and academic support space and 3,150 housing units/beds, of which no more than 550 would be faculty/staff units, during the period from 2018 to 2035. For purposes of this WSA, it is assumed that the new housing under the 2018 GUP would include 550 faculty/staff units and 2,600 student beds. Development will be located in areas within an Academic Campus land use designation, the approximate boundaries of which are Junipero Serra Boulevard, El Camino Real, Sand Hill Road and Stanford Avenue. The 2018 GUP is located on Stanford lands in unincorporated Santa Clara County.

## **2.2 Potable Water Demands**

Potable demands are projected by usage, described below and summarized in Tables 2-1 and 2-2. The analysis uses pre-drought conditions (Fiscal Year 2012-13) as the starting point because this captures pre-project conditions more accurately than subsequent years, during which drought conditions have temporarily but significantly affected campus water usage. Water usage in 2015 is included in other parts of the analysis to provide another point of comparison to the future projected water use under the 2018 GUP.

### **2.2.1 Academic Buildings Potable Water Demands**

As of 2012, Stanford had 9,104,902 square feet (sf) of academic building space. Buildings represent a mixture of classrooms, laboratories, offices and meeting spaces, among other uses, and water use is calculated on a per-square-foot basis. All potable water use is metered, and total annual potable water use for academic facilities in FY2012-13 was 0.66 mgd, or approximately 0.072 gallons/sf/day. This unit demand for potable water use is used to extrapolate from current potable water use to project the future potable water demand resulting from projected academic growth. Note that the potable water demands for academic facilities include both domestic indoor usage, as well as use of potable water for outdoor landscape irrigation for certain academic buildings.

In addition to the 412,603 sf developed between 2012-2015, plus another 769,354 sf scheduled for completion by Fall 2018 pursuant to the prior GUP that was approved in 2000, Stanford proposes to develop 2,275,000 sf of additional academic and academic support space by 2035 under the 2018 GUP. This results in a total potable water demand for academic and academic support space of 0.91 mgd, which represents a water demand increase of 0.25 mgd as compared to FY2012-13 levels.

### **2.2.2 Student Housing Potable Water Demands**

As of 2012, Stanford housed 11,323 undergraduate and graduate students on campus. Student housing is measured in units of “beds” and represents a mixture of medium to high density dormitories and apartment-style units. For the purposes of potable water demand calculations, student housing also includes dining halls and other facilities closely associated with on-campus residential life. All potable water use is metered, and total annual potable water use for student

housing in FY2012-13 was 0.46 mgd, or approximately 40.6 gallons/bed/day. For comparison, California's state indoor water use target is 55 gallons/person/day.

The 2012 unit demand for potable water use is used to extrapolate from current potable water use to project future potable water demand that would result from projected growth. In addition to the 559 student beds developed between 2012-2015, plus another 2,436 beds scheduled for completion by Fall 2018<sup>1</sup>, Stanford proposes to develop 2,600 additional beds of student housing under the 2018 GUP, resulting in a total student housing stock of 16,918 beds and a potable water demand of 0.69 mgd for student housing in 2035. This represents a water demand increase for student housing of 0.23 mgd as compared to FY2012-13 levels.

### **2.2.3 Faculty/Staff Housing Potable Water Demands**

As of 2012, Stanford provided potable water to 937 faculty and staff dwelling units. Units represent a mixture of medium to high density single family homes, townhomes and apartment-style units, and water use is calculated on a per-unit basis. All potable water use is metered, and total annual potable water use for faculty/staff housing in FY2012-13 was 0.52 mgd, or approximately 555 gallons/unit/day. This figure includes both domestic indoor uses, as well as outdoor landscape irrigation. For existing faculty/staff housing that is more urban in nature, little outdoor watering occurs, and per-unit potable water use averages 225 gallons/unit/day.

Unit demand is used to extrapolate from current potable water use to project the future water demand that would result from projected growth. Stanford expects to add 550 additional faculty/staff housing units by 2035 under the 2018 GUP. These units will all be of the higher-density type (i.e., more urban in nature), so a per-unit demand of 225 gallons/unit/day is used for new units. This results in a total potable water demand for faculty/staff housing of 0.64 mgd in 2035, which represents a water demand increase of 0.12 mgd as compared to FY2012-13 levels. This projection may well be conservative, as Stanford may consider using non-potable sources to meet some of the new housing's outdoor landscape irrigation needs, depending on location.

### **2.2.4 Combined Potable Water Demands for Academic Buildings, Student Housing and Faculty/Staff Housing**

Combining projected potable water use for academic development, student housing, and faculty/staff housing results in a potable water demand of 2.24 mgd at buildout of the 2018 GUP Project in 2035, which represents an increase of 0.60 mgd as compared to FY2012-13 levels for these three types of uses. However, as explained in the next section below, improvements to the campus' Central Energy Facility (CEF) that were completed in 2015 are resulting in a significant decrease in water usage to serve campus energy needs. As shown in Table 2-4 below, Energy

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<sup>1</sup> Total includes 1,450 student beds that are beyond the initial 2000 GUP authorization. These beds were approved by the County in March 2016.

systems water demand went from 0.46 mgd in 2012 to 0.18 mgd in 2015, a reduction of over 60%.

### 2.2.5 Energy System Water Demands

Prior to 2012, a significant portion of Stanford's SFPUC water allocation was consumed by the evaporative cooling towers of the campus cogeneration and thermal energy plant (Central Energy Facility, CEF). Between 2012 and 2015, Stanford constructed a new energy facility/system that replaced its CEF as part of the Stanford Energy System Innovations project, a massive capital investment designed to decrease Stanford's carbon footprint by 50 percent, in addition to reducing net energy and water consumption and saving money over the long-term. The project replaced the steam-based campus heating system with a hot-water-based system. Rather than discharging waste heat to the atmosphere through evaporative cooling, the new state-of-the-art CEF recaptures this energy to supply the campus with heat and hot water. Also, the new CEF uses electric chillers to produce chilled water, rather than relying totally on cooling towers and evaporative cooling for this purpose. As a result, energy system water demand has been reduced by over 60% to 0.18 mgd. This savings of 0.28 mgd represents 13% of total baseline (FY2012-13) potable water use. Energy system water demand is projected to reach 0.20 mgd at buildout of the 2018 GUP in 2035.

**Table 2-1: Summary of Existing and Proposed Development**

Water use category	Unit of Measure	Existing development in 2012	Completed development 2012-2015	Projected development 2015-2018	2018 GUP development 2018-2035	Total at Buildout Fall 2035
Academic	sq. ft.	9,104,902	412,603	769,354	2,275,000	12,561,859
Student housing	beds	11,323	559	2,436	2,600	16,918
Faculty/staff housing	dwelling units	937	0	0	550	1,487

**Table 2-2: Summary of Existing and Projected Potable Water Demand**

Water use category	Unit of Measure	Existing development in 2012	Water Use FY2012-13 mgd	Water Use factor gal/day/unit	Buildout total Fall 2035	Water Use at Buildout, mgd
Academic	sq. ft.	9,104,902	0.66	0.072	12,561,859	0.91
Student housing	beds	11,323	0.46	40.6	16,918	0.69
Faculty/staff housing	dwelling units	937	0.52	555	1,487	0.64 **
Energy Systems			0.46	NA		0.20
<b>TOTAL</b>			<b>2.10</b>			<b>2.44</b>

\*\*Calculation of future FSH usage is based on a projected water consumption of 225 gal./unit/day for new FSH units, which will be more urban in nature than the existing FSH development. 225 gal./unit/day is based on current usage statistics for comparable existing FSH units (Olmsted Terrace, Pearce Mitchell, Peter Coutts).

### 2.3 Landscape Irrigation

The proposed development under the 2018 GUP will occur as redevelopment or infill on Stanford's main campus, as it was under the 2000 GUP, rather than new development of presently vacant land. Individual developments associated with the 2018 GUP will have varying effects on landscape irrigation needs, depending on the type of development and what is replaced, which is currently not known. Development that replaces currently landscaped areas with buildings and/or pavement will cause irrigation needs to decrease, whereas similar development that replaces paved surface parking lots or non-landscaped areas with landscaping would require increased irrigation. Therefore, a precise projection regarding future irrigation demand cannot be made at this time. However, as shown in Figure 4-1 (see Section 4.1), while non-potable irrigation usage fluctuates from year to year, over time this usage remained relatively constant as the 2000 GUP was implemented; despite substantial campus growth under the 2000 GUP, non-potable irrigation usage in 2015 was equivalent to such usage in 2000 (approximately 1 mgd). Under the 2018 GUP, Stanford expects that the nature of development will continue similar to past development of the campus, and irrigation demand is therefore not expected to increase more under the 2018 GUP than it did under the 2000 GUP. For the purposes of this WSA, Stanford's irrigation demand is therefore conservatively projected to increase by 10% as a result of the 2018 GUP.

Some areas of the Stanford campus (landscaping around certain academic buildings and throughout the existing FSH area) are irrigated with potable SFPUC water, and this usage is accounted for in the potable water demands section above. However, Stanford currently meets the majority of irrigation demand with non-potable sources derived from local surface and

groundwater. Stanford makes an effort to irrigate with non-potable sources wherever practical (primarily a function of proximity to non-potable water distribution infrastructure). In FY2012-13, Stanford used a total of 1,570 AF for landscape irrigation, or 1.40 mgd on average (see Table 2-3). Of this amount, approximately 0.18 mgd (13%) was potable supply from SFPUC, while 1.23 mgd (87%) came from local sources (surface and groundwater, 0.94 and 0.29 mgd respectively)<sup>2</sup>.

The sources of landscape irrigation water, as well as the total amount used, can differ significantly from year to year. Both the quantity and timing of wet-season rainfall are highly variable, directly affecting both surface water availability and plant irrigation needs. During wet years, Stanford can divert more surface water from local streams, and plant irrigation needs are less than average, particularly if the rainy season extends into the fall or spring. In wet years, Stanford might meet most irrigation needs with surface water, relying very little on groundwater or potable SFPUC supply. In drier years, plants require more irrigation, and streamflows may be too low for Stanford to meet these demands with surface water, which is subject to minimum bypass flows retained in the creeks for passage and habitat; so Stanford pumps additional groundwater to meet its landscape irrigation needs (e.g., FY2013-14). Additionally, conservation-related supply cutbacks of potable water from SFPUC are more likely to occur during periods of drought.

Stanford uses low-water-demand, native plants in many of its landscaped areas. These plants are well adjusted to the region's Mediterranean climate and require little dry-season watering. New landscaping added as part of the 2018 GUP will rely heavily on these plant varieties. As Stanford develops through the 2018 GUP and beyond, landscaping decisions will provide opportunities to reduce irrigation needs or transition to irrigation systems that utilize non-potable water supplies.

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<sup>2</sup> In addition to irrigation, surface water use also includes flow to Lagunita, which provides California tiger salamander habitat and groundwater recharge benefits.

**Table 2-3: Summary of Irrigation Water Use, by Source**

	FY:	2010-11	2011-12	2012-13	2013-14	2014-15
<b>Surface Water</b>	(AFY)	1,019	1,032	1,056	72	-
	(mgd)	0.91	0.92	0.94	0.06	0.00
	% total	84.9%	70.2%	67.3%	5.3%	0.0%
<b>Ground-water</b>	(AFY)	182	238	323	1,142	1,085
	(mgd)	0.16	0.21	0.29	1.02	0.97
	% total	15.1%	16.2%	20.6%	83.4%	88.8%
<b>SFPUC Supply</b>	(AFY)	-	201	191	156	137
	(mgd)	-	0.18	0.17	0.14	0.12
	% total	-	13.7%	12.1%	11.4%	11.2%
<b>TOTAL</b>	(AFY)	<b>1,201</b>	<b>1,471</b>	<b>1,570</b>	<b>1,370</b>	<b>1,221</b>
	(mgd)	<b>1.07</b>	<b>1.31</b>	<b>1.40</b>	<b>1.22</b>	<b>1.09</b>

SFPUC supply quantities are for dedicated irrigation meters only; FSH irrigation use (which is supplied by SFPUC) is not separately metered or reported (*Source: Stanford staff*).

## 2.4 Projected Total Water Demands

The total potable water demand projected with the 2018 GUP is 2.44 mgd, as shown in Table 2-4 below. This represents an 16% increase from the FY2012-13 baseline, but is still 19% below the maximum SFPUC allocation of 3.03 mgd. Total water demands, including non-potable water for landscape irrigation, are projected to increase to 3.79 mgd by 2035, the year of expected 2018 GUP buildout (Table 2-4).

**Table 2-4: Projected Total Water Demands, 2020 – 2035 (mgd)<sup>3</sup>**

Water Use Category	FY2012-13 Actual	FY2015-16 Actual	2020 Projected *	2025 Projected	2030 Projected	2035 Projected
Academic	0.66	0.47	0.74	0.80	0.85	0.91
Student housing	0.46	0.42	0.53	0.58	0.64	0.69
Faculty/staff housing	0.52	0.32	0.56	0.59	0.62	0.64
Energy Systems	0.46	0.18	0.17	0.18	0.19	0.20
<b>TOTAL POTABLE</b>	<b>2.10</b>	<b>1.39</b>	<b>2.00</b>	<b>2.15</b>	<b>2.29</b>	<b>2.44</b>
Landscape (Non-Potable)	1.23	0.81	1.27	1.29	1.32	1.35
<b>TOTAL</b>	<b>3.33</b>	<b>2.20</b>	<b>3.27</b>	<b>3.44</b>	<b>3.62</b>	<b>3.79</b>

\* Assumes normal cooling year in 2020. 2015-16 energy demand reflects energy system conversion during the reporting year.

<sup>3</sup> Landscape demand reflects non-potable demands met by the Lake Water system

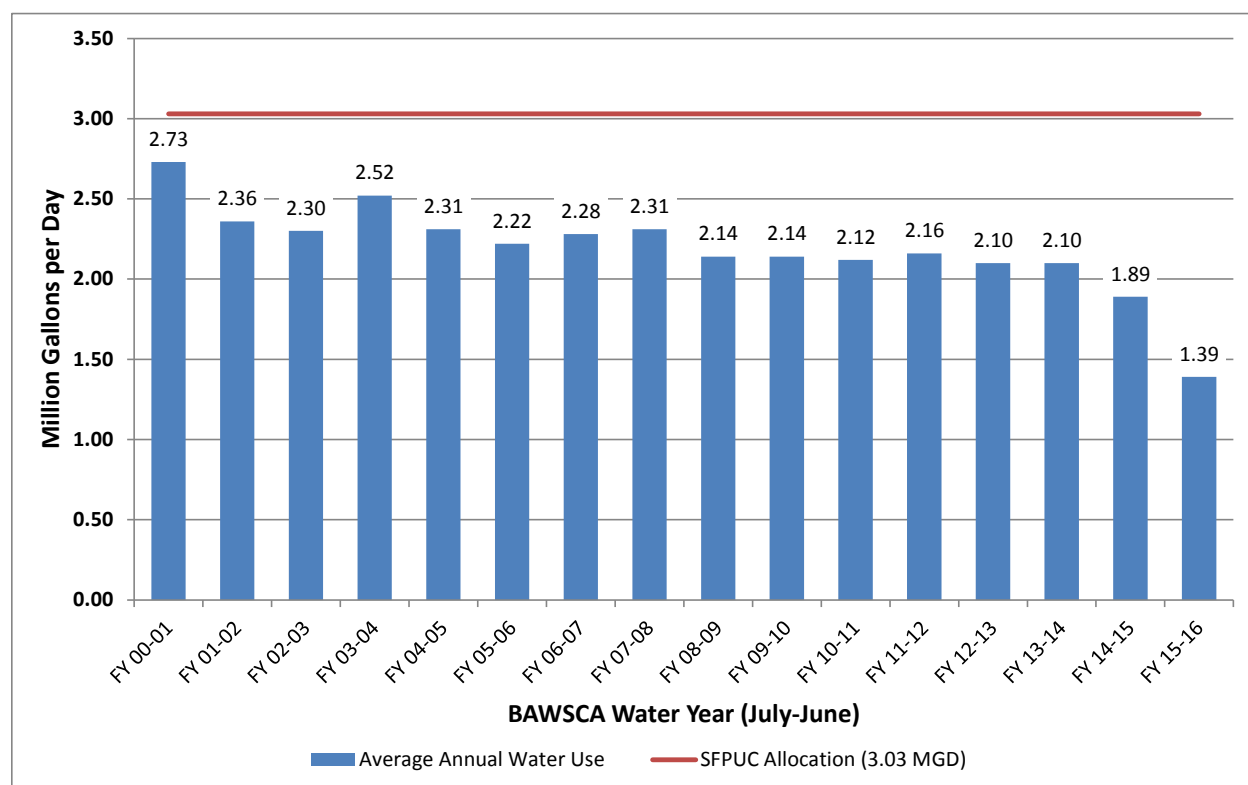
## **Section 3 - Existing Water Demands**

### **3.1 Historic and Current Water Demands**

The SFPUC provides water to its 27 wholesale customers under the terms of a 2009 Water Supply Agreement. Under this Agreement, Stanford holds a long-term “Individual Supply Guarantee” (ISG) of 3.03 mgd overall annual average, which represents approximately 1.6% of SFPUC’s total wholesale deliveries. The 2009 Agreement also contains “Interim Supply Limitations” (ISLs) that are in effect until 2018. Stanford’s ISL under the 2009 Agreement is 2.91 mgd. Thus, Stanford holds an allocation from the SFPUC of 2.91 mgd until 2018 and then an allocation from the SFPUC of 3.03 thereafter. Note that although expressed in units of mgd, both the ISG and ISL are overall annual average targets. Daily or monthly usage may exceed these targets, and this is not uncommon during the summer months.

Figure 3-1 shows domestic water demand at Stanford over the period 2001-2016. During this period, annual average consumption decreased from a maximum of approximately 2.7 mgd in 2001 to 2.1 mgd in 2012-13. This significant reduction has been achieved as a result of a rigorous water conservation program, despite substantial campus growth. As shown in Figure 3-1, annual usage since 2001 has been well below both the ISG of 3.03 and the temporary ISL of 2.91 that took effect in 2009. In FY 2014-15 and FY 2015-16, Stanford further reduced its SFPUC water use to less than 2.00 mgd by implementing the Stanford Energy Systems Innovations Project and additional mandatory conservation measures during the recent drought.

The SFPUC’s 2015 UWMP, SFPUC included projections of future purchase requests from wholesale customers. The UWMP included Stanford’s projection that purchase requests will increase from 2.00 mgd in 2015 to 2.40 mgd in 2035. This study projects a slightly higher demand at 2.44 mgd, which is still well within the limits of Stanford’s ISG and ISL.

**Figure 3-1: Stanford Domestic Water Use, 2001-2016**

Source: Stanford University Water Efficiency Program, compiled from BAWSCA Surveys and SFPUC Invoices

### 3.2 Dry Year Demands

Table 3-1 shows Stanford University's projected water demands and supplies from the SFPUC for normal, single dry, and multiple dry water years, under existing conditions (FY2012-13) and at the buildout of the 2018 GUP Project in 2035.

With respect to dry years, in its 2015 UWMP, the SFPUC advises wholesale customers to anticipate seeing their supply allocations reduced to as low as 83% of normal for a single dry year. In multiple dry year scenarios, supply might be further reduced to 72% of normal. Fiscal Year 2015-16 represented the third year of a multi-year drought, and no such curtailments were actually imposed by SFPUC, but the possibility of supply reductions should nonetheless be taken into account when planning future dry-year demand scenarios. The dry-year supply projections contained in Table 3-1, below, are based on the 83% and 72% planning factors from the SFPUC.



**Table 3-1: Dry-Year Supply and Demand Summary (mgd)**

<b>Supply</b>	<b>Water Year Type</b>				
	<b>Normal Year</b>	<b>Single Dry Year</b>	<b>Multiple Dry Years</b>		
			<b>1</b>	<b>2</b>	<b>3</b>
<b>Potable Supply (SFPUC)</b>					
ISG	3.03	2.51	2.51	2.18	2.18
ISL	2.91	2.42	2.42	2.10	2.10
<b>Surface Water Supply</b>	1.12	0.94	0.94	0.06	0.06
<b>Groundwater Supply</b>	1.52	1.52	1.52	1.52	1.52
<b>Total Supply (ISG)</b>	5.67	4.97	4.97	3.76	3.76
<b>Total Supply (ISL)</b>	5.55	4.88	4.88	3.68	3.68
<b>Baseline Demand</b>					
<b>Potable Demand</b>	2.10	2.11	2.11	1.79	1.58
<i>met by ISL</i>	2.10	2.11	2.11	1.79	1.58
<b>Non-potable Demand</b>	1.23	1.29	1.29	0.98	0.98
<i>met by surface water</i>	1.12	0.94	0.94	0.06	0.06
<i>met by groundwater</i>	0.11	0.35	0.35	0.92	0.92
<b>Total Demand</b>	3.33	3.41	3.41	2.77	2.56
<b>2035 Demands</b>					
<b>Potable Demand</b>	2.44	2.46	2.46	2.07	1.83
<i>met by ISG</i>	2.44	2.46	2.46	2.07	1.83
<b>Non-potable Demand</b>	1.35	1.42	1.42	1.08	1.08
<i>met by surface water</i>	1.12	0.94	0.94	0.06	0.06
<i>met by groundwater</i>	0.23	0.48	0.48	1.02	1.02
<b>Total Demand</b>	3.79	3.87	3.87	3.15	2.91

In Table 3-1, above, water demand increases in a single dry year or the first of multiple dry years due to natural plant irrigation demands increasing by 5%. In multiple dry years, potable demands would be reduced by 15% in the second year and 25% in the third year, reflecting conservation measures that would be implemented to reduce consumption. As shown in Table 2-4, Stanford has been able to achieve these types of reductions in the past. Excluding energy system usage, potable usage totaled 1.64 mgd in FY2012-13 and was reduced to 1.21 mgd in FY2015-16, reflecting a reduction of more than 25%. Stanford accomplished this reduction by replacing older water fixtures in campus residences with low-use models, and by significantly reducing irrigation with potable water. Stanford imposed two-day per week watering with potable water and also modified irrigation practices to avoid waste and cut back on watering of non-functional turf areas.

With respect to non-potable irrigation usage, this demand would be reduced by 20% in the second and third dry years of a multiple dry year scenario. As shown in Table 2-3, as with potable usage, Stanford has been able to achieve such reductions in the past. As shown in this table, non-potable irrigation usage (i.e., local surface water and groundwater supplies) totaled

approximately 1.23 mgd in FY2012-13 and was reduced to 0.97 mgd in FY2014-15, a reduction of more than 20%. As shown in Table 2-4 and Table 5-1, further significant reductions in non-potable usage were achieved in FY2015-16.

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## Section 4 - Water Supply

### 4.1 Current Water Supply

Stanford's primary source of water supply (and only normally utilized potable source) is purchased from the SFPUC under wholesale contract. Stanford has the capability to supplement potable supplies with groundwater if needed. In addition, Stanford uses local surface supplies and groundwater, for non-potable uses, primarily for landscape irrigation. The non-potable distribution system is referred to as the Lake Water System.

#### 4.1.1 SFPUC Water

As described in the previous section, Stanford receives the majority of its total water, and 100% of its current potable water, as a wholesale purchase from the SFPUC. SFPUC's water supply consists primarily of diverted Tuolumne River flows conveyed through the Hetch Hetchy Project (approximately 85% of supply), with local sources making up the remaining 15%. This ratio can be as high as 93%:7% during dry years (*SFPUC 2010 UWMP*). Total SFPUC system storage capacity is nearly 300 billion gallons. During normal years, the SFPUC supplies an average of 256 mgd to its retail and wholesale customers, with 81 mgd being delivered to retail customers and 184 mgd being sold to wholesale providers. Stanford holds an allocation of 3.03 mgd (annual average) from the SFPUC under the current water supply agreement. SFPUC participates in several regional water supply projects to ensure that it can meet dry-year demands with no greater than 20% rationing by its customers.

#### 4.1.2 Groundwater

Stanford has the capability to use groundwater for potable consumption, but at present groundwater is not used for this purpose other than in emergencies. Groundwater currently is used for non-potable uses such as landscape irrigation, and is relied upon most heavily during dry years. Groundwater is pumped into Felt Reservoir for rediversion into the Lake Water System. Of Stanford's total water use between 2010 and 2015, groundwater use (3,500 AF) comprised about 13%.

Stanford maintains five active wells (See Figure 1-3 and Table 4-1). These wells withdraw groundwater from the San Francisquito Cone, a region of the Santa Clara Valley groundwater basin located along the boundary between the Santa Clara Plain and San Mateo Plain subunits. Water-bearing units in the San Francisquito Cone consist of sands and gravels deposited in alluvial fans at the foot of the Santa Cruz Mountains during the Pliocene and lower Pleistocene, which were subsequently covered in alluvium and Bay Mud. The Cone contains both confined and unconfined aquifer units, with water table surfaces generally sloping gently towards San Francisco Bay. Bulletin 118 describes groundwater level trends in both the Santa Clara and San Mateo Subbasins as stable, having largely recovered from 1960s minima thanks to decreased pumpage (many former pumpers now rely on imported surface water deliveries) and increased

recharge. The SCVWD actively manages its water supply portfolio to ensure that groundwater use within the basin remains sustainable, employing methods such as managed groundwater recharge, conjunctive use, local surface water capture and storage, imported water, and recycled water to enhance and supplement groundwater supplies.

Stanford's wells have a combined total pumping capacity of approximately 4,450 AFY. In the most recent reporting year (FY2014-15, BAWSCA Annual Survey), Stanford withdrew a total of 721 AF from these wells. This was a dry year, and on average, Stanford pumps less than this amount (Table 4-2). The Santa Clara Valley groundwater basin has not been adjudicated, is not identified by the Department of Water Resources (DWR) as an overdrafted basin, nor is it projected to enter a state of overdraft. Unpublished internal groundwater modeling studies have indicated that Stanford could withdraw up to 1,700 AFY (1.52 mgd) from its wells without impacting water quality in the aquifer or causing unacceptable impacts (e.g. excessive drawdown, land subsidence, saltwater intrusion).

**Table 4-1: Existing Pumping Capacity**

Well	Year Installed	Location	Estimated Capacity	
			(GPM)	(AFY)
Well 1	1934	Sand Hill Rd.	500	800
Well 2	1936	Sand Hill Rd.	625	1000
Well 3	2003	Sand Hill Rd.	550	900
Well 4	2004	Sand Hill Rd.	525	850
Well 5	1956	Bonair Yard	550	900
<b>TOTAL:</b>			<b>2,750</b>	<b>4,450</b>

Source: Stanford staff

**Table 4-2: Summary of Annual Groundwater Pumping (AF)**

Year	2010	2011	2012	2013	2014	2015	Average 2010-2015
Well 1	33.0	10.0	47.5	53.9	175.1	96.5	69.3
Well 2	53.0	20.3	104.2	98.3	367.5	171.2	135.8
Well 3	150.9	53.2	0.0	214.2	241.8	150.4	135.1
Well 4	92.7	32.2	120.5	74.5	397.3	212.8	155.0
Well 5	3.9	10.8	88.1	76.0	177.2	177.2	88.9
<b>Total Pumped</b>	<b>334</b>	<b>127</b>	<b>360</b>	<b>517</b>	<b>1359</b>	<b>808</b>	<b>584</b>

Source: Stanford Staff (from well meters)

### 4.1.3 Local Surface Water

Stanford holds a combination of riparian and pre-1914 appropriative rights reported under four Statements of Water Diversion and Use (S004660, S004661, S015695, S015696) and one appropriative right licensed by the SWRCB (L001723). These water rights support Stanford's diversion operations from Los Trancos Creek and San Francisquito Creek, two streams that flow

through Stanford lands, which supply Stanford's non-potable Lake Water system. These appropriative water rights date to 1886, 1870, and 1891, and the licensed right was issued in 1937. The rights provide water for recreation, irrigation, stockwatering, and fire protection purposes, and are summarized as follows:

- License 1723 authorizes diversion of up to 900 AFY from Los Trancos Creek and/or the San Francisquito Creek pump station, from December 1 to May 1, to storage in Felt Reservoir, which has a storage capacity of 1,050 acre-feet.
- Statements S015695 and S015696 document pre-1914 appropriative water rights to divert from those same diversion facilities to storage in Felt Reservoir.
- Statement S004660 documents Stanford's pre-1914 appropriative right to impound, divert and store water in Searsville Reservoir (Searsville Reservoir storage capacity has been reduced over time by sedimentation, but this pre-1914 appropriative water right has been exercised downstream at the San Francisquito Creek pump station).
- Statement S004661 authorizes the diversion of water from San Francisquito Creek to Lagunita for recreational and habitat purposes.

Water is impounded seasonally (during periods of high flow) in two reservoirs above campus: Searsville Reservoir on Corte Madera Creek (just above its confluence with Bear Gulch Creek), and Felt Reservoir east of Los Trancos Creek (see Figure 1-4). Water is then drawn from these reservoirs as needed. Because of the way in which waters from multiple sources commingle during diversion and storage, total diversion and usage statistics are reported in aggregate monthly quantities to the SWRCB, on an annual basis. Together, the rights to diverted surface waters can yield over 1,250 AFY (1.12 mgd) to the lake water system. Lake water is not treated to meet domestic water quality standards. It is conveyed to campus via a separate system and used for the purposes of irrigation and backup fire protection. As mentioned in the preceding section, groundwater is also pumped into Felt Reservoir for diversion into the Lake Water distribution system.

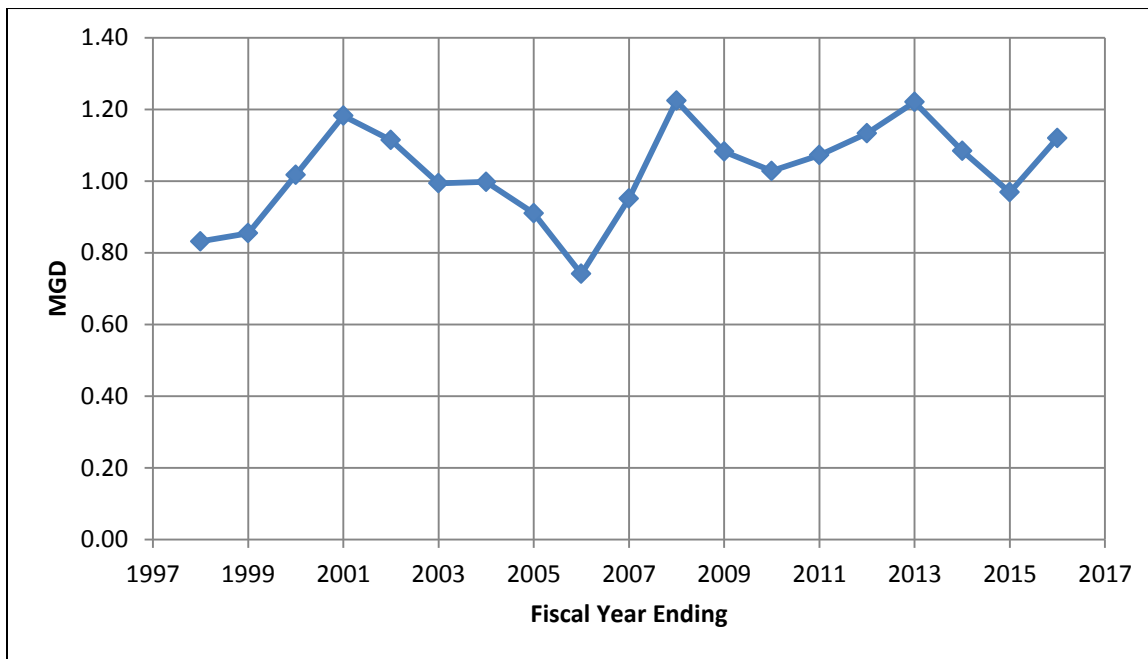
Table 4-3 shows the reported total annual diversions for Stanford's five permits for calendar years 2010 to 2015. Figure 4-1 shows the total Lake Water System use at Stanford for fiscal years 1997-98 to 2015-16, which includes both surface water and groundwater. During this period, total use ranged from a minimum of 0.74 mgd in 2005-06 to a maximum of 1.23 mgd in 2012-13. Average use in the Lake Water System is 1.03 mgd. Maximum monthly use typically occurs during the warm summer months of June through September, when irrigation demands are highest.

**Table 4-3: Surface Water Diversions, 2010-2015 (AF)\***

Year	2010	2011	2012	2013	2014	2015
<b>Total Diverted</b>	918.2	977.5	1004.9	407.0	127.4	85.0

\*Total of all Stanford Water Rights

Source: DWR eWRIMS online Water Rights Records Search database

**Figure 4-1: Annual Lake Water System Use, 1998-2015**

Source: Stanford staff

## 4.2 Future Water Supply

Stanford's overall water supply picture at 2018 GUP buildout in 2035 will be similar to conditions at present. Stanford's potable water supply allocation from SFPUC will increase slightly from 2.91 to 3.03 mgd in 2018, when the ISL expires and the ISG is reinstated. Despite year-to-year variability in the availability of non-potable surface water sources, no long term changes in this supply are anticipated. Likewise, groundwater availability in 2035 should remain similar to today, as trends over the past several decades have shown stable/increasing groundwater levels in the Santa Clara Valley groundwater basin (*Bulletin 118*).

### 4.2.1 Conservation

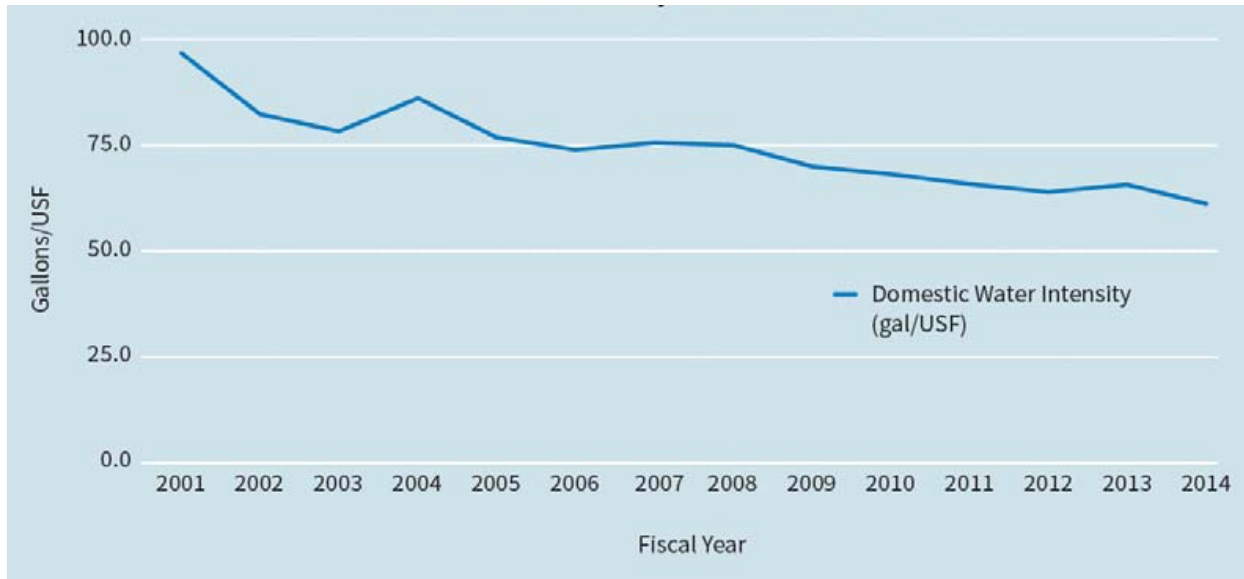
Stanford has an active water conservation program. Following the early 1990s drought, Stanford employed aggressive measures to achieve conservation gains, including landscape and irrigation improvements and the replacement of 5-gallon toilets with low flow models. In its 2003 Water Conservation, Reuse and Recycling Master Plan, Stanford proposed fourteen additional conservation measures, evaluated the benefit and cost of each, and implemented them over the

subsequent years. Today, over twenty such measures are in effect. Examples encompassing various categories include:

- **Plumbing:** Existing fixtures were replaced with lower water use models. For example: Ultra Low Flush toilets, low-flow showerheads, low- or no-flow urinals, high-efficiency washing machines, efficient pre-rinse nozzles in dining facilities, new steam sterilizers (“water misers”) in Gilbert Biology Building.
- **Landscape:** Some existing landscaping has been replaced with water-efficient plants, and these types of plants are now used in new landscaping. Lake water is now used to irrigate the practice football field, select academic areas, and almost all newly landscaped areas. Additional weather-based irrigation controllers (WBICs) have been installed across campus, so that irrigation is applied only as necessary given current weather conditions.
- **Outreach:** Various outreach programs are now in place. Water audits have been conducted on over 50 faculty/staff housing units. A community website features monthly drought and water supply updates and an interactive map of water conservation projects on campus. A conservation video contest was held in 2014.

Following implementation of the Master Plan, potable water use at Stanford has decreased from nearly 2.5 mgd in 2004 to approximately 2.1 mgd in 2012-13, a decrease of 16% (Figure 3-1). By 2015 potable water use had decreased to 1.38 mgd as a result of additional drought conservation measures and Central Energy Plant replacement (SESI), a decrease of nearly 45% relative to 2004. Meanwhile, the population and developed area of the university have continued to grow, and water use intensity on campus (gallons per developed square foot) decreased by 37% between 2001 and 2012-13 (see Figure 4-2 below).

**Figure 4-2: Stanford's SFPUC Domestic Water Use Intensity Trends Since 2001**



USF = usable square foot

(Source: *Sustainability at Stanford, Annual Report to Santa Clara County, Nov. 2014*)



## Section 5 - Supply Sufficiency Analysis

### 5.1 Comparison of Project Demands to Projected Supply

Projected water supply and demand is presented in Table 5-1, below. Based on current usage statistics and conservation achievements, Stanford's current domestic water supply of 2.91 mgd from the SFPUC is sufficient to meet current potable water demands of 2.10 mgd (non-drought conditions), as well as projected year 2035 demands of 2.44 mgd. Likewise, the current non-potable supply of 2.64 mgd from local surface (1.12 mgd) and groundwater (1.52 mgd) sources (see Sections 4.1.2 and 4.1.3 above) is sufficient to meet non-potable demands both now (1.23 mgd) and in the future (1.35 mgd). Total current supplies can adequately sustain the growth proposed in the 2018 GUP through buildout in year 2035.

Buildout of the 2018 GUP is projected to occur in the year 2035. After that date, water use under the 2018 GUP is anticipated to remain constant (i.e., consistent with the 2035 demand projection). Therefore, this water supply assessment concludes that there is adequate existing water supply available over the 20-year projection period.

**Table 5-1: Summary of Projected Demands and Projected Supply (mgd)**

Water use category		FY2012-13 Actual	FY2015-16 Actual	2020 Projected	2025 Projected	2030 Projected	2035 Projected (Next GUP buildout)
DEMAND	Potable	2.10	1.39	2.00	2.15	2.29	2.44
	Non-Potable	1.23	0.81	1.27	1.29	1.32	1.35
	<b>TOTAL</b>	<b>3.33</b>	<b>2.20</b>	<b>3.27</b>	<b>3.44</b>	<b>3.62</b>	<b>3.79</b>
SUPPLY	Potable	2.91	2.91	3.03	3.03	3.03	3.03
	Groundwater	1.52	1.52	1.52	1.52	1.52	1.52
	Surface Water	1.12	1.12	1.12	1.12	1.12	1.12
	<b>TOTAL</b>	<b>5.55</b>	<b>5.55</b>	<b>5.67</b>	<b>5.67</b>	<b>5.67</b>	<b>5.67</b>

### 5.2 Comparison of Project Demands to Projected Supply in Dry Years

Potable water supplied to Stanford by the SFPUC is deemed highly reliable. Storage and redundancy built into the SFPUC system ensure that even during periods of drought, the utility can provide its wholesale customers with at least 80% of their individual supply guarantees.

In single-dry-year scenarios, both at present and at projected 2018 GUP buildout, Stanford's SFPUC allocation remains sufficient to meet all potable demands. Despite the fact that natural plant irrigation demands are higher in dry years, non-potable supply in a single-dry-year scenario remains adequate even without conservation cutbacks (see Table 3-1 in previous section).

In multiple-dry-year scenarios, Stanford would implement demand reduction measures to ensure that Stanford's potable and non-potable water use do not exceed the available supply. As explained above, in multiple dry year scenarios, potable demand would be reduced by 15% in the second year and 25% in the third year, reflecting conservation measures that would be implemented to reduce consumption. These reductions would ensure that Stanford will not exceed a curtailed SFPUC allocation. Such a reduction was successfully implemented during the most recent drought, and similar water savings could likely be achieved in future droughts as well.

Although groundwater supplies are adequate to meet non-potable demand during multi-year drought periods, irrigation demand reduction measures would nonetheless be implemented, similarly reducing non-potable water use by 20% in the second and third years of a multiyear drought.

### **5.3 Plans for Acquiring Additional Water Supplies**

Under the provisions of Section 10911 of the California Water Code, if the water supplier concludes that water supplies will be insufficient for the proposed project, the water supplier shall provide its plans for acquiring additional water supplies. Based on current usage statistics and conservation achievements, Stanford's current domestic water supply is determined to be sufficient to sustain growth proposed in the 2018 GUP to buildout in 2035. Stanford has no plans for acquiring additional water supplies at present.

## **Section 6 - Conclusion**

### **6.1 Sufficiency of Water Supply for the Project**

The analysis in this WSA demonstrates that there will be sufficient water supplies to serve buildout under the 2018 GUP during normal, single dry, and multiple dry years.

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**Appendix A: References**

## Bay Area Water Supply &amp; Conservation Agency

Annual Survey – FY 2006-07, January 2008

Annual Survey – FY 2008-09, January 2010

Annual Survey – FY 2010-11, May 2012

Annual Survey – FY 2011-12, May 2013

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Regional Water Demand and Conservation Projections, Final Report, September 2014

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20x2020 Water Conservation Plan, February 2010.

Bulletin 118, Santa Clara Valley Groundwater Basin, San Mateo Subbasin February 2004

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Bulletin 118, Appendix C – Geology of the San Francisquito Cone Area, May 2003

California Irrigation Management Information System (CIMIS) website,  
[www.cimis.water.gov](http://www.cimis.water.gov)

Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001, October 8, 2003.

Guidebook to Assist Water Suppliers to Prepare a 2010 Urban Water Management Plan, March 2011.

Model Water Efficient Landscape Ordinance, September 15, 2015

California Building Standards Commission, 2010 California Green Building Standards Code,

County of Santa Clara, Stanford University General Use Permit, December 2000

## Santa Clara Valley Water District

Urban Water Management Plan 2010, adopted June 2011

2015 Urban Water Management Plan, adopted June 2016

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2010 Urban Water Management Plan for the City and County of San Francisco, June 2011

2015 Urban Water Management Plan for the City and County of San Francisco, June 2016

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Sustainability at Stanford 2013-2014, Annual Report to Santa Clara County, November 2014

Habitat Conservation Plan, Appendix A: Steelhead Habitat Enhancement Project, January 2007

University of California Cooperative Extension, A Guide to Estimating Irrigation Water Needs for Landscape Plantings in California, August 2000



14 | Biological Resources

*Stanford foothills.  
Photo: Linda A. Cicero, Stanford News Service*

## 14 | Biological Resources

### Summary of Revisions:

This May 2017 version of the Biological Resources technical report replaces the version submitted to Santa Clara County in November 2016. Revisions to the report include:

- In response to peer review comments, a regulatory setting section was added in Section 5.
- Information about Stanford's Habitat Conservation Plan and Special Conservation Area Plan were moved to the regulatory setting section.
- In response to peer review comments, identification of significance criteria and analyses of project impacts were added in Sections 6 and 7.
- Conservation measures previously identified in Appendix B were moved into the impact analyses in Section 7.
- Figure BIO.4 was updated to reflect the 2015 wetland delineation.

## 1.0 AUTHORS

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Dr. Esther Cole Adelsheim

Others<sup>1</sup>

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<sup>1</sup> Sections 5 and 6 were contributed by Barbara Schussman (Perkins Coie). The regulatory setting section is partially based on material from the Lehigh Permanente Quarry Reclamation Plan Amendment EIR, 2011 by ESA.

## 2.0 INTRODUCTION

This technical report addresses potential impacts to biological resources from implementation of the 2018 General Use Permit (or project). The report includes a review of biological community types, wildlife, special status plant species, and jurisdictional waters and wetlands that occur within Stanford's lands in unincorporated Santa Clara County. The report also identifies the federal, state, and local regulations that pertain to biological resources; identifies applicable CEQA significance criteria; and evaluates impacts to biological resources.

Stanford's approach to biological resource conservation is outlined within the Stanford Habitat Conservation Plan (HCP) approved by the United States Fish and Wildlife Service and the Special Conservation Area Plan approved by Santa Clara County. The Stanford HCP covers 4,372 acres of the total 8,180 contiguous acres owned by Stanford (see **Figure BIO.1**). All areas covered by the HCP are located within Santa Clara County. The Special Conservation Area Plan covers 395 acres, of which 73 acres are not specifically included in the HCP.

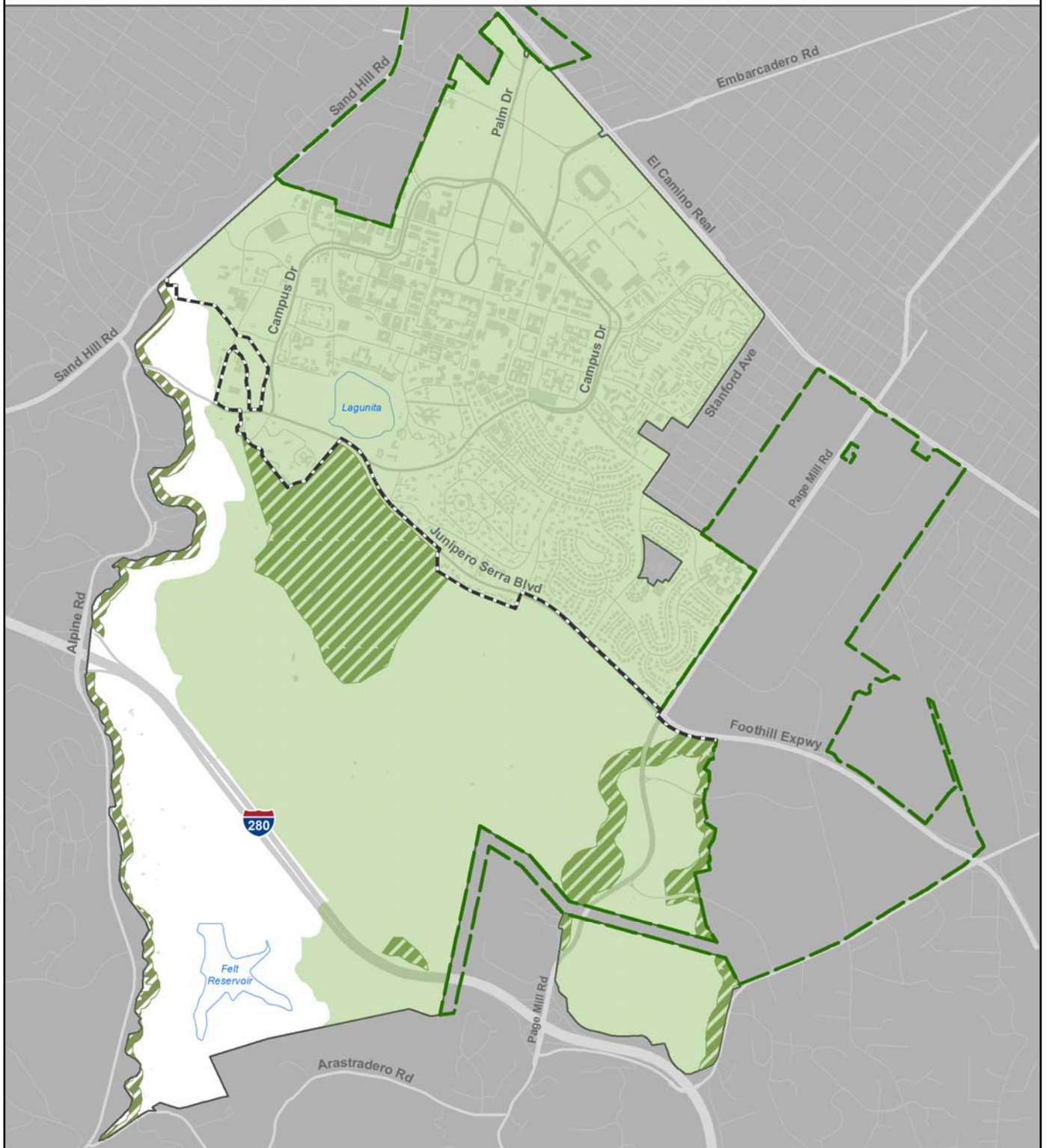
In addition to implementing these two approved conservation plans, Stanford regularly implements the following conditions required by the 2000 General Use Permit:

- Qualified biologists approved by the County conduct pre-construction surveys to prevent impact to active bird nests during construction activities.
- Stanford delineates potential jurisdictional wetlands, receives United States Army Corps of Engineers approval for these wetlands delineations, sites development projects to avoid wetlands to the extent feasible and, where avoidance is not possible, obtains appropriate authorization from the U.S. Army Corps of Engineers or Regional Water Quality Control Board.

Pursuant to 2000 General Use Permit Condition K.1, surveys for special-status plant species have been conducted by independent biologists hired by the County at proposed building project sites located within specified areas of the campus lands. No special-status plant species have been found during these surveys. Accordingly, this report recommends that future plant surveys occur only in the undeveloped portions of the campus: the lands outside the Academic Growth Boundary; the Lathrop Development District; Lagunita and its adjacent uplands, and jurisdictional wetlands.



Figure BIO.1: Habitat Conservation Plan & Special Conservation Areas



- Habitat Conservation Plan Area Within Unincorporated Santa Clara County
- Special Conservation Area Within Unincorporated Santa Clara County
- Habitat Conservation Plan Area Outside Unincorporated Santa Clara County
- Outside the Habitat Conservation Plan management area
- Academic Growth Boundary

Stanford University

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Stanford University, LBRE/LUEP  
November 5, 2016

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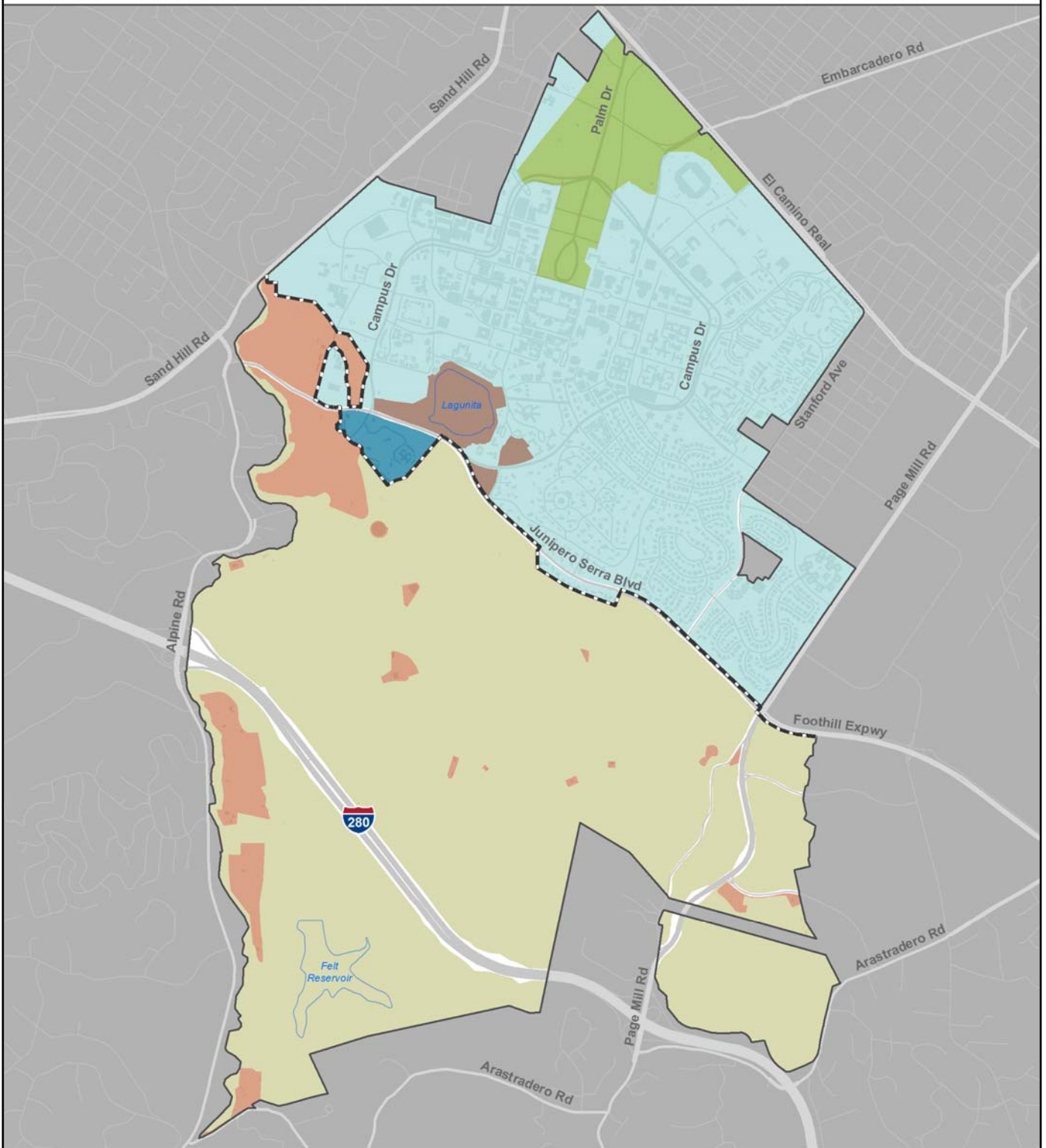
This report recommends the following changes to the 2000 General Use Permit Conditions of Approval:

1. Conditions addressing the California tiger salamander (J1 through J9) are no longer necessary. The County has found that the USFWS-approved Stanford HCP provides as much habitat value and protection for California tiger salamander as the conditions in the 2000 General Use Permit, and therefore supersedes those conditions. Note that the Stanford HCP has received a Consistency Determination from the State of California in 2016, meaning that the HCP and federal Incidental Take Permit, serves as the regulatory document for Stanford's compliance with the State Endangered Species Act (concerning the state-listed California tiger salamander).
2. Updated mitigation measures are proposed to modify and replace the 2000 General Use Permit conditions addressing special status plant surveys and protections (K.1), raptors and migratory birds (K.2), oak woodland (K.3), protected trees (K.4), and wetlands (K.5).
3. Stanford has submitted and the County Planning Office has approved a Special Conservation Area Plan; therefore Condition K.7 is no longer necessary.
4. With regard to Condition K.6, Stanford suggests that the condition should be revised to clarify that Stanford submits California Natural Diversity Database records to the State.

This technical report:

- Describes the biological community types and special-status species that occur on Stanford lands in Santa Clara County outside the Academic Growth Boundary, both in the undeveloped portion of the lands and in the developed portions occupied by the Stanford Golf Course and isolated facilities (see **Figure BIO.2**).
- Describes the biological community types and special-status species that occur on Stanford lands within the Academic Growth Boundary. The lands within the Academic Growth Boundary are divided into four distinct sub-areas (each of which may include wetlands) (see Figure BIO.2):
  - Lathrop Development District
  - Lagunita and its adjacent uplands
  - Arboretum
  - Central Campus.
- Summarizes federal, state and local regulations governing biological resources at Stanford, including Stanford's approved federal Habitat Conservation Plan, with State Consistency Determination, and Special Conservation Area Plan.
- Identifies the standards that are used to measure significance of impacts to biological resources under CEQA.
- Evaluates the potential for implementation of the proposed 2018 General Use Permit to result in significant impacts to biological resources.
- Identifies measures to prevent significant impacts to biological resources caused by implementation of the 2018 General Use Permit.

Figure BIO.2: Biological Resource Areas



Inside the AGB	Outside the AGB
<span style="display: inline-block; width: 15px; height: 10px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Central Campus	<span style="display: inline-block; width: 15px; height: 10px; background-color: #FF8C00; border: 1px solid black; margin-right: 5px;"></span> Developed
<span style="display: inline-block; width: 15px; height: 10px; background-color: #9ACD32; border: 1px solid black; margin-right: 5px;"></span> Arboretum	<span style="display: inline-block; width: 15px; height: 10px; background-color: #F0E68C; border: 1px solid black; margin-right: 5px;"></span> Undeveloped
<span style="display: inline-block; width: 15px; height: 10px; background-color: #8B4513; border: 1px solid black; margin-right: 5px;"></span> Lagunita and adjacent uplands	<span style="display: inline-block; width: 15px; height: 10px; border-top: 1px dashed black; margin-right: 5px;"></span> Academic Growth Boundary
<span style="display: inline-block; width: 15px; height: 10px; background-color: #00008B; border: 1px solid black; margin-right: 5px;"></span> Lathrop Development District	

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November 5, 2016

## 3.0 SETTING: BIOLOGICAL COMMUNITIES OUTSIDE THE ACADEMIC GROWTH BOUNDARY

For purposes of analyzing effects on biological resources, this report divides the campus lands between areas outside the County's approved Academic Growth Boundary and areas within the Academic Growth Boundary. In general, the areas outside the Academic Growth Boundary have greater habitat value for special-status wildlife and plant species; no new buildings are proposed outside the Academic Growth Boundary.

Stanford lands in unincorporated Santa Clara County that are outside the Academic Growth Boundary are designated by the Stanford Community Plan as Open Space and Field Research and Special Conservation Area. Stanford does not propose development of new structures or buildings in these areas. However, as occurred under the 2000 General Use Permit, some infrastructure improvements such as pathways, underground pipelines, electrical transmission lines, water supply infrastructure, habitat enhancements, and similar types of improvements could be constructed outside the Academic Growth Boundary. To understand the various biological community types, lands outside the Academic Growth Boundary are divided into three categories: undeveloped lands; the Stanford Golf Course; and isolated facilities (see Figure BIO.2).

### 3.1 Undeveloped Lands Outside the Academic Growth Boundary

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#### 3.1.1 Annual and Perennial Grassland<sup>2</sup>

Annual and perennial grassland is a community type on Stanford lands outside the Academic Growth Boundary comprised primarily of nonnative annual grasses and forbs. Nonnative species dominating these areas include ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), Italian rye (*Festuca perennis*), wild oat (*Avena fatua* and *A. barbata*), wall barley (*Hordeum murinum*), Italian thistle (*Carduus pycnocephalus*), storksbill (*Erodium* species), bristly ox-tongue (*Helminthotheca echioides*), purple star thistle (*Centaurea calcitrapa*), yellow star thistle (*C. solstitialis*), common groundsel (*Senecio vulgaris*), geranium (*Geranium* species) and milk thistle (*Silybum marianum*). Occasional individual oak trees or small, open-canopied groupings of oaks occur within this community type.

Several native grasses, most notably purple needlegrass (*Stipa pulchra*), form relatively dense patches that are not uncommon in some areas of the grasslands at Stanford. Native forbs that commonly occur within this community include: California poppy (*Escholzia californica*), California buttercup (*Ranunculus californicus*), blue-eyed grass (*Sisyrinchium bellum*), blue dicks (*Dichelostemma capitatum*), Ithuriel's spear (*Tritelia laxa*), yampa (*Perideridia kelloggii*), coyote brush (*Eryngium jepsonii*) and mule's ear (*Wyethia augustifolia*). Occasional individual oak trees or small, open-canopied groupings of oaks occur within this community type.

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<sup>2</sup> Defining and delineating biological communities is a complex and inexact exercise. The communities identified in this document are based on the state's Natural Communities definitions (which incorporate a number of other sources, including the California Native Plant Society). The definitions used by the Stanford Conservation Program are, however, slightly modified from the original sources in order to account for local conditions (primarily species present and spatial extent) and be useful for the University's conservation planning.

Grasslands outside the Academic Growth Boundary at Stanford provide habitat for a diversity of terrestrial wildlife. Amphibians include western toad (*Anaxyrus boreas*), Sierran treefrog (*Pseudacris sierra*) and California tiger salamander (*Ambystoma californiense*). Reptiles include the western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*) and western racer (*Coluber constrictor*).

A variety of bird species are at least seasonally present in the grasslands outside the Academic Growth Boundary at Stanford. Avian seedeaters, including western meadowlark (*Sturnella neglecta*), nest in grazed annual grasslands, while other grassland species, such as red-winged blackbirds (*Agelaius phoeniceus*), are more likely to nest in taller, ungrazed vegetation. Many other species, including American goldfinch (*Carduelis tristis*), California towhee (*Pipilo crissalis*), loggerhead shrike (*Lanius ludovicianus*), and northern mockingbird (*Mimus polyglottos*), nest in scattered shrubs throughout annual grasslands. Raptors, including white-tailed kite (*Elanus caeruleus*), red-tailed hawk (*Buteo jamaicensis*), barn owl (*Tyto alba*), and American kestrel (*Falco sparverius*), nest in nearby trees and forage in grasslands. Burrowing owls (*Athene cunicularia*) have not been observed nesting at Stanford for nearly a century, but overwinter at several locations outside the Academic Growth Boundary at Stanford. Aerial foragers, including northern rough-winged swallow (*Stelgidopteryx serripennis*), tree swallow (*Tachycineta bicolor*), violet-green swallow (*T. thalassina*), cliff swallow (*Petrochelidon pyrrhonota*), barn swallow (*Hirundo rustica*), and white-throated swift (*Aeronautes saxatilis*), also may frequent annual grasslands. Great blue herons (*Ardea herodias*) and great egrets (*A. alba*) frequently are observed foraging in the grasslands outside the Academic Growth Boundary at Stanford.

Small mammals that forage on the plants found in this habitat type include deer mice (*Peromyscus* species), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), California ground squirrel (*Otospermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*). Larger mammals, such as bobcat (*Lynx rufus*), coyote (*Canis latrans*), opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), black-tailed jack rabbit (*Lepus californicus*), and black-tailed deer (*Odocoileus hemionus*), also use the annual grasslands outside the Academic Growth Boundary at Stanford, though other habitats are generally required for cover. Badgers (*Taxidea taxus*) are rarely sighted at Stanford and other areas of the southeastern portion San Francisco Peninsula, but may be increasing in numbers and distribution. Mountain lions (*Felis concolor*) are occasionally reported from the grasslands, riparian zone and woodlands of the lower foothills region.

### 3.1.2 Oak Woodland/Savannah

While oaks grow in abundance across Stanford lands, the only biologically functional oak woodlands/savannahs occur where natural processes, such as regeneration and mortality, are occurring. These natural processes occur in the undeveloped areas outside the Academic Growth Boundary and within parts of the Lathrop Development District within the Academic Growth Boundary. By contrast, while oaks growing within the urban/suburban matrix within the Academic Growth Boundary at Stanford may serve some important functions (i.e., energy savings, atmospheric carbon dioxide reductions, air quality benefits, storm water runoff reductions, food and habitat), the trees within the Academic Growth Boundary are heavily managed to meet the demands of civil infrastructure, aesthetics and public safety. Therefore, it is appropriate to consider the oaks growing in open space outside the Academic Growth Boundary as an oak woodland/savannah community whereas oaks growing within an urban/suburban context should be considered as individual components of an urban forest.

Oak woodland/savannah occurs in a number of locations outside the Academic Growth Boundary at Stanford. This community is dominated by a mix of coast live oaks (*Quercus agrifolia*), blue oaks (*Q.*

*douglasii*), valley oaks (*Q. lobata*), and California buckeye (*Aesculus californica*). Understory species include shrubs such as poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), common snowberry (*Symphoricarpos albus*), blue elderberry (*Sambucus nigra*), western leatherwood (*Dirca occidentalis*), and occasional dense patches of coyote brush (*Baccharis pilularis*) along the edges of the woodland. Common grass species and herbs found beneath the oak woodland canopy include the nonnative species ripgut brome (*B. diandrus*), wide-leaf filaree (*E. botrys*), soft chess (*B. hordeaceus*), Italian rye (*F. perennis*), Italian thistle (*Carduus pycnocephalus*) and soft geranium (*G. dissectum*), as well as native species including bedstraw (*Galium angustifolium*), Indian lettuce (*Claytonia parviflora*), and goldenback fern (*Pentagramma triangularis*). In many instances, nonnative plants dominate the understory vegetation in oak woodlands.

The wildlife typically associated with oak woodland outside the Academic Growth Boundary at Stanford include: bobcat (*L. rufus*), gray fox (*Urocyon cinereoargenteus*), western gray squirrel (*Sciurus griseus*), California ground squirrel (*O. beecheyi*), black-tailed deer (*O. hemionus*), deer mice (*Peromyscus* species), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), broad-footed mole (*Scapanus latimanus*), acorn woodpecker (*Melanerpes formicivorus*), band-tailed pigeon (*Columba fasciata*), northern flicker (*Colaptes auratus*), and western scrub jay (*Aphelocoma californica*). Oak trees and other hardwoods in this community provide shelter, shade and breeding habitat for mammal species such as raccoon (*P. lotor*), striped skunk (*M. mephitis*), and cottontail rabbits (*Sylvilagus audubonii*).

The abundant insect and plant life present in the oak woodlands outside the Academic Growth Boundary provide food for bird species such as white-breasted nuthatch (*Sitta carolinensis*), California thrasher (*Toxostoma redivivum*), bushtit (*Psaltriparus minimus*), oak titmouse (*Baeolophus inornatus*), dark-eyed junco (*Junco hyemalis*), blue-gray gnatcatcher (*Poliophtila caerulea*), Bewick's wren (*Thryomanes bewickii*), spotted towhee (*P. maculatus*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), and ash-throated flycatcher (*Myiarchus cinerascens*). A wide variety of woodpecker species are primary-cavity nesters in oak trees, while house wren (*Troglodytes aedon*), western bluebird (*Sialia mexicana*), and American kestrel (*F. sparverius*) are secondary-cavity nesters (e.g., utilizing abandoned woodpecker cavities). Oak woodland also is important to neotropical migrant songbirds (e.g., warblers, vireos, grosbeaks) providing feeding, resting and nesting habitats. Raptors that nest and forage in the oak woodland habitat include great horned owl (*Bubo virginianus*), barn owl (*T. alba*), western screech-owl (*Otus kennicotti*), red-tailed hawk (*B. jamaicensis*), and red-shouldered hawk (*B. lineatus*). Cooper's hawk (*Accipiter cooperi*), white-tailed kite (*E. leucurus*), and golden eagle (*Aquila chrysaetos*) are additional special-status bird species that have been recorded in woodlands and grasslands of the Stanford foothills.

More than 10 species of bats are common in the Stanford area; individuals of some species roost in tree cavities. Townsend's big-eared bats (*Corynorhinus townsendii*) are occasionally recorded at Stanford and probably utilize local woodlands and riparian areas outside the Academic Growth Boundary on a regular basis, at least for foraging.

Amphibian and reptile species that are found in the oak woodlands outside the Academic Growth Boundary at Stanford include: California tiger salamander (*A. californiense*), western toad (*A. boreas*), Sierran treefrog (*P. sierra*), California slender salamander (*Batrachoseps attenuatus*), arboreal salamander (*Aneides lugubris*), sharp-tailed snake (*Contia tenuis*), ringneck snake (*Diadophis punctatus*), California kingsnake (*Lampropeltis getulus californiae*), gopher snake (*P. catenifer*), western racer (*C. constrictor*), western skink (*Eumeces skiltonianus*), western fence lizard (*S. occidentalis*), and southern alligator lizard (*Elgaria multicarinata*). It is

likely that California red-legged frogs (*Rana draytonii*) regularly traverse many of the oak woodlands outside the Academic Growth Boundary at Stanford.

### 3.1.3 Riparian Woodland and Creeks

Riparian woodland is located along Matadero Creek, Deer Creek and the creeks in the San Francisquito watershed. Vegetation along the creeks consists primarily of a moderately closed canopy of valley oak (*Q. lobata*), coast live oak (*Q. agrifolia*), and California buckeye (*A. californica*) that ranges from approximately 20 to 40 feet in height. Associated species within this community include bay (*Umbellularia californica*), redwood (*Sequoia sempervirens*), willow (*Salix* species) and white alder (*Alnus rhombifolia*). An understory shrub layer occurs beneath much of the riparian canopy, particularly in areas where gaps in the overstory allow direct sunlight. Shrub species present include poison oak (*T. diversiloba*), California rose (*Rosa californica*), blackberry (*Rubus ursinus*), common snowberry (*Symphoricarpos albus*), blue elderberry (*S. nigra*), and coyote bush (*B. pilularis*).

Small clumps of native and nonnative grasses and forbs are present in the understory of the riparian woodland. Aquatic vegetation found intermittently along the creek channels includes water cress (*Rorippa nasturtium-aquaticum*), iris-leaved juncus (*Juncus xiphioides*), broad-leaved cattail (*Typha latifolia*), and curly dock (*Rumex crispus*).

Riparian woodland provides abundant food, cover and breeding habitat for wildlife. Bird species associated with this habitat outside the Academic Growth Boundary at Stanford include California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), orange-crowned warbler (*Vermivora celata*), Nuttall's woodpecker (*Picoides nuttallii*), black phoebe (*Sayornis nigricans*), black-crowned night heron (*Nycticorax nycticorax*), belted kingfisher (*Ceryle alcyon*), western wood-pewee (*Contopus sordidulus*), California towhee (*Melospiza crissalis*), and song sparrow (*Melospiza melodia*). Many birds associated with riparian woodlands nest or roost in riparian trees and feed in adjacent habitat areas, such as annual grasslands. Steller's jay (*Cyanocitta stelleri*) and western scrub jay (*Aphelocoma californica*) are found in abundance in the riparian woodlands outside the Academic Growth Boundary at Stanford, as are California thrasher (*Toxostoma redivivum*), red-tailed hawk (*B. jamaicensis*), Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*B. lineatus*), and sharp-shinned hawk (*Accipiter striatus*). Riparian woodlands also provide important feeding, resting and nesting for neotropical songbirds such as warblers, vireos, grosbeaks and flycatchers.

Common mammals found within this riparian woodland include: black-tailed deer (*O. hemionus*), opossum (*D. virginiana*), raccoon (*P. lotor*), deer mice (*Peromyscus* species), Botta's pocket gopher (*T. bottae*), tree squirrels (*Scirus* species), San Francisco dusky-footed wood rat (*Neotoma fuscipes annectens*), California vole (*M. californicus*), coyote (*C. latrans*), gray fox (*U. cinereoargenteus*), bobcat (*L. rufus*), striped skunk (*M. mephitis*), and the nonnative red fox (*Vulpes vulpes*). Riparian areas at Stanford are used extensively by foraging bats (Evelyn et al. 2004). A number of bat species have been recorded, including: Townsend's big-eared bat (*Corynorhinus townsendii*), red bat (*Lasiurus blossevillii*), hoary bat (*Lasiurus cinereus*), California myotis (*Myotis californicus*), Yuma myotis (*Myotis yumanensis*), long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), big brown bat (*Eptesicus fuscus*), and western pipistrelle (*Pipistrellus hesperus*).

Amphibians and reptiles known to occur in this biotic community outside the Academic Growth Boundary at Stanford include western toad (*A. boreas*), Sierran treefrog (*P. sierra*), California red-legged frog (*Rana draytonii*), arboreal salamander (*Aneides lugubris*), black salamander (*Aneides flavipunctatus*), slender salamander (*Batrachoseps attenuates*), California newt (*Taricha torosa*), rough-skinned newt (*T. granulosa*), Santa Cruz ensatina (*Ensatina eschscholtzi*), California kingsnake (*L. getula californiae*), gopher snake (*P.*



*catenifer*), western night snake (*Hypsoglena torquata*), western fence lizard (*S. occidentalis*), alligator lizard (*Elgaria species*), and western skink (*Plestiodon skiltonianus*). Western pond turtles (*Clemmys marmorata*) are found in Felt Reservoir and in the San Francisquito Creek system.

Native fish recorded from the Matadero and San Francisquito systems include three-spined stickleback (*Gasterosteus aculeatus*), roach (*L. symmetricus*), Sacramento sucker (*Catostomus occidentalis*), and sculpin (*Cottus asper* and *C. gulosus*). Steelhead/rainbow trout (*Oncorhynchus mykiss*) are found locally in the San Francisquito system, but have not been recorded in the Matadero system in recent surveys conducted by Stanford. Hitch (*Lavinia exilicauda*) and Sacramento blackfish (*Orthodon microlepidotus*) have historically been present in the San Francisquito system.

San Francisquito Creek contains one of the few remaining steelhead runs in the San Francisco Bay drainage. Steelhead spawn throughout the San Francisquito Creek system, including those portions that flow through Stanford. The number of steelhead present in the watershed ranges from essentially zero in drought years to several hundred adult fish during wet years. At Stanford, relatively large numbers of parr are typically found in Los Trancos Creek and in a few portions of San Francisquito Creek. Native mussels (*Anodonta* species) are also found scattered across the San Francisquito Creek system.

Nonnative aquatic animals that have been recorded from the creeks outside the Academic Growth Boundary at Stanford include bullfrog (*Lithobates catesbeiana*), green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*), red-ear sunfish (*Lepomis microlophus*), mosquito fish (*Gambusia affinis*), largemouth bass (*Micropterus salmoides*), Louisiana red swamp crayfish (*Procambarus clarki*) and signal crayfish (*Pascifasticus leniusculus*). Bullfrogs are occasionally observed in the Stanford portions of Matadero Creek and Deer Creek; generally, no more than three or four individuals are observed each year (and fewer than 10 bullfrog tadpoles have been encountered in Matadero and Deer creeks since the mid-1990s). Green sunfish are present but uncommon in the unincorporated Santa Clara County portion of Matadero Creek, and are limited in Deer Creek to reaches immediately upstream from its confluence with Matadero Creek (reaches that do not typically dry out). No young-of-the-year green sunfish have been observed in the Stanford portions of Matadero Creek and Deer Creek during annual surveys since 1997, suggesting that juvenile or adult sunfish may be dispersing into either downstream or upstream reaches. During recent annual surveys, only one largemouth bass and one sunfish were observed in the Stanford portion of the Matadero watershed; Louisiana red swamp crayfish are found in Matadero Creek.

Mitten crabs (*Eriocheir sinensis*) have been observed in the San Francisquito watershed. The number of these invasive nonnative crabs in the Stanford portions of the creeks varies each year, and it is unclear if this invasive species is still present in the area. From 1996 to 1998, there were very few observations of crabs upstream of El Camino Real. In 1999 and 2000, hundreds of crabs were seen in San Francisquito Creek, with some individuals found upstream as far as the confluence of Corte Madera and Bear creeks. During 2001 through 2015, very few crabs were observed in the system (and none during the last few years). In 2000, a mitten crab was observed in Matadero Creek, just downstream of the Foothill Expressway bridge (there were mid-1990s reports of mitten crabs at Matadero Creek's outflow into San Francisco Bay). Mitten crabs have not been observed in the areas of the creek that support red-legged frogs, but they could colonize the area in the future. At the present time, the extent and impacts of this recent invasion are unclear.

#### **3.1.4 Chaparral and Scrub**

Chaparral and scrub are present outside the Academic Growth Boundary at Stanford in several locations including the Dish area and small peripheral areas off Alpine Road. This chaparral includes dense stands of

chamise (*Adenostoma fasciculatum*), California sagebrush (*Artemisia californica*), coyote brush (*B. pilularis*), buckbrush (*Ceanothus cuneatus*), yerba-santa (*Eriodictyon californicum*), toyon (*H. arbutifolia*), scrub oak (*Q. berberidifolia*), poison oak (*T. diversiloba*), black sage (*Salvia mellifera*), sticky monkey flower (*Mimulus auranticus*), and California bee plant (*Scrophularia californica*).

Chaparral and scrub outside the Academic Growth Boundary at Stanford provide habitat for a diversity of terrestrial wildlife. Amphibians include western toad (*A. boreas*) and Sierran treefrog (*P. sierra*). Reptiles include western fence lizard (*S. occidentalis*), gopher snake (*P. catenifer*), western racer (*C. constrictor*), and northern Pacific rattlesnake (*Crotalus oregonus oregonus*).

A wide range of mammals and birds can be found in the chaparral and scrub outside the Academic Growth Boundary at Stanford. These are, however, primarily the same species found in the annual grasslands and oak woodlands in the area.

### **3.1.5 Seasonal Wetlands**

The seasonal wetlands outside the Academic Growth Boundary at Stanford include several constructed ephemeral ponds and some small semi-natural seasonal pools scattered across the lower foothills. Rainfall permitting, all of these bodies of water support large numbers of aquatic invertebrates and vegetation.

### **3.1.6 Perennial Standing Water**

Felt Reservoir supports populations of fishes, most of which are nonnative game species such as largemouth bass (*Micropterus salmoides*), black crappie (*Pomoxis nigromaculatus*), sunfish (*Lepomis* species) and catfish (*Ameiurus* species). Felt Reservoir does not provide high-quality habitat for native aquatic species of conservation concern due to the presence of bullfrogs (*L. catesbiana*), the abundance of nonnative fishes, the highly variable water level, and the lack of cover-providing emergent vegetation. However, western toads (*A. boreas*) reproduce in Felt Reservoir and the reservoir provides habitat for waterfowl and foraging areas for bats. In 2015 and 2016, two bald eagles (*Haliaeetus leucocephalus*) were frequently observed foraging at Felt Reservoir; they successfully fledged two young in 2016. Felt Reservoir is used by both migratory and resident birds. Freshwater mussels (likely *Anodonta californiensis* and/or *A. oregonensis*) were present in Felt Reservoir, but have not been documented in the reservoir since the renovation work of 2008. Nonnative Chinese mystery snails (*Cipangopaludina chinensis*) and Louisiana red swamp crayfish (*Procambarus clarkii*) are abundant. Western pond turtles (*Actinemys marmorata*) and nonnative red-eared sliders (*T. scripta elegans*) are also present in Felt Reservoir.

## 3.2 Developed Lands Outside of the Academic Growth Boundary

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### 3.2.1 Stanford Golf Course

The Stanford Golf Course, located outside of the Academic Growth Boundary, contains Riparian Woodland and Creeks (same community type as described in section 3.1.3) as well as an artificial, heavily managed landscape environment potentially used by some native species. The golf course maintains putting and driving greens interspersed with “rough.” The golf course manages the landscape through irrigation, mowing, tree trimming and removal, and rodent trapping. High amounts of human use coupled with active landscape management make the golf course unsuitable for many native plants, vertebrates and invertebrates. However, the golf course is used by a number of native bird species, small mammals, amphibians and native plants. Some native species may thrive at the golf course because they favor the artificially high levels of moisture caused by irrigation, and the relative absence of predators.

The presence of special-status species within the golf course is highly dependent on the specific microhabitat. The creek and riparian areas located within the golf course support steelhead (*O. mykiss*), dusky-footed woodrat (*N. fuscipes*) and Cooper’s hawk (*A. cooperii*). Western pond turtle (*A. marmorata*) has historically been found upstream of the golf course on San Francisquito Creek and therefore may be present. Margins of the golf course, mainly the rough closest to the constructed ponds in the foothills and Lagunita, may occasionally support California tiger salamanders.

Despite use of the golf course by native species, the terrestrial environment present there does not contain the same set of species with the same levels of abundance or functioning processes as Oak Woodland/Savannah or Annual and Perennial Grassland communities found in the undeveloped areas outside the Academic Growth Boundary. Moreover, the rough areas located in the interior of the golf course are partially isolated from other, more natural areas by heavily managed areas of turf and often internally fragmented cart paths and utilities.

### 3.2.2 Isolated Facilities

Outside the Academic Growth Boundary, there are a number of existing facilities associated with civil infrastructure, research, education and agricultural leaseholds, including water reservoirs, solar observatories, caretakers’ residences, etc. The vegetation immediately surrounding the facilities consists of highly managed, mostly nonnative vegetation. Isolated facilities and associated grounds may be occupied by California ground squirrels, deer mice and birds. Occupancy by rodents is controlled through mechanical and chemical methods for human safety and protection of property.

## 4.0 EXISTING BIOLOGICAL RESOURCES WITHIN THE ACADEMIC GROWTH BOUNDARY

All areas within the Academic Growth Boundary are highly altered and their biological conditions reflect a long history of intensive human use. This landscape contains extensive infrastructure and small remnant patches of natural habitat. Some native species are able to survive and reproduce within areas of intensive human use, but many are not. Within the Academic Growth Boundary, fragmented patches of native vegetation and isolated wetlands provide habitat for native species. Remnant habitat patches can resemble the biological communities found in undeveloped lands outside the Academic Growth Boundary. However, these remnant patches tend to be of lower ecological value because they are small and are isolated from more extensive and biologically intact semi-natural areas.

For purposes of describing biological resources, the lands within the Academic Growth Boundary are divided into four distinct geographic sub-areas (see Figure BIO.2): the Lathrop Development District; Lagunita and its adjacent uplands; the Arboretum; and Central Campus. Isolated wetlands can occur throughout this region. All of the Arboretum and most of Lagunita and its associated uplands are designated Campus Open Space; no new buildings would be constructed within these areas under the 2018 General Use Permit. 20,000 net new square feet of academic and academic support spaces could be constructed in the Lathrop Development District. The remainder of the proposed net new academic and academic support space and the proposed housing would be located in the Central Campus, with the potential for some development within the portions of Lagunita and its associated uplands that are not within Campus Open Space. Infrastructure such as pathways, underground pipelines, electrical transmission lines, water supply infrastructure, habitat improvements, and similar types of improvements could be constructed throughout the lands within the Academic Growth Boundary.

### 4.1 Biological communities within the Academic Growth Boundary

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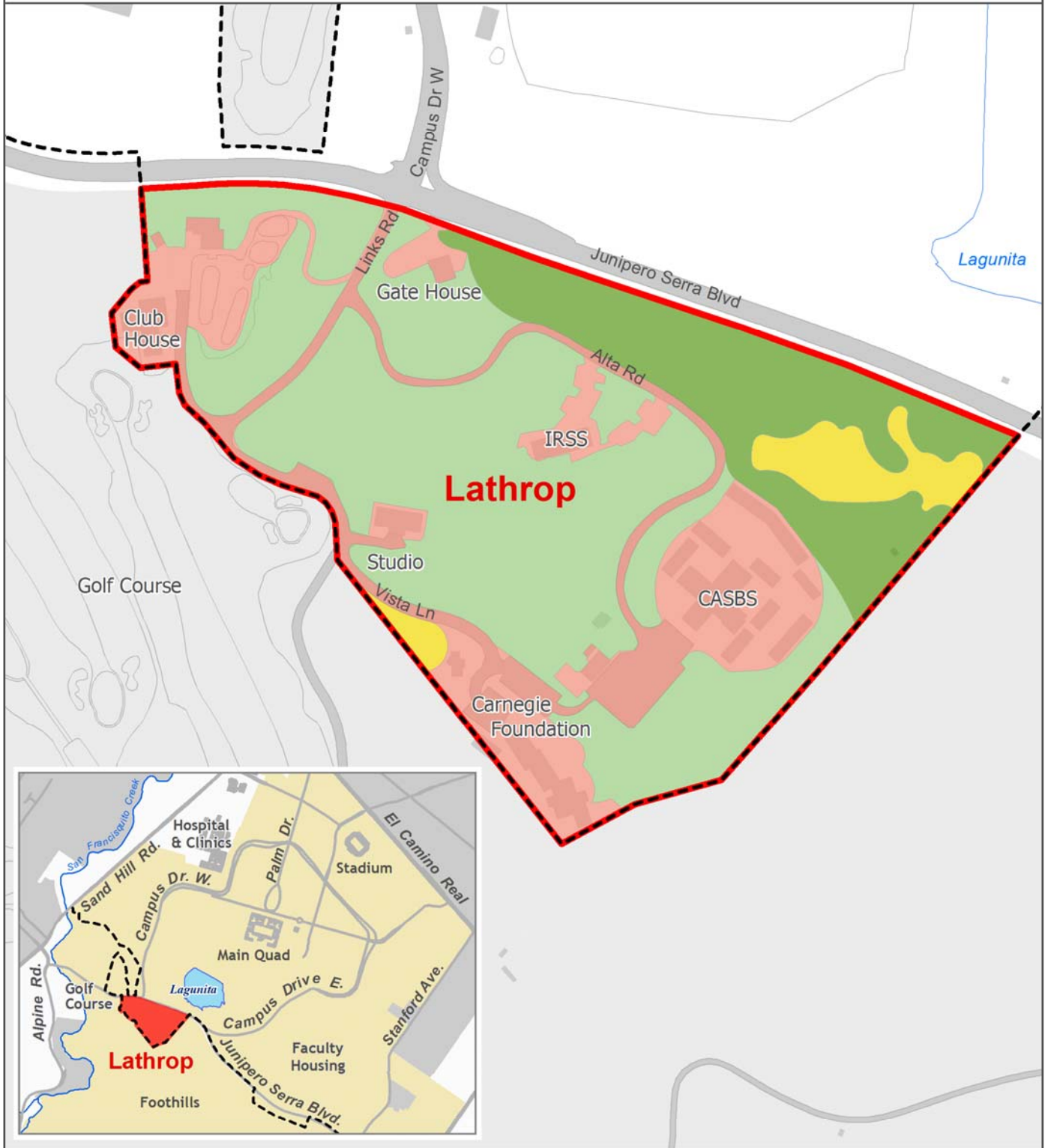
#### 4.1.1 Lathrop Development District

The Lathrop Development District contains a significant proportion of built elements as well as natural elements. The Student Observatory, Carnegie Foundation, the Center for Advanced Study in the Behavioral Sciences, and the Stanford Department of Art & Art History have facilities within the Lathrop Development District.

However, the Lathrop Development District also contains an Oak Woodland/Savannah community (same community type as described in section 3.1.2) with significant abundance of native plant species. **Figure BIO.3** depicts the Oak Woodland/Savannah community within the Lathrop Development District. The Oak Woodland/Savannah community supports California tiger salamander and other native amphibian species. A number of native bird species, including migratory song birds and raptors, also forage and nest in this district.

The Oak Woodland/Savannah community within the Lathrop Development District is dominated by a mix of coast live oaks (*Quercus agrifolia*), blue oaks (*Q. douglasii*), valley oaks (*Q. lobata*), and California buckeye (*Aesculus californica*). Understory species include shrubs such as poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), common snowberry (*Symphoricarpos albus*), blue elderberry (*Sambucus nigra*), western leatherwood (*Dirca occidentalis*), and occasional dense patches of coyote brush (*Baccharis*

Figure BIO.3: Oak Woodlands in the Lathrop Development District



- Annual Eurasian Grassland
- California Buckeye with Scattered Oaks
- Oak Woodland  
(Oak woodland is medium quality near roads and in areas bracketed by development.)
- Developed
- Lathrop Development District
- Academic Growth Boundary

**Stanford University**

0 300 Feet

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April 18, 2017

*pilularis*) along the edges of the woodland. Common grass species and herbs found beneath the oak woodland canopy include the nonnative species ripgut brome (*B. diandrus*), wide-leaf filaree (*E. botrys*), soft chess (*B. hordeaceus*), Italian rye (*F. perennis*), Italian thistle (*Carduus pycnocephalus*) and soft geranium (*G. dissectum*), as well as native species including bedstraw (*Galium angustifolium*), Indian lettuce (*Claytonia parviflora*), and goldenback fern (*Pentagramma triangularis*). In many instances, nonnative plants dominate the understory vegetation in oak woodlands.

The wildlife typically associated with oak woodland within the Lathrop Development District include: bobcat (*L. rufus*), gray fox (*Urocyon cinereoargenteus*), western gray squirrel (*Sciurus griseus*), California ground squirrel (*O. beecheyi*), black-tailed deer (*O. hemionus*), deer mice (*Peromyscus* species), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), broad-footed mole (*Scapanus latimanus*), acorn woodpecker (*Melanerpes formicivorus*), band-tailed pigeon (*Columba fasciata*), northern flicker (*Colaptes aurantus*), and western scrub jay (*Aphelocoma californica*). Oak trees and other hardwoods in this community provide shelter, shade and breeding habitat for mammal species such as raccoon (*P. lotor*), striped skunk (*M. mephitis*), and cottontail rabbits (*Sylvilagus audubonii*).

The abundant insect and plant life present in the oak woodlands provide food for bird species such as white-breasted nuthatch (*Sitta carolinensis*), California thrasher (*Toxostoma redivivum*), bushtit (*Psaltriparus minimus*), oak titmouse (*Baeolophus inornatus*), dark-eyed junco (*Junco hyemalis*), blue-gray gnatcatcher (*Poliophtila caerulea*), Bewick's wren (*Thryomanes bewickii*), spotted towhee (*P. maculatus*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), and ash-throated flycatcher (*Myiarchus cinerascens*). A wide variety of woodpecker species are primary-cavity nesters in oak trees, while house wren (*Troglodytes aedon*), western bluebird (*Sialia mexicana*), and American kestrel (*F. sparverius*) are secondary-cavity nesters (e.g., utilizing abandoned woodpecker cavities). Oak woodland also is important to neotropical migrant songbirds (e.g., warblers, vireos, grosbeaks) providing feeding, resting and nesting habitats. Raptors that nest and forage in the oak woodland habitat include great horned owl (*Bubo virginianus*), barn owl (*T. alba*), western screech-owl (*Otus kennicotti*), red-tailed hawk (*B. jamaicensis*), and red-shouldered hawk (*B. lineatus*). Cooper's hawk (*Accipiter cooperi*), white-tailed kite (*E. leucurus*), and golden eagle (*Aquila chrysaetos*) are additional special-status bird species that have been recorded in woodlands and grasslands near the Lathrop Development District.

More than 10 species of bats are common in the Stanford area; individuals of some species roost in tree cavities. Townsend's big-eared bats (*Corynorhinus townsendii*) are occasionally recorded at Stanford and probably utilize local woodlands within the Lathrop Development District on a regular basis, at least for foraging.

Amphibian and reptile species that are found in the oak woodlands within the Lathrop Development District include: California tiger salamander (*A. californiense*), western toad (*A. boreas*), Sierran treefrog (*P. sierra*), California slender salamander (*Batrachoseps attenuatus*), arboreal salamander (*Aneides lugubris*), sharp-tailed snake (*Contia tenuis*), ringneck snake (*Diadophis punctatus*), California kingsnake (*Lampropeltis getulus californiae*), gopher snake (*P. catenifer*), western racer (*C. constrictor*), western skink (*Eumeces skiltonianus*), western fence lizard (*S. occidentalis*), and southern alligator lizard (*Elgaria multicarinata*). It is very unlikely that California red-legged frogs (*Rana draytonii*) regularly traverse the oak woodlands within the Lathrop Development District.

#### 4.1.2 Lagunita and its adjacent uplands

The area designated as Lagunita and its adjacent uplands includes a seasonal wetland and a mix of plant and animals in what Stanford terms “adjacent uplands.”

The wetlands at Lagunita are biologically important and support a wide range of native and non-native plant and animal species. These ephemeral wetlands support two species covered under the Habitat Conservation Plan: California tiger salamander and a population of an intergrade form of the common gartersnake (*Thamnophis sirtalis*). Plant species are abundant in the Lagunita wetlands and include a mix of native and non-native species, including: northern water plantain (*Alisma triviale*), narrowleaf milkweed (*Asclepias fascicularis*), hen-fat (*Atriplex prostrata*), pale spikerush (*Eleocharis macrostachya*), fringed willowherb (*Epilobium ciliatum*), toad rush (*Juncus bufonius*), California grey rush (*Juncus patens*), alkali mallow (*Malvella leprosa*), longroot smartweed (*Persicaria amphibia*), Harding grass (Phalaris aquatic), common knotgrass (*Polygonum aviculare*), annual beard-grass (*Polypogon monspeliensis*), Himalayan blackberry (*Rubus armeniacus*), and common cocklebur (*Xanthium strumarium*).

Several amphibian species commonly reproduce in Lagunita, including California tiger salamander (*A. californiense*), western toad (*A. boreas*), and Sierran treefrog (*P. sierra*). Reptiles commonly found in the reservoir include Pacific gopher snake (*P. catenifer*), western racer (*C. constrictor*), western fence lizard (*S. occidentalis*), and southern alligator lizard (*Elgaria multicarinata*). The intergrade gartersnake (*Thamnophis sirtalis*) is only rarely observed in Lagunita. While there are historic records of California red-legged frogs in Lagunita, Stanford knows of no reports or specimens of the protected amphibian in the reservoir since 1956 (and no red-legged frogs have been seen at Lagunita during the intensive annual work on California tiger salamanders which began in the early 1990s).

Few bird species regularly nest within the actual seasonal wetland, but many bird species forage at the site. Species which regularly nest there include: killdeer (*Charadrius vociferous*), red-winged black birds (*Agelaius phoeniceus*), American coots (*Fulica americana*), and mallard ducks (*Anas platyrhynchos*). The list of species that at least occasionally forage at Lagunita includes virtually all the bird species regularly found at Stanford. Bird foraging at Lagunita, however, is seasonal; when there is water in the reservoir, many birds forage at the site; when the reservoir is dry, far fewer birds can be observed at Lagunita.

Other common wildlife in the reservoir proper include California voles (*Microtus californicus*), Botta's pocket gopher (*Thomomys bottae*), mice (mainly *Peromyscus* species), and black-tailed jackrabbit (*Lepus californicus*).

The upland areas adjacent to Lagunita are varied and include species found in grasslands, oak woodlands/savannahs, and riparian zones. The upland areas associated with Lagunita provide habitat for small mammals, including California ground squirrel (*Otospermophilus beecheyi*), jack rabbit (*Lepus californicus*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). Coyote (*Canis latrans*) and black-tailed deer (*O. hemionus*) are also occasionally found in these upland areas. Native amphibians and reptiles found in these uplands, include: western toad (*A. boreas*), Sierra treefrog (*P. sierra*), western racer (*C. constrictor*) and Pacific gopher snake (*P. catenifer*).

Plant species found in these uplands are numerous and include a large mix of native and non-native shrubs, trees, and annual and perennial grassland species. A partial list of the plant species found in this area includes acacias (*Acacia* species), buckeye (*Aesculus californica*), fiddleneck (*Amsinckia menziesii*), burr chervil (*Anthriscus caucalis*), slender wild oat (*Avena barbata*), common wild oat (*Avena fatua*), Coyote bush (*Baccharis pilularis*), California brome (*Bromus carinatus*), ripgut brome (*Bromus diandrus*), soft cheat

(*Bromus hordeaceus*), compact brome (*Bromus madritensis*), Italian thistle (*Carduus pycnocephalus*), valley tassels (*Castilleja attenuata*), owl's clover (*Castilleja densiflora*), purple starthistle (*Centaurea calcitrapa*), bindweed (*Convolvulus arvensis*), beaked hawk-beard (*Crepis vesicaria*), teasel (*Dipsacus sativus*), blue wild rye (*Elymus glaucus*), creeping wild rye (*Elymus triticoides*), redstem filaree (*Erodium cicutarium*), Italian ryegrass (*Festuca perennis*), bristly oxtongue (*Helminthotheca echioides*), toyon (*Heteromeles arbutifolia*), shortpod mustard (*Hirschfeldia incana*), wild barley (*Hordeum marinum* and *Hordeum murinum*), smooth cat's ear (*Hypochaeris glabra*), birdsfoot trefoil (*Lotus corniculatus*), scarlet pimpernel (*Lysimachia arvensis*), hyssop loosestrife (*Lythrum hyssopifolia*), man-root (*Marah fabacea*), olive (*Olea europaea*), frogfruit (*Phyla nodiflora*), live oak (*Quercus agrifolia*), blue oak (*Quercus douglasii*), valley oak (*Quercus lobata*), wild radish (*Raphanus sativus*), dock (*Rumex crispus*, *Rumex pulcher*, *Rumex salicifolius*), milk thistle (*Silybum marianum*), purple needlegrass (*Stipa pulchra*), poison oak (*Toxicodendron diversilobum*), California bay tree (*Umbellularia californica*), and periwinkle (*Vinca major*).

Lagunita and its adjacent uplands are abutted by developed areas: on two sides by student residences, on one side by a golf driving range and on a fourth side by a major road. As noted below in describing the Central Campus sub-area, the developed landscape is capable of supporting and sustaining some native biodiversity. However, the developed environment poses several threats to the survival and persistence of native biodiversity, and is a difficult "neighbor" for Lagunita and its adjacent uplands.

#### **4.1.3 Arboretum**

The Arboretum is embedded within an urban matrix and used as for recreation and overflow parking for Stadium events. The trees are trimmed to maintain line of sight for public safety and the area is mowed and disked for fire safety. Eucalyptus trees and oaks dominate the overstory plant assemblage while the understory plants are mostly nonnative annual Eurasian grasses. The Arboretum also hosts the Arizona Garden. The Arizona Garden was designed for Jane and Leland Stanford by landscape architect Rudolf Ulrich between 1881 and 1883. The garden includes selections from the cacti family (Cactaceae) including columnar, barrel and monstrose forms. The garden also contains selections of succulents, including aloes (Aloaceae), crassulas (Crassulaceae) and rosette-forming agaves (Agavaceae). The Arboretum is a highly managed landscape, and has been for more than 100 years. This artificial landscape feature does not contain the natural community types described in section 3.

Wildlife, including jack rabbits, striped skunk, raccoons, western fence lizards and raptors, may be found within the Arboretum. However, while it does have some biological value, the Arboretum does not function as a natural area. Successful reproduction by many native species of plants, amphibians, birds, reptiles and small mammals is very limited in this area due to the ongoing active maintenance of the area, the high abundance of mesopredators (raccoons, skunks and opossums), and human disturbance. Tree-nesting birds, however, do frequently nest in the Arboretum.

See sections 4.2.1 and 4.2.2 for a full description of wildlife and bird species that may be present within all of the Stanford lands within the Academic Growth Boundary, including the Arboretum.

#### **4.1.4 Central Campus**

The lands within the Academic Growth Boundary include both native and nonnative vegetation. Vegetation consists of remnant stands of native species, such as oaks, as well as nonnative trees (primarily eucalyptus), annual grasslands and ornamental landscape plants. In this area, many species native to the region have been planted as part of the ornamental, and drought-resistant, landscaping. The Central Campus is a highly modified and management landscape. This area does provide some very limited value to wildlife,



predominately providing nest locations for birds and roosts for bats, does not contain the natural community types described in Section 3. In general, the extensively built Central Campus is an inhospitable landscape for native species of plants and non-flying animals. Dispersal of California tiger salamanders (*A. californiense*) from Lagunita downslope to the developed campus lands is not impossible, but their successful return migration is highly unlikely due to the high density of buildings, roads, drains, curbs, retaining walls and stairs. California tiger salamanders have limited climbing abilities; therefore, relatively short features, such as curbs and stairs, present barriers to dispersal. The developed campus lands have long been considered a population sink for tiger salamanders. For this reason, the Stanford HCP focuses conservation efforts on Lagunita and the lands outside the Academic Growth Boundary.

Native and introduced animals that are tolerant of human activities can thrive in urban landscapes. These species include: western fence lizard (*S. occidentalis*), southern alligator lizard (*Elgaria multicarinata*), northern mockingbird (*M. polyglottos*), barn swallow (*H. rustica*), raccoon (*P. lotor*), striped skunk (*M. mephitis*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), eastern gray squirrel (*S. carolinensis*), fox squirrel (*S. niger*), house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), black rat (*Rattus rattus*), and opossum (*D. virginiana*).

See sections 4.2.1 and 4.2.2 for a full description of wildlife and bird species that may be present within all of the Stanford lands within the Academic Growth Boundary, including the Central Campus.

#### **4.1.5 Jurisdictional Waters and Wetlands**

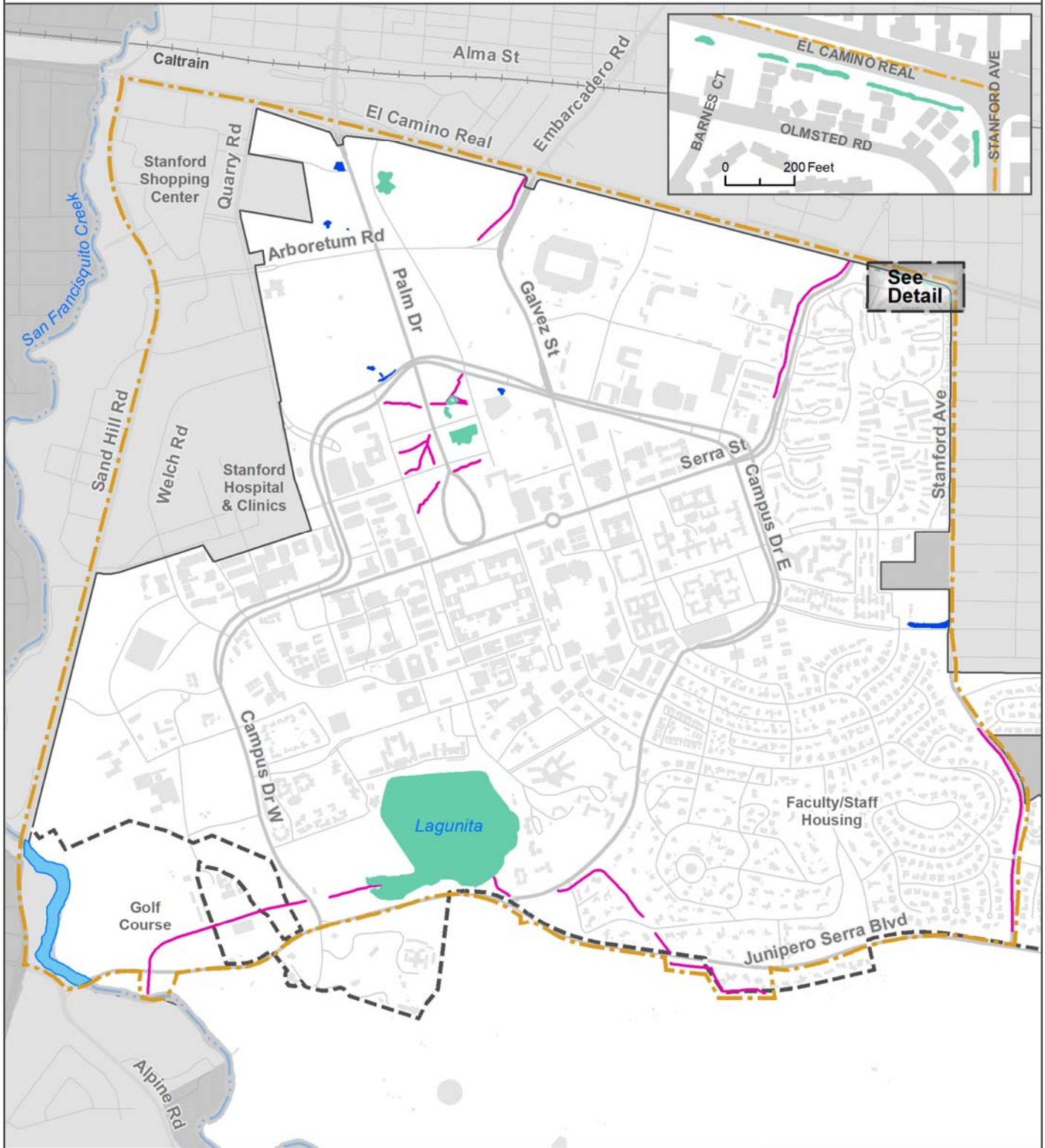
Nearly all of the area within the Academic Growth Boundary has been assessed for the presence of jurisdictional waters and wetlands. The latest delineations<sup>3</sup> indicate 36.6 acres of jurisdictional wetlands, 8.19 acres of jurisdictional waters and 0.781 acre of isolated wetlands within the Academic Growth Boundary, as shown on **Figure BIO.4**. Of the 36.6 acres of jurisdictional wetlands, 34.75 acres are in the HCP's 50-year no-build zone and therefore cannot be developed under the 2018 General Use Permit. Another 0.88 acre of jurisdictional wetlands is located within the Campus Open Space designation where new structures are prohibited.

Jurisdictional waters and wetlands within the Academic Growth Boundary are used by water birds, wildlife seeking water sources, aquatic invertebrates, and native wetland plants. The only special-status species located within the jurisdictional waters and wetlands within the Academic Growth Boundary are found within the Lagunita basin, described in section 4.1.2.

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<sup>3</sup> Wetland delineations at Stanford are conducted by independent consultants under contract to the University's Department of Sustainability and Energy Management.

Figure BIO.4: Jurisdictional Waters and Wetlands within the AGB



- Jurisdictional Determination, U.S. Army Corps of Engineers (2015)
- Jurisdictional Waters
  - Jurisdictional Wetland
  - Isolated Wetland
  - Jurisdictional Waters
  - - - Extent of Verification
  - - - Academic Growth Boundary (AGB)

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0 1,600 Feet

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May 24, 2017

## 4.2 Special-Status Species Within the Academic Growth Boundary

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### 4.2.1 Wildlife

**Appendix A** provides a summary table of species of conservation concern that are often indicated as being potentially from the Stanford area by a variety of public and Stanford sources. Specifically, the table includes species identified by California Department of Fish and Wildlife's online Rarefind (CNDDDB) data searches and by Stanford databases. The species included are species that have the potential to be found within the Academic Growth Boundary at Stanford, with annotations regarding the likelihood of the presence of these species based on decades of monitoring activities at Stanford. Of the special-status species identified through Rarefind and from Stanford records, California tiger salamander (*Ambystoma californiense*) and the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) are present within the Academic Growth Boundary. Mitigation for impacts to California tiger salamanders occurs through the Stanford Habitat Conservation Plan; Stanford has incidental take authorization for impacts to this species from existing and future campus development, operations and maintenance. Measures to address potential impacts to the San Francisco dusky-footed woodrat are discussed in section 7.

### 4.2.2 Birds

Many species of raptors are frequently observed at Stanford, including within the Academic Growth Boundary. Peregrine falcons (*Falco peregrinus*) have been observed within the Academic Growth Boundary but, despite persistent rumors, they have never been documented to nest within the Academic Growth Boundary. Western burrowing owl (*Athene cunicularia*), bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus cyaneus*) and golden eagle (*Aquila chrysaetos*) have been observed regularly outside of the Academic Growth Boundary, and occasionally fly over the lands within the Academic Growth Boundary. However, nesting of these species has never been observed within the Academic Growth Boundary. Many of the more regionally common species of raptors, including red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*B. lineatus*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*A. striatus*), American kestrel (*Falco sparverius*), barn owl (*Tyto alba*), and great horned owl (*Bubo virginianus*) do frequently nest within the Academic Growth Boundary.

In addition to the above-mentioned raptors, many bird species covered by the federal Migratory Bird Treaty Act nest at Stanford, including on many portions of the lands within the Academic Growth Boundary.

### 4.2.3 Bats

The bats historically found on Stanford lands include California bat (*Myotis californicus*), western small-footed bat (*Myotis ciliolabrum*), Yuma bat (*Myotis yumanensis*), little brown bat (*Myotis lucifugus*), long-legged bat (*Myotis volans*), fringed bat (*Myotis thysanodes*), long-eared bat (*Myotis evotis*), silver-haired bat (*Lasionycteris noctivagans*), western pipistrelle (*Pipistrellus hesperus*), desert red bat (*Lasiurus blossevilli*), hoary bat (*Lasiurus cinereus*), Townsend's long-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), Mexican free-tailed bat (*Tadarida brasiliensis*), western mastiff bat (*Eumops perotis*), and big free-tailed bat (*Nyctinomops macrotis*). Breeding records are sparse. However, pallid bat (*Antrozous pallidus*) has historically had a maternal site on campus within the Academic Growth Boundary (but this maternal roost has not been documented to be active for many years).

#### 4.2.4 Others

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), a California species of special concern, is found within the Academic Growth Boundary, primarily in the Lathrop Development District and at Lagunita and its adjacent uplands. However, woodrats can be found across the lands within the Academic Growth Boundary (but are uncommon in many of the more managed areas of campus). San Francisco dusky-footed woodrats are abundant in many areas outside of the Academic Growth Boundary.

#### 4.2.5 Special-status Plants

For most areas within the Academic Growth Boundary, the types and abundance of native plant species has been heavily manipulated through a combination of agricultural use, seeding of “wildflower” mixes, landscape planting, disking, mowing, fertilization, irrigation, and soil compaction. Decades of research on plants, often occurring in “experimental” areas adjacent to academic buildings, has also resulted in the unintentional release of numerous species of native and non-native plants. While it is possible that virtually any Mediterranean climate dwelling plant might be encountered growing on the majority of main Stanford campus, it is considered very unlikely native species of conservation concern will be encountered in most areas of main campus. Indeed, surveys completed by Environmental Science Associates (ESA) at Santa Clara County’s direction over the last 16 years at potential development sites within the Academic Growth Boundary have never yielded observations of special-status plants.

Based on these 16 years of plant surveys, most of the areas within the Academic Growth Boundary should be considered to have an exceedingly low potential to support naturally occurring special-status plant species. The only areas that should be considered to have a reasonable potential to host special-status plant species are as follows: jurisdictional wetlands and waterways; Lagunita and its associated uplands; and the Oak Woodland/Savannah community within the Lathrop Development District. These areas are somewhat less impacted than the other areas on the inside of the AGB and have better maintained natural processes and are more likely to support special-status plants than the extensively managed and modified locations on campus.

## 5.0 REGULATORY SETTING

This subsection briefly describes federal, state, and local regulations, permits, and policies pertaining to biological resources and wetlands as they apply to the Project.

### 5.1 Special-Status Species and Sensitive Communities

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#### 5.1.1 Federal Endangered Species Act

The United States Fish & Wildlife Service (USFWS), which has jurisdiction over plants, wildlife, and most freshwater fish, and the National Marine Fisheries Service (NMFS), which has jurisdiction over anadromous fish, marine fish, and marine mammals, oversee implementation of the Federal Endangered Species Act (FESA). The FESA includes protections for species that are formally listed by the USFWS or NMFS (as applicable) as either “endangered” or “threatened.” An “endangered” species is an animal or plant species that has been determined to be in danger of extinction throughout all or a significant portion of its range. A “threatened” species is an animal or plant species that has been determined as likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

The implementation of the FESA depends on whether a federal agency action is involved, which includes the issuance of a federal permit to a private party.

**Federal Agency Action – Section 7 Consultation.** If a federal agency action “may affect” a listed species or its “critical habitat” (defined below), the federal agency must engage in a consultation process with the USFWS and/or NMFS (as applicable). This consultation process, which applies to both listed animal and plant species, is designed to ensure that the federal agency action (including the issuance of a federal permit) does not jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat.

“Critical habitat” is defined as the specific areas that are essential to the conservation of a federally listed species, and that may require special management consideration or protection. Critical habitat is determined using the best available scientific information about the physical and biological needs of the species. These needs, which are referred to as “primary constituent elements,” include: space for individual and population growth and for normal behavior; food, water, light, air, minerals, or other nutritional or physiological needs; cover or shelter; sites for breeding, reproduction, and rearing of offspring; and habitat that is protected from disturbance or is representative of the historical geographic and ecological distribution of a species.

The designation of critical habitat by the USFWS and NMFS has often lagged behind the listing of species as threatened or endangered under the FESA. As a result, for various listed species, there is no designated critical habitat.

**No Federal Agency Action – Section 10 Habitat Conservation Plan & Incidental Take Permit.** Section 9 of the FESA prohibits the “take” of any listed animal species. The federal definition of “take” includes actions that unintentionally “harass” or “harm” a listed animal species. “Harass” is defined by the USFWS as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, and sheltering. “Harm” is defined as an act which actually kills or injures wildlife, which

may include significant habitat modification or degradation where it kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

The “take” prohibition applies only to listed animal species, and not to listed plants. For plants, Section 9 of the FESA prohibits the removal, possession, damage or destruction of any endangered plant from federal land, as well as acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass.

When there is no federal agency action that triggers the FESA Section 7 consultation process as described above, but where a public or private action would result in the unintentional “take” of a listed animal species, for example as a result of the impacts of a development project, FESA Section 10 requires the issuance of an “incidental take” permit. This permit requires the preparation and implementation of a “habitat conservation plan,” which is referred to as an “HCP.” An HCP outlines conservation measures to minimize the impacts to listed species, including measures to maintain, enhance and protect the species’ habitat.

### **5.1.2 Federal Migratory Bird Treaty Act**

The federal Migratory Bird Treaty Act (16 U.S.C. §§ 703-712) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

### **5.1.3 California Endangered Species Act**

Under the California Endangered Species Act (Fish and Game Code §§ 2050 et seq.) (CESA), a permit is required from the California Department of Fish & Wildlife (CDFW) for the incidental “take” of a state-listed species. There are several important differences between the FESA and the CESA. First, the state list of protected species is different than the federal list, although there are various species that are listed at both the state and federal level. Second, the definition of “take” under the CESA is narrower than the federal definition under the FESA. In particular, Fish & Game Code § 86 defines take to mean to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Unlike the federal definition, the state law definition does not include “harming” or “harassing” a listed species, such as by way of habitat modification. Third, whereas the federal “take” prohibition does not apply to “candidate” species that are being considered for future federal listing, the state prohibition applies to “candidate” species being considered for listing under the CESA, unless the CDFW provides otherwise. Fourth, whereas the federal “take” provisions make a significant distinction between listed animal and plant species, the state law “take” provisions apply equally to listed animal and plant species. Fifth, whereas the FESA authorizes the USFWS or NMFS (as applicable) to provide lesser protections for “threatened” species than for “endangered” species, there is no such allowance for this distinction under the CESA. Sixth, there are no provisions in the CESA for the designation of “critical habitat.”

### **5.1.4 California Environmental Quality Act**

Under CEQA Guidelines § 15065(a), a project has a significant impact on the environment where there is substantial evidence, in light of the whole record, that the project has the potential to “substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; [or] substantially reduce the number or restrict the range of an endangered, rare, or threatened species.”

Under CEQA Guidelines § 15380(b), a species is considered “endangered” for CEQA purposes if “its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors.” A species is considered “rare” for CEQA purposes if it meets either of the following two criteria: (1) although not presently threatened with extinction, the species exists in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or (2) the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as that term is used in the FESA.

Species that are formally listed under the FESA are presumed to meet the definition of “endangered, rare, or threatened species.” Similarly, species that are formally listed under CDFW regulations (see Title 14, Cal. Code Regs., §§ 670.2 and 670.5) are presumed to meet this definition. In addition, a CEQA lead agency has discretion to determine that a species that is not formally listed meets this definition. The CDFW interprets Lists 1A, 1B, and 2 of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California to comprise plants that, in a majority of cases, would qualify as rare, threatened, or endangered.

### **5.1.5 California Oak Woodlands Conservation Act**

California Senate Bill 1334, the Oak Woodlands Conservation Act, became law on January 1, 2005 and was added to CEQA as Public Resources Code § 21083.4. This law protects oak woodlands that are not protected under the Z’Berg-Nejedly Forest Practice Act (Pub. Res. Code §§ 4511-4628). The Oak Woodlands Conservation Act requires a county to determine whether or not a project would result in a significant impact on oak woodlands. If the project would result in a significant impact on oak woodlands, then the county must implement mitigation measures as prescribed under the Public Resources Code to reduce or compensate for the loss of oak woodlands.

### **5.1.6 California Fish and Game Code Requirements**

#### **California Native Plant Protection Act**

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed the CDFW to carry out the legislature’s intent to “preserve, protect, and enhance endangered plants in this State.” The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. The CESA expanded upon the original NPPA and enhanced legal protection for plants. The CESA established threatened and endangered species categories, and grandfathered all rare animals—but not rare plants—into the CESA as threatened species. Thus, there are three official listing categories for plants in California: rare, threatened, and endangered.

#### **Nesting Birds**

Under Fish & Game Code § 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. In turn, § 3503.3 prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs.

#### **Fully Protected Species**

The California Fish and Game Code also allows the designation of a species as Fully Protected (see § 3511 regarding birds, § 4700 regarding mammals, § 5050 regarding reptiles and amphibians, and § 5515 regarding

fish). This designation provides a greater level of protection than is afforded by the CESA, and until recently, fully protected species could not be taken at any time. On October 18, 2011, Senate Bill 618 was signed into law, which permits take of fully protected species where a Natural Communities Conservation Plan has been approved and is being implemented to ensure protection of those species.

### **Sensitive Natural Communities**

Sensitive natural communities are identified as such by the CDFW's Natural Heritage Division and include those that are naturally rare and those whose extent has been greatly diminished through changes in land use. The California Natural Diversity Database (CNDDDB) tracks 135 such natural communities in the same way that it tracks occurrences of special-status species: information is maintained on each site's location, extent, habitat quality, level of disturbance, and current protection measures. The CDFW is mandated to seek the long-term perpetuation of the areas in which these communities occur. While there is no statewide law that requires protection of all special-status natural communities, CEQA requires consideration of a project's potential impacts on biological resources of statewide or regional significance.

## **5.2 Wetlands and Jurisdictional Waters**

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### **5.2.1 U.S. Army Corps of Engineers**

Under Section 404 of the federal Clean Water Act, a permit from the U.S. Army Corps of Engineers (Corps) is required for the discharge of dredged or fill material into "waters of the United States." However, the scope of what constitutes a "water of the U.S." is presently unclear. The Corps and the U.S. Environmental Protection Agency (EPA) jointly adopted final regulations in June 2015 to define this term. 80 Fed. Reg. 37,054 (June 29, 2015). But the new regulations have been stayed in litigation and are not currently in effect. Further, an Executive Order adopted in February 2017 directed the Corps and EPA to reconsider and revise the regulations. Until this regulatory process is completed, the scope of jurisdiction under the federal Clean Water Act likely will remain uncertain and require a case-by-case evaluation, particularly for water bodies that do not qualify as "Traditional Navigable Waters" (which are waters that are currently used, were used in the past, or may be susceptible to use in interstate and foreign commerce, including waters subject to the ebb and flow of the tide). The EPA retains the authority under the Clean Water Act to veto Section 404 permits issued by the Corps. In implementing Section 404 with respect to the fill of wetlands, the federal government supports a policy of minimizing "the destruction, loss or degradation of wetlands" under Executive Order 11990 (May 24, 1977).

In addition to permits required for dredge and fill projects under Section 404, a Corps permit is required under Section 10 of the Rivers & Harbors Act of 1899 (33 U.S.C. § 403) for work or structures in or affecting navigable waters.

Depending on the nature of the activity in question, an applicant for a Corps permit may qualify for a Nationwide Permit or a Letter of Permission, which are abbreviated permit processes. Alternatively, an Individual Permit may be needed, which in turn may require a formal alternatives analysis (for Section 404 permits), a public interest review, and environmental documentation under the National Environmental Policy Act.

### **5.2.2 San Francisco Bay Regional Water Quality Control Board**

The State Water Resources Control Board and the nine Regional Water Quality Control Boards regulate "waters of the state," which are broadly defined under the Porter-Cologne Water Quality Control Act (Water



Code §§ 13000 et seq.) as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The San Francisco Regional Water Quality Control Board (SFRWQCB) has jurisdiction over waters of the state in the Bay Area.

For discharges of dredged or fill material, when a permit is required from the Corps under Section 404 of the federal Clean Water Act, the SFRWQCB is responsible for issuing a Water Quality Certification under Section 401 of that act. This certification, which is a prerequisite for the Corps permit, is designed to ensure that the activity involving the discharge will comply with the applicable state water quality standards. When a permit is not required from the Corps – for example, if the discharge is to an isolated, intermittent or ephemeral water body that is not considered a “water of the U.S.” – the SFRWQCB assumes primary permitting responsibility under state law, through the issuance of “Waste Discharge Requirements” (or WDRs), which implement the relevant water quality control plans and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisances (Water Code § 13263). In implementing these provisions, the SFRWQCB follows a policy of no net loss of wetlands and typically requires mitigation for impacts to wetlands before authorizing dredge and fill projects that discharge to wetlands.

In addition, California has been delegated the authority under Section 402 of the Clean Water Act to issue permits under the National Pollutant Discharge Elimination System (NPDES) permit program. This program governs wastewater discharges, including discharges of stormwater, to surface water bodies. The SFRWQCB oversees this permit program in the Bay Area.

### **5.2.3 California Department of Fish and Wildlife**

Under Fish and Game Code §§ 1600–1616, the CDFW regulates activities that would substantially divert, obstruct the natural flow of, or substantially change rivers, streams, and lakes. The jurisdictional limits of the CDFW are defined in § 1602 as the “bed, channel, or bank of any river, stream, or lake.” CDFW conditions activities regulated under these provisions through issuance of a Streambed Alteration Agreement.

## **5.3 Local Plans and Policies**

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### **5.3.1 Stanford Community Plan**

The Stanford Community Plan is the portion of the Santa Clara County General Plan that governs Stanford’s lands in unincorporated Santa Clara County. Several strategies in the Resource Conservation Chapter of the Stanford Community Plan address habitat and biodiversity. These strategies, policies and recommended implementation measures include:

**Resource Conservation Strategy #1:** Improve current knowledge and awareness of habitats and natural areas.

**SCP-RC 1:** Maintain and update inventories and maps of important biological resources on Stanford lands, including protected species, species considered at risk of local extinction, and habitat types (biotic communities), for use in conservation efforts, land use decision making, and monitoring of resource status.

**SCP-RC 2:** Allow field research and other academic activities related to improvement of knowledge and understanding of habitat resources to occur in areas south of Junipero Serra Boulevard.

**SCP-RC (i)1:** Require Stanford to prepare California Natural Diversity Database records for species of concern.

**SCP RC (i)2:** Transmit natural resource map updates to the County using the County's current electronic map format standards.

**Resource and Conservation Strategy #2:** Protect the biological integrity of habitat areas and adequately mitigate impacts.

**SCP-RC 3:** Assure the protection of habitats for special status species in approving the location and design of new development. Avoid habitat areas for these species in the location of development whenever feasible.

**SCP-RC 4:** Protect and maintain habitats, natural areas, and wildlife corridors in development and redevelopment.

**SCP-RC 5:** Protect habitat areas through use of the Open Space and Field Research, Special Conservation, and Campus Open Space land use designations, and through use of the Academic Growth Boundary. If land use designation changes or AGB relocation is proposed, conduct detailed studies for presence of special status species and their habitat prior to decision making.

**SCP-RC 6:** Require Stanford to mitigate any impacts on special status species or other biological resources that result from land development through:

- a. Mitigation measures that have proven to be effective, which shall be implemented prior to commencement of site preparation and construction activities as appropriate.
- b. Mitigation measures, such as provision of new habitat areas which shall be monitored and, if necessary, revised over time to ensure the viability of those measures as mitigation.

**SCP-RC 7:** Maintain and restore riparian buffer zones along creeks as described in Santa Clara County General Plan policy R-RC-37.

**SCP-RC 8:** Monitor and evaluate the recreational use of sensitive habitat areas and limit if necessary the recreational use of areas supporting significant, but less sensitive, natural resources.

**SCP-RC (i)3:** Establish guidelines for review and approval of research and teaching activities in habitat areas, particularly in those areas which support special-status species.

**SCP-RC (i)4:** Develop and implement a program for monitoring and managing recreational activities in the foothills with regard to the habitat impacts of these activities.

**SCP-RC (i)5:** Participate in the preparation and implementation of a Habitat Conservation Plan for Stanford lands, if such effort is initiated by Stanford or the USFWS.

**SCP-RC (i)6:** Require long-term habitat protection measures in appropriate locations as mitigation for development in habitat areas that support special-status species or that are protected through local, state, or federal regulations.

**SCP-RC (i)7:** Require replacement of trees greater than 12 inches in diameter which are removed at a 1:1 ratio of replacement to removed trees. For oaks, which meet this criteria, require relocation of trees or replacement at a 3:1 ratio.

**SCP-RC (i)8:** Develop guidelines for the location, siting and review of proposed construction projects that minimize impacts to natural resources.

**SCP-RC (i)9:** Identify opportunities to conserve water used for irrigation and other purposes in order to limit use of water from creeks.

**Resource Conservation Strategy #3:** Encourage and promote habitat restoration.

**SCP-RC 9:** Establish priorities for the restoration or rehabilitation of sensitive habitat areas and include habitat restoration as a key component of conservation management and planning.

**SCP-RC 10:** Stanford shall continue and support efforts to enhance habitats and populations of protected native species, including, but not limited to:

- a. reduction of non-native invasive species;
- b. wetland creation efforts, particularly to increase breeding sites for California tiger salamander; and
- c. the oak reforestation program in the foothills, the Arboretum, and in other natural areas.

**SCP-RC (i)10:** Coordinate wetland preservation for flood control purposes with habitat restoration efforts.

**SCP-RC (i)11:** Encourage location of facilities and trails out of sensitive habitat areas and areas undergoing habitat restoration.

### **5.3.2 Santa Clara County General Plan**

As indicated in the prior section, Stanford Community Plan Policy RC-7, which addresses buffer zones along creeks, contains a cross reference to Santa Clara County General Plan policy R-RC 37. General Plan Policy R-RC 37 states as follows:

**R-RC 37:** Lands near creeks, streams, and freshwater marshes shall be considered to be in a protected buffer area, consisting of the following: 1. 150 feet from the top bank on both sides where the creek or stream is predominantly in its natural state; 2. 100 feet from the top bank on both sides of the waterway where the creek or stream has had major alterations; and 3. In the case that neither (1) nor (2) are applicable, an area sufficient to protect the stream environment from adverse impacts of adjacent development, including impacts upon habitat, from sedimentation, biochemical, thermal and aesthetic impacts.

### **5.3.3 Santa Clara County Oak Woodlands Impact Guidelines**

In accordance with the Oak Woodlands Conservation Act, Santa Clara County created the Santa Clara County Planning Office Guide to Evaluating Oak Woodlands Impacts (last updated July 28, 2011). According to the County's guidelines, oak woodlands include a woodland (grouping of trees) on a unit of land or project site where oak trees encompass 10 percent or greater of the canopy cover. The 10 percent canopy cover applies to the individual woodland and not the entire project site (which may contain one or more woodlands). Oak

woodlands within Santa Clara County are identified in the County Planning Office's GIS map information using sources from Santa Clara Valley Habitat Conservation Plan data, and California Department of Forestry and Fire Protection's Fire and Resource Assessment Program data.

A land development project is considered to have a significant direct impact on oak woodlands if the project will result in a decrease of 0.5 acre or more of native oak canopy within oak woodland on the project site. If the project is within a mapped oak woodland area, and the project proposes oak tree removal, a tree removal plan and arborist report (if requested) must be submitted which identifies the species type, diameter, and amount of canopy of oak trees proposed for removal within the woodland.

#### **5.3.4 Santa Clara County Tree Preservation Ordinance**

The County's tree preservation ordinance is codified in division C16 of the County Code of Ordinances. [The interpretation memorandum dated July 1, 2014](#) documents the manner in which the ordinance has been applied to Stanford lands. The following description is taken from that memorandum.

Section C16-2 defines a "tree" as a woody plant having a single trunk measuring at least 37.7 inches in circumference (12 inches or more in diameter) or in the case of multi-trunk trees, a trunk size of 75.4 inches in circumference (24 inches in diameter).

Section C16-3 defines a "protected tree" as a tree that meets any of the following requirements:

(a) Any tree in the following areas of the County:

- (1) Parcels zoned "Hillsides" (three acres or less);
- (2) Parcels within a "-d" (Design Review) combining zoning district;
- (3) Parcels within the Los Gatos Hillside Specific Plan.

(b) A tree that is located within the "-h1" Historic Preservation zoning district for New Almaden.

(c) Any "heritage tree, as that term is defined in Section C16-2." Section C16-2 defines "heritage tree" as follows: Heritage tree shall include any tree which, because of its history, girth, height, species or other unique quality, has been recommended for inclusion on the heritage resource inventory by the Historical Heritage Commission and found by the Board of Supervisors to have special significance to the community, and which has therefore been included in the heritage resource inventory adopted by resolution of the Board of Supervisors.

(d) Any "tree required to be planted as a replacement for an unlawfully removed tree, pursuant to Section C16-17(e) of this division."

(e) Any "tree that was required to be planted or retained by the conditions of approval for any use permit, building site approval, grading permit, architectural and site approval (ASA), design review, special permit or subdivision."

(f) Trees owned or leased by the County.

(g) "Any tree, regardless of size, within rights-of-way and easements of the County, whether within or without the unincorporated territory of the County.

Under section C16-4 of the County's tree preservation ordinance, a permit for removal of a protected tree is not required "for the cutting, removal, destruction, or pruning of a tree" in circumstances that among others, include the following:

- The tree is diseased, dead, or dying, or substantially damaged from natural causes (§ C16-4(a));
- Tree cutting is needed to remove a hazard to life and personal property (§ C16-4(b));
- Tree removal is necessary to carry out building site approval or other land use application approved by the County (§ C16-4(e)); and
- Maintenance work within public utility easements (§ C16-4(f)).

The third bullet point listed above indicates that if removal of a protected tree is authorized by a land use application approved by the County, then a separate administrative tree removal permit is not needed. However, "no removal shall be permitted until such grading or building permit has been issued by the County as indicated on approved plans." (§ C16-4(e))

If a project necessitating removal of a protected tree is not the subject of a land use application and if none of the other exceptions apply, then the proper means to obtain permission to remove the protected tree is an administrative permit or encroachment permit for tree removal. (Ordinance Code § C16-3)

Section C16-7 of the tree preservation ordinance specifies the requirements for an administrative permit to remove protected trees. Among other provisions, section C16-7(e) addresses the replacement requirements for protected trees:

The ratio of trees removed to trees planted shall be determined by the Planning Department.

## 5.4 Stanford Habitat Conservation Plan/Incidental Take Permit

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The Stanford Habitat Conservation Plan (HCP) establishes a conservation strategy for the next 46 years (the HCP and associated Incidental Take Permit (ITP) are 50-year documents, and were approved in the summer of 2013). The Stanford HCP creates a comprehensive conservation program that protects, restores and enhances habitat; monitors and reports on Covered Species; and minimizes impacts on the Covered Species and their habitats. The HCP also provides major commitments of land protection, personnel and resources dedicated to biological resource conservation.

A Habitat Conservation Plan is part of a process outlined by Section 10 of the federal Endangered Species Act. Congress adopted Section 10 as a way to promote creative partnerships between public and private sectors and governmental agencies in the interest of species and habitat conservation. The Stanford HCP outlines what Stanford, as the landowner, will do to minimize or mitigate the impact of its activities on federally protected species. In turn, federal wildlife agencies have provided assurances to Stanford and have issued a long-term ITP that authorizes “take” of protected species associated with otherwise lawful activities. These activities are related to academic uses, general campus management and maintenance, redevelopment, future development and even the conservation programs.

On August 13, 2013, the United States Fish and Wildlife Service approved the Stanford HCP and issued an ITP, finding that the proposed minimization and mitigation measures more than make up for the anticipated level of take of listed species.

The Stanford Habitat Conservation Plan includes the following strategies:

- Concentrate conservation efforts in high-priority areas
- Establish long-term habitat protection
- Protect and restore riparian areas
- Enhance habitat areas
- Perform monitoring and adaptive management practices

Examples of conservation actions the University accomplished since approval of the HCP:

- Established 120 acres of conservation easements over high-quality habitats for the benefit of the Covered Species
- Established a 315-acre, 50-year no-build zone in the foothills
- Established a 40-acre, 50-year no-build zone and water management schedule for Lagunita
- Monitored species and habitat conditions

On August 13, 2013, Santa Clara County determined that the Stanford HCP provides at least as much habitat value and protection for the California tiger salamander as the County’s adopted 2000 General Use Permit conditions of approval. Pursuant to 2000 General Use Permit Condition J.9, the County determined that the Stanford HCP supersedes 2000 General Use Permit Conditions J.1 through J.8.

On May 4, 2016, the California Department of Fish and Wildlife issued a Consistency Determination, determining that the ITP issued by USFWS, including the incorporated measures in the HCP, is consistent with the California Endangered Species Act (CESA), meeting the requirements set forth in California Fish and Game Code section 2081 for authorizing take of CESA-listed species (i.e., California tiger salamander). As a

result, implementation of the Stanford HCP satisfies the requirements of both the federal and state endangered species acts.

#### 5.4.1 Covered Species

Three species receive specific coverage under the Stanford HCP. The protected species covered by the HCP and ITP are:

- California red-legged frog (*Rana draytonii*)
- California tiger salamander (*Ambystoma californiense*)
- San Francisco gartersnake (*Thamnophis sirtalis tetrataenia*)<sup>4</sup>

Management of the Covered Species includes population monitoring, habitat restoration and enhancement, educational programs for individuals whose work activities may impact the Covered Species and minimization and mitigation of impacts caused by University operations. The habitat requirements of the three Covered Species overlap with the habitat requirements of many other native species. Therefore, conservation actions implemented at Stanford to protect the Covered Species also benefit many additional native species.

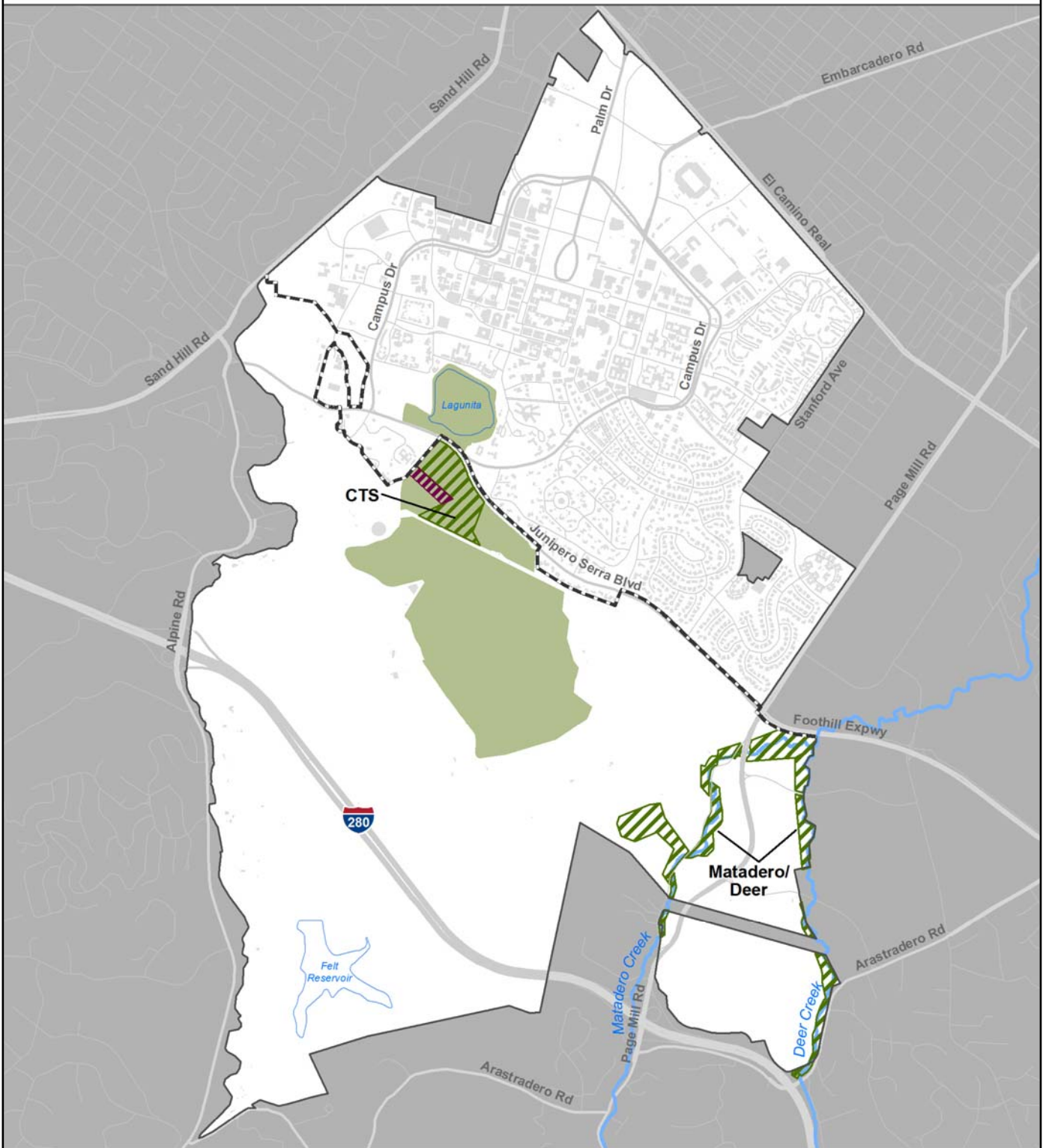
#### 5.4.2 Permanent Conservation Easements





At the present time there are two permanent conservation easements resulting from implementation of the HCP: a 30-acre easement located in the lower foothills (primarily for the California tiger salamander) and the 90-acre Matadero/Deer Creek easement (primarily for the California red-legged frog) (see **Figure BIO.5**). California tiger salamanders (*A. californiense*) require seasonal ponds that fill in December or January and hold water until June, with sufficient levels of aquatic prey and cover to allow for larval development and metamorphosis; adjacent upland areas that provide sufficient densities of rodent burrows or debris for California tiger salamanders to inhabit during the non-reproductive period; and vegetation appropriate for California tiger salamander residency and dispersal. Common gartersnakes are typically associated with permanent or nearly permanent bodies of water, usually with areas of shallow water and heavily vegetated shores; however, they are known to occur, at least temporarily, in grassland, riparian woodland, oak woodland and coniferous forest. California red-legged frogs (*R. draytonii*) require permanent bodies of slow-moving or standing water, with sufficient vegetation to provide cover and support ample prey, and with areas that are at least three feet in depth, along with adjacent upland areas of suitable vegetation to allow for dispersal and seasonal support of non-breeding individuals.

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<sup>4</sup> The San Francisco gartersnake (*T. s. tetrataenia*) and red-sided gartersnake (*T. s. infernalis*) are two nominally distinct subspecies of the common gartersnake (*Thamnophis sirtalis*). The San Francisco garter snake is listed as endangered under the ESA. The red-sided garter snake is not a federally listed species. Both of these subspecies are found on the San Francisco Peninsula. Stanford is located within a well-documented intergrade zone between these two subspecies; it is acknowledged in the HCP that the San Francisco form of the species is not currently recognized as being present at Stanford. The conservation program provided in the HCP supports the intergrade gartersnake that is present at Stanford.

Figure BIO.5: Conservation Easements and No-Build Areas



-  Permanent Conservation Easement
-  Conditional Conservation Easement
-  50 Year No-build Reserve
-  Academic Growth Boundary

Stanford University

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Miles  
Stanford University, LBRE/LUEP  
November 5, 2016





### 5.4.3 Conditionally Permanent Conservation Easement

A 4.5-acre conditionally permanent conservation easement, located in the lower foothills adjacent to the California tiger salamander easement discussed above, is the result of construction of the Carnegie Foundation's campus in 2003 (see Figure BIO.5). This easement is in place as long as the Carnegie Foundation's buildings and amenities exist. If the buildings and supporting amenities are removed and the site restored to the preconstruction condition, the 4.5 acres would no longer be subject to use restrictions (aside from those enumerated in the HCP and Open Space/Field Research zoning).

### 5.4.4 Habitats Protected by a 50-year No-build Agreement

Additional areas used by the Covered Species are protected in two 50-year no-build zones (see Figure BIO.5). The 40-acre Lagunita basin, which includes Lagunita and unbuilt surrounding upland, and a 315-acre California tiger salamander reserve in the lower foothills were designated to protect California tiger salamanders (*A. californiense*) and Stanford's intergrade population of gartersnakes. The Lagunita basin contains an ephemeral body of water (Lagunita, an artificially constructed and managed reservoir), aquatic prey and sufficient density of burrowing rodents. The 315-acre California tiger salamander reserve protects upland habitat composed of grassland, oak woodland/savannah, chaparral and scrub. Eight seasonal ponds constructed by Stanford in 2004 are also located in this no-build zone. The 30-acre permanent conservation easement targeting California tiger salamander conservation is a subset of the 315 acres within the California tiger salamander no-build reserve.

### 5.4.5 Management Zones

The HCP classifies Stanford's lands into four management zones according to the habitat value of the land, if any, to the Covered Species. The four zones and the quality of habitat they provide are discussed below. **Figure BIO.6** depicts the location of these zones.

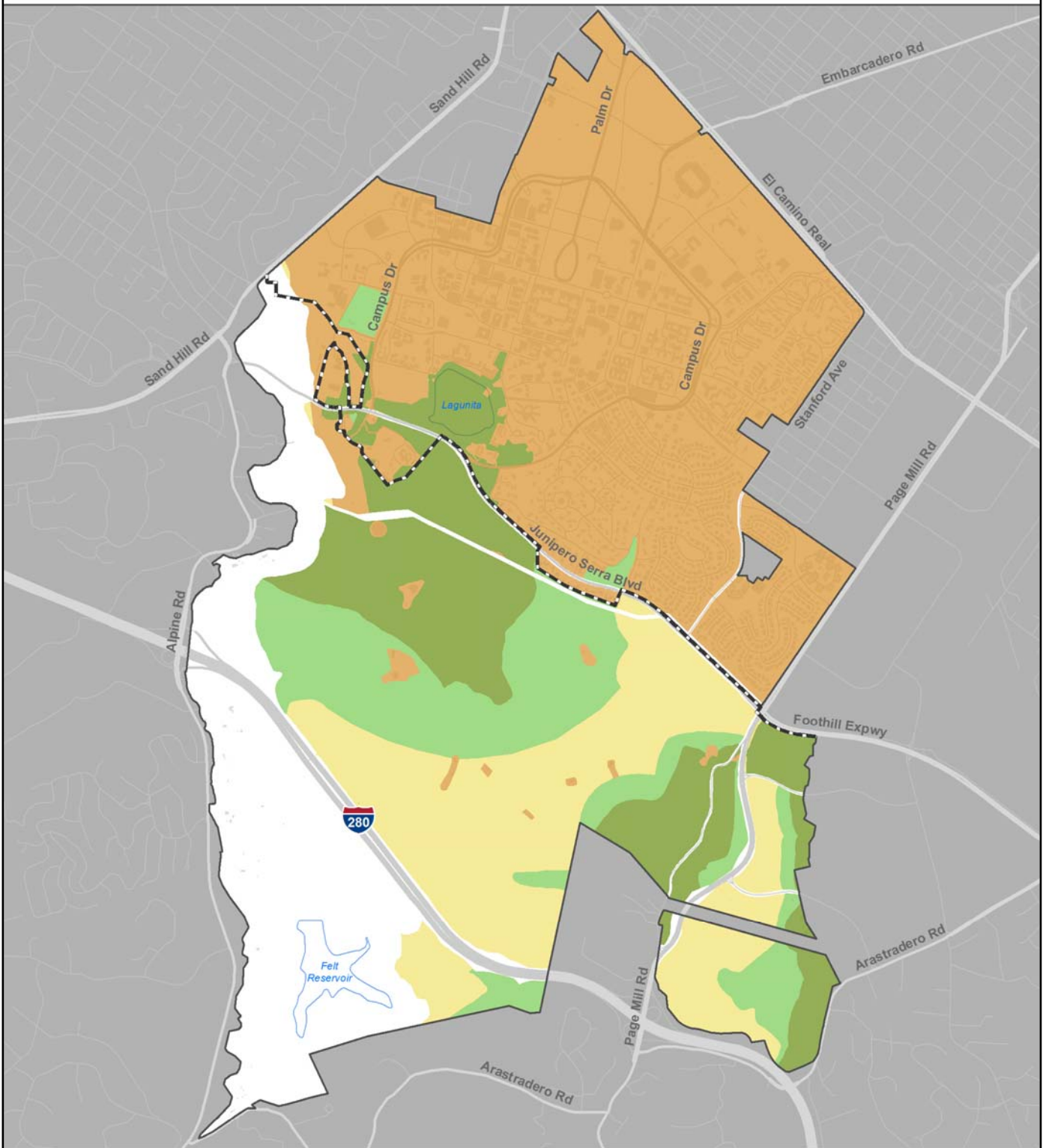
#### Zone 1

Areas classified as Zone 1 support one or more of the Covered Species or provide critical resources for a Covered Species. These areas are necessary for the local persistence of the Covered Species. A few areas that are currently degraded by the presence of a temporary land use also are included in Zone 1 if they are located in a place deemed critical for the long-term persistence of a Covered Species. If managed, or in some places enhanced, Zone 1 areas could support higher densities of the Covered Species. Some areas in Zone 1 will be subject to extensive restoration and enhancement. There are approximately 623 acres in Zone 1. A maximum of 28 acres of these 623 acres can be permanently altered by development. Any acres permanently altered by development will be mitigated, with the mitigation ratio being three HCP credits (typically acres of permanent conservation easement, but some enhancements can count as HCP credits) for each acre altered.

#### Zone 2

Zone 2 areas are occasionally occupied by a Covered Species and provide some of the resources used by the Covered Species. These areas generally do not support individuals of the Covered Species on a year-round basis, but they provide indirect support to the Covered Species by providing a buffer between Zone 1 areas and areas that are impacted by urban and other uses. Zone 2 does not include any breeding habitat for the Covered Species. Under the HCP's Conservation Program, most of these areas will be maintained in a manner that will preserve their habitat values; some portions of Zone 2 may be enhanced to more directly support Covered Species. There are approximately 517 acres in Zone 2. A maximum of 40 acres of this 517 acres can be permanently altered by development. Any acres permanently altered by development will be

Figure BIO.6: Habitat Conservation Plan Zones



**Habitat Conservation Plan Zones**

- Zone 1
- Zone 3
- Zone 2
- Zone 4
- Outside the Habitat Conservation Plan management area
- Academic Growth Boundary

**Stanford University**

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Stanford University, LBRE/LUEP  
November 5, 2016

mitigated, with the mitigation ratio being two HCP credits (typically acres of permanent conservation easement, but some enhancements can count as HCP credits) for each acre altered.

### **Zone 3**

The lands in Zone 3 are generally undeveloped open space lands that have some biological value, but provide only limited and indirect benefit to the Covered Species. There are approximately 688 acres of land in Zone 3. A maximum of 62 acres of these 688 acres can be permanently altered by development. Any acres permanently altered by development will be mitigated, with the mitigation ratio being 0.5 HCP credits (typically acres of permanent conservation easement, but some enhancements can count as HCP credits) for each acre altered.

### **Zone 4**

Zone 4 includes land that does not support or cannot sustain the Covered Species. This Zone includes urbanized areas that have been developed by the University or its ground lessees and those areas that are completely surrounded by urban development and/or roads, or are otherwise isolated from areas that support a Covered Species. Also designated as Zone 4 are generally small but highly developed facilities (such as the radio telescope) which are located within areas that otherwise support Covered Species. Zone 4 areas are population sinks for the Covered Species. The Conservation Program includes measures to reduce the likelihood that a Covered Species would enter Zone 4; if an individual is found in Zone 4, it will be relocated to a more environmentally sound location by an authorized biologist. The further development of Zone 4 areas would not adversely affect any of the Covered Species. There are approximately 2,544 acres of land in Zone 4. There are no HCP-related maximum limits of development in areas designated as Zone 4. The majority of the central campus is designated Zone 4.

## 5.5 Stanford Special Conservation Areas and the Special Conservation Area Plan

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The Special Conservation Areas (SCA) designation in the Stanford Community Plan is for specific areas of high environmental sensitivity or areas designated as natural hazard areas on the lands south of Junipero Serra Boulevard, outside of the Academic Growth Boundary. This designation requires that no physical development, other than that which supports conservation efforts, may occur in these areas – plus maintenance of existing utilities and roads. SCAs are designated in areas of steep or unstable slopes, seismic or other geologic hazard zones, riparian areas extending 150 feet from the top of creek banks and sensitive habitat areas, particularly for special-status species. The Special Conservation Areas include 395 acres of land along Los Trancos Creek, areas within the Stanford foothills, and land along Matadero Creek and Deer Creek. In locations where Special Conservation Areas overlap with areas included in the Stanford HCP, the HCP requirements, are in effect. In areas where there is no overlap between the HCP and the SCA, management is guided by the County-approved Special Conservation Area Plan (2014), which states that the applicable minimization and management actions specified in the HCP are in effect.

In addition to the three species specifically covered by the Stanford Habitat Conservation Plan, one additional protected species is found on Stanford lands outside the Academic Growth Boundary (and not present in areas directly included in the HCP): steelhead (*Oncorhynchus mykiss*).<sup>5</sup> At Stanford, steelhead are found exclusively within the San Francisquito Creek watershed, and are in unincorporated Santa Clara County portions of Stanford lands, but not within the Academic Growth Boundary.

To protect this species and to address the designated hazard areas in locations designated by the Special Conservation Area Plan, several guidelines are followed:

- No fishing is allowed.
- If water quality conditions detrimental to steelhead or other wildlife are discovered, the Conservation Program Manager will coordinate investigation of the source and feasible measures to reduce the adverse effect.
- Stanford and its tenants will maintain riparian canopy.
- Any proposed removal of trees in the hazard areas should be reviewed and approved by County staff and Stanford biologists.
- Prior to construction of any utilities, roads or other structures or infrastructure within the hazard areas, Stanford will conduct site-specific geotechnical analyses to ensure slope stability both during and after construction.
- All work or maintenance should be scheduled outside the wet season (October 15 to March 15). If any work or maintenance must take place within the wet season, the Conservation Program manager must be consulted and may assign measures that reduce or avoid the risk of landslides.

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<sup>5</sup> Following a working definition from the wildlife agencies, all *O. mykiss* from within a zone of anadromy, an area where at least some of the individuals are migratory, are considered steelhead. At Stanford, all *O. mykiss* downstream of Searsville Dam, including Los Trancos and Bear creeks, are classified as steelhead. All *O. mykiss* upstream of Searsville Dam are considered rainbow trout, because they never migrate between freshwater and marine environments. It is very likely that resident, non-migratory, rainbow trout are present in Los Trancos and San Francisquito creeks.

## 6.0 SIGNIFICANCE CRITERIA

Consistent with Appendix G of the CEQA Guidelines, the project would have a significant impact on biological resources if it would:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.
- c) Have a substantial adverse effect on federally protected or state-protected waters or wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- e) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.
- f) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

## 7.0 IMPACTS AND MITIGATION MEASURES

### **Impact BIO-1: Project construction activities could result in significant adverse effects on special-status and migratory birds. (Less than Significant Impact with Mitigation)**

Habitat for nesting birds is present throughout the project area, both outside and within the Academic Growth Boundary. Raptors protected under the MTBA and California Fish and Game Code could nest in oaks and other large trees, and on buildings, throughout the project area. Many species of raptors are frequently observed at Stanford. Peregrine falcons (*Falco peregrinus*) have been observed within the Academic Growth Boundary but have never been documented to nest within the Academic Growth Boundary. Western burrowing owl (*Athene cunicularia*), bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus cyaneus*) and golden eagle (*Aquila chrysaetos*) have been observed regularly outside of the Academic Growth Boundary, and occasionally fly over the lands within the Academic Growth Boundary. However, nesting of these species has never been observed within the Academic Growth Boundary. Many of the more regionally common species of raptors, including red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*B. lineatus*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*A. striatus*), American kestrel (*Falco sparverius*), barn owl (*Tyto alba*), and great horned owl (*Bubo virginianus*) do frequently nest within the Academic Growth Boundary.

In addition to the above-mentioned raptors, many bird species covered by the federal Migratory Bird Treaty Act nest at Stanford, including on lands outside and within the Academic Growth Boundary

During construction, tree and shrub removal and grading could directly impact nesting birds by damaging nests, causing adults to abandon nests, or directly killing or injuring nesting birds. Additionally, elevated sound levels and vibrations from heavy construction equipment could cause adult birds to abandon nests, especially for larger bird species or birds that are accustomed to relative low ambient noise levels.

Project construction activities could result in potentially significant impacts to special-status and migratory birds.

The following mitigation measures would reduce impacts of project construction on nesting birds, including raptors and migratory bird species protected by the federal Migratory Bird Treaty Act, to a level that is less-than-significant.

1. *Avoid tree removal and commencement of outdoor construction activities during nesting season.* Tree removal or pruning associated with project construction and commencement of outdoor project construction activities shall be avoided from February 1 through August 31, the primary local bird nesting season, to the extent feasible. If no tree removal or pruning associated with project construction is proposed during the nesting period and outdoor project construction activities will commence outside the nesting period, no surveys for active bird nests are required.
2. *Survey for active bird nests within 250 feet of construction site.* If the timing of a construction project necessitates construction-related tree removal/pruning that occurs during the nesting season and/or commencement of outdoor construction activities during the nesting season, Stanford shall hire a qualified biologist to conduct a nesting bird survey within five days prior to the proposed start of construction activities, and Stanford shall provide the survey results to the County Planning Office

prior to commencement of construction. If active nests are not present, project construction activities can take place as scheduled. If more than five days elapse between the initial nest search and the start of project-related construction, another nest survey must be conducted (nest surveys are valid for only five days).

3. *Minimize impacts to active bird nests.* If any active nests are detected during the pre-construction survey, the project manager shall work with a qualified biologist to determine if a work-exclusion buffer zone can be designated around the active nest which would allow for both the successful fledging of the birds and initiation of work on some portions of the project site, and Stanford shall provide the work-exclusion zone(s) to the County Planning Office prior to commencement of construction. A qualified biologist shall monitor any occupied nest located in a protective buffer zone in order to determine if the designated buffer zone is effective and when the buffer zone is no longer needed. If the buffer zone is determined to be ineffective, its size shall be increased until it is effective or work shall be delayed until the nest is unoccupied.
4. *Delay activity.* If no such buffer is possible, then there shall be a delay in the start of construction until the active nest is no longer occupied. A qualified biologist shall monitor any occupied nest to determine when the nest is no longer used.
5. *Remove nest starts.* A qualified biologist can visit project sites at any time prior to tree removal or the initiation of outdoor construction work in order to find and remove nest starts which do not have eggs or nestlings present. This activity will minimize impacts to birds as they will generally move elsewhere and restart their nest building process.

**Impact BIO-2: Project construction activities could result in adverse effects on special-status bats.  
(Less than Significant Impact with Mitigation)**

Habitats within the project area have the potential to support roosting special-status bat species, including western small-footed bat (*Myotis ciliolabrum*), Yuma bat (*Myotis yumanensis*), little brown bat (*Myotis lucifugus*), long-legged bat (*Myotis volans*), fringed bat (*Myotis thysanodes*), long-eared bat (*Myotis evotis*), silver-haired bat (*Lasiurus noctivagans*), desert red bat (*Lasiurus blossevilli*), hoary bat (*Lasiurus cinereus*), Townsend's long-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis*), and big free-tailed bat (*Nyctinomops macrotis*).

Project construction, building demolition, tree and shrub removal and grading could directly impact roosting special-status bats, and elevated sound levels from heavy construction equipment could cause adult bats to abandon maternity roosts. Indirect effects to bats during project operation would be unlikely because special-status bats roosting in or near existing campus buildings and facilities presumably would be acclimated to light, noise and activity associated with campus operations and events.

Project construction activities could result in potentially significant impacts to special-status bats.

The following mitigation measures would reduce impacts on special-status bats to a level that is less-than-significant. Similar measures were approved by the City of Palo Alto for the Stanford University Medical Center Facilities Renewal and Replacement Project.

1. *Conduct pre-project survey.* Prior to project construction, Stanford shall retain a qualified biologist (bat biologist) to conduct a pre-construction survey for roosting bats in trees to be removed or pruned and structures to be demolished. If no roosting bats are found, no further action is required. If a bat roost is found, Stanford shall implement the following measures to avoid impacts on roosting bats.
2. *Evict non-maternal roosts.* If a non-maternal roost of bats is found in a tree or structure to be removed or demolished as part of project construction, the individuals shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity. Removal or demolition should occur no sooner than at least two nights after the initial minor site modification (to alter airflow). This action allows bats to leave during darkness, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Departure of the bats from the construction area will be confirmed with a follow-up survey prior to start of construction.
3. *Avoid maternal roosting areas.* If active maternity roosts are found in trees or structures that will be removed or demolished as part of project construction, tree removal or demolition of that structure shall commence before maternity colonies form (generally before March 1) or after young are flying (generally by July 31). Active maternal roosts shall not be disturbed.
4. *Develop and employ bat nest box plan.* If special-status bats are found in trees or structures to be removed or demolished as part of project construction, Stanford shall develop a bat nest box plan for the Stanford campus employing state-of-the-art bat nest box technology. The design and placement of nest boxes shall be reviewed by a qualified bat biologist.



**Impact BIO-3: Project construction activities could result in adverse effects on the San Francisco dusky-footed woodrat. (Less than Significant Impact with Mitigation)**

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), a California species of special concern, is found within the Academic Growth Boundary primarily in the Lathrop Development District and at Lagunita and its adjacent uplands. In addition, San Francisco dusky-footed woodrats are abundant outside of the Academic Growth Boundary.

Construction-related vegetation removal, grubbing, grading, or other ground disturbance activities in wooded or brushy habitats in the Lathrop Development District, in Lagunita and its adjacent uplands, in jurisdictional wetlands, and in lands outside the Academic Growth Boundary could result in direct impacts to dusky-footed woodrats. Direct impacts could include mortality of adults or young, as well as destruction of woodrat stick nests. Indirect impacts to dusky-footed woodrat would not occur because development of new buildings within the Academic Growth Boundary would occur in an urban environment, which would not increase predation caused by expanding the range of urban adapted predators, such as raccoon and coyote, into habitats that were previously inaccessible. Additionally the project would not introduce increased night time lighting, noise or other human disturbances in areas where such conditions do not already exist.

Project construction activities could result in potentially significant impacts to San Francisco dusky-footed woodrat.

The following mitigation measures would reduce the impacts of project construction to San Francisco dusky-footed woodrats to a level that is less-than-significant.

1. *Surveys.* Prior to any clearing of vegetation within the Lathrop Development District, Lagunita and its adjacent uplands, jurisdictional waterways/wetlands, or lands outside the Academic Growth Boundary, a qualified biologist shall conduct a survey for San Francisco dusky-footed woodrat nests.
2. *Avoidance.* Where feasible, an exclusion buffer of at least 10 feet from these nests shall be established to avoid moving or bumping the nests or the logs or branches on which the nests rest.
3. *Mitigation.* If establishing a buffer and avoiding the nests is not feasible, the nests shall be dismantled and the nesting material moved to a new location outside the project's impact areas so that it can be used by woodrats to construct new nests. Prior to nest deconstruction, each active nest shall be disturbed by a qualified wildlife biologist to the degree that all woodrats leave the nest and seek cover out of the impact area. Whether the nest is on the ground or in a tree, the nest shall be slightly disturbed (nudged) to cause the woodrats to flee. For tree nests, a tarp shall be placed below the nest and the nest dismantled using hand tools (either from the ground or from a lift). The nest material shall then be piled at the base of a nearby tree or large shrub outside of the impact area.

**Impact BIO-4: Project construction activities could result in adverse effects on special-status plant species. (Less than Significant Impact with Mitigation)**

The lands outside the Academic Growth Boundary and the natural areas within the Academic Growth Boundary (the Lathrop Development District, Lagunita and its adjacent uplands, and jurisdictional waterways/wetlands) contain potentially suitable habitat for a number of rare, threatened or endangered plant species. Grading and ground-disturbing activity associated with construction activities in these locations could result in loss of rare, threatened or endangered plant species.

Project construction activities could result in potentially significant impacts to special-status plant species.

The following mitigation measures would reduce impacts to special-status plant species to a level that is less-than-significant:

1. *Surveys.* If development projects are proposed within any jurisdictional waterways/wetland areas, the Lagunita basin and its adjacent uplands, the Lathrop Development District, or lands outside the Academic Growth Boundary, a qualified biologist will conduct a focused survey for special-status plant species prior to construction. If feasible, these surveys should be conducted during the late winter/early spring period when most of the local native plant species are flowering.
2. *Avoidance.* To the extent feasible, construction activities shall avoid impacts to special-status plant species onsite by establishing a buffer zone around the individuals in question. The buffer shall be determined by a qualified biologist and shall be of sufficient size to avoid potential disturbance. The width of the buffer shall depend on a consideration of site-specific characteristics, including a consideration of the plant's ecological requirements (e.g., sunlight, moisture, shade tolerance, soils, physical and chemical characteristics) and adjacent uses (e.g., sprinkler irrigation or shading from buildings or other structures). The buffer zone shall be demarcated using exclusion fencing.
3. *Mitigation if avoidance is not feasible.* If establishing an avoidance buffer is not feasible, individual plants (including seeds) shall be transplanted to an area with suitable physical and biological conditions outside of the Academic Growth Boundary and monitored and adaptively managed for five years. Transplantation may be accomplished by relocating individual plants or through seed collection and dispersal, or a combination of both, to be determined based on the species.

**Impact BIO-5: Project construction and operation would not result in significant effects on federal and state protected species covered by the Stanford HCP. (Less than Significant Impact)**

As described above in Section 5.4, the USFWS-approved Stanford HCP creates a comprehensive conservation program that protects, restores, and enhances habitat; monitors and reports on Covered Species; and minimizes impacts on the Covered Species and their habitats. The Stanford HCP outlines what Stanford, as the landowner, will do to minimize or mitigate the impact of its activities on federally protected species. In turn, the USFWS has issued a long-term incidental take permit (ITP) that authorizes “take” of protected species associated with Stanford’s activities related to academic uses, general campus management and maintenance, redevelopment, future development, and conservation programs. On August 13, Santa Clara County determined that the Stanford HCP provides at least as much habitat value and protection for the California tiger salamander as the County’s adopted 2000 General Use Permit conditions of approval, and that the Stanford HCP supersedes 2000 General Use Permit Conditions J.1 through J.8. On May 4, 2016, CDFW issued a Consistency Determination, determining that the ITP issued by USFWS, including the incorporated measures in the HCP, is consistent with CESA, meeting the requirements set forth in California Fish and Game Code section 2081 for authorizing take of CESA-listed species (i.e., California tiger salamander). As a result, implementation of the Stanford HCP satisfies the requirements of both the federal and state endangered species acts. The three species covered by the Stanford HCP and ITP are: California red-legged frog (*Rana draytonii*); California tiger salamander (*Ambystoma californiense*); and San Francisco gartersnake (*Thamnophis sirtalis tetrataenia*). Because Stanford is required by USFWS to implement the HCP, impacts to Covered Species from project construction and operation would be less-than-significant.

## **Impact BIO-6: Project construction and operation would not result in significant effects on steelhead. (Less than Significant Impact with Mitigation)**

In addition to the three species specifically covered by the Stanford HCP, one additional federally protected species is found on Stanford lands outside the Academic Growth Boundary: steelhead (*Oncorhynchus mykiss*). At Stanford, steelhead are found exclusively within the San Francisquito Creek watershed, and are not within the Academic Growth Boundary. While no new buildings are proposed outside the Academic Growth Boundary, Stanford could construct water supply infrastructure improvements, habitat improvements, and conservation projects in the areas outside the Academic Growth Boundary. For example, under the 2000 General Use Permit Stanford undertook work in the creeks to remove barriers to steelhead migration. Similar types of conservation projects would continue to occur under the 2018 General Use Permit. As discussed in Section 5.5, the County has approved a Special Conservation Area Plan that includes the following guidelines to protect steelhead:

- No fishing is allowed.
- If water quality conditions detrimental to steelhead or other wildlife are discovered, the Conservation Program Manager will coordinate investigation of the source and feasible measures to reduce the adverse effect.
- Stanford and its tenants will maintain riparian canopy.
- Any proposed removal of trees in the hazard areas should be reviewed and approved by County staff and Stanford biologists.
- Prior to construction of any utilities, roads or other structures or infrastructure within the hazard areas, Stanford will conduct site-specific geotechnical analyses to ensure slope stability both during and after construction.
- All work or maintenance should be scheduled outside the wet season (October 15 to March 15). If any work or maintenance must take place within the wet season, the Conservation Program manager must be consulted and may assign measures that reduce or avoid the risk of landslides.

In addition to implementing the Special Conservation Area Plan, Stanford must obtain permits and approvals from applicable federal and state wildlife and water quality agencies to perform work in creeks that support steelhead.

Because construction of infrastructure, habitat improvement and conservation projects could adversely affect steelhead, construction activities would have a potentially significant impact on steelhead.

The following mitigation measures would reduce impacts to steelhead to a level that is less-than-significant:

1. Steelhead habitat avoidance. To the extent feasible, grading or ground-disturbing activities within 150 feet of the top of the bank of a creek that supports steelhead shall be avoided.
2. Protective measures. If avoidance of steelhead habitat is not feasible, Stanford shall obtain any required permits and approvals from federal and state wildlife agencies as well as a Streambed Alteration Agreement. Such permits and approvals shall specify the conditions under which construction activities may occur, including any applicable construction windows, installation of coffer dams or other measures necessary to protect steelhead.

**Impact BIO-7: Project activities would not result in substantial loss or degradation of riparian habitat. (Less than Significant Impact)**

Construction of infrastructure, habitat improvement and conservation projects including channel modifications and removal of man-made facilities and barriers to steelhead migration could occur within riparian habitat outside of the Academic Growth Boundary. Because Stanford's activities in riparian areas are subject to the USFWS-approved Stanford HCP and the County-approved Special Conservation Area Plan (as described in Sections 5.4 and 5.5), project impacts on riparian habitat would be less-than-significant.

## **Impact BIO-8: Project construction activities could result in the loss of native oak woodland habitat. (Less than Significant Impact with Mitigation)**

Under California Public Resources Code §21083.4, counties are required to evaluate impacts to oak woodlands as part of the environmental analysis conducted in compliance with CEQA, and determine whether a project's impacts to oak woodlands are significant. In response to this statute, the County developed its own set of significance criteria for impacts to oak woodlands, whereby a decrease of 0.5 acre or more in the native oak canopy of an oak woodland is considered a significant impact.

As shown in Figure BIO.3, an Oak Woodland/Savannah community is present within the Academic Growth Boundary in the Lathrop Development District. Oak Woodland/Savannah communities also are present outside the Academic Growth Boundary.

Removal of oaks within the Oak Woodland/Savannah community for development of new buildings in the Lathrop Development District would have the potential to result in a significant direct impact to oak woodland. Project activities would not result in indirect impacts to oak woodland because project operations would not be expected to introduce non-native plant species that outcompete native oak trees, or introduce Sudden Oak Death into the oak woodlands.

Because there are no County-mapped Oak Woodland/ Savannah communities on Stanford's lands, the mitigation measures specified by the Santa Clara County Planning Office Guide to Evaluating Oak Woodlands Impacts (last updated July 28, 2011) do not directly apply to the project; however those measures provide a useful framework. The following mitigation measures, which are modeled on the Planning Office Guide to Evaluating Oak Woodlands Impacts, would reduce impacts to oak woodlands to a level that is less-than-significant:

1. Prior to oak tree removal within the Lathrop Development District, a tree removal plan and arborist report shall be submitted which identifies the species type, acreage, diameter, and amount of canopy of oak trees proposed for removal. The arborist report shall be prepared by an I.S.A. Certified Arborist, Registered Professional Forester, or another professional acceptable to the County Planning Office.
2. If the proposed oak tree removal would result in a decrease of 0.5 acre or more of native oak canopy on the project site, at least two of the following three mitigation measures shall be implemented:
  - (A) Planting Replacement of Oak Trees. Pursuant to Public Resources Code §21083.4, the planting of oaks shall not fulfill more than 50 percent of the mitigation requirement for the project.

Tree replacement can be dependent upon the size of the canopy of the removed trees, the number of trees to be removed, the size of trees to be removed, the type of trees to be removed, the steepness of the slope on which trees will be removed, or the amount of room on a parcel in which trees can be planted. The objective of tree planting shall be to restore former oak woodland at a ratio of 2:1 or 3:1 based on the condition of the oak woodland habitat. 2:1 restoration is recommended for medium quality oak woodland habitat, and 3:1 restoration is recommended for high quality oak woodland habitat.

The following standard mitigation ratios shall be used unless otherwise accepted by the Planning Office based on site specific characteristics:

- For the removal of one small tree (5-18 inches): two 24-inch boxed trees or three 15 gallon trees.
- For the removal of 1 medium tree (18-24 inches): three 24-inch boxed trees or four 15 gallon trees.
- For the removal of a tree larger than 24 inches: four 24-inch boxed trees or five 15 gallon trees.

All tree replacement shall be with in-kind species, unless alternate species are approved by the county (in some cases replacement in-kind is not the preferred option in terms of biological conservation objectives).

A Tree Planting and Maintenance Plan shall be submitted showing species, size, spacing and location of plantings and the location and species of established vegetation.

- (B) Conservation Easement. Protect existing native oak trees on or off the project site from future development through a conservation easement or fee title dedication to the County or a land conservation group approved by the County.

Oak woodland offered as mitigation must be configured in such a manner as to best preserve the integrity of the oak ecosystem and minimize the ratio of edge to area. Priority should be given to conserving oak habitat adjacent to existing woodlands under conservation easements, public lands or open space lands.

As a general guide, the protection of existing oak woodlands through conservation easements should mitigate for the loss of oaks at a ratio equal to 2:1 or 3:1 based on the condition of the oak woodland habitat. 2:1 conservation is recommended for medium quality oak woodland habitat, and 3:1 conservation is recommended for high quality oak woodland habitat. Land proposed as mitigation, when viewed with adjacent conservation land, should not result in conserved parcels of less than one acre.

- (C) Other Options. Oak woodland mitigation may occur in the form of in lieu fees paid to an agency, acceptable to the Planning Office, which shall use the fees for the preservation, restoration, or creation of oak woodland habitat. There must be a direct nexus between the amount of fees paid and mitigation required in terms of oak tree replacement and oak woodland preservation.

In lieu fees shall be paid to a natural resource agency or nonprofit organization (i.e. Open Space, Parks) for planting of oak trees to create oak woodland habitat located in Santa Clara County. If this option is selected by Stanford, Stanford must obtain documentation from the local agency or organization confirming receipt of the payment and that the funds will be used for planting of oak trees for preservation, restoration, or creation of oak woodland habitat at the required ratio.

**Impact BIO-9: Project construction activities could result in substantial adverse effects on jurisdictional waters and wetlands through direct filling, hydrological interruption, or other means. (Less than Significant Impact with Mitigation)**

Construction of new buildings, infrastructure, habitat enhancements/improvements and conservation projects could necessitate filling or altering jurisdictional waters and wetlands. For example, removal of barriers to steelhead migration would involve work within jurisdictional waters. Construction and enhancement of breeding ponds for California tiger salamander can require work within jurisdictional wetlands. While only a small quantity of jurisdictional waters or wetlands are located in areas upon which new buildings could be constructed, it is possible that infrastructure and habitat enhancement improvements could affect jurisdictional waters and wetlands in all locations in which such features are present outside and within the Academic Growth Boundary.

Project construction activities could result in potentially significant impacts to jurisdictional waters and wetlands.

Project impacts to jurisdictional waters and wetlands would be mitigated to less-than-significant levels through implementation of the following mitigation measures:

1. Jurisdictional waters and wetland identification. Stanford has provided a wetlands delineation that covers the lands within the Academic Growth Boundary. Prior to grading or ground-disturbing activities on lands outside the Academic Growth Boundary that have not been evaluated in the current delineation, a qualified wetland biologist shall delineate jurisdictional waters or wetlands within 250 feet of the construction site.
2. Jurisdictional waters and wetlands avoidance. To the extent feasible, grading or ground-disturbing activities within 250 feet of jurisdictional waters or wetlands shall be avoided.
3. Jurisdictional waters or wetland replacement. If avoidance of jurisdictional waters or wetlands is not feasible, Stanford shall obtain appropriate authorization from the USACE or Regional Water Quality Control Board. As specified by the USACE or Regional Water Quality Control Board, any jurisdictional waters or wetlands that are lost as a result of project development shall be replaced through the creation, preservation or restoration of jurisdictional waters or wetlands of equal function and value to those that are lost.



**Impact BIO-10: Implementation of the project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Less than Significant Impact)**

Grassland, Oak Woodland/Savannah, Riparian Woodland and Creeks, Chaparral and Scrub, Seasonal Wetlands, and Perennial Standing Water areas outside of the Academic Growth Boundary can provide movement corridors and nursery sites for fish and wildlife. While construction activities associated with infrastructure and habitat enhancement improvements temporarily could impede wildlife movement, such improvements would not result in long-term substantial interference. Implementation of the USFWS-approved Stanford HCP and County-approved Special Conservation Area Plan further ensures that impacts to movement corridors and nursery sites for fish and wildlife on lands outside the Academic Growth Boundary would be less-than-significant.

Within the Academic Growth Boundary, the Oak Woodland/Savannah community within the Lathrop Development District and Lagunita and its adjacent uplands can provide movement corridors for the California tiger salamander. Implementation of the USFWS-approved Stanford HCP ensures that impacts to movement of the California tiger salamander would be less-than-significant.

**Impact BIO-11: The implementation of the project would not fundamentally conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. (No Impact)**

The Stanford HCP authorizes “take” resulting from Stanford’s activities related to academic uses, general campus management and maintenance, redevelopment, future development and conservation programs. The uses proposed under the 2018 General Use Permit are consistent with the uses addressed by the Stanford HCP. No impact would occur.

**Impact BIO-12: Implementation of the project could conflict with local Santa Clara County tree preservation ordinance (Less than Significant with Mitigation).**

Construction of project academic facilities, housing units and infrastructure improvements could result in the need to remove trees that are protected by the Santa Clara County tree preservation ordinance. [The interpretation memorandum dated July 1, 2014](#) documents the manner in which the tree preservation ordinance has been applied at Stanford.

Project construction activities could result in potentially significant impacts to protected trees.

The following mitigation measures would ensure compliance with the County's tree preservation ordinance:

1. A "tree" is defined a woody plant having a single trunk measuring at least 37.7 inches in circumference (12 inches or more in diameter) or in the case of multi-trunk trees, a trunk size of 75.4 inches in circumference (24 inches in diameter). A protected tree on the Stanford campus is a:
  - heritage tree (if included on the County's heritage resource inventory adopted by resolution of the Board of Supervisors);
  - a tree planted or retained as required by conditions of approval of County permits;
  - and a tree located within County rights-of-way and easements.

Stanford shall not remove a protected tree except as follows:

- a. Removal of the protected tree is authorized by a County land use approval for which a grading or building permit has been issued.
  - b. Removal of the protected tree is authorized by a County-issued administrative permit or encroachment permit for tree removal; or
  - c. Removal of the protected tree is exempt. In addition to trees removed pursuant to a County land use approval, the ordinance currently exempts removal of a protected tree in the following circumstances:
    - the tree is diseased, dead, or dying or substantially damaged from natural causes;
    - tree cutting is needed to remove a hazard to life and personal property; and
    - maintenance work within public utility easements
2. Issuance of a land use permit, administrative permit or encroachment permit that authorizes removal of a protected tree shall be conditioned as follows:
    - a. Protected trees shall be replaced at a ratio of 3:1 for oaks and 1:1 for other protected trees; or
    - b. Stanford may submit a Vegetation Management Plan for the entire campus to the County Planning Office for review and approval. This plan must provide for the same or greater level of tree protection as the measures described in subsection (a) above.

## 8.0 APPENDICES

- Appendix A Summary Table from Stanford Data and RareFind Search
- Appendix B Preparers' Resumes

## APPENDIX A

### Summary Table from Stanford Data and RareFind Search

**Potential for Special-Status Plant Species to Occur Within the Academic Growth Boundary (AGB)  
(as determined from RareFind and Stanford records, including Thomas' Flora of the Santa Cruz Mountains)**

Botanical Name	Common Name	Federal and State Status	Potential to Occur within the Academic Growth Boundary
<i>Acanthomintha duttonii</i>	San Mateo thorn-mint	FE, SE	Not recorded from Stanford; nearest known occurrence is at Edgewood County Park (~5.3 miles northwest of Stanford).
<i>Androsace elongata acuta</i>	California rockjasmine		Historically recorded from Stanford, but not observed in decades.
<i>Allium peninsulare franciscanum</i>	Franciscan onion		Not recorded and not expected within the AGB; recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the AGB.
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck		Not recorded from Stanford.
<i>Arabis blepharophylla</i>	coast rock cress		Historically recorded from Stanford, but not observed in decades.
<i>Centromadia parryi congdonii</i>	Congdon's tarplant		Not recorded from Stanford.
<i>Chorizanthe robusta robusta</i>	robust spineflower	FE	Not recorded from Stanford.
<i>Cirsium fontinale fontinale</i>	Crystal Springs fountain thistle	FE, SE	Not recorded from Stanford.
<i>Cirsium praeteriens</i>	lost thistle		Not recorded from Stanford.
<i>Collinsia corymbosa</i>	round-headed Chinese-houses		Not recorded from Stanford.
<i>Collinsia multicolor</i>	San Francisco chinese houses		Historically recorded from Stanford area, but not observed for many decades.
<i>Cypripedium montanum</i>	Mountain lady's slipper		Historically recorded from Stanford area, but not observed for many decades.
<i>Dirca occidentalis</i>	western leatherwood		Not recorded and not expected within the AGB; recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the AGB and historically from near Los Trancos Creek.

Botanical Name	Common Name	Federal and State Status	Potential to Occur within the Academic Growth Boundary
<i>Eryngium aristulatum hooveri</i>	Hoover's button-celery		A different variety of this species, <i>Eryngium aristulatum</i> var. <i>aristulatum</i> , is recorded from Stanford. The variety <i>E. aristulatum</i> var. <i>hooveri</i> has not been verified from Stanford.
<i>Fritillaria liliacea</i>	Fragrant fritillary		This species has been historically recorded from Stanford, but has not been observed for decades. It is known from grasslands ~4.0 miles to the northwest.
<i>Hemizonia congesta</i>	congested-headed hayfield tarplant		A different variety of this species, <i>Hemizonia congesta</i> ssp. <i>luzulifolia</i> , occurs at Jasper Ridge. The variety <i>H. congesta</i> var. <i>congesta</i> is present at Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the AGB.
<i>Horkelia cuneata sericea</i>	Kellogg's horkelia		Not recorded from Stanford.
<i>Lasthenia conjugens</i>	Contra Costa goldfields	FE	Not recorded from Stanford.
<i>Lathyrus jepsonii jepsonii</i>	Delta tule pea		A different variety of this species, <i>Lathyrus jepsonii</i> var. <i>californicus</i> has been historically recorded from Stanford. The variety <i>L. jepsonii</i> var. <i>jepsonii</i> has not been recorded from Stanford.
<i>Lessingia hololeuca</i>	wooly-headed lessingia		This is found at Stanford, not expected within the AGB; recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the AGB.
<i>Lessingia tenuis</i>	spring lessingia		This is found at Stanford, not expected within the AGB; recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the AGB.
<i>Linanthus acicularis</i>	bristly linanthus		Historically present in area, but not recorded for many decades.
<i>Linanthus ambiguus</i>	serpentine linanthus		Not recorded and not expected within the AGB; recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the AGB.
<i>Lilium maritimum</i>	coast lily		Not recorded from Stanford.
<i>Malacothamnus arcuatus</i> and <i>Malacothamnus hallii</i>	arcuate bush-mallow		The records on these species are combined, and it is unclear if both species are present. Neither has been recorded and not are expected within the AGB; at least one has been recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the AGB.
<i>Malacothamnus clementinus</i>	San Clemente Island bush-mallow	FE, SE	Not recorded from Stanford.
<i>Malacothamnus davidsonii</i>	Davidson's bush-mallow		Not recorded from Stanford.
<i>Microseris paludosa</i>	marsh scorzonella		Not recorded from Stanford.

Botanical Name	Common Name	Federal and State Status	Potential to Occur within the Academic Growth Boundary
<i>Monolopia gracilens</i>	woodland monolopia		Not recorded and not expected within the AGB; recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the AGB.
<i>Pedicularis dudleyi</i>		SR	Not recorded from Stanford.
<i>Pentachaeta bellidiflora</i>	white-rayed pentachaeta	FE, SE	Not recorded from Stanford; nearest known occurrence is at Edgewood County Park (~5.3 miles northwest of Stanford).
<i>Perideridia gairdneri gairdneri</i>	Gairdner's yampa		Present at Stanford.
<i>Piperia michaelii</i>	Michael's piperia		This is found at Stanford, not expected within the AGB; recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the AGB.
<i>Plagiobothrys chorisianus chorisianus</i>			A different variety of this species, <i>Plagiobothrys chorisianus</i> var. <i>hickmanii</i> is found at Stanford. The variety <i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> has not been recorded from Stanford.
<i>Plagiobothrys chorisianus hickmanii</i>			This is found at Stanford, not expected within the AGB; recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the AGB.
<i>Plagiobothrys diffusus</i>		SE	Not recorded from Stanford.
<i>Polemonium carneum</i>			Not recorded from Stanford.
<i>Senecio aphanactis</i>			Not recorded from Stanford.
<i>Stylocline amphibola</i>	Mount Diablo cottonseed		Historically recorded from Stanford area; Coyote Hill in 1990s.
<i>Stuckenia filiformis alpina</i>			Not recorded from Stanford.
<i>Trifolium amoenum</i>	showy indian clover	FE, SE	Historic record (1950s), but not recorded since.
<i>Triphysaria floribunda</i>			Not recorded from Stanford.

Notes:

1 United States Fish and Wildlife Service and California Department of Fish and Wildlife listing status definitions:

FE = Federally listed as endangered

FT = Federally listed as threatened

SE = State endangered

ST = State listed as threatened

SC (T) = State candidate for listing as threatened

SR = State listed as rare

**Potential for Special-Status Animal Species to Occur in the GUP Study Area (as determined from RareFind and Stanford records)**

Zoological Name	Common Name	Federal and State Status	Potential to Occur within the Academic Growth Boundary
<b>INVERTEBRATES</b>			
<i>Anodonta</i> species (likely <i>A. californiensis</i> and/or <i>A. oregonensis</i> )	freshwater mussel		Uncommon, but present in the San Francisquito Creek watershed and historically found in Felt Reservoir
<i>Bombus</i> species ( <i>B. caliginosus</i> , <i>B. crotchii</i> , and <i>B. occidentalis</i> )	bumble bee		Recorded from region, but precise distribution and conservation status unknown
<i>Callophrys mossii bayensis</i>	San Bruno elfin butterfly	FE	Not recorded from Stanford, and well outside of known range (San Bruno Mountain and immediate vicinity)
<i>Euphydryas editha bayensis</i>	Bay checkerspot butterfly	FT	Not recorded and not expected in the Stanford GUP area; recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the GUP area, but extinct at Jasper Ridge since 1997. Critical Habitat for the subspecies is designated at Jasper Ridge.
<i>Speyeria callippe callippe</i>	Callippe silverspot butterfly	FT	Not recorded from and not expected at Stanford; well outside of the known range of this subspecies.
<i>Speyeria zerene myrtleae</i>	Myrtle's silverspot butterfly	FE	Not recorded from and not expected at Stanford; well outside of the known range of this subspecies.
<b>FISH</b>			
<i>Hypomesus transpacificus</i>	delta smelt	FT, SE	Not recorded from and not expected at Stanford.
<i>Oncorhynchus kisutch</i>	coho salmon	FE, SE	This species may have been historically present in San Francisquito watershed, but no known verified or recent reports exist.
<i>Oncorhynchus mykiss</i>	steelhead (CCC DPS)	FT	Present in San Francisquito Creek and Los Trancos Creek. These creeks are designated Critical Habitat for this entity.
<i>Spirinchus thaleichthys</i>	longfin smelt	FC, ST	Not recorded from and not expected at Stanford.
<b>AMPHIBIANS</b>			
<i>Ambystoma californiense</i>	California tiger salamander	FT, ST	Present. Subject of Stanford HCP.
<i>Aneides flavipunctatus niger</i>	Santa Cruz black salamander	SSC	Not recorded and not expected in the Stanford GUP area; recorded from Stanford's Jasper Ridge (San Mateo County), 1.75 miles west of the GUP area



Zoological Name	Common Name	Federal and State Status	Potential to Occur within the Academic Growth Boundary
<i>Rana draytonii</i>	California red-legged frog	FT, SSC	Present in Matadero and Deer creeks. Formerly found in the Stanford portion San Francisquito and Los Trancos creeks...but not observed during annual surveys in those creeks since 2007 and 1996, respectively. Subject of Stanford HCP.
<b>REPTILES</b>			
<i>Actinemys marmorata</i>	western pond turtle	Federal Proposed, SSC	Present in Felt Reservoir, and scattered throughout the San Francisquito watershed.
<i>Thamnophis sirtalis tetrataenia</i>	San Francisco gartersnake	FE, SE, FP	Stanford University is part of long-identified intergrade zone between San Francisco gartersnake and red-sided gartersnake. Intergrade individuals are present in Lagunita and immediate vicinity. The San Francisco gartersnake is not found at Stanford. The intergrade form is subject of Stanford HCP.
<b>BIRDS</b>			
<i>Aquila chrysaetos</i>	golden eagle	FP	Not uncommon at Stanford, but not documented to nest in the GUP area.
<i>Asio otus</i>	long-eared owl	SSC	Known from area, but not known to nest in GUP area.
<i>Athene cunicularia</i>	burrowing owl	SSC	Known to overwinter at Stanford. No evidence of recent nesting.
<i>Brachyramphus marmoratus</i>	Marbled murrelet	FT, SE	Not recorded from and not expected at Stanford.
<i>Buteo swainsoni</i>	Swainson's hawk	ST	Not recorded nesting at Stanford.
<i>Charadrius nivosus nivosus</i>	western snowy plover	FT	Not recorded nesting at Stanford.
<i>Coccyzus americanus</i>	yellow-billed cuckoo	FT, SE	Not recorded from Stanford, and not expected.
<i>Elanus leucurus</i>	white-tailed kite	FP	Present
<i>Falco peregrinus anatum</i>	American peregrine falcon	FP	Not uncommon at Stanford; despite persistent rumors peregrine falcons have not been documented to nest on Hoover Tower (or anywhere else at Stanford).
<i>Geothlypis trichas sinuosa</i>	saltmarsh common yellowthroat	SSC	Not recorded and not expected in the Stanford GUP area; recorded from Stanford's Jasper Ridge

Zoological Name	Common Name	Federal and State Status	Potential to Occur within the Academic Growth Boundary
			(San Mateo County), 1.75 miles west of the GUP area and along San Francisco Bay.
<i>Gymnogyps californianus</i>	California condor	FE, SE, FP	Individuals of this species were historically occasionally observed at Stanford, until at least the late 1960s. Recent sightings in the area are presumed to be of individuals originating from Pinnacles National Park. Condors have never been recorded to nest at Stanford.
<i>Haliaeetus leucocephalus</i>	bald eagle	SE, FP	A pair successfully nested at Felt Reservoir in 2016.
<i>Laterallus jamaicensis coturniculus</i>	California black rail	ST	Not recorded and not expected in the Stanford GUP area; recorded from along San Francisco Bay.
<i>Melospiza melodia pusillula</i>	Alameda song sparrow	SSC	This subspecies is not recorded and not expected in the Stanford GUP area; recorded from along San Francisco Bay.
<i>Rallus lobsoletus</i>	Ridgway's rail	FE, SE, FP	Not recorded and not expected in the Stanford GUP area; recorded from along San Francisco Bay.
<i>Sterna antillarum browni</i>	California least tern	FE, SE, FP	Not recorded nesting at Stanford.
<b>MAMMALS</b>			
<i>Antrozous pallidus</i>	pallid bat	SSC	Historically present at Stanford, but no observations of a maternal roost have been made for several decades.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	SC	Occasionally observed in the area, but no known maternal roosts have been recorded from Stanford.
<i>Dipodomys venustus venustus</i>	Santa Cruz kangaroo rat		Historically recorded from area, but no recent observations in the GUP area
<i>Lasiurus cinereus</i>	hoary bat		Recorded from the region, but given their aversion to humans, they are not expected in the Stanford GUP area.
<i>Neotoma fuscipes annectens</i>	San Francisco dusky-footed woodrat	SSC	Present
<i>Reithrodontomys raviventris</i>	salt marsh harvest mouse	FE, SE, FP	Not recorded and not expected in the Stanford GUP area; recorded from along San Francisco Bay.
<i>Sorex vagrans halicoetes</i>	salt-marsh wandering shrew	SC	Not recorded and not expected in the Stanford GUP area; recorded from along San Francisco Bay.

Zoological Name	Common Name	Federal and State Status	Potential to Occur within the Academic Growth Boundary
<i>Taxidea taxus</i>	American badger	SSC	Formerly very rare, but apparently increasing in distribution and abundance. Not recorded from the Stanford GUP area, but observed at Jasper Ridge in 2015.

Notes:

\*Species has low potential to occur and no reported occurrences within 1 mile of the project footprint. The species will not be further discussed in this technical memorandum.

Abbreviations:

CCC – Central California Coast

DPS – Distinct Population Segment

FC – Federal candidate

FD – Federally delisted

FE – Federally endangered

FP – California Department of Fish and Wildlife Fully Protected

FT – Federally threatened

## APPENDIX B

### Preparers' Curriculum Vitae

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- Dr. Alan Launer
- Dr. Esther Cole Adelsheim

## 15 | Wetlands Delineation



*Lagunita at sunset.  
Photo: Ian Terpin, Stanford University Communications*



DEPARTMENT OF THE ARMY  
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
1455 MARKET STREET, 16<sup>TH</sup> FLOOR  
SAN FRANCISCO, CALIFORNIA 94103-1398

DEC 28 2015

Regulatory Division

Subject: File Number 2001-26686S

Mr. Jeff Olberding  
Olberding Environmental, Inc.  
3170 Crow Canyon Place, Suite 260  
San Ramon, California 94583

Mr. Jeff Olberding:

This correspondence is in reference to your submittal of March 14, 2013, and revised submittal of April 16, 2015, on behalf of Stanford University, requesting a preliminary jurisdictional determination of the extent of navigable waters of the United States (U.S.) and waters of the U.S. occurring on the main Stanford University Campus, located in Palo Alto, Santa Clara County, California.

All proposed discharges of dredged or fill material occurring below the plane of ordinary high water in non-tidal waters of the U.S.; or below the high tide line in tidal waters of the U.S.; and within the lateral extent of wetlands adjacent to these waters, typically require Department of the Army authorization and the issuance of a permit under Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 *et seq.*). Waters of the U.S. generally include the territorial seas; all traditional navigable waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters subject to the ebb and flow of the tide; wetlands adjacent to traditional navigable waters; non-navigable tributaries of traditional navigable waters that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally; and wetlands directly abutting such tributaries. Where a case-specific analysis determines the existence of a "significant nexus" effect with a traditional navigable water, waters of the U.S. may also include non-navigable tributaries that are not relatively permanent; wetlands adjacent to non-navigable tributaries that are not relatively permanent; wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary; and certain ephemeral streams in the arid West.}

The enclosed delineation map entitled, "Preliminary Jurisdictional Determination, SPN File Number 2001-26686S, Stanford University Campus, Palo Alto, Santa Clara County, CA," in one sheet date certified December 18, 2015, accurately depicts the extent and location of wetlands and other waters of the U.S. within the boundary area of the site that are subject to U.S. Army Corps of Engineers' regulatory authority under section 404 of the Clean Water Act. This approved jurisdictional determination is based on the current conditions of the site, as verified during a field investigation of September 19, 2013, a review of available digital photographic imagery, and a review of other data included in your submittal. While this preliminary jurisdictional determination was conducted pursuant to Regulatory Guidance Letter No. 08-02,




*Jurisdictional Determinations*, it may be subject to future revision if new information or a change in field conditions becomes subsequently apparent. The basis for this preliminary jurisdictional determination is fully explained in the enclosed *Preliminary Jurisdictional Determination Form*. You are requested to sign and date this form and return it to this office within two weeks of receipt.

You are advised that the preliminary jurisdictional determination may **not** be appealed through the U.S. Army Corps of Engineers' *Administrative Appeal Process*, as described in 33 C.F.R. Part 331 (65 Fed. Reg. 16,486; Mar. 28, 2000). Under the provisions of 33 C.F.R. § 331.5(b)(9), non-appealable actions include preliminary jurisdictional determinations since they are considered to be only advisory in nature and make no definitive conclusions on the jurisdictional status of the water bodies in question. However, you may request this office to provide an approved jurisdictional determination that precisely identifies the scope of jurisdictional waters on the site; an approved jurisdictional determination may be appealed through the *Administrative Appeal Process*. If you anticipate requesting an approved jurisdictional determination at some future date, you are advised not to engage in any on-site grading or other construction activity in the interim to avoid potential violations and penalties under Section 404 of the Clean Water Act.

You may refer any questions on this matter to Katerina Galacatos of my Regulatory staff by telephone at 415-503-6778 or by e-mail at [katerina.galacatos@usace.army.mil](mailto:katerina.galacatos@usace.army.mil). All correspondence should be addressed to the Regulatory Division, South Branch, referencing the file number at the head of this letter.

The San Francisco District is committed to improving service to our customers. My Regulatory staff seeks to achieve the goals of the Regulatory Program in an efficient and cooperative manner, while preserving and protecting our nation's aquatic resources. If you would like to provide comments on our Regulatory Program, please complete the Customer Service Survey Form available on our website:  
<http://www.spn.usace.army.mil/Missions/Regulatory.aspx>.

Sincerely,

  
f Tori White  
Acting Chief, Regulatory Division

Enclosures

Copies Furnished (w/enclosures):

Stanford University, Palo Alto, CA (Attn. Tom Zigterman)

Copy Furnished (w/encl 1 only):

CA RWQCB, Oakland, CA



# PRELIMINARY JURISDICTIONAL DETERMINATION FORM

## San Francisco District

This Preliminary Jurisdictional Determination finds that there "may be" waters of the United States in the subject review area and identifies all such aquatic features, based on the following information:

Regulatory Division: South Branch

File Number: 2001-266860S

PJD Completion Date: 12-18-2015

### Review Area Location

City/County: Stanford/San Mateo State: California  
Nearest Named Waterbody: San Francisquito Creek  
Approximate Center Coordinates of Review Area  
Latitude (degree decimal format): 37.43262°N  
Longitude (degree decimal format): -122.17248°W  
Approximate Total Acreage of Review Area: Appr. 1305 acres

File Name: Stanford University Campus

### Applicant or Requestor Information

Name: Tom  
Company Name: Zigterman  
Street/P.O. Box: 327 Bonair Siding, Stanford University  
City/State/Zip Code: Stanford, CA

### Estimated Total Amount of Waters in Review Area

Non-Wetland Waters: 15,867 lineal feet      feet wide and/or  
8.19 acre(s)      Flow Regime: Multiple

Wetlands:      lineal feet      feet wide and/or  
37.381 acre(s)      Cowardin Class: Palustrine- emergent

### Name of Section 10 Waters Occurring in Review Area

Tidal:  
Non-Tidal:

Office (Desk) Determination

Field Determination:

Date(s) of Site Visit(s): 09-13-2013

**SUPPORTING DATA: Data reviewed for Preliminary JD (check all that apply – checked items should be included in case file and, where checked and requested, appropriately reference sources below)**

Maps, Plans, plots or plat submitted by or on behalf of applicant/requestor (specify): February 25, 2015 revised map

Data sheets submitted by or on behalf of applicant/requestor (specify):

Corps concurs with data sheets/delineation report.

Corps does not concur with data sheets/delineation report.

Data sheets prepared by the Corps.

Corps navigable waters' study (specify):

U.S. Geological Survey Hydrologic Atlas:

USGS NHD data.

USGS HUC maps.

U.S. Geological Survey map(s) (cite quad name/scale):

USDA Natural Resources Conservation Service Soil Survey.

National wetlands inventory map(s) (specify):

State/Local wetland inventory map(s) (specify):

FEMA/FIRM maps.

100-year Floodplain Elevation (specify, if known):

Photographs:  Aerial (specify name and date):

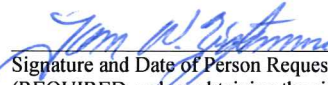
Other (specify name and date):

Previous JD determination(s) (specify File No. and date of response letter):

Other information (specify):

**IMPORTANT NOTE: If the information recorded on this form has not been verified by the Corps, the form should not be relied upon for later jurisdictional determinations.**

Signature and Date of Regulatory Project Manager  
(REQUIRED)

  
Signature and Date of Person Requesting Preliminary JD  
(REQUIRED, unless obtaining the signature is impracticable)

**EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:**

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

<b>Aquatic Resource I.D.</b>	<b>Latitude (degree decimal format)</b>	<b>Longitude (degree decimal format)</b>	<b>Cowardin Class and Flow Regime</b>	<b>Estimated Area or Lineal Feet of Aquatic Resource</b>	<b>Type of Aquatic Resource</b>
d-2	37.43692°N	-122.16157°W	Select Flow: Seasonal	848 lineal ft acre(s) ft wide	Natural Creek
d-3	37.43332°N	-122.16696°W	Select Flow: Seasonal	376 lineal ft acre(s) ft wide	Natural Creek
d-4	37.43314°N	-122.16799°W	Select Flow: Seasonal	392 lineal ft acre(s) ft wide	Natural Creek
d-5	37.43363°N	-122.16874°W	Select Flow: Seasonal	407 lineal ft acre(s) ft wide	Natural Creek
d-6	37.43243°N	-122.16937°W	Select Flow: Seasonal	335 lineal ft acre(s) ft wide	Natural Creek
d-7	37.43219°N	-122.16957°W	Select Flow: Seasonal	542 lineal ft acre(s) ft wide	Natural Creek
d-8	37.43083°N	-122.17022°W	Select Flow: Seasonal	421 lineal ft acre(s) ft wide	Natural Creek
d-9	37.43113°N	-122.16819°W	Select Flow: Seasonal	316 lineal ft acre(s) ft wide	Natural Creek
d-10	37.43198°N	-122.16904°W	Select Flow: Seasonal	220 lineal ft acre(s) ft wide	Natural Creek
d-11	37.43299°N	-122.16711°W	Select Flow: Seasonal	170 lineal ft acre(s) ft wide	Natural Creek
d-12	37.42338°N	-122.18574°W	Select Flow: Perennial	2222 lineal ft acre(s) ft wide	Natural Creek
d-13	37.42226°N	-122.18085°W	Select Flow: Seasonal	584 lineal ft acre(s) ft wide	Natural Creek
d-14	37.42003°N	-122.17566°W	Select Flow: Seasonal	290 lineal ft acre(s) ft wide	Natural Creek
d-15	37.41603°N	-122.17149°W	Select Flow: Perennial	2679 lineal ft acre(s) ft wide	Natural Creek
d-16	37.41343°N	-122.15920°W	Select Flow: Perennial	1492 lineal ft acre(s) ft wide	Natural Creek
d-17	37.42894°Select	-122.15469°Select	Select Flow: Perennial	1781 lineal ft acre(s) ft wide	Natural Creek
	°Select	- °Select	Select Flow: Select	lineal ft acre(s) ft wide	Select
	°Select	- °Select	Select Flow: Select	lineal ft acre(s) ft wide	Select

**EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:**

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

<b>Aquatic Resource I.D.</b>	<b>Latitude (degree decimal format)</b>	<b>Longitude (degree decimal format)</b>	<b>Cowardin Class and Flow Regime</b>	<b>Estimated Area or Lineal Feet of Aquatic Resource</b>		<b>Type of Aquatic Resource</b>
w-11	37.41946°N	-122.15673°W	Select Flow: Seasonal	lineal ft 0.4 acre(s)	ft wide	Seasonal Wetland
w-12	37.42852°N	-122.15061°W	Select Flow: Seasonal	lineal ft 0.1 acre(s)	ft wide	Seasonal Wetland
w-13	37.4320 °N	-122.16791°W	Select Flow: Seasonal	lineal ft 0.86 acre(s)	ft wide	Seasonal Wetland
w-14	37.43296°N	-122.16750°W	Select Flow: Seasonal	lineal ft 0.12 acre(s)	ft wide	Seasonal Wetland
w-8	37.43472°N	-122.16906°W	Select Flow: N/A	lineal ft 0.01 acre(s)	ft wide	Seasonal Wetland
w-9	37.43460°N	-122.16925°W	Select Flow: N/A	lineal ft 0.05 acre(s)	ft wide	Seasonal Wetland
w-10	37.42238°N	-122.17640°W	Select Flow: N/A	lineal ft 34.75 acre(s)	ft wide	Pond or Lake
w1	37.43949°N	-122.16509°W	Select Flow: N/A	lineal ft 0.68 acre(s)	ft wide	Seasonal Wetland
w2	37.43993°N	-122.16782°W	Select Flow: N/A	lineal ft 0.07 acre(s)	ft wide	Seasonal Wetland
w3	37.44076°N	-122.16622°W	Select Flow: N/A	lineal ft 0.16 acre(s)	ft wide	Seasonal Wetland
w4	37.43923°N	-122.16657°W	Select Flow: N/A	lineal ft 0.001 acre(s)	ft wide	Seasonal Wetland
w5	37.43260°N	-122.16563°W	Select Flow: N/A	lineal ft 0.05 acre(s)	ft wide	Seasonal Wetland
w6	37.43276°N	-122.16785°W	Select Flow: N/A	lineal ft 0.09 acre(s)	ft wide	Seasonal Wetland
w7	37.43514°N	-122.16928°W	Select Flow: N/A	lineal ft 0.04 acre(s)	ft wide	Select
	°N	- °W	Select Flow: N/A	lineal ft acre(s)	ft wide	Select
	°N	- °W	Select Flow: N/A	lineal ft acre(s)	ft wide	Select
	°N	- °W	Select Flow: N/A	lineal ft acre(s)	ft wide	Select
	°N	- °W	Select Flow: N/A	lineal ft acre(s)	ft wide	Select

Preliminary Jurisdictional Determination  
 SDV File Number 2015-24606  
 Stanford University Campus  
 Palo Alto, Santa Clara County, CA

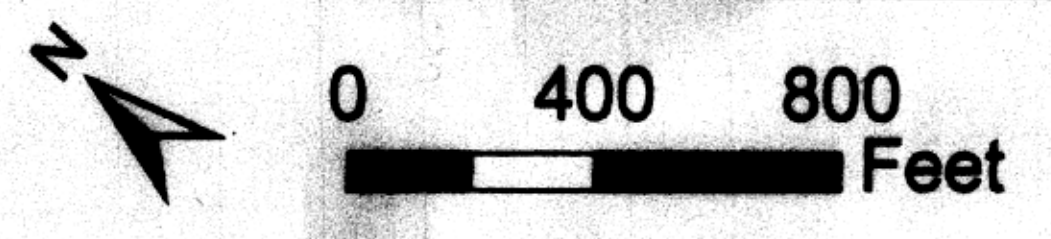
Project Lead/Reviewer  
 Isolated Wetland  
 Jurisdictional Wetland  
 Jurisdictional Waters

All wetland areas mapped as jurisdictional and isolated and areas below ordinary high water within jurisdictional waters are for jurisdictional waters of the U.S. pursuant to Section 404 of the Clean Water Act of 1972.

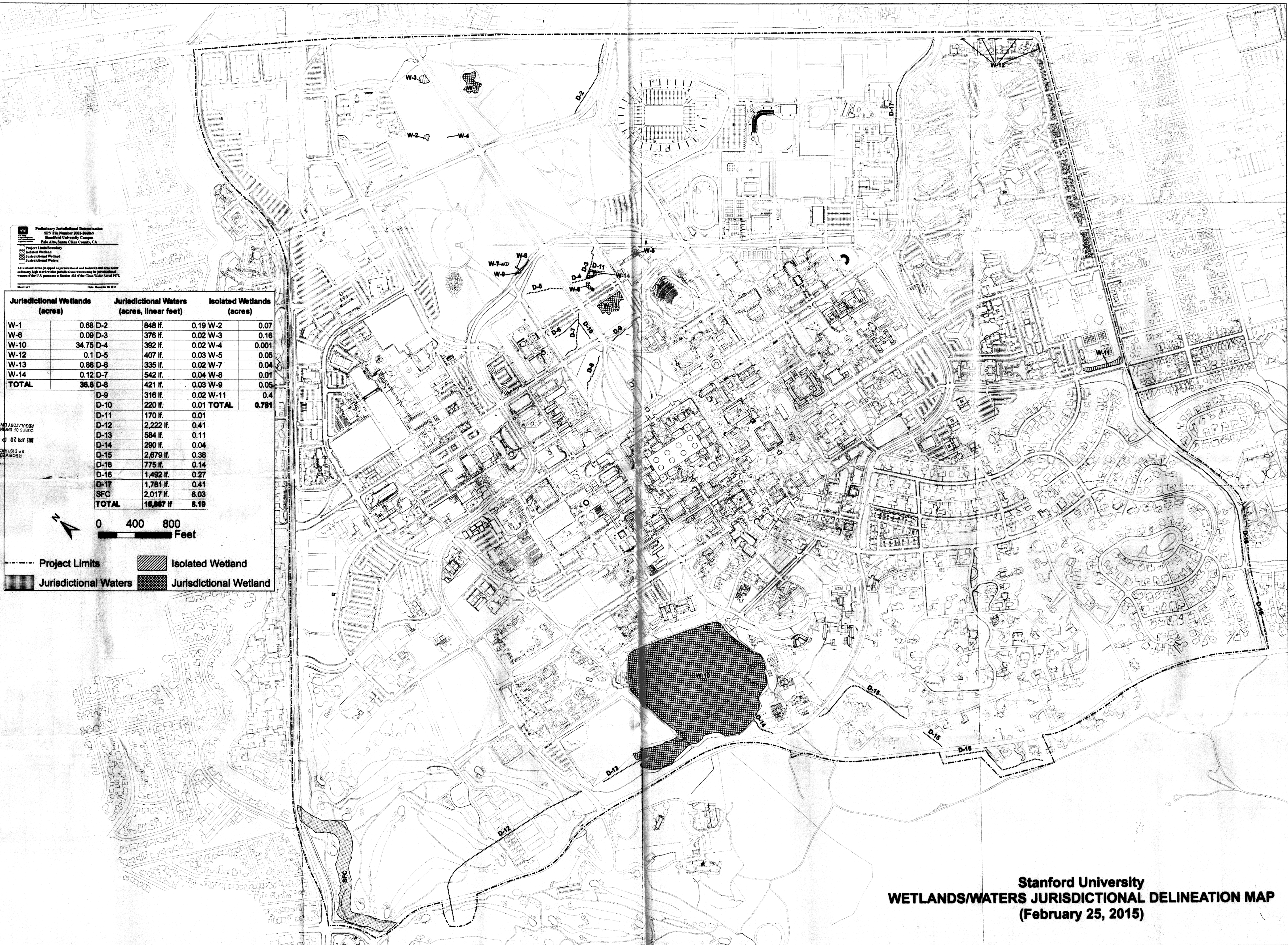
Sheet 1 of 1 Date: December 16, 2015

Jurisdictional Wetlands (acres)		Jurisdictional Waters (acres, linear feet)		Isolated Wetlands (acres)	
W-1	0.68	D-2	848 lf.	W-2	0.07
W-6	0.09	D-3	376 lf.	W-3	0.16
W-10	34.75	D-4	392 lf.	W-4	0.001
W-12	0.1	D-5	407 lf.	W-5	0.05
W-13	0.86	D-6	335 lf.	W-7	0.04
W-14	0.12	D-7	542 lf.	W-8	0.01
<b>TOTAL</b>	<b>36.6</b>	D-8	421 lf.	W-9	0.05
		D-9	316 lf.	W-11	0.4
		D-10	220 lf.	<b>TOTAL</b>	<b>0.781</b>
		D-11	170 lf.		
		D-12	2,222 lf.		
		D-13	584 lf.		
		D-14	290 lf.		
		D-15	2,679 lf.		
		D-16	775 lf.		
		D-16	1,492 lf.		
		D-17	1,781 lf.		
		SFC	2,017 lf.		
		<b>TOTAL</b>	<b>15,957 lf.</b>		

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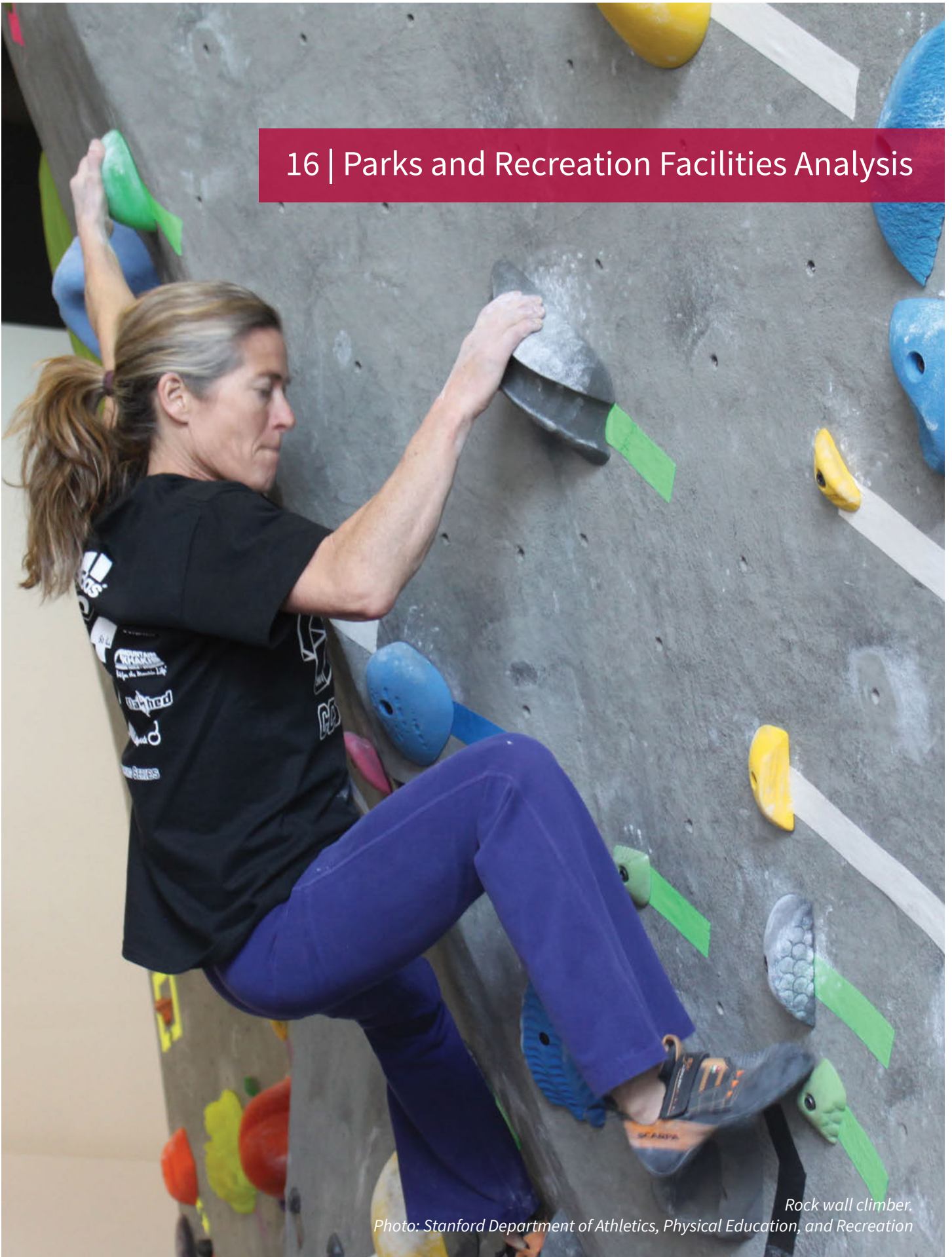


Project Limits  
 Isolated Wetland  
 Jurisdictional Waters  
 Jurisdictional Wetland



**Stanford University  
 WETLANDS/WATERS JURISDICTIONAL DELINEATION MAP  
 (February 25, 2015)**

## 16 | Parks and Recreation Facilities Analysis



Rock wall climber.  
Photo: Stanford Department of Athletics, Physical Education, and Recreation

## 16 | Parks and Recreation Facilities Analysis

### **SUMMARY OF REVISIONS**

This April 2017 version of Tab 16 -- Parks and Recreation Facilities Analysis contains the following revisions to the version provided to Santa Clara County in November, 2016:

- As directed by Santa Clara County staff, estimates of campus residents in the year 2018 have been revised to exclude the approved Escondido Village Graduate Residences project. This project would be under construction by 2018, but is not anticipated to be occupied until 2020.
- Estimates of campus residents in the year 2020 have been added to reflect conditions at full development of the existing 2000 General Use Permit. This scenario is identical to the 2018 scenario except it includes occupancy of the approved Escondido Village Graduate Residences project.
- A sensitivity analysis has been added to determine whether growth in faculty, staff, students and other population segments who study or work on the campus but do not live on campus, combined with the usage by future campus residents, might cause substantial physical deterioration of nearby public park and recreation facilities.
- Acreages devoted to active recreational use at regional/ district parks have been calculated to address a scoping comment pointing out that recreational use of these large parks is concentrated in active use areas.
- A footnote has been added to explain that overcrowding and increased demand for public facilities and programs are not impacts under CEQA.

# 1.0 INTRODUCTION

The purpose of this chapter is to provide background information and data to support the Environmental Impact Report’s analysis of the project’s recreation impacts. It contains two sections: Section 2.0 describes Stanford’s existing on-campus recreation facilities and designated Campus Open Space; Section 3.0 provides data and analysis based on the standards for assessing recreation impacts under CEQA, including Stanford’s 2016 Recreation Survey used to determine the potential for substantial deterioration of nearby public park and recreation facilities. Stanford’s conclusions and a good neighbor offer are described at the end of this analysis.

# 2.0 EXISTING ON-CAMPUS RECREATION FACILITIES AND CAMPUS OPEN SPACE

Like many universities, Stanford has athletic and recreation facilities to serve its students, faculty and staff. The campus also has groves, lawns, courtyards and plazas that support outdoor gatherings, picnicking, casual recreation and peaceful contemplation.

**Table 1** below lists recreation facilities at Stanford University. This list is limited to facilities that are used by the general Stanford population for sports and fitness activities. Facilities exclusively used for varsity and club sports are not included in this list. Varsity facilities serve more than 2,000 student athletes but are not open to the general campus population. Off-campus recreation and fitness centers at the SLAC National Accelerator Laboratory, Redwood City and Porter Drive in Palo Alto, are also not included.

Each of the facility types and names is identified with a letter and number in the third column of Table 1. These same identifiers show the location of each facility in **Figure REC.1**.

**Table 1: Existing Recreation Facilities at Stanford University**

Facility Type	Use	Location and Size/Quantity	Comments
A. Recreation play fields	Intramural sports, club sports, general recreation	A1. 13 acres at El Camino Real A2. 10 acres at Sand Hill Road	Some fields are for intramural and club sports, managed by the Department of Athletics, Physical Education and Recreation under a reservation system, and provide general recreation for the Stanford community and public when not reserved for athletics. Other fields are managed by Residential and Dining Enterprises and are accessed on a first-come, first-served basis, for general recreation purposes.
	General recreation	A3. 4 acres at Wilbur Field, on top of the Wilbur Field Garage A4. 1.5 acres on top of underground Roble Garage, to be completed January 2017 A5. 0.8 acres at Manzanita Field A6. 0.6 acres at Arguello Field and Courts	
B. Recreation centers	General recreation	B1. Arrillaga Center for Sports and Recreation (ACSR) B2. Ford Center B3. Burnham Pavilion B4. Schwab Residential Center fitness center B5. Stanford Campus Recreation Association (SCRA) B6. Arrillaga Outdoor Education and Recreation Center (AOERC) B7. School of Medicine Outdoor recreation area B8. Li Ka Shing Center (LKSC) fitness center	ACSR, Ford Center and Burnham Pavilion currently open to Stanford affiliates M-Thu from 6a–11p, Fri from 6 a–10p and Sa-Su from 9a–10p. SCRA currently is open 5a–10p every day to members. AOERC currently open to Stanford affiliates M-Thu from 5:30a–12a, Fri from 5:30a–11p and Sa-Su from 8a–10p. The LKSC fitness center currently is open 24 hours a day. The Schwab Residential fitness center is open to student residents only.
	Climbing	Included in B1: ACSR Bouldering Center Included in B6: AOERC Climbing Center	ACSR Bouldering Center currently open to Stanford affiliates M-Thu from 6a–11p, Fri from 6 a–10p and Sa-Su from 9a–10p. AOERC Climbing Center currently open to Stanford affiliates at lunch and evening hours M-Thu and Su afternoons. Families of Stanford affiliates are welcome on weekends.
C. Recreation courts	Tennis	C1. Eight at Taube C2. Six at Taube South C3. Eight at West Campus C4. Three at Escondido Village	Currently available for sign-up M-Th when classes not scheduled and all day F-Su. Currently reserved for faculty and staff M-F from 12p–1p. Escondido Village tennis courts are available on a first-come, first-served basis.
	Sand volleyball	C5. Two at Ford Quad C6. Four at Nelson Mall C7. One at Escondido Village	Those at Ford Quad and Nelson Mall currently available during daylight hours outside of varsity



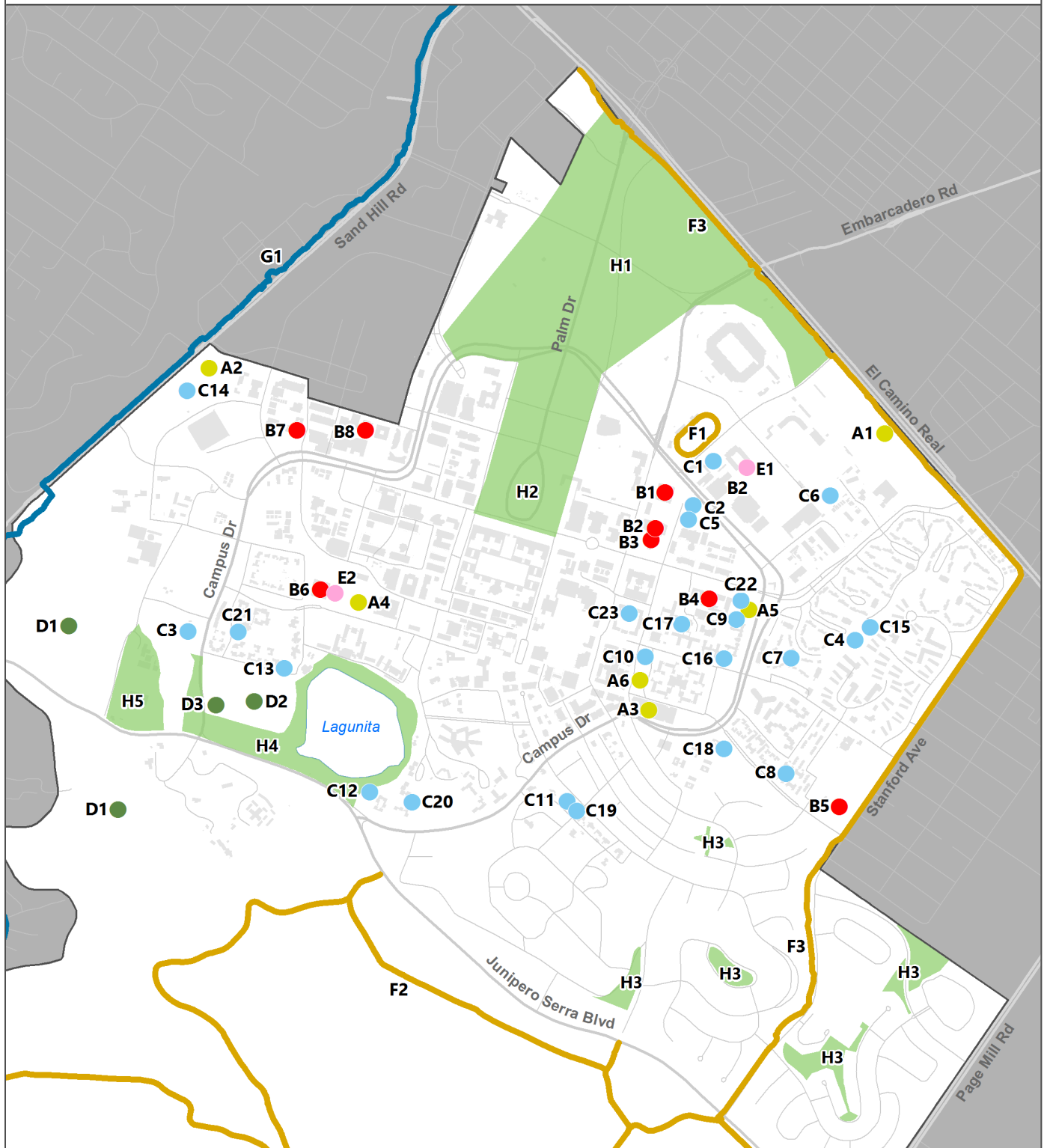
Facility Type	Use	Location and Size/Quantity	Comments
		C8. Two at Rains C9. One at Manzanita Field C10. Two at Arguello Field C11. Five at Mayfield Row C12. One at Lake Houses C13. One at Governor's Corner C14. Two at Sandhill Fields	use. Others available on a first-come, first-served basis.
	Paved basketball	C15. Two at Escondido Village C16. Two at Castano Greens C17. Two at Branner/Toyon C18. One at Cowell C19. Twelve at Mayfield Row C20. Three at Lake Houses C21. Three at Governor's Corner C22. Two at Manzanita Field	Available on a first-come, first-served basis.
	Bocce ball	C23. One at Crothers	Available on a first-come, first-served basis.
D. Golf course and driving range	Golf and golf practice	D1. 18 holes D2. 55 hitting tees at range D3. Golf Learning Center to be completed Spring 2017.	Course available to Stanford affiliates by reservation. Range open to public when classes not scheduled. Golf Learning Center open for summer camps.
E. Recreation pools	Swimming	E1. One 50m recreation pool at Avery Aquatic Center E2. One 50m recreation pool at the Avery Recreation Pool at the AOERC	Avery Aquatic Center currently open to Stanford affiliates M-F from 10a–2p. Avery Rec Pool open M-F from 7a–8p and Sa-Su from 12p–6p.
F. Recreation routes	Walking, jogging	F1. 400m, nine-lane oval at Angell field F2. Dish Recreation Route, approximately 4 miles F3. Stanford Perimeter Trail, approximately 3.4 miles	Tracks currently open daily 8a to dusk. Recreation access is allowed on portions of existing service roads in “dish” area of foothills. The “dish” is open approximately sunrise to sunset daily. The Stanford Perimeter Trail currently is open all day and night.
G. Designated County trails	Walking, jogging	G1. Designated Trail C-1 G2. Designated Trail C-2 G3. Designated Trail S-1	See <b>Figure BCR.14</b> in <b>Tab 4 -- Background Conditions Report</b> for the location of these trails.
H. Designated Campus Open Space	General recreation	H1. Arboretum H2. The Oval H3. San Juan neighborhood parks H4. Lagunita and surroundings H5. Red Barn and equestrian facilities	Campus Open Space areas are currently unfenced and open at all times; however many areas are not well lit and nighttime use is not encouraged.

Source: Stanford Land Use and Environmental Planning Office, with the University Architect and Campus Planning Department, Department of Athletics, Physical Education, and Recreation, and Residential and Dining Enterprises.

Under the 2000 General Use Permit, Stanford relocated or replaced some of its existing facilities, and also used about 290,000 square feet of its 2,035,000 authorized net new academic and academic support square footage for new athletic and recreation facilities and expansion of existing athletic and recreation facilities. In addition, Stanford expanded the Stanford Campus Residential Association (SCRA) sports complex with square footage authorized for community centers. (Source: [2000 General Use Permit Annual Reports](#))

Further, the Escondido Village Graduate Residences (EVGR) project is currently anticipated to reconfigure and add some indoor and outdoor recreation spaces, including spaces for activities such as sand volleyball and badminton.

Figure REC.1: Campus Recreation Facilities



**Recreational Facilities**

- Play Field
- Recreation Center
- Recreation Court
- Golf Course/Driving Range
- Recreation Pool
- Recreation Route
- Designated Trail
- Campus Open Space Designation

**Stanford University**

0 1,500  
 Feet

Stanford University, LBRE/LUEP  
November 5, 2016

## 3.0 STANDARDS FOR ASSESSING RECREATION IMPACTS

Appendix G to the California Environmental Quality Act (CEQA) Guidelines presents two ways to assess whether a project's recreation impacts would be significant:

1. Does the project include recreation facilities or require the construction or expansion of recreation facilities that might have an adverse physical effect on the environment?
2. Would the project increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facilities would occur or be accelerated?

The sections below provide technical analyses of these two CEQA questions. To address the first question, many jurisdictions, including the City of Palo Alto, use an “acres of park per 1,000 residents” target to determine whether a residential project will necessitate construction of new onsite parks to serve additional residents, which in turn could result in physical environmental effects. This technical report similarly compares the campus residential population anticipated to occur under the proposed 2018 General Use Permit to the acreage of designated Campus Open Space, which function much like a park.

To address the second question, this technical report assesses whether the increase in campus residents anticipated under the proposed 2018 General Use Permit would result in “substantial deterioration” to offsite public parks and recreation facilities. In a recent case involving Cal State University East Bay (CSU East Bay), the court found that the university should have investigated the use of off-campus public park facilities.<sup>1</sup> To address the potential for an increase in campus residents to result in substantial deterioration of nearby parks, Stanford surveyed its campus residents to determine current offsite park usage and to create a basis for projecting future offsite park use.

This technical report also contains an appendix that presents a sensitivity analysis to determine whether the anticipated increases in faculty, staff, student, and other population segments who study and work on the campus but do not live on the campus, combined with the usage by future campus residents, might result in substantial physical deterioration of nearby public park and recreation facilities.

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<sup>1</sup> By contrast, crowding and increased demand for public facilities and programs, absent physical deterioration or new construction, are not environmental impacts under CEQA. See *City of Hayward v. Board of Trustees*, 242 Cal. App. 4th 833, 840-48 (2015) (need for additional fire protection services due to campus population growth is a social and economic impact, not an environmental impact); *Saltonstall v. City of Sacramento*, 234 Cal. App. 4th 549, 584-85 (2015) (event crowds and crowd safety are social, not environmental impacts); *Goleta Union School Dist. v. Regents of the Univ. of California*, 37 Cal. App. 4th 1025, 1031-34 (1995) (classroom overcrowding is not a CEQA impact); *San Franciscans for Reasonable Growth v. City & County of San Francisco*, 209 Cal. App. 3d 1502, 1516 (1989) (increased demand for childcare is an economic and social effect, not an environmental impact). See also *Preserve Poway v. City of Poway*, 245 Cal. App. 4th 560, 575-82 (2016) (changes in community character are not effects under CEQA); *National Parks & Conservation Assn. v. County of Riverside*, 71 Cal. App. 4th 1341, 1359-62 (1999) (impact on the “wilderness experience” of park visitors is not a CEQA impact).

### 3.1 Construction or Expansion of Recreation Facilities

The [Stanford Community Plan](#) (page 90) identified the acreage of designated Campus Open Space in the faculty/staff subdivision, and compared that acreage to the faculty/staff residential population to arrive at a Campus Open Space per resident ratio. The Community Plan states that the Campus Open Space areas “can be considered adequate” for the residential population as long as the quantity of designated open space meets the five acres per 1,000 residents standard recognized by the State of California as the maximum amount of park area that can be required in a new subdivision.

The analysis presented below expands the analysis in the Stanford Community Plan by comparing the number of all campus residents (including students) anticipated under the proposed 2018 General Use Permit to the total acreage of designated Campus Open Space lands to determine whether there would be at least five acres of designated Campus Open Space per 1,000 campus residents. Campus residents include all residents on Stanford lands within unincorporated Santa Clara County, including students, faculty and staff. The resident population estimates also include the spouses and children of graduate students and faculty/staff living on the campus. The acreage designated as Campus Open Space is not proposed to change under the 2018 General Use Permit. All 265 acres presently designated as Campus Open Space would retain this designation.

**Table 2** below demonstrates that the lands presently designated Campus Open Space, as shown in Figure 5.2 of the Stanford Community Plan, provide ample space to support additional campus residents under the proposed 2018 General Use Permit. Under both existing and future conditions, there would be more than five acres of designated Campus Open Space per 1,000 campus residents. Therefore, the 2018 General Use Permit would not create a need for construction of new onsite park facilities.

**Table 2: Campus Open Space Acreage per Resident**

	Fall 2015	Fall 2018	Fall 2020	Fall 2035
Campus resident population	14,902	15,338	17,560	21,664
Designated Campus Open Space (approximate)	265	265	265	265
Ratio (acres per 1,000 residents, approximate)	17.8	17.3	15.1	12.2

While existing Campus Open Space will be sufficient to support additional residents anticipated under the 2018 General Use Permit, Stanford will likely use a portion of the net new square footage authorized for academic and academic support uses to construct new recreation facilities, as occurred under the 2000 General Use Permit. Under the 2000 General Use Permit, Stanford relocated or replaced some of its existing recreation facilities, and also used about 290,000 square feet of its 2,035,000 authorized net new academic and academic support square footage for new and expanded athletic and recreation facilities. Under the 2018 General Use Permit, Stanford anticipates that it similarly would relocate or replace some of its existing campus recreation facilities, and would use a portion of its 2,725,000 net new academic and academic support square footage for new or expanded athletic and recreation facilities. The impacts of such construction and use will be addressed throughout the environmental impact report (EIR) as impacts of the development authorized by the 2018 GUP.

## 3.2 Potential for Substantial Deterioration of Nearby Public Park and Recreation Facilities

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The following analysis considers the use of neighboring public park and recreation facilities by Stanford campus residents and the potential that an increase in offsite facility use by Stanford residents could contribute to substantial deterioration of those facilities. The analysis addresses park use by campus residents because each population category of Stanford residents is more likely to use nearby public park and recreation facilities than the same population category of Stanford commuters, and also because data are not available to determine how many commuters use nearby public park and recreation facilities because of proximity to their jobs as opposed to proximity to their places of residence.<sup>2</sup> The analysis is focused on whether “substantial physical deterioration of the facility would occur or be accelerated.”

Substantial deterioration may be defined as a condition requiring replacement or major repairs. This could refer to the replacement of artificial or natural turf or playground equipment and park infrastructure. Increased use by campus residents could result in the substantial physical deterioration of public parks and recreation facilities if the increased use would necessitate turf, equipment or infrastructure to be replaced substantially ahead of their expected lifecycles. The analysis focuses on the deterioration of turf as a screening threshold, as such deterioration is more likely to be immediate and visible, and is therefore a more conservative threshold to apply, compared to the deterioration of hardscape and equipment in a park.

The City of [Palo Alto’s FY 17 Capital Budget](#) (page 238) states that artificial turf has a typical lifespan of 8 to 10 years, in reference to the replacement of artificial turf at the Stanford-Palo Alto Playing Fields. The available literature on the maintenance of natural turf is varied but tends to focus on recovery time required depending on level of use.

One guide for the potential for deterioration of natural turf is the [Turf Management Operations and Maintenance Guide for the Mall in Washington, D.C., dated December 2012](#) (Page 16, Table 1), which provides guidelines for protecting turf, as measured in 1.5- to 2-acre turf areas, or panels. The Guide includes qualitative and quantitative turf protection and maintenance strategies, including post-event restoration, as events have the potential to deteriorate the turf in excess of normal operating procedures and casual public use of the turf areas. The Guide defines a “minor event” as less than 25 attendees at a 2-acre panel, with no turf covering or structures. Under most conditions minor events require no additional recovery time for the turf (heavy rain and frost can lead to closure of turf areas for all users). By contrast, events with 26 to 999 attendees at a panel require three to five days of turf recovery. According to the Guide, the turf and soil system used at the Mall is similar to that used on professional sports fields. Therefore, these guidelines may be applied to both nearby parks and sports fields.

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<sup>2</sup> The sensitivity analysis in Appendix D conservatively assumes all Stanford commuters visiting nearby parks and recreation facilities outside of their place of residence do so because of their affiliation with Stanford. Even under this conservative assumption, the inclusion of commuters does not change the conclusions of the analysis. Stanford also considered whether an increase in campus visitors could contribute to substantial physical deterioration to nearby public park and recreation facilities. Visitors to Stanford were not included in this analysis for several reasons:

- The analysis is meant to capture regular visits to offsite parks, and visitors generally do not visit the Stanford campus on a regular basis;
- It is not possible to draw a meaningful conclusion regarding the frequency or location of offsite park visits by visitors due to the many types of visitors to the Stanford campus, including concert-goers, prospective students arriving for campus tours, and tourists arriving on tour buses;
- There are no data to support an assumption that campus visitors result in a substantial number of deliberate and subsequent visits to nearby offsite parks (or vice versa for that matter). While occasional visits to both Stanford and a nearby park may occur, it is not possible to determine whether one causes the other or, if so, how often this occurs.

While the Guide does not indicate what level of usage would require turf or other recreation facility replacement substantially ahead of its ordinary life, it does indicate that increased use of a 1.5- to 2-acre panel of turf by 25 people or less on a given day is so minor as to require no post-event recovery measures. Likely for this reason, according to [National Park Service Guidelines](#), an event involving 25 or fewer persons at the National Mall does not require a permit.

This Park and Recreation Facilities technical analysis uses the Guide to formulate a conservative screening threshold for physical deterioration from increased park use. Using this screening threshold, an increase of 25 daily visits per two acres of parkland (12.5 daily visits per acre) indicates that no protective measures are needed, and substantial physical deterioration (beyond the level otherwise expected) is not likely to occur.

This screening threshold is reasonably conservative for application to turf areas given that public park and recreation facility usage likely would be spread out over the course of the day, such that 12.5 daily visits might equate to only a few visitors at any one time, and visitors may be using different turf areas, as well as other non-turf facilities within the park, such as pathways, play structures and tennis courts.

The screening threshold is extremely conservative for application to equipment and infrastructure. Such facilities would be less susceptible to substantial deterioration from increased use than natural turf.

Based on the screening threshold, if growth in campus residents were found to result in more than 12.5 daily visits per acre at a particular public park or recreation facility, additional site specific analysis would be performed to determine whether the increase in visitors might require replacement of turf or other recreation facilities substantially in advance of their expected life cycles. An increase of less than 12.5 daily visits per acre at a particular park or recreation facility would indicate that substantial deterioration from increased use by campus residents is highly unlikely.

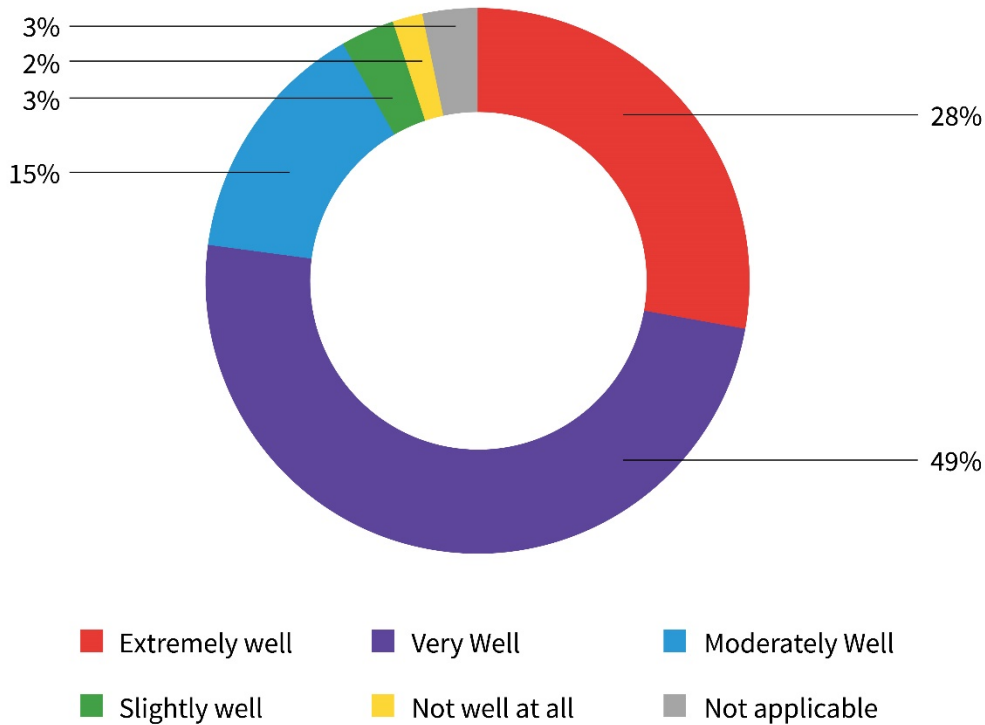
Quantification of the increase in daily offsite park and recreation facility use by Stanford campus residents is based on a survey that documented current use of offsite public park and recreation facilities by the same campus residential populations that are anticipated to grow under the proposed 2018 General Use Permit. Survey responses, by population segment, were used to predict the level of increased park and recreation facility usage from growth in future campus residents anticipated under the 2018 General Use Permit. The assessment also includes a review of recent official municipal documents describing the existing conditions of nearby public park and recreation facilities.

### **3.2.1 Stanford Sports, Fitness and Recreation Facilities Survey**

Stanford conducted a Sports, Fitness and Recreation Facilities Survey (“Survey”) in Spring 2016 to document the use of on-campus sports, fitness and recreation facilities and off-campus facilities in neighboring communities. The survey questions were intended to address how satisfied Stanford affiliates are with on-campus sports, fitness and recreation facilities; and to determine the extent to which campus residents use offsite public park and recreation facilities.

Overall, 1,862 campus residents — faculty, staff and students — responded to the Survey. The Survey results show that Stanford campus residents are generally satisfied with on-campus recreation facilities: 92% reported that their sports, fitness and/or recreation needs are met moderately to extremely well with programs and facilities provided by Stanford.

**Figure 2: Visualization of How Well Stanford Campus Residents Felt that On-Campus Recreation Facilities Met Their Needs**



**3.2.2 Projection of Increase in Public Park and Recreation Facility Use from the Remaining Housing Authorization in the 2000 General Use Permit**

The Survey also asked respondents whether they visited off-campus public park and recreation facilities in nearby communities, specifically those in Palo Alto and Menlo Park. The Survey only included parks in Palo Alto and Menlo Park since the future projected housing is within the Academic Growth Boundary. The Survey also included a list of parks and facilities in Palo Alto and Menlo Park for selection, and respondents had the ability to identify three additional facilities that they visited, beyond the ones listed. Of the 1,862 campus residents who responded to the Survey, 214 (11%) responded that they visited at least one public park or recreation facility in Palo Alto at least monthly, and 96 (5%) responded that they visited at least one public park or recreation facility in Menlo Park at least monthly. Responses regarding visits to private sports and recreation facilities that require membership or payment (such as a yoga instruction facility or private gym) were not included in the analysis because the fees charged to users of such private facilities are used to maintain those facilities.

**Table 3** below identifies the percentage of Stanford campus residents who visit public parks or recreation facilities in nearby communities. The usage of each park or recreation facility is then analyzed separately, because a single person may use more than one park or recreation facility at varying frequencies.



**Table 3: 2016 Stanford Recreation Survey – Percentage of Campus Residents that Visit Palo Alto or Menlo Park Public Park and Recreation Facilities at Least Once per Month**

Population Category	Campus Residents Responding to Survey	Campus Residents Who visit Palo Alto Park and Recreation Facilities	Campus Residents who visit Menlo Park Park and Recreation Facilities
Undergraduate students	823	5%	3%
Graduate students	885	14%	6%
Faculty, staff and postdocs*	154	33%	13%
Total	1,862	11% (214 out of 1,862)	5% (96 out of 1,862)

\* Survey results for postdocs was combined with faculty and staff results.

To estimate the potential increase in public park and recreation facilities visits resulting from growth in campus residents under the remainder of the current 2000 General Use Permit, Stanford used the Survey responses of campus residents to determine the rates of “daily visits” and “daily visits per acre” for undergraduate student, graduate student and faculty/staff resident populations. Those three rates were then applied to the growth in undergraduate student and graduate student resident populations anticipated under the remainder of the 2000 General Use Permit. See **Appendices A and B** for the methodology for extrapolating daily visits from the Survey results, and calculations for projected daily visits under the remainder of the 2000 General Use Permit. Any spouses of graduate students are assumed to have the same behavior as the primary Stanford affiliate and are factored into the projected visits.

**Table 4** shows the number of campus residents anticipated to be added between 2015 and 2018, and between 2015 and 2020 under the current 2000 General Use Permit. The growth in campus residents from 2015 to 2018 is due to the completion and occupancy of student residences at Lagunita and Highland Hall. The growth in residents from 2018 to 2020 is due to occupancy of the Escondido Village Graduate Residences project.

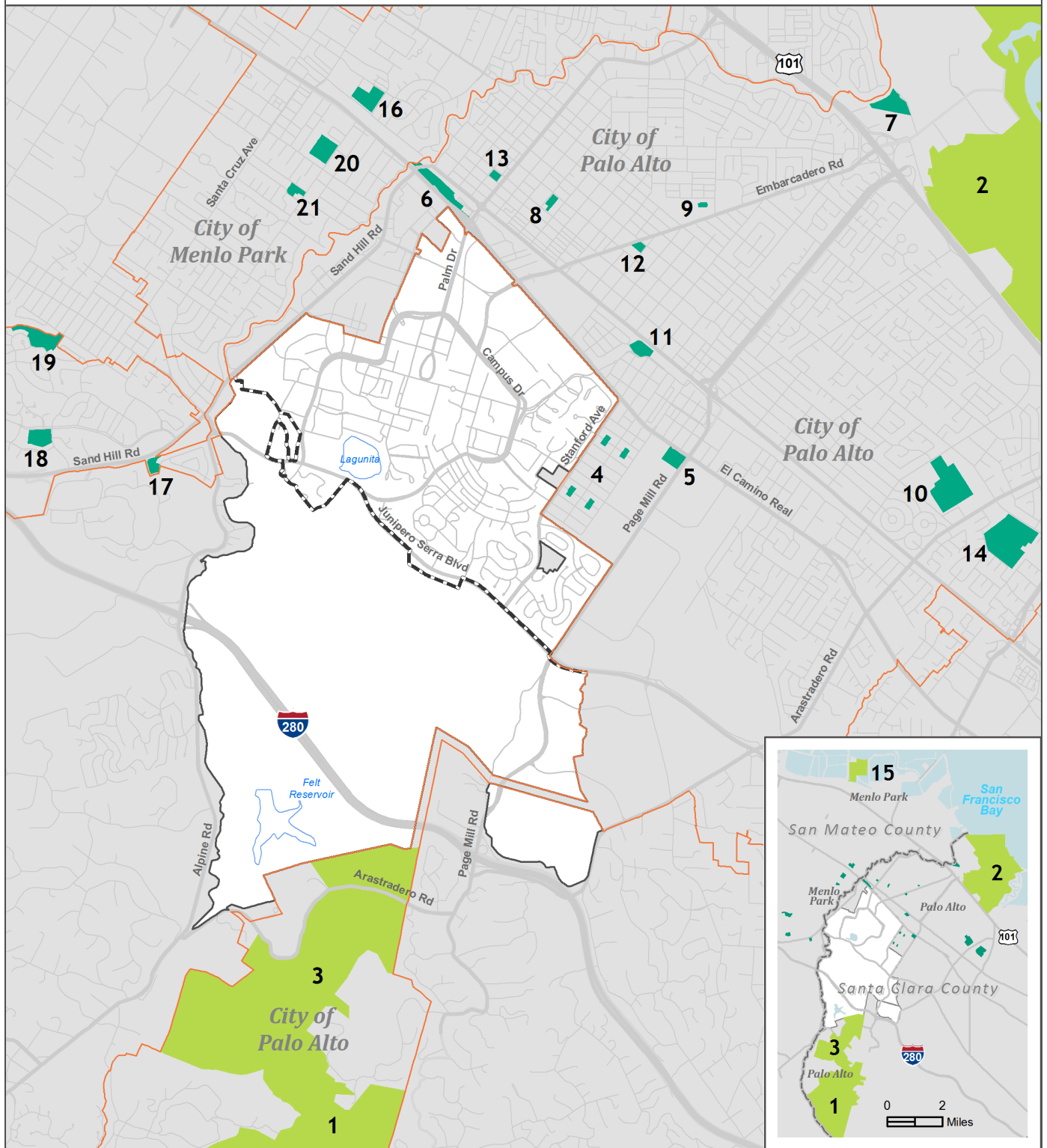
**Table 4: Projected Growth in Residential Population Under the Remainder of the 2000 General Use Permit**

Population Category	Fall 2015 to Fall 2018 Growth in Campus Resident Population
Undergraduate students	216 additional undergraduate students housed in Lagunita
Graduate students and spouses	200 additional graduate students housed in Highland Hall plus 20 spouses (of whom 4 are assumed to be student spouses and 16 are non-student spouses) and no additional children
Faculty and staff	0
Population Category	Fall 2018 to Fall 2020 Growth in Campus Resident Population
Undergraduate students	0
Graduate students and spouses	2,020 additional graduate students housed in Escondido Village Graduate Residences plus 202 spouses (of whom 40 are assumed to be student spouses and 162 are non-student spouses) and no additional children
Faculty and staff	0

**Figure REC.2** below shows the location of nearby public park and recreation facilities that at least five Stanford campus residents said they visit once per month or more. The numbers next to the park and recreation facilities correspond to the park and recreation facilities identified in **Table 5** and **Table 7**.

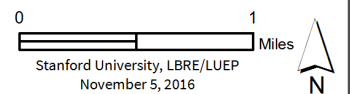
**Table 5** below shows the estimated increase in daily visits and daily visits per acre by campus residents at each public park and recreation facility from 2015 to 2018, and from 2018 to 2020, due to new residential projects authorized under the 2000 General Use Permit. The Graduate School of Business Residences and New Residences at Lagunita Court that opened in Fall 2016 are assumed to contribute to an increase in graduate and undergraduate students that would visit nearby public park and recreation facilities.

Figure REC.2: Park and Recreation Facilities, Palo Alto and Menlo Park



- Park and Recreation Facility - Neighborhood
- Park - Regional/District
- City Limits (Menlo Park and Palo Alto)
- Academic Growth Boundary

Stanford University



The Escondido Village Graduate Residences project is now estimated to open in 2020, and therefore Table 5 breaks out the expected increase in graduate students due to this project. The new recreation facilities constructed with the Escondido Village Graduate Residences project may diminish the increased visits shown below to nearby public parks in College Terrace; however, this analysis conservatively forecasts increased visits based on the current rate of daily visits per resident.

For regional and district parks, Table 5 presents both the total acreage of parkland and the acreage that is actively used for recreational purposes. Daily visits per acre are then presented both based on the total acreage and on the actively used acreage.

**Table 5: Estimated Growth in Usage of Public Park and Recreation Facilities Under the 2000 General Use Permit**

		Acres*	Increase in Daily Visits from 2015-2018 due to residential projects**	Increase in Daily Visits from 2018-2020 due to EVGR**	Total increase in Daily Visits under remainder of 2000 GUP**	Increase in Daily Visits per Acre
<b>Palo Alto</b>						
<b>Parks – Regional/District</b>						
1	Foothills Park/Open Space Preserve	Total 1,400; Active 26.7	2	14	16	0.0; 0.6
2	Baylands Nature Preserve	Total 1,940; Active 9.2	2	10	11	0.0; 1.2
3	Pearson-Arastradero Preserve	Total 622; Active 6.2	2	14	16	0.0; 2.6
<b>Park and Recreation Facilities – Neighborhood</b>						
4	Neighborhood parks in College Terrace (Cameron, Mayfield, Weisshaar, and Werry Parks)	4.4	2	11	13	3.0
5	Mayfield (Stanford-Palo Alto) playing fields	5.9	1	7	7	1.2
6	El Camino Park	12.2	1	7	8	0.7
7	Baylands Athletic Center fields	10.0	1	2	2	0.2
8	Heritage Park	2.01	1	3	3	1.5
9	Rinconada Pool***	NA	1	4	5	NA
10	Mitchell Park	21.4	1	4	5	0.2
11	Peers Park	4.7	1	2	2	0.4
12	Lawn Bowling Green	1.9	1	3	3	1.6
13	Avenidas Senior Center***	NA	1	2	2	NA
14	Cubberley Community Center***	NA	1	3	3	NA
<b>Menlo Park</b>						
<b>Parks – Regional/District</b>						
15	Bedwell Bayfront Park	Total 160; Active 7.0	1	3	3	0.0; 0.4
<b>Park and Recreation Facilities – Neighborhood</b>						
16	Civic Center recreation facilities****	9.3	1	7	8	0.9
17	Stanford Hills Park	3.1	1	4	5	1.6

		Acres*	Increase in Daily Visits from 2015-2018 due to residential projects**	Increase in Daily Visits from 2018-2020 due to EVGR**	Total increase in Daily Visits under remainder of 2000 GUP**	Increase in Daily Visits per Acre
18	Sharon Park	9.8	1	6	7	0.7
19	Sharon Hills Park	11.5	1	5	5	0.4
20	Nealon Park	9.0	1	4	4	0.4
21	Jack W. Lyle Park	4.6	1	2	2	0.4

\*Acreages of all parks were obtained from Palo Alto or Menlo Park City websites and documents, except for Sharon Hills Park, which was calculated by Stanford. Please see Appendix E for calculations on “actively used” park areas for regional/district parks.

\*\* The subtotals for Fall 2015 to 2018 and Fall 2018 to 2020 were calculated with a single decimal point before being added together. The subtotals and totals here are rounded up to the nearest digit.

\*\*\* Visitors to Rinconada Pool, Avenidas Senior Center, and Cubberley Community Center may have paid a fee to use the facilities/programs. In addition, visitors to the Cubberley Community Center may have used either indoor or outdoor facilities.

\*\*\*\* The Survey question for the Civic Center recreation facilities in Menlo Park referred collectively to the Arrillaga Family Gymnasium and Arrillaga Gymnastics Center, and it is likely that some respondents visited these indoor facilities. However, the total visits to the Civic Center recreation facility were conservatively assumed to be using the 9.3 acres of Burgess Park.

### 3.2.3 Projection of Increase in Public Park and Recreation Facility Use Under the 2018 General Use Permit

To estimate the potential increase in public park and recreation facilities visits resulting from growth in campus residents under the proposed 2018 General Use Permit, Stanford used this same methodology as was used to calculate the increase in public park and recreation facilities resulting from growth in campus residents under the current 2000 General Use Permit, as presented in section 3.2.2. The methodology was expanded to also calculate increased park and recreation facilities visits by growth in the faculty/staff resident population and their household members.

The growth in campus residents anticipated to occur under the 2018 General Use Permit would include new faculty/staff residents, graduate and undergraduate student residents, as well as spouses of new graduate student residents and spouses and children of faculty and staff residents.

**Table 6: Projected Growth in Residential Population Under the 2018 General Use Permit**

Population Category	Fall 2018 to Fall 2035 Growth in Campus Resident Population
Undergraduate students	1,700 additional undergraduate students housed on campus
Graduate students and spouses	900 additional graduate students housed on campus plus 90 spouses (of whom 18 are assumed to be student spouses and 72 are non-student spouses), and no additional children
Faculty and staff, and spouses and children *	550 additional faculty and staff residents on campus plus 864 spouses and children

\* Future faculty and staff rental housing could be available to postdocs.

Please see **Tab 5 – Anticipated Changes to Population** for more detail on the projected campus resident population increase.

**Table 7** shows the anticipated increase in daily visits and daily visits per acre to public park and recreation facilities in Palo Alto and Menlo Park that would result from growth of Stanford campus residents under the proposed 2018 General Use Permit.

**Table 7: Estimated Growth in Usage of Public Park and Recreation Facilities by Campus Residents Under the 2018 General Use Permit**

		Acres	Growth in Daily Visits	Daily Visits per Acre
<b>Palo Alto</b>				
<b>Parks – Regional/District</b>				
1	Foothills Park/Open Space Preserve	Total 1,400; Active 26.7	41	0.0; 1.5
2	Baylands Nature Preserve	Total 1,940; Active 9.2	32	0.0; 3.5
3	Pearson-Arastradero Preserve	Total 622; Active 6.2	27	0.0; 4.4
<b>Park and Recreation Facilities – Neighborhood</b>				
4	Neighborhood parks in College Terrace (Cameron, Mayfield, Weisshaar, and Werry Parks)	4.4	37	8.4
5	Mayfield (Stanford-Palo Alto) playing fields	5.9	16	2.7
6	El Camino Park	12.2	16	1.3
7	Baylands Athletic Center fields	10.0	7	0.7
8	Heritage Park	2.01	7	3.5
9	Rinconada Pool	NA	5	NA
10	Mitchell Park	21.4	4	0.2
11	Peers Park	4.7	6	1.3
12	Lawn Bowling Green	1.9	2	1.1
13	Avenidas Senior Center	NA	2	NA
14	Cubberley Community Center	NA	5	NA
<b>Menlo Park</b>				
<b>Parks – Regional/District</b>				
15	Bedwell Bayfront Park	Total 160; Active 7.0	1	0.0; 0.1
<b>Park and Recreation Facilities – Neighborhood</b>				
16	Civic Center recreation facilities	9.3	14	1.5
17	Stanford Hills Park	3.1	12	3.9
18	Sharon Park	9.8	5	0.5
19	Sharon Hills Park	11.5	5	0.4
20	Nealon Park	9.0	4	0.4
21	Jack W. Lyle Park	4.6	3	0.7

As shown in Table 7, the increase in daily visits per acre of public park and recreation facilities would be small. No park would experience an increase over the screening threshold of 12.5 daily visits per acre. Therefore, the 2018 General Use Permit would not result in significant deterioration of public park and recreation facilities.

The Survey results also document minimal usage of community center facilities (e.g., Rinconada Pool, Avenidas Senior Center and Cubberley Community Center) by Stanford campus residents, as shown in Table 7. It is not appropriate to calculate a visits per acre ratio here as Rinconada Pool is a swimming pool, Avenidas is an indoor center, and Cubberley

has visitors to its outdoor and indoor facilities. However, the increase in the number of daily visits is no more than five, which is a very small number.

Other factors supporting the conclusion that substantial deterioration of offsite park and recreation facilities is unlikely to result from campus resident growth under the proposed 2018 General Use Permit include the following:

- Due to the size of the district and regional parks (Foothills Park/Open Space Preserve, Baylands Nature Preserve, Pearson-Arastradero Preserve, and Bedwell Bayfront Park), increased visitorship is less likely to lead to substantial deterioration. The very low increases in visits per acre for district and regional parks shown in Table 7 demonstrate that such increases in park use are negligible given the size of the parks, even when considering the active areas of the district and regional parks.
- The Mayfield (Stanford-Palo Alto) playing field was provided by Stanford to Palo Alto as part of a Development Agreement. Palo Alto controls visitorship through a tiered eligibility system that limits use by non-Palo Alto residents and charges fees to support facility operations and maintenance. Because the City has programs to control visitorship and limit deterioration, substantial deterioration from growth in Stanford campus residents would not occur.
- El Camino Park is also located on Stanford property, leased to the City of Palo Alto since 1915. Palo Alto controls visitorship through a tiered eligibility system that limits nonresident use and charges fees for field use. Because the City has programs to control visitorship and limit deterioration, substantial deterioration from growth in Stanford campus residents would not occur.
- The Survey option for the Civic Center recreation facilities in Menlo Park included Burgess Park, Arrillaga Family Gymnastics Center, and the Arrillaga Family Gymnasium as a single response. The gymnastics center and gymnasium offer both residents and nonresidents a mix of fee-based and free classes, activities and facility rentals. Menlo Park controls visitorship and the fee structure and can adjust these to guard against substantial deterioration from overuse. The number of campus residents using Burgess Park is likely to be less than the conservative estimates provided in Tables 5 and 7 because Survey responders may be using the gymnastics center or gymnasium rather than the park. In any case, growth in campus residents would not result in more than 12.5 daily visits per acre even under these conservative estimates.
- The Survey option for College Terrace parks included all four of these parks as a single response. Mayfield Park includes a public library, and it is likely that some of the Survey respondents may have been visiting the library rather than the park and recreation facilities. Nevertheless, the analysis assumes all responders visit the park and recreation facilities. Even then, the four parks together are projected to experience an additional 37 daily visits by campus residents (910 additional daily visitors per park), averaging 8.4 daily visits per acre, which is below the 12.5 daily visits per acre screening threshold.

### **3.2.4 Non-Resident Stanford Students and Workers (Commuters)**

The body of this technical report calculates future use of nearby public park and recreation facilities by campus residents because residents are more likely than commuters to visit offsite parks on a regular basis. However, a further sensitivity analysis for commuters has been prepared in Appendix D, which concludes that even under conservative assumptions, commuters would not cause the combined resident and commuter daily visits per acre to nearby parks and recreation facilities in Palo Alto and Menlo Park to exceed the screening threshold.

### 3.2.5 Existing Conditions of Public Park and Recreation Facilities

As a final step in the analysis, Stanford reviewed documents assessing the condition of public park and recreation facilities used by campus residents to determine whether any appear to be experiencing substantial deterioration under existing conditions. Documents reviewed included:

- City of Palo Alto Parks, Trails, Open Space and Recreation Master Plan process: Existing conditions for both neighboring parks and nature preserves, compiled April 2015 by consulting firm MIG. The MIG team visited each park site to document and evaluate existing conditions.
- [City of Palo Alto FY 17 Capital Budget](#)
- [City of Menlo Park FY 17 Capital Budget](#)

Please see **Appendix C** for excerpts of these documents addressing the conditions of the public park and recreation facilities discussed in Sections 3.2.2 and 3.2.3. These excerpts include text and photographs that describe various aspects of the parks. In some cases, the text clearly states the condition of the facility. For example, the text for Cameron Park (College Terrace) states: “A small neighborhood park with a large green open space, playground and picnic area (good condition).”

Based on review of the descriptions of public park and recreation facilities in these documents, none of the public park or recreation facilities was identified as substantially deteriorated. Cyclical maintenance upgrades were included in the capital budget programs, and the public park and recreation facilities appear to be well-maintained.

Stanford staff also visited each of these public park and recreation facilities for a visual assessment. None of the parks appeared to be substantially deteriorated. However, there is widespread browning of natural turf likely associated with the current, prolonged drought. City documents and local news sources confirm that both Palo Alto and Menlo Park have reduced watering turf and planted areas, except for formal sports fields. This suggests that the effects of the prolonged drought and the reduction in watering may have contributed to limited deterioration in the condition of certain parks. There is no documentation that substantial deterioration is occurring due to an increase in visitorship.

### 3.2.6 Conclusion and Good Neighbor Offer

Stanford provides excellent on-campus sports, fitness and recreation facilities for its faculty, staff and students. Further, designated Campus Open Space provides outdoor park and recreation facilities in excess of planning standards for residential communities, even with the increase in residents anticipated under the 2018 General Use Permit. New and expanded indoor recreation facilities would be authorized as part of the academic and academic support space authorized by the General Use Permit. Impacts of constructing such facilities would be addressed throughout the EIR.

Occasionally, some campus residents (approximately 5–10%) visit public park and recreation facilities in neighboring communities. Survey data were analyzed to estimate the potential for increased visitorship to these public facilities resulting from growth in campus residents under the proposed 2018 General Use Permit. This analysis suggests that there will be no substantial deterioration of public park and recreation facilities associated with increased visitorship from campus residents under the proposed 2018 General Use Permit.

While no public park is expected to experience substantial deterioration as a result of the proposed 2018 General Use Permit, Stanford recognizes that increased daily visits to the four College Terrace parks would be higher than the increase experienced at other neighborhood parks. This is likely due to the proximity of these parks to the residential areas of the campus. Stanford also recognizes that small neighborhood parks are not managed by reservation systems or other controls and that increased visitorship may result in some additional maintenance costs. Therefore, as a voluntary good-neighbor measure, Stanford offers to provide to the City of Palo Alto a one-time contribution equivalent to the capital budget needs previously identified by the City of Palo Alto (approximately \$300,000) to provide for planned park upgrades and ensure that these College Terrace parks remain in good condition.

Improvements identified in the Palo Alto Capital Budget were as follows:

- Tennis court upgrade (\$215,000 planned for both Terman Park and Weisshaar Park, this good-neighbor offer assumes \$140,000 is for Weisshaar Park), planned for FY 2021.
- Planned infrastructure improvements to upgrade and renovate safety and accessibility of the playground and other features in Cameron Park, approximately \$160,000, planned for FY 2020.



## APPENDIX A: METHODOLOGY FOR CALCULATING VISIT-GENERATION RATE BY POPULATION CATEGORY

- A. Obtain Survey visitor data by individual park or facility.
  1. Obtain number of campus residents and frequency of visits to individual parks or facilities based on Survey responses and affiliate data provided by Stanford Human Resources and Registrar.
  2. Include parks/facilities listed as Survey options, as well as those identified by Survey respondents.
- B. Extrapolate Survey visitor data to Survey visits.
  1. Exclude parks that were visited by less than five surveyed campus residents from further analysis.
  2. Multiply the number of Survey visitors by their visiting frequencies to obtain daily visits.
    - i. Those who visit occasionally are assumed conservatively to visit twice a month (Survey text: “at least monthly.”)
    - ii. Those who visit regularly are assumed to visit twice a week (Survey text: “one to three times a week.”)
    - iii. Those who visit frequently are assumed to visit four times a week (Survey text: “four times a week or more.”)
    - iv. Total Survey visits per month are divided by 30 to obtain Survey daily visits.
  3. Survey visits are calculated per affiliation — undergraduate students, graduate students, faculty and staff. Survey results from postdocs and medical residents are combined with survey results from faculty and staff.
- C. Calculate Survey visit-generation rate (Survey visits per day per respondent, per affiliation, per park/facility).
  1. Divide Survey daily visits for each affiliation by the number of respondents for that affiliation, to obtain the Survey daily visit-generation rate. This is the number of daily visits that a Stanford campus resident of a particular affiliation would generate at a particular park or facility.

- D. Calculate increase in daily visits to a park/facility due to additional housing added to campus from 2016–2018, under the existing 2000 General Use Permit.
1. Multiply Survey daily visit-generation rate by the growth in residential population of a particular affiliation.
  2. Any spouses of graduate students are assumed to have the same behavior (i.e., same Survey visit-generation rate) as the primary Stanford affiliate. Based on historic data, 10% of graduate students were assumed to be part of couples.
  3. It is estimated that 216 undergraduates, 2,220 graduate students and 222 spouses of graduate students will be added to the campus resident population, totaling 2,658.  
Add up daily visits by all affiliations to obtain total increase in daily visits to the park/facility.
- E. Calculate increase in daily visits to a park/facility due to the proposed 2018 General Use Permit.
1. Multiply Survey daily visit-generation rate by the growth in residential population of a particular affiliation, by affiliation.
  2. Any spouses of future graduate students and spouses and children of future faculty and staff are assumed to have the same behavior (i.e., same Survey visit-generation rate) as the primary Stanford affiliate; 10% of graduate students were assumed to be part of couples; and no increase in graduate student families is anticipated. Future faculty/staff household sizes were assumed to be 2.57.
  3. It is estimated that 1,700 undergraduates, 900 graduate students and 90 spouses of graduate students, 550 faculty and staff and 864 spouses and children of faculty and staff will be added to the campus resident population, totaling 4,104.
  4. Add up daily visits per day by all affiliations to obtain total increase in daily visits to the park/facility.
- F. Determine whether increase in daily visits to community parks due to increase of campus residents under 2018 General Use Permit would result in substantial physical deterioration of the parks.
1. Divide the daily visits by the park acreage to calculate the additional daily visits per acre at each park.
  2. Compare the daily visits per acre at each park to the 12.5 daily visits per acre screening threshold to determine whether substantial physical deterioration would occur.

## APPENDIX B: CALCULATIONS FOR PROJECTED VISITS BY CAMPUS RESIDENTS

Note: Projected population increase includes projected dependents. Please see Appendix A for methodology and calculation assumptions.

PALO ALTO	Surveyed Visitors				Daily Visits by surveyed visitors				Rate of daily visits per visitor		Projected daily visits under remainder of 2000 GUP				Projected daily visits under 2018 GUP	
	Occasionally	Regularly	Frequently	Total Visitors	Occasionally	Regularly	Frequently	Total Visits Per Day	Residential population surveyed	Rate of visit per visitor	Projected population increase 2015-2018	Projected future visits 2015-2018	Projected population increase 2018-2020	Projected future visits 2018-2020 (EVGR)	Projected population increase	Projected future visits
<b>Foothills Park / Open Space Preserve</b>																
Undergraduates	13	1	1	15	26	8	16	1.7	823	0.0020	216	0.4	0	0.0	1700	3.4
Graduates and dependents	53	7	0	60	106	56	0	5.4	885	0.0061	220	1.3	2222	13.6	990	6.0
Faculty, Staff and Postdocs	22	7	0	29	44	56	0	3.3	154	0.0216	0	0.0	0	0.0	1414	30.6
				104				10				2		14		41
<b>Baylands Nature Preserve</b>																
Undergraduates	5	3	0	8	10	24	0	1.1	823	0.0014	216	0.3	0	0.0	1700	2.3
Graduates and dependents	34	5	0	39	68	40	0	3.6	885	0.0041	220	0.9	2222	9.0	990	4.0
Faculty, Staff and Postdocs	25	2	1	28	50	16	16	2.7	154	0.0177	0	0.0	0	0.0	1414	25.1
				75				7				2		10		32
<b>Pearson-Arastradero Preserve</b>																
Undergraduates	6	1	1	8	12	8	16	1.2	823	0.0015	216	0.3	0	0.0	1700	2.5
Graduates and dependents	36	9	1	46	72	72	16	5.3	885	0.0060	220	1.3	2222	13.4	990	6.00
Faculty, Staff and Postdocs	14	4	0	18	28	32	0	2.0	154	0.0130	0	0.0	0	0.0	1414	18.4
				72				9				2		14		27
<b>Neighborhood parks in College Terrace (Cameron, Mayfield, Weisshaar, Werry)</b>																
Undergraduates	5	1	1	7	10	8	16	1.1	823	0.0014	216	0.3	0	0.0	1700	2.3
Graduates and dependents	24	4	3	31	48	32	48	4.3	885	0.0048	220	1.1	2222	10.7	990	4.8
Faculty, Staff and Postdocs	16	6	1	23	32	48	16	3.2	154	0.0208	0	0.0	0	0.0	1414	29.4
				61				9				2		11		37

PALO ALTO, con't.	Surveyed Visitors				Daily Visits by surveyed visitors				Rate of daily visits per visitor		Projected daily visits under remainder of 2000 GUP				Projected daily visits under 2018 GUP	
	Occasionally	Regularly	Frequently	Total Visitors	Occasionally	Regularly	Frequently	Total Visits Per Day	Residential population surveyed	Rate of visit per visitor	Projected population increase 2015-2018	Projected future visits 2015-2018	Projected population increase 2018-2020	Projected future visits 2018-2020 (EVGR)	Projected population increase	Projected future visits
<b>Mayfield (Stanford-Palo Alto) playing fields</b>																
Undergraduates	7	0	1	8	14	0	16	1.0	823	0.0012	216	0.3	0	0.0	1700	2.1
Graduates and dependents	12	6	0	18	24	48	0	2.4	885	0.0027	220	0.6	2222	6.0	990	2.7
Faculty, Staff and Postdocs	6	3	0	9	12	24	0	1.2	154	0.0078	0	0.0	0	0.0	1414	11.0
				35				5				1		7		16
<b>El Camino Park</b>																
Undergraduates	7	1	1	9	14	8	16	1.3	823	0.0015	216	0.3	0	0.0	1700	2.6
Graduates and dependents	9	5	1	15	18	40	16	2.5	885	0.0028	220	0.6	2222	6.2	990	2.8
Faculty, Staff and Postdocs	8	2	0	10	16	16	0	1.1	154	0.0069	0	0.0	0	0.0	1414	9.8
				34				5				1		7		16
<b>Baylands Athletic Center fields</b>																
Undergraduates	3	2	0	5	6	16	0	0.7	823	0.0009	216	0.2	0	0.0	1700	1.5
Graduates and dependents	5	1	0	6	10	8	0	0.6	885	0.0007	220	0.1	2222	1.5	990	0.7
Faculty, Staff and Postdocs	7	0	0	7	14	0	0	0.5	154	0.0030	0	0.0	0	0.0	1414	4.3
				18				2				1		2		7
<b>Heritage Park</b>																
Undergraduates	3	1	0	4	6	8	0	0.5	823	0.0006	216	0.1	0	0.0	1700	1.0
Graduates and dependents	7	0	1	8	14	0	16	1.0	885	0.0011	220	0.5	2222	2.5	990	1.1
Faculty, Staff and Postdocs	3	1	0	4	6	8	0	0.5	154	0.0030	0	0.0	0	0.0	1414	4.3
				16				2				1		3		7
<b>Rinconada Pool</b>																
Undergraduates	0	1	0	1	0	8	0	0.3	823	0.0003	216	0.1	0	0.0	1700	0.6
Graduates and dependents	6	2	1	9	12	16	16	1.5	885	0.0017	220	0.4	2222	3.7	990	1.6
Faculty, Staff and Postdocs	4	0	0	4	8	0	0	0.3	154	0.0017	0	0.0	0	0.0	1414	2.5
				14				3				1		4		5

PALO ALTO, con't.	Surveyed Visitors				Daily Visits by surveyed visitors				Rate of daily visits per visitor		Projected daily visits under remainder of 2000 GUP				Projected daily visits under 2018 GUP	
	Occasionally	Regularly	Frequently	Total Visitors	Occasionally	Regularly	Frequently	Total Visits Per Day	Residential population surveyed	Rate of visit per visitor	Projected population increase 2015-2018	Projected future visits 2015-2018	Projected population increase 2018-2020	Projected future visits 2018-2020 (EVGR)	Projected population increase	Projected future visits
<b>Mitchell Park</b>																
Undergraduates	1	0	0	1	2	0	0	0.1	823	0.0001	216	0.0	0	0.0	1700	0.1
Graduates and dependents	6	2	1	9	12	16	16	1.5	885	0.0017	220	0.4	2222	3.7	990	1.6
Faculty, Staff and Postdocs	3	0	0	3	6	0	0	0.2	154	0.0013	0	0.0	0	0.0	1414	1.8
				13				2				1		4		4
<b>Peers Park</b>																
Undergraduates	2	0	0	2	4	0	0	0.1	823	0.0002	216	0.0	0	0.0	1700	0.3
Graduates and dependents	2	1	0	3	4	8	0	0.4	885	0.0005	220	0.1	2222	1.0	990	0.5
Faculty, Staff and Postdocs	3	1	0	4	6	8	0	0.5	154	0.0030	0	0.0	0	0.0	1414	4.3
				9				1				1		2		6
<b>Lawn Bowling Green</b>																
Undergraduates	1	1	0	2	2	8	0	0.3	823	0.0004	216	0.1	0	0.0	1700	0.7
Graduates and dependents	6	0	1	7	12	0	16	0.9	885	0.0011	220	0.2	2222	2.3	990	1.0
Faculty, Staff and Postdocs	0	0	0	0	0	0	0	0.0	154	0.0000	0	0.0	0	0.0	1414	0.0
				9				2				1		3		2
<b>Avenidas Senior Center</b>																
Undergraduates	2	0	0	2	4	0	0	0.1	823	0.0002	216	0.0	0	0.0	1700	0.3
Graduates and dependents	3	1	0	4	6	8	0	0.5	885	0.0005	220	0.1	2222	1.2	990	0.5
Faculty, Staff and Postdocs	1	0	0	1	2	0	0	0.1	154	0.0004	0	0.0	0	0.0	1414	0.6
				7				1				1		2		2
<b>Cubberley Community Center</b>																
Undergraduates	0	0	0	0	0	0	0	0.0	823	0.0000	216	0.0	0	0.0	1700	0.0
Graduates and dependents	1	3	0	4	2	24	0	0.9	885	0.0010	220	0.2	2222	2.2	990	1.0
Faculty, Staff and Postdocs	1	1	0	2	2	8	0	0.3	154	0.0022	0	0.0	0	0.0	1414	3.1
				6				2				1		3		5

MENLO PARK	Surveyed Visitors				Daily Visits by surveyed visitors				Rate of daily visits per visitor		Projected daily visits under remainder of 2000 GUP				Projected daily visits under 2018 GUP	
	Occasionally	Regularly	Frequently	Total Visitors	Occasionally	Regularly	Frequently	Total Visits Per Day	Residential population surveyed	Rate of visit per visitor	Projected population increase 2015-2018	Projected future visits 2015-2018	Projected population increase 2018-2020	Projected future visits 2018-2020 (EVGR)	Projected population increase	Projected future visits
<b>Bedwell Bayfront Park</b>																
Undergraduates	0	0	0	0	0.0	0.0	0.0	0.0	823	0.0000	216	0.0	0	0.0	1700	0.0
Graduates and dependents	0	1	1	2	0.0	0.3	0.5	0.8	885	0.0009	220	0.2	2222	2.0	990	0.9
Faculty, Staff and Postdocs	0	0	0	0	0.0	0.0	0.0	0.0	154	0.0000	0	0.0	0	0.0	1414	0.0
				2				1				1		3		1
<b>Civic Center recreational facilities (Burgess Park, Arrillaga Gym, etc.)</b>																
Undergraduates	9	1	0	10	0.6	0.3	0.0	0.9	823	0.0011	216	0.2	0	0.0	1700	1.8
Graduates and dependents	12	3	2	17	0.8	0.8	1.1	2.7	885	0.0030	220	0.7	2222	6.7	990	3.0
Faculty, Staff and Postdocs	10	1	0	11	0.7	0.3	0.0	0.9	154	0.0061	0	0.0	0	0.0	1414	8.6
				38				5				1		7		14
<b>Stanford Hills Park</b>																
Undergraduates	5	3	0	8	0.3	0.8	0.0	1.1	823	0.0014	216	0.3	0	0.0	1700	2.3
Graduates and dependents	14	2	0	16	0.9	0.5	0.0	1.5	885	0.0017	220	0.4	2222	3.7	990	1.6
Faculty, Staff and Postdocs	4	2	0	6	0.3	0.5	0.0	0.8	154	0.0052	0	0.0	0	0.0	1414	7.4
				30				4				1		4		12
<b>Sharon Park</b>																
Undergraduates	3	0	0	3	0.2	0.0	0.0	0.2	823	0.0002	216	0.1	0	0.0	1700	0.4
Graduates and dependents	17	2	1	20	1.1	0.5	0.5	2.2	885	0.0025	220	0.5	2222	5.5	990	2.5
Faculty, Staff and Postdocs	2	0	0	2	0.1	0.0	0.0	0.1	154	0.0009	0	0.0	0	0.0	1414	1.2
				25				3				1		6		5

MENLO PARK, con't.	Surveyed Visitors				Daily Visits by surveyed visitors				Rate of daily visits per visitor		Projected daily visits under remainder of 2000 GUP				Projected daily visits under 2018 GUP	
	Occasionally	Regularly	Frequently	Total Visitors	Occasionally	Regularly	Frequently	Total Visits Per Day	Residential population surveyed	Rate of visit per visitor	Projected population increase 2015-2018	Projected future visits 2015-2018	Projected population increase 2018-2020	Projected future visits 2018-2020 (EVGR)	Projected population increase	Projected future visits
<b>Sharon Hills Park</b>																
Undergraduates	7	1	0	8	0.5	0.3	0.0	0.7	823	0.0009	216	0.2	0	0.0	1700	1.5
Graduates and dependents	14	3	0	17	0.9	0.8	0.0	1.7	885	0.0020	220	0.4	2222	4.4	990	1.9
Faculty, Staff and Postdocs	2	0	0	2	0.1	0.0	0.0	0.1	154	0.0009	0	0.0	0	0.0	1414	1.2
				27				3				1		5		5
<b>Nealon Park</b>																
Undergraduates	1	0	1	2	0.1	0.0	0.5	0.6	823	0.0007	216	0.2	0	0.0	1700	1.2
Graduates and dependents	2	4	0	6	0.1	1.1	0.0	1.2	885	0.0014	220	0.3	2222	3.0	990	1.3
Faculty, Staff and Postdocs	1	0	0	1	0.1	0.0	0.0	0.1	154	0.0004	0	0.0	0	0.0	1414	0.6
				9				2				1		4		4
<b>Jack W. Lyle Park</b>																
Undergraduates	2	1	0	3	0.1	0.3	0.0	0.4	823	0.0005	216	0.1	0	0.0	1700	0.8
Graduates and dependents	9	0	0	9	0.6	0.0	0.0	0.6	885	0.0007	220	0.1	2222	1.5	990	0.7
Faculty, Staff and Postdocs	1	0	0	1	0.1	0.0	0.0	0.1	154	0.0004	0	0.0	0	0.0	1414	0.6
				13				2				1		2		3

## APPENDIX C: CONDITIONS OF PARKS AND RECREATIONAL FACILITIES IN MENLO PARK AND PALO ALTO

The following pages are excerpted from several documents showing the conditions of relevant parks and recreational facilities in Palo Alto and Menlo Park, respectively.

City of Palo Alto Parks, Trails, Open Space and Recreation Master Plan process: Existing conditions for both [nature preserves](#) and [neighboring parks](#), compiled April 2015 by consulting firm MIG. The MIG team visited each park site to document and evaluate existing conditions.

Parks evaluated include:

- Pearson Arastradero Reserve
- Baylands Nature Preserve
- Foothills Park
- Baylands Athletic Center
- Bowling Green
- Cameron Park (College Terrace)
- Cubberley Community Center
- El Camino Park
- Heritage Park
- Mayfield Park (College Terrace)
- Mitchell Park
- Peers Park
- Rinconada Park + Pool
- Stanford Palo Alto Playing Fields
- Weisshaar Park (College Terrace)
- Werry Park (College Terrace)

### [City of Palo Alto FY 17 Capital Budget](#)

- Cameron Park improvements (College Terrace)
- Tennis Court resurfacing at Weisshaar Park (College Terrace)

### [City of Menlo Park FY 17 Capital Budget](#)

- Arrillaga Family Recreation Center at Civic Center HVAC upgrade
- Bedwell Bayfront Park Master Plan
- Jack W. Lyle Park restroom construction
- Minor improvements to parks in general





A | Meadowlark Trail



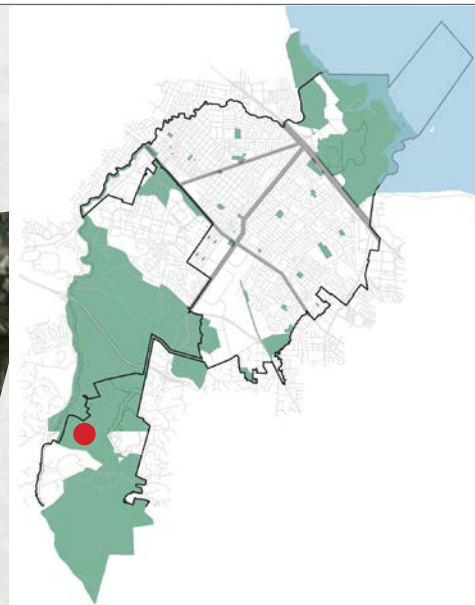
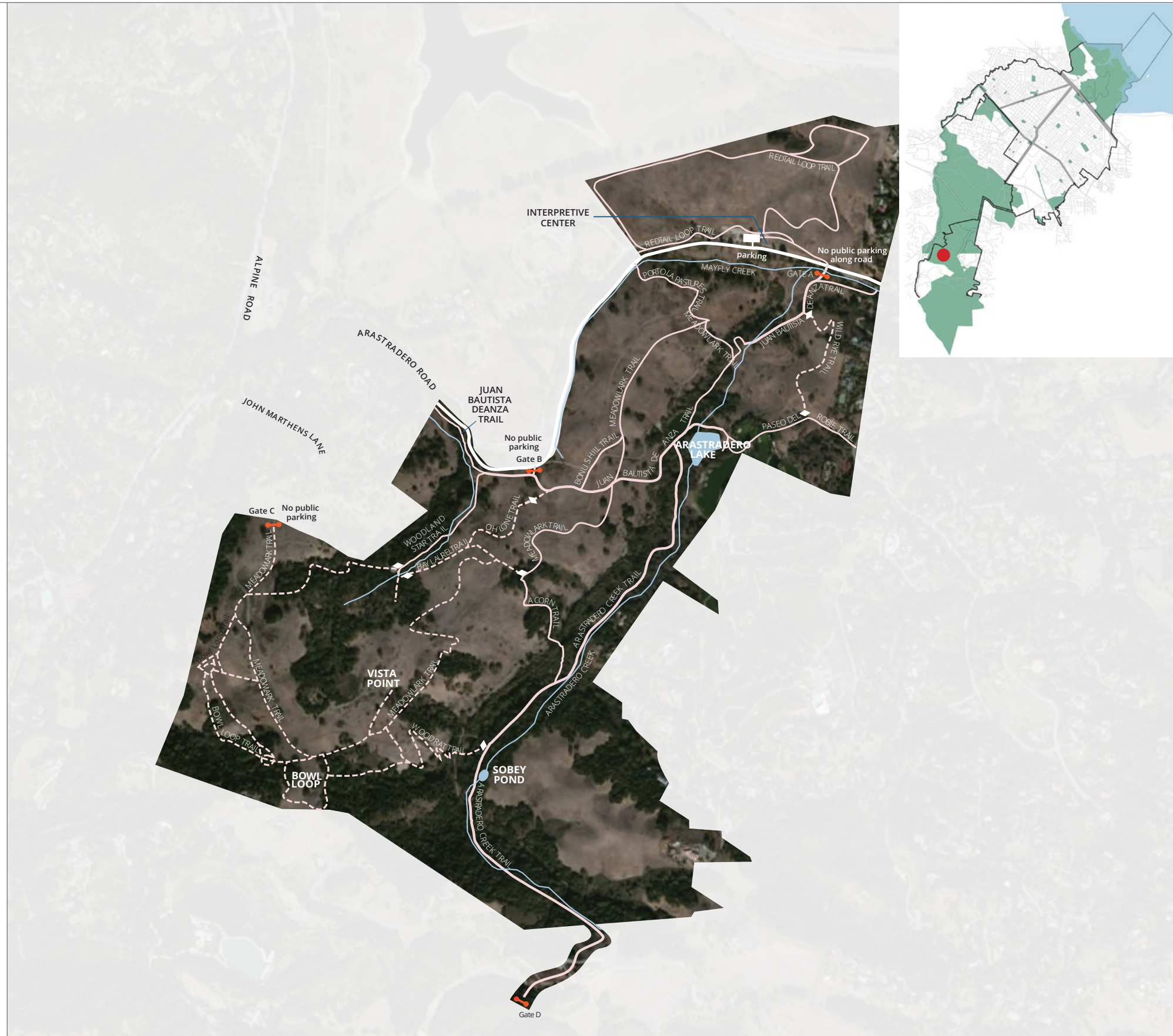
B | Wet meadow area



C | Golf course view



D | Bench at trail junction



# PEARSON-ARASTRADERO PRESERVE

Location: 1530 Arastradero Rd  
 Owner: City of Palo Alto  
 Size: 622 acres  
 Year: 1970s

**HISTORY**  
 In the 1970s, Palo Alto purchased the Arastradero property (433 acres and three buildings) from Arastra Ltd. after the city amended its Comprehensive Plan to include most of the foothills in the Open Space Controlled Development. In 1984 the space was dedicated as park land, with "...emphasis on the natural and open space amenities of the land and sensitivity to the fragile foothills ecology."

Arastradero Preserve was renamed Enid Pearson-Arastradero Preserve in 2004 to honor former city council member Enid Pearson who was instrumental in the passage of a measure in 1965 that prohibits Palo Alto from selling any park land without voters' approval.

- EXISTING CONDITIONS**
- The preserve is a mixture of rolling savanna grassland and broadleaf evergreen forest.
  - Elevation varies from 275 feet in the northeast to 775 feet in the southwest.
  - Wildlife includes deer, bobcats, coyotes, and many varieties of birds.
  - View of the bay.
  - 10.25 miles of trails for hiking, bicycling and horseback riding. Most of the trails (6.6 miles) are open year-round. Some trails (3.6 miles) are designated as "seasonal" and are closed at the trailheads after heavy rain.



## EXISTING CONDITIONS



- Arastradero Lake is a twenty minute hike from the parking lot and is open all year to fishing.
- All California Fish and Game rules apply. Boats, flotation devices, and swimming are not permitted.

#### ESSENTIAL PARK ACTIVITIES

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

#### ADDITIONAL PARK FEATURES

- Parking

#### OPPORTUNITIES AND CONSTRAINTS

- Great public-private partnership with Acterra to restore habitat, install native plants, remove invasive species and help increase biodiversity on the preserve
- Multi-use trails allow several user groups to use the site
- Parking lot size and signage intentionally limits use of the reserve to trail users only
- Parking lot size creates visitor conflicts and fights over space
- Overflow lot not open to individual trail users
- Reserve users have been observed parking in residential areas when lot is full
- Low-impact designation means the preserve does not have a picnic area or many furnishings
- Sensitive surrounding ecology can be damaged by undesignated uses
- Undesignated use of parking lot by road bicyclists
- Conflicts among multiple types of park users/ groups
- Multiple points of entry make signage and contact with visitors challenging

#### SITE-SPECIFIC PUBLIC INPUT

- One trail for off-leash dogs
- Close trails for horses and cyclists during the winter
- Parking limits access





A | The Harbor Basin, with chevrons



B | The Byxbee Park Pole Field



C | The start of the Baylands trail



D | Adobe Creek, with Dumbarton Bridge



# BAYLANDS NATURE PRESERVE

Location: 2500 Embarcadero Road  
 Owner: City of Palo Alto  
 Size: 1,940 acres  
 Year: 1921-1958

## HISTORY

The Byxbee Park Hills area of Baylands was named for John Fletcher Byxbee Jr., Palo Alto City Engineer from 1906 to 1941. Byxbee envisioned the development of the Baylands as a park and recreation center and in January 1921, the Board of Public Works recommended the initial purchase of 40 acres of marshland. Nine years later, Byxbee submitted a plan that included a municipal airport, a salt-water swimming pool, a yacht harbor -- yachting was his main recreation -- and clubhouse, a basin for seaplanes, and areas for playgrounds, picnic grounds, golf course, and a game reserve. The cost was estimated at 2.2 million dollars.

In 1968, the city Council named the park the John Fletcher Byxbee Recreation Area. However, today the term "Baylands Nature Preserve" is used more readily in the city's publications. The area covers several facilities and occupies 1,940 acres. The land was acquired between 1921 and 1958 through a series of acquisitions and one condemnation - 23 transactions in all.

At present, the Baylands complex consists of the former Yacht Harbor area, the Palo Alto Airport, the Municipal Golf Course, the Duck Pond and public picnic area, the Baylands Athletic Center, the Sailing Station, the Lucy Evans Baylands Nature Interpretive Center, the Harriet Mundy Marsh and tidal basin.



# EXISTING CONDITIONS



The Baylands has been a focus for activism on behalf of the natural environment and several features bear the names of key players in preserving and enhancing this unique space:

- Lucy Evans Baylands Interpretive Center (rededicated 1978)
- Harriet Mundy Marsh (1982)
- Emily Renzel Wetlands Restoration (1992)

#### EXISTING CONDITIONS

- Bounded by Mountain View and East Palo Alto, the 1,940-acre Baylands Preserve is one of the largest tracts of undisturbed marshland remaining in the San Francisco Bay.
- Fifteen miles of multi-use trails provide access to a unique mixture of tidal and fresh water habitats.
- Many consider this area to be one of the best bird watching areas on the west coast. The preserve has a substantial resident population of birds as well as being a major migratory stopover on the Pacific Flyway.
- Include walking, running or biking on 15 miles of trails; bird watching; wind surfing and boating (non-motorized craft such as canoes, kayaks or small, hand-launched boats and sailboards).
- The city also offers a variety of nature walks and programs on ecology and natural history.

#### ESSENTIAL PARK ACTIVITIES

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

#### ADDITIONAL PARK FEATURES

- The Duck Pond is a popular family attraction. Besides the resident population of several species of ducks, it is a way station for many migratory birds. The pond was originally built as a swimming pool, but because of siltation problems, it was soon converted to a bird refuge with funds from the estate of Lucie Stern. On the far side of the pond there are two tables with two benches nestled among the trees and shrubs for picnickers.
- The Lucy Evans Baylands Nature Interpretive Center is built on pilings at the edge of the salt marsh. A plank walk leads a quarter-mile across the marsh to open water and a panoramic view of San Francisco Bay. The Center offers various programs and activities such as nature walks, animal and fossil workshops for children, an ecology laboratory, and displays of tidelands flora and fauna.

#### OPPORTUNITIES AND CONSTRAINTS

- Significant bird habitat and flyway
- Some activities limited by airport flight path (kite flying)
- Sensitive equipment
- High impact from sea level rise
- Save the Bay Native Plant Nursery provides the preserve with thousands of native plants for habitat restoration with many volunteers to help do the work
- Boardwalk is currently closed while a maintenance feasibility study is under way

#### SITE-SPECIFIC PUBLIC INPUT

- Difficult to access on bike or on foot
- Restrooms
- Recreation with dogs



A | Trappers Fire Road



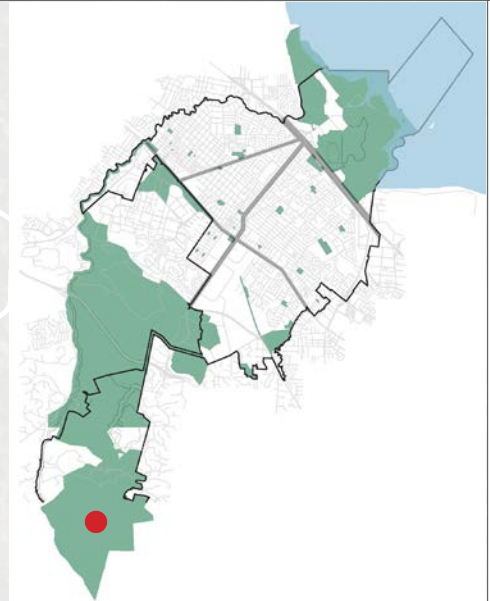
B | The Foothills Park visitor center



C | Fern Loop



D | Boronda Lake



# FOOTHILLS PARK

Location: 3300 Page Mill Road  
 Owner: City of Palo Alto  
 Size: 1,400 acres  
 Year: 1965

**HISTORY**  
 The land for Foothills Park was sold to the City of Palo Alto by Dr. Russel Lee, founder of the Palo Alto Medical Clinic, and his wife Dorothy in 1958, on the condition that it be preserved as open space. The park was formally opened and dedicated in 1965. The Interpretive Center in the park is housed in a building originally built by the Lees as a horse stable. For more information, see the Palo Alto Historical Association's chapter on Foothills Park in their city history.

- EXISTING CONDITIONS**
- Bounded by Portola Valley, Los Altos Hills, Pearson-Arastradero Preserve and Los Trancos Open Space Preserve, the 1,400-acre Foothills Park is a nature lover's paradise. Miles of trails provide access through rugged chaparral, woodlands, fields, streams, and a lake, and provide spectacular views of the Bay Area. Wildlife abounds, and it is common to see deer and coyotes.
  - Foothills Park is open to Palo Alto residents and their accompanied guests only. Proof of residency is required. Guests must be accompanied by a Palo Alto resident. Limit of 15 guests per resident in two additional cars.
  - Groups of 25 or more adults and children (both residents and non-residents included) must make a reservation in advance, or get a permit in advance from the supervising ranger. There must be one Palo Alto resident for each 15 non-resident guests.



## EXISTING CONDITIONS



- Groups of 24 or fewer (residents plus non-residents, children included) do not require a reservation.
- Hiking Trails: There are fifteen miles of hiking trails, which offer a variety of hiking experiences. The longest hike is the Los Trancos Trail, which is 7.5 miles. The Toyon Self-Guided Nature Trail enables you to learn about nature at your own pace.
- Lake, Fishing, and Boating: Fishing is permitted in Boronda Lake. All anglers age 16 and over must have a California Sport Fishing License. Fish species in the lake include bass, catfish, and sunfish. While swimming is prohibited you may enjoy the lake with your non-motorized and hand-launched boat. Canoes are also available for rent on the weekends and holidays from May 1st to October 31st, weather and staffing permitting.
- Picnic Areas: Five picnic areas are first-come, first-served, and there is one picnic area that is by reservation only. Tables, barbecues, and water are available. Groups at the non-reservable picnic areas may not exceed 24 people (adults and children, residents and non-residents included). Groups of 25 or more people must have a reservation. The Oak Grove group picnic area is the only picnic area that is reservable, and can be used by groups of 1-150.

#### ESSENTIAL PARK ACTIVITIES

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

#### ADDITIONAL PARK FEATURES

- Parking
- Towle Camp is a seasonal campground available to residents and their accompanied guests for tent camping from May 1 to October 31. Eight campsites, each with a charcoal barbecue, water, picnic table, tent pad and food box. Six of the campsites can accommodate up to eight people, and the remaining two campsites can accommodate up to sixteen people.
- The Nature Interpretive Center has exhibits and maps and is the starting point for many nature walks. There is a meeting room available for rent.
- Nature Programs: Ranger-led activities are available throughout the year in Foothills Park. See the Activities and Programs page for more information.

#### OPPORTUNITIES AND CONSTRAINTS

- 7.7 acres recently added to site
- Facilities on site allow for many visitor opportunities
- Limited staffing makes regular patrols difficult given total mileage of trails
- Public is responsible for reporting trail troubles
- Small, primitive campground limits the number of visitors and its location allows for summer use only
- Limited staffing makes it difficult to enforce residency restrictions

#### SITE-SPECIFIC PUBLIC INPUT

- Trails are narrow
- Access for bicycles
- Allow dogs on one loop
- Open park to non-residents





A | Viewing box and picnic table



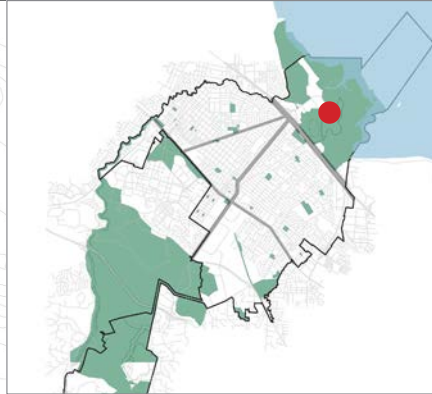
B | No ADA access to bleachers



C | Multi-use trail



D | San Francisquito Creek and levy



# BAYLANDS ATHLETIC CENTER

Location: 1900 Geng Road  
 Owner: City of Palo Alto  
 Size: 10 acres  
 Year: N/A

**HISTORY**  
 The Baylands Athletic Center complex was completed in 1969. Facilities for field and team sports include a lighted baseball diamond with a 500-seat grandstand, a lighted softball field with bleachers, snack facility and parking lots. In 1970, the baseball field was named Tom Casey Field in honor of a longtime Palo Alto sports figure.

- EXISTING CONDITIONS**
- Baylands Athletic Center is part of the Baylands Nature Preserve and serves as a gateway to the Baylands trail system.
  - The park is a B-class, six-acre facility with one baseball field, which is in great condition with full features, stands, dugouts, concessions, and fencing
  - A nice grandstand provides shaded viewing
  - A second field is for softball (good condition)
  - Fields are scheduled for organized league play in the spring and fall and are open for casual public use at other times
  - Parking lot is adequately sized for games but not other special events
  - Bathroom building is simple but functional
  - Field lighting is relatively new and efficient
  - Special events, including organized runs, start at this location



## EXISTING CONDITIONS



- Site is popular with community members for running and cycling
- Field needs regrading due to material decomposing from it being a former landfill; large dips visible in the outfield
- Irrigation is fed to the site from the golf course's system

#### ESSENTIAL PARK ACTIVITIES

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

#### ADDITIONAL PARK FEATURES

- Grandstands
- Concessions

#### OPPORTUNITIES AND CONSTRAINTS

- The site will be threatened with inundation by sea level rise in the next 100 years
- The parking lot is in very bad condition, has no drainage and is poorly designed for circulation.
- Currently people park vehicles between creek and path
- The center is not transit-accessible
- The snack shack/maintenance equipment building is very simple and limits opportunities for full range of food and beverages
- The sound system and scoreboard are outdated
- Access to the softball field is somewhat confusing
- Community members report difficulty accessing the park by bike when crossing at Oregon/101 overcrossing
- The site is former landfill, there is settling in the outfield. At some point the settling will need to be addressed.
- There is only one picnic table, and it is not ADA accessible
- There have been incidents of copper theft from the field lighting
- The additional 10.5 acres from the golf course could provide new uses
- Batting cages used by the Babe Ruth Little League may be a compatible new use on the undeveloped southern parcel of the former Pasco site (2000 Geng Rd).
- The concession stand could be expanded to support special events and full catering services
- The land between the softball field and International School is underutilized
- The current bathroom facility has storage area for small maintenance equipment; leagues also use it for storing smaller equipment

- At this time, site does not use 100% recycled water; future plans for 100%
- The use of recycled water limits plant selection
- There is potential to be an actual sports complex with reconstruction of adjacent golf course
- The site would benefit from improved player warm up areas, practice areas, bleachers, wifi and concession stands

#### SITE-SPECIFIC PUBLIC INPUT

N/A





A | Fenced lawn bowling green



B | Open lawn



C | Benches with shade structures



D | Shaded grassy area



# BOWLING GREEN + KELLOGG PARKS

Location: 474 Embarcadero Road  
 Owner: City of Palo Alto  
 Size: 1.9 acres (Bowling Green Park), 0.25 acre (Kellogg Park)  
 Year: 1933

**HISTORY**  
 Constructed in 1933-34 by the Civil Works Administration, Bowling Green Park sits on the site of the old Peninsula Hospital (built in 1910 and razed in 1931). On opening day, which was March 10, 1935, ceremonial bowls were rolled by Virginia Arnott, club president; Earl C. Thomas, mayor of Palo Alto; and John McLaren, superintendent of Golden Gate Park who aided in the planning of Palo Alto's green.

- EXISTING CONDITIONS**
- Bowling Green Park is a unique facility that is maintained by the Palo Alto Lawn Bowl Club (who maintains the City-owned club house)
  - Facility is well-kept
  - Newly renovated restrooms serve the needs of the lawn bowlers
  - Turf area outside of the fenced lawn bowling facility is used for soccer practice
  - Parking area for the lawn bowling club is shared with the adjacent Gamble Garden
  - Most visitors use on-street parking in the neighborhood near the park
  - Palo Alto Lawn Bowl Club hosts competition matches during the spring and summer attracting players from all over the state and west coast
  - Club members provide free instruction and welcome visitors and new members of all ages
  - Kellogg Park is an adjacent small green space with mature trees



## EXISTING CONDITIONS



**ESSENTIAL PARK ACTIVITIES**

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

**ADDITIONAL PARK FEATURES**

N/A

**OPPORTUNITIES AND CONSTRAINTS**

- The fenced-off lawn bowl area makes most of this park “exclusive” for the lawn bowlers, so the facility cannot be used by bocce or pétanque players
- The club house can only be used by special reservation
- Bowling green requires intense maintenance and quite a bit of herbicide to keep a healthy playing surface
- Issue with young adults jumping fence after hours and vandalizing property (broken glass, garbage)
- Make the green more visible from Embarcadero Rd
- Consider synthetic turf with a canopy to provide shade and reduction of maintenance and herbicide usage

**SITE-SPECIFIC PUBLIC INPUT**

N/A



A | Shaded picnic area



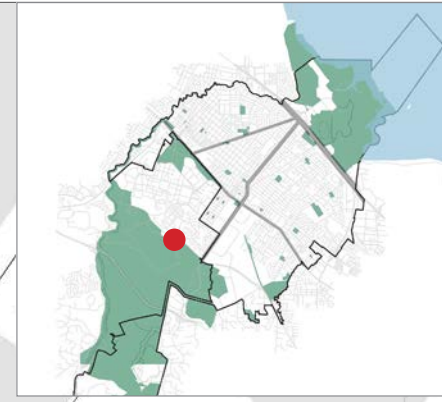
B | ADA access into play area



C | Tree shading play area



D | Poor perimeter screening



# CAMERON PARK

Location: 2101 Wellesley Street  
 Owner: City of Palo Alto  
 Size: 1.1 acres  
 Year: 1880

**HISTORY**  
 Cameron is one of four small parks planned together in Mayfield that dates back to 1888. Originally named Berkeley Park, in 1968 it was renamed for Donaldina M. Cameron who directed the Presbyterian Mission Home for Chinese Women in San Francisco. After she retired, Cameron lived at 1020 in College Terrace until her death.

- EXISTING CONDITIONS**
- A small neighborhood park with a large green open space, playground, and picnic area (good condition)
  - One of four small parks in the College Terrace neighborhood that function as a set of parks (the others are Mayfield, Werry, and Weisshaar)

**ADDITIONAL PARK FEATURES**  
 N/A

- OPPORTUNITIES AND CONSTRAINTS**
- This park is very similar to nearby Werry Park
  - The playground is very small
  - There are very few park amenities and few activities for adults to do here
  - There is no on-street parking
  - Field use is restricted to quiet practice games because the fields are small and the park is surrounded by residences
  - Planned improvements for the FY 2018 CIP will upgrade and renovate safety and accessibility of the playground and other features
  - The wooden play structure requires increased maintenance - continual need to replace rotten posts, cracked posts and boards
  - No connection path through park to keep pedestrians off the turf when walking along Wellesley St



## EXISTING CONDITIONS



- Consider installing basketball or tennis courts
- Potential for more picnic tables
- Park drainage is a concern to adjacent neighbors

**ESSENTIAL PARK ACTIVITIES**

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

**SITE-SPECIFIC PUBLIC INPUT**

- Off-leash dog area
- Updated play equipment
- Play structure for older kids
- Paved walkway around the park



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**A** | Outdoor covered walkways



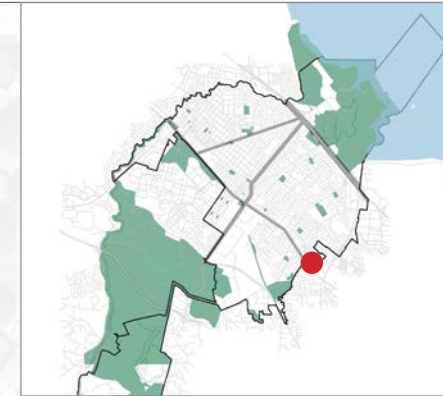
**B** | Asphalt parking lot



**C** | Entrance to sports field area



**D** | Softball field



# CUBBERLEY COMMUNITY CENTER

Location: 4000 Middlefield Road  
 Owner: Palo Alto Unified School District (PAUSD) and City of Palo Alto  
 Size: 35 acres  
 Year: 1989

**HISTORY**  
 Originally opened as a high school in 1956, Cubberley High School was closed due to decreasing enrollment in 1979. The vacant school has been used as a community center that has grown in use and importance over the years. The City of Palo Alto owns 8 acres of the site, and the school district owns the remaining 27 acres (see red border). A lease agreement between the City and PAUSD expired at the end of 2014. The City and the school district have agreed on key terms of a new lease agreement.

- EXISTING CONDITIONS**
- Structures are old and deteriorating
  - As of 2013, there is a need to refurbish the physical plant
  - Layout of current structures is a very inefficient use of the property
  - Large concentration of sports fields and tennis courts are scheduled and maintained by the City
  - Facility contains the only gymnasium regularly available for City of Palo Alto programs. Facility is also important to other public institutions, including Foothill College

- SOME OF THE ASSOCIATED USER AND PARTNER GROUPS INCLUDE:**
- ACME : an organization teaching the Chinese culture and language
  - Acterra: an environmental stewardship and restoration organization with sites in Santa Clara and San Mateo Counties
  - Audubon Society: an environmental conservation and restoration group



## EXISTING CONDITIONS



- Bay Area Amphibian & Reptile Society: an education and conservation group
- Bay Area Arabic School: an organization teaching Arabic language and Islamic religion
- California Law Revision Commission: a branch office of the state commission responsible for reviewing California statutory and decisional law
- Canopy: an environmental nonprofit organization dedicated to planting and protecting trees in parks, schools and along streets of Palo Alto, East Palo Alto and neighboring communities
- Cardiac Therapy Foundation: non-profit organization for those with cardiovascular disease and those at risk of developing it
- Children's Pre-School Center: a child-care organization
- Commonwealth Club: a statewide public affairs forum
- Dance Connection: an organization offering dance classes
- Dance Visions: an organization offering dance classes
- Dutch School: an organization that teaches Dutch language and culture education
- Earth Day Film Festival: the city of Palo Alto's annual film festival
- Foothill College: the Palo Alto extension campus of a Los Altos Hills community college
- Friends of the Palo Alto Library: an organization supporting the Palo Alto Public Library
- Friends of the Palo Alto Parks: an organization supporting parks in Palo Alto
- Gideon Hausner Jewish Day School: a school for Jewish students
- Good Neighbor Montessori: an educational organization
- Grossman Academy Japanese Language School: a school for Japanese students
- Hua Kuang Chinese Reading Room: a library that offers Chinese cultural programs
- Kumon Math and Reading: after-school tutoring program

- Museo Italo Americano: a museum offering language classes
- Palo Alto Chamber Orchestra: a youth orchestra for regional string musicians
- Palo Alto Menlo Park Mothers Club: a parenting organization
- PAUSD Adult School: an adult school offering gardening classes

- Peninsula Piano School: an organization that provides group lessons for piano students
- Save the Bay: an environmental restoration organization that focuses on the health of San Francisco Bay's ecosystems

- SCC Registrar of Voters: the county-level voting and election office
- Waldorf School of the Peninsula: a private school
- Zohar Dance: an organization teaching dance classes

**PROGRAMMING & FACILITIES**

*Classroom/Lecture Space*

- A2 Classroom
- A3 Classroom
- A6 Classroom
- A7 Classroom
- D1 Classroom
- FH Classroom
- H1 Classroom
- H6 Classroom
- G4 Activity Room
- M4 Activity Room

*Dance*

- G6 Dance Studio
- L6 Dance Studio

*Court Sports*

- Gym A
- Gym B

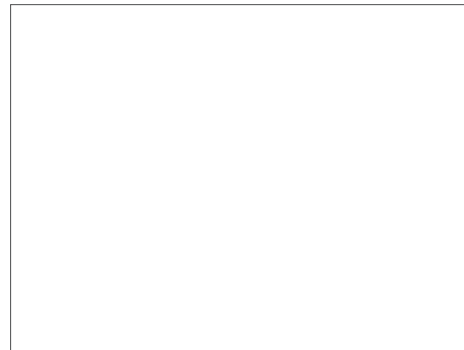
*Performing Arts*

- M2 Music Room
- M3 Dressing Room
- Theatre
- Auditorium
- Pavilion

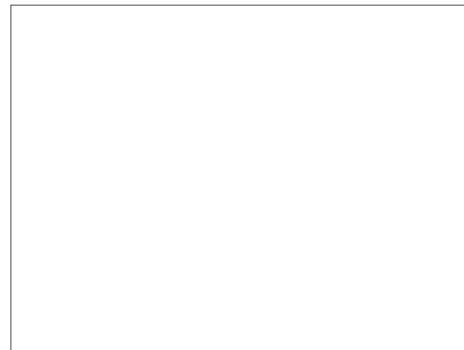
**SITE SPECIFIC PUBLIC INPUT**

- Update play equipment
- Provide water fountains
- Picnic areas
- Needs more family and kid friendly spaces
- Restrooms for field users
- Needs major reinvestment

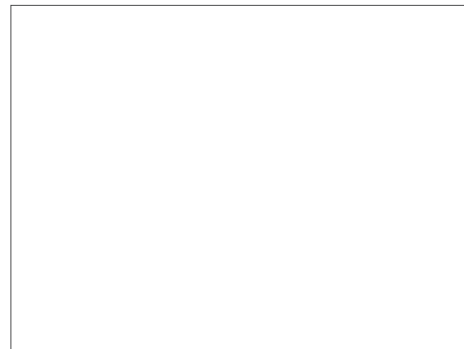




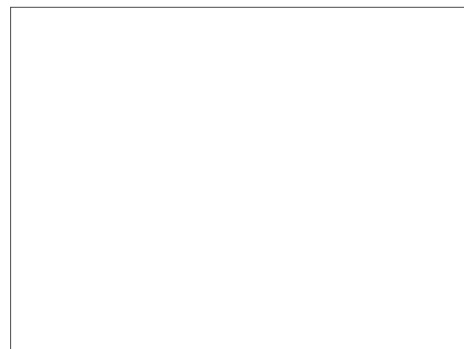
A | TBD



B | TBD



C | TBD



D | TBD



# EL CAMINO PARK

Location: 1 El Camino Real  
Owner: Stanford University, leased to the City of Palo Alto through 2046  
Size: 12.2 acres  
Year: Currently under construction

## HISTORY

El Camino Park was established in 1914 as an effort to create a pleasant entry to the City off El Camino Real. The park, leased to the City from Stanford University in June 1915, included land located between the highway and the railroad northwest of the depot. The park was originally called Highway or Community Park, and has been called "Palo Alto's first playground."

In 1925 a clubhouse was built; landscaping was provided in 1928 that included screen trees along El Camino and a 30-foot border of shrubs along the fence marking the railroad's right-of-way.

Over the years, sports recreation facilities were added for rugby, baseball and soccer. The park was also a site of rock concerts and mass gatherings in the late 1960s and early 1970s. A softball field was added in the mid-1970s with bleachers and lighting.

On the south side of the park stands Olympic Redwood Grove, where several trees were planted in the late 1980s to honor Palo Alto's Olympic medalists.

In 1999 Palo Alto and Stanford University amended their lease agreement for \$1 per year, which extends to 2033.

As of February 2015, the park is undergoing a renovation to increase community and sports activities. The improvements are slated to be complete in Fall 2015.



# EXISTING CONDITIONS



#### EXISTING CONDITIONS

- A significant-sized park with playfields, many mature trees, a picnic area, and a restroom
- The distance from residential uses allows adult sports with minimal conflicts
- Currently under renovation
- The new design transitions the park from being an athletic park to having more neighborhood park features and picnic spaces
- New lighted artificial turf soccer field will help City meet demand for fields
- Other planned improvements include an expanded parking lot, a new restroom, a lighted perimeter path, passive recreation areas and drought tolerant plantings

#### ESSENTIAL PARK ACTIVITIES

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

#### ADDITIONAL PARK FEATURES

N/A

#### OPPORTUNITIES AND CONSTRAINTS

- There is unused park land at both the north (creek side) and south end of the park
- In the past, this park has been a magnet for the homeless because of its downtown location and public restrooms
- Stanford may have long-term plans for the north undeveloped area as a mitigation site
- There is a poor and uninviting connection between the train station/bus depot and Stanford Shopping Center
- There is a required 100-ft setback from the creek
- A shallow root zone (only 13" of soil on top of the reservoir) limits this site's potential uses
- Even after the renovation, the parking may not meet demand
- The sidewalk condition near Alma is difficult to navigate with a stroller
- Possibility of using vacant lots for storage areas for different types of venues; access will be needed to and from these locations

#### SITE-SPECIFIC PUBLIC INPUT

- Bicyclists describe difficulties safely navigating nearby crossings, especially from the train station





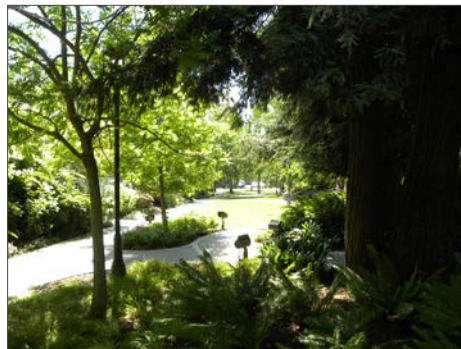
A | Focal point redwood



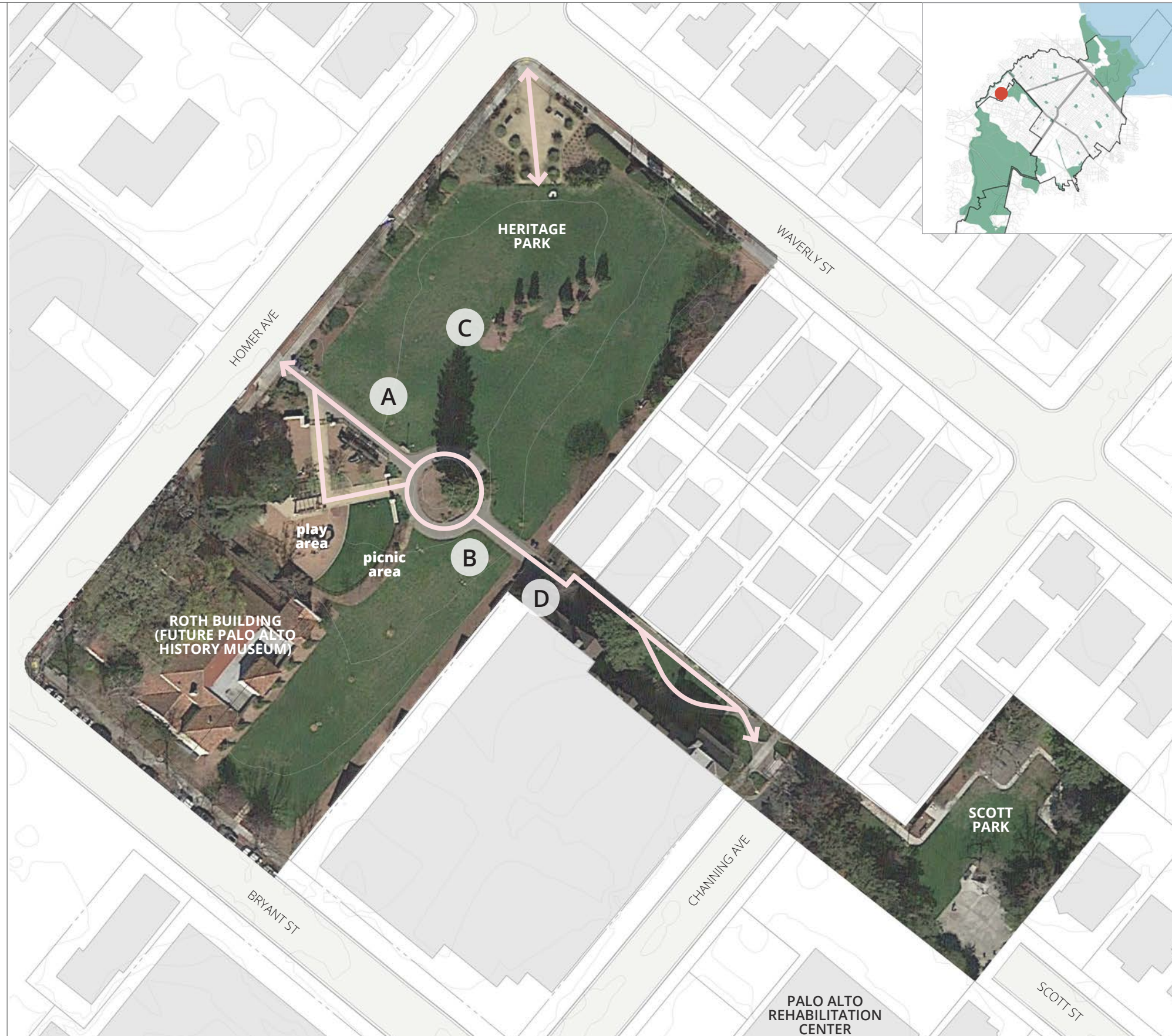
B | Picnic area alongside play area



C | Open lawn



D | Private greenway path



# HERITAGE PARK

Location: 300 Homer Avenue  
 Owner: City of Palo Alto  
 Size: 2.01 acres  
 Year: 2006

**HISTORY**  
 Palo Alto's newest park sits on the former site of the Palo Alto Medical Foundation. The Foundation moved in 1999; negotiations between the new property owners (Summerhill Homes), the City of Palo Alto, the Medical Foundation and the neighbors led to several acres being set aside for a park. In 2000, the City purchased the Roth Building that was previously owned by the Palo Alto Medical Foundation. The 1932 building was designed by architect Birge Clark, and is listed on the National Register of Historic Places. Plans for the building have evolved to include a local history museum. In 2003, the city approved plans for an interim park; groundbreaking took place in 2004, and Heritage Park had its grand opening in March of 2006.

- EXISTING CONDITIONS**
- Park is the result of a unique public-private partnership that allowed the park to be designed and built on a relatively quick timeline
  - Features open lawn with a cluster of trees in the middle to prevent sports play, a picnic area and a popular children's playground with unique features like a train and a climbing wall. There are also a few benches,
  - Park has limited amenities, since it came online shortly before the recession and resulting budget cut

- ESSENTIAL PARK ACTIVITIES**
- Play for Children
  - Throw a Ball
  - Exercise and Fitness
  - Gathering
  - Relax and Enjoy Outdoors



## EXISTING CONDITIONS



#### ADDITIONAL PARK FEATURES

- Climbing wall

#### OPPORTUNITIES AND CONSTRAINTS

- The Roth Building adjacent to the park remains unused today - fundraising efforts for the planned museum are ongoing
- Aside from museum uses, the Roth Building could also serve as a location for recreation programs, educational displays or staff offices
- There are drainage issues associated with site conditions. When the site became a park, soil was placed on top of the asphalt that had previously been at the site. Stormwater sometimes flows into the condominium parking lot because the site is sloped towards its driveway.
- Trees on the site are not doing well
- In the playground, the sand mixes into the wood fiber safety surfacing
- When the park was established there was an agreement with the neighbors that the park would not be programmed for special events that would bring in large groups and noise
- People play soccer on the turf area between the playground and Waverly St. To discourage the games from becoming too boisterous and loud, trees were planted to break the field into to smaller sections.
- There is an unused portion of grass in southeast corner which could accommodate new uses
- Dog bites to children have occurred, both off-leash and on-leash
- Large tree in center could serve as a natural tree for holiday tree lighting ceremony
- Large turf area between proposed museum building and condominiums could be used for other purposes

#### SITE-SPECIFIC PUBLIC INPUT

- More seating and benches
- More shade
- Movie projection
- Off-leash dog area
- Restrooms
- Spigots for dog walkers
- Review the play equipment to make sure it is up to safety code
- Paved perimeter trail for children to ride their bikes
- Flashing lights at nearby pedestrian crossings



**A** | Turf area and planting



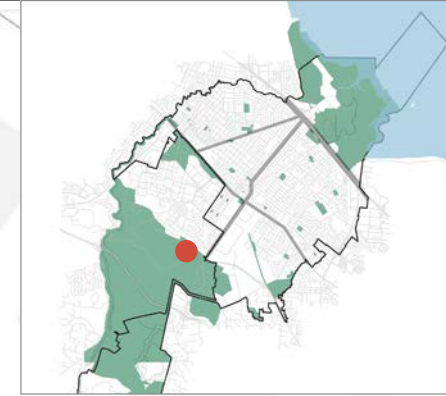
**B** | Unscreened adjacent residential area



**C** | Carved tree trunk furnishings



**D** | Adjacent vacant lot



# MAYFIELD PARK

Location: Wellesley Street between College and California Avenues  
 Owner: City of Palo Alto  
 Size: 1.1 acres  
 Year: 1880

**HISTORY**  
 Mayfield Park, along with Cameron, Werry, and Weisshaar Parks, is one of four old parks from the town of Mayfield. It was originally named Hollywood Park and in 1968, Hollywood was renamed Mayfield in honor of the former town.

- EXISTING CONDITIONS**
- Very small green space with benches that wrap around the popular Mayfield Branch Library and Children's Center
  - One of four small parks in the College Terrace neighborhood that function as a set of parks (the others are Cameron, Werry, and Weisshaar)

- ESSENTIAL PARK ACTIVITIES**
- Play for Children
  - Throw a Ball
  - Exercise and Fitness
  - Gathering
  - Relax and Enjoy Outdoors

- ADDITIONAL PARK FEATURES**
- N/A

- OPPORTUNITIES AND CONSTRAINTS**
- This is a small park with few amenities and is used primarily for passive recreation
  - There is an undeveloped private parcel adjacent to the park
  - There is limited parking for library and day care

**SITE-SPECIFIC PUBLIC INPUT**  
 N/A





A | Enclosed water play area



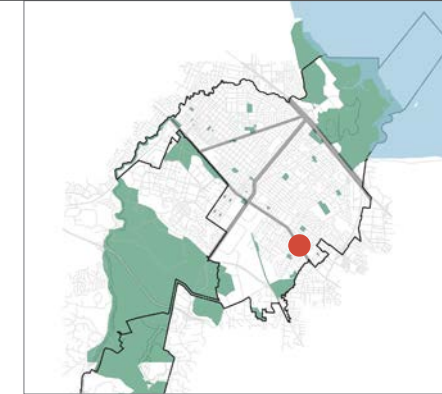
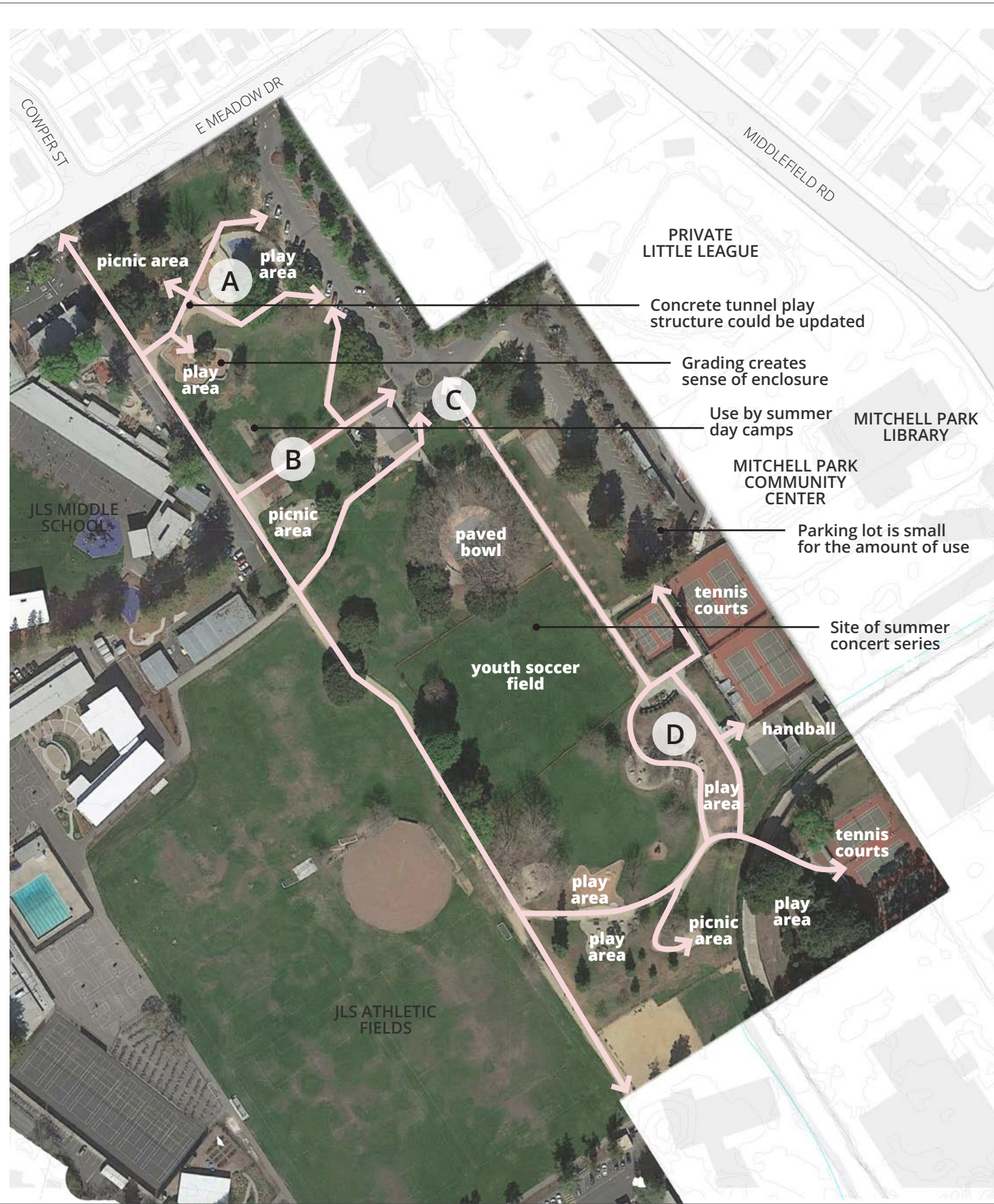
B | Pergola structure



C | Mature evergreen trees



D | Mulched play area



# MITCHELL PARK

Location: 6 East Meadow Avenue  
 Owner: City of Palo Alto  
 Size: 21.4 acres  
 Year: 1957

**HISTORY**  
 Mitchell Park opened to national and international acclaim in 1957. Designed by Robert Royston, it was a new kind of park with a variety of recreational activities geared to people of all ages. The park featured 29 activities that included above ground "gopher holes" and a miniature freeway system in the tiny tot area; a circular slab for roller skating; and designated areas for shuffleboard, bocce, tennis, and picnicking. Some mid-century features have become outdated and degraded, but the community is committed to preserving many of them. Some infrastructure upgrades have been made over time.

Mitchell Park is named for J. Pearce Mitchell, a longtime Palo Alto City Councilman and two-term mayor. He came to California in 1896 and earned a Bachelor's, Master's, and Ph.D. from Stanford. In 1969, as part of Palo Alto's 75th anniversary, El Palo Nuevo, a *Sequoia sempervirens* was planted in Mitchell Park as a companion tree to El Palo Alto.

- EXISTING CONDITIONS**
- One of Palo Alto's two regional parks and a destination for much of the region
  - Park includes several play areas for children, tennis and handball courts, and a great lawn which is used for staging large events
  - Other features include a water play area, a paved bowl, shuffleboard and horseshoes, public art, a field house, picnic areas with BBQs, and a dog exercise area
  - Park is bordered by three schools (two elementary and one middle) and is close to senior housing



## EXISTING CONDITIONS



- The new Mitchell Park Library and Community Center opened adjacent to this site in 2014
- Adjacent to a private little league park, several schools and Abilities United (a nonprofit organization for disabled persons)
- A Magical Bridge Playground is the latest addition to the park and provides an accessible play area for children of all abilities and ages
- Adjacent school fields are maintained by the City and Contract maintenance is used at this site

#### ESSENTIAL PARK ACTIVITIES

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

#### ADDITIONAL PARK FEATURES

- Water play
- Multi-purpose concrete bowl
- Shuffleboard
- Horseshoes
- Dog run
- Handball court
- Historic modernist landscape design
- Public art

#### OPPORTUNITIES AND CONSTRAINTS

- Planned improvements will repair and maintain playground equipment, fencing around the water play element, and the covered wood walkway. These are included in the CIP for FY 2018.
- The water play feature should be renovated with more efficient play features pending drought restrictions
- The renovation in early 2000s maintained the original design. The community wanted to preserve historic features.
- The playgrounds are located quite far from the picnic areas
- Having only a few entrances to the park limits the site circulation
- Some park amenities, such as shuffleboard and horseshoes, are outdated and not well-used
- The restrooms are not well-maintained and the water fountains are often broken
- The lawn is over-irrigated
- There have been incidents of copper theft from the park
- Noise from the park can present a conflict with nearby senior housing

#### SITE-SPECIFIC PUBLIC INPUT

- Improved and expanded dog play area
- More trees
- Add native vegetation
- Improved play structures
- Community pool
- Complete loop path for jogging
- Skateboard or BMX park
- Improved pedestrian and bike paths
- More trash receptacles
- Better interpretive signage
- Shade for play structure
- Expanded parking



A | Field house with restrooms



B | Recently updated playground



C | Basketball court



D | Utilities water well



# PEERS PARK

Location: 1899 Park Boulevard  
 Owner: City of Palo Alto  
 Size: 4.7 acres  
 Year: 1899

**HISTORY**  
 This park is named after Alexander Peers, a long-time resident of the historic Mayfield township. Peers came to California from England and was a co-founder of the Page and Peers Lumber Company. Page Mill Road was built to transport logs from their mill in the foothills to Mayfield. Peers served on Mayfield's first Board of Trustees and was Mayfield Bank's first president.

A number of redwood trees in Peer Park grew from seeds from El Palo Alto. Before being planted, the seeds orbited the earth in 1985 aboard the Space Shuttle Challenger STS-51F. A plaque commemorates Challenger Memorial Grove.

- EXISTING CONDITIONS**
- Large, attractive neighborhood park, which includes two tennis courts, picnic tables, two children's play areas (for ages 2 to 5 and ages 5 to 12), a basketball court, a field house, picnic areas, and restrooms
  - The field is often used for young soccer teams
  - The children's play area and tennis courts were recently renovated
  - The park features many mature oak trees
  - The field house serves a contracted young child development (daycare) program
  - On-street parking seems adequate for the needs of this park

- ESSENTIAL PARK ACTIVITIES**
- Play for Children
  - Throw a Ball
  - Exercise and Fitness
  - Gathering
  - Relax and Enjoy Outdoors

- ADDITIONAL PARK FEATURES**
- Field house with day care



## EXISTING CONDITIONS



#### OPPORTUNITIES AND CONSTRAINTS

- When the park was renovated a few years ago, neighbors opposed locating a small dog exercise area near the railroad tracks
- The basketball court does is not heavily used beyond lunch time and could be converted to another use
- Community members report that the climbing wall ledge is dangerous
- Homeless are known to hang out at the site often
- Planned improvements in the CIP (for FY 2018) will upgrade and renovate the park irrigation system and turf, replace benches and drinking fountains, resurface the basketball and tennis court surfaces and repair court fencing
- Transform low-use turf areas into other features (water wise plantings, bocce court, hardscape, etc.)
- Water bottle filler may address public requests for a dog spigot
- The picnic area could be enlarged (with a potential shelter) and scheduled for use if neighbors do not object

#### SITE-SPECIFIC PUBLIC INPUT

- Updated furnishings including BBQs, bike racks, picnic tables
- Splash pad
- Water spigots to give water to dogs
- Off-leash dog area
- Regular maintenance of restroom
- Nighttime patrols
- More frequent trash pick-ups
- Finer sand grain to reduce slipperiness on walkways



A | Heritage oak trees



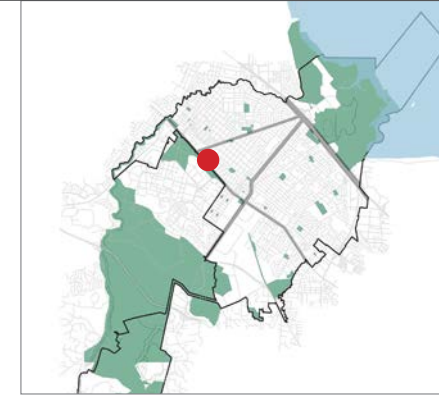
B | Play area



C | Irregularly shaped paved bowl



D | Asphalt path and fence



# RINCONADA PARK + POOL

Location: 777 Embarcadero Road  
 Owner: City of Palo Alto, with PAUSD  
 Size: 19 acres  
 Year: 1922

**HISTORY**  
 Rinconada is one of Palo Alto's oldest parks. Established in 1922, it was originally called Waterworks after a nearby well and reservoir. Two years later it was renamed Rinconada (Spanish for corner) through a contest sponsored by the Chamber of Commerce. In the 1930s, Lucie Stern (widow of Louis Stern who was a nephew of Levi Strauss) and her daughter Ruth gifted the city with money to build what is now the Lucie Stern Community Center.

- EXISTING CONDITIONS**
- A large regional park located in the middle of a cultural resources hub that includes libraries, the Art Center, the Junior Museum and Zoo, the Children's Theater, the Community Theater, the Community Center, and Girl Scout and Boy Scout facilities
  - Includes an open grassy areas, two children's playgrounds, nine tennis courts (six with lights), a backboard, picnic areas with barbecues and one group area, a municipal swimming pool and children's pool, a redwood grove, a multipurpose concrete bowl, benches, a jogging/walking path, and public restrooms
  - Includes a "Magic Forest" of mature trees along Hopkins Ave
  - A summer destination for the Summer Concert Series and other special events



## EXISTING CONDITIONS





The City's long-range plan for Rinconada Park is divided into several phases and is expected to be completed by 2035. Plan will renovate and reconfigure existing amenities while improving infrastructure, adding new features, and improving access and connections to surrounding streets and sidewalks. Details include:

- Maintain Magical Forest and tennis courts
- Improve irrigation and drainage in open turf areas
- Upgrade power and create larger stage area for the amphitheater
- Remove arboretum turf and plant new trees
- Relocate group picnic area and install new furnishings
- Widen and/or repave pathways and install additional lighting
- Relocate tot lot near existing children's playground
- Construct new restrooms at the pool building
- Reconfigure parking lot at new Junior Museum building and Lucie Stern Center
- Make playing fields at Walter Hayes School available for after hours and weekend use
- Replace fencing alongside school
- Eliminate turf in non-use areas
- Construction of bioswales for stormwater capture should be carefully considered given City's experience installing them at other location
- Add group picnic areas, a picnic pavilion, a bocce court, a special event pavilion, adult exercise equipment, and a fire pit at the Girl Scout house
- Add new entry monument structures, walkways, crosswalks, sidewalks, shuttle stops, parking and bike lanes improve access to the park

#### ESSENTIAL PARK ACTIVITIES

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

#### ADDITIONAL PARK FEATURES

- Lighted tennis courts
- Swimming pool
- Splash pool
- Multi-purpose concrete bowl

#### OPPORTUNITIES AND CONSTRAINTS

- Middlefield Road is very busy
- The parking lot is too small and circulation and parking are challenging
- Passive turf areas should be converted to allow more parking along street sides
- Accessibility is poor

- There are many points of entry
- Events cause parking impacts to neighborhoods
- The tennis courts need maintenance
- Rinconada Park has the city's only year-round municipal pool
- The pool is under-sized for adults and serious swimmers
- There are irrigation issues, and the public notes that the turf is wet and swampy.
- Furnishings, including benches, picnic tables, and trash cans, are in poor condition
- Picnic tables are not ADA accessible
- Play areas need more shade
- The gazebo structure near the pool with the center planter is not usable in its present form
- The Magic Forest is underutilized
- The shuffleboard and horseshoe courts are not well used
- Building at pool could be rebuilt to include a second floor for more exercise/gym equipment and possible rental/meeting/staff space
- Dog bites to children have occurred, both off-leash and on-leash

#### SITE-SPECIFIC PUBLIC INPUT

- Restrooms
- More trash cans
- Off-leash dog area
- Expanded pool size and hours
- More shade
- New picnic tables and benches
- Improved safety in the park
- Food concessions
- Updated play structures
- Consider fencing the park
- Create an online reservation system for tennis courts

#### RINCONADA POOL

##### *Rentable Facilities*

- Wading Pool: Wading pool rental includes exclusive use of the pool, deck surrounding the immediate pool area, and four picnic tables (each tables seats 8 people). Rental includes shared use of the changing rooms and showers. Private pool parties can be booked before or after public use of the wading pool.

##### *Programming and Other Facilities*

- Lap Pool: Lap swim, recreation swim, swim lessons and classes
- Lockers: Rinconada Pool offers 48 complimentary wallet-sized lockers available for storing valuables (keys, wallets, cell phones, jewelry, etc.).
- Changing Rooms: Men's and women's changing rooms with showers





A | Soccer field



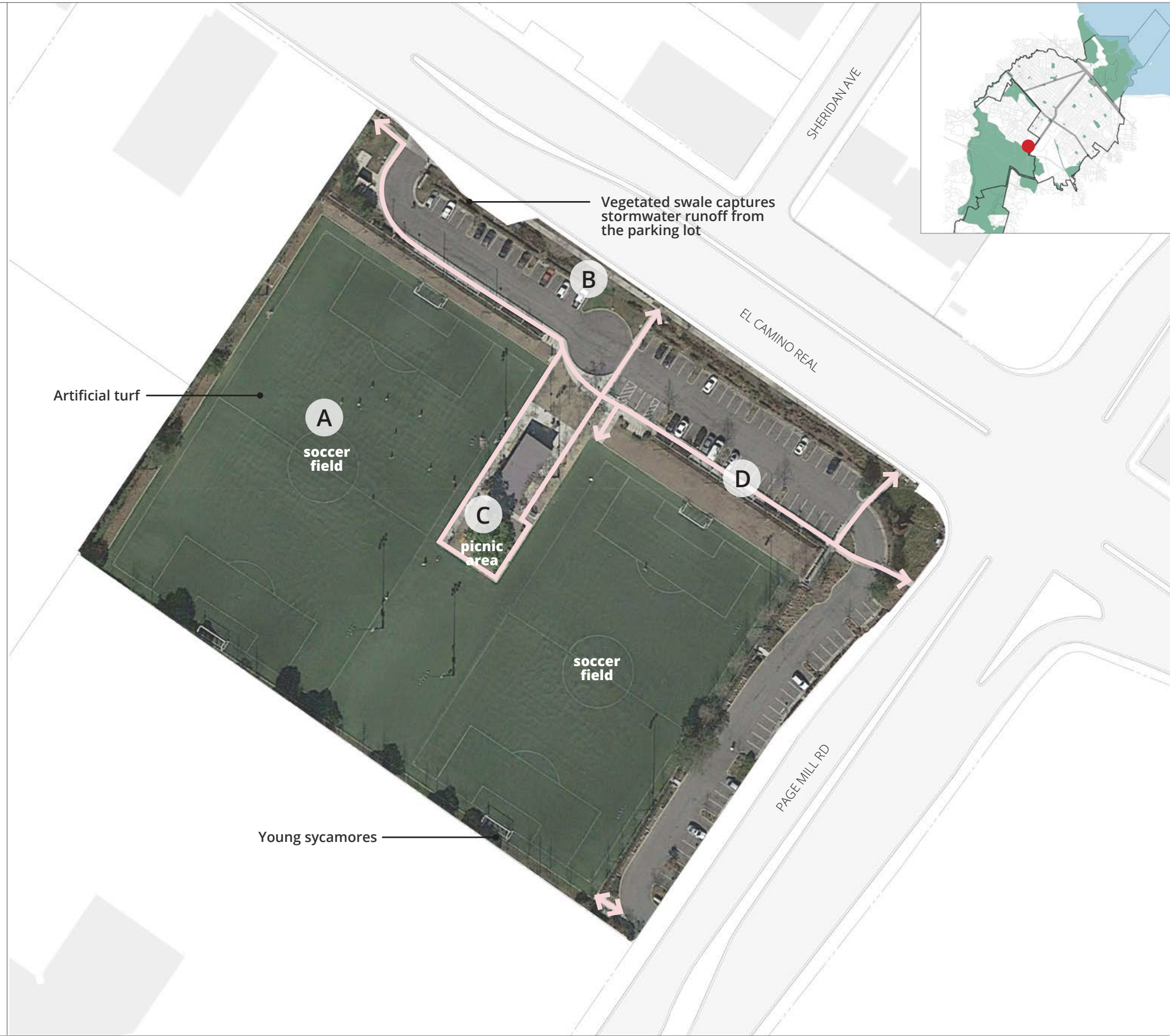
B | Vegetated swale



C | Picnic area



D | Interpretive signage



# STANFORD PALO ALTO PLAYING FIELDS

Location: El Camino at Page Mill Road  
 Owner: Stanford University  
 Size: 5.9 acres  
 Year: 2006

**HISTORY**  
 These playing fields were ready for play in 2006 on the site that once held Mayfield Elementary School. An agreement between Stanford University and the city of Palo Alto leases this Stanford land to Palo Alto for \$1.00 a year for 51 years.

- EXISTING CONDITIONS**
- A new, well-designed A-class sport facility with two artificial turf playing fields
  - Includes bioswales, snack shack, public art, and on-site parking

- ESSENTIAL PARK ACTIVITIES**
- Play for Children
  - Throw a Ball
  - Exercise and Fitness
  - Gathering
  - Relax and Enjoy Outdoors

- ADDITIONAL PARK FEATURES**
- Public art
  - (2) Artificial turf fields
  - Snack shack

- OPPORTUNITIES AND CONSTRAINTS**
- The park location allows adult and competitive games without conflicts with residential neighbors
  - Because the field is A-class and is on a main thoroughfare, the site is extremely popular and attracts a lot of un-permitted users, which results in conflicts between user groups and overuse of the facility
  - There is competition for reservations and some illegal use



## EXISTING CONDITIONS



- The area behind the goals is denuded due to activity, which reflects the community's demand for playing fields
- The snack shack is underutilized compared to how it was intended
- Maintenance of the surrounding landscape has been a challenge
- The park is located at a busy intersection
- Parking is not adequate for the intense use of this park
- There have been incidents of copper theft
- Planned improvements in the CIP for FY2016 will replace synthetic turf on the soccer fields in June 2015

SITE-SPECIFIC PUBLIC INPUT

N/A



CITY OF  
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ALTO





A | Tennis court



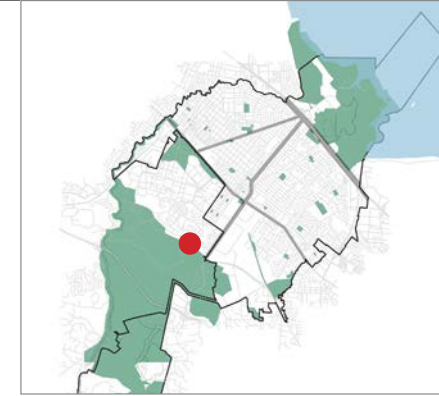
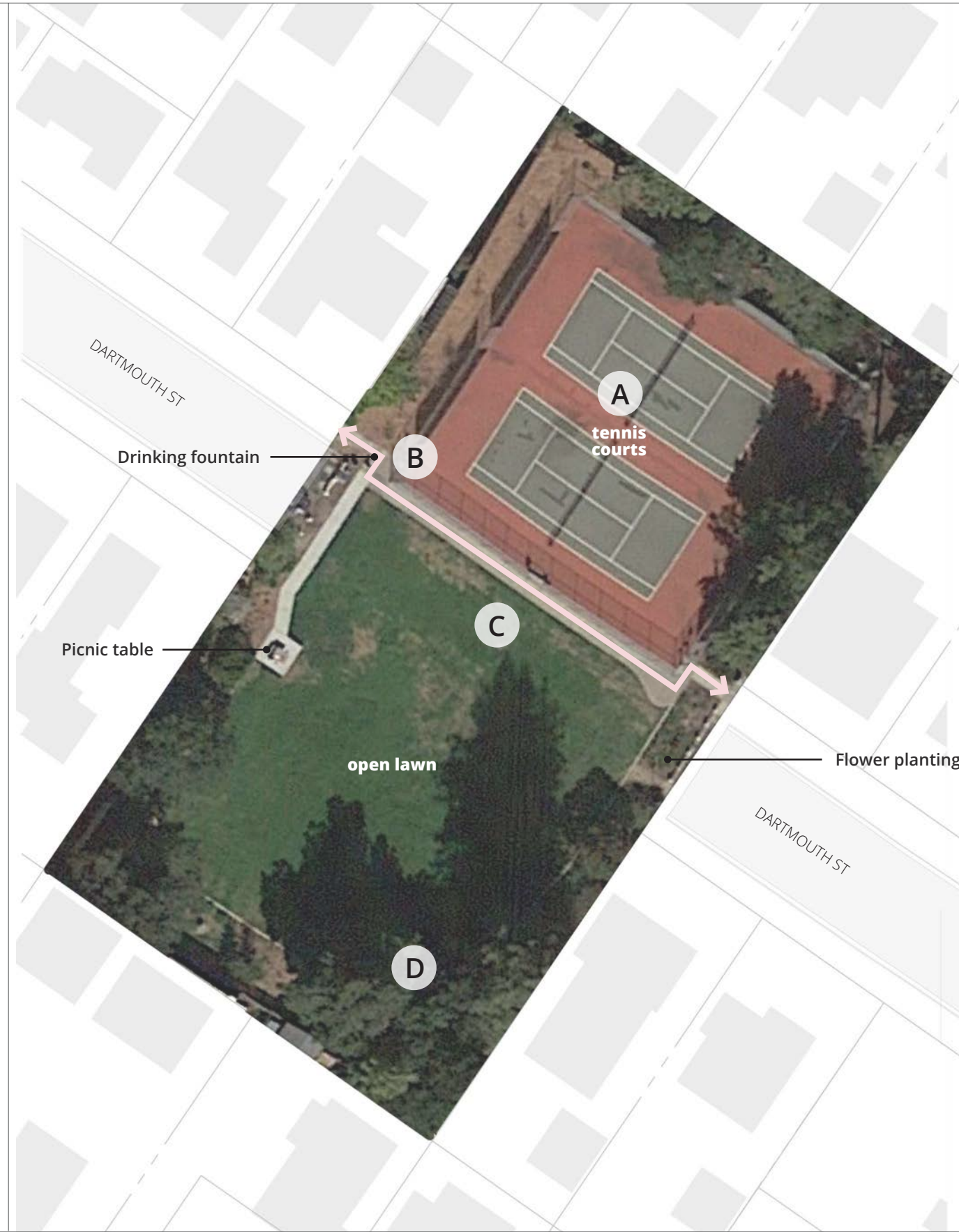
B | Water fountain at west entrance



C | Turf in good condition



D | Redwoods provide shade



# WEISSHAAR PARK

Location: 2298 Dartmouth Street between College and California Avenues  
 Owner: City of Palo Alto  
 Size: 1.1 acres  
 Year: 1880

## HISTORY

Along with Cameron, Werry and Mayfield, Weisshaar is one of the four old Mayfield parks. Originally named Hampton Park, it was renamed Weisshaar after Frederick W. Weisshaar. Weisshaar owned and farmed 120 acres in Mayfield until the late 1880s when he sold the land to Alexander Gordon who subdivided it into plots that would become College Terrace. Weisshaar was a longtime Mayfield School District Trustee and was elected Mayfield's first Treasurer.

## EXISTING CONDITIONS

- The park includes a large, green open field and the only tennis court in College Terrace
- One of four small parks in the College Terrace neighborhood that function together (the others are Cameron, Mayfield, and Werry)

## ESSENTIAL PARK ACTIVITIES

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

## ADDITIONAL PARK FEATURES

N/A

## OPPORTUNITIES AND CONSTRAINTS

- There is no on-street parking
- There are few park amenities
- Field use is restricted to quiet practice games because the fields are small and the park is surrounded by residences

## SITE-SPECIFIC PUBLIC INPUT

N/A



# EXISTING CONDITIONS





A | Ramp down into park



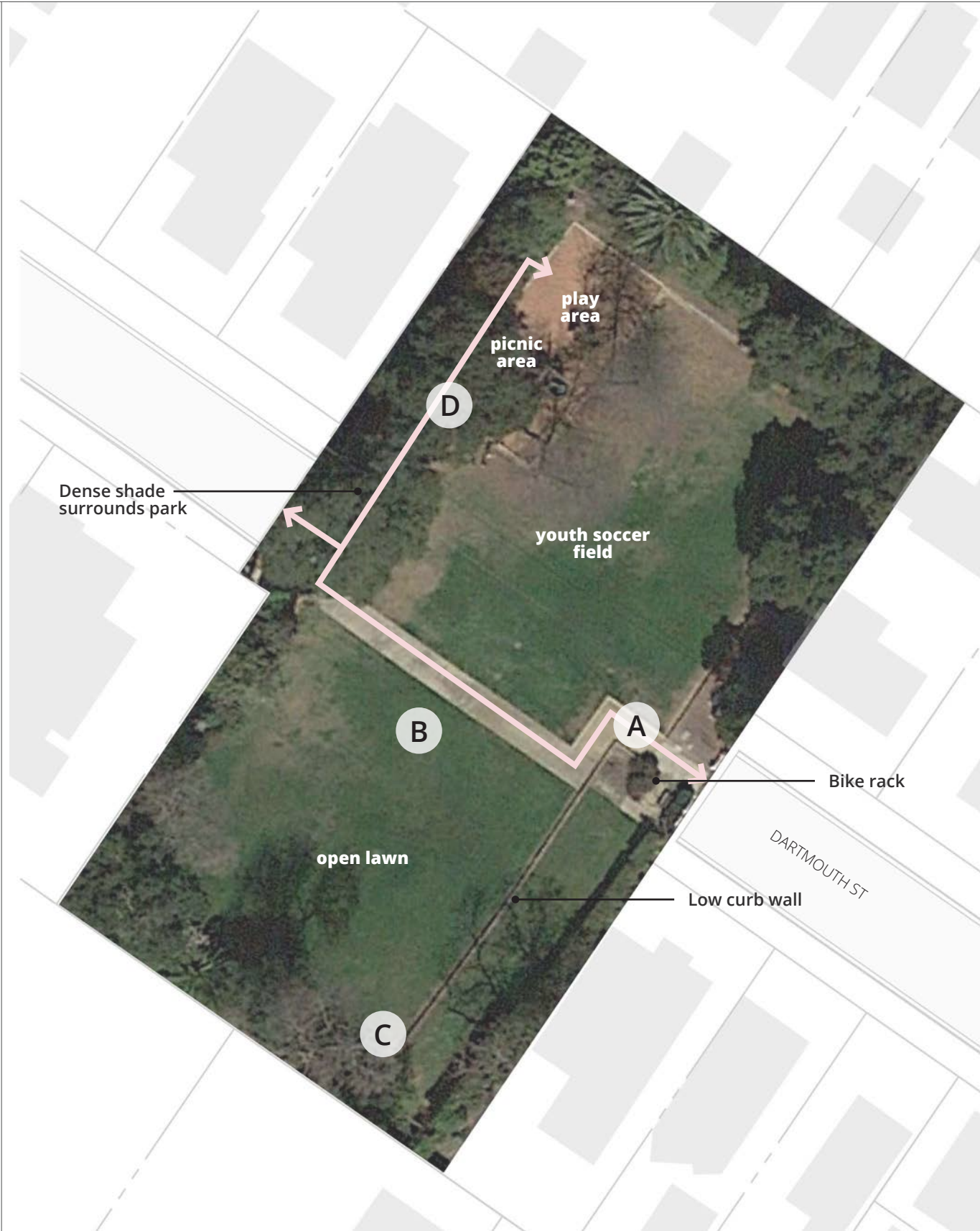
B | Open lawn bisected by path



C | Low curb wall and thick screening



D | Ramp to play area



# WERRY PARK

Location: 2100 Dartmouth Street between College and Stanford Avenues  
 Owner: City of Palo Alto  
 Size: 1.1 acres  
 Year: 1880

## HISTORY

Werry is one of four original parks from the historic town of Mayfair. It was originally named Eton Park but was renamed Werry in 1968 after William C. Werry who was assistant postmaster, then Palo Alto postmaster, from 1924 until 1935.

## EXISTING CONDITIONS

- Small neighborhood park that includes an open lawn (also used as a youth soccer field) and a children's play area
- One of four small parks in the College Terrace neighborhood that function as a set of parks (the others are Cameron, Mayfield, and Weisshaar)

## ESSENTIAL PARK ACTIVITIES

- Play for Children
- Throw a Ball
- Exercise and Fitness
- Gathering
- Relax and Enjoy Outdoors

## ADDITIONAL PARK FEATURES

N/A

## OPPORTUNITIES AND CONSTRAINTS

- The playground was designed using neighborhood input and preferences
- There is no on-street parking
- There are few park amenities and very few activities for adults
- Field use is restricted to quiet practice games because the fields are small and the park is surrounded by residences
- The wooden play structure needs increased maintenance - there is continual need to replace rotten posts, cracked posts and boards

## SITE-SPECIFIC PUBLIC INPUT

- More toddler specific play features
- Restrooms
- Off-leash dog area



# EXISTING CONDITIONS



# CAPITAL IMPROVEMENT FUND



**Fund:** Capital Improvement Fund  
**Category:** Parks and Open Space  
**Project Location:** Cameron Park  
**Managing Department:** Community Services  
**IBRC Reference:** Catch-up  
**Initial Project Start:** Summer 2017  
**Initial Project Completion:** Summer 2018  
**Revised Project Start:**  
**Revised Project Completion:**  
**Project Number:** PG-14002

Cameron Park, January 2015

## Cameron Park Improvements

### Description

This project provides funding to upgrade and renovate safety and accessibility features at Cameron Park with a primary focus on the park playground.

### Justification

As park infrastructure ages, safety and compliance issues need to be addressed. This project will ensure compliance and address accessibility needs as well as safety issues.

### Significant Changes

**2017-2021 CIP:** Project being shifted from Fiscal Year 2018 to Fiscal Year 2020 pending completion of the Parks Master Plan and a reprioritization of parks projects.

### Funding Sources Schedule

Funding Source	Prior Years	FY 2016 Budget	FY2016 Est.	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	5 Year CIP Total	Beyond 5 Year CIP	Total
Capital Improvement Fund	0	0	0	0	0	0	159,994	0	159,994	0	159,994
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>159,994</b>	<b>0</b>	<b>159,994</b>	<b>0</b>	<b>159,994</b>

### Expenditure Schedule

Project Phase	Prior Years	FY 2016 Budget	FY2016 Est.	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	5 Year CIP Total	Beyond 5 Year CIP	Total
Construction	0	0	0	0	0	0	141,997	0	141,997	0	141,997
Design	0	0	0	0	0	0	17,997	0	17,997	0	17,997
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>159,994</b>	<b>0</b>	<b>159,994</b>	<b>0</b>	<b>159,994</b>

**Operating Impact**

This project is not anticipated to impact operating expenses.

<b>Relationship to Comprehensive Plan</b>	<b>Potential Board/Commission Review:</b>
<b>Primary Connection</b>	Parks and Recreation Commission
Element: Community Services & Facilities	
Section: Parks and Public Facilities	
Goal: C-4	
Policy: C-24	
Program: C-19	
<b>Environmental Impact Analysis:</b>	
This project is expected to have a possible exemption from CEQA under Section 15301.	



**Fund:** Capital Improvement Fund

**Category:** Parks and Open Space

**Project Location:** Various

**Managing Department:** Community Services

**IBRC Reference:** Keep-up

**Initial Project Start:** Recurring

**Initial Project Completion:** Recurring

**Project Number:** PG-06001

Rinconada Tennis Courts, February 2015

# Tennis and Basketball Court Resurfacing

## Description

This project provides funding for tennis and basketball court repair and resurfacing in various Palo Alto parks.

## Justification

Tennis and basketball courts require ongoing repairs and resurfacing due to wear and tear. Resurfacing of courts will enhance the safety, quality, and condition of these athletic facilities.

## Supplemental Information

Work to be completed under this project is scheduled as follows:

**Fiscal Year 2017:** Mitchell Park tennis courts reconstruction (courts 5-7)

**Fiscal Year 2018:** Mitchell Park handball resurfacing and Mitchell Park paddle tennis resurfacing

**Fiscal Year 2019:** Rinconada Park tennis courts reconstruction (all courts)

**Fiscal Year 2020:** Basketball court resurfacing: Briones Park, Johnson Park and Terman Park

**Fiscal Year 2021:** Tennis courts at Terman Park, and Weisshaar Park

## Significant Changes

**2017-2021 CIP:** Tennis courts at Cubberley Community Center have been removed from this project and now are covered in a separate project within the Cubberley Infrastructure Fund.



Funding Sources Schedule

Funding Source	Prior Years	FY 2016 Budget	FY2016 Est.	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	5 Year CIP Total	Beyond 5 Year CIP	Total
Capital Improvement Fund	N/A	645,250	351,690	508,560	215,000	215,000	215,000	215,000	1,368,560	0	N/A
<b>Total</b>	<b>N/A</b>	<b>645,250</b>	<b>351,690</b>	<b>508,560</b>	<b>215,000</b>	<b>215,000</b>	<b>215,000</b>	<b>215,000</b>	<b>1,368,560</b>	<b>0</b>	<b>N/A</b>

Expenditure Schedule

Project Phase	Prior Years	FY 2016 Budget	FY2016 Est.	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	5 Year CIP Total	Beyond 5 Year CIP	Total
Construction	N/A	645,250	351,690	508,560	215,000	215,000	215,000	215,000	1,368,560	0	N/A
<b>Total</b>	<b>N/A</b>	<b>645,250</b>	<b>351,690</b>	<b>508,560</b>	<b>215,000</b>	<b>215,000</b>	<b>215,000</b>	<b>215,000</b>	<b>1,368,560</b>	<b>0</b>	<b>N/A</b>

Operating Impact

This project is not anticipated to impact operating expenses.

<p><b>Relationship to Comprehensive Plan</b></p> <p><b>Primary Connection</b></p> <p>Element: Community Services &amp; Facilities</p> <p>Section: Parks and Public Facilities</p> <p>Goal: C-4</p> <p>Policy: C-24</p> <p>Program: C-19</p> <p><b>Environmental Impact Analysis:</b></p> <p>This project is expected to have a possible exemption from CEQA under Section 15301.</p>
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## Menlo Park FY 2016-17 Budget, relevant excerpts

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<http://www.menlopark.org/DocumentCenter/View/10372>

### Descriptions of relevant parks and recreational facilities

Menlo Park's Parks and Recreation Master Plan has not been recently updated, and the City is currently working on community engagement to obtain input from the public in the development of an update. The excerpts below are descriptions of specific parks and recreational facilities that were found in the FY 2016 – 17 Budget. They show that the conditions of these parks and recreational facilities are not deteriorating due to overuse. Rather, they are generally in good condition, and the planned projects include upgrades and minor improvements.

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#### ARRILLAGA FAMILY RECREATION CENTER HEATING, VENTILATION AND AIR CONDITIONING SYSTEM UPGRADE

When the Arrillaga Family Recreation Center was remodeled in 2011, a new HVAC system was installed that cooled/heated solely outside air as opposed to a more traditional recirculating system similar to those in many residential homes. The advantage of an HVAC system configured to pull air from the outside was cost and time savings during the renovation project. The decision at the time, however, came at the expense of energy efficiency and has resulted in extreme wear and tear on the cooling condensers due wide fluctuations in temperature experienced outside when compared to relatively constant indoor temperatures. This project will evaluate options to reduce the energy to control temperatures in the Recreation Center with a more efficient HVAC system and install the improvements.



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#### BEDWELL BAYFRONT PARK MASTER PLAN

The master plan will provide a long-term vision and general development guide for the park and its facilities, including how to best protect park resources, provide quality visitor experiences, manage visitor use, and plan for future park development. The plan will also identify infrastructure needs related to the methane gas and leachate collection systems and other issues associated with managing the closed landfill.



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### JACK LYLE PARK RESTROOM CONSTRUCTION

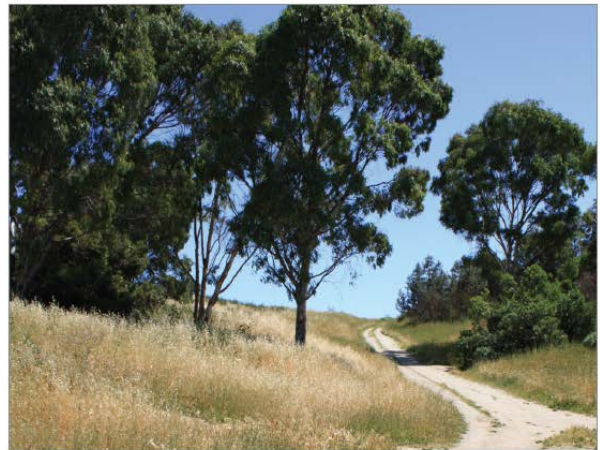
The first phase of this project involved engaging the neighboring community in developing a conceptual design. This year's funding will be used to construct the restrooms at Jack Lyle Park.



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### PARK IMPROVEMENTS (MINOR)

The project addresses minor improvements to parks, such as repairing fences, irrigation systems, play equipment, resodding portions of fields and adding sand and fiber to play equipment areas.



## APPENDIX D: SENSITIVITY ANALYSIS, PART 1

When Stanford conducted its Spring 2016 Survey to evaluate use of offsite parks and recreation facilities, Stanford included both campus residents and campus commuters. The Survey included Stanford regular benefits-eligible employees who commute from off-campus locations to campus, of which 3,163 responded. Another 17 commuting undergraduate students and 378 commuting graduate students also responded, totaling 3,558 commuters who responded to the Survey.

The Survey data revealed that a higher percentage of campus residents in every population category use offsite park facilities than that of commuters. **Table D1** below compares the percentage of each category of Stanford campus residents and the percentage of each category of Stanford commuters who visit parks or recreation facilities in nearby communities based on the Survey data.

**Table D1: 2016 Stanford Recreation Survey – Comparison of Campus Residents to Non-Resident Commuters Who Visit Palo Alto or Menlo Park Public Park and Recreation Facilities At Least Once per Month**

Campus Population Category	Campus Residents Who visit Park and Recreation Facilities in Palo Alto	Non-Resident Commuters who visit Park and Recreation Facilities in Palo Alto	Campus Residents Who visit Park and Recreation Facilities in Menlo Park	Non-Resident Commuters who visit Park and Recreation Facilities in Menlo Park
Undergraduate students	5%	0%	3%	0%
Graduate students	14%	7%	6%	5%
Faculty, staff and postdocs	33%	12%	13%	8%

To further assess whether inclusion of faculty, staff, students and other populations living off campus might combine with park use by campus residents to result in a significant impact, the following sensitivity analysis has been prepared.

### D.1 Commuter Population Growth

As described in **Tab 5 – Anticipated Changes to Population**, and **Tab 8 – Transportation: Vehicle Miles Traveled**, the campus population includes faculty, staff and students who study or work on the campus on a daily basis. The campus population also includes other population segments who may not work on the campus on a daily or year-round basis, or who are not directly employed by Stanford. The other population segments include part-time workers including those who work less than 20 percent time, workers who are employed only during summer camps, and workers who are not directly employed by Stanford.

**Table D2** below shows the projected growth in the commuter (non-resident) populations, for undergraduate students, graduate students, faculty, staff and postdocs under the 2018 General Use Permit.

**Table D2: Projected Growth in Faculty, Staff and Student Commuters Under the 2018 General Use Permit**

Population Category	Daytime Population Fall 2018*	Resident Population Fall 2018 + EV Grad. Residence Project**	Commuter Population Fall 2018	Daytime Population Fall 2035*	Resident Population Fall 2035**	Commuter Population Fall 2035	Growth in Commuter Population under 2018 GUP
Undergraduate students	7,085	6,617	468	8,785	8,317	468	0
Graduate students	9,528	7,265	2,263	10,728	8,183	2,545	282
Faculty, staff and postdocs	14,461	965	13,496	18,649	1,515	17,134	3,638
<b>Total</b>	<b>31,074</b>	<b>14,847</b>	<b>16,227</b>	<b>38,162</b>	<b>18,015</b>	<b>20,147</b>	<b>3,920</b>

Notes:

\* Daytime population in Fall 2018 and Fall 2035 is found in Table 2 of Tab 5 – Anticipated Changes to Population.

\*\* Campus Resident population in Fall 2018 plus Escondido Village Graduate Residences (2020) and Fall 2035 is found in Table 3 of Tab 5 – Anticipated Changes to Population. Escondido Village Graduate Residences is included in the Fall 2018 residential population for purposes of this sensitivity analysis to ensure the analysis is conservative. If that project were not included in the 2018 scenario, the analysis would show a decrease rather than an increase in graduate student commuters in 2035. The 2018 and 2035 resident population totals exclude any non-student dependents (spouses, children, family members) for purposes of calculating the commuter population. Spouses, children and family members are included in the resident population when calculating daily visits to offsite park and recreation facilities.

**Table D3** below shows the projected growth in the Other Population Segment Commuter populations from Fall 2018 to Fall 2035 under the 2018 General Use Permit.

**Table D3: Projected Growth in Other Population Segment Commuters Under the 2018 General Use Permit**

Affiliation	Commute Frequency	Anticipated total Population in Fall 2018	Anticipated Daily Campus Population in Fall 2018	Anticipated Total Population in Fall 2035	Anticipated Daily Campus Population in Fall 2035	Change in Population	Change in Daily Campus Population
Casual	20%	2,167	434	2,746	550	579	116
Contingent	52%	1,021	531	1,294	673	273	142
Temporary	78%	1,448	1,130	1,835	1,432	387	302
Non-employee academic affiliates, 20% FTE	17%	1,312	224	1,662	283	350	59
Non-employee academic affiliates, FTE	85%	1,435	1,220	1,818	1,546	383	326
Third-party contract workers	100%	324	324	396	396	72	72
Janitorial contract workers	100%	259	259	316	316	57	57
Construction contract workers	100%	1,200	1,200	1,200	1,200	0	0
<b>Total</b>	<b>NA</b>	<b>9,166</b>	<b>5,321</b>	<b>11,267</b>	<b>6,395</b>	<b>2,101</b>	<b>1,074</b>

## D.2 Offsite Park Visits by Commuters

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The Spring 2016 Survey results were used to determine daily visits to nearby parks by commuting faculty, staff and students. Stanford used the survey results to calculate the rate of daily visits to each park by each population category. Residents of Palo Alto who study or work on campus were excluded from the analysis of Palo Alto parks, and residents of Menlo Park who study or work on campus were excluded from the analysis of Menlo Park parks, because residents of each community are expected to use parks within their own communities due to their place of residence rather than due to their place of employment. The analysis remains conservative because residents of Menlo Park, Palo Alto and other nearby communities would be expected to use parks in adjacent and nearby local communities based on their places of residence. However, for purposes of the sensitivity analysis, it was assumed that all use of nearby parks by non-residents was due to affiliation with Stanford.

The Spring 2016 Survey did not include members of the other population segments. Because the other population segments include workers who work on campus less than 20 percent time, workers who work on campus less than 50 percent time, and workers who only work on campus for a few months per year, the other population segments would not be expected to use offsite public park and recreation facilities at the same rate as faculty and benefits-eligible staff. These populations were adjusted to an average daily population based on their commute frequency. The adjusted average daily population was assumed to use offsite parks and recreation facilities at the same rates as faculty and regular benefits-eligible staff. This too is a conservative assumption.

**Table D4** below is similar to Table 7 from the body of the report. It shows the summarized projected daily visits and resulting daily visits per acre to each offsite park under the 2018 General Use Permit. The table includes:

- Campus Residents;
- Student, Faculty, Staff and Post-Doc Commuters;
- Other Population Segment Commuters; and
- All Populations Combined.

**Table D4: Estimated Growth in Usage of Public Park and Recreation Facilities Under the 2018 General Use Permit**

		Acres	Growth in Daily Visits by Campus Residents	Growth in Daily Visits by Student, Faculty, Staff and Post-Doc Commuters	Growth in Daily Visits by Other Population Segment Commuters	Combined Growth in Daily Visits by All Populations	Daily Visits per Acre
<b>Palo Alto</b>							
<b>Parks – Regional/District</b>							
1	Foothills Park/Open Space Preserve	Total 1,400; Active 26.7	41	18	5	64	0.0; 2.4
2	Baylands Nature Preserve	Total 1,940; Active 9.2	32	16	5	53	0.0; 5.8
3	Pearson-Arastradero Preserve	Total 622; Active 6.2	27	15	5	47	0.1; 7.6
<b>Park and Recreation Facilities – Neighborhood</b>							
4	Neighborhood parks in College Terrace (Cameron, Mayfield, Weisshaar, and Werry Parks)	4.4	37	4	1	42	9.5
5	Mayfield (Stanford-Palo Alto) playing fields	5.9	16	6	2	24	4.1
6	El Camino Park	12.2	16	5	2	23	1.9
7	Baylands Athletic Center fields	10.0	7	4	2	13	1.3
8	Heritage Park	2.01	7	3	1	11	5.5
9	Rinconada Pool	NA	5	4	2	11	NA
10	Mitchell Park	21.4	4	3	1	8	0.4
11	Peers Park	4.7	6	1	1	8	1.7
12	Lawn Bowling Green	1.9	2	1	1	4	2.1
13	Avenidas Senior Center	NA	2	1	1	4	NA
14	Cubberley Community Center	NA	5	0	0	5	NA
<b>Menlo Park</b>							
<b>Parks – Regional/District</b>							
15	Bedwell Bayfront Park	Total 160; Active 7.0	1	2	1	4	0.0; 0.6
<b>Park and Recreation Facilities – Neighborhood</b>							
16	Civic Center recreation facilities	9.3	14	23	7	44	4.7
17	Stanford Hills Park	3.1	12	8	2	22	7.1
18	Sharon Park	9.8	5	8	2	15	1.5
19	Sharon Hills Park	11.5	5	5	2	12	1.0
20	Nealon Park	9.0	4	7	2	13	1.4
21	Jack W. Lyle Park	4.6	3	5	2	10	2.2

Note: The subtotals are rounded up to the nearest digit.

The Survey did not ask responders what day of the week or time they visit such facilities, hence it cannot be easily deduced whether these affiliates are visiting the parks and recreation facilities before, during, or after their workday in association with employment, or if they are visiting the parks on a weekend, in which case the activity should be considered unrelated to their Stanford affiliation.

Furthermore, there is a large number of Stanford affiliates that live fairly close to campus, and therefore in close proximity to Palo Alto and Menlo Park. Based on the 2016 Commute Survey conducted by Stanford University, about 29,500 Stanford University affiliates who were surveyed said they worked or studied on the main campus. Out of these 29,500, 12,300 said they lived on the Stanford campus, therefore about 17,200 commute to campus. Approximately 9,500 of the commuters lived within five miles of the campus boundary. This meant that over 55% of commuters to campus lived within five miles of the campus boundary. Those who were not living in Palo Alto or Menlo Park were residents of Redwood City, Atherton, East Palo Alto, Portola Valley, Los Altos, Los Altos Hills, Mountain View, and other nearby jurisdictions, and could easily be familiar with and travel to parks and facilities in Palo Alto and Menlo Park for occasional or frequent recreation. Residents of each of these communities would be expected to visit nearby parks due to proximity to their homes, regardless of their affiliation with Stanford.

Nevertheless, Table D4 shows that the projected combined number of visits by residents and commuters, using conservative assumptions, would not cause the daily visits per acre measurement to exceed the screening threshold for any of the regional or neighborhood parks.



## APPENDIX D: SENSITIVITY ANALYSIS, PART 2 – CALCULATIONS FOR FACULTY, STAFF AND STUDENT COMMUTERS, AND OTHER POPULATION SEGMENT COMMUTERS

Please see Appendix A for methodology and calculation assumptions. There were no commuting undergraduates that resulted in visits to these offsite parks. The total for projected daily visits was calculated by adding the sum of future daily visits projected for graduates, faculty, staff and postdocs (rounded up to the nearest digit), and projected daily visits for Other Workers (also rounded up to the nearest digit).

PALO ALTO	Surveyed Visitors				Daily Visits by surveyed visitors				Rate of daily visits per visitor		Projected daily visits 2018-2035		
	Occasionally	Regularly	Frequently	Total Visitors	Occasionally	Regularly	Frequently	Total Visits Per Day	Residential population surveyed	Rate of visit per visitor	Projected population increase	Projected future visits	Projected future visits (subtotals)
<b>Foothills Park / Open Space Preserve</b>													
Graduate Commuters	16	1	0	17	1.1	0.3	0.0	1.3	378	<b>0.0035</b>	282	<b>1.0</b>	<b>18</b>
Fac, Staff and Postdoc Comm.	148	17	0	165	9.9	4.5	0.0	14.4	3163	<b>0.0046</b>	3638	<b>16.6</b>	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									<b>0.0046</b>	1074	<b>4.9</b>	<b>5</b>
												<b>23</b>	<b>23</b>
<b>Baylands Nature Preserve</b>													
Graduate Commuters	12	1	0	13	0.8	0.3	0.0	1.1	378	<b>0.0028</b>	282	<b>0.8</b>	<b>16</b>
Fac, Staff and Postdoc Comm.	144	13	0	157	9.6	3.5	0.0	13.1	3163	<b>0.0041</b>	3638	<b>15.0</b>	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									<b>0.0041</b>	1074	<b>4.4</b>	<b>5</b>
												<b>21</b>	<b>21</b>
<b>Pearson-Arastradero Preserve</b>													
Graduate Commuters	9	1	1	11	0.6	0.3	0.5	1.4	378	<b>0.0037</b>	282	<b>1.0</b>	<b>15</b>
Fac, Staff and Postdoc Comm.	95	15	3	113	6.3	4.0	1.6	11.9	3163	<b>0.0038</b>	3638	<b>13.7</b>	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									<b>0.0038</b>	1074	<b>4.1</b>	<b>5</b>
												<b>20</b>	<b>20</b>
<b>Neighborhood parks in College Terrace (Cameron, Mayfield, Weisshaar, Werry)</b>													
Graduate Commuters	1	0	0	1	0.1	0.0	0.0	0.1	378	<b>0.0002</b>	282	<b>0.0</b>	<b>4</b>
Fac, Staff and Postdoc Comm.	21	5	0	26	1.4	1.3	0.0	2.7	3163	<b>0.0009</b>	3638	<b>3.1</b>	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									<b>0.0009</b>	1074	<b>1.0</b>	<b>1</b>
												<b>5</b>	<b>5</b>

PALO ALTO, con't.	Surveyed Visitors				Daily Visits by surveyed visitors				Rate of daily visits per visitor		Projected daily visits 2018-2035			Projected future visits (subtotals)
	Occasionally	Regularly	Frequently	Total Visitors	Occasionally	Regularly	Frequently	Total Visits Per Day	Residential population surveyed	Rate of visit per visitor	Projected population increase	Projected future visits		
<b>Mayfield (Stanford-Palo Alto) playing fields</b>														
Graduate Commuters	0	0	0	0	0.0	0.0	0.0	0.0	378	0.0000	282	0.0	6	
Fac, Staff and Postdoc Comm.	29	12	0	41	1.9	3.2	0.0	5.1	3163	0.0016	3638	5.9		
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0016	1074	1.7	2	
												8	8	
<b>El Camino Park</b>														
Graduate Commuters	2	0	0	2	0.1	0.0	0.0	0.1	378	0.0004	282	0.1	5	
Fac, Staff and Postdoc Comm.	30	7	0	37	2.0	1.9	0.0	3.9	3163	0.0012	3638	4.4		
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0012	1074	1.3	2	
												7	7	
<b>Baylands Athletic Center fields</b>														
Graduate Commuters	1	0	0	1	0.1	0.0	0.0	0.1	378	0.0002	282	0.0	4	
Fac, Staff and Postdoc Comm.	27	5	0	32	1.8	1.3	0.0	3.1	3163	0.0010	3638	3.6		
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0010	1074	1.1	2	
												6	6	
<b>Heritage Park</b>														
Graduate Commuters	2	0	0	2	0.1	0.0	0.0	0.1	378	0.0004	282	0.1	3	
Fac, Staff and Postdoc Comm.	23	1	0	24	1.5	0.3	0.0	1.8	3163	0.0006	3638	2.1		
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0006	1074	0.6	1	
												4	4	
<b>Rinconada Pool</b>														
Graduate Commuters	1	0	0	1	0.1	0.0	0.0	0.1	378	0.0002	282	0.0	4	
Fac, Staff and Postdoc Comm.	39	2	0	41	2.6	0.5	0.0	3.1	3163	0.0010	3638	3.6		
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0010	1074	1.1	2	
												6	6	

PALO ALTO, con't.	Surveyed Visitors				Daily Visits by surveyed visitors				Rate of daily visits per visitor		Projected daily visits 2018-2035		
	Occasionally	Regularly	Frequently	Total Visitors	Occasionally	Regularly	Frequently	Total Visits Per Day	Residential population surveyed	Rate of visit per visitor	Projected population increase	Projected future visits	Projected future visits (subtotals)
<b>Mitchell Park</b>													
Graduate Commuters	0	1	0	1	0.0	0.3	0.0	0.3	378	0.0007	282	0.2	3
Fac, Staff and Postdoc Comm.	14	1	1	16	0.9	0.3	0.5	1.7	3163	0.0005	3638	2.0	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0005	1074	0.6	1
												4	4
<b>Peers Park</b>													
Graduate Commuters	1	0	0	1	0.1	0.0	0.0	0.1	378	0.0002	282	0.0	1
Fac, Staff and Postdoc Comm.	4	0	0	4	0.3	0.0	0.0	0.3	3163	0.0001	3638	0.3	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0001	1074	0.1	1
												2	2
<b>Lawn Bowling Green</b>													
Graduate Commuters	0	0	0	0	0.0	0.0	0.0	0.0	378	0.0000	282	0.0	1
Fac, Staff and Postdoc Comm.	6	1	0	7	0.4	0.3	0.0	0.7	3163	0.0002	3638	0.8	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0002	1074	0.2	1
												2	2
<b>Avenidas Senior Center</b>													
Graduate Commuters	0	0	0	0	0.0	0.0	0.0	0.0	378	0.0000	282	0.0	1
Fac, Staff and Postdoc Comm.	4	1	0	5	0.3	0.3	0.0	0.5	3163	0.0002	3638	0.6	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0002	1074	0.2	1
												2	2
<b>Cubberley Community Center</b>													
Graduate Commuters	0	0	0	0	0.0	0.0	0.0	0.0	378	0.0000	282	0.0	0
Fac, Staff and Postdoc Comm.	0	0	0	0	0.0	0.0	0.0	0.0	3163	0.0000	3638	0.0	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0000	1074	0.0	0
												0	0

MENLO PARK	Surveyed Visitors				Daily Visits by surveyed visitors				Rate of daily visits per visitor		Projected daily visits 2018-2035		Projected future visits (subtotals)
	Occasionally	Regularly	Frequently	Total Visitors	Occasionally	Regularly	Frequently	Total Visits Per Day	Residential population surveyed	Rate of visit per visitor	Projected population increase	Projected future visits	
<b>Bedwell Bayfront Park</b>													
Graduate Commuters	0	0	0	0	0.0	0.0	0.0	0.0	378	0.0000	282	0.0	2
Fac, Staff and Postdoc Comm.	4	1	1	6	0.3	0.3	0.5	1.1	3163	0.0003	3638	1.2	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0003	1074	0.4	1
												3	3
<b>Civic Center recreational facilities (Burgess Park, Arrillaga Gym, etc.)</b>													
Graduate Commuters	5	1	0	6	0.3	0.3	0.0	0.6	378	0.0016	282	0.4	23
Fac, Staff and Postdoc Comm.	102	39	3	144	6.8	10.4	1.6	18.8	3163	0.0059	3638	21.6	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0059	1074	6.4	7
												30	30
<b>Stanford Hills Park</b>													
Graduate Commuters	5	2	0	7	0.3	0.5	0.0	0.9	378	0.0023	282	0.6	8
Fac, Staff and Postdoc Comm.	56	4	2	62	3.7	1.1	1.1	5.9	3163	0.0019	3638	6.7	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0019	1074	2.0	2
												10	10
<b>Sharon Park</b>													
Graduate Commuters	5	1	0	6	0.3	0.3	0.0	0.6	378	0.0016	282	0.4	8
Fac, Staff and Postdoc Comm.	55	4	2	61	3.7	1.1	1.1	5.8	3163	0.0018	3638	6.7	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0018	1074	2.0	2
												10	10

MENLO PARK, con't.	Surveyed Visitors				Daily Visits by surveyed visitors				Rate of daily visits per visitor		Projected daily visits 2018-2035		
	Occasionally	Regularly	Frequently	Total Visitors	Occasionally	Regularly	Frequently	Total Visits Per Day	Residential population surveyed	Rate of visit per visitor	Projected population increase	Projected future visits	Projected future visits (subtotals)
<b>Sharon Hills Park</b>													
Graduate Commuters	1	1	0	2	0.1	0.3	0.0	0.3	378	0.0009	282	0.2	5
Fac, Staff and Postdoc Comm.	33	7	0	40	2.2	1.9	0.0	4.1	3163	0.0013	3638	4.7	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0013	1074	1.4	2
												7	7
<b>Nealon Park</b>													
Graduate Commuters	3	0	0	3	0.2	0.0	0.0	0.2	378	0.0005	282	0.1	7
Fac, Staff and Postdoc Comm.	34	11	1	46	2.3	2.9	0.5	5.7	3163	0.0018	3638	6.6	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0018	1074	1.9	2
												9	9
<b>Jack W. Lyle Park</b>													
Graduate Commuters	0	0	0	0	0.0	0.0	0.0	0.0	378	0.0000	282	0.0	5
Fac, Staff and Postdoc Comm.	19	6	2	27	1.3	1.6	1.1	3.9	3163	0.0012	3638	4.5	
Other Pop. Segment Comm.	Same assumptions as faculty, staff, postdocs									0.0012	1074	1.3	2
												7	7

## APPENDIX E: ACTIVE AREAS IN REGIONAL/DISTRICT PARKS

Acreages of all parks were obtained from Palo Alto or Menlo Park City websites and documents, except for Sharon Hills Park, which was calculated by Stanford using NearMap. In response to the City of Palo Alto's comments on the Notice of Preparation that although the open space preserves are large, "people only actively recreate on a very small percentage of the entire preserve area", Stanford has also calculated "actively used" park areas for regional/district parks. These calculations were based on information available on City websites regarding trail lengths, and conservative assumptions based on aerials and NearMap, for the average widths of the trails. These acreages were added to the relevant tables and the daily visits per acre were calculated for the active areas as well.

Lakes and bodies of water in these parks were not included, even though recreation is allowed on some of them.

### **Foothills Park/Open Space Preserve "active areas":**

Source of information: <http://www.cityofpaloalto.org/gov/depts/csd/parks/preserves/foothills.asp>

Trail map: <http://www.cityofpaloalto.org/civicax/filebank/documents/8505/>

Facilities and trails:

- Park Interpretive Center (0.1 acres),
- Oak Grove Picnic Area (0.5 acres – assumed from City website photos and Nearmap; boundaries of this picnic area are unclear),
- Orchard Glen picnic area, available on a first-come-first-served basis (0.2 acres – determined via Nearmap; boundaries of this picnic area are unclear),
- Grassy area stretching from Orchard Glen picnic area to Oak Grove Picnic Area, marked as "Las Trampas Valley" on Foothills Park map (7.8 acres – determined via Nearmap),
- Towle Campground (4 acres – estimated based on aerials and online City maps – boundaries of this campground are unclear)
- Grassy area around Boronda Lake (about 5.0 acres – determined via Nearmap),
- Trails: 15 miles per City website – assume 5 feet average width (trail widths range from 4 to over 10 feet wide per Nearmap aerials) = 396,000 square feet = 9.1 acres

**Total "active areas": 26.7 acres**

### **Baylands Nature Preserve "active areas":**

Source of information: <http://www.cityofpaloalto.org/gov/depts/csd/parks/preserves/baylands.asp>

Trail map: <http://www.cityofpaloalto.org/civicax/filebank/documents/6117/>

Facilities and trails:

- Lucy Evans Baylands Nature Interpretive Center (0.13 acres)
- Trails: 15 miles per City website – assume 5 feet average width (trails widths range from 4 to 12 feet wide based on Nearmap aerials) = 396,000 sf = 9.1 acres

**Total "active areas": 9.2 acres**

### **Pearson-Arastradero Preserve “active areas”:**

Source of information: <http://www.cityofpaloalto.org/gov/depts/csd/parks/preserves/arastradero/default.asp>

Trail map: <http://www.cityofpaloalto.org/civicax/filebank/documents/6049/>

Facilities and trails:

- Trails: 10.25 miles per City website of trails for hiking, bicycling and horseback riding – assume 5 feet average width (trails widths range from 4 to 12 feet wide based on Nearmap aerials) = 270,600 sf = 6.2 acres

**Total “active areas”: 6.2 acres**

### **Bedwell Bayfront Park “active areas”:**

Trail map: <http://www.friendsofbayfrontpark.org/BayfrontBrochure2014.press-1.pdf>

Facilities and trails:

- Trails: There are many wide and minor trails in the park, but information on the length of all trails could not be found on City websites. The City websites do state that the perimeter trail is 2.3 miles long. Using Nearmap and GIS, it was estimated that the primary (wider) trails, including the perimeter trail, measured approximately 6.3 miles – assume 8 feet average width (trails widths ranged from 8 to 20 feet wide based on Nearmap aerials) = 266,112 sf = 6.1 acres
- Using Nearmap and GIS, it was estimated that the secondary (smaller) trails in the middle of the Park measured approximately 2.6 miles – assume 3 feet average width (trail widths ranged from 3-5 feet wide based on Nearmap aerials) = 41,184 sf = 0.9 acres

**Total “active areas”: 7.0 acres**



Stanford University, Bing Concert Hall.  
Photo: Jeff Goldberg, Esto



## 1.0 INTRODUCTION AND ENGAGEMENT APPROACH

In anticipation of submitting Stanford's application for the 2018 General Use Permit, the University has begun a public outreach process that will include broad engagement with the campus community, local jurisdictions and a range of community organizations and individuals to share information and solicit community input. The intent is to continue with these efforts in many different ways and use a variety of tools so as to supplement the public's participation in Santa Clara County's formal review process.

Stanford's commitment to an open and diverse community conversation is critically important to the success of the 2018 General Use Permit and will be a central and defining characteristic of our effort as we move forward.

As part of the 2018 General Use Permit engagement effort and commitment to the community, Stanford will:

- ensure that there are opportunities for open communication
- seek perspectives and actively listen
- be forthcoming
- be prepared with as much information as is available
- continue to commit to being a good neighbor and regional community member

### 1.1 Pre-Application Outreach and Engagement

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Since the most recent General Use Permit was approved in 2000, Stanford, the community, and Santa Clara County have continued to communicate and share information via the County-created Community Resource Group, as well as through annual reports on the 2000 General Use Permit presented to the Planning Commission in noticed public meetings.

Since May, Stanford has had three primary objectives in our Outreach and Engagement approach with the community. First, Stanford worked to inform our neighbors in the region that we were beginning the process to apply for Santa Clara County approval of an update to our campus land use permit. Second, we worked to educate community members about key campus land use documents — the Stanford Community Plan and 2000 General Use Permit — as well as the Sustainable Development Study approved by the Santa Clara County Board of Supervisors in 2009. Additionally, we shared what Stanford has been doing in the

areas of planning, housing, mobility, stewardship of its lands and sustainability. Third, we sought initial feedback from the community regarding the effectiveness of the Stanford Community Plan and 2000 General Use Permit and what has been accomplished since 2000.

Stanford has used a variety of communication vehicles to reach members of the community. Our approach to date has included the following:

- Media presence and publicity
  - [Stanford Report](#): A May 6, 2016 article kicked off the announcement that Stanford was beginning the process to apply to Santa Clara County for an update to the campus land use permit. Additional news coverage appeared in [The Stanford Daily](#), [Palo Alto Weekly](#) and [Patch](#) publications.
  - In print and online Open House advertisements (see **Figure OS.1**) were placed in local-serving newspapers including *The Palo Alto Weekly*, *The Almanac*, *Mountain View Voice*, *Los Altos Town Crier*, and *The Stanford Daily* for two weeks.
    - *Palo Alto Weekly*, [May 27, 2016](#) and [June 3, 2016](#)
    - *The Almanac*, [May 25, 2016](#) and [June 1, 2016](#)
    - *Mountain View Voice*, [May 27, 2016](#) and [June 3, 2016](#)
    - *Los Altos Town Crier*, [May 25, 2016](#) and [June 1, 2016](#)
    - *Stanford Daily*, May 23, 2016
  - Social Media: Facebook daily digital ads appeared March 28–June 9, 2016 (see **Figure OS.2**).
  - *Stanford Report* digital advertisements, published on June 1, 2016 (Figure OS.1).
  - [Stanford For You announcement](#), June 2016 Edition, included information about the Open Houses.
- Direct Notification
  - A Stanford email announcement was sent to city leaders in the region including those in Palo Alto, Menlo Park, Mountain View, Los Altos, Portola Valley, Woodside and Palo Alto Unified School District informing them of the plans to apply for an updated land use permit and to host the June Open Houses (see **Figure OS.3**).
  - A Stanford email was sent and personal phone calls made to campus and community leaders including environmental, business and housing interest groups, Stanford Campus Residential Leaseholders and others to inform them of the announcement and the June Open Houses.
  - Ten thousand postcards were mailed inviting neighbors to attend any one of the three Open House meetings scheduled for early June 2016 (see **Figure OS.4**).
- Website
  - A dedicated [website](#) went live, focused first on the Open House announcement, which will now be used on an ongoing basis for all communications about the proposed 2018 General Use Permit: <http://gup.stanford.edu>

- Engagement at Open Houses
  - Three Community Open House meetings were held on:
    1. June 2, 2016 Paul Brest Hall at Stanford
    2. June 4, 2016 Terman Middle School in Palo Alto
    3. June 9, 2016 La Entrada Middle School in Menlo Park

## 1.2 Findings from 2018 General Use Permit Open Houses

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[The three Open Houses held in early June 2016](#) provided multiple opportunities for the community to learn more about the Stanford Community Plan and 2000 General Use Permit that currently govern land use approvals on the Stanford campus, and to ask questions and share feedback. Participants were free to spend as much or as little time as they preferred and were able to talk to a significant number of knowledgeable Stanford staff who could answer questions on a variety of topics.

Before leaving each Open House, attendees were asked to share their thoughts and ideas in an exit survey. Of the approximately 121 attendees over the three sessions, 97 surveys were completed. The responses provide some insight into the opinions of those who attended and what they thought about the information they received. A high-level summary of comments is reflected below.

Among those who completed the surveys, the majority live and work in Palo Alto, Menlo Park and Stanford. Portola Valley and Los Altos were also strongly represented as places of residence, with other attendees from Los Altos, Portola Valley, Woodside, San Jose, Santa Clara, Mountain View, Redwood City and Santa Cruz present.

Overall, two-thirds of respondents found that the Open House they attended was extremely helpful or helpful. Some noted that they appreciated the community outreach beginning early in the 2018 General Use Permit approval process.

Approximately two-thirds of the respondents expressed support for Stanford's commitment to compact development principles, preserving lands outside the Academic Growth Boundary, sustainability efforts and maintaining its tradition as a residential university. Some of the open-ended feedback encouraged Stanford's maintenance of the Academic Growth Boundary. Others were pleased by Stanford's housing efforts and asked that Stanford's commitment to affordable housing in particular be continued.

Traffic and reducing the number of cars on and near campus was a priority identified by attendees. Nearly three-fourths of respondents strongly agreed or agreed with a statement emphasizing its importance. This was also reflected when respondents identified transportation as the issue area most important to them.

A number of attendees had specific questions about the future of certain equestrian facilities on Stanford land. Follow-up communications were provided to explain the plans for these facilities, which are unrelated to the proposed 2018 General Use Permit.

## 2.0 UPCOMING 2018 GENERAL USE PERMIT ENGAGEMENT SCHEDULE AND ACTIVITIES

The 2018 General Use Permit outreach and engagement will continue with the formal submission of the application to Santa Clara County in November 2016. The first step will be to post the application on the <http://gup.stanford.edu> website and to work with local news media to provide informed coverage of the specifics of the application's content.

In accordance with Santa Clara County's 2014 Early Public Notification and Outreach Policy, a community meeting will be held on January 25, 2017 to inform adjacent property owners and other interested parties about the proposed permit. Stanford intends to work closely with Santa Clara County's Department of Planning and Development to meet this requirement in the most effective manner to achieve the policy's objective "...[to] enhance awareness of the project, minimize misconceptions and encourage active collaboration among all interested parties."

The 2018 General Use Permit website will be regularly updated to contain current information such as notices of public meetings, community presentations and formal hearing dates as they occur during the process. Visitors to the website will be able to voluntarily opt in to receive periodic email updates, and there will be a dedicated email address, [Stanford2018GUP@stanford.edu](mailto:Stanford2018GUP@stanford.edu), on the website where questions can be submitted.

Stanford will continue to use print, web-based and social-media outlets to further provide notice to the community of milestones throughout the process.

Stanford intends to arrange for presentations about the 2018 General Use Permit application and the status of the Santa Clara County review of it on an ongoing basis to all manner of interested groups, including internal campus audiences, the Santa Clara County Community Resource Group, neighboring city councils/planning commissions, school district boards, service and environmental organizations and neighborhood associations.

Figure OS.1: Print and Online advertisements



**GUIDING STANFORD'S FUTURE**  
Please join us at a drop-in open house event to provide your input as we seek an updated General Use Permit from Santa Clara County.

**JOIN US!**

# Guiding Stanford's Future

ACADEMIC PROGRAMS • HOUSING • TRANSPORTATION  
RESOURCE CONSERVATION • SUSTAINABILITY

Stanford University has begun looking forward to its application to Santa Clara County for its next General Use Permit that governs its campus land use. Join us to learn more about that process and how Stanford manages its lands.



Please join us at a drop-in open house event to provide your input as we seek an updated General Use Permit from Santa Clara County.

**Thursday, June 2, 6:00–8:00 p.m.**  
Paul Brest Hall, Stanford University, 555 Salvatierra Walk, Stanford

**Saturday, June 4, 11:00 a.m.–1:00 p.m.**  
Terman Middle School, Multipurpose Room/Café, 655 Arastradero Road, Palo Alto

**Thursday, June 9, 6:00–8:00 p.m.**  
La Entrada Middle School, Jensen Hall, 2200 Sharon Road, Menlo Park

For more information please visit [gup.stanford.edu](http://gup.stanford.edu).






**GUIDING STANFORD'S FUTURE**


Join us at a drop-in open house event to provide input as we seek an updated General Use Permit from Santa Clara County.

**JOIN US!**

Figure OS.2: Facebook Advertisements

 **Stanford University**  
Sponsored ·   



Please help us as we plan for Stanford's future, advance scientific research and ensure our campus serves the needs of our students and faculty while also protecting the quality of life in our surrounding neighborhoods.








**Stanford** | Community Plan  
2018 General Use Permit

**Join Us at an Open House**


[gup.stanford.edu](http://gup.stanford.edu)

   | 491 others  
19 Comments 44 Shares

 Like |  Comment |  Share

 **Stanford University**  
Sponsored ·  

Please help us as we plan for Stanford's future, advance scientific research and ensure our campus serves the needs of our students and faculty while also protecting the quality of life in our surrounding neighborhoods.



**Stanford** | Community Plan  
2018 General Use Permit

**Join Us at an Open House**

[GUP.STANFORD.EDU](http://GUP.STANFORD.EDU)

492 Reactions 19 Comments 44 Shares




 Like |  Comment |  Share

Figure OS.3: Direct Email Notifications

# Stanford University

Dear Friends:

Stanford announced last week that we are beginning the process to apply for an updated General Use Permit (2018 GUP) to Santa Clara County, outlining the next phase of needs for the campus for the period beginning in 2018.

This will update the current GUP, adopted in 2000, which allowed construction of academic buildings and housing, governed by specific conditions to address areas of environmental and community concerns. We expect that County-adopted policies as stated in the Stanford University Community Plan will continue to provide the policy framework. The Community Plan and GUP have proven successful, providing predictability and flexibility for Stanford and accountability to the county and the community.

The 2018 GUP will reflect future needs of the university, including a modest increase in undergraduate enrollment, on-campus housing for students and faculty, facilities for emerging fields of study and interdisciplinary institutes formed to address global problems. In developing this plan, Stanford is committed to livability and sustainability in the surrounding region. The university will continue its commitment to sustainability in energy and water conservation and will aggressively provide transportation alternatives to limit automobile congestion.

The first phase of the 2018 GUP application process will be to engage in conversations with the campus and local communities. Several community-wide open houses will cover topics including academic needs, housing, traffic, environmental stewardship, sustainability and other issues of interest to Stanford and our neighbors. We hope to have an application to present to the County to start the formal review process by late summer.

We look forward to working with you as this effort progresses over the next many months. The Stanford announcement can be read at the following link:  
<https://news.stanford.edu/2016/05/06/stanford-kicks-off-land-use-planning-process/>.

Best Regards,

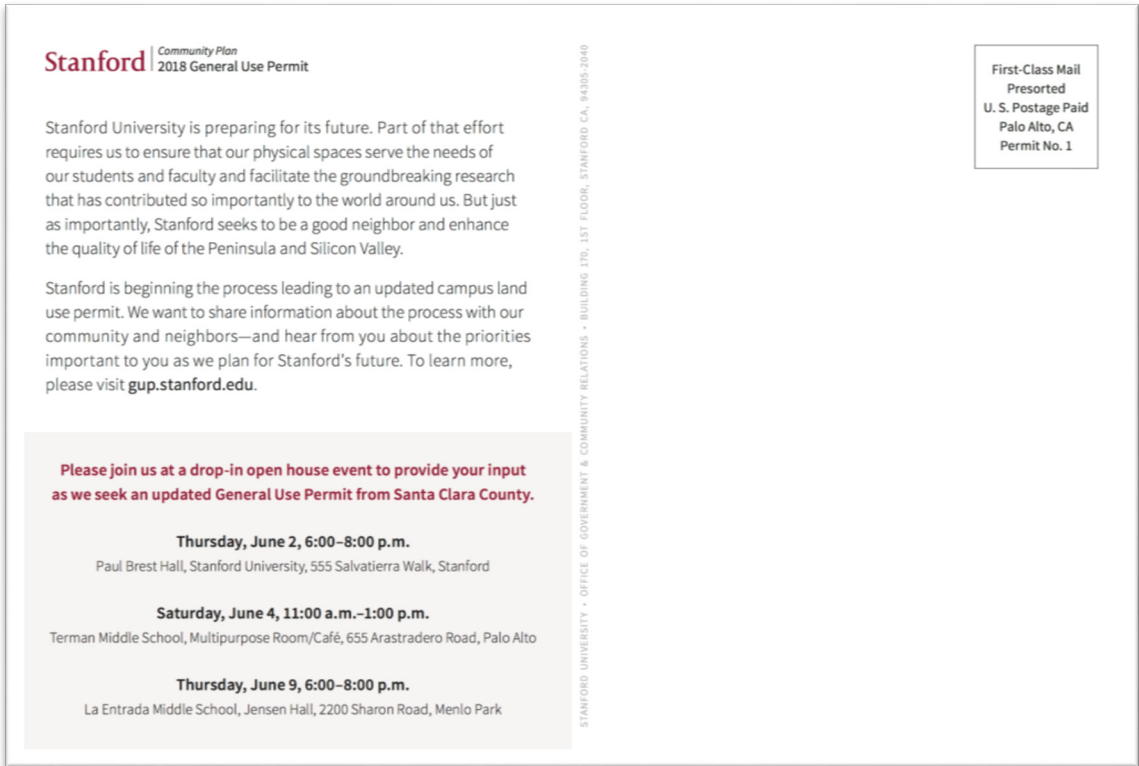


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**Figure OS.4: Postcard Mailers**

**Postcards**

Stanford mailed 10,000 postcards inviting neighbors to attend any one of the three Open House meetings scheduled for June 2016.





## 18 | List of Linked Background Documents



*The Dish in the Stanford foothills at dusk.  
Photo: Linda A. Cicero, Stanford News Service*

## 18 | List of Linked Background Documents

### Tab 3. Project Description

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Pg 44: [Santa Clara County Housing Element Update](#), 2015

### Tab 4. Background Conditions Report

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Pg 12: [Interpretation of GUP square footage](#), 2009

Pg 16: [2000 GUP Annual Reports](#), 2001-2015

Pg 19: [Protocol 2000 to 1985 Stanford Land use Policy Agreement](#), 2000

Pg 21: [Interpretation of Academic support uses](#), 2001

Pg 30: [Santa Clara County Housing Element Update](#), 2015

Pg 34: [Interpretation of student beds versus housing units](#), 2006

Pg 41: [Stanford Traffic Cordon Count Credit Guidelines](#), 2015

Pg 41: [Stanford University Traffic Monitoring Report](#), 2015

Pg 45: [Methodology to scope a project-specific traffic impact analysis approved by County Planning](#), 2002

Pg 45: [Special Events Traffic Management Plan](#), 2003

Pg 56: [Program for the Replacement of Recreational Facilities in the San Juan District](#), 2004

Pg 60: [Consistency Determination issued by the California Department of Fish and Wildlife](#), 2016

Pg 61: [Interpretation regarding breeding bird surveys](#), 2001

Pg 61: [Interpretation of Tree Protection Ordinance](#), 2014

Pg 62: [Special Conservation Area Plan](#), approved 2015

Pg 62: [Water Conservation, Reuse, and Recycling Mater Plan](#), approved 2003

Pg 67: [Campus-Wide Plan for Groundwater Recharge](#), approved 2015

Pg 68: [Corrected Watershed Boundaries and Groundwater Recharge Area maps](#), 2003

Pg 68: [Historic Preservation interpretation](#), approved 2014

Pg 73: [El Camino Real Frontage Plan](#), approved April 2008

Pg 78: [Interpretation of Condition M.1 regarding hazardous materials](#), 2002

Pg 80: [Memorandum of Understanding regarding police services between Santa Clara County and Stanford](#), June 2007

### Tab 14. Biological Resources

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Pg 6: [Consistency Determination from the California Department of Fish and Wildlife](#), 2016.