August 29, 2017

Mr. Driz Cook
High Trails Outdoor Science School
P.O. Box 2640
Big Bear City, CA 92314

Subject: **Biological California Environmental Quality Act Cumulative Analysis for High Trails Outdoor Science School, San Bernardino County, California**

Dear Mr. Higgins:

First Carbon Solutions is pleased to provide this biological California Environmental Quality Act (CEQA) cumulative analysis of biological resources for the High Trails Outdoor Science School Project (Project) located near Seven Oaks, San Bernardino Mountains, California (Exhibit 1). The property (Assessor's Parcel Number 305-241-14-000) is currently primarily undeveloped, and is being considered for development of an outdoor science school.

Project Description

The project proposes to develop approximately 2.55 acres in the southeast corner of the 40-acre property as an outdoor science school. The proposed development would include one main lodge, along with thirteen student / staff / teacher housing cabins in Phase One and six cabins in Phase Two. A permeable surface parking area and vehicle access routes will also be established. Access to the property would be achieved by construction of new paved roads from Radford Camp Road to the south.

This report summarizes the biological resources present within the property boundaries (survey area), the potential for the proposed project to impact sensitive biological resources and recommended mitigation measures to reduce project impacts to less than significant.

Survey Methods

Literature Review

A literature review was conducted prior to the field reconnaissance survey in order to identify sensitive biological resources known within the Project vicinity. The literature review included the following research:

- Existing documentation and studies of the biological resources within the immediate vicinity of the site
- The Federal Register listing package for each federally listed endangered or threatened species potentially occurring within the project site
- Literature pertaining to habitat requirements of special-status species potentially occurring on the site, including California Wildlife Habitat Relationship.

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- The California Department of Fish and Wildlife (CDFW) Annual Report on the status of California's listed threatened and endangered plants and animals.
- California Natural Diversity Database (CNDDB, Big Bear Lake and Moonridge Quadrangles) and California Native Plant Society Electronic Inventory (CNPSEI) information regarding special-status species potentially.
- The United States Fish and Wildlife (USFWS) Species Occurrence Data.
- United States Geological Service topographic maps and current aerial photos were reviewed for evidence of United States Army Corps of Engineers (USACE) or CDFW jurisdictional areas pursuant to Section 404 of the Clean Water Act and Section 1602 of the California Fish and Game Code.

Field Surveys

Reconnaissance Field Surveys

Andrew Borcher conducted a generalized reconnaissance survey of the project site on September 14, 2016 between 0800 and 1400. Conditions during the survey consisted of clear skies, temperatures between approximately 43 and 70 degrees Fahrenheit, and winds from zero to 4 miles per hour. The survey was conducted on foot by walking meandering transects within and around the project site and recording all vegetation communities, plants, and wildlife species observed. Wildlife species recorded during the reconnaissance-level survey were detected by sight, sound, or other sign when encountered. The surveyor assessed for the potential of special-status species to occur within the project site.

Although the entire project site was surveyed, some sensitive resources may not have been detected because of the short duration and seasonal timing of the survey period. Potentially occurring rare annual plants may not have been identifiable and any wildlife species that are not diurnal (nocturnal, fossorial, etc.), secretive in their habits, or that utilize the site only periodically may not have been detected during the survey.

In addition to the assessment of plants and wildlife, the project site was assessed for wetlands and potentially jurisdictional waters regulated by state and federal agencies. Andrew Borcher is also a professional jurisdictional delineator with over 15 years of experience performing wetland and waters determinations and preparing permit applications. The surveyor made a jurisdictional assessment based on professional experience for each water conveyance feature located within the project site. A full wetland delineation was not performed and will be required if wetland and waters are proposed to be impacted.

Focused/Directed Habitat Assessment Surveys

Wildlife

Following the reconnaissance survey, a series of focused surveys were conducted to determine the presence/absence of special status species that were determined to have potential to occur on-site. Focused surveys/assessments were conducted for special status plant species, southwestern willow

flycatcher (*Empidonax traillii extimus*) (SWFL), southern rosy boa (*Charina umbratica*) (SRB), yellow-legged frog (*Rana muscosa*) (MYLF) and San Bernardino Flying Squirrel (*Glaucomys sabrinus californicus*) (SBFS).

The focused SWFL habitat assessment was conducted on May 8th, by Brian Lohstroh who maintains a U.S. Fish and Wildlife Service (USFWS) Recovery Permit to survey for SWWF (permit no. TE-063608-5) and has over 16 years of experience conducting surveys and working with the species. The SBFS focused survey was conducted on May 13, 2017, Matt Weldy, a qualified biologist. Both the SRB and MYLF surveys were conducted on May 23rd, 2017, by Dr. Eric A. Dugan who has conducted numerous SRB and MYLF surveys and has extensive experience with native herpetofauna of the region.

Plants

Focused rare plant surveys were conducted on the following dates in 2017: May 29th, June 21st, July 10th, and August 1st. All special status rare plant surveys were conducted by Korey Klutz who has more than 20 years of conducting rare plant surveys throughout southern California.

In addition to the special-status species surveys a directed tree survey was conducted on May 8th, 2017- by associate biologist Brenda Bennett (ISA #WE-10776A). Survey data documented included tree species identification, tree diameter at breast height (DBH; 4.5 feet), and approximate tree height. Individual tree locations were recorded using a Geographic Information System (GIS) and assigned unique numbers.

Wildlife Movement Corridor

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of natural vegetation communities can lead to the isolation of wildlife habitat, separating different populations of a single species. Corridors link these populations. The project site was evaluated for evidence of a wildlife movement corridor. The focus of the wildlife corridor assessment was to determine if the proposed project will have significant impacts on the regional movement of wildlife.

Regulatory Setting

Potential impacts to biological resources on the project site were analyzed based upon the environmental policies and regulations including the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), Migratory Bird Treaty Act (MBTA), federal Endangered Species Act (ESA), California Endangered Species Act (CESA), Clean Water Act (CWA), Biotic Resources Overlay Map, Development Code (Chapter 82.11 and Chapter 88.01), and the General Plan, Section V Conservation. These regulations are enforced by federal and state agencies such as the USFWS, USACE, CDFW, and the County of San Bernardino.

Migratory Bird Treaty Act

The MBTA is a federal law that prohibits take of nearly all bird species native to the United States. There are a number of species (native or non-native) that belong to families not referred to in any of the four treaties underlying the MBTA (USFWS 2010) and are added as three groups: (1) nonnative species introduced into the United States or its territories by means of intentional or unintentional human assistance that belong to families or groups covered by the Canadian, Mexican, or Russian Conventions; (2) nonnative human-introduced species that belong to families or groups not covered by the Canadian, Mexican, or Russian Conventions; (3) native species that belong to families or groups represented in the United States, but which are not expressly mentioned by the Canadian, Mexican, or Russian Conventions. An exhaustive list of the species covered by the MBTA has been published (USFWS 2010) and includes nonnative swans, ducks, geese, and pigeons.

U.S. Army Corps of Engineers Waters

Section 404 of the CWA gives the United States Environmental Protection Agency (EPA) and the USACE regulatory and permitting authority regarding discharge of dredged or fill material into "waters of the United States." The term "waters of the United States" is defined by 33 Code of Federal Regulations (CFR) Part 328. In 2015, the USACE finalized the Clean Water Rule to clarify the definition of "waters of the United States" to be:

- Waters used for commerce;
- Interstate waters and wetlands;
- "Other waters" such as intrastate lakes, rivers, streams, and wetlands;
- Impoundments of waters ;
- Tributaries, containing a bed and bank, and an "ordinary high water mark", to the above waters;
- Territorial seas;
- Wetlands and riparian areas adjacent to waters; and
- Lakes and ponds located in the riparian zone or floodplain of waters.

In December 2008, in response to the Supreme Court's decision in the combined cases of *Rapanos v. U.S.* and *Carabell v. U.S.* (126 S. Ct. 2208; 2006), the EPA and USACE issued final guidance on the scope of regulatory jurisdiction under the CWA, including Section 404 (EPA and USACE 2007). The guidance specifies that EPA and USACE will assert jurisdiction over the following waters:

- **Traditional Navigable Waters (TNWs).** TNWs are all waters subject to the ebb and flow of the tides, and waters that are presently used, have been used in the past, or may be susceptible for use to transport interstate or foreign commerce (33 CFR 328.3(a)(1)).
- **Wetlands adjacent to TNWs.** Wetlands are defined as cited above (see also Methodology below). The term "adjacent" means bordering, contiguous, or neighboring, meeting one of the following criteria: 1) there is an unbroken surface or shallow sub-surface connection to the TNW; 2) the wetland is physically separated from the TNW artificially by a human-made dike, or by natural

barrier such as a berm or dune; or 3) the wetland is reasonably close to the TNW, such that direct ecological interconnections are present (40 CFR Part 230).

- **Non-navigable, but relatively permanent waters (RPWs) that are tributaries to TNWs.** These are waters that typically flow year-round or continuously for at least 3 months. The boundaries of such waters are determined by the limits of ordinary high water (33 CFR part 328.3).
- **Wetlands adjacent to RPWs.** The guidance stipulates that a continuous surface connection must be present between the wetland and RPW. If such connection is not present, additional criteria must be satisfied (see next bullet).
- **Non-RPWs and adjacent wetlands with a significant nexus to TNWs.** To establish (or rule out) a significant nexus requires an assessment of the flow characteristics and functions of the tributary and any adjacent wetland to determine if they significantly affect the chemical, physical, and biological integrity of downstream navigable waters.

Previous guidance states that swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short-duration flow) and ditches excavated in uplands are generally not jurisdictional because they are not tributaries or do not have a significant nexus to downstream TNWs. The same reasoning would indicate that isolated bodies of water and isolated wetlands without a demonstrated relationship to interstate commerce would generally not be considered jurisdictional. The Supreme Court ruling in *SWANCC v. U.S.* (121 S. Ct. 751; 2001) indicated that the movement of migratory birds to/from an isolated body of water was not sufficient evidence of interstate commerce. The recent Clean Water Rule includes a list of features that are not jurisdictional, including erosional features, upland ditches, rills, and non-wetland swales.

United States Army Corps of Engineers Wetlands

Wetlands are defined by 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987, the USACE published a manual to guide its field personnel in determining jurisdictional wetland boundaries. This manual was amended in 2008 by the USACE 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Currently, the 1987 Wetland Manual and the 2008 Arid West Supplement provide the legally accepted methodology for identification and delineation of USACE-jurisdictional wetlands in southern California.

The methodology set forth in the 1987 Wetland Manual and updated by the Arid West Supplement generally requires that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area must exhibit at least minimal hydric characteristics. Wetlands are determined by and delineated using three parameters: hydrophytic vegetation, wetland hydrology, and hydric soils.

California Department of Fish and Wildlife

Under sections 1600–1607 of the Fish and Game Code, CDFW regulates all activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW limits of jurisdiction include the outer edge of riparian vegetation drip line or at the top of the uppermost bank-to-bank distance, whichever is wider.

Regional Water Quality Control Board

The State of California (State) regulates discharge of material into waters of the State pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act (California Water Code, Division 7, §13000, et seq.). State waters are all waters that meet one of three criteria—hydrology, hydric soils, or wetland vegetation—and generally include all waters under the jurisdiction of USACE and CDFW.

Discharges require a National Pollutant Discharge Elimination System (NPDES) permit. The NPDES permit program controls water pollution by regulating sources of pollutants into waters of the United States. A permit for San Bernardino County has been issued through the State of California through the Santa Ana Regional Water Quality Control Board. The San Bernardino County Flood Control District has been designated "Principal Permittee" under the MS4 permit, and administers and coordinates many of the permit requirements on behalf of all permittees.

San Bernardino County

The property occurs within the Biotic Resources Overlay Zone of San Bernardino County. The Overlay Zone is established by Sections 82.01.020 (Land Use Plan and Land Use Zoning Districts) and 82.01.030 (Overlays) implements General Plan policies regarding protection and conservation of beneficial rare and endangered plants and animal resources and their habitats, which have been identified within unincorporated areas of the county. When proposing development within the Biotic Resources Overlay Zone, the project proponent must prepare a biotic resources report that identifies all biotic resources located on the site and those on adjacent parcels that could be impacted by the project. The report must also include mitigation measures designed to reduce or eliminate impacts to identified resources. This Biological Resources Assessment Report has been prepared to meet those requirements.

Survey Results

Environmental Setting

The approximately 40-acre project site is located near the community of Seven Oaks and Barton Flats in the San Bernardino National Forest north of State Route 38 (SR-38), on the western slopes of Sugar Loaf Mountain (Exhibit 2). Elevation on-site ranges from 5,520 feet above mean sea level (AMSL) in the northwest corner to 5,322 AMSL in the Santa Ana River in the southwest corner. The project site contains several small hills and generally slopes moderately from north to south. The parcel is traversed by Radford Camp Road that winds north to south on the western half. The property is undeveloped, supporting natural vegetation with the exception of an expansion tank for a private water well located on a small concrete pad in the center of the site. A dirt access road and gate on the eastern edge of the site occur as well (Attachment A: Site Photographs). The upper Santa Ana River occurs within the southwest corner and to the south of the property. The project site is nearly completely bound by undeveloped land owned by the United States Forest Service (USFS) with the exception of undeveloped private land to the northwest.

Soils on the project site are limited to Oak-glen rush families complex (2 to 15% slopes) and Wapi-Pacifico families (50 to 75% slopes) (Bowman 1973) (Exhibit 3). Soils from the Oak-glen complex are alluvial and well-drained. Soils from the Wapi-Pacifico complex are found on mountain slopes and are also somewhat excessively drained. Both soils are mostly made up of mixed coarse loam and sand.

Vegetation Communities

The project site contains four different land cover types including mixed oak/coniferous forest, big sagebrush scrub, white alder riparian forest and developed lands (Exhibit 4). Each land cover type is discussed in more detail below. A complete list of plants observed during the site visit is provided as Table 1.

Mixed Oak/Coniferous Forest

Mixed Oak/Coniferous Forest is a community with a diversity of oak and conifer species. The dominant tree species found within the project site included yellow pine (*Pinus ponderosa*), black oak (*Quercus kelloggii*), interior live oak (*Quercus wislizeni*), canyon live oak (*Quercus chrysolepis*), and Coulter pine (*Pinus coulteri*). Tree cover was mostly open with some dense patches of oaks. The trees varied in height, but the maximum heights for oaks were generally 30 feet and for pines were generally 50 feet. The understory of this habitat type was dominated by big sagebrush scrub. Approximately 28.0 acres of mixed oak/coniferous forest occur within the project site.

Big Sagebrush Scrub

Big Sagebrush Scrub is characterized by mostly soft-woody shrubs, 0.5 to 2.0 meters tall, that is dominated by big sagebrush (*Artemisia tridentata*). Dominant species found within this habitat included big sagebrush, rubber rabbitbrush (*Ericamaria nauseosa*), tarragon (*Artemisia dracunculus*), shiny-leaf

yerba santa (*Eriodictyon trichocalyx*), and cheat grass (*Bromus tectorum*). Other species found scattered within this habitat included manzanita (*Arctostaphylus glandulosa*), wild rye (*Elymus* spp.), and chaparral whitethorn (*Ceanothus leucodermis*). This habitat was found between tree openings and within the understory of the mixed oak/coniferous forest. Approximately 10.62 acres of big sagebrush scrub was observed on the eastern half of the project site, where it and continued to the adjacent properties to the east, south, and west.

White Alder Riparian Forest

White Alder Riparian Forest is characterized by medium-tall broadleaf deciduous forests dominated by white alder (*Alnus rhombifolia*), with a shrubby, deciduous understory. It is generally associated with rapidly flowing, well-aerated perennial streams. This habitat is found within the southwest corner of the project site where Santa Ana River flows through. Dominant species observed included white alder, with arroyo willow (*Salix lasiolepis*), poison oak (*Toxicodendron diversilobum*) and stinging nettle (*Urtica dioica*) co-occurring. Approximately 0.31 acre of white alder riparian forest occurs within the project site.

Developed Lands

Developed Lands refers to any built areas that are maintained and are not vegetated. This is limited to the paved Redford Camp Road, and the small concrete pad with tank within the project area. Approximately 1.81 acre of developed areas occurs within the project site.

General Wildlife Observations

Wildlife species observed during the general survey included bushtit (*Psaltriparus minimus*), pygmy nuthatch (*Sitta pygmaea*), northern flicker (*Colaptes auratus*), acorn woodpecker (*Melanerpes formicivorus*), California scrub jay (*Aphelocoma californica*), Wilson's warbler (*Cardellina pusilla*), woodrat (*Neotoma* sp.), chipmunk (*Tamias* sp.), Behr's metalmark butterfly (*Apodemia virgulti*), and red admiral butterfly (*Vanessa atalanta*). These species are common to the area and found in mixed conifer, sagebrush, and riparian habitats.

Plant Observations

All plants identified during the reconnaissance survey are shown in Table 1.

Table 1: Plants Observed during Survey

Scientific Name	Common Name	Special Status
Alnus Rhombiflora	white alder	—
Arctostaphylos glandulosa	manzanita	—
Artemisia douglasiana	California mugwort	—
Artemisia dracunculus	taragon	—

Scientific Name	Common Name	Special Status
Artemisia tridentate	big sagebrush	—
Asclepias californica	California milkweed	—
Brickellia californica	California bricklebush	—
*Bromus rubens**	red brome*	—
*Bromus tectorum**	cheat grass*	—
Calocedrus decurrens	California incense cedar	—
Ceanothus leucodermis	chaparral whitethorn	—
Cirsium sp.	thistle	—
Elymus sp.	rye grass	—
Emmenanthe penduliflora	whispering bells	—
Epilobium sp.	fuschia	—
Ericameria nauseosa	rubber rabbitbrush	—
Eriodictyon trichocalyx	shiny-leaf yerba mansa	—
Eriogonum fasciculatum	California buckwheat	—
Eriogonum gracile	slender buckwheat	—
Eriogonum kennedyi var. *kennedyi*	Kennedy's wild buckwheat	—
Eriogonum parishii	Parish buckwheat	—
Erysimum sp.	wallflower	—
Fangula californica	California coffee berry	—
Galium angustifolium	narrow-leaf bedstraw	—
Gnaphalium Leucodermis	California everlasting	—
Lessingia filanifolia	California aster	—
Leymus condensatus	giant wild rye	—
Lonicera subspicata	California honeysuckle	—
Mirabilis sp.	wishbone	—
Opuntia sp.	prickly pear	—
Pinus coulteri	Coulter pine	—
Pinus jeffreyi	Jeffrey pine	—
Pinus lambertiana	sugar pine	—
Prosopis glandulosa	honey mesquite	—
Quercus berberidifolia	scrub oak	—
Quercus chrysolepis	canyon live oak	—

Scientific Name	Common Name	Special Status
Quercus kelloggii	California black oak	—
Quercus wislizeni	interior live oak	—
Rhus trilobata	skunkbush	—
Ribes sp.	currant	—
Salix lasiolepis	arroyo willow	—
Sambucus nigra	blue elderberry	—
Stephanomeria exigua	small wreath-plant	—
Stipa millicae	smilo grass	—
Toxicodendron diversilobum	poison oak	—
Urtica dioica	stinging nettle	—
Notes: * = Non-native species; ** = Unable to identify without flowers, requires follow-up survey		

Special-status Wildlife and Plant Species

Special-status biological resources are those defined as follows: (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as sensitive; (3) habitat areas or plant communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; and (4) wildlife corridors and habitat linkages.

Wildlife

Twenty-four special-status wildlife species were identified by the CNDDB search as potentially occurring within 5 miles the Project vicinity. No special-status species were detected during the surveys onsite; however, several state and federally listed species have the potential to occur within the project site.

Based on the results of the initial reconnaissance level field survey, several special-status species were determined to have the potential to occur including the federally and/or state listed southwestern willow flycatcher (*Empidonax traillii extimus*), southern rubber boa (*Charina umbratica*), and mountain yellow-legged frog (*Rana muscosa*). Additionally, the following a CDFW Species of Special Concern (SSC) were determined to have the potential to occur on-site: San Bernardino northern flying squirrel (*Glaucomys sabrinus californicus*), silvery legless lizard (*Anniella pulchra pulchra*), coastal rosy boa (*Charnia trivirgata*), San Bernardino ringneck snake (*Diadophis puncttatus modestus*), large-blotched ensatina (*Ensatina eschscholtzii klauberi*), California mountain kingsnake (*Lampropeltis zonata*), coast horned lizard (*Phrynosoma blainvillii*), two-striped garter snake (*Thamnophis hammondii*), Cooper's hawk (*Accipiter cooperii*), yellow warbler (*Dendroica petechia brewsteri*), long-eared owl (*Asio otus*), yellow-breasted chat (*Ictera virens*), loggerhead shrike (*Lanius ludovicianus*), pallid bat (*Antrozous*

pallidus), Townsend's big-eared bat (*Corynorhinus townsendii*), and lodgepole chipmunk (*Tamias speciosus*). For a complete list of special-status wildlife that were identified by the literature search or have the potential to occur within the project vicinity please see Table 2 below. Table 2 below also details the results of the focused survey efforts and the remaining potential for special-status wildlife species to occur and/or be impacted by the project.

Plants

Thirty-two special-status plant species were identified by the CNDDB search as potentially occurring within the project vicinity. No special-status species were detected during the survey; however, several species, including federally listed, have the potential to occur within the project site. For a complete list of special-status wildlife that occur within the project vicinity and their potential to occur on the project site, please see Table 3 below.

Table 2: Special Status Wildlife Species Occurrence Potential

Common Name (*Scientific Name*)	Status	Habitat	Potential for Occurrence
Birds			
Cooper's hawk (*Accipiter cooperii*)	SSC	Mixed deciduous forests and open woodlands	Although not observed, potential to occur due to suitable nesting and foraging habitat present on site.
long-eared owl (*Asio otus*)	SSC	Deciduous and coniferous forests adjacent to grasslands	Although not observed, potential to occur due to suitable nesting and foraging habitat present on the site.
golden eagle (*Aquila chrysaetos*)	SSC, BEPA	Uncommon resident forages over grassland and broken chaparral or sage scrub	Not observed and low foraging potential and no suitable nesting habitat present.
yellow warbler (*Dendroica petechia brewsteri*)	SSC	Dense shrubs near marshes and water courses	Although not observed, potential to occur due to suitable nesting and foraging riparian habitat associated with the Santa Ana River adjacent to the project site.
Southwestern willow flycatcher (*Empidonax trailii extimus*)	FE, SE	Dense riparian and shrub communities associated with rivers and other wetlands.	Not observed, riparian habitat within the project site is not suitable habitat for this species. Marginally suitable habitat is present off-site and to the west of the property along the Santa Ana River.
yellow-breasted chat (*Ictera virens*)	SSC	Dense thickets and brush	Although not observed, moderate potential to occur due to suitable nesting and foraging riparian habitat associated with the Santa Ana River adjacent to the project site.
loggerhead shrike (*Lanius ludovicianus*)	SSC	Grasslands, orchards, open areas with scattered trees, deserts.	Although not observed, moderate potential to occur due to adequate nesting and foraging habitat present throughout site.
California spotted owl (*strix occidentalis occidentalis*)	SSC, FSS	Closed canopy mature forests	Not expected to occur within the project site due to lack of mature dense closed canopy habitat.
Reptiles and Amphibians			
silvery legless lizard (*Anniella pulchra pulchra*)	SSC	Moist sandy loams near sparse vegetation	Not observed, moderate potential to occur within the project site.

Common Name (*Scientific Name*)	Status	Habitat	Potential for Occurrence
coastal rosy boa (*Charina trivirgata*)	FSC, FSS	Chaparral and scrub habitats up to 6700 feet	Although not observed, low potential to occur within the project site due to suitable habitat present.
Southern rubber boa (*Charina umbratica*)	ST, FSS	Oak and conifer forests at elevations between 5000 to 8200 feet	Not observed, limited potential to occur on the project site. Shelter available under rocks, logs and leaf litter.
San Bernardino ringneck snake (*Diadophis punctatus modestus*)	FSC, FSS	Wide variety of habitats near streams up to 6400 feet. More associated with elevations below 3000 feet.	Not observed, low-moderate potential to occur due to suitable habitat conditions within project site.
large-blotched Ensatina Salamander (*Ensatina eschololtzii klauberi)*	FSS	Open woodlands dominated oak, pine and fir species	Not observed, low-moderate potential to occur due to suitable habitat conditions within project site.
California mountain kingsnake (*Lampropeltis zonata*)	SSC	Chaparral, lower montane coniferous forest.	Not observed, low-moderate potential to occur due to suitable habitat conditions within project site.
coast horned lizard (*Phrynosoma blainvillii*)	SSC, FSS	Open sandy areas with low vegetation	Not observed, potential to occur. Historical observations within 3 miles.
mountain yellow-legged frog (*Rana muscosa*)	FE, SE	Mountain creeks, lakes, streams, and pools. Tadpoles require a permanent water habitat for at least two years while they develop.	Not observed, limited suitable habitat occurs within the Santa Ana River creek channel adjacent to the project site. Critical habitat and historic observation approximately 1.3 miles southeast in a tributary (Barton Creek) to the Santa Ana River.
Two-striped garter snake (*Thamnophis hammondii*)	SSC, FSS	Along streams bordered by riparian growth.	Not observed, low-moderate potential to occur due to suitable habitat conditions within project site.
Mammals			
pallid bat (*Antrozous pallidus*)	SSC	Found throughout California in forested regions and brushy areas; roosts in buildings, trees, and crevices in cliffs.	Not observed, low potential to occur due to lack of suitable night roost habitat within the project site and low quality day/maternity roost bridge location south of the project site.
Townsend's big-eared bat (*Corynorhinus townsendii*)	FSC, SSC, FSS	Humid coastal regions of northern and central California; roosts in mines, caves, and old buildings; utilizes a variety of habitats including oak woodlands, arid grasslands, and deserts.	Not observed, low potential to occur due to lack of suitable night roost habitat within the project site and low quality day/maternity roost bridge location south of the project site.
greater western mastiff bat (*Eumops perotis californicus*)	FSC, SSC	Central California to central Mexico; rocky areas within open shrub/grassland and cultivated fields, as well as chaparral and chaparral/oak interfaces.	Not observed, not likely to roost on-site due to lack of suitable habitat.

Common Name (*Scientific Name*)	Status	Habitat	Potential for Occurrence
San Bernardino northern flying squirrel (*Glaucomys sabrinus californicus*)	SSC, FSS	Coniferous forests and mixed coniferous forests from 5000 to 8000 feet	Not observed, low potential to occur on the project site. Project site provides limited potential nesting habitat in the Northwest portion of the property. Low to moderate quality foraging habitat occurs in the southeast corner of the project site.
pocketed free-tailed bat (*Nyctinomops femorosaccus*)	SSC	Rocky areas with relatively high cliffs, usually using rock crevices for day-roosts	Not observed, not likely to roost on-site due to lack of suitable habitat.
lodgepole chipmunk (*Tamias speciosus*)	SSC	Open-canopy forests of mixed conifer, Jeffry pine, lodgepole and limber pine, and occasionally in chaparral.	A solitary chipmunk was observed briefly during the 2017 field visit, but the surveyor was unable to identify to species before it retreated into a tree cavity. Lodgepole chipmunks are known to occur in the vicinity and the habitat within the project site is suitable.
Fish			
Unarmored three-spined stickleback (*Gasterosteus aculeatus williamsoni*)	FE, SE	Permanent water such as lakes, ponds, ditches and rivers	Not observed, low potential to occur. Not known to occur in the Santa Ana River. Appropriate breeding habitat does not exist on the project site. The section of the Santa Ana River on-site is a relatively narrow rocky stream channel with fast-moving water with very little areas for fish shelter. Some portions up and downstream of the project site may be appropriate.

Code Designations	
FE= Federally Endangered **FC**= Federal Candidate for listing **FT** = Federally Threatened **FSC**= Federal Species of Concern **FPE** = Federally proposed for listing as Endangered	**SE** = State Endangered **SSC** = California Species of Special Concern **FSS** = Forest Service Sensitive Species **CFP** = California Fully Protected **BEPA** = Bald and Golden Eagle Protection Act

Table 3: Special Status Plant Species Occurrence Potential

Common/Scientific Name	Status	Habitat	Occurrence/Occurrence Potential
cushberry milk-vetch (*Astragulus albens*)	FE, CRPR 1B	Carbonate soils with scrub and dwarf woodland with open canopies	Not observed during focused surveys. Not expected occur due to a lack of carbonate soils on-site.
San Bernardino milk-vetch (*Astragalus bernardinus*)	CRPR 1B	Stony washes, pinyon and juniper woodlands	Not observed during focused surveys. Not expected to be impacted by the proposed project.
Big Bear Valley milk-vetch (*Astragalus lentiginosus* var. *sierra*)	CRPR 1B	Sagebrush scrub	Not observed during focused surveys. Not expected to be impacted by the proposed project.
Big Bear Valley woollypod (*Astragalus leucolobus*)	CRPR 1B	Gravelly or rocky desert scrub, meadows, pinyon and juniper woodland, upper montane coniferous forest	Not observed during focused surveys. Not expected to be impacted by the proposed project.
pinyon rockcress (*Boechera dispar*)	CRPR 2	Joshua tree woodland, desert scrub, pinyon and juniper woodlands	Not observed during focused surveys. Not expected to occur due to a lack of suitable habitat.
Shockley's rockcress (*Boechera shockleyi*)	CRPR 2	Pinyon and juniper woodlands	Not observed during focused surveys. Not expected to occur due to a lack of suitable habitat.
Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*)	CRPR 1B	Meadows and moist habitats	Not observed during focused surveys. Not expected to be impacted by the proposed project.
Western sedge (*Carex occidentalis*)	CRPR 2	Lower montane coniferous forest, and meadows and seeps	Not observed during focused surveys. Not expected to be impacted by the proposed project.
ash-gray paintbrush (*Castilleja cinerea*)	FT, CRPR 1B	Clay opening in desert scrub, pinyon-juniper woodland, and coniferous forests above 5900'	Not observed, not expected to occur based on lack of clay soils on-site.
San Bernardino Mt. owl's clover (*Castilleja lasioryncha*)	CRPR 1B.1	Meadows, yellow-pine forests	Not observed during focused surveys. Not expected to occur due to a lack of suitable habitat.
San Bernardino Mts. dudleya (*Dudleya abramsii)*	CRPR 1B	Pebble plains, pavement habitat within pinyon and juniper woodlands, upper coniferous forests	Not observed during focused surveys. Not expected to occur due to a lack of suitable habitat.
Big Bear Valley sandwort (*Eremogane ursina)*	FT, CRPR 1B	Pebble plains, pinyon and juniper woodland in moist, rocky areas	Not observed during focused surveys. Not expected to occur due to a lack of suitable habitat.

Common/Scientific Name	Status	Habitat	Occurrence/Occurrence Potential
Parish's daisy (*Erigeron parishii)*	FT, CRPR 1B	Desert scrub and pinyon woodland, sandy washes	Not observed during focused surveys. Not expected to be impacted by the proposed project.
Southern mountain buckwheat (*Eriogonum kennedyi*)	FT, CRPR 1B	Stony, sage-brush covered pebble plains	Not observed during focused surveys. Not expected to occur due to a lack of suitable habitat.
Cushenbury ovalifolium (*Eriogonum ovalifolium* var. *vineum*)	FE, CRPR 1B	Carbonite soils, pinyon and juniper woodlands	Not observed during focused surveys. Not expected to occur due to a lack of appropriate soils.
San Bernardino Mtn. gilia (*Gilia leptantha* spp. *leptantha*)	CRPR 1B	Sandy or gravelly soils, open pine forests	Not observed during focused surveys. Not expected to be impacted by the proposed project.
Parish's alumroot (*Houchera parishii*)	CRPR 1B	Montane coniferous forests	Not observed during focused surveys. Not expected to be impacted by the proposed project.
Barton Flats horkelia (*Horkelia wilderae*)	CRPR 1B	Montane chaparral and woodlands	Not observed during focused surveys. Historical observations approximately 2 miles to the east.
silver-haired ivesia (*Ivesia argyrocoma*)	CRPR 1B	Dry meadows, 6500-7500', pebble plains, montane coniferous forest	Not observed during focused surveys. Not expected to occur due to a lack of suitable habitat.
short-separated lewisia (*Lewisia cotyledon)*	CRPR 1B	Rocky, lower montane forest	Not observed during focused surveys. Not expected to occur due to a lack of suitable habitat.
lemon lily (*Lillium parryi)*	CRPR 1B	Meadows, streambanks and seeps within montane coniferous forests	Not observed during focused surveys. Not expected to occur due to lack of suitable habitat.
San Bernardino Mts. Monkey flower (*Mimulus exiguus*)	CRPR 1B	Moist rocky habitat, mountain meadows	Not observed during focused surveys. Not expected to be impacted by the proposed project.
San Bernardino ragwort (*Packera bernardino*)	CRPR 1B	Pebble plains, pine forests	Not observed, not expected to occur due to a lack of suitable habitat.

Common/Scientific Name	Status	Habitat	Occurrence/Occurrence Potential
Parish's yampah (*Perideridia parishii*)	CRPR 2	Montane coniferous forest, meadows and seeps	Not observed during focused surveys. Not expected to be impacted by the proposed project.
Big Bear Valley phlox (*Phlox dolichantha*)	CRPR 1B	Pebble plain in upper montane forest	Not observed, not expected occur due to a lack of suitable habitat.
San Bernardino bluegrass (*Poa atropurpurea*)	FE, CRPR 1B	Meadows and grassy, moist openings in pine forest	Not observed during focused surveys. Not expected to be impacted by the proposed project.
plantain goldenweed (*Pyrrocoma uniflora*)	FE, CRPR 1B	Forest, meadows with alkali soils	Not observed, not expected to occur due to a lack of suitable habitat.
Bear valley checkerbloom (*Sidalcea malviflora* ssp. *dolosa*)	CRPR 1B	Lower montane coniferous forest	Not observed during focused surveys. Not expected to be impacted by the proposed project.
bird-foot checkerbloom (*Sidalcea pedata*)	FE, SE, CRPR 1B	Pebble plains, meadows above 5250'	Not observed, not expected to occur due to a lack of suitable habitat.
San Bernardino aster (*Symphyotrichum defoliatum*)	CRPR 1B	Grassland and meadows	Not observed during focused surveys. Not expected to be impacted by the proposed project.
California dandelion (*Taraxacum californicum*)	FE, CRPR 1B	Wetlands, moist meadows	Not observed during focused surveys. Not expected to be impacted by the proposed project.
slender-petaled mustard (*Thelypodium stenopetalum*)	FE, SE, CRPR 1B	Wetlands, meadows and seeps, lake shores	Not observed during focused surveys. Not expected to be impacted by the proposed project.
Note: CRPR = California Native Plant Society Rare Plant Rank (1B = Rare throughout their range, and 2 = rare in California but common beyond boundaries of California)			

Tree Inventory

The project site falls within a location of the San Bernardino National Forest where the ranges of yellow pine (*Pinus jeffreyi*) and ponderosa pine (*Pinus ponderosa)* are known to overlap (USGS 2015). It is likely that the stands of yellow pine within the project area contain individuals that are actually ponderosa pine. Due to the similarities between the two species and the amount of time it would take to identify each pine, all pine trees in the area will be referred to as yellow pine for the purposes of this report.

The arborist assessment took place within mixed oak/coniferous forest, bordered by big sagebrush scrub. Data were recorded for 141 individual trees (Exhibit 5). Species observed within the impact area were California incense cedar (*Calocedrus decurrens*), Sierra juniper (*Juniperus grandis*), yellow pine, canyon live oak, California black oak, and interior live oak. Table 4 provides tree species and size class data for trees expected to be impacted through removal. Complete assessment data can be found in the FCS report prepared May, 2017, *Arborist Assessment for the High Trails Outdoor School Project in the Angelus Oaks area, San Bernardino County, California* .

Table 4: Summary of Impacted Tree Data by Size and Species

Scientific Name Common Name	Approximate Height (feet)			DBH (inches)			Total Individuals
	<30	30-60	>60	<20	20-40	>40	
Calocedrus decurrens California incense cedar	—	—	—	—	—	—	—
Juniperus grandis Sierra juniper	—	—	—	—	—	—	—
Pinus jeffreyi Yellow pine	5	9	1	12	3	—	15
Quercus chrysolepis Canyon live oak	6	3	—	3	6	—	9
Quercus kelloggii California black oak	—	—	—	—	—	—	—
Quercus wislizenii Interior live oak	—	—	—	—	—	—	—
Grand Total of Impacted Trees							24

In 2015, a site forest assessment of the site had been performed and resulted in a recommendation to thin smaller oak shrubs within the property for fire management purposes (Cocking 2015). This thinning appears to have been implemented at the site; no live oaks in a shrub-form were documented during the site survey. It should also be noted prior to site impact, many of the large yellow pines were observed to have top dieback; the cause of the dieback is unknown, but may be due to insect infestation.

Jurisdictional Wetlands and Waters

The upper Santa Ana River occurs directly south of the project site including traversing the southwest and southeast corners (Exhibit 6). The Santa Ana River was flowing steadily during the reconnaissance survey and is presumed to be a perennial mountain stream. The Santa Ana River supports mature white alder riparian forest with an understory of mostly hydrophytic plants within the project site. The vegetation adjacent to the river would likely be considered and regulated as a wetland. The creek's historic floodplain is very wide in some areas (>500 feet southeast of the project site) and is demarcated by a sandy substrate with steep banks at some of its widest points. The floodplain does not appear to flood often based on the presence of some mature upland shrubs. The floodplain would likely be considered jurisdictional by CDFW and RWQCB and permits would be required if it is proposed to be impacted.

The Santa Ana River begins approximately 10 miles upstream from the project site, draining a large area of steep mountain slopes. Approximately 8 miles downstream from the project site the Santa Ana River converges with Bear Creek. From there the Santa River flows through the interior basin of San Bernardino and Riverside County. The river eventually flows into the Prado Dam, Orange County and out to sea at Santa Ana River County Beach.

The project site also supports another water feature that runs north to south. This feature is shown on maps as Converse Creek. However, during inspection, the surveyor was unable to find a consistent bed and bank. This feature does not appear to have enough regular flowing water, or appropriate soils to create an ordinary high water mark, or support hydrophytic vegetation. For this reason, this feature may be considered a non-jurisdictional swale due to the lack of an ordinary high water mark, or bed and bank (see Attachment A). However, this feature drains into a culvert under Radford Camp Road in the southwestern portion of the project site before flowing into the Santa Ana River and is therefore hydrologically connected. Both the inlet and the outlet of the culvert do not appear to receive substantial flow due to the lack of a channel.

Project Impact Analysis

Vegetation Communities

Given the project's current design, the proposed project would impact 1.57 acres of oak/coniferous forest and 4.98 acre of big sagebrush scrub (Exhibit 4). Table 5 details the project impacts to vegetation communities within the project site as proposed.

Table 5: Anticipated Project Impacts

Vegetation Community	Acreage within Parcel Boundary (acre)	Proposed to be Impacted (acre)
Oak/Coniferous Forest	28.00	1.57
Big Sagebrush Scrub	10.62	4.98
White Alder Riparian Forest	0.31	—

Special Status Species

Wildlife

The project has been designed to avoid direct impact to both State and Federally listed wildlife species. Potential exists for several non-listed special-status species to occur (Table 2). However, Impacts to non-listed special-status species potential habitat are relatively minor, given the location of the proposed impact area of the project, and would be considered less than significant under CEQA guidelines.

Nesting Birds

The project site contains suitable nesting habitat for a number of shrub-nesting and tree-nesting birds. If impacts were to occur to nesting birds protected under the federal MBTA, these impacts could be considered significant if the project activities cause a nest to fail.

Plants

No special-status plant species were detected on-site (Table 3).

Tree Inventory

The site supports 141 trees within the project impact area. It is likely that 24 trees within the proposed project development will be directly impacted through removal.

Jurisdictional Wetlands and Waters

The project has been designed to avoid impacts to both the Santa Ana River and Converse Creek. For this reason, impacts to jurisdictional wetlands and waters are not expected and wetland and waters permits will not likely be required.

Wildlife Corridors

Construction of the proposed project will not impede wildlife movement through the Santa Ana River valley. The project is designed to be outside of the river floodplain in upland habitat that is common and abundant in the project site. The project does have the potential to increase traffic through the area, which may increase mortality of wildlife on roadways. However, use of the school and roadways is intermittent, and the minor increase in traffic will not likely have a substantial effect on wildlife movement through the area.

Wastewater Discharge

Through the San Bernardino County NPDES program, the project proponent will be required to develop a Water Quality Management Plan (WQMP). Please refer to the Technical Guidance Document for Water Quality Management Plans prepared for the County of San Bernardino Areawide Stormwater Program (SBC 2013).

United States Forest Service, San Bernardino

The project site occurs within lands zoned as Resource Conservation Areas managed by the San Bernardino National Forest. Additionally, the proposed project requires development of access roads on and through property owned by the Forest Service. Consultation with the Forest Service is required.

Mitigation and Project Measures to Reduce Impacts

Potential impacts to vegetation communities, general wildlife, nesting birds, and special-status wildlife can be mitigated by the implementation of avoidance and minimization measures. The final mitigation measures prior to, during, and post-construction will ultimately be recommended by the local, state and federal agencies involved in the project permitting. Below are mitigation measures that may be required to reduce biological resources impacts:

- Provide a biological monitor during construction in locations where suitable wildlife habitat is present. This will minimize impacts to sensitive biological resources.
- Provide species-specific resource training for all construction personnel.
- *Nesting birds*—If construction occurs during the nesting bird season (March 1–August 15), pre-construction surveys will likely be required. If identified nests may be adversely affected by construction activities, the qualified biologist will propose a no work, or limited buffer if appropriate.
- *Mountain yellow-legged frog*—a specialized monitor should establish a buffer in all locations of suitable habitat that are within 100-feet of project development. This measure will ensure construction does not impact suitable habitat adjacent on or off-site within the Santa Ana River.
- *Southern rubber boa*— Due to the potential of this species to occur on site, it is recommended that a specialized monitor familiar with this species to conduct a preconstruction clearance survey in locations within the project impact area that has suitable habitat (i.e., boulders, logs, etc.). This survey should be conducted within 7-days of the start of construction. If SRB is encountered, it may be relocated by a permitted biologist that is recognized by the USFWS for handling and translocating this species. If deemed necessary, exclusionary fencing may be placed during construction activities to discourage animals from returning to the impact area.
- *Jurisdictional Resources*—Development of a Storm Water Pollution Prevention Plan and implementation of Best Management Practices (BMPs) will likely be required to avoid impacts to jurisdictional wetlands and waters.

To retain the value of the mixed oak/coniferous forest, the following is recommended (ISA 2011):

- Avoid damage during construction by erecting barriers around existing trees to be retained. Fencing should be placed one foot from the trunk for each inch of trunk diameter.
- Limit access to construction crews, allowing only one route in and out of the project area.

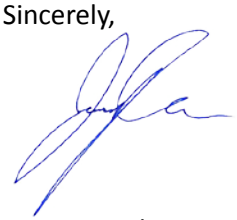
- Intentions to protect the trees should be communicated and written into the construction specifications.

Conclusion and Recommendations

The project, with the suggested mitigation measures, will not significantly impact native vegetation communities or special-status wildlife species. Project design features have taken into account the biological resources present on site and have made project design changes to significantly reduce impacts to existing biological resources. Thus, with project design features as presented and mitigation measures, this project will not significantly impact biological resources within the project site. A California Environmental Quality Act (CEQA) environmental evaluation of the project relative to biological resources is provided as Attachment B, Table 5.

If you have questions regarding the analysis or conclusions presented herein, please contact me at 925.200.1656.

Sincerely,



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Enc: Exhibit 1 Regional Vicinity
Exhibit 2 Project Vicinity
Exhibit 3 Soils Composition
Exhibit 4 Site Plan and Vegetation Communities
Exhibit 5 Tree Locations
Exhibit 6 Potential Jurisdictional Resources Wetlands/Waters
Attachment A: Site Photographs
Attachment B: Environmental Evaluation

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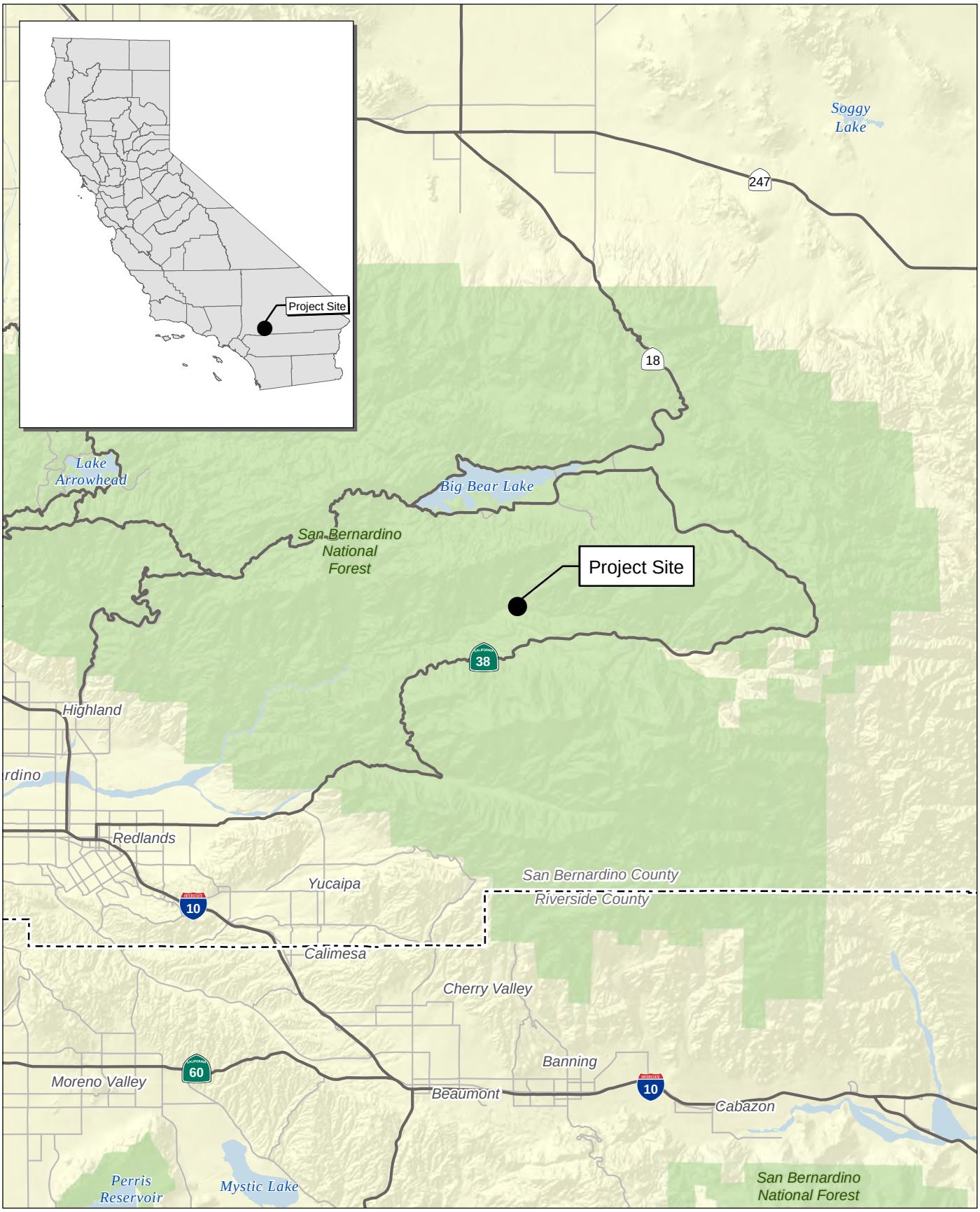

Source: Census 2000 Data, The CaSIL, FCS GIS 2016.

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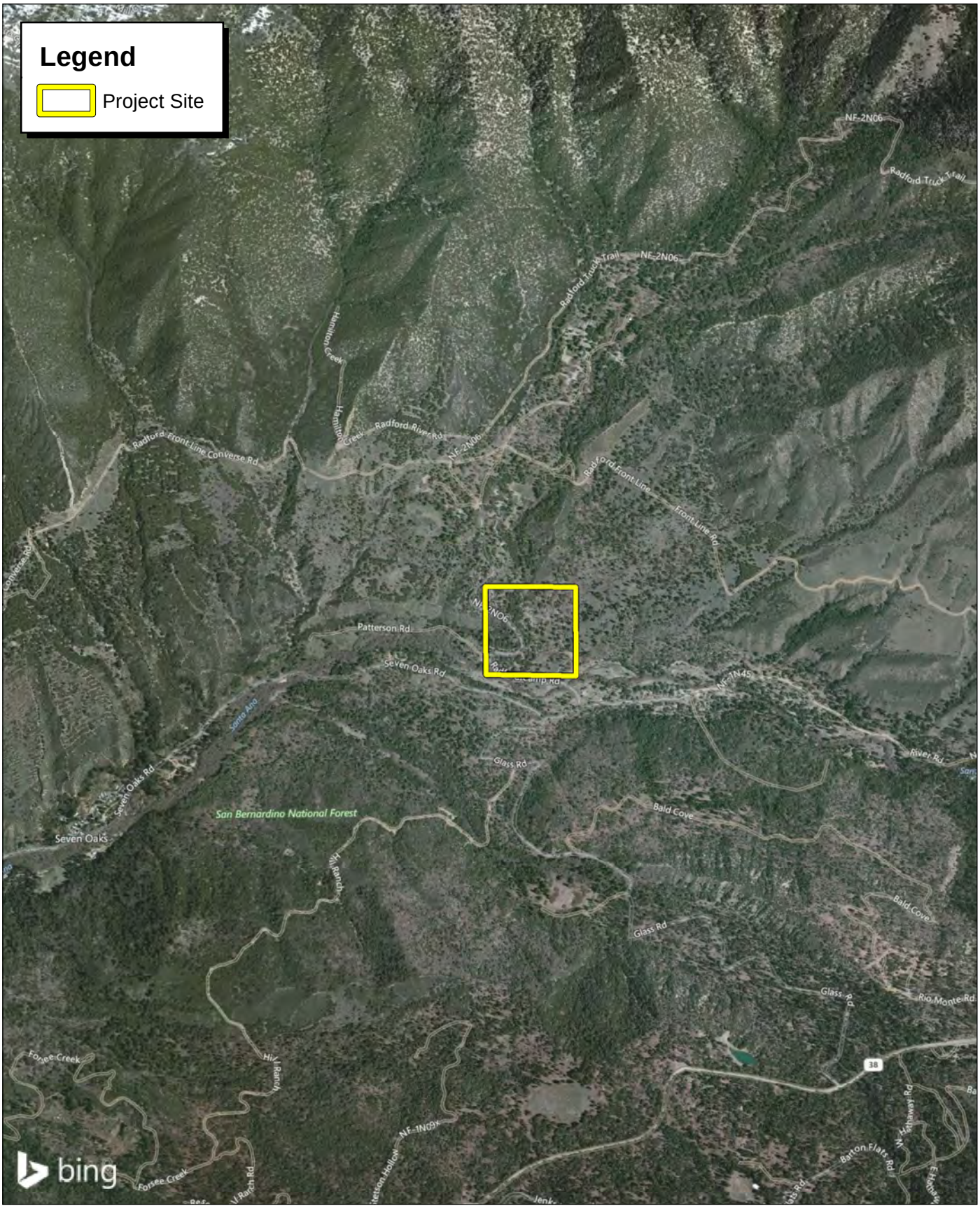
5 2.5 0 5 Miles

Exhibit 1
Regional Location Map



Source: Bing Imagery, 2015

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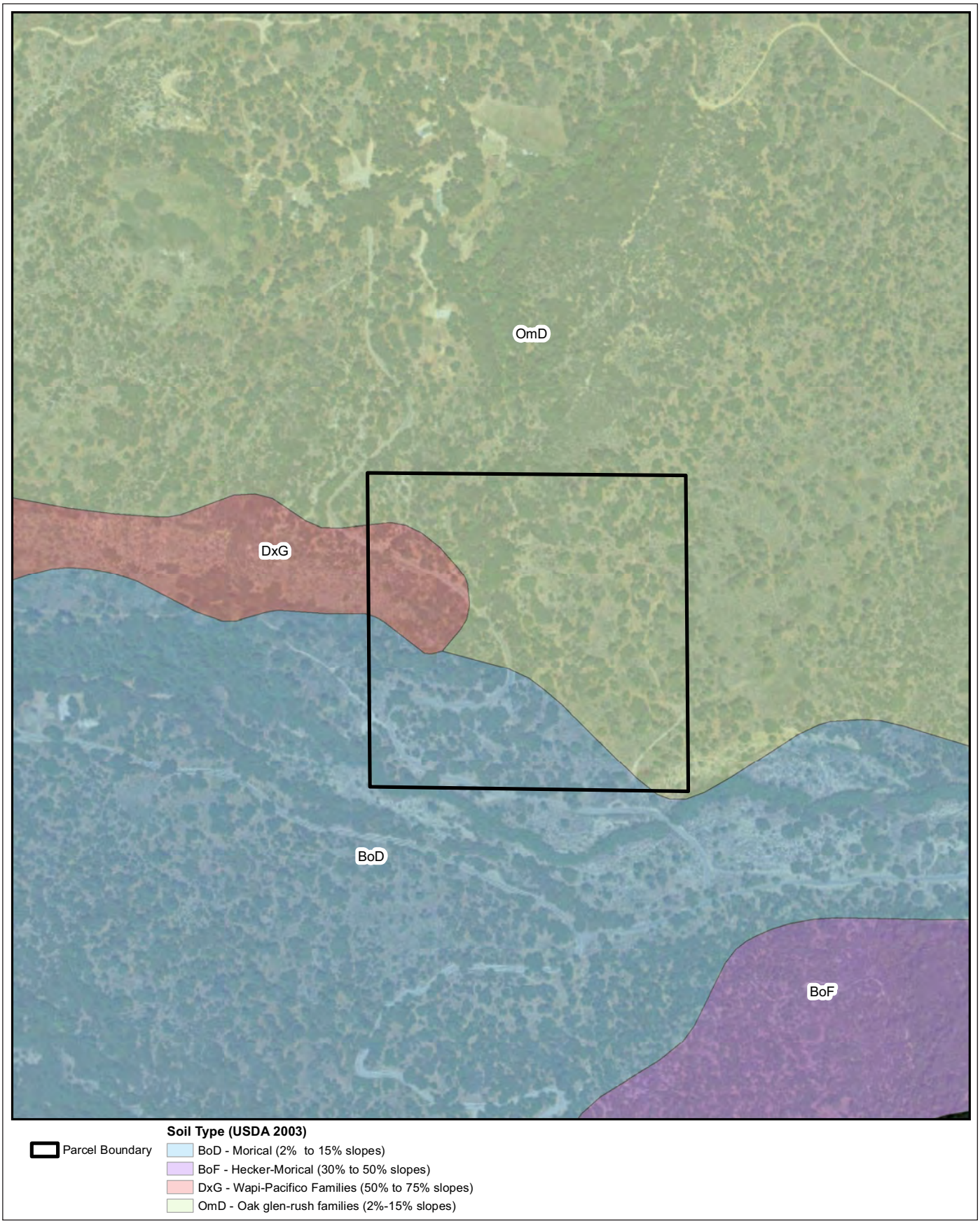
2,000 1,000 0 2,000 Feet

Exhibit 2
Local Vicinity Map
Aerial Base



Source: Borcher Environmental Management, 2016

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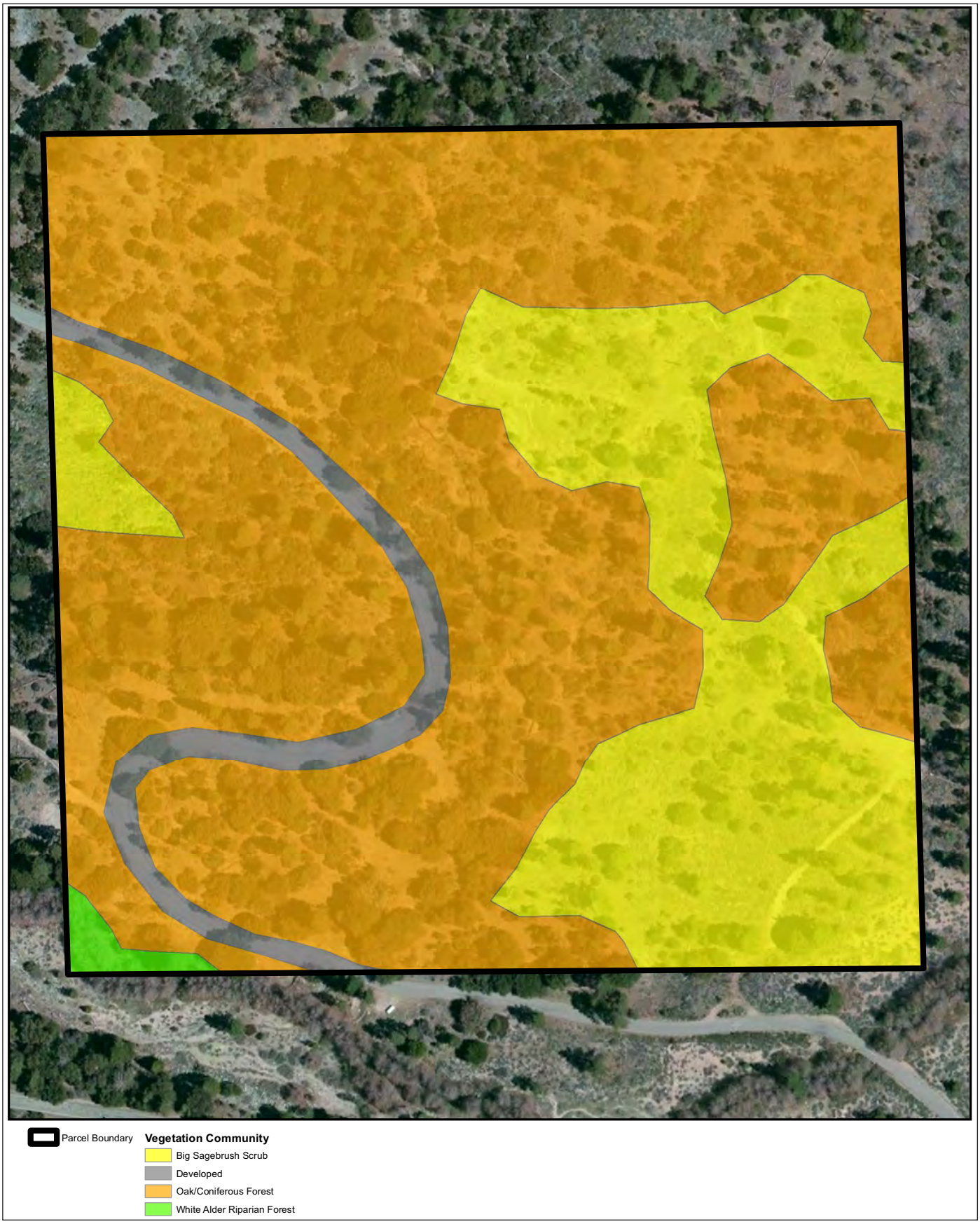
0 500 1,000 Feet

Exhibit 3
Soils Composition



Source: Borcher Environmental Management, 2016

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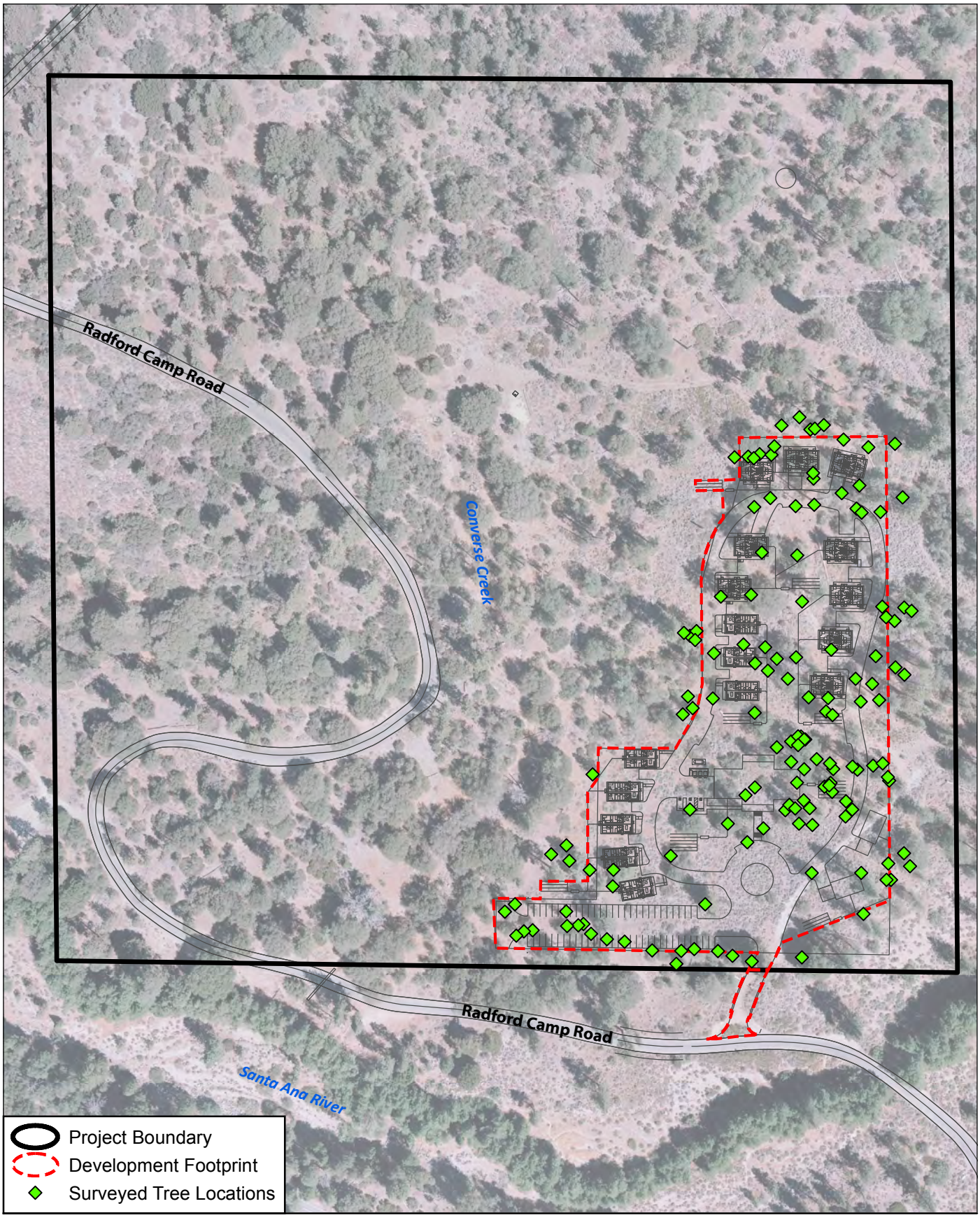
Exhibit 4
Vegetation Communities



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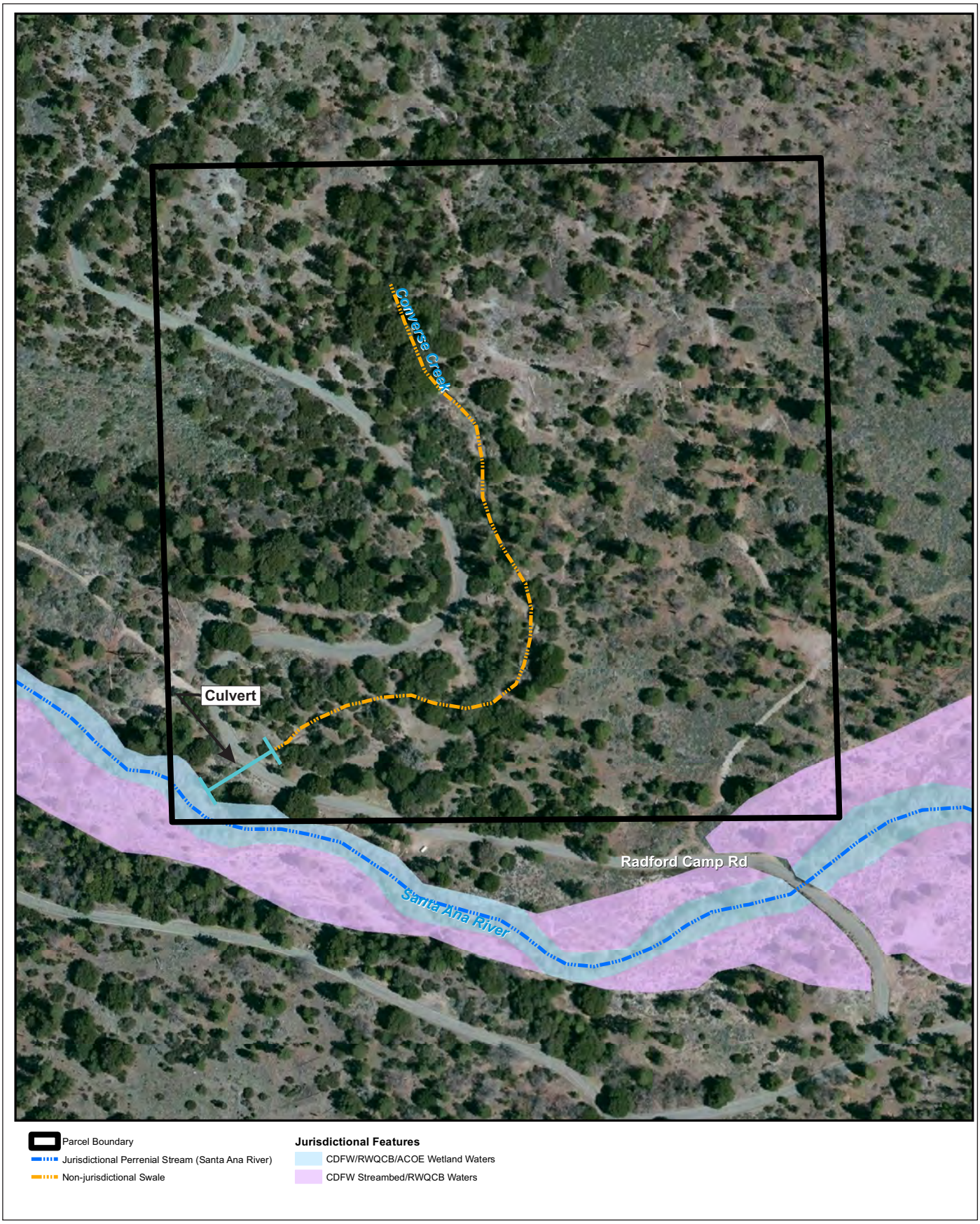
Feet

Exhibit 5
Tree Locations



Source: Borcher Environmental Management, 2016

FIRSTCARBON SOLUTIONS™

0 250 500 Feet

Exhibit 6
Jurisdictional Resources - Wetland/Waters

Photograph 1: Big sagebrush scrub in the foreground and oak/coniferous forest in the background, taken from the middle of the Survey Area, facing west.

Photograph 2: Big sagebrush scrub in the foreground and oak/coniferous forest in the background, taken from the middle of the property, facing west.

Photograph 3: Existing dirt access road within the middle of the property, facing north.

Photograph 4: Santa Ana River floodplain located within the southeast corner of the property, facing east.

Photograph 5: Santa Ana River and bridge approximately 150 feet south of the property, facing east.

Photograph 6: Santa Ana River flowing through the white alder riparian forest within the southwest corner of property, facing south.

Photograph 7: Radford Camp Road traversing the southwest portion of property, facing west.

Photograph 8: Absence of defined bed and bank in non-jurisdictional swale (Converse Creek) in western portion of the property near mid-site, facing north.

Photograph 9: Non-jurisdictional swale (Converse Creek) in northwestern portion of property showing absence of defined bed and bank, facing north.

Photograph 10: Non-jurisdictional swale (Converse Creek) in southwestern area of the property near Radford Camp Road demonstrating absence of defined bed and bank, facing north.

Photograph 11: Culvert inlet under Radford Camp Road where non-jurisdictional swale (Converse Creek) drains under road, facing south.

Photograph 12: Oak/coniferous forest west of Radford Camp Road in western portion of property, facing south.

Photograph 13: Propane tank on concrete pad near mid-site, facing southwest.

Photograph 14: Fallen logs providing potential habitat for Southern rubber boa, facing southwest.

Attachment B: Environmental Evaluation

This section evaluates potential effects on biological resources that may result from project implementation. Table 5 denotes the level of significance associated with project development.

Environmental Evaluation

Environmental Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4. Biological Resources *Would the project:*				
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 California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (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 wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4. Biological Resources *Would the project:*				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Would the project:

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 California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant Impact with Mitigation Incorporated. The project has the potential to significantly impact special-status wildlife species. These impacts can be mitigated by the implementation of avoidance and minimization measures. The mitigation measures below are recommended to reduce the potential biological resources impacts to less than significant:

- Provide a biological monitor during construction to minimize impacts to sensitive biological resources.
- Provide species specific resource training for all construction personnel.
- *Mountain yellow-legged frog*—a specialized monitor should establish a buffer in all locations of suitable habitat that are within 100-feet of project development. This measure will ensure construction does not impact suitable habitat adjacent on or off-site within the Santa Ana River.
- *Southern rubber boa*— Due to the potential of this species to occur on site, it is recommended that a specialized monitor familiar with this species to conduct a preconstruction clearance survey in locations within the project impact area that has suitable habitat (i.e., boulders, logs, etc.). This survey should be conducted within 7-days of the start of construction. If SRB is encountered, it may be relocated by a permitted biologist that is recognized by the USFWS for handling and translocating this species. If deemed necessary, exclusionary fencing may be placed during construction activities to discourage animals from returning to the impact area.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No impact. The project will not directly impact any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulation or by the CDFW or USFWS. Riparian habitat associated with the Santa Ana River occurs within the southwestern portion of the property but the channel and associated riparian habitat will not be impacted the proposed project.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than significant impact with mitigation incorporated. The project has the potential to indirectly impact jurisdictional resources both on-site and off-site. The Santa Ana River occurs within the southwestern portion of the property and also off-site. Off-site it begins approximately 10 miles upstream, draining a large area of steep mountain slopes. Approximately 8 miles downstream from the project site the Santa Ana River converges with Bear Creek. From there the Santa River flows through the interior basin of San Bernardino and Riverside County. The river eventually flows into the Prado Dam, Orange County and out to sea at Santa Ana River County Beach.

The project site also supports another on-site water feature that runs north to south. This feature is shown on maps as Converse Creek. This feature does not appear to have enough regular flowing water, or appropriate soils to create an ordinary high-water mark, or support hydrophytic vegetation. For this reason, this feature may be considered a non-jurisdictional swale due to the lack of an ordinary high-water mark, or bed and bank. However, this feature drains into a culvert under Radford Camp Road in the southwestern portion of the project site before flowing into the Santa Ana River and is therefore hydrologically connected. Both the inlet and the outlet of the culvert do not appear to receive substantial flow due to the lack of a channel.

The Santa River and Converse Creek will not be directly impacted by the proposed project. However, indirect impacts associated with construction activities have the potential to significantly impact these hierological resources. In order to mitigate potential significant indirect impacts, the development of a Storm Water Pollution Prevention Plan and implementation of Best Management Practices (BMPs) will be required to reduce impacts to less than significant.

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 wildlife nursery sites?

Less than significant impact with mitigation incorporated. The project site contains natural vegetation communities that have the potential to support nesting birds and raptors protected under the Migratory Bird Treaty Act. Impacts to these species would be significant. Implementation of the following mitigation measure would reduce these potential significant impacts to less than significant:

- Provide a biological monitor during construction in order to minimize impacts to sensitive biological resources.
- Provide species specific resource training for all construction personnel.

- *Nesting birds*—If construction occurs during the nesting bird season (March 1–August 15), pre-construction surveys will likely be required. If identified nests may be adversely affected by construction activities, the qualified biologist will propose a no work, or limited buffer if appropriate.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The proposed project site will not conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy ordinance. Although the site does contain numerous tree species that have the potential to be impacted both directly and indirectly by the proposed project. In order to reduce both direct and indirect impacts to tree species that will remain on-site directly, the following project measures should be implemented:

- Avoid damage during construction by erecting barriers around existing trees to be retained. Fencing should be placed one foot from the trunk for each inch of trunk diameter.
- Limit access to construction crews, allowing only one route in and out of the project area.
- Intentions to protect the trees should be communicated and written into the construction specifications.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No impact. The project site is not located in an area covered by an adopted habitat conservation plan. Therefore, the project would result in no impact related to conservation plans.