

PROTOCOL SURVEYS
LEAST BELL'S VIREO (*Vireo bellii pusillus*)

DP-2021-2347

ASSESSOR'S PARCEL NUMBER 392-320-014

18.08-ACRE SITE / ±2.0 ACRES SURVEYED

LOCATION:

Southeast corner of the intersection of Whitewood Road and Lee Lane in the City of Murrieta, Riverside County, California. Portion of Section 35, Township 6 South and Range 3 West S.B.M. of the USGS Topographic Map, 7.5 Minute Series, Murrieta, California Quadrangle

OWNER/APPLICANT:

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SURVEYS CONDUCTED BY PAUL A. PRINCIPE ON:
April 25, May 6, 18, 28, June 8 and 21, and July 2 and 15, 2021

REPORT DATE:

July 23, 2021

INFORMATION SUMMARY

REPORT DATE

July 23, 2021

REPORT TITLE

Protocol Surveys for Least Bell's Vireo (*Vireo bellii pusillus*)

CASE NUMBER

DP-2021-2347

ASSESSOR'S PARCEL NUMBER

392-320-014

SITE LOCATION

Southeast corner of the intersection of Whitewood Road and Lee Lane in the City of Murrieta, Riverside County, California (**Site Vicinity Map**). It was mapped in a portion of Section 35, Township 6 South and Range 3 West S.B.M. of the USGS Topographic Map, 7.5 Minute Series, Murrieta, California Quadrangle (**USGS Location/ Survey Area Map**).

ACREAGES

18.08-acre site
±2 acres surveyed

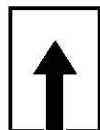
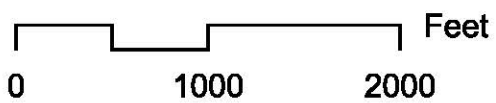
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Source of Aerial Photo: Google Earth 1-2020

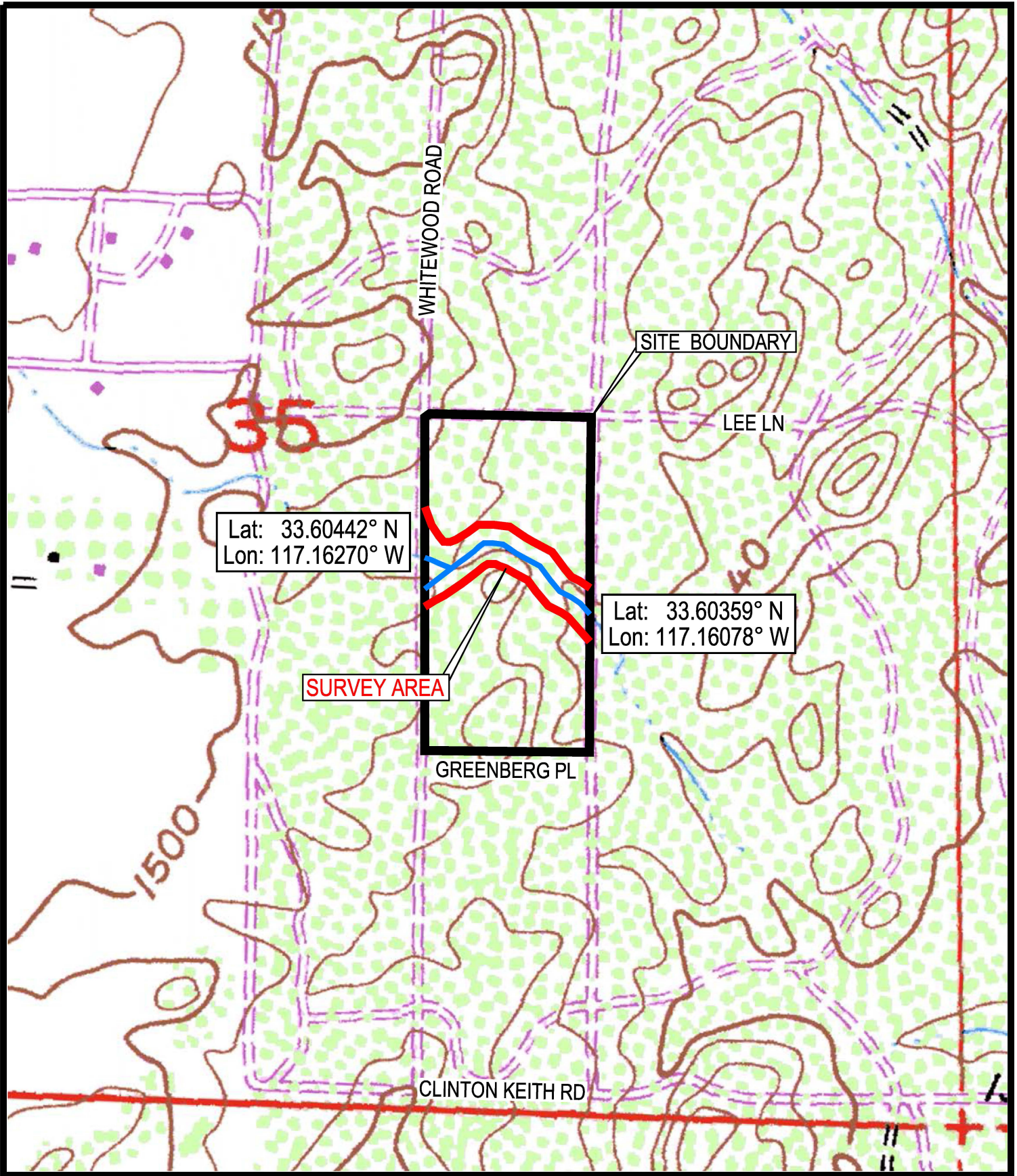
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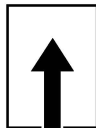
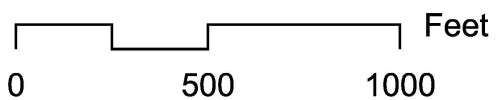
SITE VICINITY MAP

DP 2021-2347

PRINCIPE AND ASSOCIATES



Ref: USGS 7.5 Min.
Murrieta, Calif. Quad.



**USGS LOCATION /
SURVEY AREA MAP**

DP 2021-2347

PRINCIPE AND ASSOCIATES

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SURVEY SUMMARY

This report presents the findings of focused nesting season surveys conducted in 2021 for the least Bell's vireo (*Vireo bellii pusillus*) at the proposed project site. Eight surveys were conducted between April 25 and July 15, 2021.

A Least Bell's Vireo Habitat Assessment includes determining the presence and suitability of primary nesting habitat, as this is a migratory species. Least Bell's vireos are obligate riverine riparian breeders. They are dependent on the presence of willows within occupied habitat, but the structure is probably the most important component. The most critical structural component to a potential breeding habitat is the presence of a dense shrub layer at 2 to 10 feet above the ground.

The assessment determined that marginally suitable least Bell's vireo habitat is present at the site. The primary habitat, Riparian Forest, is located along an approximately 695-foot-long reach of the unnamed tributary of Warm Springs Creek. The Riparian Forest tree canopy is mostly continuously-growing, and is formed by a mix of mature black willow, red willow, western cottonwood, and coast live oak. It is linear and narrow in nature, and only has a few clumps that are more than a few trees wide. The understory is a rather dense tangle of riparian and upland species. Although the habitat is not dense, it shows a moderate variability in patch size and bush height.

There is no suitable least Bell's vireo located in a 500-foot buffer zone around the project boundary, and a very limited amount of habitat located farther away from the site in any direction.

Least Bell's vireos were not observed nor heard calling during any of the 2021 focused nesting season surveys. Eight surveys conducted 10 or more days apart provided an accurate assessment of the presence/absence of least Bell's vireo on the site. In addition, nests were not discovered in the Riparian Forest and Mulefat Scrub habitats. There was no evidence of nesting activities taking place in the shrub layer present 2 to 10 feet above the ground by least Bell's vireos.

Brown-headed cowbirds were not observed nor heard calling during any of the eight 2021 least Bell's vireo nesting season surveys conducted at this site.

Southwestern willow flycatchers and/or western yellow-billed cuckoos were not observed nor heard calling during any of the eight 2021 least Bell's vireo nesting season surveys.

ABSTRACT

Due to the presence of suitable Riparian Forest and Mulefat Scrub habitats, **Protocol Surveys for Least Bell's Vireo (*Vireo bellii pusillus*)** were conducted on the site. Eight surveys were conducted 10 or more days apart between April 25 and July 15, 2021, and followed the Least Bell's Vireo Survey Guidelines (USFWS, 2001). These suggested guidelines have been provided to facilitate accurate assessments of the presence/absence of the State and federally endangered least Bell's vireo, to provide the Fish and Wildlife Services with sufficient information to adequately respond to requests for applicable Federal permits and licenses, and to fulfill its mandate to conserve and recover the species.

DESCRIPTION OF THE SITE, INCLUDING TOPOGRAPHY, HYDROGRAPHY, SOILS, VEGETATION ASSOCIATIONS AND SPECIES COMPOSITION, AND WILDLIFE SPECIES OBSERVED DURING THE SURVEYS

Site

The site is presently vacant and undeveloped. Aerial photographs from 1996 and 2004 show that most of the upland scrublands present on the site were cleared and annual grassland was succeeding onto the site surface. The unnamed tributary of Warm Springs Creek that dissects the northern portion of the site was sparsely vegetated, and only a few clumps of large coast live oak trees were visible. Meadowlark Lane crossed the tributary along the site's west property line.

A 2007 aerial photograph shows that some more typical riparian vegetation had emerged along the banks of the tributary (*i.e.*, willows, mulefat, etc.), and an isolated ephemeral stream was created downstream of a culvert placed beneath a newly constructed portion of Whitewood Road. This stream formed a confluence with the tributary in the west central portion of the site. With a new source of storm water runoff, riparian vegetation was starting to grow along this ephemeral stream. It appears that some shrub vegetation was resprouting in the annual grassland. Whitewood Road was being constructed to replace Meadowlark Lane along the site's west property line.

Between 2010 and 2012 the construction of Whitewood Road was completed at a few feet above the natural grade of the site. The tributary was placed in a culvert beneath Whitewood Road, and surface drains were constructed to drain water into the tributary. This probably resulted in an emergence of the riparian vegetation along the tributary and ephemeral stream. The resprouting shrub vegetation was becoming denser and more widespread. The site has remained vacant and undeveloped since that time. Recently, a homeless camp has been developed in the middle of the tributary and riparian vegetation.

Topography

Site topography is characterized by hill and valley contours. The southern portion of the site is nearly flat-lying with only a few natural irregularities, mainly rock and boulder outcrops, while the northern portion is a broad sloping hillside. One main natural watercourse trends in a west-to-east direction through the northern portion of the site. Rolling hills are present in the northern half of the site that is located north of the natural watercourse. The hills slope gently downward in a general north→south direction to the channel of the natural watercourse. The change in elevation is 30 feet between the site's north property line and the channel (1500→1470 feet). Numerous hillocks are scattered through this portion of the site, which is strewn with boulders and rock outcrops. A manufactured slope is present along the westernmost portion of this area. During the construction of Whitewood Road, the roadway was raised 10-15 feet above the channel of an unnamed tributary of Warm Springs Creek.

A broad rather flat-lying hill is present in the southern half of the site that is located south of the natural watercourse. It occupies the entire center of this portion of the site, and gently slopes downward in a general southwest direction to the channel of the natural watercourse. The change in elevation is 20 feet between the top of this hill and the natural watercourse (1490→1470 feet). A few hillocks are present, and are elevated 7-14 feet above the rounded hilltop. Numerous boulder and rock outcrops are scattered throughout this portion of the site. A manufactured slope is also present along the westernmost portion of this area. During the construction of Whitewood Road, the roadway was raised 10-15 feet above the channel of a small ephemeral stream.

Hydrography and Drainage

The natural watercourse is an unnamed tributary of Warm Springs Creek. It is designated as an intermittent blue-line stream on the USGS Topographic Map, Murrieta, California Quadrangle. An approximately 695-foot-long reach of this stream dissects the northern portion of the site, and has a northwest→southeast direction of flow. It enters and exits the site via culverts, and is not deeply incised into the ground. The origin of this tributary was mapped approximately 1,175 feet upstream of the site in a northwest direction. Downstream of the site, it was mapped for approximately 1,900 feet in a southeast direction before it could no longer be detected. The tributary has a confluence with a small ephemeral stream near the west central portion of the site. This stream is not designated as an intermittent blue-line stream, and likely was the result of a culvert placed beneath a newly constructed portion of Whitewood Road. It only trends for approximately 335 feet through the site before its confluence with the tributary

The majority of drainage on the site is by overland flow or downslope movement of storm water runoff (sheet flow) originating on higher elevated terrain located in the northern and southern portions of the site. The storm water runoff is characterized by low volume, infrequent and short duration flows that only occur during and after precipitation events. All of the onsite runoff drains directly into the unnamed tributary of Warm Springs Creek present on the site. Once the runoff drains into the tributary, the drainage regime becomes fluvial as it is carried off the site.

Soils

Review of the “Soil Survey of Western Riverside Area, California” revealed that the surficial soils mapped at the site are included in the Cajalco-Temescal-Las Posas Association (Soils of the Southern California Coastal Plain). Within this association, two soil types were mapped on the site (**Soils Map**):

- Cac2 – Cieneba fine sandy loam, 2 to 8 percent slopes, eroded
- CbD2 – Cajalco rocky fine sandy loam, 5 to 15 percent slopes, eroded

Vegetation Associations and Species Composition

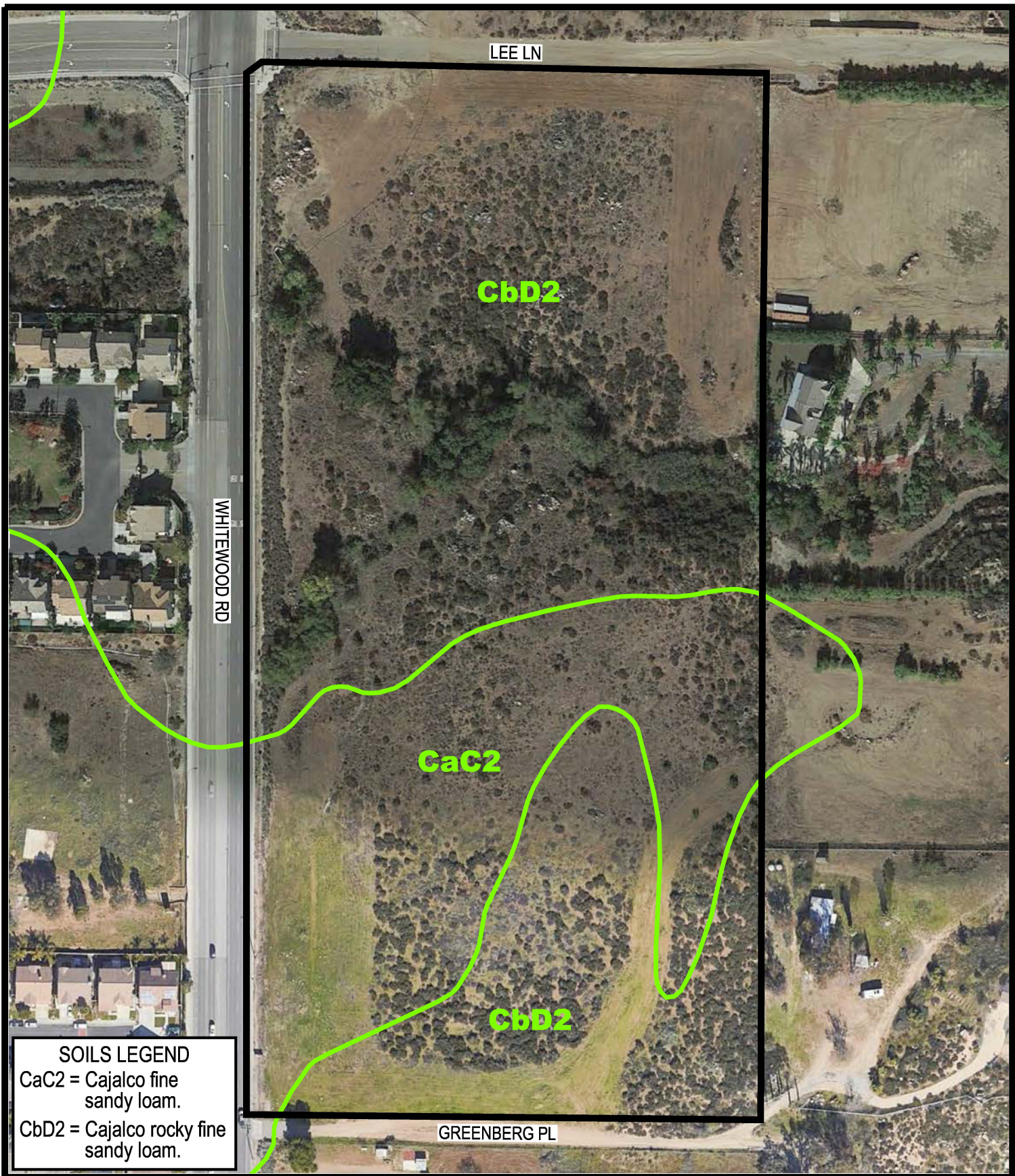
Based on the Habitat Accounts described in Volume 2 of the MSHCP, the Vegetation Subassociations occurring on the site are classified as Coastal Sage-Chaparral Scrub (1.07 acres), Non-Native Grasslands (15.77 acres) and Riparian Forest (1.19 acres), and Mulefat Scrub (0.05 acres) (**Biological Resources Map**).

The **Coastal Sage Scrub Vegetation Association** is distributed throughout Western Riverside County, occupying approximately 159,000 acres (12 percent) of the MSHCP Plan Area. It is represented by three subassociations: Diegan coastal sage, Riversidean sage scrub and undifferentiated coastal scrub. Coastal Sage Scrub in Riverside County is contained in the Riversidean Sage Scrub Mapped Subassociation. Riversidean Sage Scrub is the dominant sage scrub Mapped Subassociation in the MSHCP Plan Area, occupying approximately 10.3 percent (136,278 acres) of the Plan Area.

The **MSHCP Habitat Accounts for the Coastal Sage Scrub Vegetation Association** includes additional classifications made by others. Based on previous vegetation removal activities occurring at the site, it appears that the Coastal Sage Scrub extant at the site is contained in the **Coastal Sage–Chaparral Scrub** classification made by Holland (1986). Based on its level of disturbance on the site, it is considered to be a remnant. Coastal Sage–Chaparral Scrub is typically a diverse mosaic of woody sclerophyllous (hard-leaved plants) chaparral species and drought-deciduous malacophyllous (fleshy-leaved plants) sage scrub species adapted to arid climates.

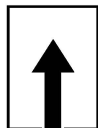
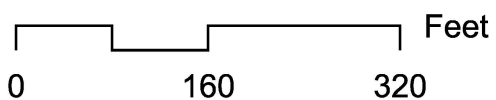
The 1.07 acres of Coastal Sage–Chaparral Scrub growing on the site is confined to boulder and rock outcrops and the manufactured slope below Whitewood Road. It is no longer continuously-growing on the site, and is now basically limited to a few shrubs growing in and around areas that were not cleared, individual sage and scrub plants resprouting from damaged central growing trunks or major branches scattered around the site, and individual sage and scrub plants that took root from seeds. Native sage scrub species are mixed with landscaping materials along the slopes below Whitewood Road and Lee Lane.

The Coastal Sage–Chaparral Scrub is dominated by interior California buckwheat (*Eriogonum fasciculatum* subsp. *foliolosum*). Other abundant sage scrub species include coastal sagebrush (*Artemisia californica*), brittlebush (*Encelia farinosa*), thick-leaved lilac (*Ceanothus crassifolius* var. *crassifolius*), and chamise (*Adenostoma fasciculatum*).



Source of Aerial Photo: Google Earth 1-2020

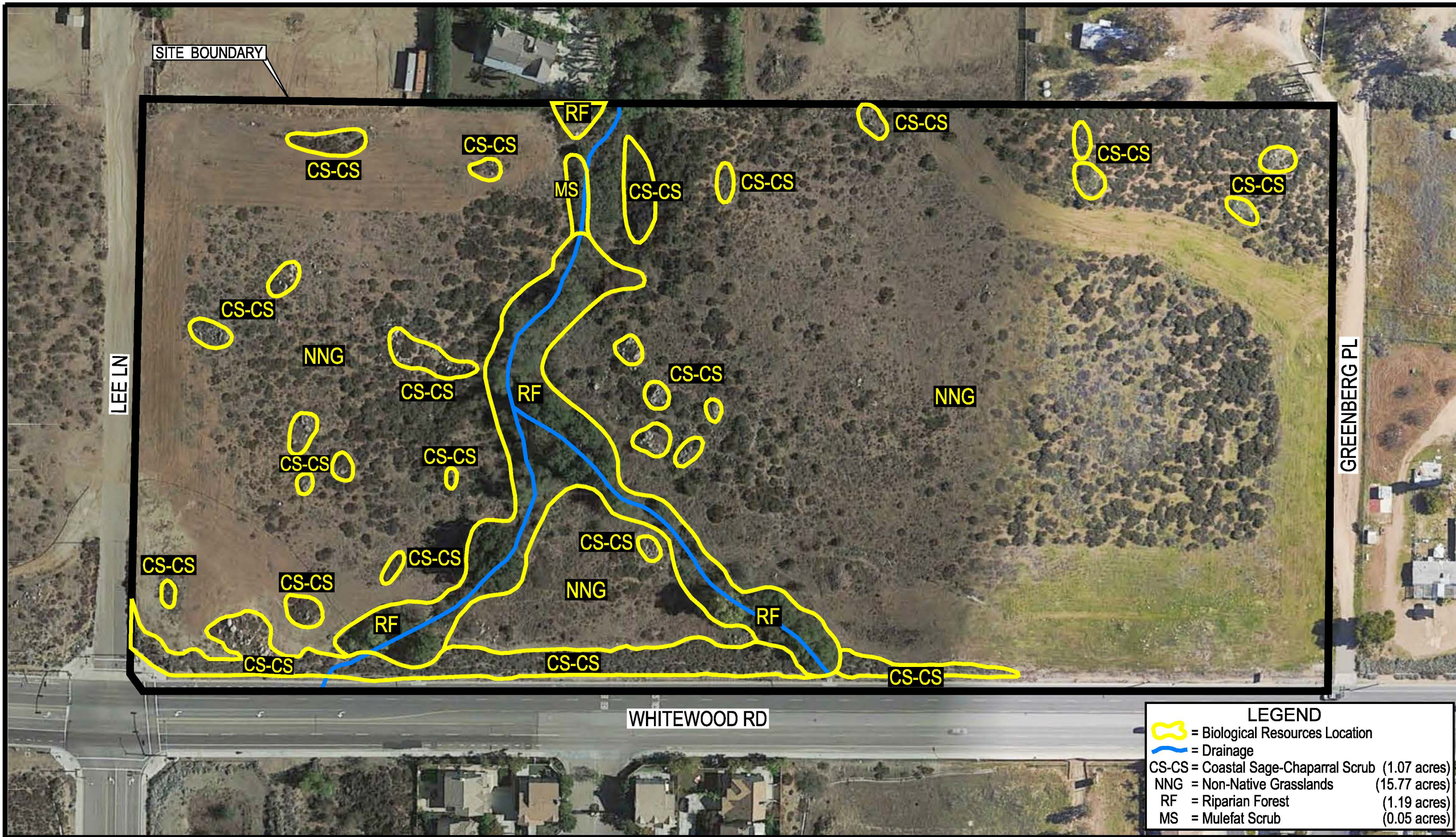
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SOILS MAP

DP 2021-2347

PRINCIPE AND ASSOCIATES





SITE BOUNDARY

LEE LN

GREENBERG PL

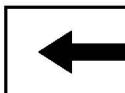
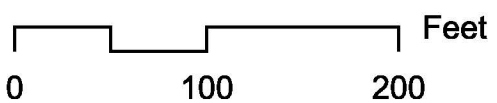
WHITEWOOD RD

LEGEND

-  = Biological Resources Location
-  = Drainage
- CS-CS = Coastal Sage-Chaparral Scrub (1.07 acres)
- NNG = Non-Native Grasslands (15.77 acres)
- RF = Riparian Forest (1.19 acres)
- MS = Mulefat Scrub (0.05 acres)

Source of Aerial Photo: Google Earth 1-2020

Scale: 1"= 100'



BIOLOGICAL RESOURCES MAP

DP 2021-2347
PRINCIPE AND ASSOCIATES

See attached Checklist of Vascular Plant Species for a complete list of all the species identified at the site.

The **Grasslands Vegetation Association** occurs throughout most of Western Riverside County, and covers approximately 11.8% (154,421 acres) of the Plan Area. The **Grasslands Vegetation Subassociation** growing on the site is **Non-Native Grasslands**. Non-Native Grasslands occurs throughout the majority of the Plan Area (11.6%), usually within close proximity to urbanized or agricultural land uses.

15.77 acres of **Non-Native Grasslands** is growing on the site. It is dominated by invasive, non-native species, but also includes a suite of spring annuals and wildflowers that take root after the winter rains. Native resprouting Coastal Sage-Chaparral Scrub species scattered through the Non-Native Grasslands do not possess characteristics that would classify them in a recognized Vegetation Subassociation and are herein included as a component of Non-Native Grasslands. It is continuously-growing on both sides of the tributaries, forming a dense carpet in some areas.

The Non-Native Grasslands is dominated by *brome grasses (*Bromus diandrus*, *B. hordeaceus* and *B. madritensis* subsp. *rubens*). Other abundant ground-covering grasslands species include *Tocalote (*Centaurea melitensis*), paniculate tarplant (*Deinandra paniculata*), common fiddleneck (*Amsinckia menziesii* var. *intermedia*), *shortpod mustard (*Brassica geniculata*), and *annual bluegrass (*Poa annua*).

Riparian Forest/Woodland/Scrub Vegetation Association subtypes are spatially distributed in drainages throughout much of Western Riverside County, and cover approximately 1.1 percent (14,545 acres) of the Plan Area. Southern Cottonwood/Willow Riparian Forest makes up the largest proportion of the riparian vegetation in the Plan Area comprising nearly one-half of the acreage (6,610 acres). Large complexes containing several of the riparian forest, woodland and scrub types are located in several portions in the Plan Area. The Temecula area supports a diversity of riparian vegetation types among urban and agricultural land uses along Temecula Creek, Sandia Canyon and portions of Wolf Valley.

Based on the description in the MSHCP, 1.19 acres of the **Riparian Forest Mapped Subassociation** is present at the site. Riparian Forest is now growing along both the unnamed tributary of Warm Springs Creek and the ephemeral stream. An aerial photograph from 1996 shows that only a few coast live oak (*Quercus agrifolia* var. *agrifolia*) were present on the site, and other riparian vegetation was minimal. The ephemeral stream was not yet present on the site. Currently, the Riparian Forest is mostly continuously-growing except where it is interrupted by the homeless camp. It is linear and narrow in nature, and only has a few clumps that are more than a few trees wide. The

*Denotes non-native species

Scientific nomenclature after Roberts, Jr., Fred M., Scott D. White, Andrew C. Sanders, David E. Bramlet, and Steve Boyd. 2004.

understory is a rather dense tangle of riparian and upland species. Although the habitat is not dense, it shows a moderate variability in patch size and bush height. It is now dominated by a mix of mature black willow (*Salix gooddingii*), red willow (*Salix laevigata*), western cottonwood (*Populus fremontii* subsp. *fremontii*), and coast live oak trees. One of the coast live oak trees has a diameter at breast height of ±65 inches.

Where the Riparian Forest opens and is no longer continuous in the eastern portion of the site, it is replaced by the **Mulefat Scrub Mapped Subassociation**. The 0.05 acres of Mulefat Scrub present on the site is dominated by mulefat (*Baccharis salicifolia*). In fact, it is the sole riparian species except for one coast live oak tree. An opening in the Mulefat Scrub occurs near the site's east property line to allow access to the southern portion of the site. This open section of the Mulefat Scrub has been invaded by non-native grasses and weeds.

Wildlife Species Observed

Wildlife is relatively abundant and diverse at the site even at its location in a rapidly developing area. Most of the species observed are common and opportunistic species that inhabit and/or forage in developed areas. Species observed during all the plant and animal surveys conducted at the site between April 25 and July 15, include the western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), California red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californica*), killdeer (*Charadrius vociferus*), greater roadrunner (*Geococcyx californianus*), western kingbird (*Tyrannus verticalis*), common raven (*Corvus corax*), lark sparrow (*Chondestes grammacus*), ground squirrel (*Spermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), and the coyote (*Canis latrans*).

Eighteen (18) bird species were observed during the least Bell's vireo surveys conducted at the site between April 25 and July 15, 2021. These species were observed in the onsite Riparian Forest and Mulefat Scrub habitats. Species include the American kestrel (*Falco sparverius*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), Nuttall's woodpecker (*Picoides nuttallii*), black phoebe (*Sayornis nigricans*), California scrub jay (*Aphelocoma californica*), wrentit (*Chamaea fasciata*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), northern mockingbird (*Mimus polyglottos*), California thrasher (*Toxostoma redivivum*), Wilson's warbler (*Wilsonia pusilla*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), white-crowned sparrow (*Zonotrichia leucophrys*), song sparrow (*Melospiza melodia*), house finch (*Carpodacus mexicanus*), and lesser goldfinch (*Carduelis psaltria*).

Nests were not discovered in the Riparian Forest and Mulefat Scrub habitats. A number of nest cavities in two dead trees were likely excavated by the Nuttall's woodpeckers observed during most of the surveys conducted at the site. Other birds seen during most of the surveys included doves, hummingbirds, phoebes, scrub jays, wrentits, wrens, towhees (both species), and finches.

A few diagnostic animal signs were also discovered at the site. Dirt mounds indicated the presence of Botta's pocket gophers (*Thomomys bottae*), small burrows with 2-3.25-inch

openings indicated the presence of pocket mice (*Perognathus* sp.) and/or deer mice (*Peromyscus* sp.), and nests indicated the presence of dusky-footed woodrats (*Neotoma* sp.).

LEAST BELL'S VIREO

Biogeography

Four subspecies of Bell's vireos have a widespread occurrence in central and southwestern U.S. and northern Mexico as a breeding bird. They winter from southern Baja and southern Sonora south along the west coast of Mexico and Central America to the Honduras and casually to northern Nicaragua. Least Bell's vireo was formerly a common and widespread summer resident in coastal southern California from Santa Barbara County south, east of the Sierra Nevada, in Owens and Benton Valleys, along the Mojave River and other streams at the western edge of the southern deserts, and along the entire length of the Colorado River.

Least Bell's vireos usually arrive from Mexican wintering areas by the end of March to early April, and depart by the end of September. The males precede the females in arrival by a few days, and stragglers have been noted post breeding as late as November.

The least Bell's vireo was once the major breeding subspecies of Bell's vireos in California. It is endemic to California and northern Baja California, and is now a rare, local, summer resident. Except for a few outlying pairs, the subspecies is currently restricted to southern California south of the Tehachapi Mountains and northwestern Baja California. Breeding pairs have been observed in the counties of Monterey, San Benito, Inyo, Santa Barbara, San Bernardino, Ventura, Los Angeles, Orange, Riverside, and San Diego, with the highest concentration in San Diego County along the Santa Margarita River. The population in the Prado Basin and contiguous reaches of the Santa Ana River of Riverside County is the second largest population of this Endangered Species within its range.

Reproduction

The breeding season for least Bell's vireo is typically mid-March to September. During this period, they are known to breed almost exclusively within riparian habitats. Nesting sites are typically selected within structurally heterogeneous woodlands, forests and scrubs that support dense vegetation near the ground, and dense horizontally separated vegetation higher up in the canopy. Nests are typically suspended in forked branches of many different riparian species, and are usually placed between 0.9 and 1.5 meters above the ground (0.2- to 3.6-meter average). Females probably select the nesting sites, but both genders participate in nest construction. Nests appear to only be used once, with new ones constructed for failed or successive broods.

ASSESSMENT OF HABITAT SUITABILITY FOR LEAST BELL'S VIREO

Habitat and Habitat Associations

Least Bell's vireos are nearly obligate riparian breeders. They appear to be especially dependent on the presence of willows within occupied habitat, although the structure is extremely important. They are characterized as preferring early successional habitat. They tend to establish territories in sites with small amounts of aquatic and herbaceous cover, large amounts of shrub and tree cover and a large proportion of tree cover with shrub understory. The width of the vegetation belt appears to be important for establishing territories.

Least Bell's vireo nest sites are most frequently located in stands between 5 and 10 years of age. The average age of willow vegetation in the immediate vicinity of most nests is between 4 and 7 years. Flooding and river meandering rejuvenates the gallery of otherwise old-age stands by scouring the vegetation that would normally persist and introduce new growth. The riparian plant succession appears to be an important influence in maintaining their habitat.

Least Bell's vireos primarily occupy riverine riparian habitats that typically feature dense cover within 1 to 2 meters of the ground, and a dense, stratified canopy. They inhabit low, dense riparian growth along water or along dry parts of intermittent streams which are associated with Southern Willow Scrub, Cottonwood Forest, Mule Fat Scrub, Sycamore Alluvial Fan Woodland, Coast Live Oak Riparian Forest, or Arroyo Willow Riparian Forest habitats, or Wild Blackberry or Mesquite habitats in desert localities. They use habitats that are limited to the immediate vicinity of watercourses below 1,500 feet elevation in the interior. In coastal areas of southern California, they occur in willows and other low, dense valley foothill riparian habitat, the lower portions of canyons and along the western edge of the deserts in desert riparian habitat.

During the spring and fall migrations, least Bell's vireos occupy a wider range of habitats including coastal sage scrub, riparian and woodland. The winter range of habitats includes thornscale vegetation adjacent to watercourses or in riparian gallery forests along the west coast of north and central Mexico. In southern Mexico and Honduras, tropical forest and arid tropical scrub along the coast are used.

Assessment of the Habitat On the Site

The assessment determined that marginally suitable least Bell's vireo habitat is present at the site. The primary habitat, Riparian Forest, is located along an approximately 695-foot-long reach of the unnamed tributary of Warm Springs Creek present between the site's east and west property lines. Where the Riparian Forest opens and is no longer continuous in the eastern portion of the site, it is replaced by Mulefat Scrub. Riparian Forest habitat is also located along approximately 335 feet of the ephemeral stream located in the west central portion of the site that forms a confluence with the tributary. Riparian Forest is primarily growing along the channel bottom, but is also growing on the

banks in some areas. The Riparian Forest tree canopy is mostly continuously-growing, and is formed by a mix of mature black willow, red willow, western cottonwood, and coast live oak. It is linear and narrow in nature, and only has a few clumps that are more than a few trees wide. The understory is a rather dense tangle of riparian and upland species. Species present in the understory that are important to least Bell's vireo include mule fat, arroyo willow (*Salix lasiolepis* var. *lasiolepis*) and narrow-leaved willow (*Salix exigua*). Although the habitat is not dense, it shows a moderate variability in patch size and bush height.

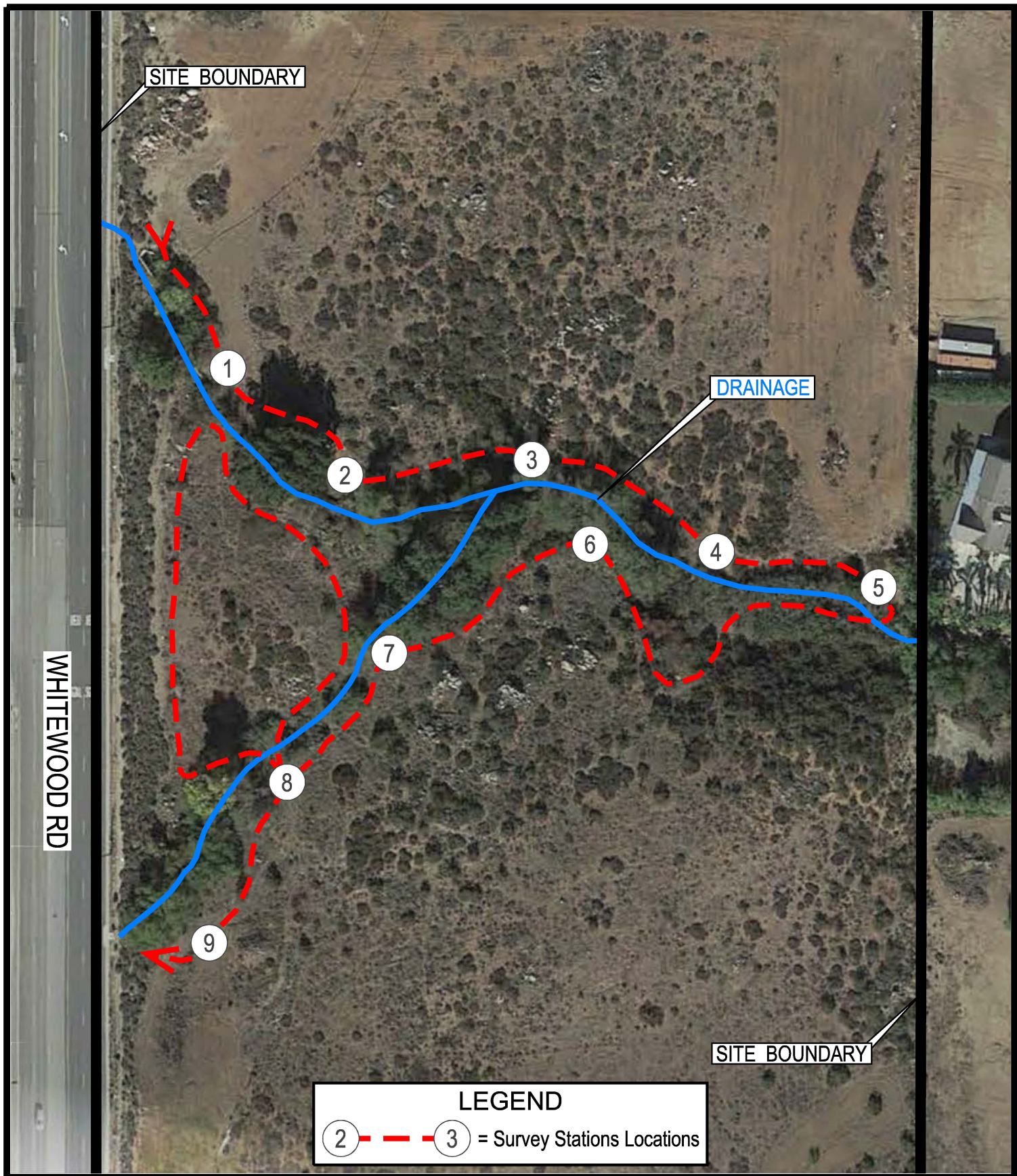
Assessment of the Habitat Off the Site

The site is located in a rapidly developing area. As such, there is no suitable least Bell's vireo located in a 500-foot buffer zone around the project boundary, and a very limited amount of habitat located farther away from the site in any direction. The unnamed tributary of Warm Springs Creek present on the site was originally mapped for approximately 1,500 feet upstream of the site on the USGS Topographic Map, Murrieta Quadrangle. This reach of the tributary is no longer present in this area, and as such, there is no riparian habitat present there. Also, the tributary was originally mapped for approximately 1,900 feet downstream of the site. The tributary and scattered riparian habitat only extend off the site for approximately 720 feet, then the downstream reach of the tributary or riparian habitat can no longer be detected. The unnamed tributary present on the site is located approximately 1.1 miles west of Warm Springs Creek. As shown on the Murrieta Quadrangle, a confluence between these two blue-line streams was not mapped. It is also located south and west of another blue-line stream tributary of Warm Springs Creek, but is located over 2,000 feet from its associated riparian habitat.

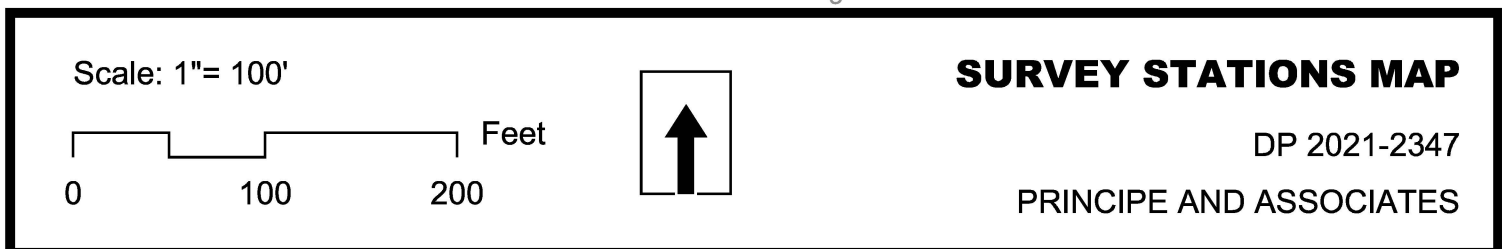
DATE AND TIME OF VISIT(S), INCLUDING NAME OF THE QUALIFIED BIOLOGIST CONDUCTING NESTING SEASON SURVEYS, WEATHER AND VISIBILITY CONDITIONS, AND SURVEY METHODOLOGY

In accordance with the currently accepted survey protocols for the least Bell's vireo, all riparian areas present on the site were surveyed. Least Bell's vireo protocol also requires that a minimum of eight surveys be conducted at least 10 days apart during the period between April 10 and July 31. The surveys were conducted by moving slowly through and along the edges of the Riparian Forest habitat looking for plumage characteristics of adult and juvenile least Bell's vireos while listening for songs, whisper songs, calls, and scolds. The surveyor stationed himself in the best possible locations to hear or see least Bell's vireos (**Survey Stations Map**). Care was taken not to disturb potential or occupied habitat of any sensitive or listed riparian species.

Eight surveys were conducted between April 25 and July 15, 2021. Surveys were conducted between sunrise and 11:00 AM PDT. Surveys were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather that individually or collectively may reduce the likelihood of detection. Surveys did not exceed more than three (3) linear kilometers (1.86 miles) or more than 50 hectares (123.5 acres) of habitat on any given survey day.



Source of Aerial Photo: Google Earth 1-2020



All surveys were conducted by Paul A. Principe, Principal, Principe and Associates. Paul Principe holds a Federal Fish and Wildlife Permit (TE 786497-8) and a California Resident Scientific Collecting Permit (Permanent ID #SC-2215), and is a Biological Consultant authorized by the Riverside County Planning Department, Environmental Programs Division. He has been conducting biological surveys in Riverside County since 1980. He has conducted protocol nesting season surveys for the least Bell's vireo in Temescal Wash (positive), Murrieta Creek (positive), Empire Creek (negative), and Long Valley Wash (negative).

Following are the number and dates of surveys, start and stop times of surveys and the weather conditions at the beginning and end of each survey (shaded temperature in degrees Fahrenheit includes the wind chill factor, and wind speed in miles per hour is given as the range measured over a few moments with a Kestrel ® 2000):

1. April 25, 2021: Sunrise at 0605 hours
Partly cloudy, 55°F, 2-3 mph winds (0830 hours)
Partly cloudy, 61°F, 1-2 mph winds (1030 hours)
2. May 6, 2021: Sunrise at 0554 hours
Cloudy, 56°F, 1-2 mph winds (0745 hours)
Mostly clear, 62°F, 2-3 mph winds (0930 hours)
3. May 18, 2021: Sunrise at 0546 hours
Mostly cloudy, 59°F, 2-3 mph winds (0830 hours)
Partly cloudy, 63°F, 1-2 mph winds (1000 hours)
4. May 28, 2021: Sunrise at 0541 hours
Mostly clear, 59°F, 1-2 mph winds (0800 hours)
Mostly clear, 67°F, 2-3 mph winds (0935 hours)
5. June 8, 2021: Sunrise at 0536 hours
Partly cloudy, 56°F, 1-2 mph winds (0650 hours)
Mostly cloudy, 61°F, 1-2 mph winds (0830 hours)
6. June 21, 2021: Sunrise at 0539 hours
Clear, 59°F, 0-1 mph winds (0600 hours)
Clear, 65°F, 0-1 mph winds (0730 hours)
7. July 2, 2021: Mostly clear, 62°F, 0-1 mph winds (0525 hours)
Sunrise at 0541 hours
Mostly clear, 67°F, 0-1 mph winds (0700 hours)
8. July 15, 2021: Mostly clear, 62°F, 0-1 mph winds (0535 hours)
Sunrise at 0548 hours
Mostly clear, 72°F, 0-1 mph winds (0710 hours)

RECORD AND PLOT ALL LEAST BELL'S VIREO DETECTIONS TO ESTIMATE LOCATION AND EXTENT OF HABITATS UTILIZED (e.g., VOCALIZATION POINTS, AREAS USED FOR FORAGING, etc.). MAP DATA ON APPROPRIATE USGS QUADRANGLE MAP

Least Bell's vireos were not observed nor heard calling during any of the 2021 focused nesting season surveys. Although this bird is drab in plumage and can be secretive within densely vegetated habitat, territorial males are easy to detect during the nesting season due to their conspicuous, repetitive, and diagnostic song. As such, least Bell's vireos are typically heard before they are seen, or they are only heard depending on the density of the habitat and/or the distance from which they are heard. Eight surveys conducted 10 or more days apart provided an accurate assessment of the presence/absence of least Bell's vireo on the site. In addition, nests were not discovered in the Riparian Forest and Mulefat Scrub habitats. There was no evidence of nesting activities taking place in the shrub layer present 2 to 10 feet above the ground by least Bell's vireos.

NOTE AND RECORD DATA PERTAINING TO LEAST BELL'S VIREO STATUS AND DISTRIBUTION DURING EACH SURVEY (e.g., NUMBERS AND LOCATIONS OF PAIRED OR UNPAIRED TERRITORIAL MALES, AGES AND SEXES OF ALL BIRDS ENCOUNTERED, LEG BANDS OR OTHER MARKERS, etc.)

While conducting the eight 2021 nesting season surveys, least Bell's vireos were not observed nor heard calling at this site.

NUMBER AND LOCATIONS OF ALL BROWN-HEADED COWBIRDS DETECTED WITHIN LEAST BELL'S VIREO TERRITORIES

Brown-headed cowbirds were not observed nor heard calling during any of the eight 2021 least Bell's vireo nesting season surveys conducted at this site.

ALL DETECTIONS OF SOUTHWESTERN WILLOW FLYCATCHERS AND WESTERN YELLOW-BILLED CUCKOOS RECORDED AND REPORTED

Southwestern willow flycatchers and/or yellow-billed cuckoos were not observed nor heard calling during any of the eight 2021 least Bell's vireo nesting season surveys conducted at this site. No flycatchers belonging to the (*Empidonax*) genus were observed at the site.

MSHCP CONSIDERATIONS

Focused surveys are necessary to ensure compliance with the California and Federal Endangered Species Acts and the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

ANY HISTORICAL INFORMATION REGARDING THE PRESENCE OF LEAST BELL'S VIREOS ON THE SITE (e.g., NATURAL DIVERSITY DATABASE, DEPARTMENT REGIONAL FILES, BREEDING BIRD SURVEY DATA, AMERICAN BIRDS RECORDS, AUDUBON SOCIETY, LOCAL BIRD CLUB, OTHER BIOLOGISTS, etc.)

Given the ongoing recovery of the species and the large concentration of birds in the western portion of the Plan Area, the least Bell's vireo may be found in suitable habitats nearly throughout the Plan Area. The least Bell's vireo population in the Prado Basin and contiguous (upstream and downstream) reaches of the Santa Ana River is the second largest population of this Endangered Species within its range. Other key population areas of the least Bell's vireo, in addition to the Prado Basin and Santa Ana River, include: Temescal Wash (including Alberhill Creek), Mockingbird Canyon, Murrieta Creek, Temecula Creek, Lake Skinner (including Rawson Canyon), Vail Lake, Wilson Creek, and San Timoteo Canyon.

Other geographic locations that are recorded within the U.C. Riverside database and by the USFWS include Lake Elsinore, March ARB, Meadowbrook, Canyon Lake, De Luz Creek, Potrero Creek, Bautista Creek, and Reche Canyon.

The California Natural Diversity Database (CNDDDB) for the Bachelor Mountain, California Quadrangle does not include any occurrence records of least Bell's vireo at the site. Occurrence records for least Bell's vireo that are located 1-2 miles from the site were not found in the CNDDDB.

The site is not within designated critical habitat for least Bell's vireo. The nearest key population area of least Bell's vireo is Lake Skinner, which is located approximately 5.1 miles southeast of the site.

CERTIFICATION STATEMENT

Date: July 23, 2021

I hereby certify that the statements furnished herein and in the attached exhibits present the data and information required to complete this Protocol Surveys for Least Bell's Vireo report to the best of my ability, and that the facts, statements and information presented are true and correct to the best of my knowledge and belief.

Paul A. Principe

PRINCIPE AND ASSOCIATES
Paul A. Principe
Principal

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CHECKLIST OF VASCULAR PLANT SPECIES

<u>GROUP</u>	<u>FAMILY</u>	<u>Species</u>	<u>COMMON NAME</u>	<u>HABITATS</u>
ANGIOSPERMAE - DICOTS				
ADOXACEAE – ELDERBERRY FAMILY				
		<i>Sambucus mexicana</i>	MEXICAN ELDERBERRY	NNG, RF
ANACARDIACEAE – SUMAC FAMILY				
		<i>Daucus pusillus</i>	RATTLESNAKE WEED	CS-CS, NNG
		<i>Rhus trilobata</i>	SKUNK BUSH	CS-CS
		* <i>Schinus molle</i>	PERUVIAN PEPPER TREE	RF
		<i>Toxicodendron diversilobum</i>	POISON OAK	CS-CS, RF
APIACEAE (UMBELLIFERAE) – CARROT FAMILY				
		<i>Apiastrum angustifolium</i>	MOCK PARSLEY	CS-CS
ASCLEPIADACEAE – MILKWEED FAMILY				
		<i>Funastrum cynanchoides</i>	HARTWEG'S MILKVINE	CS-CS
ASTERACEAE – SUNFLOWER FAMILY				
		<i>Acourtia microcephala</i>	SACAPEPPOTE	NNG
		<i>Ambrosia psilostachya</i> var. <i>californica</i>	WESTERN RAGWEED	RF
		* <i>Anthemis cortula</i>	DOG MAYWEED	NNG
		<i>Artemisia californica</i>	COASTAL SAGEBRUSH	CS-CS
		<i>Baccharis pilularis</i> subsp. <i>consanguinea</i>	COYOTE BRUSH	RF
		<i>Baccharis salicifolia</i>	MULE FAT	MS, RF
		* <i>Carduus pycnocephalus</i>	ITALIAN THISTLE	RF
		* <i>Centaurea melitensis</i>	TICALOTE	NNG
		* <i>Coryza canadensis</i>	COMMON HORSEWEED	NNG
		<i>Deinandra paniculata</i>	PANICULATE TARPLANT	NNG
		<i>Erigeron foliosus</i> var. <i>foliosus</i>	LEAFY DAISY	CS-CS
		<i>Encelia farinosa</i>	BRITTLEBUSH	CS-CS
		<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	LONG-STEMMED GOLDEN YARROW	CS-CS
		<i>Eriophyllum multicaule</i>	MANY-STEMMED WOOLLY DAISY	CS-CS
		<i>Filago californica</i>	CALIFORNIA FILAGO	NNG
		<i>Gnaphalium californicum</i>	CALIFORNIA EVERLANSTING	CS-CS
		<i>Gnaphalium luteo-album</i>	WEEDY CUDWEED	NNG
		<i>Gnaphalium stramineum</i>	COTTON-BATTING PLANT	CS-CS
		<i>Gutierrezia californica</i>	CALIFORNIA MATCHWEED	NNG
		<i>Helianthus annuus</i>	WESTERN SUNFLOWER	RF
		<i>Helianthus gracilentus</i>	SLENDER SUNFLOWER	NNG
		* <i>Lactuca serriola</i>	PRICKLY LETTUCE	NNG
		<i>Microseris lindleyi</i>	SILVER PUFFS	NNG
		* <i>Oncosiphon piluliferum</i>	STINK-NET	NNG
		* <i>Senecio vulgaris</i>	COMMON GROUNDSEL	NNG

FAMILY	Species	COMMON NAME	HABITATS
	<i>*Sonchus asper</i>	PRICKLY SOW-THISTLE	NNG
	<i>Stephanomeria virgata</i> subsp. <i>virgata</i>	VIRGATE WREATH-PLANT	CS-CS, NNG
BORAGINACEAE – BORAGE FAMILY			
	<i>Amsinckia menziesii</i> var. <i>intermedia</i>	COMMON FIDDLENECK	CS-CS, NNG
	<i>Cryptantha intermedia</i>	COMMON CRYPTANTHA	NNG
	<i>Cryptantha micromeres</i>	MINUTE-FLOWERED CRYPTANTHA	NNG
	<i>Heliotropium curassavicum</i>	ALKALI HELIOTROPE	NNG
	<i>Plagiobothrys canescens</i>	VALLEY POPCORN-FLOWER	NNG
BRASSICACEAE (CRUCIFERAE) – MUSTARD FAMILY			
	<i>*Brassica geniculata</i>	SHORTPOD MUSTARD	CS-CS, NNG
CACTACEAE – CACTUS FAMILY			
	<i>Cylindropuntia californica</i>	VALLEY CHOLLA	CS-CS
CHENOPODIACIAE – GOOSEFOOT FAMILY			
	<i>Atriplex canescens</i> subsp. <i>canescens</i>	FOURWING SALTBUCH	CS-CS
	<i>*Chenopodium album</i>	LAMB'S QUARTERS	NNG
	<i>*Salsola tragus</i>	RUSSIAN THISTLE	NNG
CONVOLVULACEAE – MORNING-GLORY FAMILY			
	<i>Calystegia macrostegia</i> subsp. <i>tenuifolia</i>	NARROW-LEAVED MORNING GLORY	NNG
CRASSULACEAE – STONECROP FAMILY			
	<i>Crassula connata</i>	SAND PIGMY-STONECROP	NNG
CUCURBITACEAE – GOURD FAMILY			
	<i>Marah macrocarpus</i> var. <i>macrocarpus</i>	WILD CUCUMBER	CS-CS, NNG
EUPHORBIACEAE – SPURGE FAMILY			
	<i>Croton setiger</i>	DOVEWEED	NNG
FABACEAE (LEGUMINOSAE) – PEA FAMILY			
	<i>Lotus hamatus</i>	GRAB LOTUS	NNG
	<i>*Lotus purshianus</i>	SPANISH CLOVER	NNG
	<i>Lotus scoparius</i> subsp. <i>scoparius</i>	COASTAL DEERWEED	CS-CS, NNG
	<i>Lupinus bicolor</i> subsp. <i>microphyllus</i>	MINIATURE LUPINE	NNG
	<i>*Melilotus indicus</i>	SOURCLOVER	MS, NNG, RF
FAGACEAE – OAK FAMILY			
	<i>Quercus agrifolia</i> var. <i>agrifolia</i>	COAST LIVE OAK	RF
	<i>Quercus berberidifolia</i>	CALIFORNIA SCRUB OAK	RF
GERANIACEAE – GERANIUM FAMILY			
	<i>*Erodium botrys</i>	LONG-BEAK FILAREE	NNG
	<i>*Erodium cicutarium</i>	RED-STEMMED FILAREE	NNG

FAMILY	Species	COMMON NAME	HABITATS
HYDROPHYLLACEAE – WATERLEAF FAMILY			
	<i>Emmenanthe penduliflora</i> var. <i>penduliflora</i>	WHISPERING BELLS	NNG
	<i>Phacelia cicutaria</i> subsp. <i>hispida</i>	CATERPILLAR PHACELIA	CS-CS
	<i>Phacelia minor</i>	WILD CANTERBURY-BELL	CS-CS
	<i>Phacelia ramosissima</i> var. <i>latifolia</i>	BRANCHING PHACELIA	CS-CS
LAMIACEAE – MINT FAMILY			
	* <i>Marrubium vulgare</i>	COMMON HOREHOUND	NGG
	<i>Salvia columbariae</i>	CHIA	CS-CS, NNG
	<i>Salvia mellifera</i>	BLACK SAGE	CS-CS
MALVACEAE – MALLOW FAMILY			
	* <i>Malva parviflora</i>	CHEESEWEED	NNG
ONAGRACEAE – EVENING PRIMROSE FAMILY			
	<i>Camissonia strigulosa</i>	STRIGULOSE EVENING PRIMROSE	NNG
POLEMONIACEAE – PHLOX FAMILY			
	<i>Gilia angelensis</i>	LOS ANGELES GILIA	NNG
	<i>Eriastrum sapphirinum</i>	SAPPHIRE WOLLY-STAR	NNG
	<i>Navarretia hamata</i> subsp. <i>leptantha</i>	SOUTHERN HOOKED SKUNKWEED	NNG
POLYGONACEAE – BUCKWHEAT FAMILY			
	<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	LONG-SPINED SPINEFLOWER	NNG
	<i>Chorizanthe staticoides</i>	TURKISH RUGGING	NNG
	<i>Eriogonum fasciculatum</i> subsp. <i>foliolosum</i>	INTERIOR CALIFORNIA BUCKWHEAT	CS-CS, NNG
	<i>Eriogonum gracile</i> var. <i>incultum</i>	SMOOTH-STEMMED SLENDR BUCKWHEAT	NNG
	<i>Lastarriaea coriacea</i>	LASTARRIAEA	NNG
	* <i>Rumex crispus</i>	CURLY DOCK	RF
PORTULACACEAE – PURSLANE FAMILY			
	<i>Claytonia perfoliata</i> subsp. <i>perfoliata</i>	COMMON MINER'S LETTUCE	RF
RHAMNACEAE – BUCKTHORN FAMILY			
	<i>Ceanothus crassifolius</i> var. <i>crassifolius</i>	THICK-LEAVED LILAC	CS-CS
ROSACEAE – ROSE FAMILY			
	<i>Adenostoma fasciculatum</i>	CHAMISE	CS-CS
	<i>Prunus ilicifolia</i>	HOLLY-LEAVED CHERRY	CS-CS
RUBIACEAE – MADDER FAMILY			
	<i>Gallium angustifolium</i> subsp. <i>angustifolium</i>	NARROW-LEAVED BEDSTRAW	CS-CS
SALICACEAE – WILLOW FAMILY			
	<i>Populus fremontii</i> subsp. <i>fremontii</i>	WESTERN COTTONWOOD	RF
	<i>Salix exigua</i>	NARROW-LEAVED WILLOW	RF

FAMILY	Species	COMMON NAME	HABITATS
	<i>Salix gooddingii</i>	BLACK WILLOW	RF
	<i>Salix laevigata</i>	RED WILLOW	RF
	<i>Salix lasiolepis</i> var. <i>lasiolepis</i>	ARROYO WILLOW	RF
SCROPHULARIACEAE – FIGWORT FAMILY			
	<i>Mimulus guttatus</i>	SEEP MONKEY FLOWER	MS, RF
SOLANACEAE – NIGHTSHADE FAMILY			
	<i>Datura wrightii</i>	JIMSONWEED	CS-CS, NNG
	* <i>Nicotiana glauca</i>	TREE TOBACCO	CS-CS, RF
	<i>Nicotiana quadrivalvis</i>	WALLACE'S TOBACCO	NNG
	* <i>Solanum elaeagnifolium</i>	SILVERLEAF NIGHTSHADE	CS-CS, NNG
	<i>Solanum xanti</i>	CHAPARRAL NIGHTSHADE	CS-CS, NNG
TAMARICACEAE – TAMARISK FAMILY			
	* <i>Tamarix ramosissima</i>	MEDITERRANEAN TAMARISK	RF
URTICACEAE – NETTLE FAMILY			
	<i>Urtica dioica</i> subsp. <i>holosericea</i>	HOARY NETTLE	CS-CS, RF
	* <i>Urtica urens</i>	DWARF NETTLE	CS-CS, RF
MONOCOTYLEDONES – MONOCOTS			
LILIACEAE – LILY FAMILY			
	<i>Calochortus splendens</i>	SPLENDID MARIPOSA LILY	CS-CS, NNG
	<i>Calochortus weedii</i> <i>weedii</i>	WEED'S MARIPOSA LILY	CS-CS, NNG
POACEAE – GRASS FAMILY			
	* <i>Avena barbata</i>	SLENDER WILD OAT	NNG
	* <i>Bromus diandrus</i>	COMMON RIPGUT GRASS	NNG
	* <i>Bromus hordeaceus</i>	SOFT CHESS	NNG
	* <i>Bromus madritensis</i> subsp. <i>rubens</i>	RED BROME	NNG
	* <i>Cynodon dactylon</i>	BERMUDA GRASS	NNG
	<i>Elymus condensatus</i>	GIANT WILD RYE	NNG
	* <i>Poa annua</i>	ANNUAL BLUEGRASS	NNG
	* <i>Polypogon monspeliensis</i>	ANNUAL BEARD GRASS	RF
	* <i>Schismus barbatus</i>	MEDITERRANEAN SCHISMUS	NNG
	<i>Stipa cernua</i>	NODDING NEEDLEGRASS	CS-CS, NNG
	* <i>Vulpia myuros</i> var. <i>myuros</i>	RATTAIL FESCUE	CS-CS, NNG
THEMIDACEAE – BRODIAEA FAMILY			
	<i>Dichelostemma pulchellum</i> var. <i>pulchellum</i>	BLUE-DICKS	CS-CS, NNG
TYPHACEAE – CAT-TAIL FAMILY			
	<i>Typha latifolia</i>	BROAD-LEAVED CAT-TAIL	MS, RF

HABITATS:

CS-CS = COASTAL SAGE-CHAPARRAL SCRUB

MS = MULEFAR SCRUB

NNG = NON-NATIVE GRASSLANDS

RS = RIPARIAN FOREST

*Denotes non-native species throughout Checklist
Nomenclature after Roberts, Jr., Fred M., Scott D. White, Andrew C. Sanders, David E. Bramlet,
and Steve Boyd. 2004.



View of the primary least Bell's vireo habitat, Riparian Forest, located along an approximately 695-foot-long reach of the unnamed tributary of Warm Springs Creek present between the site's east and west property lines.

SITE PHOTOGRAPH 1

DP-2021-2347

PRINCIPE AND ASSOCIATES



Close-up view of a portion of the Riparian Forest habitat. Least Bell's vireos are obligate riverine riparian breeders. They are dependent on the presence of willows within occupied habitat. Overall, the onsite habitat is relatively dense, and shows a moderate variability in patch size and bush height.

SITE PHOTOGRAPH 2

DP-2021-2347

PRINCIPE AND ASSOCIATES



Least Bell's vireos are dependent on the presence of willows within occupied habitat, but the structure is probably the most important component. View of a dense shrub layer at 2 to 10 feet above the ground that is one of the most critical structural components to a potential breeding habitat.

SITE PHOTOGRAPH 3

DP-2021-2347

PRINCIPE AND ASSOCIATES



View of the canopy of the Riparian Forest that is dominated by a mix of mature black willow, red willow, western cottonwood, and coast live oak trees. One of the coast live oak trees has a diameter at breast height of ± 65 inches.

SITE PHOTOGRAPH 4

DP-2021-2347

PRINCIPE AND ASSOCIATES



View of a dead coast live oak tree that occupies a sizeable area within the Riparian Forest. Overall, the Riparian Forest is mostly continuously-growing except where it is interrupted by a homeless camp that has been developed adjacent to the dead tree. This represents a substantial reduction in least Bell's vireo habitat value.

SITE PHOTOGRAPH 5

DP-2021-2347

PRINCIPE AND ASSOCIATES



View of the Riparian Forest habitat located along approximately 335 feet of the ephemeral stream located in the west central portion of the site that forms a confluence with the unnamed tributary of Warm Springs Creek.

SITE PHOTOGRAPH 6

DP-2021-2347

PRINCIPE AND ASSOCIATES



View of the understory of the ephemeral stream. It is a rather dense tangle of riparian and upland species. Species present in the understory that are important to least Bell's vireo include mule fat, arroyo willow and narrow-leaved willow.

SITE PHOTOGRAPH 7

DP-2021-2347

PRINCIPE AND ASSOCIATES



View of where the Riparian Forest opens and is no longer continuous in the eastern portion of the site. This is where it is replaced by Mulefat Scrub. Least Bell's vireos inhabit low, dense riparian growth along water or along dry parts of intermittent streams which are associated with Mulefat Scrub

SITE PHOTOGRAPH 8

DP-2021-2347

PRINCIPE AND ASSOCIATES



Least Bell's vireos use habitats that are limited to the immediate vicinity of watercourses. The onsite Mulefat Scrub is growing along the banks of the tributary. Flooding rejuvenates older stands and introduces new growth. The riparian plant succession appears to be an important influence in maintaining their habitat.

SITE PHOTOGRAPH 9

DP-2021-2347

PRINCIPE AND ASSOCIATES

