

**Gilman Springs Median and Shoulder Improvements
Project
Western Riverside County Multiple Species Habitat
Conservation Plan Consistency Analysis and
Determination of Biologically Equivalent or
Superior Preservation**

Riverside County, California
8-RIV-Gilman Springs Road
HSIPL-5956(263)

Prepared by:

ICF
49 Discovery Suite 250,
Irvine, CA 92618
Contact: Marisa Flores
(951) 493-0649

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Acronyms and Abbreviations

ARL	Additional Reserve Lands
BMP	best management practice
BSA	Biological Study Area
BUOW	burrowing owl
Caltrans	California Department of Transportation
CASSA	Criteria Area Plant Survey Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
County	County of Riverside Transportation Department
DBESP	Determination of Biologically Equivalent or Superior Preservation
FTIP	Federal Transportation Improvement Program
GIS	geographic information system
GPS	global positioning system
HMMP	habitat mitigation and monitoring plan
HUC	hydrologic unit
LAPM	Los Angeles pocket mouse
LOD	limits of disturbance
MCV	<i>A Manual of California Vegetation</i>
NEPSA	Narrow Endemic Plant Survey Area
OHWM	ordinary high water mark
P/QP	Public/Quasi-Public
project	Gilman Springs Median and Shoulder Improvements Project
RCA	Regional Conservation Authority
SARW	Santa Ana River Watershed
SBKR	San Bernardino kangaroo rat
SCAG	Southern California Association of Governments
SJWA	San Jacinto Wildlife Area
SKR	Stephens' kangaroo rat
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WRC MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan

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1.0 INTRODUCTION

This report provides the Western Riverside County Multiple Species Habitat Conservation Plan (WRC MSHCP) Consistency Analysis and the Determination of Biologically Equivalent or Superior Preservation (DBESP) for the Gilman Springs Median and Shoulder Improvements Project (project). The Consistency Analysis summarizes the biological data for the proposed project and documents the project's consistency with the goals and objectives of the WRC MSHCP. The DBESP analysis demonstrates that the proposed mitigation is biologically equivalent or superior to the existing conditions on the project site if left in current conditions. This analysis was completed by describing the functions and values of the resources pre- and post-project development and relative to mitigation implementation. Details for the DBESP are provided in Chapters 3.0 through 5.0, with a summary provided in Section 7.1.

The information and analysis provided in this document were taken from the Gilman Springs Median and Shoulder Improvements Project Natural Environment Study (Minimal Impacts) (ICF 2021) and the Gilman Springs Median and Shoulder Improvements Project Jurisdictional Delineation Report (ICF 2021).

1.1 Project Location

The project is located along the existing Gilman Springs Road within unincorporated Riverside County, California (Figures 1 and 2, Appendix A) within the U.S. Geological Survey (USGS) 7.5-minute El Casco and Lakeview quadrangles in Sections 21, 22, 26, and 27 of Township 3 South, Range 2 West, and Sections 31 and 36 of Township 3 South, Range 1 West. The project is within the jurisdiction of Caltrans District 8, which encompasses Riverside and San Bernardino Counties (USGS 1967). The proposed project is entirely located within the Plan Area of the WRC MSHCP (Dudek 2003).

1.1.1 Project Purpose and Need

The County of Riverside Transportation Department (County), in cooperation with the California Department of Transportation (Caltrans), proposes to widen the median and shoulders along Gilman Springs Road from approximately 1.29 miles north of Jack Rabbit Trail, to approximately 1 mile south of Bridge Street, and to add an approximately 6,900-foot-long passing lane in the westbound direction. The purpose of this project is to enhance safety and traffic operations by eliminating safety concerns associated with the narrow, undivided roadway, and improving driver awareness on Gilman Springs Road. The current roadway configuration on Gilman Springs Road consists of two lanes of undivided traffic and narrow shoulders, which presents safety concerns for both directions of traffic and those intending to turn onto the road from Kennedy Hills Materials, Eden Hot Springs Road/Central Avenue, and Jack Rabbit Trail/Curtis Street/Knoch Road.

1.2 Project Description

The proposed project is located on Gilman Springs Road from approximately 1.3 miles north of Jack Rabbit Trail to approximately 1 mile south of Bridge Street. The proposed project would reconstruct the existing roadway to a configuration that includes 5-foot graded shoulders, 5-foot paved shoulders with rumble strips, a 12-foot lane in each direction, and a 4-foot double yellow striped median with rumble stripes and impact resistant channelizers in the median. The project would also include one approximately 6,900-foot long passing lane in the northbound direction

from approximately 1,350 feet north of Bridge Street to approximately 1,200 feet north of Eden Springs. Additionally, the project would replace the existing reinforced concrete box culvert near the Gilman Springs Road intersection with Bridge Street with a single-span concrete slab bridge that would be used to create a wildlife crossing. An eight-foot high wildlife fence, which would also extend an additional two feet below grade, would be installed at the same location and jumpouts would be integrated into the fencing to allow wildlife to escape from the right of way. Three retaining walls, approximately 10 to 16 feet high and approximately 100 to 320 feet long, are proposed to prevent grading into an adjacent channel.

Utility relocations and adjustments would be made to power poles, gas valves, and any other utilities determined to be present. Any affected utilities would be relocated in accordance with state law and regulations and County policies. Permanent acquisitions of right of way, along with temporary construction easements, are expected to be necessary at various locations along the project alignment.

The proposed project is included in the Southern California Association of Governments' (SCAG) 2019 financially constrained Federal Transportation Improvement Program (FTIP) as project ID FTIP No. SCAG015. This project ID is for grouped projects for safety improvements. Within that listing the proposed project has the unique project ID H8-08-021.

1.2.1 Description of Permanent and Temporary Impacts

For this analysis, permanent impacts would occur as a result of grading activities from the widened shoulder, installation of rumble strips on the shoulders and median, addition of the passing lane, the wider 12-foot lanes, cut and fill of slopes, extensions of culverts and associated drainage areas, installation of the bridge at Bridge Street, installation of wildlife fencing and jumpouts, relocated utilities, slope easements, and the improvements within drainages. Maintenance, weed abatement, or fuel modifications would be performed by the County or utility providers within these permanent impact areas. Temporary impacts would occur within the right of way, staging areas, and temporary construction easements, all of which may require grubbing and light grading needed to construct and access the project. No change in grade would occur within these temporary impact areas. All temporary impacts would be returned to original elevation contours, soils decompacted/scarified, and impact areas reseeded with a native seed mix at the completion of project construction in order to ensure the biological and hydrological conditions following construction are restored (refer to measure **BIO-21** in Appendix E). Decompaction/scarification requirements would be included as contract specifications in the design plans. Refer to Figure 3 for the location of the permanent and temporary impact areas as they relate to the project design.

1.2.2 Feasibility of an Avoidance Alternative

Due to the location of conservation areas on both sides of Gilman Springs Road and the project crossing several drainage features that would need to be extended, it is not possible to construct this safety project without affecting the WRC MSHCP Conserved Lands or riparian/riverine resources; therefore, an avoidance alternative is not a feasible option to achieve the goals and objectives of the project. However, a number of features were incorporated into the project design to avoid and minimize impacts on WRC MSHCP Conservation Areas and riparian/riverine resources to the maximum extent feasible. During the project design, the disturbance footprint was narrowed across nearly the entire project length in order to minimize vegetation removal, minimize temporary work areas, and minimize grading to the maximum extent feasible. In addition, the entire roadway was shifted one foot to the northeast to reduce the impacts on Public/Quasi-Public (P/QP)

conservation lands. The remaining project footprint is as small as possible for constructability while still achieving the project's goal. Staging areas would be placed within areas that are already developed or disturbed and that do not contain sensitive resources. Permanent impacts have been designed to be minimized to the extent feasible in order to complete the project and would be mitigated and replaced at an approved location(s), and all temporarily affected areas would be restored post-construction. The details for the construction activities and restoration techniques associated with the permanent and temporary impacts associated with drainages and slopes within the conservation area is provided in Appendix B.

A new bridge structure would replace the existing culvert north of Bridge Street and would increase hydrological connectivity, increase capacity for flows, reduce scour through the stream, and enhance wildlife movement within the conservation area through the new bridge crossing. Thus, this bridge structure would provide a benefit for hydrological flows and wildlife connectivity for the proposed project.

1.3 Covered Roads

The proposed project is considered a safety and improvements project and as such is a Covered Activity under the WRC MSHCP. The proposed project would widen existing lanes and the shoulder so that vehicles have sufficient room to pull over. In addition, a passing lane in the westbound direction would allow vehicles to pass slower trucks and reduce the potential for collisions with oncoming traffic. Additional capacity or traffic volumes are not anticipated with the addition of the passing lane. Due to the potential presence of sensitive biological resources, adjacency to conserved lands, and importance of the area for wildlife movement (as described in the WRC MSHCP), the County has incorporated siting and design criteria, and general avoidance guidelines (WRC MSHCP Volume I, Section 7.5.1 and 7.5.2, Section 7.5.3 and Appendix C) to the project. Within the conservation area, Gilman Springs Road has a maximum allowable right of way width of 128-feet (WRC MSHCP Volume I, 7.2.2 and 7.3.5).

1.4 General Setting

The proposed project extends for approximately 4.4 miles in length from 1.29 miles north of Jack Rabbit Trail to 1 mile south of Bridge Street (Figure 2, Appendix A). The study area is composed of the southern end of the Badlands region as it ends at Gilman Springs Road, as well as primarily agricultural lands and grasslands associated with the California Department of Fish and Wildlife's (CDFW's) San Jacinto Wildlife Area (SJWA) and local farms. WRC MSHCP conservation lands are located throughout the study area, with P/QP lands located south of Gilman Springs Road, Existing Core H generally located south of the road, and Proposed Core 3 generally located north of the road. Both core areas have small portions traversing Gilman Springs Road. P/QP lands within the study area are entirely owned by the State of California within the SJWA. Although the SJWA is an important preserve for a variety of wildlife species including mammals and birds, the portions of the preserve within the study area are generally highly disturbed and composed of dense, tall, nonnative vegetation typical of roadway right of way. Primary biological resource management goals for SJWA pertain to Stephens' kangaroo rat (SKR) (*Dipodomys stephensi*), alkali communities, wetland communities, riparian communities, and sensitive upland communities (CDFW 2017). In addition, there are additional WRC MSHCP reserve lands owned by CDFW and the Regional Conservation Authority (RCA).

1.4.1 Land Uses in the Project Area

Much of the study area consists of open land, with some areas that are densely vegetated and show little or no signs of disturbance, some that are routinely disked by landowners, and some that are used as agricultural fields. There are only a few isolated developed properties within the study area, and these are located outside of the project footprint. All the drainages in the study area are disturbed and have been modified to accommodate drainage through the roadway right of way.

1.4.2 Soils

Soils in the study area consist of clays, loams, and sands ranging from silty clay to silt loam to fine sandy loam to rocky fine sandy loam to sandy loam to coarse sandy loam to gravelly sandy loam to loam to loamy sand (Figure 4, Appendix A). Soil series mapped within the study area include Badland, Chino, Friant, Gravel Pits, Greenfield, Hanford, Metz, Riverwash, San Emigdio, San Timoteo, and Willows (USDA/NRCS 2006).

1.4.3 Topography and Hydrology

The study area is located within the El Casco and Lakeview, California, USGS 7.5-Minute topographic quadrangles between 1,430 and 1,560 feet above mean sea level. The topography within the study area consists of foothills associated with the “Badlands” to the north and east of the study area and the relatively flat lands to the south and west of the project associated with the ephemeral Mystic Lake and various agricultural areas.

The study area is located within the San Jacinto watershed 8-digit hydrologic unit code (HUC), which covers 780 square miles and drains into the Santa Ana River and eventually into the Pacific Ocean. The study area also occurs within the Middle San Jacinto River 10-digit HUC. The watershed contains several lakes and reservoirs including Lake Elsinore, Canyon Lake, Lake Perris, and Mystic Lake. Major tributaries in the watershed are San Jacinto River, Bautista Creek, Strawberry Creek, Fuller Mill Creek, Canyon Creek, Stone Creek, Salt Creek, Poppet Creek and Potrero Creek. The headwaters of the HUC 8 San Jacinto watershed originate in the San Jacinto Mountains and pass through Riverside and Orange Counties before emptying into the Pacific Ocean.

1.4.4 MSHCP Conservation Area and Resources

The study area occurs within the Reche Canyons/Badlands Area Plan (Subunit 3: Badlands North and Subunit 4: San Jacinto Wildlife Area/Mystic Lake) and the San Jacinto Valley Area Plan (Subunit 1: Gilman Springs/Southern Badlands). Portions of the study area occur within Criteria Cells (refer to Table 1 for a list of Criteria Cells/Cell Groups). The study area crosses Existing Core H and Proposed Core 3. The study area also overlaps with P/QP conserved lands and WRC MSHCP’s Additional Reserve Lands (ARL) associated with the SJWA, which are owned and managed by CDFW, and a portion of which consists of the SKR San Jacinto/Lake Perris Core Reserve (Figure 5, Appendix A). Other conserved lands within the study area include RCA-owned lands east of Gilman Springs Road, which contribute to the WRC MSHCP’s ARL (Figure 5, Appendix A).

Table 1. WRC MSHCP Criteria Cells within the Study Area

Subunit	Criteria Cell	Cell Group
<i>San Jacinto Valley Area Plan</i>		
Subunit 1 – Gilman Springs/Southern Badlands	1882, 1979	I
	1982	J
	1763, 1978, 1881	H
<i>Reche Canyons/Badlands Area Plan</i>		
Subunit 3 – Badlands North	1478	F'
	1584	G'
	1584	G'
	1652, 1666	H'
	1762	n/a ¹
Subunit 4- San Jacinto Wildlife Area/Mystic Lake	1977	n/a ¹
	1880	n/a ¹

¹ This Criteria Cell is not part of a Cell Group.

Portions of the study area occur in the following WRC MSHCP-designated survey areas (Figures 6 through 8, Appendix A):

- Burrowing Owl Survey Area (*Athene cunicularia*; BUOW) (Figure 6, Appendix A)
- Mammal Survey Area Survey Area 2: Los Angeles pocket mouse (*Perognathus longimembris brevinasus*; LAPM) and Survey Area 3: LAPM and San Bernardino kangaroo rat (*Dipodomys merriami parvus*; SBKR) (Figure 7, Appendix A)
- Narrow Endemic Plant Survey Area (NEPSA) 3: Munz's onion (*Allium munzii*), San Diego ambrosia (*Ambrosia pumila*), many-stemmed dudleya (*Dudleya multicaulis*), spreading navarretia (*Navarretia fossalis*), California Orcutt grass (*Orcuttia californica*), and Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*) (Figure 8, Appendix A)
- Criteria Area Plant Survey Area (CASSA) 3: San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), Parish's brittlescale (*Atriplex parishii*), Davidson's saltscale (*Atriplex serenana* var. *davidsonii*), thread-leaved brodiaea (*Brodiaea filifolia*), smooth tarplant (*Centromadia pungens* ssp. *laevis*), round leaved filaree (*California macrophyllum*), Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), little mousetail (*Myosurus minimus*), and mud nama (*Nama stenocarpum*) (Figure 8, Appendix A)

The project does not occur within any other WRC MSHCP survey area.

1.4.5 Cores and Linkages

The study area is located within Proposed Core 3 and Existing Core H. These two cores also function as linkages, connecting the San Bernardino and San Jacinto Mountains to the north and east, respectively, to downstream reaches of the San Jacinto River to the south and eventually to the Santa Ana Mountains and Santa Ana River. Proposed Core 3 is one of the largest WRC MSHCP Core Areas, providing important undeveloped habitat within the Badlands for wildlife such

as Bell's sage sparrow, loggerhead shrike, cactus wren, SKR, Southern California rufous-crowned sparrow, and mountain lion. Existing Core H comprises portions of the Lake Perris State Recreation Area, SJWA, the middle reach of the San Jacinto River, private lands, and lands with pre-existing conservation agreements. It provides important habitat for bobcat, LAPM, SKR, smooth tarplant, San Jacinto Valley crowscale, spreading navarretia, California Orcutt grass, vernal barley, and thread-leaved brodiaea.

Proposed Core 3 and Existing Core H generally lie within existing conserved lands, but both are mostly outside of the study area. Linkage areas in Proposed Core 3 within the study area mainly consist of drainages exiting out of the Badlands, whereas Existing Core H within the study area consists mainly of open grasslands. Because of the presence of the SJWA, the Badlands, and agricultural lands within and abutting the study area, the area has resulted in relatively high species diversity throughout this area.

Proposed Core 3 and Existing Core H generally connect to each other via the existing roadway as well as a series of culverts under Gilman Springs Road. Wildlife movement under Gilman Springs Road is currently largely constrained by small culverts, blocked culverts, lack of wildlife fencing, and general poor visibility; most culverts within the study area are either partially buried at one or both entrances and/or have dense vegetation (often Russian thistle) immediately outside the entrance(s). The existing culvert dimensions and openness ratios were evaluated in the study area and most culverts have a very low openness ratio that does not provide any substantial or suitable movement potential for wildlife. In addition, wildlife presumably moves freely across the roadway rather than seeking out small culverts. Refer to Appendix C for the details of the existing conditions of each culvert within the study area.

2.0 VEGETATION MAPPING

2.1 Terminology

Throughout this report, the term “footprint,” “project footprint,” or limits of disturbance (LOD) refers to the area proposed for direct impacts, both permanent and temporary, by project construction or operation. The term “study area” refers to the existing Gilman Springs Road corridor, which includes the project footprint and a survey buffer. The buffer was used to provide context for the resources identified within the footprint, address potential indirect effects, and allow revisions to the footprint while maintaining an adequate representation of the biological resources present. However, an expansion of the study area along the Bridge Street Biological Study Area (BSA) was incorporated in February 2021 to address wildlife fencing that was added within the right of way of this segment. The proposed project footprint along Bridge Street is limited to the existing road right of way and the appropriate study areas that have been applied.

For the purposes of this project, study area buffers were applied to the project footprint as follows:

1. A 300-foot study area buffer was used for vegetation communities, habitat assessments, and protocol surveys for BUOW (visual extends to 500 feet);
2. A 250-foot study area was used for trapping arrays targeting LAPM and SBKR; and
3. A 100-foot buffer was used for the jurisdictional delineation, riparian/riverine analysis, and focused rare plant surveys.

2.2 Field Reconnaissance

2.3 Methods for Vegetation Mapping

Vegetation communities were classified to the Alliance level according to *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009, herein referred to as MCV). The MCV is a hierarchical system that is consistent with the National Vegetation Classification System. Alliances are characterized by the presence of diagnostic species within a range of cover values within a single plant stratum. The Alliances were determined by assessing the relative dominance of tree, shrub, and herbaceous species. Vegetation communities were mapped on a 1-inch equals 200 feet (1:2400) scale aerial photograph of the study area in the field and later digitized into a geographic information system (GIS) GeoDatabase using ArcGIS software (Figure 9, Appendix A).

2.4 Literature Review and Required Surveys

Potentially relevant reference literature, natural resource databases, and the WRC MSHCP were reviewed to determine the potential value of the study area for biological and habitat resources with special status or resource value. Focused surveys for LAPM, SBKR, and rare plants were performed in 2017, and focused surveys for BUOW were performed in 2018. Additional surveys for BUOW, rare plants, and LAPM along the Bridge Street BSA were conducted in 2021. Table 2 summarizes the survey dates and personnel for field reconnaissance and focused survey work. WRC MSHCP survey area mapping within and adjacent to the project study area is found on Figures 6 through 8, Appendix A.

Table 2. Dates and Personnel for Reconnaissance and Focused Habitat Evaluations

Date	Survey Type	Surveyors
March 2017	General reconnaissance/habitat assessment	Paul Schwartz, Phillip Richards
May–June 2017	Rare plant surveys	Lance Woolley, Phillip Richards, Cara Snellen, Kristen Klinefelter, Glen Kinoshita
July 2017	Vegetation mapping	Phillip Richards, Eric Willems
September–October 2017	LAPM and SBKR trapping	Phillip Richards, James Hickman, Kolby Olson
September 2017, February 2018	BUOW habitat assessments	Ryan Winkleman, Will Kohn, Phillip Richards
December 2017–February 2018	Delineation for federal jurisdictional waters and wetlands, CDFW streambeds, and WRC MSHCP riparian/riverine resources.	Paul Schwartz, Dennis Miller, Marissa Maggio
March 2018	BUOW focused surveys	Phillip Richards, Ryan Winkleman, Kolby Olson
May 2021 July 2021	Rare plant surveys	Shawn Johnson
June 2021	LAPM trapping	Phil Richards, Vincent Baker
June–July 2021	BUOW focused survey	Phil Richards, Vincent Baker

2.5 Vegetation Communities

Twelve vegetation communities/land cover types were mapped within the study area (Figure 9, Appendix A), which included the footprint and a 300-foot buffer. Vegetation types within the study area were mapped during the jurisdictional delineation and during the biological resource surveys assessments. Representative photos of the vegetation communities and conditions within the study area are provided in Appendix D.

Over 66 percent of the study area consists of disturbed habitat and developed areas with high percentage of nonnative and/or invasive species. These habitat/land use types primarily occur within the existing right of way or areas directly within and adjacent to Gilman Springs Road, and are heavily disturbed. Vegetation within P/QP and ARL is a combination of disturbed and nonnative grassland habitats. Brittlebush scrub and four-wing saltbush scrub north of Jackrabbit Trail provide the highest quality scrub habitat within the study area. The foothills east of the alignment also contain scrub habitat but are mostly classified as disturbed scrub habitats based on the higher cover of invasive species and less native shrub cover. This area functions as a transition between the roadway right of way and the vegetation on the hillslopes of the Badlands area.

2.5.1 Developed

Developed land cover exists throughout the BSA in several forms including paved and dirt roadways with associated road shoulders, paved and dirt parking lots, agricultural buildings, cattle

lots, vacant fields, commercial buildings, and ornamental landscaping. Commonly occurring trees and shrubs associated with these areas included Mexican fan palm (*Washingtonia robusta*), Peruvian pepper tree (*Schinus molle*), Jerusalem thorn (*Parkinsonia aculeata*), saltcedar (*Tamarix ramosissima*), athel (*Tamarix aphylla*), eucalyptus (*Eucalyptus* spp.), pine (*Pinus* sp.), and honey mesquite (*Prosopis glandulosa*). Several ruderal herbaceous plant species associated with these areas included stinknet (*Oncosiphon piluliferum*), Russian thistle (*Salsola tragus*), short podded mustard (*Hirschfeldia incana*), fiddleneck (*Amsinckia intermedia*), slim oat (*Avena barbata*), hairy leaved sunflower (*Helianthus annuus*), and prickly lettuce (*Lactuca serriola*).

2.5.2 Disturbed

Disturbed vegetation is found throughout the BSA, especially adjacent to developed areas and roadways. These areas are dominated by bare ground or disturbance-tolerant plant species. Plant species in these areas included stinknet, Russian thistle, short podded mustard, fiddleneck, barley (*Hordeum* sp.), ripgut brome (*Bromus diandrus*), foxtail brome (*Bromus madritensis* ssp. *rubens*), alkali weed (*Cressa truxillensis*), hairy leaved sunflower, five horn bassia (*Bassia hyssopifolia*), fourwing saltbush (*Atriplex canescens*), prickly lettuce, slim oat, and annual burrweed (*Ambrosia acanthicarpa*).

2.5.3 Emory's and Broom Baccharis Scrub

Emory's and broom baccharis scrub (*Baccharis emoryi* - *Baccharis sergiloides* Shrubland Alliance) is found in the northwestern portion of the BSA. The community is co-dominated by Emory's baccharis (*Baccharis emoryi*) and fourwing saltbush. Other shrubs found included brittlebush (*Encelia farinosa*), tree tobacco (*Nicotiana glauca*), Jerusalem thorn, blue elderberry (*Sambucus nigra* ssp. *caerulea*), pinebush (*Ericameria pinifolia*), and five horn bassia. Dominant herbaceous species included stinknet, Russian thistle, alkali weed, short-podded mustard, hairy leaved sunflower, fiddleneck, prickly lettuce, annual burrweed, and Chinese parsley (*Heliotropium curassavicum* var. *oculatum*). Dominant grasses included barley, slim oat, and salt grass (*Distichlis spicata*). According to Sawyer et al. (2009), this community correlates with sage scrub.

2.5.4 Fourwing Saltbush Scrub

Fourwing saltbush scrub (*Atriplex canescens* Shrubland Alliance) is found infrequently throughout the BSA and is dominated by fourwing saltbush. Other woody shrubs included California sagebrush (*Artemisia californica*), brittlebush, Jerusalem thorn, and tree tobacco. Dominant herbaceous species included stinknet, short podded mustard, Russian thistle, hairy leaved sunflower, fiddleneck, and prickly lettuce. Dominant grasses included barley and slim oat.

2.5.5 Disturbed Fourwing Saltbush Scrub

Disturbed fourwing saltbush scrub is found throughout the BSA. The community is dominated by the same species as the fourwing saltbush scrub, but with more invasive species and fewer woody native species.

2.5.6 Goodding's Willow - Red Willow Riparian Woodland and Forest

Goodding's willow - red willow riparian woodland and forest (*Salix gooddingii* - *Salix laevigata* Forest and Woodland Alliance) is found in a wash and a drainage in the northwestern portion of the BSA. The community is dominated by a low cover of black willow (*Salix gooddingii*) and other

willow species (*Salix* spp.). Other woody shrubs included saltcedar, desert willow (*Chilopsis linearis* ssp. *arcuata*), and mule fat (*Baccharis salicifolia*). Dominant herbaceous species included short podded mustard, Russian thistle, and fiddleneck.

2.5.7 Mule Fat Thickets

Mule fat thickets (*Baccharis salicifolia* Shrubland Alliance) is found in the central portion of the BSA. The community is dominated by mule fat and an occasional black willow. Dominant herbaceous species found included stinknet, Russian thistle, and fiddleneck. The dominant grass within this community was barley.

2.5.8 Brittle Bush Scrub

Brittle bush scrub (*Encelia farinosa* Shrubland Alliance) is found prominently in the southeastern half of the BSA. The community is dominated by brittlebush. Other woody shrubs included California buckwheat (*Eriogonum fasciculatum*), California sagebrush, laurel sumac (*Malosma laurina*), white sage (*Salvia apiana*), fourwing saltbush, California cholla (*Cylindropuntia californica*), coastal prickly pear (*Opuntia littoralis*), and inland scrub oak (*Quercus berberidifolia*). Dominant herbaceous species included stinknet, Russian thistle, short podded mustard, fiddleneck, and prickly lettuce. Dominant grasses included barley, ripgut brome, foxtail brome, and slim oat.

2.5.9 Disturbed Brittle Bush Scrub

Disturbed brittle bush scrub is found in the southeastern portion of the BSA. The community is dominated by the same species as the disturbed brittle bush scrub, but with more invasive species and fewer woody native species.

2.5.10 Scale Broom Scrub

Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance) is found in a wash at the southeastern end of the BSA. The community is co-dominated by California broomsage (*Lepidospartum squamatum*) and brittlebush. Other woody shrubs included California buckwheat, California sagebrush, laurel sumac, white sage, and fourwing saltbush. Dominant herbaceous species found here included stinknet, Russian thistle, short podded mustard, fiddleneck, and prickly lettuce. The dominant grass was slim oat.

2.5.11 Wild Oats and Annual Brome Grasslands

Wild oats and annual brome grasslands (*Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance) is found in the central portion of the BSA. The community is co-dominated by barley, ripgut brome, and foxtail brome. Slim oat is also supported, but less frequently. This community also supports other nonnative and invasive herbaceous species, including Russian thistle, fiddleneck, prickly lettuce, short podded mustard, and stinknet.

2.5.12 Tamarisk Thickets

Tamarisk thickets (*Tamarix* spp. Shrubland Semi-Natural Alliance) is found in the central portion of the BSA. This community is characterized by dense stands dominated with saltcedar and athel.

Table 3 lists the total amount of each vegetation communities and land use type within the study area.

Table 3. Vegetation Communities/Land Use Types Occurring within Study Area

Vegetation Community/Land Use Types	Total within the Study Area (acres)
Developed	65.13
Disturbed	209.94
Emory's and Broom Baccharis Scrub	15.28
Fourwing Saltbush Scrub	6.58
Disturbed Fourwing Saltbush Scrub	41.05
Goodding's Willow – Red Willow Riparian Woodland and Forest	1.68
Mule Fat Thickets	1.12
Brittle Bush Scrub	32.89
Disturbed Brittle Bush Scrub	3.21
Scale Broom Scrub	0.36
Wild Oats and Annual Brome Grasslands	41.53
Tamarisk Thickets	1.61
Total¹	420.38

¹ Due to rounding, the total sum is slightly different than what would be expected by adding the individual acreages above.

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3.0 RIPARIAN/RIVERINE RESOURCES (SECTION 6.1.2)

This section describes the riparian/riverine resources and protection of species associated with riparian/riverine areas and vernal pools in WRC MSHCP Volume I, Section 6.1.2.

WRC MSHCP Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools*, requires an assessment of a project's potentially significant effects on riparian/riverine areas, vernal pools, and fairy shrimp habitat. These resources are defined as the following:

- **Riparian/Riverine Areas** are lands that contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or depend on soil moisture from nearby freshwater sources, or areas with freshwater flow during all portions of the year. These areas should contain biological functions and values that contribute to downstream habitat values for covered species inside the WRC MSHCP Conservation Area.
- **Vernal Pools** are seasonal wetlands that occur in depression areas that have wetland indicators of all three parameters (i.e., soils, vegetation, hydrology) during the wetter portion of the growing season but normally lack wetland indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetland plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. To determine whether vernal pools are present, historical aerial imagery, vegetation, soils, drainage characteristics, land uses, weather, and hydrologic records were reviewed, and field conditions were assessed incidentally during other focused surveys to confirm a lack of suitable habitat.
- **Fairy Shrimp Habitat** is habitat that is suitable for Riverside fairy shrimp (*Streptocephalus woottoni*), vernal pool fairy shrimp (*Branchinecta lynchi*), or Santa Rosa fairy shrimp (*Linderiella santarosae*). It also includes ephemeral pools created by tire ruts and stock ponds and/or features determined appropriate by a qualified biologist.

With the exception of wetlands created for the purpose of providing wetlands habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas demonstrating characteristics as described above which are artificially created are not included in these definitions.

WRC MSHCP Section 6.1.2 requires surveys, along with avoidance and minimization measures incorporated in accordance with the species-specific objectives, when riparian/riverine areas provide suitable habitat for riparian birds and/or fairy shrimp and a project would not avoid the areas.

3.1 Riparian/Riverine

3.1.1 Methods

The study area (100-foot buffer) was evaluated for riparian/riverine areas during the jurisdictional delineation work between December 2017 and February 2018 (ICF 2021). In this report, riparian/riverine areas roughly equate to areas considered riparian vegetated (riparian) and streambed (riverine) under CDFW's jurisdiction. Historical aerial imagery and topographic maps were also reviewed to determine where historical flows occur. Riparian/riverine resources were

and mapped where access was possible using a Trimble R1 GNSS sub-meter receiver paired with the ArcGIS Collector application running on an iPad (Figure 10, Appendix A). If no access was possible, then riparian/resources were viewed from the nearest accessible vantage point where possible and delineated on aerial photographs and digitized in GIS. Swales were not included in this report's assessment of riparian/riverine resources, as they did not contain riparian vegetation, did not show any indications of regular flow that would form either an ordinary high water mark (OHWM) or a streambed and bank, there was no indication that there were historical flows in the location based on a review of historic imagery and USGS maps, and generally did not contain habitat or biological functions and values that would contribute to the goals of the WRC MSHCP or the wellbeing of covered species in the Conservation Area.

3.1.2 Existing Conditions and Results

This section describes the vegetation communities that fall within areas considered riparian/riverine under the WRC MSHCP and are listed in Table 4. Many of these vegetation types are not typically considered riparian/riverine resources due to upland characteristics (e.g., four-wing saltbush scrub), but they were found to contain sparse riparian vegetation and/or to constitute suitable riverine habitat as defined under the WRC MSHCP.

Table 4. WRC MSHCP Riparian/Riverine Resources within the Study Area (100 feet)

Riparian/Riverine Resource Vegetation Communities	Riparian	Riverine
Brittle Bush Scrub	--	<0.01
Developed	0.06	0.18
Disturbed	0.02	1.04
Disturbed Fourwing Saltbush Scrub	0.19	2.15
Disturbed Brittle Bush Scrub	--	0.08
Emory's and Broom Baccharis Scrub	0.03	0.01
Fourwing Saltbush Scrub	--	0.11
Goodding's Willow – Red Willow Riparian Woodland and Forest	0.55	--
Scale Broom Scrub	--	< 0.01
Tamarisk Thickets	--	0.02
Total¹	0.85	3.59

¹ Due to rounding error, the total sum is slightly different than what would be expected by adding the individual acreages.

There were 23 drainage features mapped within the study area (100-foot buffer) during the jurisdictional delineation, of which 19 features were determined to qualify as riparian/riverine areas (Figure 10 in Appendix A). Of these, 5 features include both riparian and riverine habitat, 1 includes only riparian habitat, and 13 include only riverine habitat. These features variably provide riparian vegetation, have ephemeral riverine flows, provide functions and values either instream or downstream to Mystic Lake, or are natural features. Although most of the riparian habitat mapped in the study area is sparsely vegetated, these areas are of higher function and value to the region due to the scarcity of riparian vegetation resources in the vicinity. The remaining four features (Feature 5, 8, 12, and 13) that do not qualify as riparian/riverine are all artificial (man-made) features, have no clear drainage or topographical lowpoint upstream or downstream of a culvert crossing, have no functions or values for wildlife, do not make any contribution to downstream

habitat values for covered species or Mystic Lake, and have no function as, or connections to, wetland habitats (RCA 2007). The ephemeral inputs to each of these four features originates from road runoff directed to culverts under Gilman Springs Road, then sheetflow on the downstream side of the roadway.

Ecological Processes Functions and Values Assessment

Riparian/riverine resources provide important hydrological and biological functions and values and support a wide variety of species, such as mammals, birds, fish, amphibians, reptiles, and plants, many of which are rare and special-status species. Functions and values for species include provision of water, food, shelter, microclimates, and nesting/breeding habitat. Riparian/riverine systems also serve as important buffers that maintain and protect water quality and hydrologic function by trapping sedimentation and toxicants, mitigating flood flows and velocities, reducing erosion and soil loss, increasing water storage and infiltration rates, improving stream and ground water quality, and reducing disturbance associated with flood events. These systems also provide valuable connectivity functions for a variety of upland and wetland species, which enables wildlife movement, migration, and genetic flow between populations.

A total of 23 drainage features were mapped within the study area. The majority of the drainage features observed within the study area originate from the foothills north and east of Gilman Springs Road. These drainage features traverse south and west before entering the relatively flat agricultural areas or the dry Mystic Lake area where many features cease to exhibit indicators of an OHWM and/or bed and bank. Many swales were observed in the study area, some of which were not apparent on aerial imagery and existed only for short lengths on the north and east side, but not south and west, of Gilman Springs Road. Most of these swales appeared to be defined features just upslope, or north and east of the study area, but then had no defined OHWM or bed and bank as they enter or pass through the study area. Due to the abundance of these types of very small watershed, low conveyance sheetflow features, and the presence of many culverts suggesting the need for storm water conveyance, features associated with culverts were nonetheless noted and mapped during the jurisdictional delineation regardless of the presence of OHWM and/or bed and bank to confirm that they were not missed during the delineation.

Based on the investigation and analysis documented in the jurisdictional delineation, approximately 3.59 acres of streambed subject to CDFW jurisdiction and 0.85 acre of CDFW jurisdictional riparian vegetation were observed within the study area, for a total of 4.44 acres of CDFW jurisdiction equivalent to riparian/riverine resources within the study area. This total does not include swales that would not be jurisdictional under CDFW and, similarly, would not be expected to qualify as riparian/riverine resources as previously explained.

The riparian/riverine resources in the ephemeral drainages in the study area provide limited important functions and values to plants and wildlife:

- **Hydrologic regime:** The hydrologic regime within the study area consists of ephemeral, seasonal surface flows. All drainages and associated culverts within the study area are dry for most of the year and thus, when unblocked, provide some limited and small-size wildlife passage under the road when flowing water is not present. However, flows are increased during the rainy season and cause scour within some of the larger structures such as north of Jackrabbit Trail and north of Bridge Street. The hydrologic regime may limit wildlife movement during, and for a short period following, precipitation events.

- **Sediment trapping and transport:** Sediment trapping and transport relates to the ability of a feature to retain or transport sediment that is deposited from upstream. In this case, the flow within the study area is ephemeral and typically low volume in the small drainages. Larger drainages convey larger volumes through the study area. Because of the linear aspect of most culverts under the roadway, as well as the low-density vegetation and topographical relief within each drainage, sediment trapping is low and most sediment is transported downstream toward the lake following large precipitation events.
- **Toxicant trapping:** As a result of generally high levels of sediment transport, as well as a lack of wetlands, pools, and dense vegetation to collect toxins, the study area is unlikely to have high levels of toxicant trapping. Most roadway toxins and roadway trash and debris are thought to be transported downstream following storm events.
- **Wildlife habitat:** The drainages within the study area provide limited wildlife habitat. They are generally dry and vegetated with sparse shrubs/trees or grasses and weeds. The vegetation that is present, which includes patches of riparian vegetation, provides limited functions and values for nesting, foraging, roosting, shelter, and rearing of wildlife species. In addition, all the drainages are associated with, and in close proximity to, the roadway culvert system as well as receive periodic roadway maintenance. As previously mentioned, the existing culverts in the study lack suitable habitat or lack the appropriate crossing openness to encourage wildlife movement between both sides of Gilman Springs Road (refer to Appendix C).

3.1.3 Impacts

A total of 1.20 acres (0.58 acre permanent and 0.62 acre temporary) of riparian/riverine areas would be affected through disturbance and/or removal of existing vegetation (Table 5). Permanent impacts on riparian/riverine areas would include the removal of existing vegetation and encroachment into the plant community, including in riparian vegetation for grading of the permanent shoulder widening and associated cut/fill, and could result in potential temporary or permanent loss of foraging and/or nesting habitat for the eight WRC MSHCP riparian/riverine species that occur within the study area. Temporary direct impacts as a result of the project would include clearing and grubbing of the temporary construction areas and easements, incidental disturbances adjacent to construction areas (edge effects), equipment staging, and temporary construction access routes. In addition to direct temporary loss of habitat, the temporary removal of riparian habitat would also result in a temporal loss of biological functions and values during project construction and the restoration phase. Nonetheless, no impacts on listed riparian birds, fish, vernal pools, or fairy shrimp are anticipated because of the lack of any suitable habitat. Refer to Figure 10 (provided in Appendix A) for locations of the riparian/riverine resources that occur within the project footprint.

Table 5. Impacts on Riparian/Riverine Areas

Riparian/Riverine Vegetation Communities	Acreage of Impacts on Riparian/Riverine Areas in the Study Area						Total Impact
	Permanent			Temporary			
	Riparian	Riverine	Total	Riparian	Riverine	Total	
Brittle Bush Scrub	--	--	--	--	--	--	0.00
Developed	--	0.06	0.06	--	0.05	0.05	0.11
Disturbed	< 0.01	0.04	0.04	--	0.09	0.09	0.13
Disturbed Brittle Bush Scrub	--	<0.01	<0.01	--	0.02	0.02	0.02
Disturbed Fourwing Saltbush Scrub	<0.01	0.38	0.38	0.03	0.39 ¹	0.42	0.81
Emory's and Broom Baccharis Scrub	<0.01	0.01	0.01	<0.01	< 0.01	<0.01	0.01
Fourwing Saltbush Scrub	--	--	--	--	--	--	--
Goodding's Willow – Red Willow Riparian Woodland and Forest	0.07	--	0.07	0.04	--	0.04	0.10
Scale Broom Scrub	--	--	--	--	--	--	--
Tamarisk Thickets	--	0.02	0.02	--	<0.01	<0.01	0.02
Subtotals Total¹	0.07	0.51	0.58¹	0.07¹	0.55	0.62¹	1.20¹

¹ Due to rounding error, the total sum is slightly different than what would be expected by adding the individual acreages.

Indirect impacts on riparian/riverine resources may be caused by construction activities on riparian habitat found adjacent to the project footprint, which could lead to temporary degradation of riparian habitat and water quality if water is present at the time of construction. The use of construction equipment at the edge of the project footprint could also damage adjacent native vegetation where present and the project would indirectly affect riparian/riverine areas within Existing Core H. Smooth tarplant located adjacent to the footprint may be indirectly affected by construction activities, such as increased dust, fire risk, and introduction of invasive plants causing habitat degradation and edge effects on the species. Wildlife movement/connectivity, behavior, and breeding may be adversely affected by increased human presence, nighttime lighting, and construction noise and vibrations. However, these impacts are expected to be greatly reduced with implementation of the avoidance and minimization efforts described below and provided in Appendix E.

Because the project is only adding a passing lane for faster vehicles to bypass slower trucks and widening of the existing lane and shoulder, there would be no increase in vehicle capacity or traffic volume because the total input and output vehicles through the alignment would remain unchanged; therefore, there would not be additional indirect impacts in the form of habitat degradation through increased air pollution, litter, and noise. The wider roadbed and additional passing lane would create a less permeable surface by increasing the amount of paved roadbed and, thus, could increase surface flows into storm drain facilities and riparian/riverine features. Drainage design and water quality best management practices (BMPs) proposed and required as

part of the project would reduce the amount of roadway pollutants entering riparian/riverine areas and federal and state jurisdictional waters.

3.1.4 Mitigation

The direct impacts on riparian/riverine resources would require replacement that is biologically equivalent or superior to that which is removed. Implementation of avoidance and minimization measures **BIO-1** through **BIO-6** and mitigation measure **BIO-19** in Appendix E, and those elements that are required for compliance with the Urban/Wildlands Interface Guidelines (Section 6.1.4 of the WRC MSHCP) (discussed in Section 8.4) would ensure that the proposed project is consistent with the WRC MSHCP in this regard for impacts on riparian/riverine areas.

A compensatory ratio of no less than 3:1 for permanent riparian direct impacts and minimum 1:1 for temporary riparian direct impacts would provide equivalent preservation (refer to measure **BIO-19** in Appendix E). Mitigation would consist of purchasing re-establishment or establishment credits¹ within the Santa Ana Watershed through the Riverpark Mitigation Bank, permittee-responsible mitigation, or other agency-approved mitigation provider. Temporary impacts on riparian habitat would be mitigated in kind at their current locations via onsite restoration at a minimum 1:1 ratio. Onsite restoration would occur upon completion of construction and would consist of returning affected areas to original contour grades, decompacting/scarifying the soil, and reseeding with a native seed mix (**BIO-21**).

Mitigation would consist of purchasing offsite riparian/riverine resource lands through the Riverpark Mitigation Bank, permittee-responsible mitigation, or other agency-approved mitigation provider. The Riverpark Mitigation Bank would permanently preserve and manage aquatic resources that support a diversity of sensitive plants and animals (including smooth tarplant) and serves as compensatory mitigation for WRC MSHCP riparian/riverine resources. Until the specific credits are identified and purchased, and depending on the specific types of credits available at that time, the ecological increases in functions and values through the Riverpark Mitigation Bank, permittee-responsible mitigation, or other agency-approved mitigation provider can only be generalized. Once the project environmental document has been approved and the project permits have been issued, the mitigation funding would be available, and the mitigation provider and specific credit type and location of the mitigation lands would be finalized. Mitigation purchase would occur prior to project construction impacts.

3.2 Vernal Pools & Fairy Shrimp

3.2.1 Methods

A field evaluation for vernal pools and ponding was performed in the spring of 2018 on four separate visits within 4 days of local rain events ranging from 0.31 to 0.82 inch of rain per event, and no ponded water was found anywhere in the study area during any of the four post-rain evaluations, including in soils that are otherwise associated with vernal pools (i.e., Willows-Traver-Domino soils). Surface layer of silty soils, presence of algal crusts, and surface cracking are

¹ If establishment and/or re-establishment credits are unavailable, permittee-responsible mitigation or other mitigation area provider may be used, or enhancement may be used instead. However, the mitigation ratio for permanent impacts may be higher and as approved by the agencies. That said, enhancement is not the preferred mitigation type.

examples of conditions surveyed for during the habitat evaluation. Vegetation within the study area was also documented to determine whether vernal pool-associated plants are present.

The study area was evaluated for potential suitable habitat for fairy shrimp and followed the U.S. Fish and Wildlife Service (USFWS) *Revised USFWS Survey Guidelines for Listed Large Branchiopods* (USFWS 2015). Field evaluations for ponding were conducted from 2 to 4 days after four notable local rain events in March 2018 ranging from 0.31 to 0.82 inch of rain, with no ponding observed in the study area in any occasion.

3.2.2 Existing Conditions and Results

Vernal Pools: Soils in the study area are alluvial and well-drained sandy and sandy loams (Figure 4, Appendix A) and, therefore, are not conducive to support ponding at a duration necessary for fairy shrimp to occur (i.e., at least 30 days). Therefore, based on the persistent lack of ponded water in the study area following rain events, vernal pools were determined to be absent within the study area and formal mapping of vernal pools was not conducted for this project. Likewise, fairy shrimp were also determined to be absent based on a lack of suitable habitat to support ponded water, and focused surveys were not conducted. It was determined during field studies for other resources that the study area does not contain habitat that would support vernal pools. **Vernal pools are not addressed further in this document as no impacts would occur.**

Vernal Pool/Seasonal Pond Invertebrates. No onsite habitat is present for Riverside fairy shrimp and vernal pool fairy shrimp, both of which are listed as WRC MSHCP riparian/riverine-dependent species, nor for Santa Rosa Plateau fairy shrimp, listed as a species that benefits from riparian/riverine habitat. The site is outside of the range of Santa Rosa Plateau fairy shrimp, and the onsite habitat does not support ponded water long enough to support Riverside fairy shrimp (typically at least 60 days of continuous ponding) or vernal pool fairy shrimp (typically 30–40 days of ponding). Clay soils are mapped west of the study area north of Bridge Street; however, no ponding occurred in these areas. No protocol surveys were conducted due to lack of seasonal depressions, stock ponds, basins, road ruts, or other features which could potentially hold standing water. Therefore, these three species are considered absent from the study area. **Vernal pool/seasonal pond invertebrates are not addressed further in this document as no impacts would occur.**

3.3 Riparian Birds

3.3.1 Methods

The study area was reviewed for suitable habitat for riparian birds but lacked the suitable riparian habitat with an appropriate structure and function that would support least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). Because of the lack of suitable habitat for least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo within the study area, focused surveys for these species were not conducted for this project.

3.3.2 Existing Conditions and Results

Listed Riparian/Riverine Birds. Least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo are all state- and federally listed species and WRC MSHCP Section 6.1.2 riparian/riverine-dependent species. Southwestern willow flycatcher is also a planning species for

Existing Core H. Riparian/riverine habitat within the 500-foot study area is insufficient to support these species. The riparian vegetated areas identified within the study area are composed only of a few scattered mature trees and is not contiguous with or near a larger riparian corridor. The riparian vegetation lacks the structure and density needed to support listed riparian birds, including for least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo. Therefore, riparian/riverine habitat in the study area has no functions and values for listed riparian birds. Due to the lack of suitable habitat, focused surveys were not conducted and these species are considered absent from the study area. **Listed riparian bird species are not addressed further in this document as no impacts would occur.**

3.4 Other Section 6.1.2 Species

Non-Listed Riparian/Riverine Birds. Separate from the avian species discussed above, the following non-listed riparian/riverine-dependent avian species and/or WRC MSHCP avian planning species would benefit from preservation of onsite riparian/riverine resources and would have a potential to occur, or were confirmed present in the project study area: Cooper's hawk (*Accipiter cooperii*), northern harrier (*Circus hudsonius*), tree swallow (*Tachycineta bicolor*), white-tailed kite (*Elanus leucurus*), MacGillivray's warbler (*Geothlypis tolmiei*), Nashville warbler (*Oreothlypis ruficapilla*), Wilson's warbler (*Cardellina pusilla*), and yellow warbler (*Setophaga petechia*). Cooper's hawk, northern harrier, tree swallow, white-tailed kite, Nashville warbler, and yellow warbler were incidentally observed during project surveys. Onsite riparian/riverine areas would not provide suitable nesting habitat to support other riparian/riverine-dependent avian species listed in WRC MSHCP Section 6.1.2 or listed as core area or plan area subunit planning species. Riparian/riverine areas within the study area could potentially be used by foraging non-listed riparian birds, such as yellow warbler, that may migrate or disperse through the study area. The excluded species for which there is no onsite habitat include American bittern (*Botaurus lentiginosus*), black-crowned night-heron (*Nycticorax nycticorax*), breeding black swift (*Cypseloides niger*), double-crested cormorant (*Phalacrocorax auritus*), downy woodpecker (*Picoides pubescens*), breeding Lincoln's sparrow (*Melospiza lincolni*), osprey (*Pandion haliaetus*), purple martin (*Progne subis*), tricolored blackbird colonies (*Agelaius tricolor*), white-faced ibis (*Plegadis chihi*), yellow-breasted chat (*Icteria virens*), and bald eagle (*Haliaeetus leucocephalus*). Lincoln's sparrow was observed on site but does not breed in this area, and likewise a colony of tricolored blackbirds was found foraging on site, but no breeding habitat is present anywhere within the study area, and preservation of riparian/riverine habitat on the site would not affect either of these species. **Because no equivalency analysis is required for any of these species, non-listed riparian/riverine birds are not addressed further in this document.**

Amphibians. Riparian/riverine habitat in the study area is not suitable to support amphibians listed in Section 6.1.2 of the WRC MSHCP as being dependent on riparian/riverine resources or benefitting from these resources. These species include arroyo toad (*Anaxyrus californicus*), which is a WRC MSHCP planning species under Subunit 1 of the San Jacinto Valley Area Plan, southern mountain yellow-legged frog (*Rana muscosa*), and California red-legged frog (*Rana draytonii*), all of which are state- and/or federally listed species, and coast range newt (*Taricha torosa*). However, the study area does contain suitable habitat to support western spadefoot (*Spea hammondi*), which is listed as a planning species under Existing Core H and is listed in Section 6.1.2 of the WRC MSHCP as benefitting from riparian/riverine resources. However, this species is fully covered under the WRC MSHCP. **Amphibians are not addressed further in this document.**

Reptiles. The only reptile that is listed as benefitting from the preservation of riparian/riverine resources in WRC MSHCP Section 6.1.2 is western pond turtle (*Emys marmorata*). The onsite riparian/riverine habitat in the study area is not suitable for this species. **Reptiles are not addressed further in this document.**

Fish. There is no suitable habitat to support either Santa Ana sucker (*Catostomus santaanae*) or arroyo chub (*Gila orcuttii*), both of which are listed in WRC MSHCP Section 6.1.2 as dependent on riparian/riverine resources or as a species that benefits from them, respectively. Focused surveys were not conducted, and these species are considered absent from the study area. **Fish are not addressed further in this document.**

Plants. Brand's phacelia, California Orcutt grass (*Orcuttia californica*), California black walnut (*Juglans californica*), Coulter's matilija poppy (*Romneya coulteri*), Engelmann oak (*Quercus engelmannii*), Fish's milkwort (*Polygala cornuta* var. *fishiae*), graceful tarplant (*Holocarpha virgata* ssp. *elongata*), lemon lily (*Lilium parryi*), Mojave tarplant (*Deinandra mohavensis*), mud nama (*Nama stenocarpum*), ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*), Orcutt's brodiaea (*Brodiaea orcuttii*), Parish's meadowfoam (*Limnanthes alba* ssp. *parishii*), prostrate navarretia (*Navarretia prostrata*), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), San Miguel savory, Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), slender-horned spineflower (*Dodecahema leptoceras*), smooth tarplant (*Centromadia pungens* ssp. *laevis*), spreading navarretia (*Navarretia fossalis*), thread-leaved brodiaea (*Brodiaea filifolia*), vernal barley (*Hordeum intercedens*), California muhly (*Muhlenbergia californica*), Coulter's goldfields, Davidson's saltscale, little mousetail, Parish's brittlescale, and Wright's trichocoronis are all listed in Section 6.1.2 of the WRC MSHCP as species that are dependent on riparian/riverine habitats or benefit from these areas.

Coulter's goldfields, Davidson's saltscale, San Jacinto Valley crownscale, spreading navarretia, vernal barley, Wright's trichocoronis, Nevin's barberry (*Berberis nevinii*), California Orcutt grass, smooth tarplant, and thread-leaved brodiaea are all also listed as WRC MSHCP planning species. Although the study area could provide functions and values for many of these species, based on surveys conducted for narrow endemic plant species and criteria area plant species as listed in Chapter 4.0 and Section 5.1 of this report, no rare plants, planning species plants, or WRC MSHCP Section 6.1.2 riparian/riverine plants are present within the 100-foot study area of Gilman Springs Road except smooth tarplant. A total of 355 smooth tarplant individuals were recorded within the 100-foot study area (Appendix A, Figure 8). These were present in two locations: in a scattered grouping west of Gilman Springs Road (Figure 8, Sheet 2), and in a condensed group southwest of the road (Figure 8, Sheet 8). Both occurrences were located outside of the CASSA and, therefore, "take" conditions do not apply and it is not subject to an equivalency analysis. However, since smooth tarplant is a riparian/riverine species, an evaluation of the long-term conservation value is provided in Chapter 6.2. **Additional analysis for smooth tarplant is provided in Section 6.2. There is a potential for several of these species to be present within the Bridge Street study area. Refer to Chapter 4.0 and Section 5.1 for additional information.**

Amphibians. Riparian/riverine habitat in the study area is not suitable to support amphibians listed in Section 6.1.2 of the WRC MSHCP as being dependent on riparian/riverine resources or benefitting from these resources. These species include arroyo toad (*Anaxyrus californicus*), which is a WRC MSHCP planning species under Subunit 1 of the San Jacinto Valley Area Plan, southern mountain yellow-legged frog (*Rana muscosa*), and California red-legged frog (*Rana draytonii*), all of which are state- and/or federally listed species, and coast range newt (*Taricha torosa*). However, the study area does contain suitable habitat to support western spadefoot (*Spea hammondi*), which is listed as a planning species under Existing Core H and is listed in Section

6.1.2 of the WRC MSHCP as benefitting from riparian/riverine resources. The project is not within the WRC MSHCP Amphibian Species Survey Area, and there are no other amphibian planning species for the study area. **Amphibians are not addressed further in this document.**

4.0 NARROW ENDEMIC PLANT SPECIES (SECTION 6.1.3)

The proposed project occurs within the NEPSA 3 requiring habitat evaluations for Munz’s onion, San Diego ambrosia, many-stemmed dudleya, spreading navarretia, California Orcutt grass, and Wright’s trichocoronis, and subsequent focused studies are required if suitable habitat is present.

4.1 Methods

Focused rare plant surveys were conducted from May through June 2017 in accordance with protocols established by USFWS (2000), California Native Plant Society (CNPS) (2001), and CDFW (CDFG 2009). Prior to conducting the 2017 surveys, ICF biologists visited reference sites on May 11, 2017 near the study area to verify the phenology and detectability of target special-status plant species. Reference site locations were attained from the California Natural Diversity Database (CDFW 2021). Surveys were completed by walking meandering transects throughout suitable habitat within the study area, which included the project footprint and a 100-foot buffer. The distance between transects was adjusted when necessary to provide adequate coverage and to account for ground surface visibility, terrain, vegetation density, and access. Surveys were conducted where the study area overlapped with NEPSA 3 area, as shown in Figure 8 of Appendix A.

Determinations of the presence of suitable habitat for special-status plants were based on each species’ natural life history requirements, which includes hydrology, existing habitat, tolerance to disturbance, elevation range, soil types, current land uses, and/or disturbances. Focused survey methods were derived from the standardized guidelines issued by USFWS (2000), CDFW (CDFG 2000, 2009), and CNPS (2001) and were consistent with WRC MSHCP requirements for narrow endemic plant species, as described in Section 6.1.3, *Protection of Narrow Endemic Plant Species*, of the WRC MSHCP. Surveys were completed by walking meandering belt transects throughout suitable habitat. The distance between transects was adjusted when necessary to provide adequate coverage and account for ground surface visibility, terrain, vegetation density, and access. Surveys were targeted within unique portions of the study area where microhabitats had increased potential to support special-status species. The rare plant survey was conducted during the appropriate blooming season for all special-status plant species potentially occurring within the study area that require flowers for detection; the few plants whose blooming period is outside the timeframe when the survey was performed are conspicuous perennials that would have been detectable even while not in flower. Table 6 provides the personnel and dates for the special-status plant focused surveys.

Table 6. Personnel and Date for the Special-Status Plants Focused Survey

Date	Survey Area	Survey Type	Surveyors
5/11/2017	Gilman Springs BSA	Reference site visit and special-status plant survey	Phillip Richards, Lance Woolley
5/12/2017	Gilman Springs BSA	Special-status plant survey	Kristen Klinefelter, Phillip Richards, Cara Snellen, Lance Woolley
6/6/2017	Gilman Springs BSA	Special-status plant survey	Glen Kinoshita, Kristen Klinefelter, Lance Woolley

Date	Survey Area	Survey Type	Surveyors
5/4/2021	Bridge Street BSA	Special-status plant habitat assessment and focused survey	Shawn Johnston
7/20/2021	Bridge Street BSA	Special-status plant survey	Shawn Johnston

4.2 Existing Conditions/Results

During habitat assessments for NEPSA 3 species, it was determined suitable habitat was present for San Diego ambrosia. Focused surveys for San Diego ambrosia were negative and this species is determined to be absent. The study area lacked suitable habitat for all other NEPSA species, therefore no additional studies were performed for these species.

4.3 Impacts

No impacts on other special-status plant species would occur along Gilman Springs Road, as there are no species determined to be present. There is a potential risk that generation of dust, increased risk of fire, and increases in invasive species or toxics in areas outside of the right of way could reduce habitat suitability for special-status plants. However, measures identified in Section 4.4 would ensure these indirect effects would not occur.

4.4 Mitigation

Implementation of minimization measures and BMPs required under the WRC MSHCP (**BIO-1, BIO-5, BIO-8** through **BIO-15**) are described in full in Appendix E and would ensure that there are no indirect effects on special-status plants.

5.0 ADDITIONAL SURVEY SPECIES (SECTION 6.3.2)

The study area occurs within the WRC MSHCP CASSA 3, BUOW Survey Area, and Mammal Survey Area for LAPM and SBKR. The project site does not occur within an amphibian survey area. The methods and results of these studies are provided below. In addition, a description of other WRC MSHCP planning species is provided in Section 5.4.

5.1 Criteria Area Species Survey Area – Plants

The footprint is also within CASSA 3, for which evaluations and focused surveys are required for San Jacinto Valley crownscale, Parish's brittlescale, Davidson's saltscale, thread-leaved brodiaea, smooth tarplant, round leaved filaree, Coulter's goldfields, little mousetail, and mud nama where suitable habitat is present.

5.1.1 Methods

The survey methods for determining presence/absence of criteria area plant species is the same as the rare plant focused survey methodology in Section 4.1 and during the same time period. Surveys were conducted where the study area overlapped with CASSA 3, as shown in Figure 8 of Appendix A.

5.1.2 Existing Conditions/Results

A total of 355 smooth tarplant plants were observed within or immediately outside of the 100-foot study area. These were present in two locations: in a scattered grouping west of Gilman Springs Road between stations 379+00 and 382+00, and in a condensed group southwest of the road between stations 258+00 and 260+00 (Figure 8 of Appendix A). All occurrences were located outside of the CASSA, as shown in Figure 8 of Appendix A. Additional details for this species are provided in Section 6.2 as it pertains to the MSHCP. No other special-status CASSA plants were found in the study area.

5.1.3 Impacts

To date, smooth tarplant was only found outside of the CASSA (see Figure 8, Sheets 2 and 8 in Appendix A) and impacts on this species are fully covered. Additional discussion for smooth tarplant as it pertains to the WRC MSHCP is provided in Section 6.2. No impacts on other special-status plant species would occur along Gilman Springs Road as there are no species present that could constrain the proposed project. There is a potential risk that generation of dust, increased risk of fire, and increases in invasive species or toxics in areas outside of the right of way would reduce habitat suitability for special-status plants. However, measures identified below would ensure these indirect effects do not occur.

5.1.4 Mitigation

Implementation of minimization measures and BMPs required under the WRC MSHCP (**BIO-1**, **BIO-5**, **BIO-8** through **BIO-15**) are described in full in Appendix E and would ensure that there are no indirect effects on special-status plants.

5.2 Burrowing Owl

BUOW is a non-listed WRC MSHCP planning species for the Reche Canyon/Badlands Area Plan Subunit 4, the San Jacinto Valley Area Plan Subunit 1, and Existing Core H, and the project is also located within the WRC MSHCP BUOW Survey Area (Figure 6, Appendix A).

5.2.1 Methods

Focused surveys for BUOW were conducted in March 2018 in all areas with the exception of the Bridge Street study area. The focused surveys in the Bridge Street area were conducted in June/July 2021. The project overlaps with the WRC MSHCP BUOW Survey Area; as such, surveys were conducted only within the boundaries of the WRC MSHCP-designated survey area for this species, which includes the entire 500-foot study area except for the Quail Ranch Golf Course and a small area immediately to the east that is also excluded from the WRC MSHCP-designated survey area.

The habitat evaluation identified potential suitable habitat at a broad landscape level. Suitable habitat was identified by the presence of low vegetation cover, presence of potential burrows, perch sites, and/or BUOW sign such as scat, tracks, pellets, or feathers (RCA 2006). Open lands that were sparsely vegetated with native or nonnative vegetation were considered potentially suitable. Areas with no suitable habitat, including fully developed parcels and areas with dense, tall vegetation or with dense, matted grasses covering all open ground and lacking burrows or burrow surrogates, were deemed unsuitable and excluded from further assessment.

Focused surveys for BUOW were performed in areas determined to be potentially suitable habitat (Figure 6, Appendix A). BUOW surveys followed a two-step protocol (RCA 2006):

- Map and search for potential BUOW burrows and BUOW sign within the WRC MSHCP BUOW Survey Area portions of the study area.
- Perform a four-visit focused survey in suitable habitat within the WRC MSHCP BUOW Survey Area portions of the study area up to 500 feet.

Within the WRC MSHCP BUOW Survey Area, accessible portions of vacant fields and open areas were surveyed for suitable burrows in September 2017. A systematic search for potential burrows and BUOW sign was performed by walking transects, thereby allowing for 100 percent coverage of all accessible lands; some private areas were inaccessible and were viewed from the public right of way. All potential burrows were determined by burrow size (greater than 10 centimeters). The location of all potential burrows or burrow complexes was recorded and mapped as global positioning system (GPS) point locations. Another assessment was conducted in February 2018 to see if site conditions had changed since the fall (i.e., if areas previously considered unsuitable due to dense cover had been cleared over the winter) and to finalize areas for protocol surveys. Protocol surveys were then initiated in areas with suitable vegetation communities and suitable burrows. The protocol surveys were conducted during weather that was conducive to observing owls outside burrows and detecting sign. Biologists walked transects to ensure 100 percent visual coverage, or where private property presented access restrictions, walked along property lines on the public right of way and examined survey areas with binoculars. All BUOW protocol surveys were conducted between 1 hour before sunrise and 2 hours after to comply with the WRC MSHCP BUOW survey requirements. The same methods for suitable burrow surveys and BUOW focused surveys were used in June/July 2021. Table 7 lists the dates, conditions, and personnel for each survey.

Table 7. Personnel, Dates, and Conditions for the Burrowing Owl Focused Study

Date	Start–End Time	Start–End Temperature (°F)	Start–End Wind Speed (mph)	Conditions	Surveyors
3/1/2018	0600–0820	38–46	0–3	Clear, some fog	Phillip Richards, Kolby Olson
3/8/2018	0545–0815	48–59	1–3	Partly cloudy	Phillip Richards, Ryan Winkleman
3/13/2018	0655–0900	53–58	1–4	Cloudy	Phillip Richards, Ryan Winkleman
3/27/2018	0630–0845	41–55	1–5	Clear	Phillip Richards, Ryan Winkleman
6/12/2021	0600–0800	55–66	0-1	Clear	Phillip Richards, Vincent Baker
7/7/2021	0635–0720	68–72	0-1	Clear	Vincent Baker
7/8/2021	0600–0640	70–72	0-1	Clear	Vincent Baker
7/19/2021	0620–0700	73–73	0-1	Clear	Vincent Baker

5.2.2 Existing Conditions and Results

Onsite habitat was surveyed according to protocol in 2018 (RCA 2006) along Gilman Springs Road, and three of four surveys were positive, with a single BUOW detected in the same general location for the first three protocol surveys. This individual was not observed during the final (fourth) survey. This owl used several burrows located just under 500 feet away from the LOD, as shown in Figure 6 of Appendix A. Additional focused studies for burrowing owl were conducted in 2021 following the same protocol within the Bridge Street BSA. No burrowing owl were present.

The location of the 2018 finding would not be directly affected by the project, and the entire area surrounding it is outside of the project footprint. Furthermore, habitat within the impact area and the survey area is marginal at best. Particularly in the impact area, open habitat is adjacent to Gilman Springs Road, which has a high volume of traffic and has very little in the way of functions and values for BUOW due to the edge effects of the roadway (e.g., noise, pollution). Because the detection location would not be directly affected and because there are no lands of long-term conservation value for the species within the project footprint, an equivalency analysis is not required for this species.

5.2.3 Impacts

Project construction would result in the removal of approximately 9.42 acres of suitable BUOW habitat within the species WRC MSHCP Survey Area. An additional 11.44 acres of suitable habitat would be temporarily affected within the LOD. The suitable habitat that would be affected in the LOD is low-quality habitat because of the high level of disturbance in the vegetation along the roadway from fire/weed abatement practices.

The proposed project would not remove or directly affect BUOW or the burrows that it uses along Gilman Springs Road because they occurred well outside the proposed project LOD. Due to its

distance from the proposed impact areas, no direct impacts would be expected on the owl or future owls at this burrow location. There may be some temporary visual and aural disturbances resulting from project-related construction activities, but the construction would not directly affect this area and, with the relatively constant traffic on Gilman Springs Road, project-related construction in the vicinity of the owl would generally be consistent with existing high levels of ambient disturbance and no direct impacts on the owl(s) itself would be expected. These areas are all subject to the expected indirect edge effects of being adjacent to a high-traffic road (e.g., continuous noise, air pollution, trash, the spread of exotic weed seeds via windborne or vehicular sources, and deposition of toxic vehicular fluids, particularly after rain events). In addition, in the western half of the study area and in particular, in the southwest of Gilman Springs Road, patches of extant vegetation within the footprint are wedged between the pavement and dirt shoulder to the north and a 75-foot-wide area immediately to the south that is generally disked and kept clear of vegetation, further lowering the value of the onsite habitat due to fragmentation.

5.2.4 Mitigation

To ensure full compliance and consistency with Section 6.3.2 of the WRC MSHCP, and ensure no impacts occur on individuals that may be nesting in the vicinity of the proposed project, measures **BIO-1** through **BIO-3**, **BIO-8**, **BIO-9**, **BIO-11**, **BIO-13**, and **BIO-15** shall be implemented, as described in full in Appendix E.

5.3 Mammals

LAPM is a species of special concern and the species survey area overlaps the study area. SBKR is a federally endangered and state species of special concern and the species survey area also overlaps the study area. Portions of the study area fall within WRC MSHCP Mammal Survey Areas 2 (LAPM) and 3 (LAPM and SBKR) (Figure 7, Appendix A).

5.3.1 Methods

Focused LAPM and SBKR trapping was conducted over two separate trapping sessions in late September and mid-October 2017 in areas that are designated by the WRC MSHCP as small mammal survey areas along Gilman Springs Road. Trap lines were located along the length of the study area, as shown in Figure 7 of Appendix A. The trapping program used for this survey included 12 trap lines in September and 13 trap lines in October, each consisting of 10 Sherman live traps, set within the habitat determined to be the most suitable within the project footprint and a 300-foot buffer. A third trapping session was conducted in June 2021 within the WRC MSHCP LAPM survey area along the Bridge Street BSA and comprised two trap lines consisting of a total of 125 Sherman live traps.

All traps used during the trap sessions survey had doors that were modified to minimize potential risk of injury (e.g., tail lacerations or excisions) to kangaroo rats and other small mammals. Mixed birdseed was used as bait. For each trapping session, traps were set and baited during the early evening and traps were systematically checked near midnight and again at dawn for five consecutive nights. Overnight temperatures did not drop below 50 degrees Fahrenheit for the duration of the trapping. Each captured animal was identified to species. Because Dulzura kangaroo rat (*Dipodomys simulans*) and SBKR are known to co-occur in this area, identification of a fifth toe on the hind foot for agile kangaroo rat was noted to differentiate between the two species.

Table 8 summarizes dates, personnel, and conditions during the survey.

Table 8. Personnel, Dates, and Conditions for the Small Mammal Trapping

Date	Start–End Temperature (°F)	Start–End Wind Speed (mph)	Conditions	Surveyors
9/26/2017	60–71	0–2	Clear to partly cloudy	Phillip Richards, Kolby Olson
9/27/2017	59–66	0–2	Clear	Phillip Richards, Kolby Olson
9/28/2017	57–65	0–3	Clear	Phillip Richards, Kolby Olson
9/29/2017	63–69	0–2	Clear	James Hickman, Kolby Olson
9/30/2017	51–65	0–3	Clear	James Hickman, Kolby Olson
10/10/2017	51–67	1–4	Clear	James Hickman, Kolby Olson
10/11/2017	54–66	1–2	Clear	Phillip Richards, Kolby Olson
10/12/2017	50–60	0–1	Clear	Phillip Richards, Kolby Olson
10/13/2017	53–63	0–3	Clear	James Hickman, Kolby Olson
10/14/2017	55–65	0–3	Clear	James Hickman, Kolby Olson
6/8/2021	58–58	0–2	Cloudy	Phil Richards, Vincent Baker
6/9/2021	54–64	0–2	Partly Cloudy	Phil Richards, Vincent Baker
6/10/2021	48–54	0–2	Clear	Phil Richards, Vincent Baker
6/11/2021	57–63	0–2	Clear	Phil Richards, Vincent Baker
6/12/2021	57–66	0–2	Clear	Phil Richards, Vincent Baker

5.3.2 Existing Conditions and Results

Although suitable habitat was present for LAPM and SBKR, these species were not found during trapping efforts within their respective WRC MSHCP Mammal Survey Areas. Based on results of trapping surveys conducted in 2017, northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) and San Diego desert woodrat are both present in the 300-foot trapping study area, while LAPM and SBKR are both absent. Suitable habitat for LAPM is present within the Bridge Street study area; however, the 2021 trapping effort did not detect the species. During the 2021 survey effort, San Diego pocket mouse, deer mouse (*Peromyscus maniculatus*) and house mouse (*Mus musculus*) were captured.

Although surveys were not specifically conducted for SKR (as it is a covered species under the WRC MSHCP and has no survey requirement), none were incidentally captured during LAPM/SBKR trapping sessions; however, suitable habitat is present outside of the trapping areas and there are records of this species occurring on both sides of Gilman Springs Road in this area. San Diego black-tailed jackrabbit was spotted incidentally during diurnal project surveys.

5.3.3 Impacts

Project construction would result in the removal of approximately 8.91 acres of suitable habitat for small mammals. An additional 12.72 acres of suitable habitat would be temporarily affected within the proposed project area. However, based on the focused studies, both LAMP and SBKR were determined to be absent throughout the study area and no direct effects would occur. Indirect effects that could occur on individuals that could occupy lands adjacent to the proposed project site include increased risk of fire, habitat degradation from introduction of weeds, and edge effects. The avoidance and minimization measures identified below would ensure any potential indirect effects on LAMP and SBKR would not occur.

5.3.4 Mitigation

No mitigation is required for LAMP or SBKR as these species are absent from the BSA. Implementation of measures **BIO-1** through **BIO-3**, **BIO-8**, **BIO-9**, **BIO-11**, **BIO-12**, and **BIO-14** as described in full in Appendix E would ensure any potential indirect effects on SBKR and LAMP would be minimized and would ensure full compliance and consistency with Section 6.3.2 of the WRC MSHCP.

5.4 Other WRC MSHCP Planning Species

The following sections analyze the presence or absence of suitable habitat for narrow endemic plant species under Section 6.1.3 of the WRC MSHCP and Additional Survey Area species under Section 6.3.2 of the WRC MSHCP. Analysis is also provided for WRC MSHCP planning species for Existing Core H, Proposed Core 3, Reche Canyon/Badlands Area Plan (Subunit 3: Badlands – North (Reche Canyon Subunit 3), Reche Canyon/Badlands Area Plan Subunit 4: San Jacinto Wildlife Area/Mystic Lake (Reche Canyon Subunit 4), and San Jacinto Valley Area Plan Subunit 1: Gilman Springs/Southern Badlands (San Jacinto Subunit 1), in which the project is located. Although WRC MSHCP planning species are addressed in this section for the purpose of describing functions and values for these groups, these species are not addressed further after this section unless they require additional mitigation or an equivalency analysis for the WRC MSHCP consistency. Those species that have conditional or full coverage under the WRC MSHCP and that were included in the project's original record search results as having a potential to occur in the study area are described in Appendix F.

Non-Riparian/Riverine Avian Planning Species. The following non-riparian/riverine WRC MSHCP avian planning species have potential to occur within the study area or were identified during project surveys: Bell's sage sparrow (*Artemisiospiza belli belli*), cactus wren (*Campylorhynchus brunneicapillus*), loggerhead shrike (*Lanius ludovicianus*), mountain plover (*Charadrius montanus*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), California horned lark (*Eremophila alpestris actia*), peregrine falcon (*Falco peregrinus*), prairie falcon (*Falco mexicanus*), sharp-shinned hawk (*Accipiter striatus*), golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), migrant Swainson's hawk (*Buteo swainsoni*), and turkey vulture (*Cathartes aura*). Of these, loggerhead shrike, ferruginous hawk, Swainson's hawk, and turkey vulture were all observed on site during project surveys. The ferruginous hawk was a wintering bird, the Swainson's hawks were migrating through the area and likely overwintered in the SJWA, and the shrikes were confirmed to be breeding on site. The only remaining avian planning species, grasshopper sparrow (*Ammodramus savannarum*), would not be expected to occur within the study area based on the habitat present. **Because no**

equivalency analysis is required for any of these species, these bird planning species are not addressed further in this document.

Reptiles. Reptile planning species that are listed as benefitting from the preservation within existing Core H include western pond turtle (*Emys marmorata*), coastal western whiptail (*Aspidozelis tigris stejnegeri*), Belding's orange-throated whiptail (*Aspidozelis hyperythra beldingi*), San Diego banded gecko (*Coleonyx variegatus abbotti*), northern red-diamond rattlesnake (*Crotalus ruber ruber*), San Diego horned lizard (*Phrynosoma blainvillii*), granite spiny lizard (*Sceloporus orcutti*), and granite night lizard (*Xantusia henshawi*). The study area provides marginal or suitable habitat for all of these species, except for western pond turtle. Areas being permanently affected would not provide long-term conservation value for these species based on existing disturbances. **Reptiles are not addressed further in this document.**

Mammals. Bobcat (*Lynx rufus*), LAPM, mountain lion (*Puma concolor*), SBKR, SKR, northwestern San Diego pocket mouse, San Diego black-tailed jackrabbit (*Lepus californicus bennetti*), and San Diego desert woodrat (*Neotoma lepida intermedia*) are all listed as planning species under Existing Core H, Proposed Core 3, Reche Canyon Subunit 3, Reche Canyon Subunit 4, and San Jacinto Subunit 1. Bobcats and mountain lions or their sign were not observed during surveys conducted in 2017 or 2018. However, there are opportunities for these species to occur in either Existing Core H or Proposed Core 3, and several subgrade culvert crossings under Gilman Springs Road provide potential movement opportunities for these two large mammals. However, these large species likely cross over the existing roadway as there are no existing impediments such as wildlife fencing. Areas being permanently affected would not provide long-term conservation value for these species based on existing disturbances. **Mammals are not addressed further in this document.**

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6.0 DBESP FINDINGS

With the implementation of the avoidance and minimization measures and compensatory mitigation presented in Sections 3.1.4, 4.4, 5.1.4, 5.2.4, 5.3.4, and Chapter 6, the project would be biologically equivalent and superior to the existing study area conditions. As described in Section 1.3, the project is classified as a safety operations and maintenance project (Section 7.2.1 of the WRC MSHCP Volume I) and is therefore a covered activity. Portions of the project overlap with P/QP lands, Criteria Cells, and the WRC MSHCP Conservation Area (refer to Section 7.1 for details). Due to the proposed project's location within an area that is considered highly sensitive by the RCA and resource agencies, and since it is in a wildlife core/linkage of the WRC MSHCP and is adjacent to P/QP and conserved lands (WRC MSHCP Volume I, Section 7.2.2), the County has incorporated siting and design criteria, and general avoidance guidelines (WRC MSHCP Volume I, Sections 7.5.1, 7.5.2, and 7.5.3 and Appendix C) into the proposed project. With the compensatory mitigation provided in Appendix E, for riparian/riverine resources and conserved lands, replacement would be superior or equivalent to existing conditions.

6.1 Riparian/Riverine Areas, Vernal Pools, and Fairy Shrimp Habitat

The WRC MSHCP lists 34 planning species associated with riparian/riverine and vernal pool habitats that are important to the conservation of riparian/riverine and vernal pool areas (refer to Sections 3.2, 3.3, and 3.4). These species were assessed for the probability of occurring within the study area. Appendix F provides a description of habitat requirements and occurrence probability for those WRC MSHCP species that were determined by the project's record search to have a potential to occur in the study area. No vernal pool or fairy shrimp species occur within the study area. Eight riparian/riverine wildlife species were recorded within the project footprint and in contiguous habitat adjacent to the project footprint during biological surveys: Cooper's hawk, northern harrier, tree swallow, white-tailed kite, Lincoln's sparrow, tricolored blackbird, Nashville warbler, and yellow warbler.

A total of 1.20 acres (0.58 acre permanent and 0.62 acre temporary) of riparian/riverine resources would be affected due to implementation of the proposed project and would result in potential temporary or permanent loss of foraging and/or nesting habitat for the 8 WRC MSHCP riparian/riverine species that occur within the study area. As described in Section 3.1.2, the existing conditions of the riparian/riverine resources in the study area have limited functions and values for plants and wildlife. A compensation ratio of a minimum 3:1 for permanent riparian impacts, minimum 3:1 for permanent riverine impacts, and 1:1 for temporary riparian/riverine impacts would provide equivalent preservation (**BIO-19**). Mitigation would consist of purchasing re-establishment or establishment credits within the Santa Ana Watershed through the Riverpark Mitigation Bank, permittee-responsible mitigation, or other agency-approved mitigation provider. Temporary impacts on riparian habitat would be mitigated in-kind at their current locations with onsite restoration at a minimum 1:1 ratio. A habitat mitigation and monitoring plan (HMMP) would be prepared and onsite restoration would occur upon completion of construction. Restoration would involve returning affected areas to original contour grades, decompacting and scarifying the soil, and revegetating with hydroseeding and/or container plantings to match existing riparian habitats in order to ensure the biological, hydrological, and topographical conditions and functions and values are equivalent or superior to pre-construction conditions (**BIO-21**). Soil decompaction/scarification specifications would be included in the design plans and HMMP to ensure soils and topography are restored to pre-construction conditions.

As discussed in Section 3.1.4, mitigation would consist of purchasing offsite riparian/riverine resource lands through the Riverpark Mitigation Bank, permittee-responsible mitigation, or other agency-approved mitigation provider. The Riverpark Mitigation Bank would permanently preserve and manage aquatic resources that support a diversity of sensitive plants and animals (including smooth tarplant) and serves as compensatory mitigation for WRC MSHCP riparian/riverine resources. The credits would all create an ecological lift in functions and values compared to current conditions by improving native quality and abundance of riparian vegetation for wildlife use, increasing the nutrient retention and sediment and toxicant trapping capability through native vegetation, and enhancing flood storage capacity. Until the specific credits are identified and purchased, and depending on the specific types of credits available at that time, the ecological increases in functions and values through the Riverpark Mitigation Bank, permittee-responsible mitigation, or other agency-approved mitigation provider can only be generalized. Once the project environmental document has been finalized and the project permits have been issued, the mitigation funding would be available, and the mitigation provider and specific credit type and location of the mitigation lands would be finalized. Mitigation would occur prior to project construction impacts. The replacement of riparian/riverine resources would be biologically equivalent or superior to that which is removed by the project. Refer to Table 9 for the total mitigation required for riparian/riverine resources.

Table 9. Summary of Impacts and Proposed Mitigation Requirements for Riparian/Riverine Resources

Riparian/Riverine Resource	Impact Types		Offsite Mitigation		Onsite Mitigation	Total Minimum Mitigation Occurring Onsite & Offsite
	Permanent Impacts	Temporary Impacts	Mitigation for Permanent Impacts ¹ (minimum) (acres)	Mitigation for Temporal Losses ² (acres)	Mitigation for Temporary Impacts (acres)	
Riparian						
Within CDFW Conserved land³: Vegetation communities: [disturbed, disturbed fourwing saltbush scrub]	0.01	0.01	0.03	0.01	0.01	0.05
Within RCA-owned lands: Vegetation community: [disturbed fourwing saltbush scrub]	0.00	<0.01	0.00	0.00	<0.01	<0.01
Non-Conserved lands: Vegetation communities: [developed, disturbed, disturbed fourwing saltbush scrub]	0.07	0.06	0.21	0.07	0.06	0.34
<i>Riparian (subtotal)</i>	<i>0.08</i>	<i>0.07</i>	<i>0.24</i>	<i>0.08</i>	<i>0.07</i>	<i>0.39</i>
Riverine						
Within CDFW Conserved lands³: Vegetation communities: [developed, disturbed, fourwing saltbush scrub]	0.06	0.20	0.18	0.13	0.20	0.51
Within RCA Conserved land: Vegetation community: [disturbed fourwing saltbush scrub]	0.04	0.04	0.12	0.04	0.04	0.20
Non-Conserved lands: Vegetation communities: [developed, disturbed, disturbed fourwing saltbush scrub]	0.40	0.31	1.20	0.36	0.31	1.87
<i>Riverine (subtotal)</i>	<i>0.50</i>	<i>0.55</i>	<i>1.50</i>	<i>0.53</i>	<i>0.55</i>	<i>2.58</i>
TOTAL IMPACTS/MITIGATION FOR RIPARIAN/RIVERINE RESOURCES	0.58	0.62	1.74	0.61	0.62	2.97

*Due to rounding error, the total sum is slightly different than what would be expected by adding the individual acreages.

¹ Impacts on WRC MSHCP riparian/riverine would be mitigated at a minimum 3:1 for permanent impacts (refer to **BIO-19**).

² Temporal effects due to both permanent and temporary impacts would be mitigated at 0.5:1.

³ Impacts on CDFW-owned lands within the San Jacinto Wildlife Area (inclusive of P/QP lands) would require compensatory mitigation at no less than 1:1 (refer to section 7.1.1). To ensure biological equivalency, a minimum of 0.01 acre riparian and 0.06 acre riverine would be needed as CDFW replacement lands (if feasible). All other riparian/riverine impacts would require compensatory mitigation through a mitigation bank, permittee-responsible mitigation site, or other approved provider as described in **BIO- 19**. If mitigation for riparian/riverine is not feasible within CDFW replacement lands, full compensatory mitigation for riparian/riverine resources would occur through a mitigation bank, permittee-responsible mitigation site, or other approved provider (refer to **BIO-20**).

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The project must meet the requirements of the WRC MSHCP as well as requirements under Sections 401 and 404 of the Clean Water Act, the state Porter-Cologne Water Quality Act, and Fish and Game Code Section 1602. As such, the project team would maintain flexibility with mitigation procurement while providing consistency with the WRC MSHCP, and specifically Section 6.1.2 requirements. Compensation would occur at the above minimum ratios for each resource through onsite restoration within temporary impact areas as well as offsite establishment, or re-establishment, or enhancement of riparian/riverine resources at an approved mitigation provider such as the Riverpark Mitigation Bank or permittee-responsible mitigation (**BIO-15** in Appendix E).

With the implementation of the avoidance measures and compensatory mitigation identified in Section 3.1.4, there would be no anticipated potential long-term project effects on existing downstream/upstream riparian/riverine resources, including narrow endemic plants, criteria area species, or covered WRC MSHCP species described in Section 6.1.2 of the WRC MSHCP. Through implementation of avoidance and minimization measures and proposed mitigation of temporary and permanent impacts on riparian/riverine resources, the proposed project would be biologically equivalent or superior to a project that would occur under an avoidance alternative without these measures.

6.2 Smooth Tarplant

The project would have direct impacts on two populations of smooth tarplant. Direct impacts on this species are likely as many of the individuals identified during the focused surveys are present within the project footprint. As such, these individuals would be removed from their current locations. The northern population that would be affected is relatively small consisting of less than 20 individuals (one within the footprint) and occurs primarily within areas already disturbed by maintenance, including for roadside weed abatement and fire abatement on conserved lands. The few individuals from this northern population that would be affected occur within and adjacent to riparian/riverine resources (refer to Figure 8, Sheet 2 of Appendix A). The southern population (approximately 100 individuals) occurs directly adjacent to the existing roadway (refer to Figure 8, Sheet 8 of Appendix A) was not found associated with a riparian/riverine area.

Implementation of the avoidance and minimization measures in Section 3.1.4 for riparian/riverine resources and replacement of P/QP lands (Section 7.1.1) with lands of equivalent value would address impacts to this species. Since there would only be an impact to a small number of smooth tarplant associated with riparian/riverine resources, and because the P/QP lands that would be affected would be replaced with lands of equivalent value, and because there is a larger population within conserved lands west of the project footprint, the impacts on smooth tarplant are not expected to contribute to a decrease in the long-term conservation value for this species. Indirect impacts on adjacent riparian/riverine habitat outside of the project footprint would be minimized by incorporating the avoidance and minimization measures included in Section 5.1.4 and by complying with the standard BMPs outlined in the WRC MSHCP, Section 7.5.3 (**BIO-1** through **BIO-4**, **BIO-6** through **BIO-11**, and **BIO-16**) and Appendix C (**BIO-3**, **BIO-6**, **BIO-7**, **BIO-10**, and **BIO-11**). With the implementation of the avoidance and minimization measures and compensatory mitigation, the project would be biologically equivalent to the existing study area conditions.

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7.0 WRC MSHCP CONSISTENCY ANALYSIS FINDINGS

The proposed project is a safety operations and maintenance project (WRC MSHCP Volume I, Sections 7.2.1 and 7.3.4), and a covered activity within the Reche Canyon/Badlands Area Plan and the San Jacinto Valley Area Plan (refer to Section 1.3 for WRC MSHCP details). The WRC MSHCP requires consistency with Volume I, Sections 3.2.3, 6.1.2, 6.1.3, 6.1.4, 6.3.2, 7.5.1, 7.5.2, 7.5.3, and Appendix C of the WRC MSHCP document.

During the reconnaissance survey, 13 vegetation communities/land use types were mapped within the project study area (refer to Section 2.1.5 and Figure 9 in Appendix A for details). The riparian/riverine resource areas documented within the study area were also mapped and based on the presence of riparian vegetation, presence of a streambed, and/or topographical relief which would facilitate animal movement or connection to Mystic Lake (Figure 10 in Appendix A).

As described in Chapter 3.0 through 5.0, the WRC MSHCP requires habitat assessments for riparian/riverine resources, vernal pools, fairy shrimp, narrow endemic plant species, small mammals, and BUOW for the proposed project. Suitable habitat was found to be present for Narrow Endemic plant species, Criteria Area plant species, BUOW, LAPM, and SBKR. Focused surveys consistency with the WRC MSHCP requirements were conducted for these species in the BSA. The project site lacked suitable habitat for riparian birds, vernal pools, and fairy shrimp.

Although the project occurs within Existing Core H and Proposed Core 3 as described in Section 1.4.5, the project is for safety improvements and is not capacity increasing. Due to the limitations and utility of existing culverts that would not further impede wildlife movement, it was determined that improvements to wildlife crossings was not economically feasible during this project phase, with the exception of the expansion of the crossing north of Bridge Street, which presents the most reasonable and cost effective wildlife crossing improvement. To minimize impacts on the Conservation Area, the Urban/Wildlands Interface Guidelines would need to be satisfied; these are addressed in Section 8.4 of this report. In addition, as addressed in Section 7.2 of this report, the project is not required to implement any additional avoidance and mitigation for the take of smooth tarplant because all individuals located during rare plant surveys were found outside of the designated CASSA as shown in Figure 8 of Appendix A. Last, as described in Section 5.3.2 of this report, the project would not affect lands of long-term conservation value for BUOW.

This report also satisfies the DBESP requirements (as summarized in Section 7.0) for the project. The project would implement the Construction Guidelines in Section 7.5.3 of the WRC MSHCP and the Standard BMPs in Appendix C of the WRC MSHCP during construction, which have been incorporated as avoidance and minimization measures in Appendix E. In the event that sensitive resources are identified within the Bridge Street BSA and lands provide long-term conservation value for the species, an additional DBESP report would be prepared for the Bridge Street BSA. This document would be reviewed and approved by the RCA, USFWS, and CDFW prior to initiating any ground disturbances (i.e., vegetation clearing, grading, equipment staging, or watering).

7.1 Effects on the WRC MSHCP Conservation Area

The proposed project would directly affect approximately 56 acres during construction of the proposed project, with 38.33 acres of lands permanently affected and 17.67 acres of temporary impacts (Table 10). Approximately 0.21 acre of P/QP lands would be permanently affected and approximately 1.54 acres of WRC MSHCP ARL would be permanently affected. All temporarily

affected lands, including 0.49 acre of temporarily affected P/QP lands, would be fully decompacted and scarified and revegetated with a native seed mix. Decompaction/scarifying specifications would be included in the design plans. All permanent impacts on P/QP lands would be fully replaced within an offsite mitigation area and temporary impacts would be revegetated with native seed mix. An HMMP (**BIO-21** in Appendix E) would be reviewed and approved by the RCA, USFWS, and CDFW and would provide the details for offsite restoration. Table 10 provides the direct effects on each vegetation community throughout the project area and within conserved lands.

It is expected that maintenance activities of the road right of way would be on-going during operation of the proposed project. These activities are similar to the ongoing maintenance activities on either side of Gilman Springs Road and along Bridge Street. As described in Section 2.1.5, the existing disturbances and land uses within the right of way of Gilman Springs Road are heavily disturbed and scrub habitat east of the right of way is also heavily disturbed. Portions of the new right of way, which would extend into CDFW-owned lands west of Gilman Springs Road, are currently routinely mowed for fire and weed abatement. Because WRC MSHCP ARL lands being affected east of Gilman Springs Road would be improving a wildlife crossing (including maintenance of the bridge crossing [**BIO-17**]) for wildlife movement, the incremental loss of habitat at the crossing location, would encourage safe wildlife movement between Mystic Lake and the Badlands thereby improving the functions and values of this crossing. Maintenance activities within drainage areas and removal of debris from culverts would also improve accessibility by wildlife to both sides of the roadway over the long-term (**BIO-16**).

Potential indirect effects on the WRC MSHCP Conservation Area include habitat degradation through edge effects, increased fire risk and spread of noxious weeds. However, the avoidance and minimization measures in Appendix E (measure **BIO-4** through **BIO-12**) through are intended to decrease these potential effects.

Table 10. Direct Effects on all Vegetation Communities

Vegetation Community	CDFW Conserved Lands – San Jacinto Wildlife Area				RCA Conserved Lands		Conserved Lands Total Impact		Other Non-Conserved Lands (i.e., private)		Total Impacts on Vegetation Communities (acres)	
	Existing P/QP		WRC MSHCP Conserved Lands ¹		WRC MSHCP Conserved Lands ^{1,2}		Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary						
Goodding’s Willow - Red Willow Riparian Woodland and Forest	0.01	<0.01	0.00	0.00	0.00	0.00	0.01	<0.01	0.11	0.04	0.12	0.04
Brittle Bush Scrub	0.00	0.00	0.00	0.00	0.03	0.26	0.03	0.26	< 0.01	< 0.01	0.03	0.26
Developed	0.00	<0.01	0.24	0.04	3.46	0.39	3.70	0.43	24.14	4.76	27.84	5.19
Disturbed	0.12	0.19	0.16	0.16	0.17	0.54	0.45	0.89	4.57	6.74	5.02	7.63
Disturbed Brittle Bush Scrub	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.20	0.03	0.14	0.03	0.34
Disturbed Fourwing Saltbush Scrub	0.05	0.26	1.12	0.84	0.33 ⁴	0.52	1.50	1.62	3.00	1.80	4.50	3.42
Fourwing Saltbush Scrub	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.16	0.00	0.17
Mule Fat Thickets ³	0.00	<0.01	0.00	0.00	0.00	0.00	0.00	<0.01	0.00	0.00	0.00	<0.01
Wild Oats and Annual Brome Grasslands	0.00	0.01	0.02	0.04	0.00	0.00	0.02	0.05	0.04	0.09	0.06	0.14
Tamarisk Thickets ³	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.11	0.13	0.11
Scale Broom Scrub	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Emory’s and Broom Baccharis Scrub	0.03	0.03	0.00	0.00	0.00	0.00	0.03	0.03	0.57	0.32	0.60	0.35
Total Affected Acreage	0.21	0.49	1.54	1.08	3.99	1.92	5.74	3.49	32.59	14.18	38.33	17.67

¹ The ARL are those lands under the WRC MSHCP (Volume I, Section 3), which would help achieve assembly of the WRC MSHCP reserve.

² Planned covered roads (Table 7-1) within the WRC MSHCP allow take of ARL owned by the RCA, as long as the maximum road right of way width is not exceeded. Because the road improvements through ARL owned by the RCA would not exceed the allowable right of way width, no mitigation for impacts on RCA-owned lands is required. However, this table provides the amount of each vegetation community that is being removed. A description of habitat quality is provided in Section 2.5 for each vegetation community.

³ Impacts on this vegetation community may require higher mitigation as it pertains to the WRC MSHCP Volume Section 6.1.2 riparian/riverine policy. See Section 3.1.4.

⁴ Although no mitigation for impacts on RCA-owned ARL is required, approximately 0.04 acre of this vegetation community occurs outside of the 128-foot maximum right of way width within a drainage easement. Therefore, 0.04 acre of RCA-owned conserved lands will require replacement (refer to Section 7.1.2 for more details).

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7.1.1 Public Quasi-Public Lands

As stated under Section 3.2.1 of the WRC MSHCP Implementation Manual, “In the event a Permittee elects to use property currently depicted as P/QP lands on the MSHCP Plan map (see Figure 3-1 of the MSHCP, Volume I) in a way that alters the land use such that it would not contribute to Reserve Assembly (see Section 4.1 of the Implementation Guidance Manual), that Permittee shall locate and acquire, or otherwise encumber, replacement acreage at the minimum ratio of 1:1 replacement. The Permittee should make findings that the replacement acreage is biological equivalent or superior to the existing property as set forth in Section 6.5 of the MSHCP, Volume I.”

P/QP lands in the BSA are owned by CDFW and are located west of Gilman Springs Road. As a Covered Activity under the WRC MSHCP, the allowable width for Gilman Springs Road right-of-way through the conservation area is 128 feet. The roadway and widened shoulder do not exceed the 128-foot take allowance. The proposed project would have permanent and temporary effects on P/QP lands, with a total of 0.21 acre of acquisition lands for P/QP replacement necessary for permanent impacts. Temporary impact areas (0.49 acre) would be restored onsite (refer to measure **BIO-21**). Refer to Table 10 for a breakdown of the impacts on P/QP lands by vegetation community.

Approximately 80 percent of the P/QP lands in the permanent impact area are classified as disturbed habitats, and 82 percent of the temporary impact areas are disturbed habitats. The existing P/QP lands west of Gilman Springs Road are CDFW-owned open space lands. CDFW manages these P/QP lands and maintains an approximately 100-foot area from the existing roadway is mowed/disc'd for fuel modification along Gilman Springs Road. Culverts under the existing Gilman Springs Road are congested by vegetation debris and do not provide optimal conditions for wildlife movement or hydrological connectivity. Currently, the P/QP lands within the permanent impact area provide low functions and values due to the high levels of disturbance within low quality habitat, adjacency to a CDFW maintained buffer, and disruptions to hydrological connectivity.

The impacts on P/QP conserved lands and other conserved lands owned by CDFW were considered during the design phase of the project to reduce impacts to the maximum extent practicable and to determine how much conservation land replacement would be required. No less than 1:1 replacement would be required for permanent and temporary impacts on P/QP lands. Table 11 summarizes the mitigation required for CDFW-owned lands (including P/QP lands) replacement based on the impact results provided in Table 10 for both P/QP lands and CDFW lands replacement.

Table 11. CDFW-Owned Lands Replacement Requirements

CDFW owned lands	Purchase Replacement Lands ¹ (acres)	Onsite Restoration for Temporary Impacts ² (acres)	Total Mitigation Required
P/QP Conserved Lands ¹	0.21	0.49	0.70
WRC MSHCP Conserved Lands ³	1.54	1.08	2.62
Total Replacement Acreage⁴	1.75	1.57	3.32

¹ Permanent impacts on P/QP lands and CDFW lands would be mitigated through purchase of replacement lands at minimum 1:1 (refer to **BIO-20**).

²The temporary impact areas would be restored on site, decompacted, and hydroseeded with a native seed mix (refer to **BIO-21**).

³Refer to Section 7.1.2 for additional analysis.

⁴To avoid double counting the mitigation for riparian/riverine resources (see Table 9) on CDFW-owned lands, the required compensatory mitigation for 0.05 acre riparian and 0.51 acre riverine would first occur through purchase of P/QP and CDFW-owned replacement lands that contain 0.17 acre (1:1) riparian/riverine resources (if feasible), and the remaining 0.34 acre of riparian/riverine for P/QP lands would be addressed offsite through a mitigation bank, permittee-responsible mitigation bank, or other approved provider (**BIO-19**). All temporary impacts would be addressed onsite (**BIO-19** and **BIO-21**).

No less than 1.75 acres of acquisition lands for replacement of P/QP and CDFW-owned lands would be necessary for permanent impacts on these conserved areas. Offsite mitigation areas for P/QP and ARL permanent impacts will be evaluated and reviewed for equivalent or better habitat suitability than the affected conserved lands being removed. The priority for site selection will be to identify lands that are contiguous to the existing San Jacinto Wildlife Area. During these site evaluations, the County will target sites that contain the same or similar vegetation communities that are being replaced. If lands being evaluated do not contain the same or similar community types, then the County will review sites that provide opportunity to replace with a community that has a higher ecological value for the region (such as wetlands). As potential properties are reviewed, coordination with CDFW land management will also take place to ensure that the potential replacement properties occur in locations acceptable to CDFW. Once the proposed replacement lands are identified, these will be provided to the USFWS, CDFW, RCA, and the Wildlife Conservation Board for review and approval prior to acquisition to serve as P/QP and ARL replacement.

Lands acquisitions cannot occur until the Environmental Document has been approved. Once lands are acquired, a more detailed equivalency report will be provided to ensure the administrative record has the details of what was acquired for equivalency. The equivalency analysis will provide the total size of the acquired property and area that will serve as mitigation, the flora and fauna documented on site, current and past land uses, vegetation mapping, mapping of riparian/riverine or vernal pool resources, and the restoration potential of the site. The P/QP and ARL replacement analysis will be provided to the RCA and Wildlife Agencies after lands have been purchased and must be agreed upon prior to the start of construction within P/QP and ARL.

For onsite restoration, an HMMP would be prepared and onsite restoration would occur upon completion of construction. Restoration would involve returning temporary impact areas (1.57 acres) to original contour grades, decompacting/scarifying the soil, and revegetating with hydroseeding to match pre-construction habitats in order to ensure the biological, hydrological, and topographical conditions and functions and values are restored to pre-construction conditions (refer to **BIO-19** and **BIO-21**). Soil scarification and decompaction specifications would be included in the design plans and HMMP to ensure soils and topography are restored to pre-construction conditions. Permanent impact areas resulting from new slopes will not be included in the HMMP but these areas will be hydroseeded. Additionally, areas within fuel modification areas will not be restored.

After construction, it is anticipated that CDFW would maintain the fuel modification zone from the roadway outside of the right of way. Any permanent impacts on the P/QP lands within the existing fuel modification area will be replaced off site with habitat that is equivalent or superior. The improvements to the drainage easements and the County's commitment for annual clearing of culverts (**BIO-17**) would improve the hydrological flows through the area. Through the implementation of the HMMP (**BIO-21** and described above), all temporary construction areas would be returned to original contours and would be hydroseeded with native species with the

exception of fuel modification areas. Offsite restoration and replacement of P/QP lands mitigation would address the full replacement of P/QP lands, including the temporal loss of habitat during construction. Based on this, there would be improved onsite functions and values, and offsite mitigation would exceed the minimum requirements for replacement.

Properties under review are not currently described for conservation. The County has been coordinating with CDFW to identify potential mitigation lands that would be suitable for replacement of P/QP and CDFW-owned lands, that would meet biological equivalency standards which would fulfill land management and conservation goals of CDFW, and, if feasible, incorporate the necessary mitigation for riparian/riverine resources (refer to Section 6.1 and Table 9). Replacement lands would be purchased and located adjacent to the existing SJWA conservation area. Restoration of temporary impact areas would occur on site through implementation of the HMMP (**BIO-21**). A separate P/QP equivalency analysis would be prepared after mitigation lands are identified and would be provided to the RCA, USFWS, and CDFW for review and approval.

7.1.2 Additional Reserve Lands

The project would permanently affect 5.53 acres and temporarily affect 3.00 acres of ARL owned by RCA and CDFW (refer to Figure 9 of Appendix A). Because the project is a covered road and does not exceed the 128-foot right-of-way take allowance for the road, median, and associated slopes, replacement of ARL is not required, except for temporarily affected areas that will be restored on site. However, to ensure the SJWA remains whole, replacement of CDFW-owned ARL (1.54 acres of permanent impacts and 1.08 acres of temporary impacts) would be combined with the replacement of P/QP lands (refer to Section 7.1.1 above and measure **BIO-20** in Appendix E). In addition, there are permanent impacts on the RCA-owned ARL that occur outside of the take allowance area (i.e., drainage easement) and would also be subject to replacement (approximately 0.04 acre). Refer to Figure 9, Sheet 9 of Appendix A for the portion for the drainage easement that occurs outside of the take allowance area². Lands that would be affected already have a high percentage of nonnative grasses and disturbed vegetation and, therefore, provide low function or value to WRC MSHCP species due to edge effects from the existing roadway. The replacement of CDFW-owned ARL as part of the acquisition requirement for the SJWA (see Section 7.1.1 above) and the RCA-owned ARL would provide superior replacement habitat than what currently exists. In addition, returning the temporary impact areas to original condition would ensure that any existing functions and values adjacent to the existing roadway are not lost.

The existing functions and values of CDFW-owned ARL are very similar to those described for P/QP lands under Section 7.1.1, and these lands are managed by CDFW similar to the P/QP lands. Culverts across the project site are clogged with vegetative debris and restrict wildlife and hydrological connectivity. Approximately 99 percent of the CDFW-owned ARL lands in the permanent impact area are classified as developed and disturbed habitats, and 96 percent of the temporary impact areas are developed and disturbed habitats. CDFW also maintains a fuel modification zone approximately 100-feet from the existing edge of the roadway through the ARL. Due to the high levels of disturbance within low quality habitat, existing fuel modification area, and

² The 128-foot right-of-way in the Figure 7-1 of the MSHCP, Volume I does not align with the existing right-of-way for Gilman Springs Road. Therefore, to determine the amount of permanent impact area that would encroach into the RCA-owned ARL beyond the 128-foot take allowance, a 128-foot buffer was applied in GIS from the edge of the slope easement (permanent impact area) northwest of Gilman Springs Road and Bridge Street. The portion of the drainage easement east of the Gilman Springs Road/Bridge Street intersection which occurs outside of this buffered area (0.04 acre) within the RCA-owned ARL requires replacement of the ARL. Refer to Figure 9, Sheet 9 in Appendix A.

disruptions to hydrological connectivity, the affected area along Gilman Springs Road provides low functions and values.

The RCA-owned ARL primarily occurs east of Gilman Springs Road, with a portion of the conservation area mapped within and west of the existing road right-of-way in the area south of Bridge Street. The existing Gilman Springs Road provides no functions and values for biological resources in the conservation area. Several culverts in this area have similar conditions to the remainder of the project and provide little value for wildlife movement or hydrological connectivity. The proposed project is expected to improve functions and values of the RCA-owned ARL through the replacement of the culvert with a bridge just north of Bridge Street. The annual clearing of debris, wider opening, and installation of wildlife fencing would encourage wildlife to move through a wildlife crossing via the conservation lands. Hydrological connectivity would also be maintained as the bridge was designed to accommodate a 100-year flood event. There is only a narrow area of RCA-owned ARL impact associated with the shoulder widening on Gilman Springs Road, but this area is entirely within the 128-foot right-of-way. The loss of ARL is not expected to negatively affect the functions and values as most of it is already associated with the existing graded right-of-way. Although no replacement of the RCA-owned ARL is necessary for the project within the 128-foot take allowance, there is an approximately 0.04 acre area within the drainage easement that extends outside of the take allowance area into the RCA-owned ARL and would require replacement of habitat. Any temporarily affected areas would be restored on site to pre-construction conditions.

All permanent impacts on the CDFW-owned ARL and 0.04 acre of RCA-owned ARL will be fully mitigated off site (**BIO-20**) and temporary impacts will be returned to existing conditions. Thus, the CDFW-ARL will be replaced with habitat that will have higher functions and value, and be biologically equivalent or superior.

7.1.3 Wildlife Crossings

The project study area is located within Existing Core H; Proposed Core 3; Cell Groups H (Criteria Cells 1763, 1978, 1881), I (1882, 1979), J (1982), F' (1478), G' (1584), and H' (1652, 1666), as well as Criteria Cells 1762, 1977, and 1880, which do not occur within a Cell Group. The project would not permanently affect existing wildlife movement corridors or linkages because no new barriers to wildlife movement would be created and no corridors or linkages would be permanently reduced or eliminated by the project. The alignment in general provides little in the way of safe wildlife movement due to the roadway grade, limited size and spacing of culverts, and limited fencing. Culverts within the study area were analyzed for their ability to support wildlife movement and openness ratios were calculated for all culverts (Appendix C). Many of the culverts within the study area are partially or completely blocked by vegetation and/or debris and are currently of little use for wildlife movement based on their low openness ratios (see Table C-1 in Appendix C).

One wildlife crossing would be enhanced with the installation of a single-span bridge just north of Bridge Street within Proposed Core 3. The existing undercrossing would be expanded from a 12-foot-wide by 6-foot-high culvert to a 26-foot-wide by 7.5-foot-high bridge with a dry bench for wildlife to cross during high flows and smaller tube on the dry bench for small mammal passage (refer to Appendix A, Figure 3C). In addition, wildlife fencing would be installed approximately a 0.5 mile in each direction of the crossing (refer to Appendix A, Figure 3A for fence location), and would direct wildlife to the crossing area. Wildlife escape jumpouts have also been added to ensure any wildlife that become trapped on the roadway have a means to escape into the conservation area (refer to Appendix G for design of jumpouts). The design of the bridge undercrossing, wildlife

fencing, jumpouts and other design elements are consistent with the requirements in Section 7.5.2, Guidelines for the Construction of Wildlife Crossings. It is anticipated that these enhancements would encourage wildlife to move through the undercrossing rather than across the roadway within this segment of the project. It is also anticipated the bridge crossing would support movement of key populations of species within the WRC MSHCP for Proposed Core 3. No improvements to other crossings would occur.

The remaining culverts along the alignment would be extended in length to accommodate the wider lanes and shoulder, but are not viable for enhancements for wildlife movement under this safety project. The project has undergone extensive analysis of strategies coordination with the RCA, USFWS, and CDFW to increase wildlife passage throughout the proposed project BSA; however, since the proposed project purpose is for safety improvements, is not capacity increasing, and would not add barriers to wildlife movement, it was decided that the proposed temporary improvement to corridors for this project phase was not economically practical and that, for the time being, the extended culverts would be cleared of obstructions during construction (**BIO-16**) and maintained with annual clearing once the project is complete (**BIO-17**).

Project construction may temporarily affect WRC MSHCP wildlife Cores and Linkages due to the presence of equipment and construction personnel. However, because the project would not structurally deter wildlife movement and all temporarily affected riparian/riverine areas would be mitigated (see Section 3.1.4 and 6.1), the overall functionality of Existing Core H, Proposed Core 3, Cell Groups, Criteria Cells, and P/QP lands would not be appreciably affected by the project. Indirect impacts on conserved areas and linkages outside of the project footprint would be minimized by incorporating the avoidance and minimization measures included in Appendix E and by complying with the standard BMPs outlined in the WRC MSHCP Volume I, Appendix C. With the expansion of the crossing north of Bridge Street and the incorporation of avoidance and minimization to maintain the culvert inlets and outlets, the proposed project would be biologically equivalent or superior to the existing study area conditions.

7.2 Urban/Wildlands Interface Guidelines

Under Section 6.1.4 of the WRC MSHCP, Urban/Wildlands Interface Guidelines, a project must address potential edge effects from proposed development on adjacent WRC MSHCP Conservation Areas from potential degradation of water quality due to runoff and discharge, the introduction of toxins, night lighting, noise, and invasive species. Indirect impacts on WRC MSHCP Conservation Areas within the study area—including Existing Core H; Proposed Core 3; Cell Groups H (Criteria Cells 1763, 1978, 1881), I (1882, 1979), J (1982), F' (1478), G' (1584), and H' (1652, 1666), as well as Criteria Cells 1762, 1977, and 1880, which don't occur within a Cell Group; and P/QP conserved lands—would be minimized by reducing edge effects to riparian/riverine habitat by following the WRC MSHCP guidelines pertaining to the Urban/Wildlands Interface.

Water pollution and erosion control plans would be created and implemented for drainage, toxins, runoff, and new surface flows prior to entering waterways in accordance with the Stormwater Pollution Prevention Plan (**BIO-5**), the Lake and Streambed Alteration Agreement, and CDFW, U.S. Army Corps of Engineers, and Regional Water Quality Control Board permit conditions. Implementation of standard storm water BMPs (measures **BIO-6**), including but not limited to installation of fiber rolls and silt fencing, would ensure compliance with WRC MSHCP Volume I, Section 7.5.3 and Appendix C). Hydrologic connectivity would be maintained within drainages during the duration of construction.

Potential impacts from artificial lighting on wildlife inhabiting surrounding WRC MSHCP Conservation Areas would be avoided and minimized by limiting artificial lighting used for construction. If artificial night lighting is needed, then lights would be shielded and/or directed away from natural lands to prevent light intrusion and spillover into the Conservation Area. New lighting systems installed at intersections at Kennedy Hills Materials, Eden Hot Springs Road/Central Avenue, and Jack Rabbit Trail/Curtis Street/Knoch Road would be directed downward and would incorporate baffles as feasible to reduce excess light from shining out the sides and spilling into adjacent areas (measure **BIO-12**).

Because the project is not adding any additional lanes or otherwise increasing capacity, the long-term operational noise level is expected to be the same as it is now. New rumble strips may create occasionally louder noise levels but would be expected to be short-lived and temporary, only when cars venture onto the shoulder. There may be increased noise levels during construction, but this is expected to be a minimal increase above the ambient noise levels along this high-traffic road.

The introduction and spread of invasive species during and following construction would be avoided and minimized by properly handling and removing exotic plant species to prevent sprouting or regrowth, covering trucks that are carrying exotic vegetation, and disposing of removed vegetation in accordance with applicable laws and regulations (**BIO-4**). In addition, construction equipment would be cleaned of mud or other debris that may contain invasive plants and/or seeds and would be inspected to reduce the potential of spreading noxious weeds before mobilizing to the site and before leaving the site during the course of construction. The cleaning of equipment would occur at least 300 feet from any environmentally sensitive area fencing to prevent the spread of invasive plants (**BIO-5**).

The proposed project would grade existing slopes within the vicinity of the Conservation Area to provide adequate elevation for the roadway and shoulder expansion. The road improvements, cut and fill slopes, and slope easements associated with the roadway and shoulder expansion do not exceed the 128-foot take allowance. The temporarily affected lands along Gilman Springs Road would be hydroseeded with native plant species (**BIO-21**). No fencing would be installed that would impede wildlife passage, although a wildlife fence would be installed north and south of the Bridge Street undercrossing on both sides of Gilman Springs Road and along the north side of Bridge Street which would guide wildlife to the undercrossing (**BIO-18**). This would ensure safe passage of wildlife between the conservation area on either side of the road. Added into the design of the wildlife fencing are jumpouts, which would provide escape opportunities for wildlife which get trapped on the roadway (Appendix G). Native landscaping on slopes and potential fencing would minimize human trespass, dumping into the conservation area, and act as a buffer between the roadway and wildlife.

Through adherence to WRC MSHCP Section 6.1.4, Urban/Wildlands Interface Guidelines, and complying with the standard BMPs outlined in the WRC MSHCP, Appendix C, edge effects on WRC MSHCP Conservation Areas would be minimized.

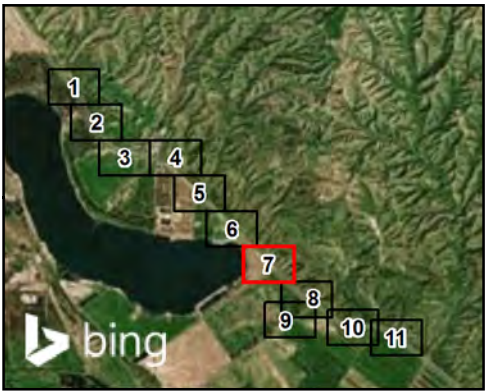
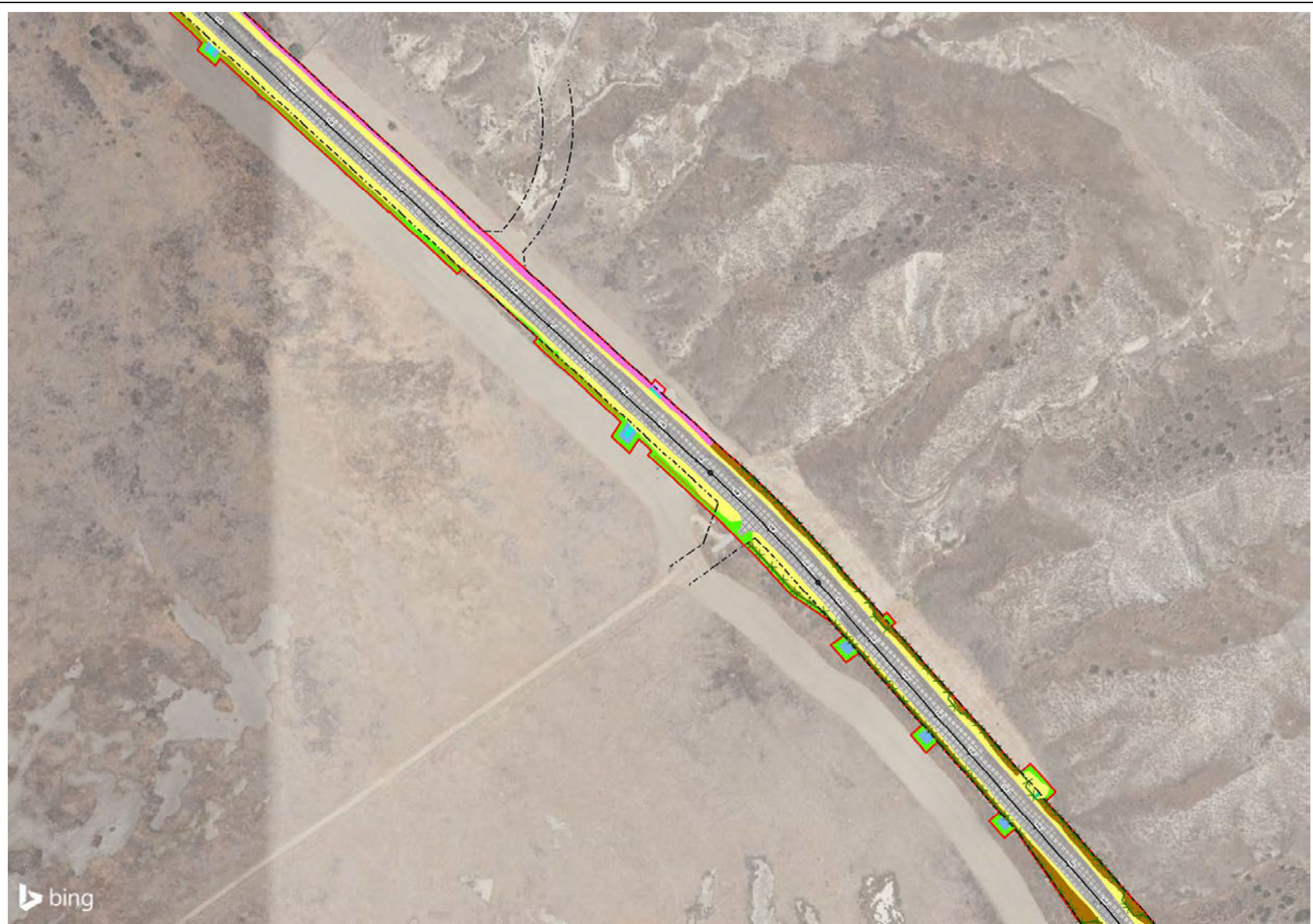
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Appendix A – Figures

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- Existing Right-of-Way
 - ▭ Limits of Disturbance
 - ⊕ Wildlife Fencing
 - ▨ Proposed Pavement Limits
- Permanent Impact**
- ▭ Cut/Fill
 - ▭ Fence Footing
 - ▭ Proposed Slope Easement
 - ▭ Proposed Drainage Easement
 - ▭ Rip Rap
 - ▭ Wildlife Fencing
- Temporary Impact**
- ▭ New Right-of-Way
 - ▭ Construction Limits
 - ▭ Proposed Construction Stage Areas
 - ▭ Temporary Construction Easement

Source: RCTD (2021); ESRI (2017)

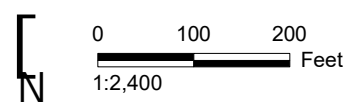


Figure 3A - Sheet 7
Build Alternative
Gilman Springs Median and Shoulder Improvements Project



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Figure 1
Regional Vicinity Map
Gilman Springs Median and Shoulder Improvements Project

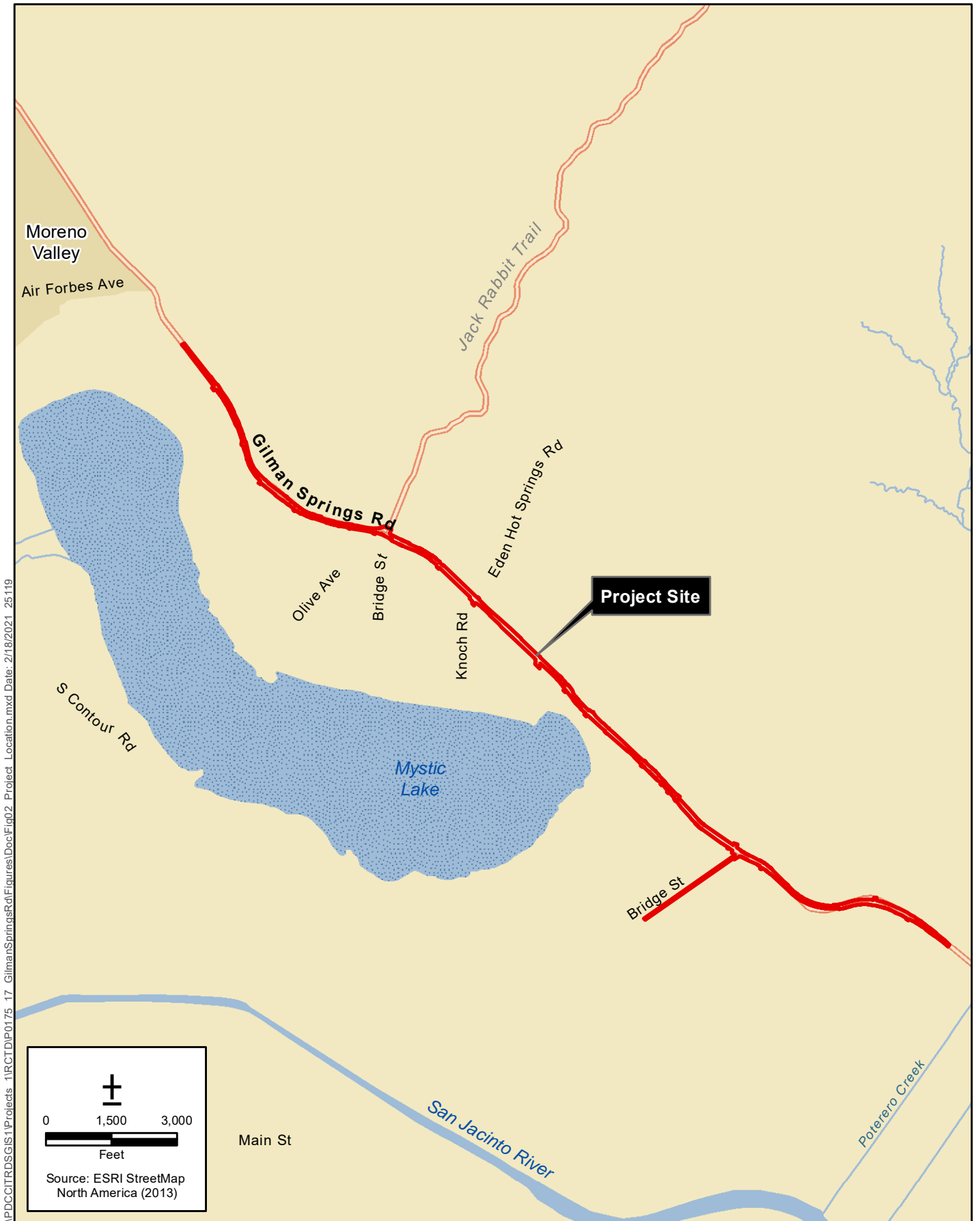
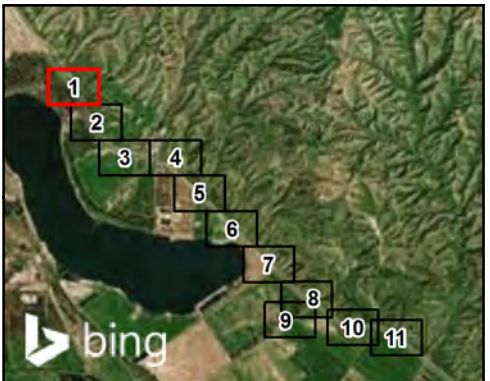
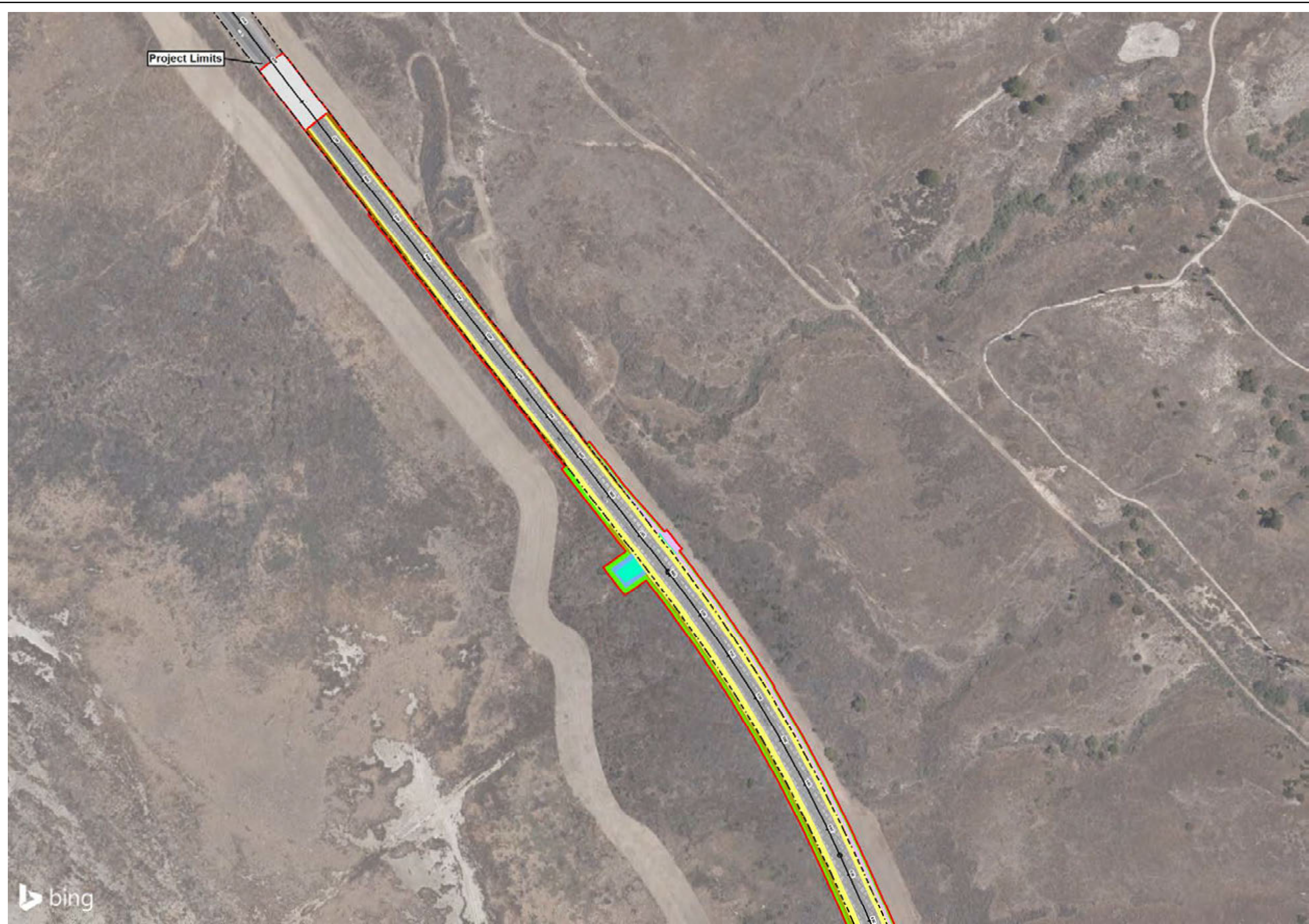


Figure 2
Project Location
Gilman Springs Median and Shoulder Improvements Project

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- Legend**
- Existing Right-of-Way
 - ▭ Limits of Disturbance
 - ▨ Proposed Pavement Limits
- Permanent Impact**
- ▭ Cut/Fill
 - ▭ Proposed Slope Easement
 - ▭ Proposed Drainage Easement
 - ▭ Rip Rap
- Temporary Impact**
- ▭ New Right-of-Way
 - ▭ Construction Limits
 - ▭ Roadway Striping
 - ▭ Temporary Construction Easement

Source: RCTD (2021); ESRI (2017)

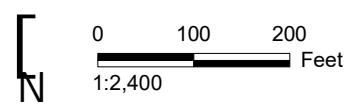
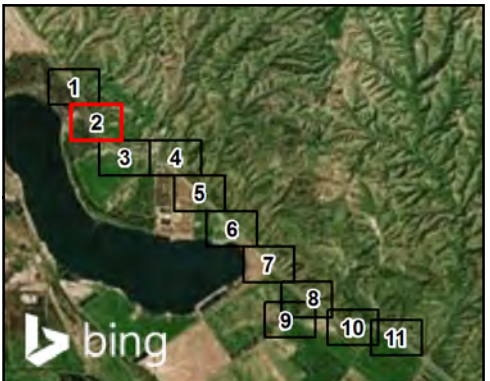


Figure 3A - Sheet 1
Build Alternative
Gilman Springs Median and Shoulder Improvements Project

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- Legend**
- Existing Right-of-Way
 - ▭ Limits of Disturbance
 - ▨ Proposed Pavement Limits
- Permanent Impact**
- ▭ Cut/Fill
 - ▭ Proposed Slope Easement
 - ▭ Proposed Drainage Easement
 - ▭ Rip Rap
- Temporary Impact**
- ▭ New Right-of-Way
 - ▭ Construction Limits
 - ▭ Temporary Construction Easement

Source: RCTD (2021); ESRI (2017)

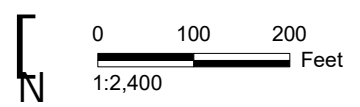
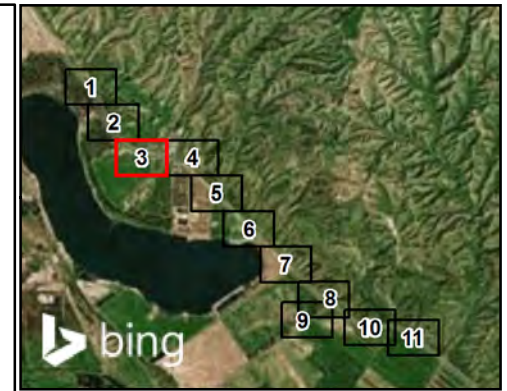
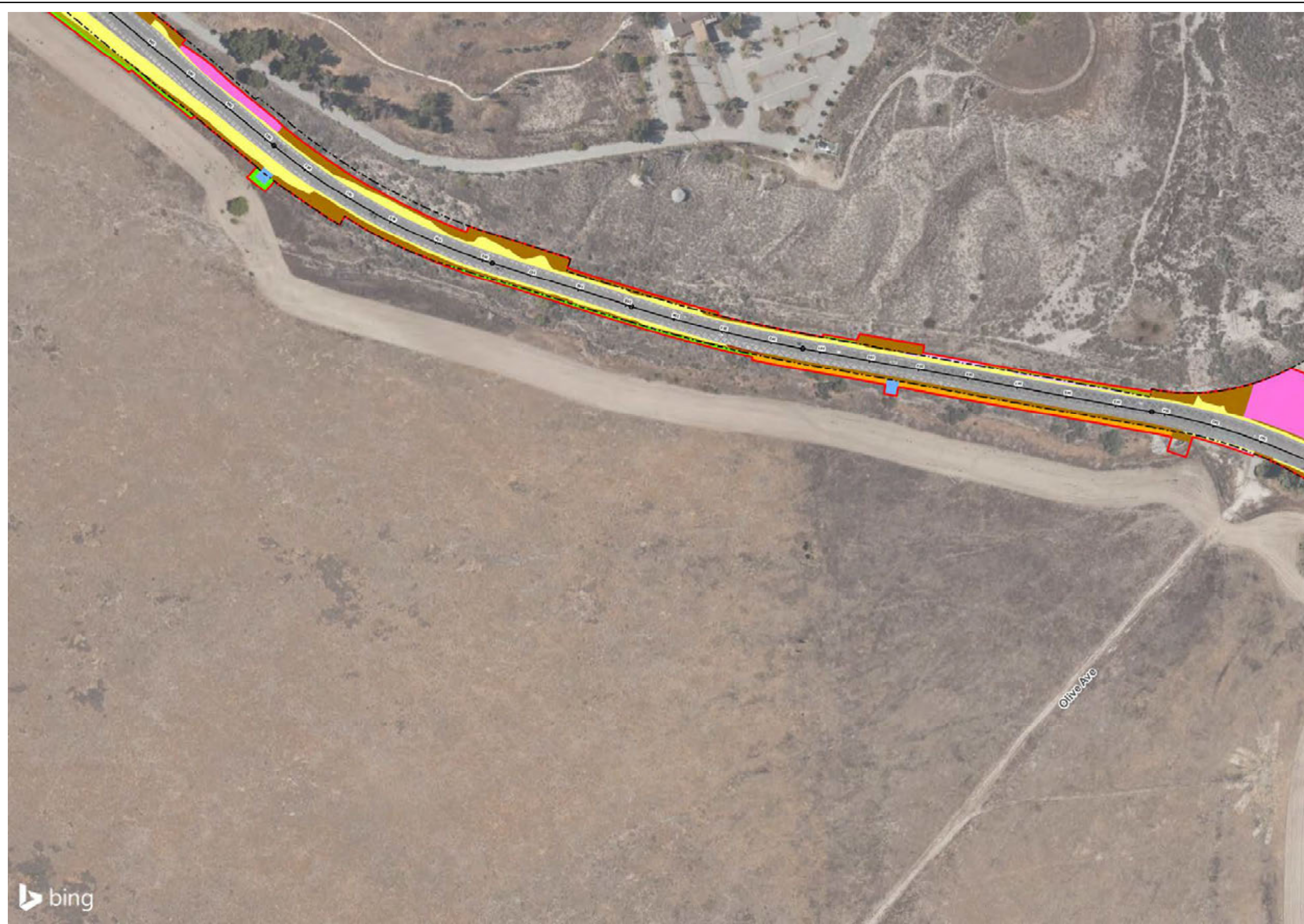
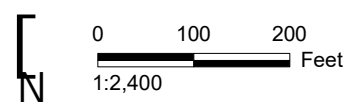
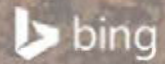


Figure 3A - Sheet 2
Build Alternative
Gilman Springs Median and Shoulder Improvements Project

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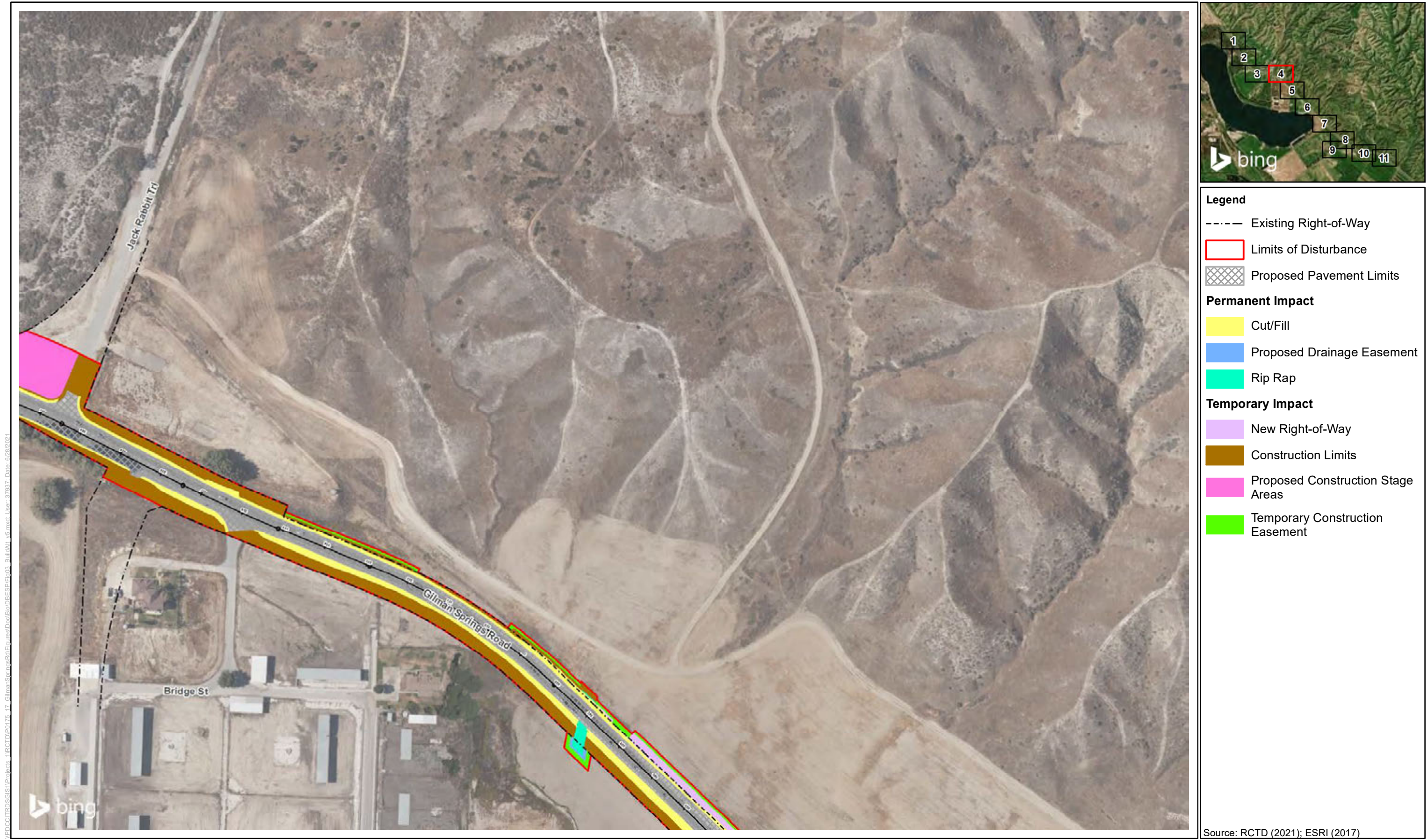


- Legend**
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 - ▨ Proposed Pavement Limits
- Permanent Impact**
- ▭ Cut/Fill
 - ▭ Concrete Barrier
 - ▭ Proposed Slope Easement
 - ▭ Proposed Drainage Easement
- Temporary Impact**
- ▭ New Right-of-Way
 - ▭ Construction Limits
 - ▭ Proposed Construction Stage Areas
 - ▭ Retaining Wall Footing & Maintenance Easement
 - ▭ Temporary Construction Easement



Source: RCTD (2021); ESRI (2017)

Figure 3A - Sheet 3
Build Alternative
Gilman Springs Median and Shoulder Improvements Project



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Source: RCTD (2021); ESRI (2017)

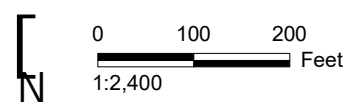
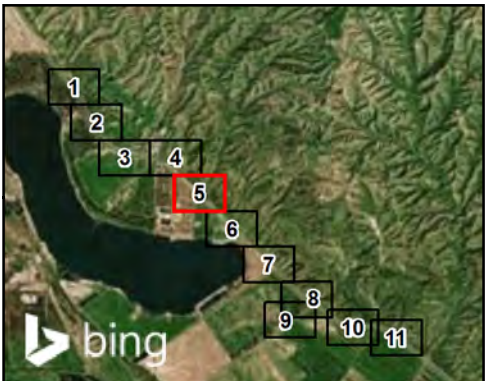
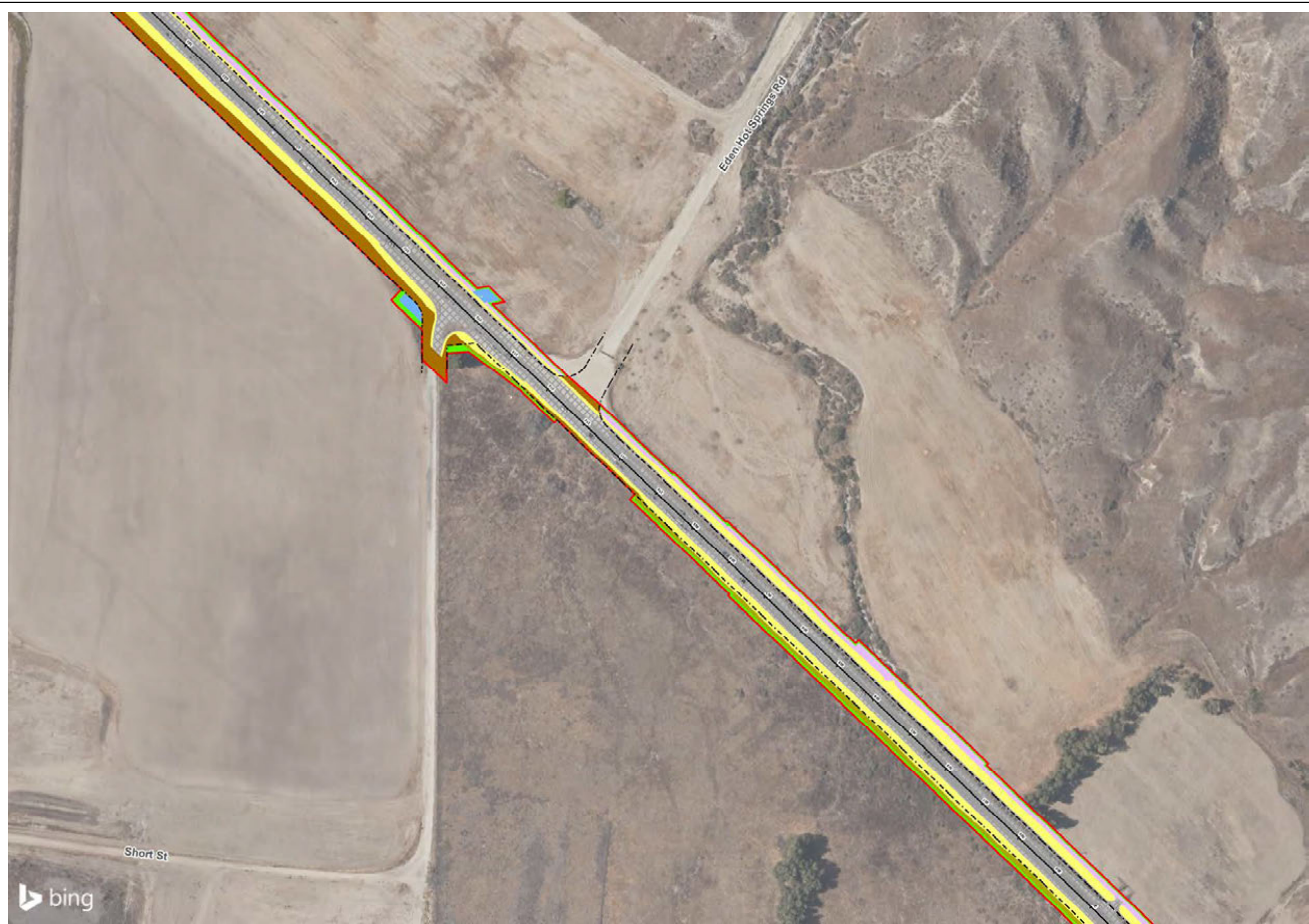


Figure 3A - Sheet 4
Build Alternative
Gilman Springs Median and Shoulder Improvements Project

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- Legend**
- Existing Right-of-Way
 - ▭ Limits of Disturbance
 - ▨ Proposed Pavement Limits
- Permanent Impact**
- ▭ Cut/Fill
 - ▭ Proposed Slope Easement
 - ▭ Proposed Drainage Easement
- Temporary Impact**
- ▭ New Right-of-Way
 - ▭ Construction Limits
 - ▭ Temporary Construction Easement

Source: RCTD (2021); ESRI (2017)

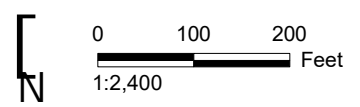
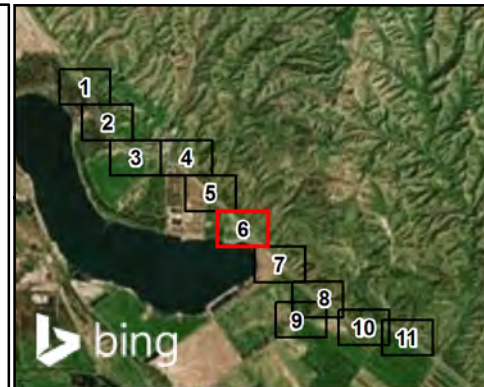


Figure 3A - Sheet 5
Build Alternative
Gilman Springs Median and Shoulder Improvements Project

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- Legend**
- Existing Right-of-Way
 - [Red Outline] Limits of Disturbance
 - [Cross-hatch] Proposed Pavement Limits
- Permanent Impact**
- [Yellow] Cut/Fill
 - [Olive Green] Proposed Slope Easement
 - [Light Blue] Proposed Drainage Easement
 - [Cyan] Rip Rap
 - [Dark Blue] Utility Easement
- Temporary Impact**
- [Purple] New Right-of-Way
 - [Brown Outline] Construction Limits
 - [Pink] Proposed Construction Stage Areas
 - [Bright Green Outline] Temporary Construction Easement

Source: RCTD (2021); ESRI (2017)

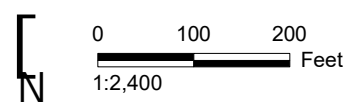
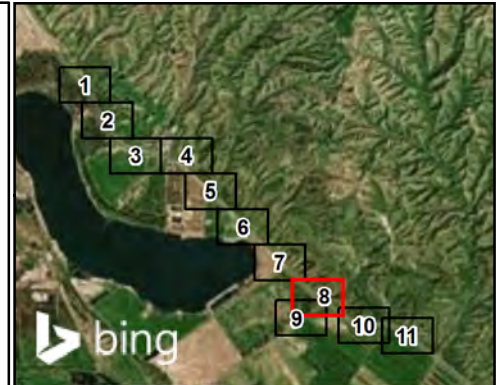


Figure 3A - Sheet 6
Build Alternative
Gilman Springs Median and Shoulder Improvements Project

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- Legend**
- Existing Right-of-Way
 - [Red Outline] Limits of Disturbance
 - [Green Dashed Line] Wildlife Fencing
 - [Cross-hatch] Proposed Pavement Limits
- Permanent Impact**
- [Yellow] Cut/Fill
 - [Orange] Fence Footing
 - [Olive Green] Proposed Slope Easement
 - [Light Blue] Proposed Drainage Easement
 - [Dark Blue] Utility Easement
 - [Green] Wildlife Fencing
- Temporary Impact**
- [Brown] Construction Limits
 - [Pink] Proposed Construction Stage Areas
 - [Light Green] Temporary Construction Easement

Source: RCTD (2021); ESRI (2017)

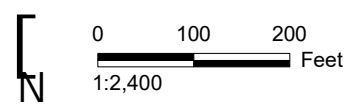
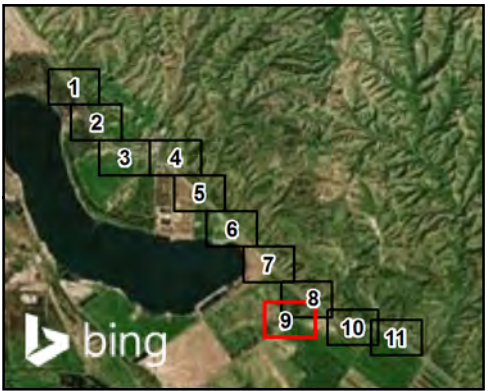
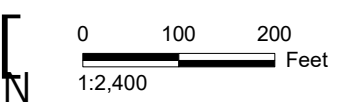


Figure 3A - Sheet 8
Build Alternative
Gilman Springs Median and Shoulder Improvements Project

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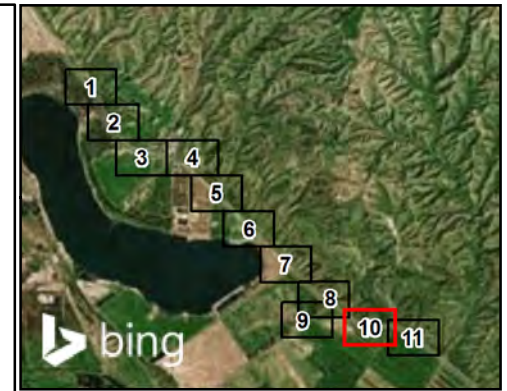
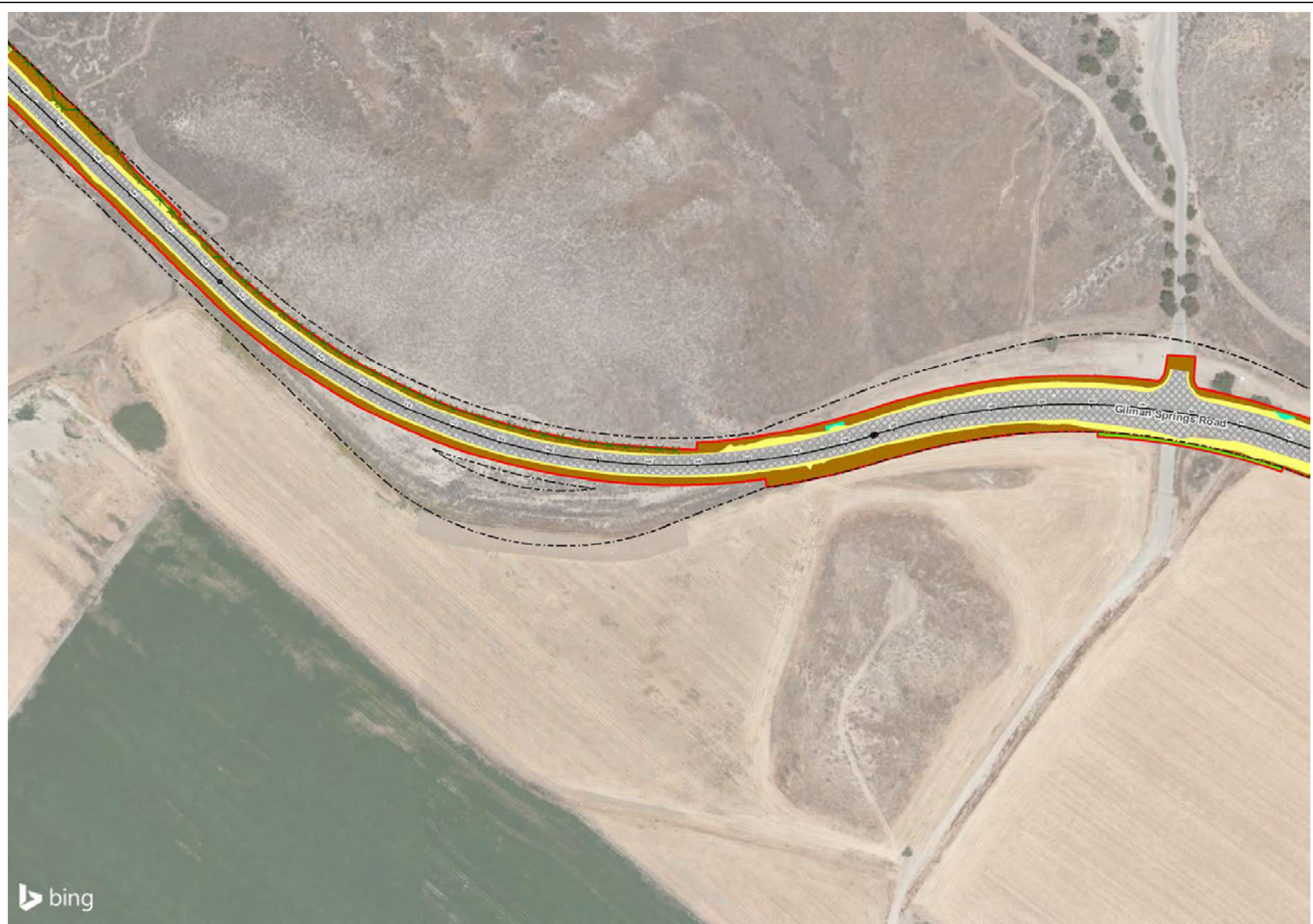
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 - [Red Outline] Limits of Disturbance
 - [Green Dashed Line] Wildlife Fencing
 - [Hatched Box] Proposed Pavement Limits
- Permanent Impact**
- [Yellow Box] Cut/Fill
 - [Orange Box] Fence Footing
 - [Blue Box] Proposed Drainage Easement
 - [Green Box] Wildlife Fencing
- Temporary Impact**
- [Brown Box] Construction Limits
 - [Light Green Box] Temporary Construction Easement



Source: RCTD (2021); ESRI (2017)

Figure 3A - Sheet 9
Build Alternative
Gilman Springs Median and Shoulder Improvements Project

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Legend

- Existing Right-of-Way
- [Red Outline] Limits of Disturbance
- - - - Wildlife Fencing
- [Hatched Box] Proposed Pavement Limits

Permanent Impact

- [Yellow Box] Cut/Fill
- [Orange Box] Fence Footing
- [Cyan Box] Rip Rap
- [Dark Green Box] Wildlife Fencing

Temporary Impact

- [Brown Box] Construction Limits
- [Light Green Box] Temporary Construction Easement

Source: RCTD (2021); ESRI (2017)

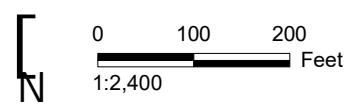
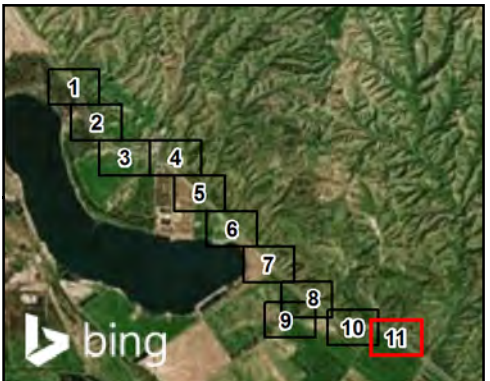
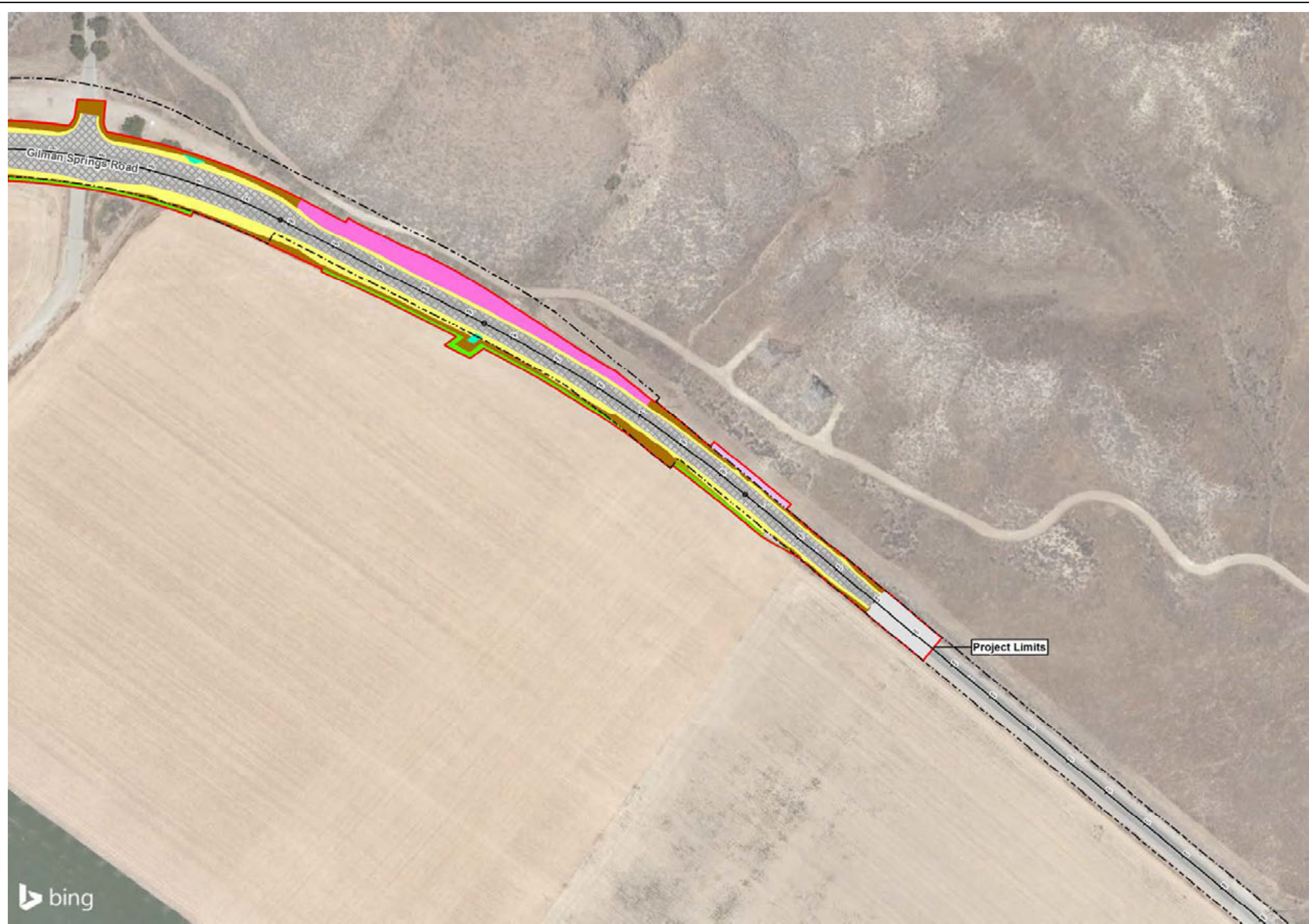
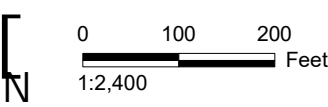
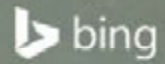


Figure 3A - Sheet 10
Build Alternative
Gilman Springs Median and Shoulder Improvements Project

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- Legend**
- Existing Right-of-Way
 - ▭ Limits of Disturbance
 - ▨ Proposed Pavement Limits
- Permanent Impact**
- ▭ Cut/Fill
 - ▭ Proposed Slope Easement
 - ▭ Rip Rap
- Temporary Impact**
- ▭ New Right-of-Way
 - ▭ Construction Limits
 - ▭ Proposed Construction Stage Areas
 - ▭ Roadway Striping
 - ▭ Temporary Construction Easement



Source: RCTD (2021); ESRI (2017)

Figure 3A - Sheet 11
Build Alternative
Gilman Springs Median and Shoulder Improvements Project

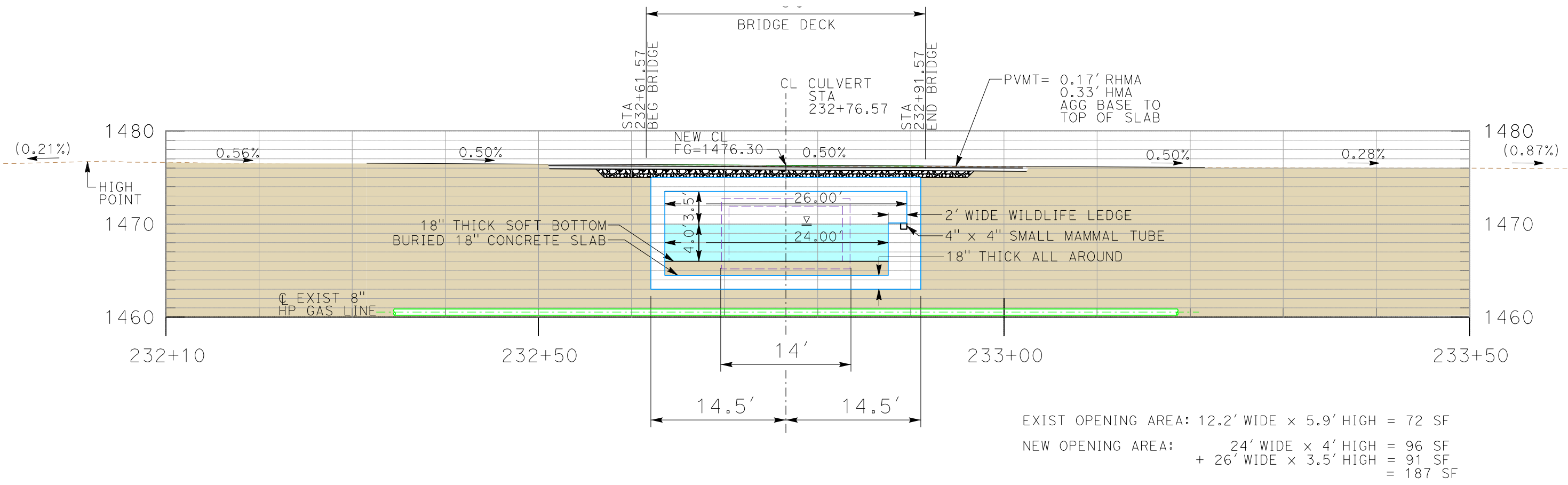


Figure 3C
Build Alternative- Bridge Street Cross Section
Gilman Springs Median and Shoulder Improvements Project



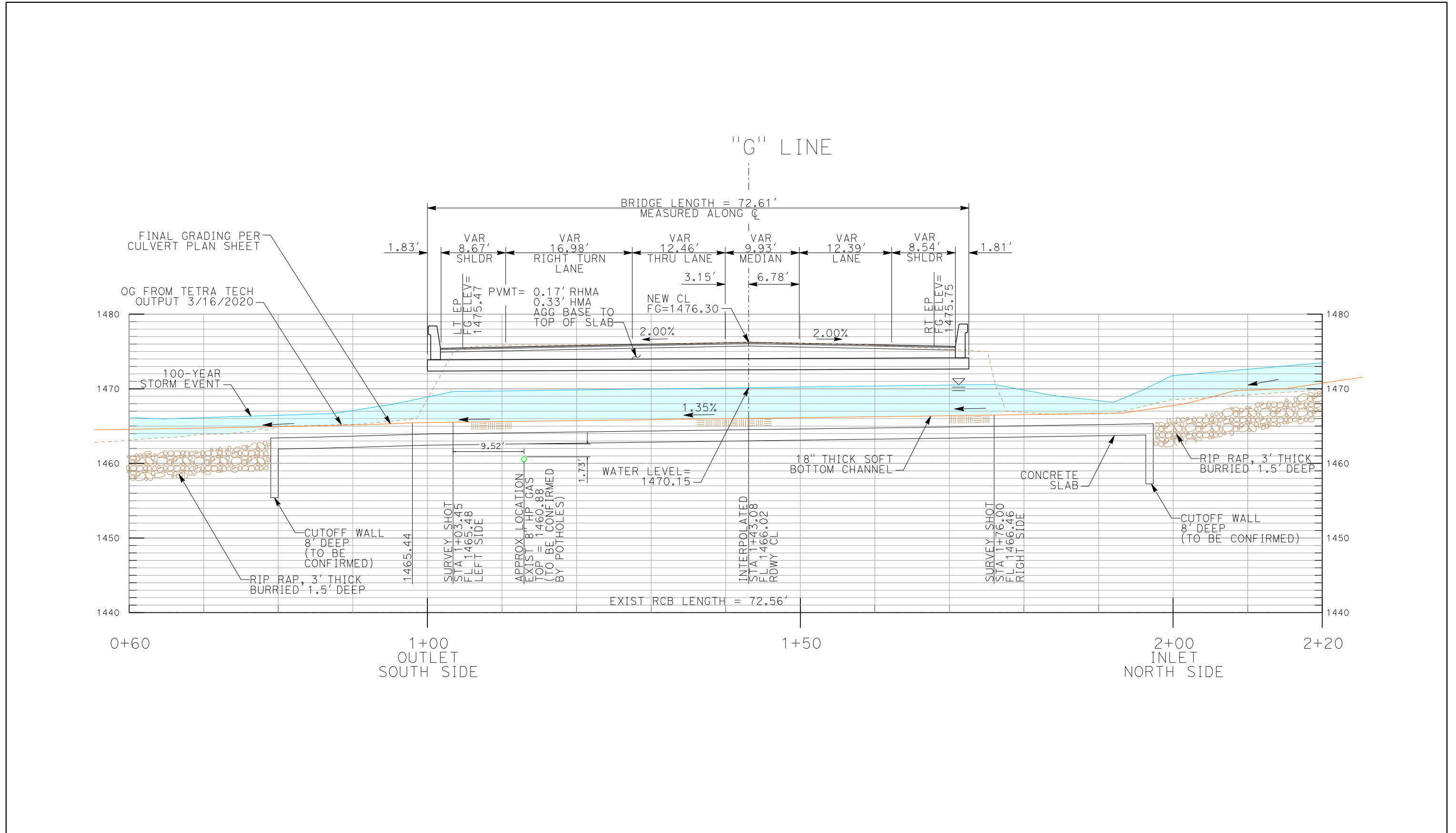
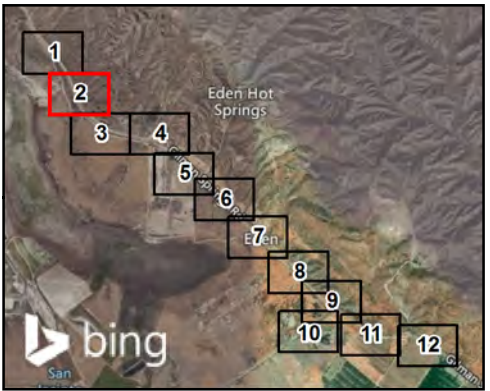


Figure 3D
Build Alternative- Bridge Street Culvert Profile
Gilman Springs Median and Shoulder Improvements Project

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Legend

- 300-ft Study Area
- Permanent Impacts
- Temporary Impacts
- Roadway

SSURGO Soils

- BaG - Badland
- MhB - Metz loamy fine sand, sandy loam substratum, 0 to 5 per cent slopes
- SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, ero ded
- SgC - San Emigdio loam, 2 to 8 percent slopes
- SgD2 - San Emigdio loam, 8 to 15 percent slopes, eroded
- SmE2 - San Timoteo loam, 8 to 25 percent slopes, eroded

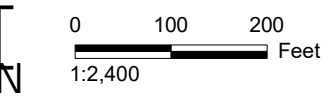
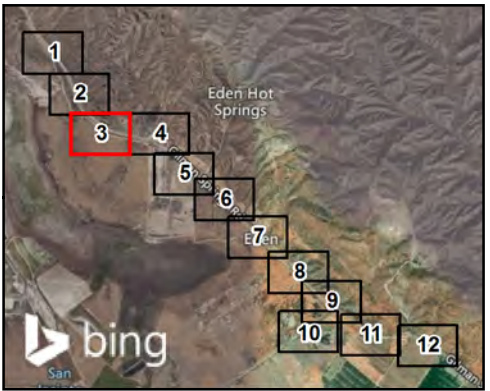
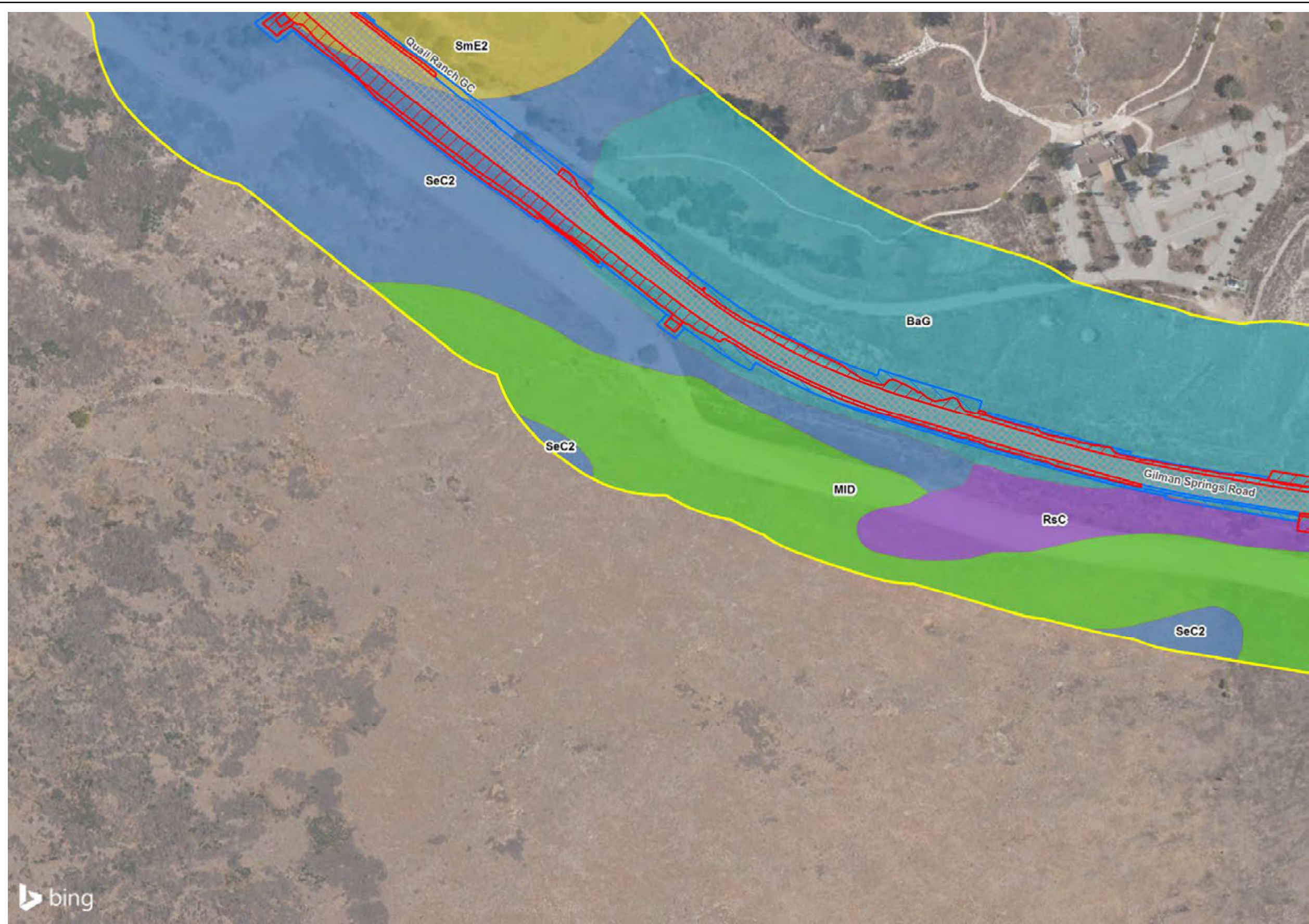


Figure 4 - Sheet 2
Soils Map
Gilman Springs Median and Shoulder Improvements Project

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Legend

- 300-ft Study Area
- Permanent Impacts
- Temporary Impacts
- Roadway

SSURGO Soils

- BaG - Badland
- MID - Metz gravelly sandy loam, 2 to 15 percent slopes
- RsC - Riverwash
- SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, ero ded
- SmE2 - San Timoteo loam, 8 to 25 percent slopes, eroded

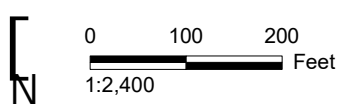
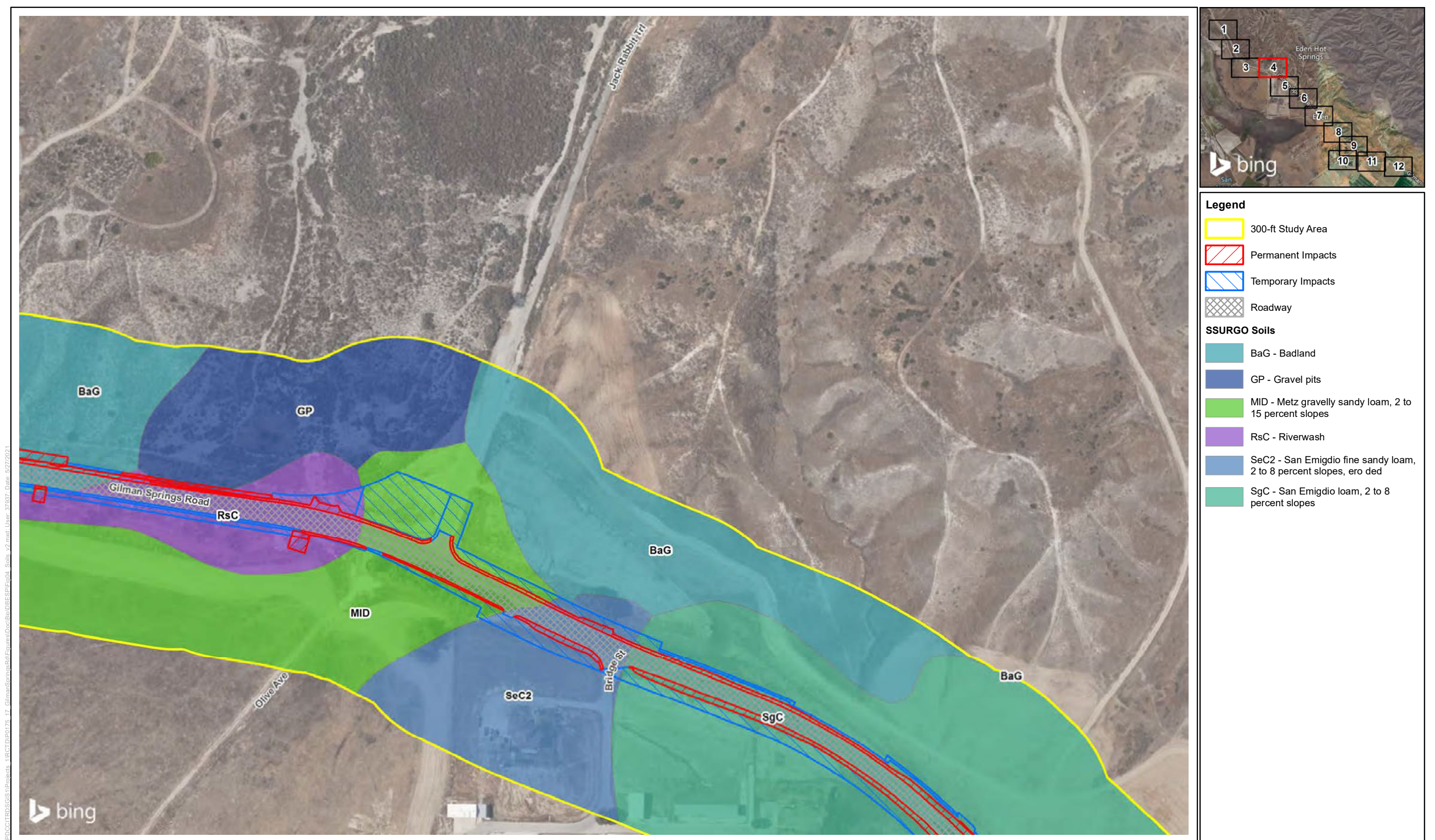
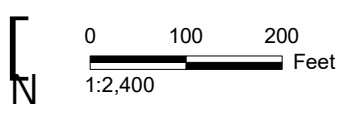


Figure 4 - Sheet 3
Soils Map
Gilman Springs Median and Shoulder Improvements Project



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Legend

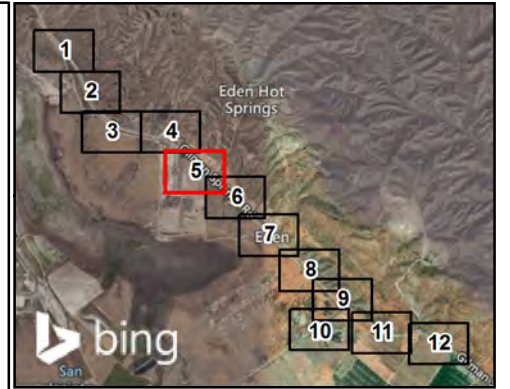
- 300-ft Study Area
- Permanent Impacts
- Temporary Impacts
- Roadway

SSURGO Soils

- BaG - Badland
- GP - Gravel pits
- MID - Metz gravelly sandy loam, 2 to 15 percent slopes
- RsC - Riverwash
- SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, ero ded
- SgC - San Emigdio loam, 2 to 8 percent slopes

**Figure 4 - Sheet 4
Soils Map
Gilman Springs Median and Shoulder Improvements Project**

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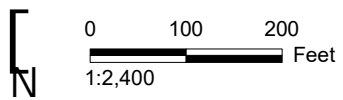


Legend

- 300-ft Study Area
- Permanent Impacts
- Temporary Impacts
- Roadway

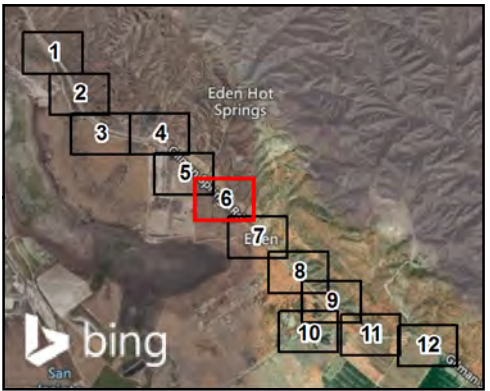
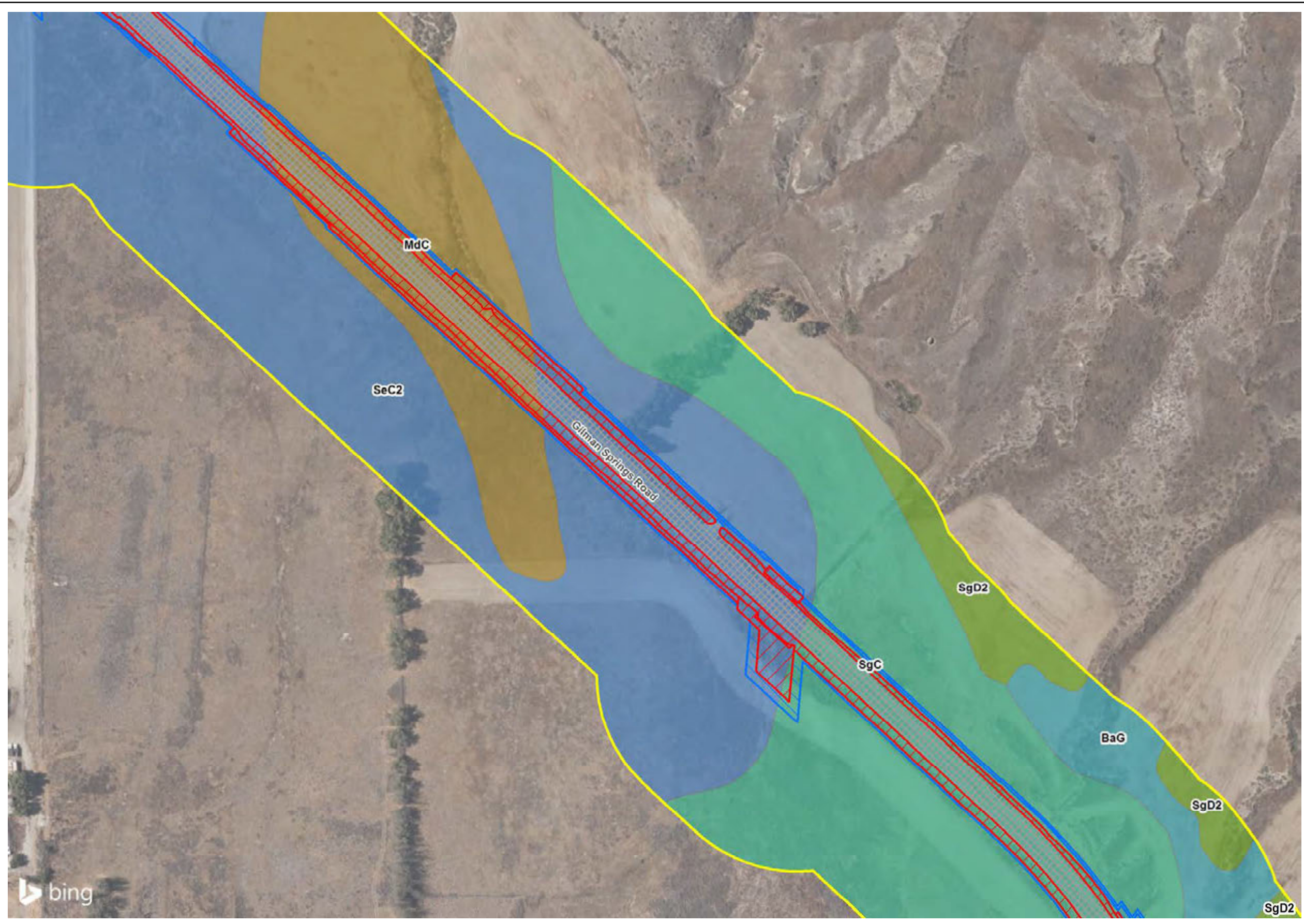
SSURGO Soils

- MdC - Metz loamy sand, 2 to 8 percent slopes
- SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, ero ded
- SgC - San Emigdio loam, 2 to 8 percent slopes



**Figure 4 - Sheet 5
Soils Map
Gilman Springs Median and Shoulder Improvements Project**

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Legend

- 300-ft Study Area
- Permanent Impacts
- Temporary Impacts
- Roadway

SSURGO Soils

- BaG - Badland
- MdC - Metz loamy sand, 2 to 8 percent slopes
- SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded
- SgC - San Emigdio loam, 2 to 8 percent slopes
- SgD2 - San Emigdio loam, 8 to 15 percent slopes, eroded

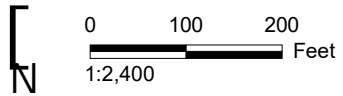
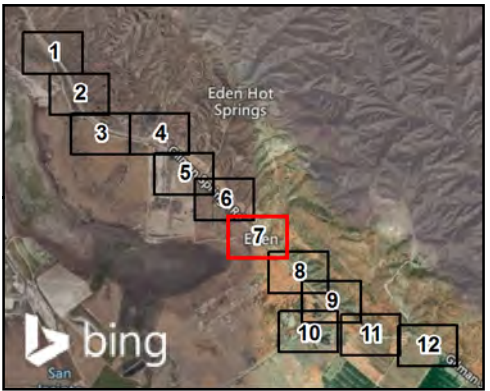
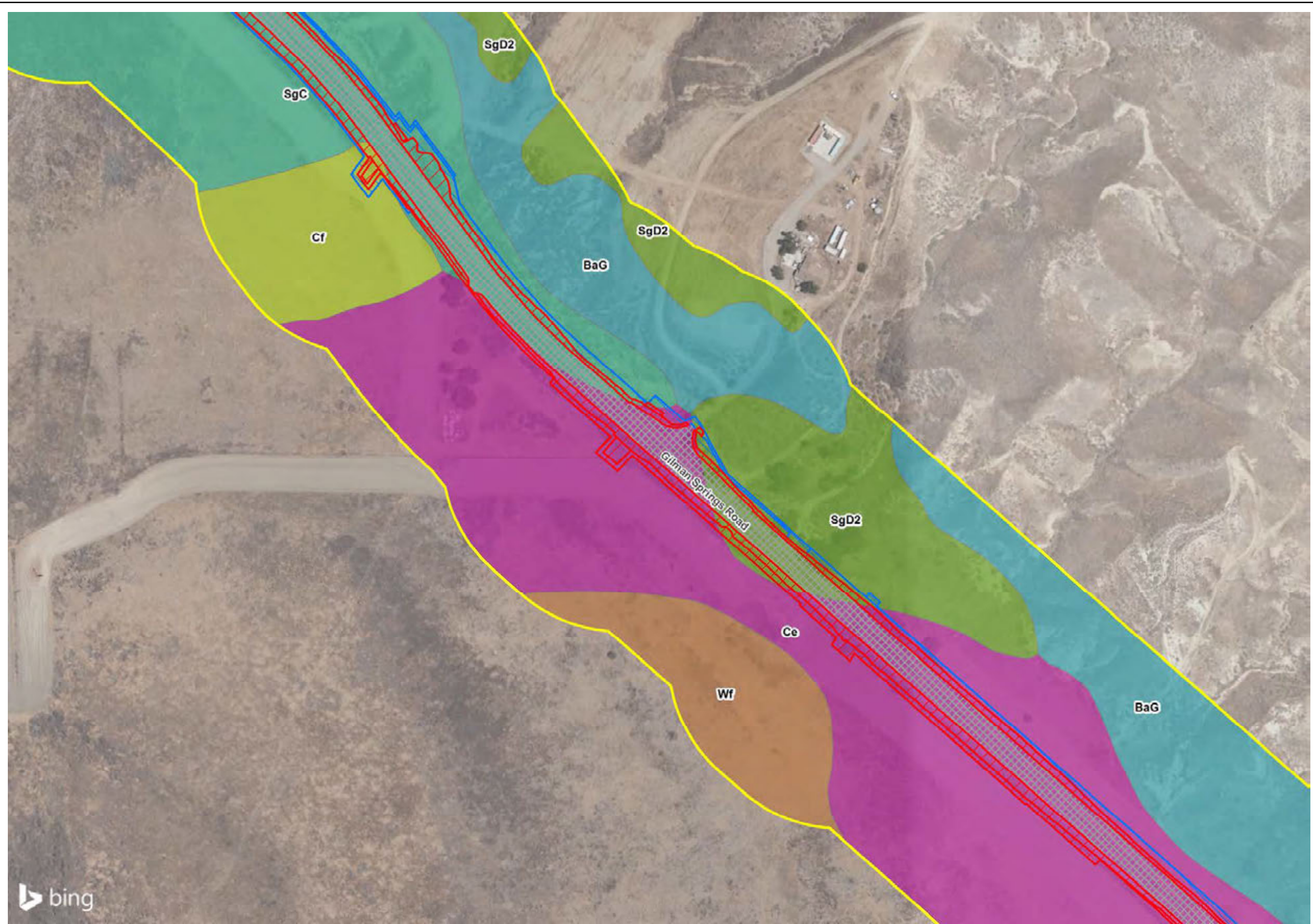
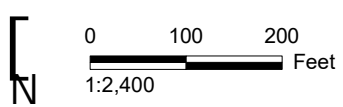


Figure 4 - Sheet 6
Soils Map
Gilman Springs Median and Shoulder Improvements Project

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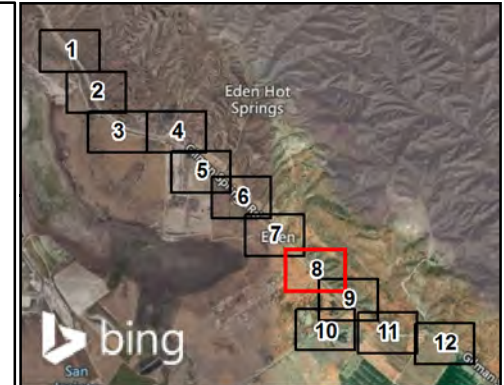
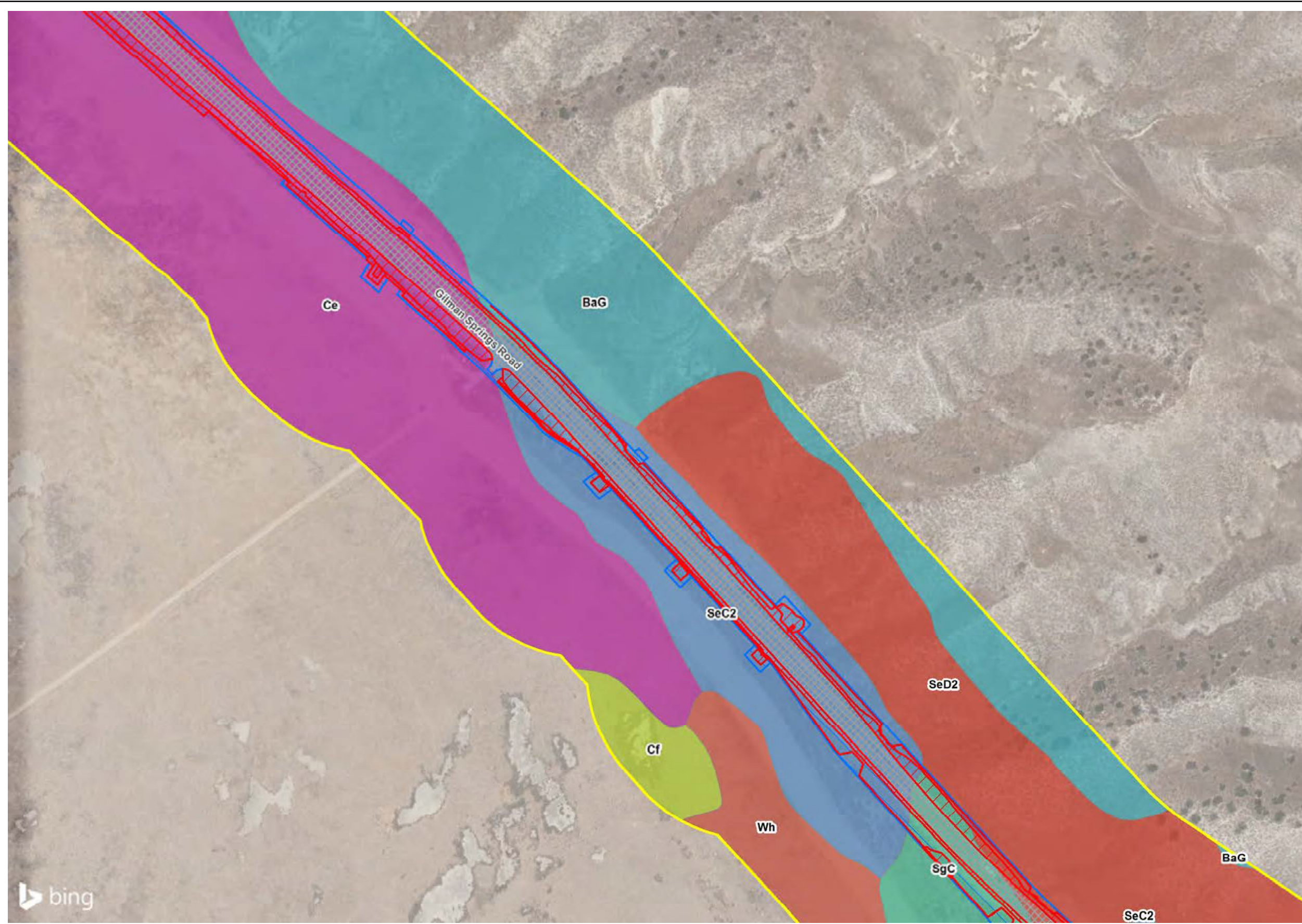


- Legend**
- 300-ft Study Area
 - Permanent Impacts
 - Temporary Impacts
 - Roadway
- SSURGO Soils**
- BaG - Badland
 - Ce - Chino silt loam, drained
 - Cf - Chino silt loam, drained, saline-alkali
 - SgC - San Emigdio loam, 2 to 8 percent slopes
 - SgD2 - San Emigdio loam, 8 to 15 percent slopes, eroded
 - Wf - Willows silty clay



**Figure 4 - Sheet 7
Soils Map
Gilman Springs Median and Shoulder Improvements Project**

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Legend

- 300-ft Study Area
- Permanent Impacts
- Temporary Impacts
- Roadway

SSURGO Soils

- BaG - Badland
- Ce - Chino silt loam, drained
- Cf - Chino silt loam, drained, saline-alkali
- SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded
- SeD2 - San Emigdio fine sandy loam, 8 to 15 percent slopes, eroded
- SgC - San Emigdio loam, 2 to 8 percent slopes
- Wh - Willows silty clay, strongly saline-alkali

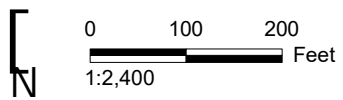
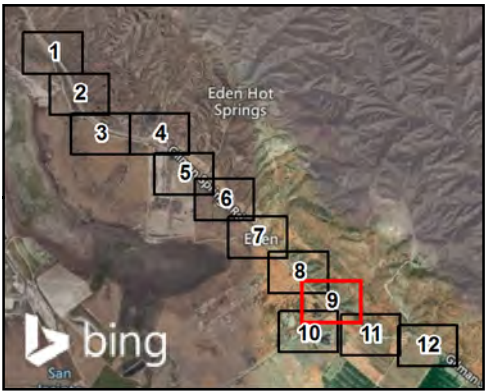
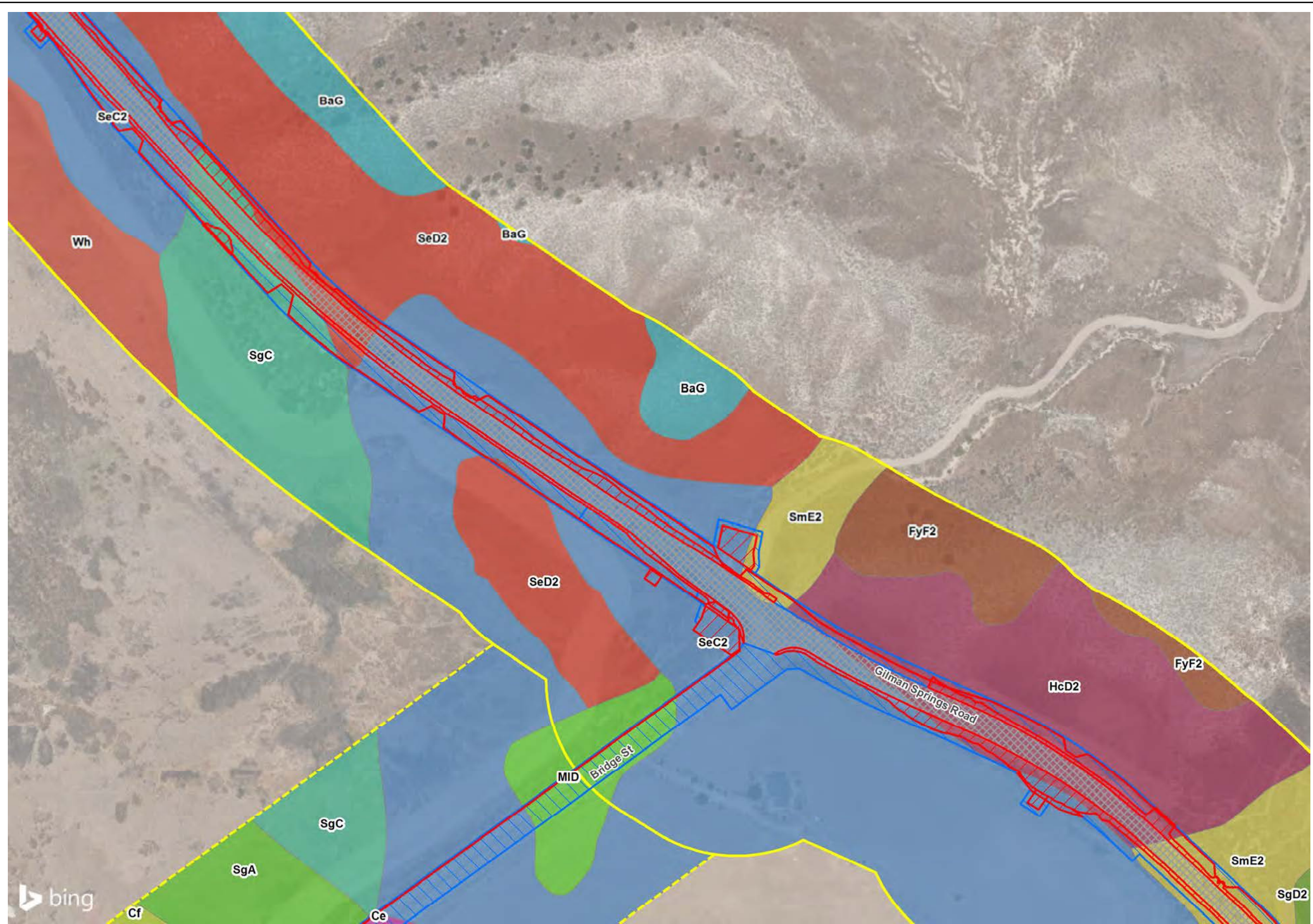


Figure 4 - Sheet 8
Soils Map
Gilman Springs Median and Shoulder Improvements Project

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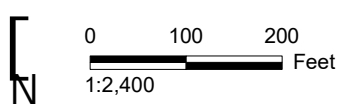


Legend

- 300-ft Study Area
- Bridge Street Study Area (300-ft Buffer)
- Permanent Impacts
- Temporary Impacts
- Roadway

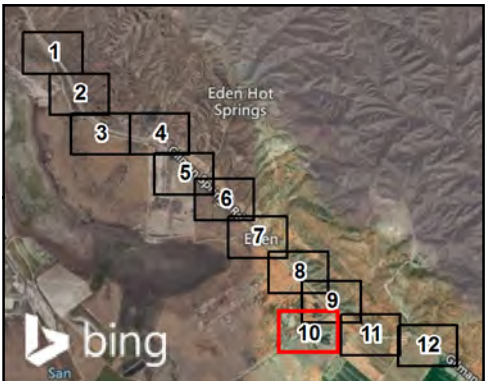
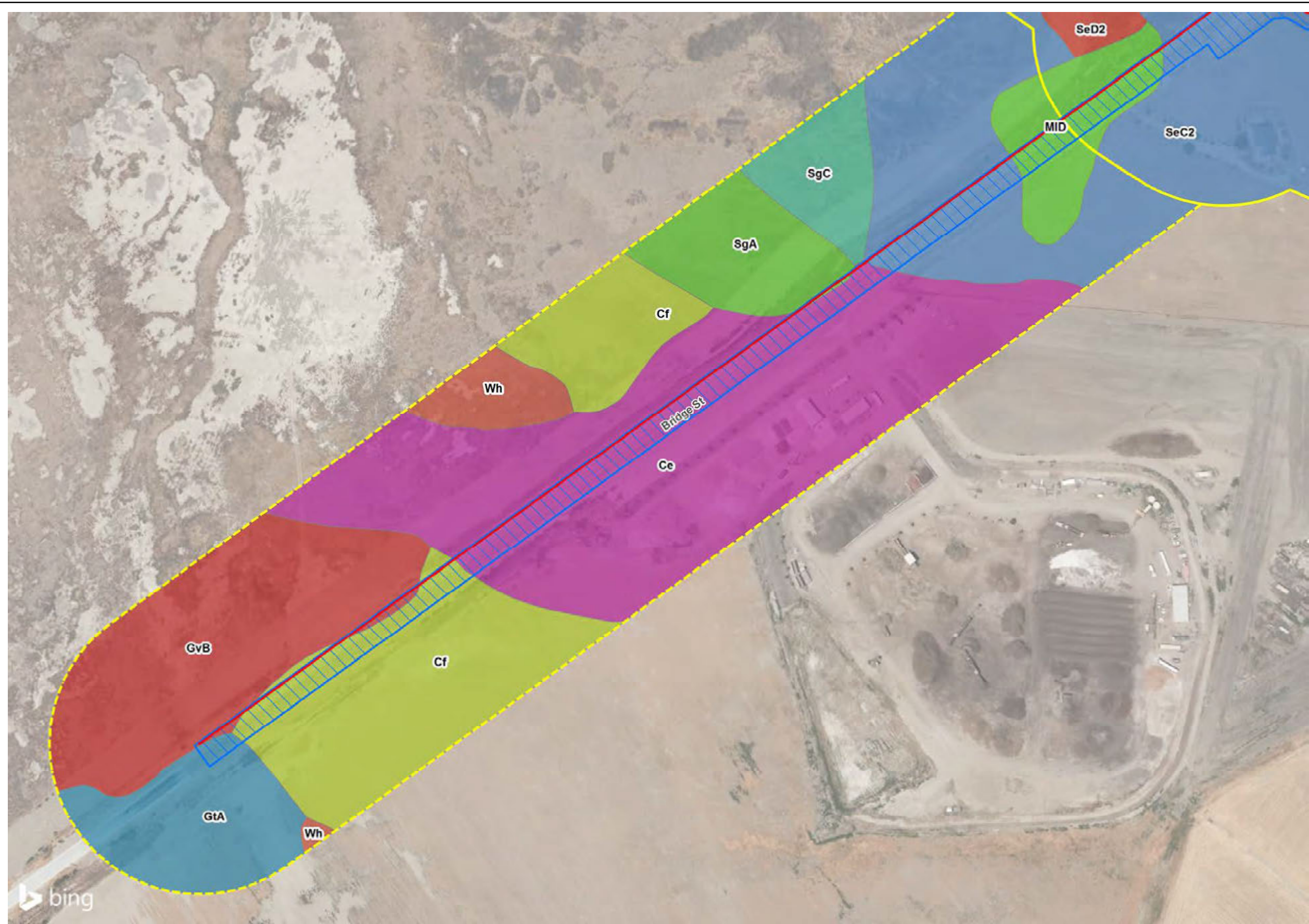
SSURGO Soils

- BaG - Badland
- Ce - Chino silt loam, drained
- Cf - Chino silt loam, drained, saline-alkali
- FyF2 - Friant rocky fine sandy loam, 25 to 50 percent slopes, eroded
- HcD2 - Hanford coarse sandy loam, 8 to 15 percent slopes, eroded
- MID - Metz gravelly sandy loam, 2 to 15 percent slopes
- SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded
- SeD2 - San Emigdio fine sandy loam, 8 to 15 percent slopes, eroded
- SgA - San Emigdio loam, 0 to 2 percent slopes
- SgC - San Emigdio loam, 2 to 8 percent slopes
- SgD2 - San Emigdio loam, 8 to 15 percent slopes, eroded
- SmE2 - San Timoteo loam, 8 to 25 percent slopes, eroded
- Wh - Willows silty clay, strongly saline-alkali



**Figure 4 - Sheet 9
Soils Map
Gilman Springs Median and Shoulder Improvements Project**

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Legend

- 300-ft Study Area
- Bridge Street Study Area (300-ft Buffer)
- Permanent Impacts
- Temporary Impacts

SSURGO Soils

- Ce - Chino silt loam, drained
- Cf - Chino silt loam, drained, saline-alkali
- GtA - Grangeville fine sandy loam, drained, 0 to 2 percent slopes
- GvB - Grangeville fine sandy loam, saline-alkali, 0 to 5 percent slopes
- MID - Metz gravelly sandy loam, 2 to 15 percent slopes
- SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded
- SeD2 - San Emigdio fine sandy loam, 8 to 15 percent slopes, eroded
- SgA - San Emigdio loam, 0 to 2 percent slopes
- SgC - San Emigdio loam, 2 to 8 percent slopes
- Wh - Willows silty clay, strongly saline-alkali

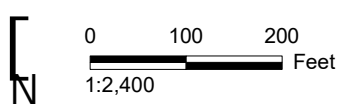
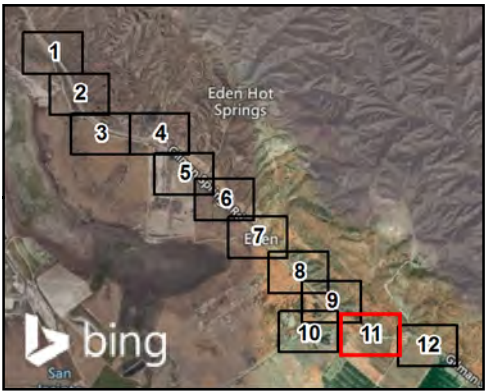
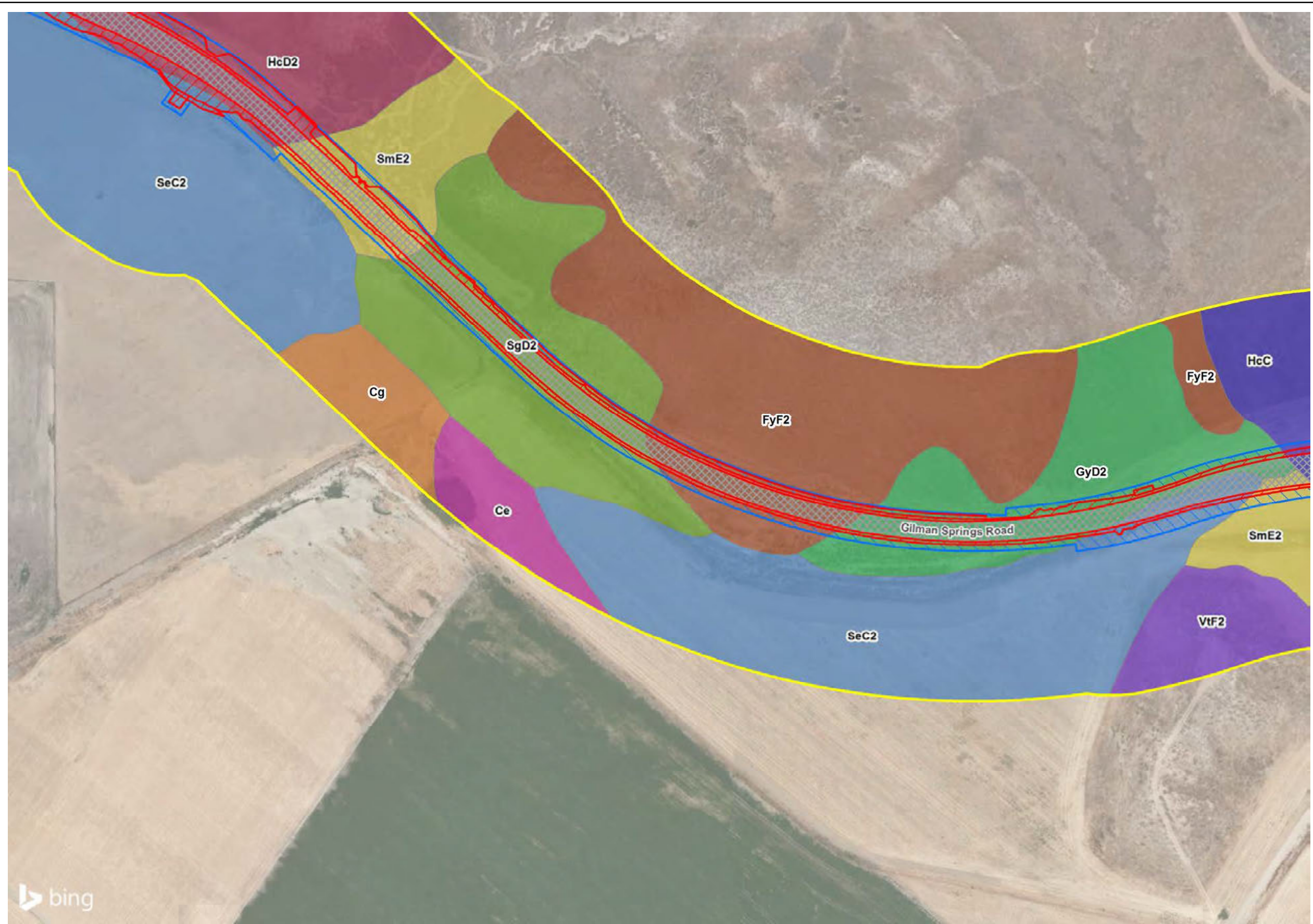


Figure 4 - Sheet 10
Soils Map
Gilman Springs Median and Shoulder Improvements Project

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- Legend**
- 300-ft Study Area
 - Permanent Impacts
 - Temporary Impacts
 - Roadway
- SSURGO Soils**
- Ce - Chino silt loam, drained
 - Cg - Chino silt loam, drained, strongly saline-alkali
 - FyF2 - Friant rocky fine sandy loam, 25 to 50 percent slopes, eroded
 - GyD2 - Greenfield sandy loam, 8 to 15 percent slopes, eroded
 - HcC - Hanford coarse sandy loam, 2 to 8 percent slopes
 - HcD2 - Hanford coarse sandy loam, 8 to 15 percent slopes, eroded
 - SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded
 - SgD2 - San Emigdio loam, 8 to 15 percent slopes, eroded
 - SmE2 - San Timoteo loam, 8 to 25 percent slopes, eroded
 - VtF2 - Vista rocky coarse sandy loam, 2 to 35 percent slopes, eroded

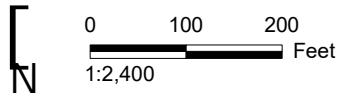
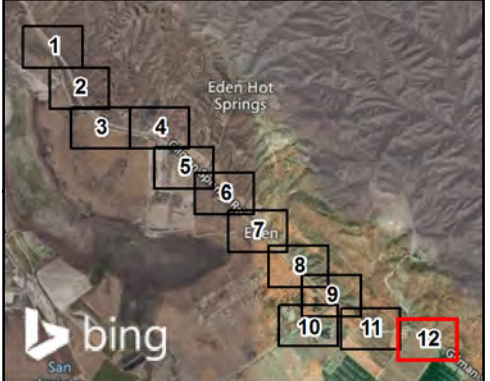
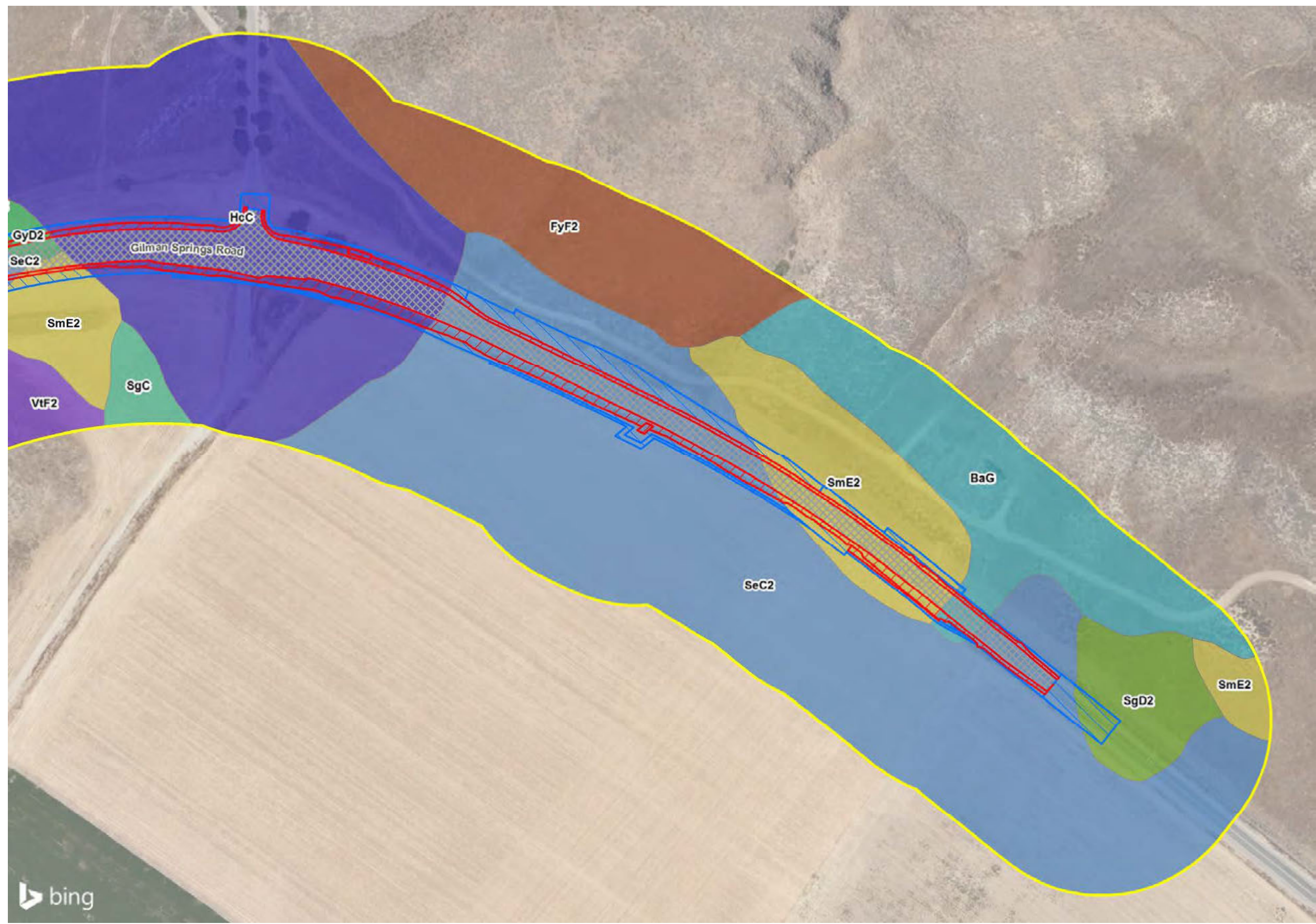


Figure 4 - Sheet 11
Soils Map
Gilman Springs Median and Shoulder Improvements Project

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Legend

- 300-ft Study Area
- Permanent Impacts
- Temporary Impacts
- Roadway

SSURGO Soils

- BaG - Badland
- FyF2 - Friant rocky fine sandy loam, 25 to 50 percent slopes, eroded
- GyD2 - Greenfield sandy loam, 8 to 15 percent slopes, eroded
- HcC - Hanford coarse sandy loam, 2 to 8 percent slopes
- SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded
- SgC - San Emigdio loam, 2 to 8 percent slopes
- SgD2 - San Emigdio loam, 8 to 15 percent slopes, eroded
- SmE2 - San Timoteo loam, 8 to 25 percent slopes, eroded
- VtF2 - Vista rocky coarse sandy loam, 2 to 35 percent slopes, eroded

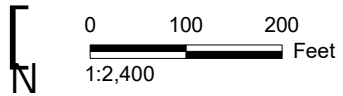
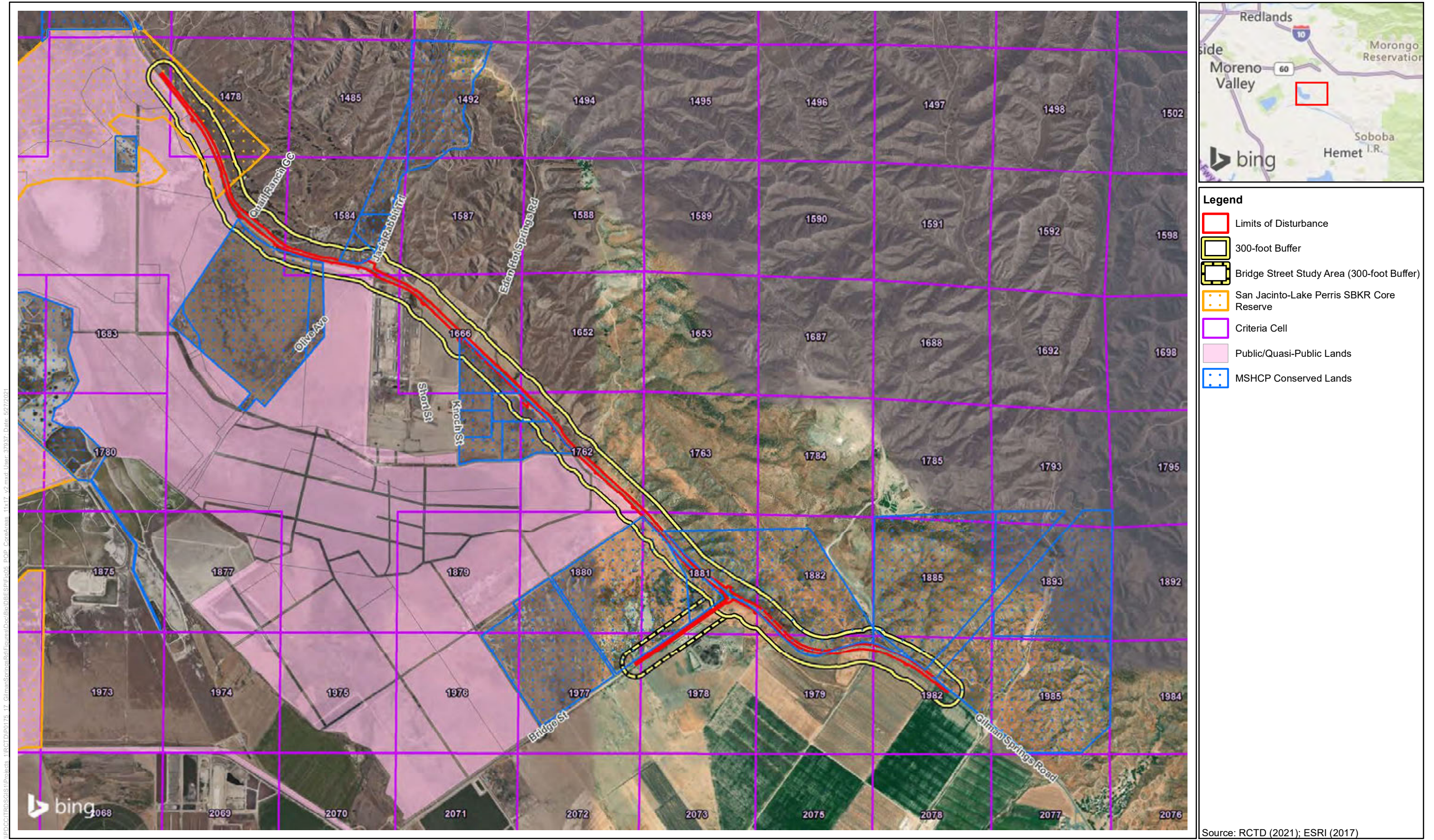


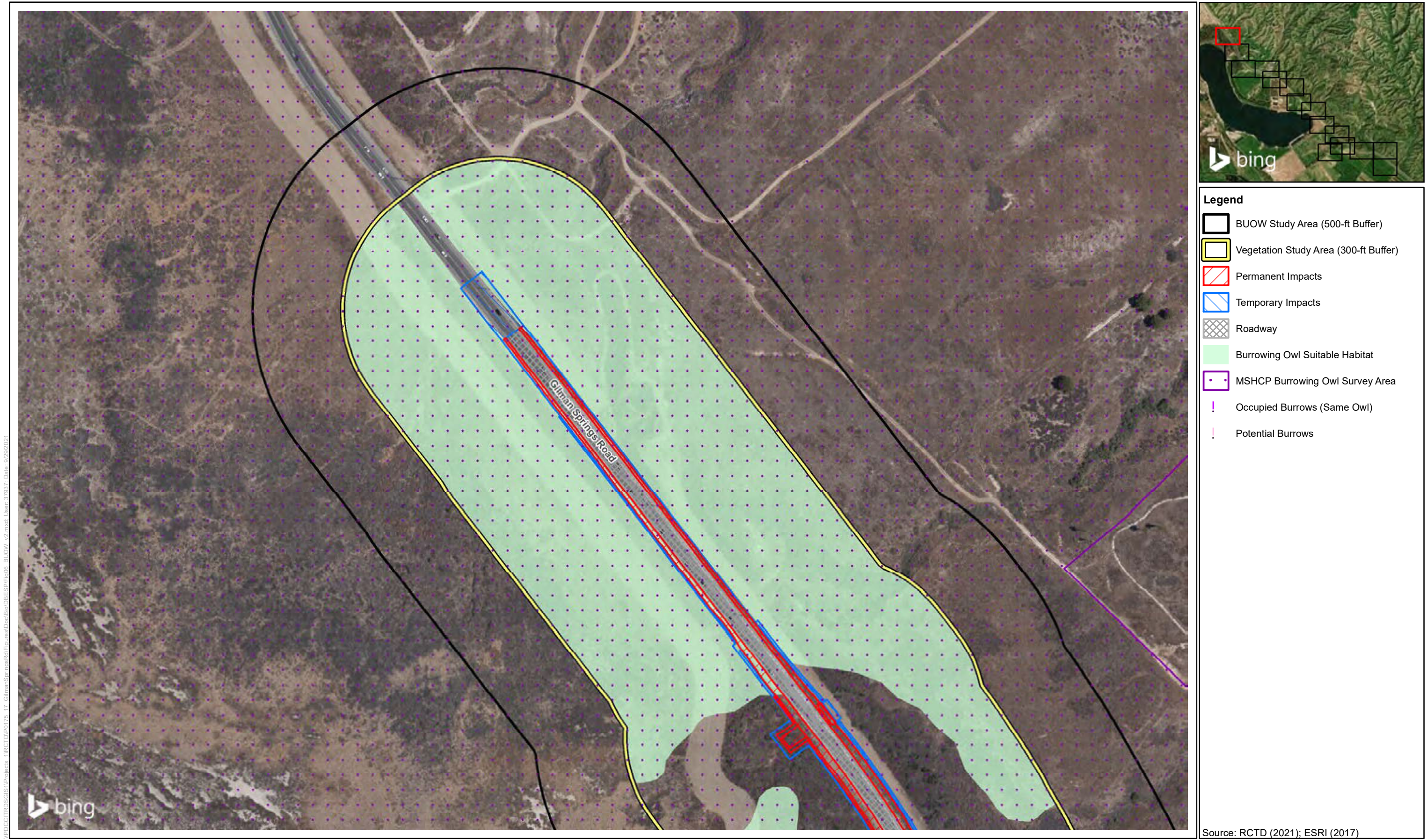
Figure 4 - Sheet 12
Soils Map
Gilman Springs Median and Shoulder Improvements Project



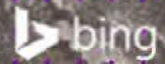
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Source: RCTD (2021); ESRI (2017)

Figure 5
WRC MSHCP Conservation Areas
Gilman Springs Median and Shoulder Improvements Project



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Source: RCTD (2021); ESRI (2017)

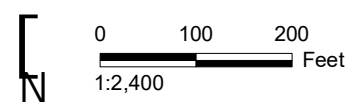


Figure 6 - Sheet 1
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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- Legend**
- BUOW Study Area (500-ft Buffer)
 - Vegetation Study Area (300-ft Buffer)
 - Permanent Impacts
 - Temporary Impacts
 - Roadway
 - Burrowing Owl Suitable Habitat
 - MSHCP Burrowing Owl Survey Area
 - Occupied Burrows (Same Owl)
 - Potential Burrows

Source: RCTD (2021); ESRI (2017)

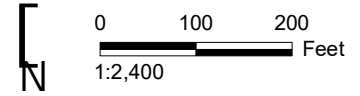
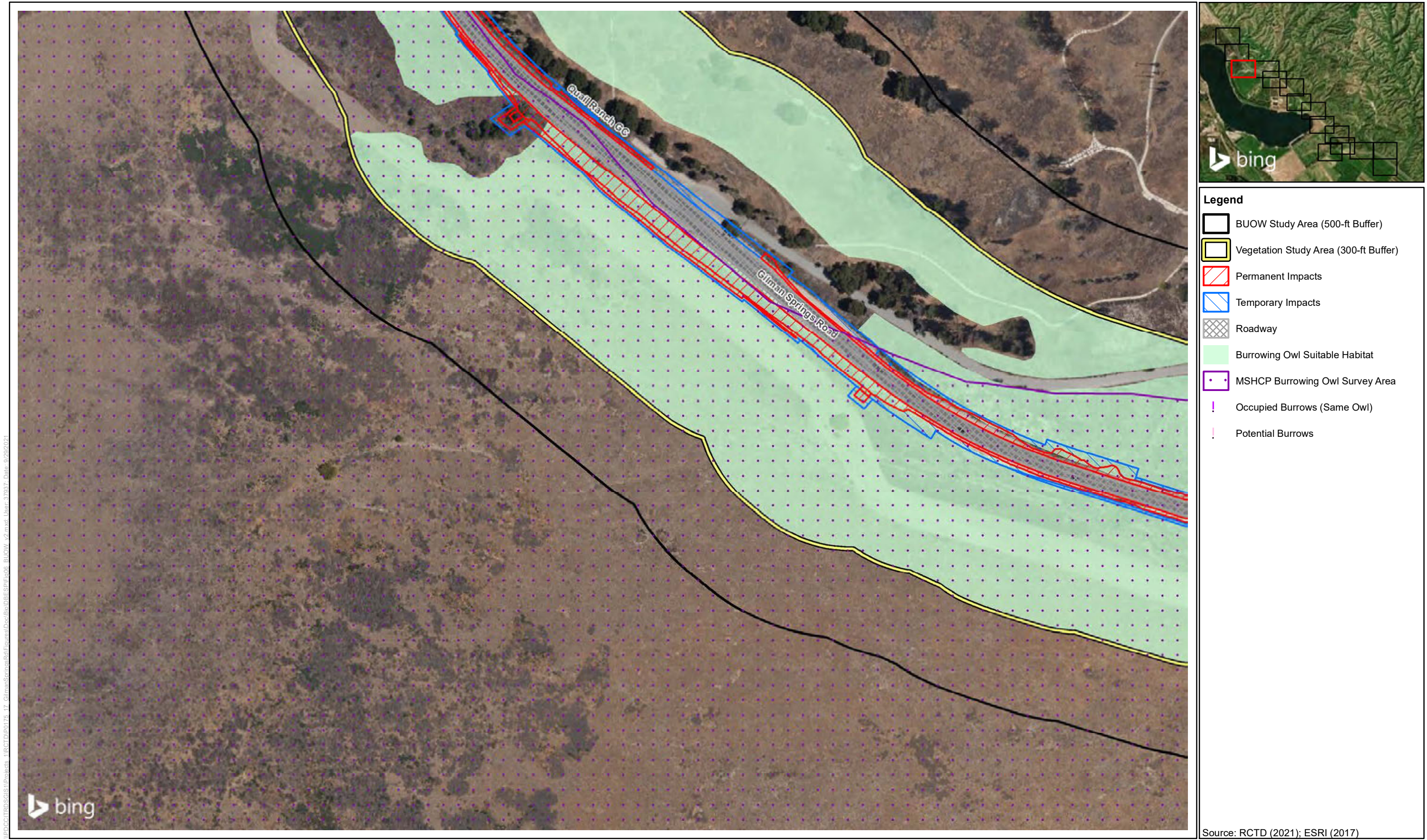


Figure 6 - Sheet 2
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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Source: RCTD (2021); ESRI (2017)

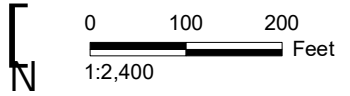
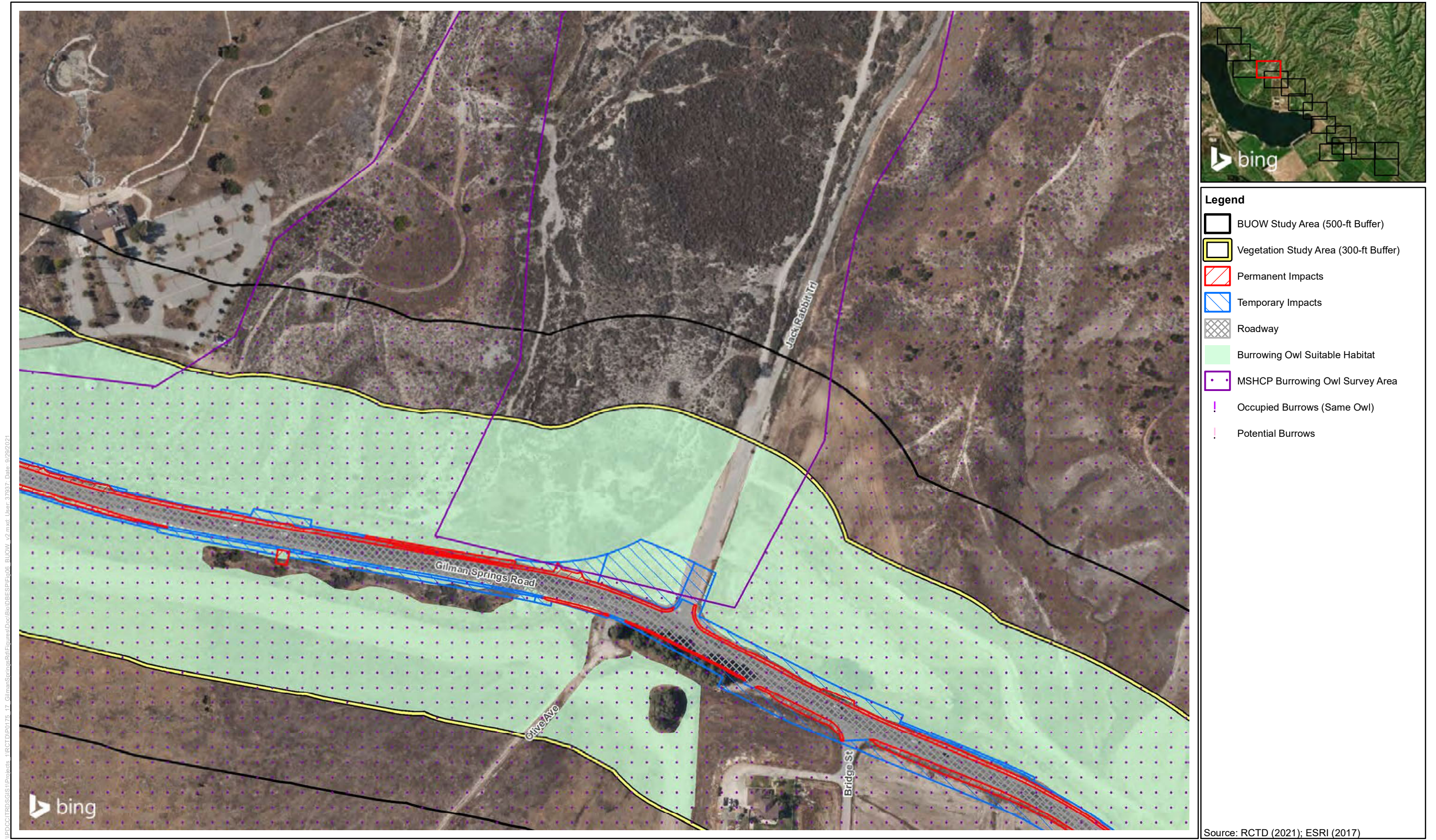


Figure 6 - Sheet 3
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



- Legend**
- BUOW Study Area (500-ft Buffer)
 - Vegetation Study Area (300-ft Buffer)
 - Permanent Impacts
 - Temporary Impacts
 - Roadway
 - Burrowing Owl Suitable Habitat
 - MSHCP Burrowing Owl Survey Area
 - Occupied Burrows (Same Owl)
 - Potential Burrows

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Source: RCTD (2021); ESRI (2017)

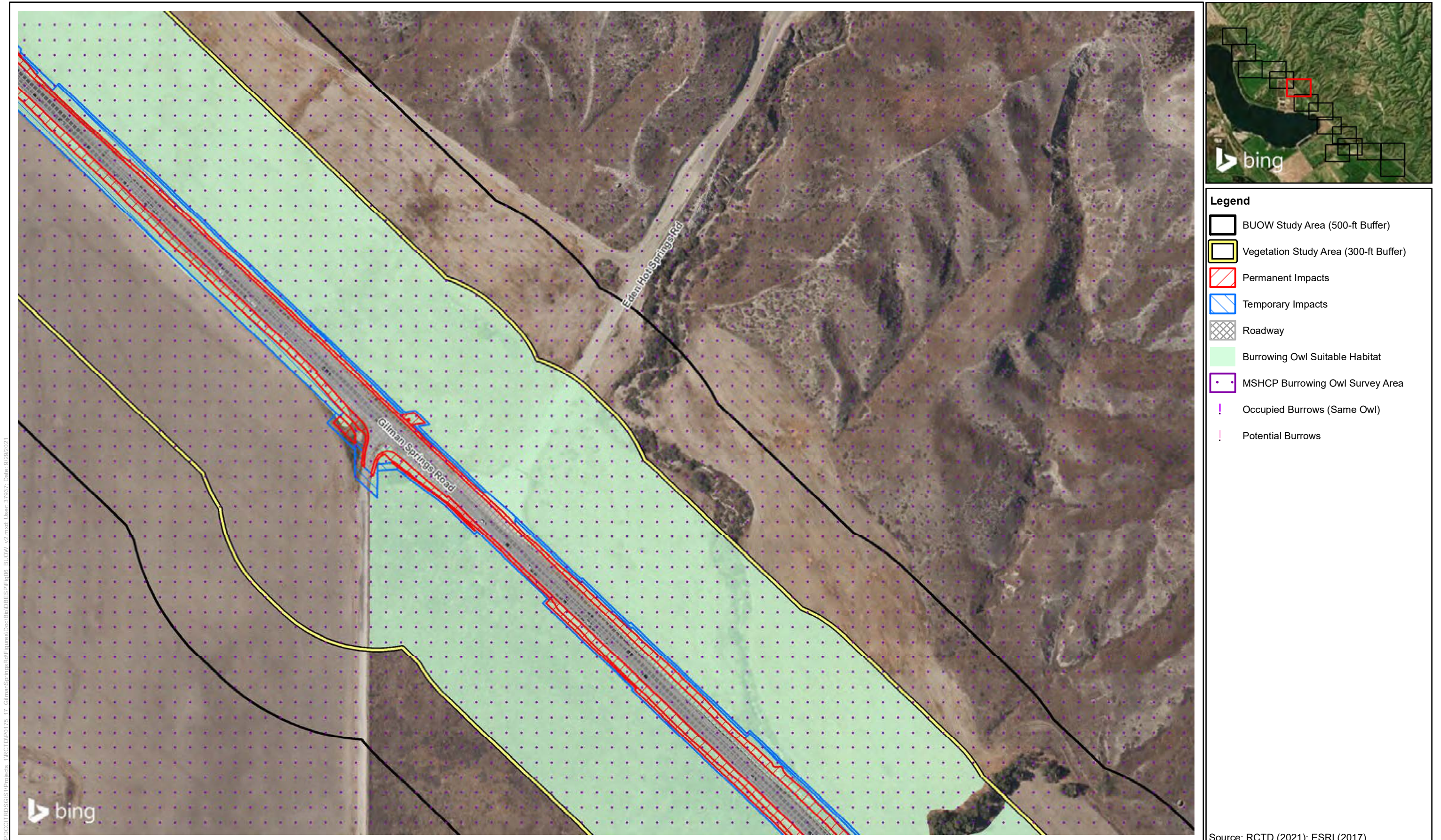
Figure 6 - Sheet 4
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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Source: RCTD (2021); ESRI (2017)

Figure 6 - Sheet 5
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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- Legend**
- BUOW Study Area (500-ft Buffer)
 - Vegetation Study Area (300-ft Buffer)
 - Permanent Impacts
 - Temporary Impacts
 - Roadway
 - Burrowing Owl Suitable Habitat
 - MSHCP Burrowing Owl Survey Area
 - Occupied Burrows (Same Owl)
 - Potential Burrows

Source: RCTD (2021); ESRI (2017)

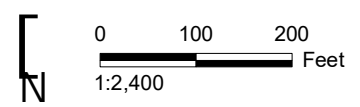
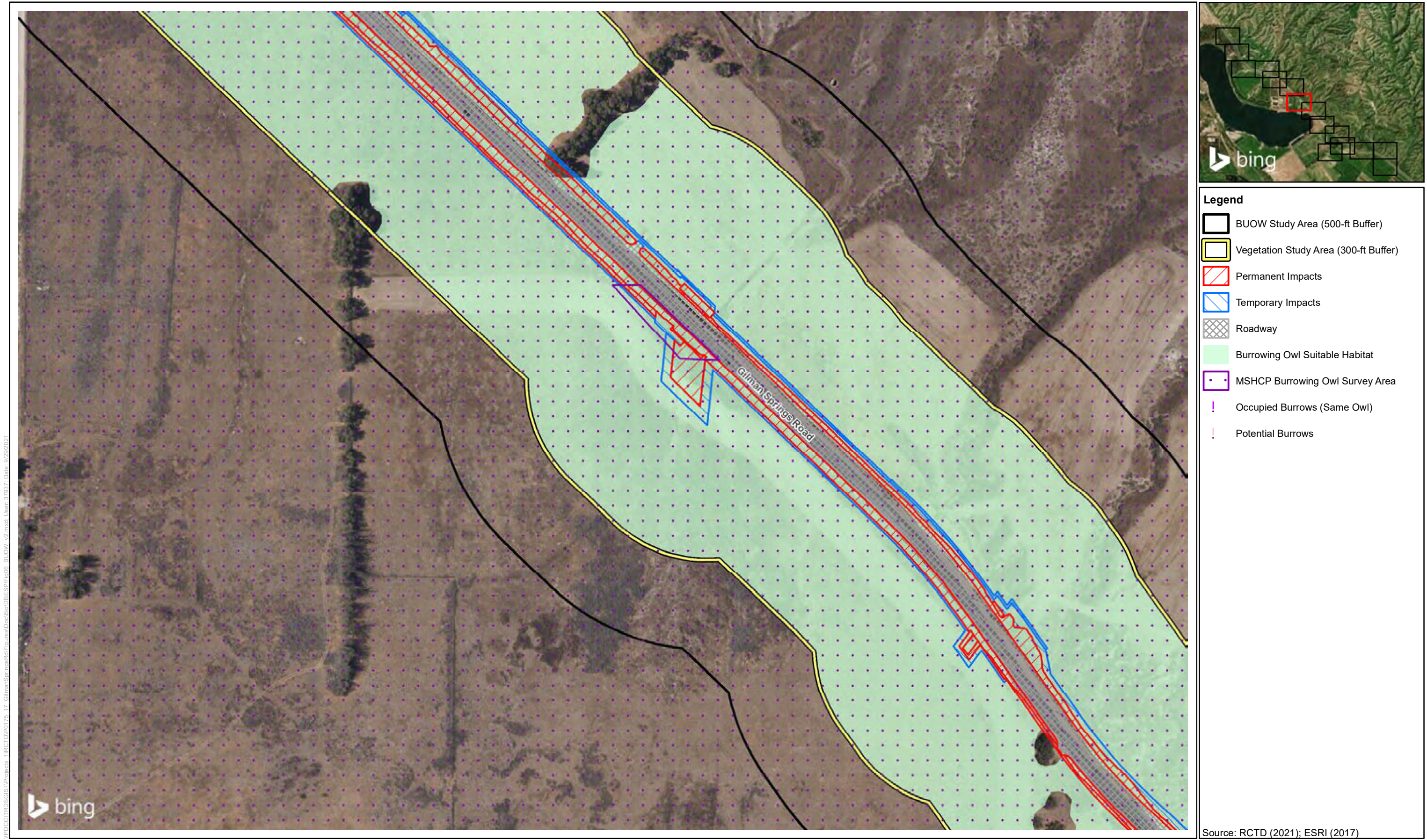


Figure 6 - Sheet 6
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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- Legend**
- BUOW Study Area (500-ft Buffer)
 - Vegetation Study Area (300-ft Buffer)
 - Permanent Impacts
 - Temporary Impacts
 - Roadway
 - Burrowing Owl Suitable Habitat
 - MSHCP Burrowing Owl Survey Area
 - Occupied Burrows (Same Owl)
 - Potential Burrows

Source: RCTD (2021); ESRI (2017)

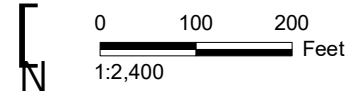


Figure 6 - Sheet 7
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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- Legend**
- BUOW Study Area (500-ft Buffer)
 - Vegetation Study Area (300-ft Buffer)
 - Permanent Impacts
 - Temporary Impacts
 - Roadway
 - Burrowing Owl Suitable Habitat
 - MSHCP Burrowing Owl Survey Area
 - Occupied Burrows (Same Owl)
 - Potential Burrows

Source: RCTD (2021); ESRI (2017)

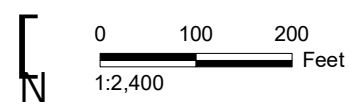
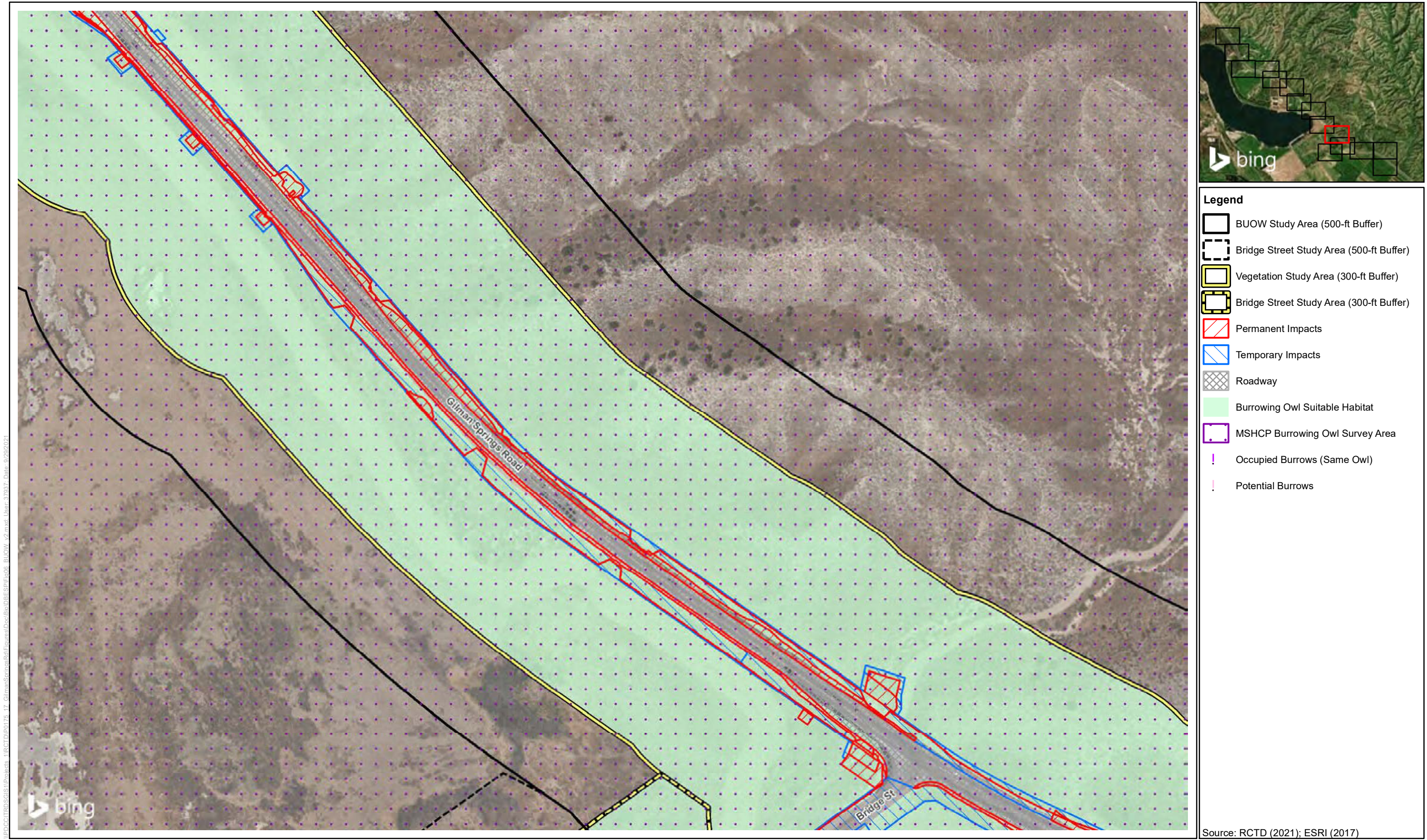


Figure 6 - Sheet 8
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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- Legend**
- BUOW Study Area (500-ft Buffer)
 - Bridge Street Study Area (500-ft Buffer)
 - Vegetation Study Area (300-ft Buffer)
 - Bridge Street Study Area (300-ft Buffer)
 - Permanent Impacts
 - Temporary Impacts
 - Roadway
 - Burrowing Owl Suitable Habitat
 - MSHCP Burrowing Owl Survey Area
 - Occupied Burrows (Same Owl)
 - Potential Burrows

Source: RCTD (2021); ESRI (2017)

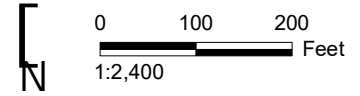
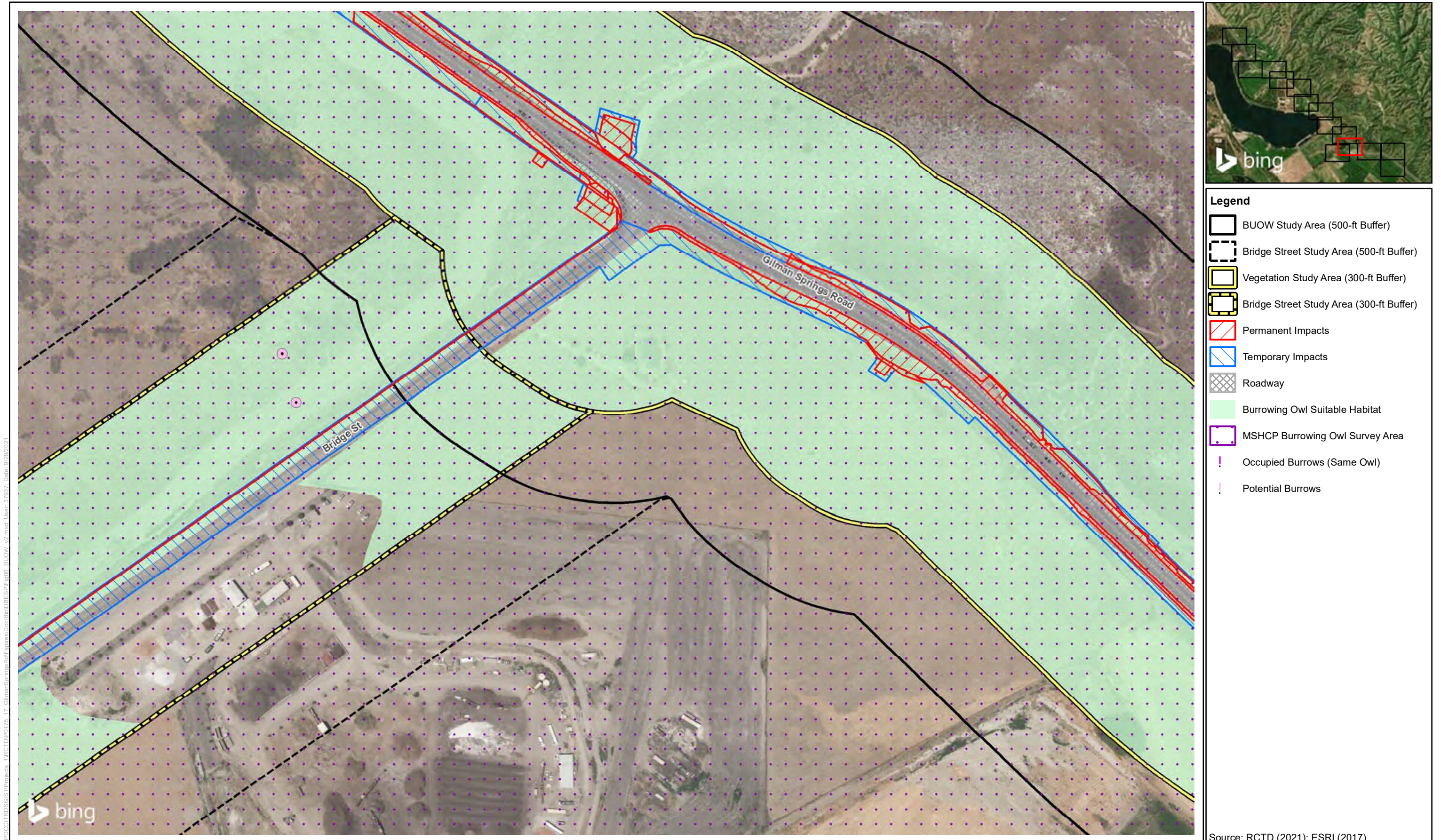


Figure 6 - Sheet 10
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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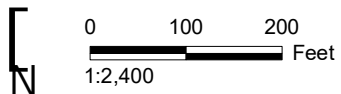


Figure 6 - Sheet 11
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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Source: RCTD (2021); ESRI (2017)

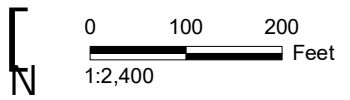
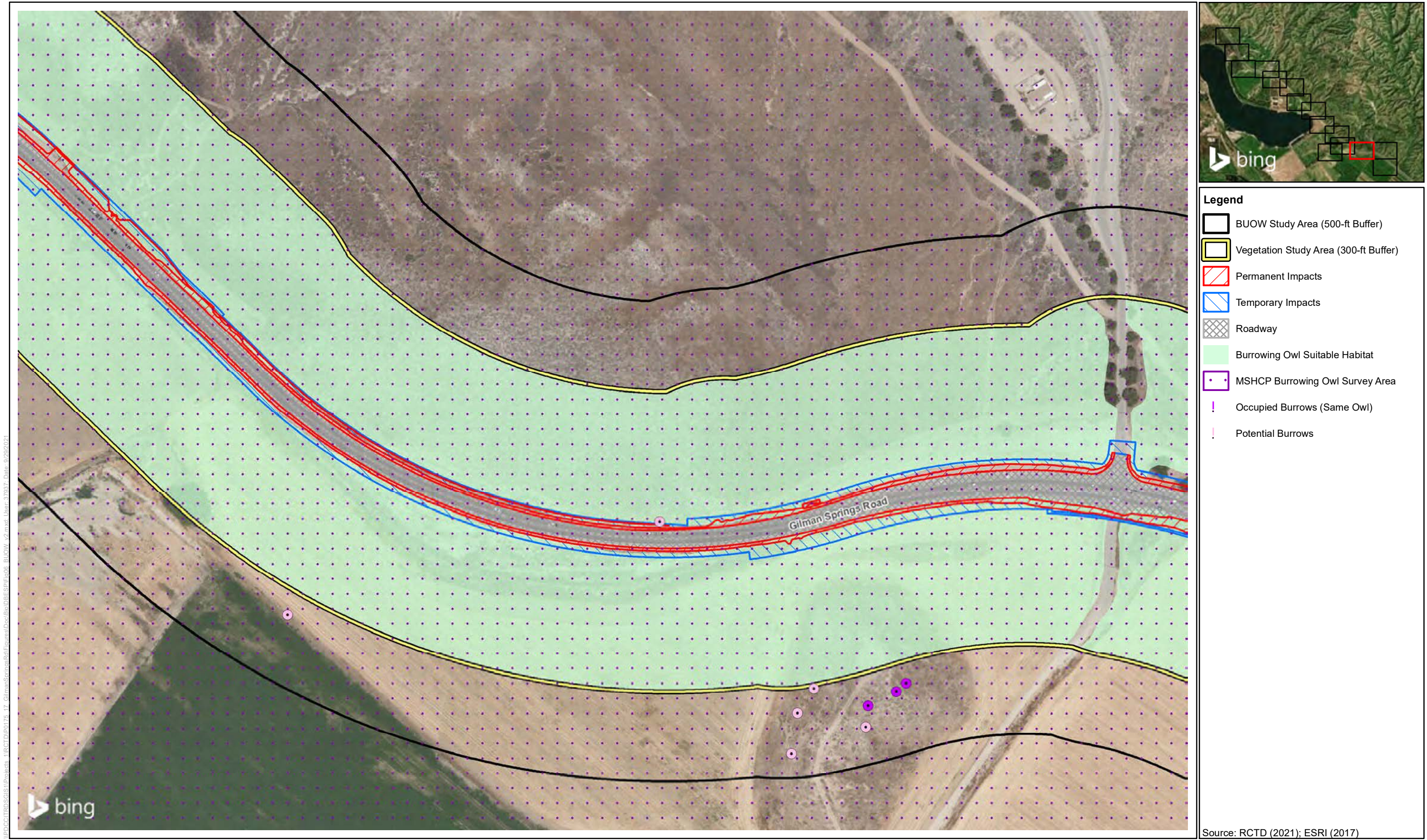


Figure 6 - Sheet 12
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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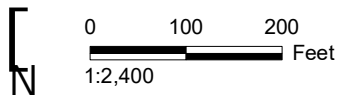
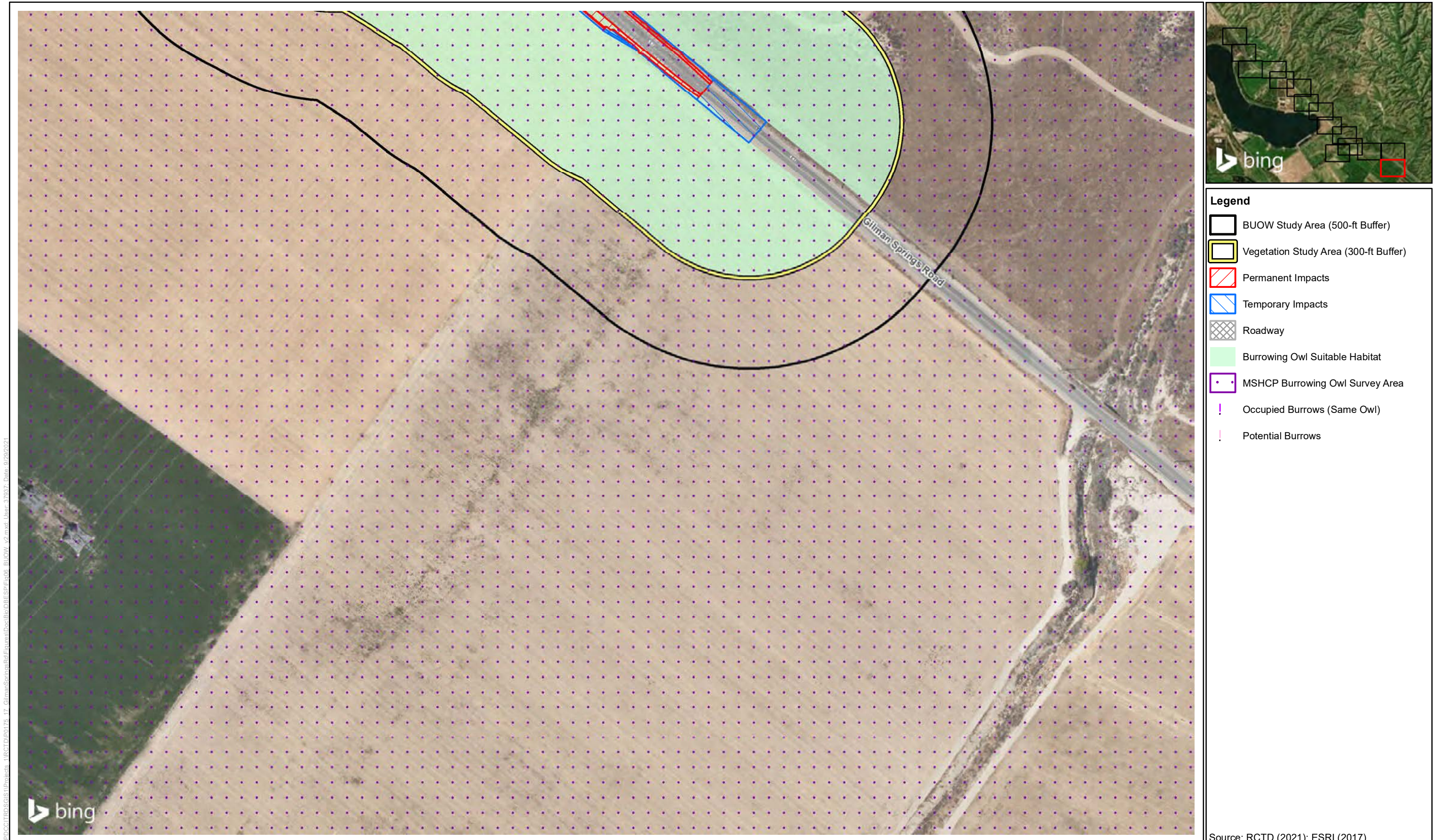


Figure 6 - Sheet 13
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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- Legend**
- BUOW Study Area (500-ft Buffer)
 - Vegetation Study Area (300-ft Buffer)
 - Permanent Impacts
 - Temporary Impacts
 - Roadway
 - Burrowing Owl Suitable Habitat
 - MSHCP Burrowing Owl Survey Area
 - Occupied Burrows (Same Owl)
 - Potential Burrows

Source: RCTD (2021); ESRI (2017)

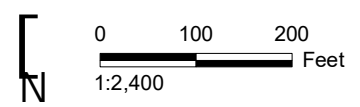
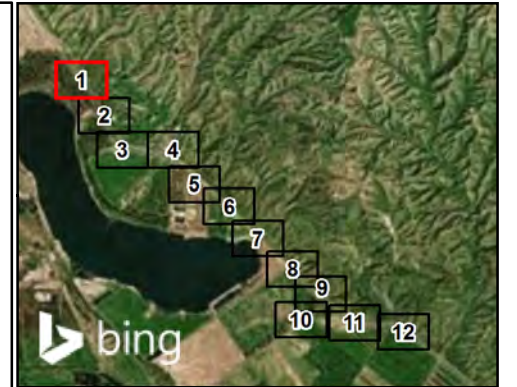











Figure 6 - Sheet 15
Burrowing Owl Surveys and Results
Gilman Springs Median and Shoulder Improvements Project

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Legend

-  250-ft Buffer
 -  Permanent Impacts
 -  Temporary Impacts
 -  Roadway
 -  Small Mammal Suitable Habitat
- Survey Areas**
-  L. A. Pocket Mouse Only Survey
 -  San Bernardino Kangaroo Rat and L.A. Pocket Mouse Survey Area
 -  Session 1 Trap Lines
 -  Session 2 Trap Lines



Source: RCTD (2021); ESRI (2017)

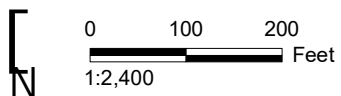
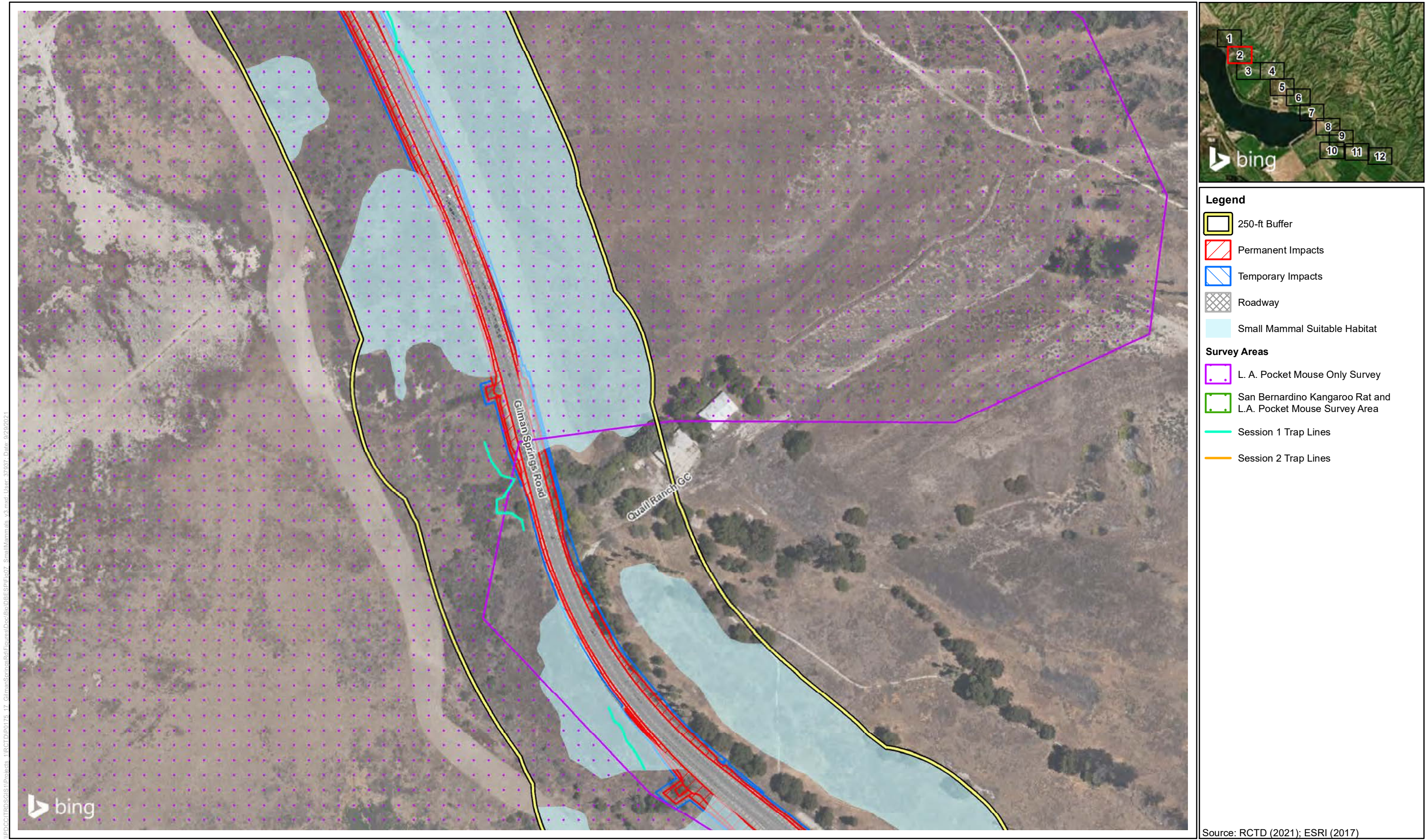


Figure 7 - Sheet 1
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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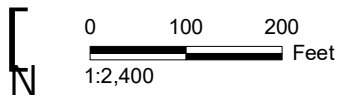
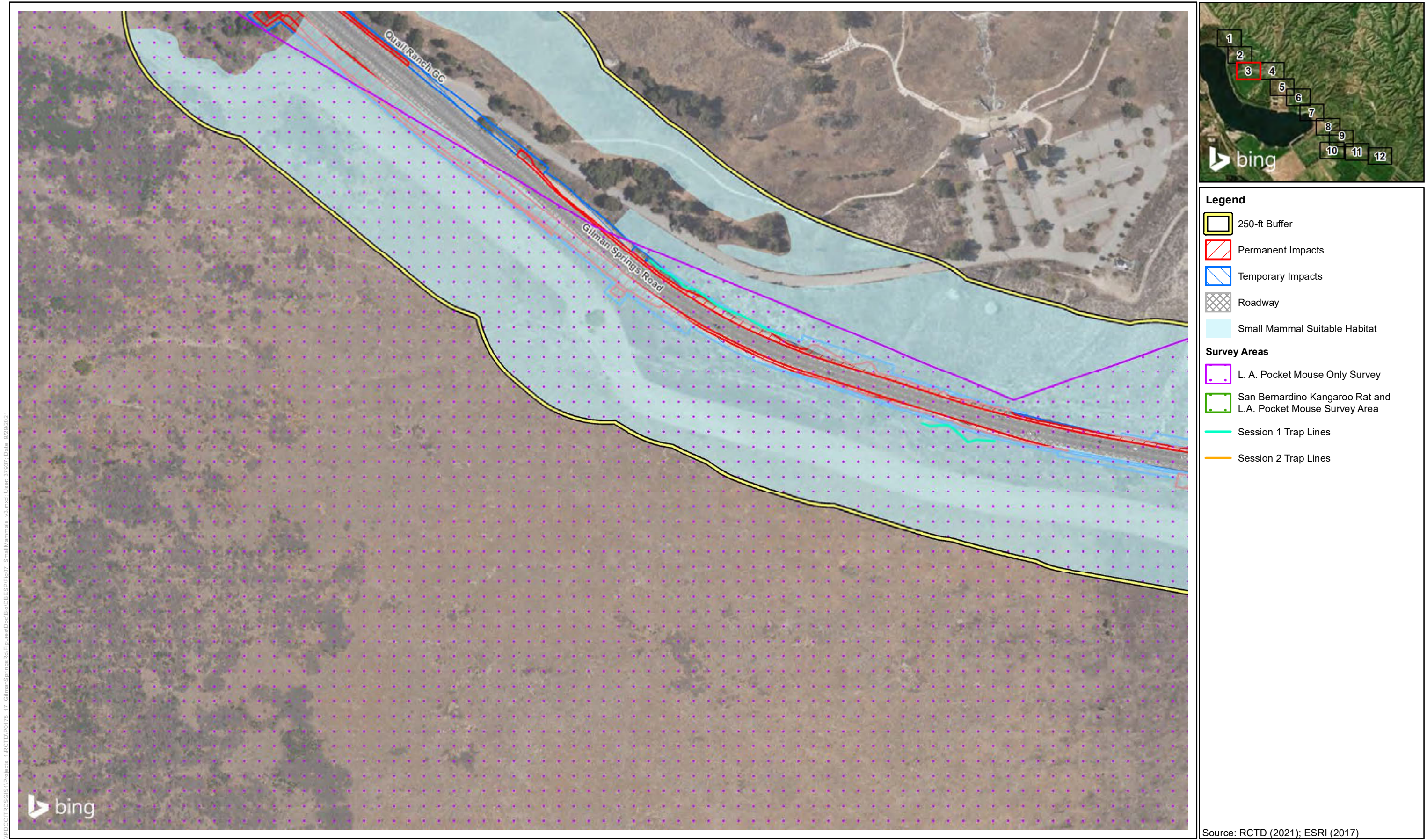


Figure 7 - Sheet 2
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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Source: RCTD (2021); ESRI (2017)

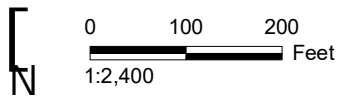
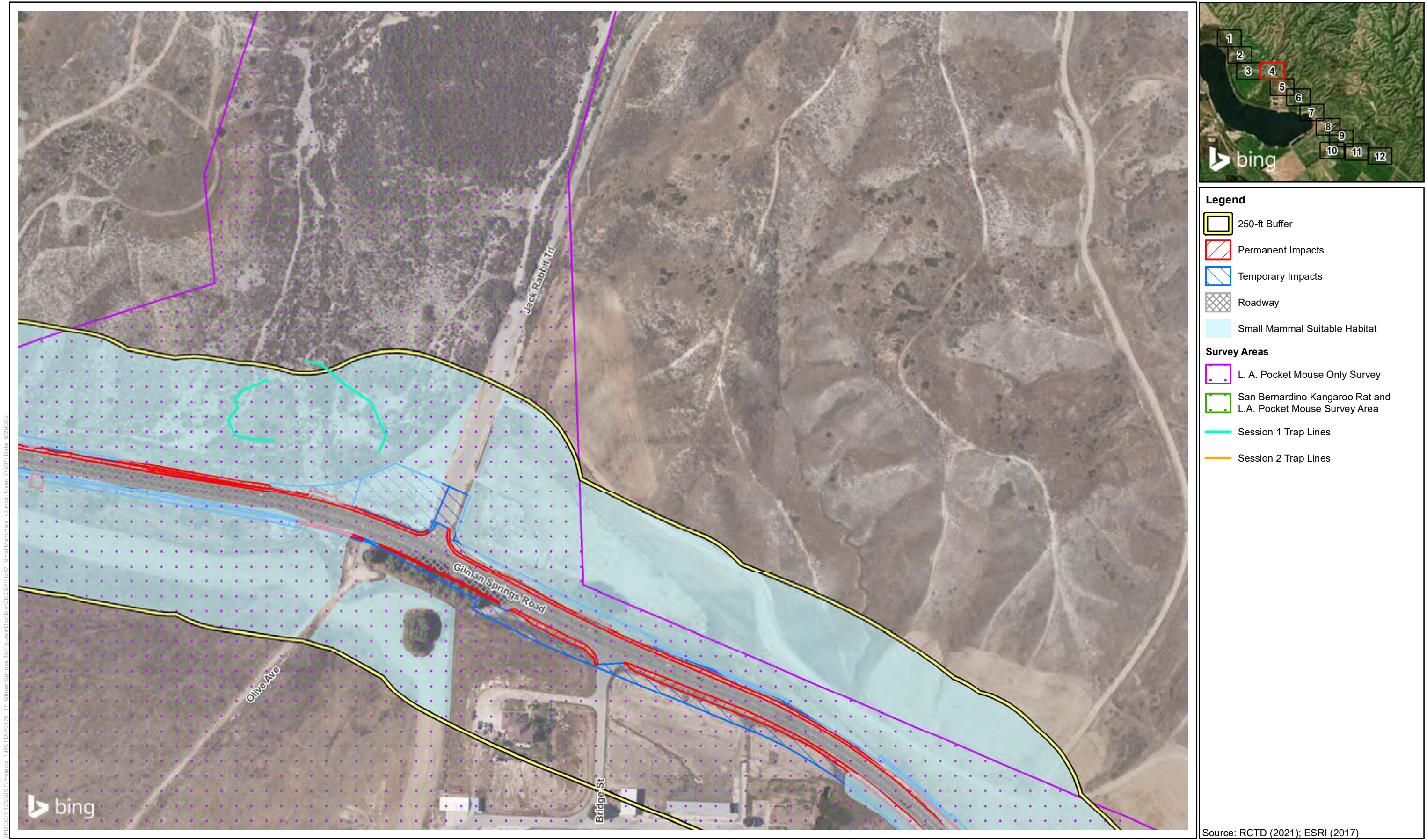


Figure 7 - Sheet 3
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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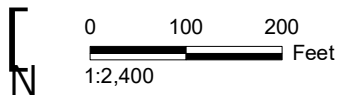
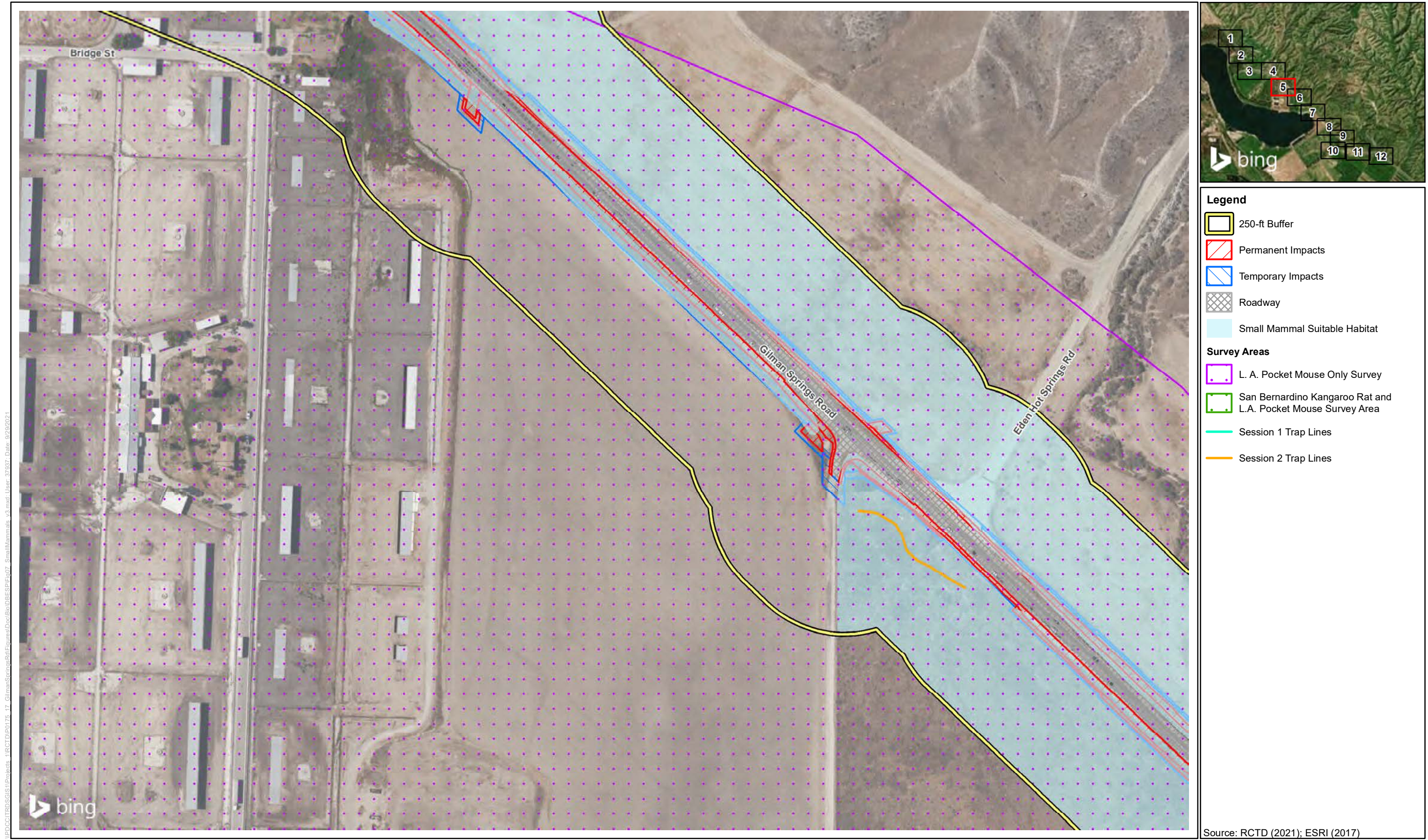


Figure 7 - Sheet 4
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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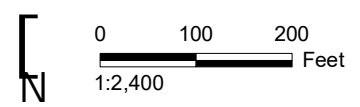
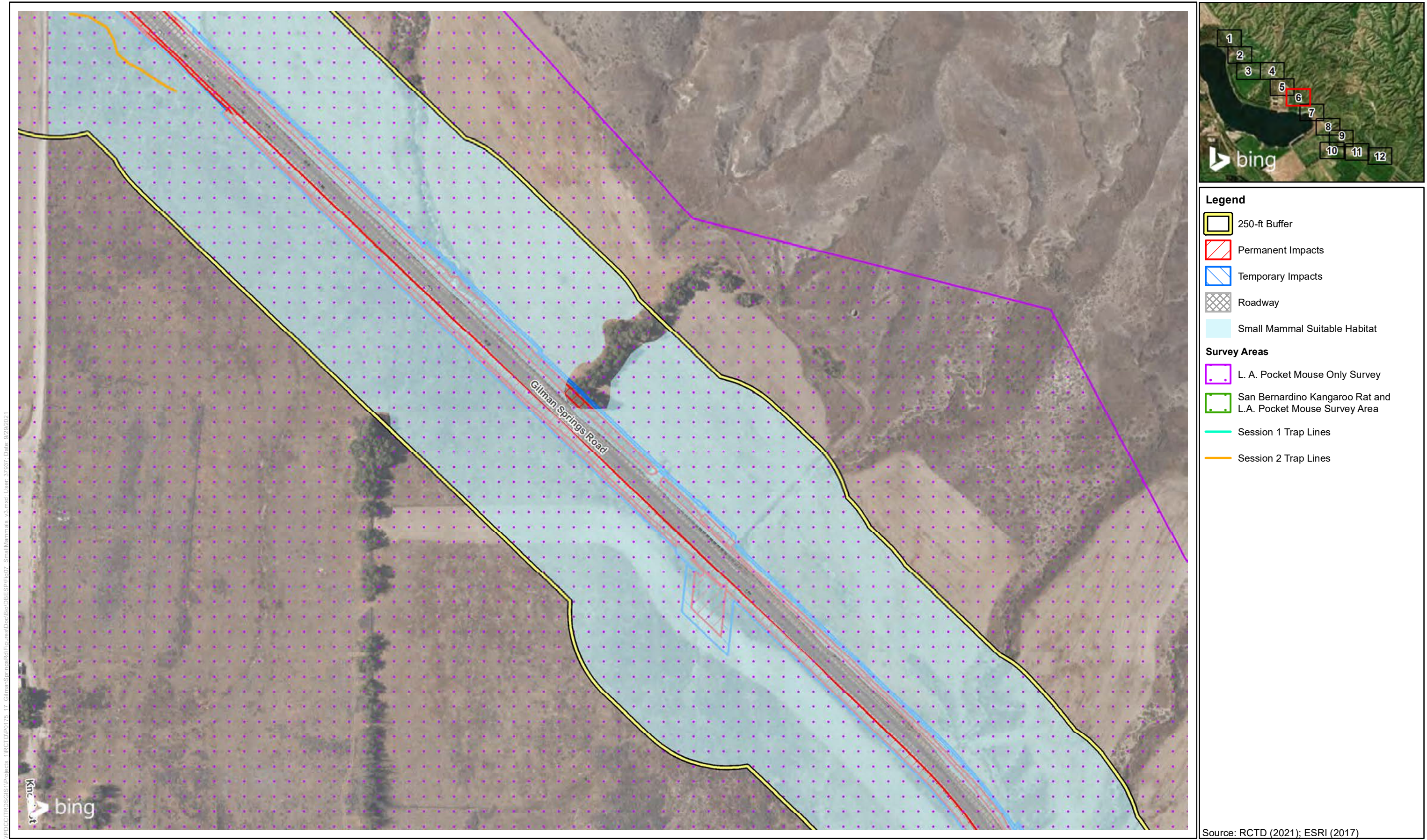


Figure 7 - Sheet 5
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project

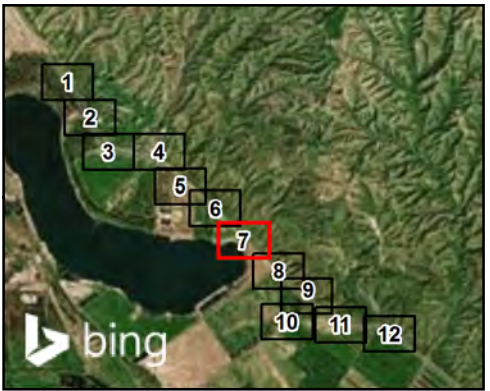
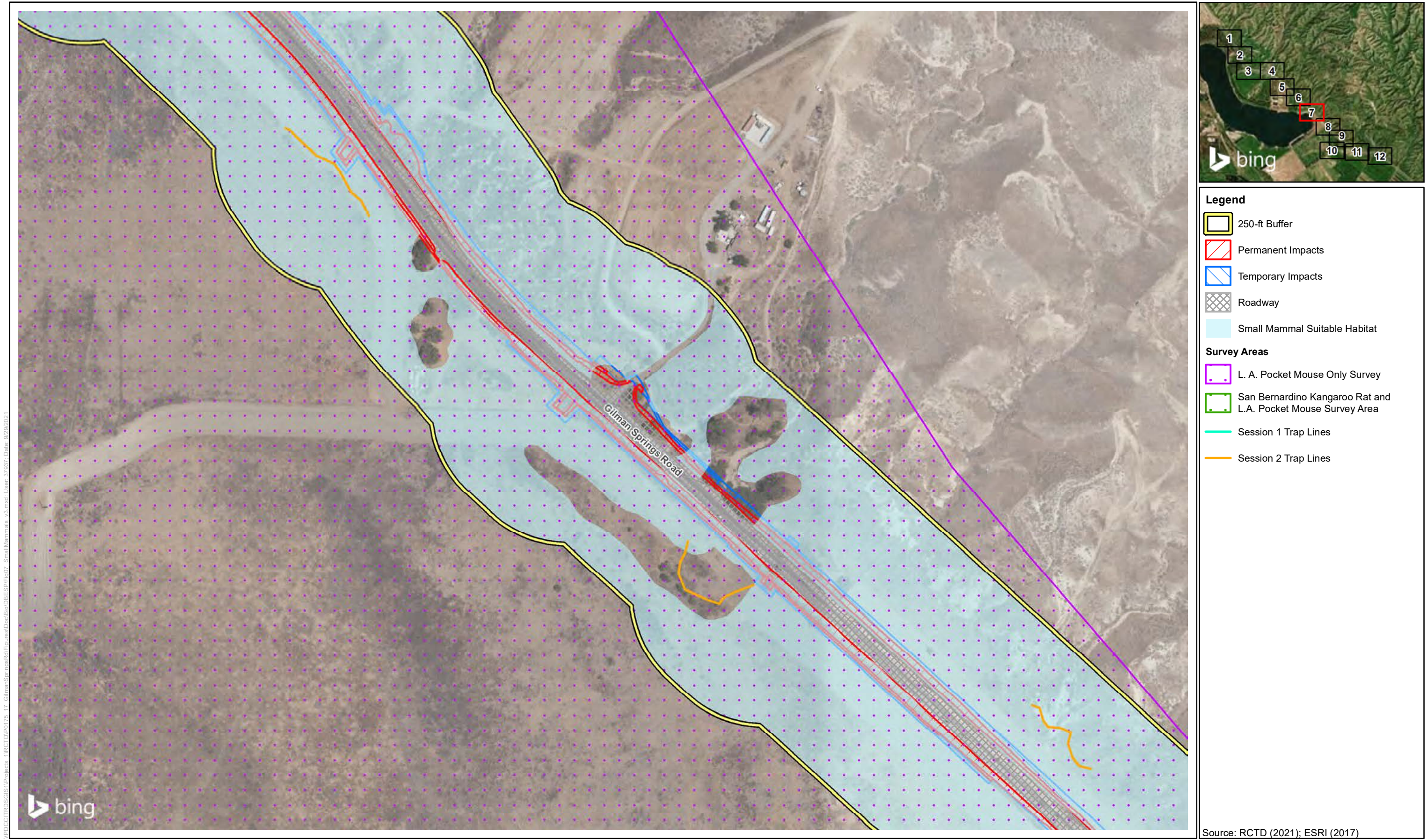


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Source: RCTD (2021); ESRI (2017)

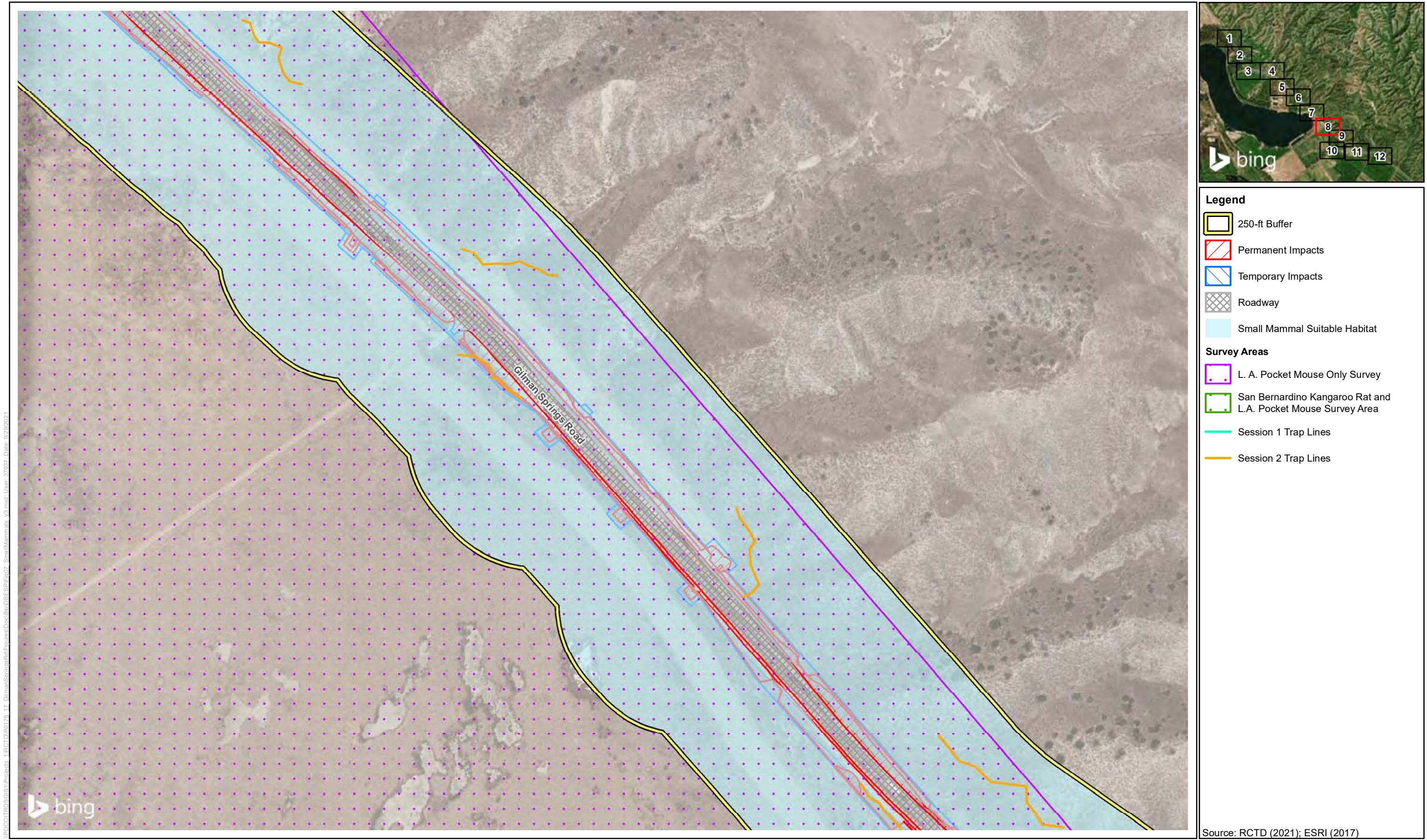
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Figure 7 - Sheet 6
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



- Legend**
- 250-ft Buffer
 - Permanent Impacts
 - Temporary Impacts
 - Roadway
 - Small Mammal Suitable Habitat
- Survey Areas**
- L. A. Pocket Mouse Only Survey
 - San Bernardino Kangaroo Rat and L.A. Pocket Mouse Survey Area
 - Session 1 Trap Lines
 - Session 2 Trap Lines

Figure 7 - Sheet 7
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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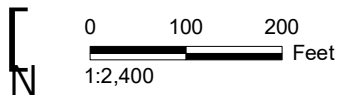
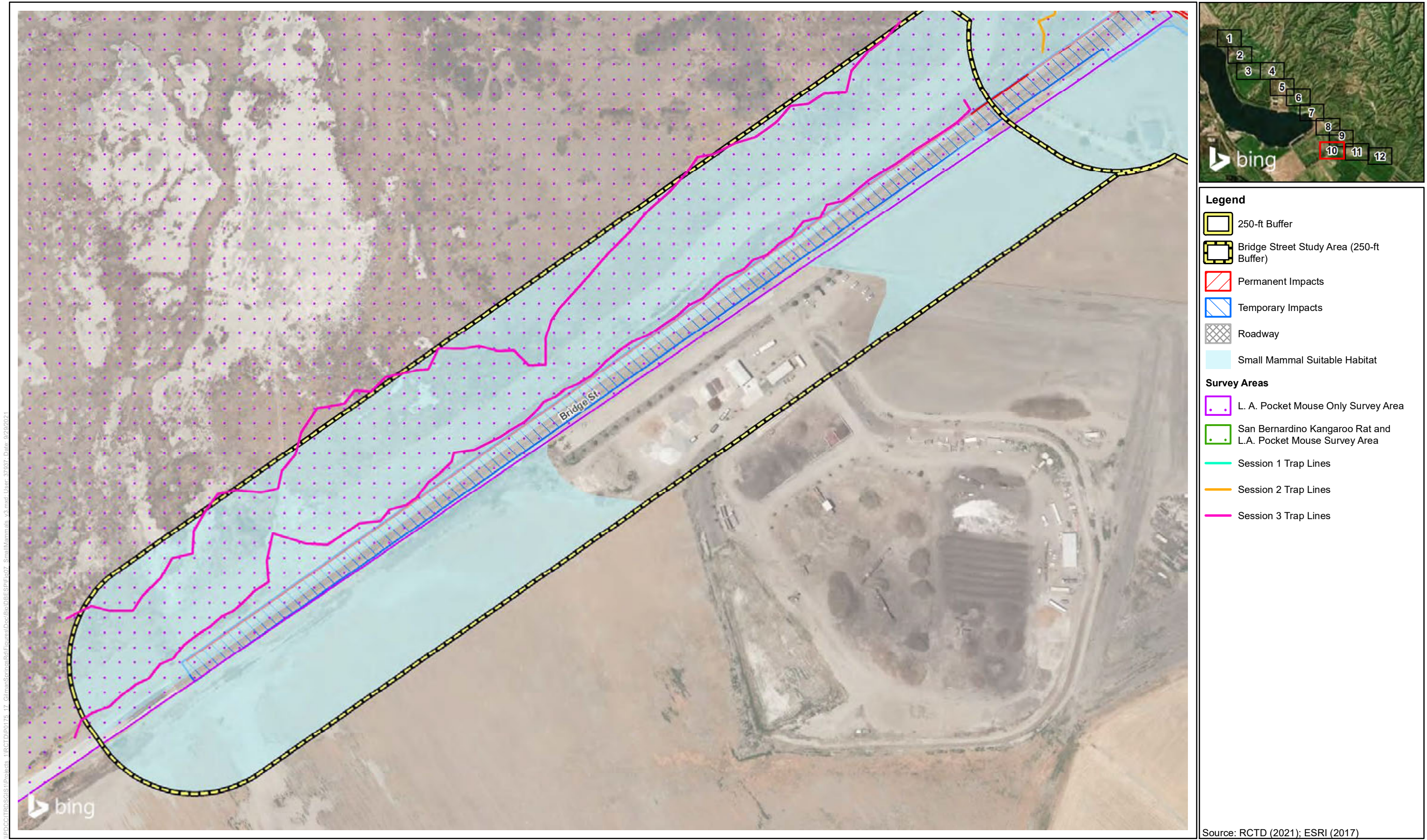


Figure 7 - Sheet 8
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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Legend

- 250-ft Buffer
- Bridge Street Study Area (250-ft Buffer)
- Permanent Impacts
- Temporary Impacts
- Roadway
- Small Mammal Suitable Habitat

Survey Areas

- L. A. Pocket Mouse Only Survey Area
- San Bernardino Kangaroo Rat and L.A. Pocket Mouse Survey Area
- Session 1 Trap Lines
- Session 2 Trap Lines
- Session 3 Trap Lines

Source: RCTD (2021); ESRI (2017)

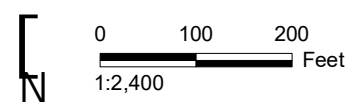
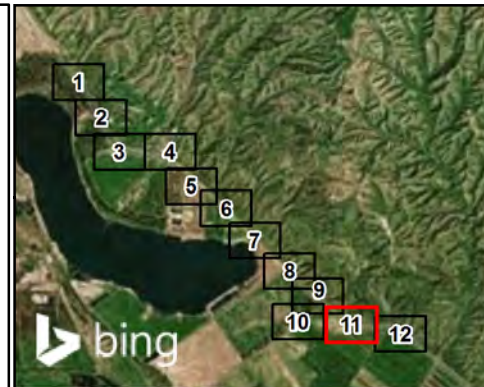
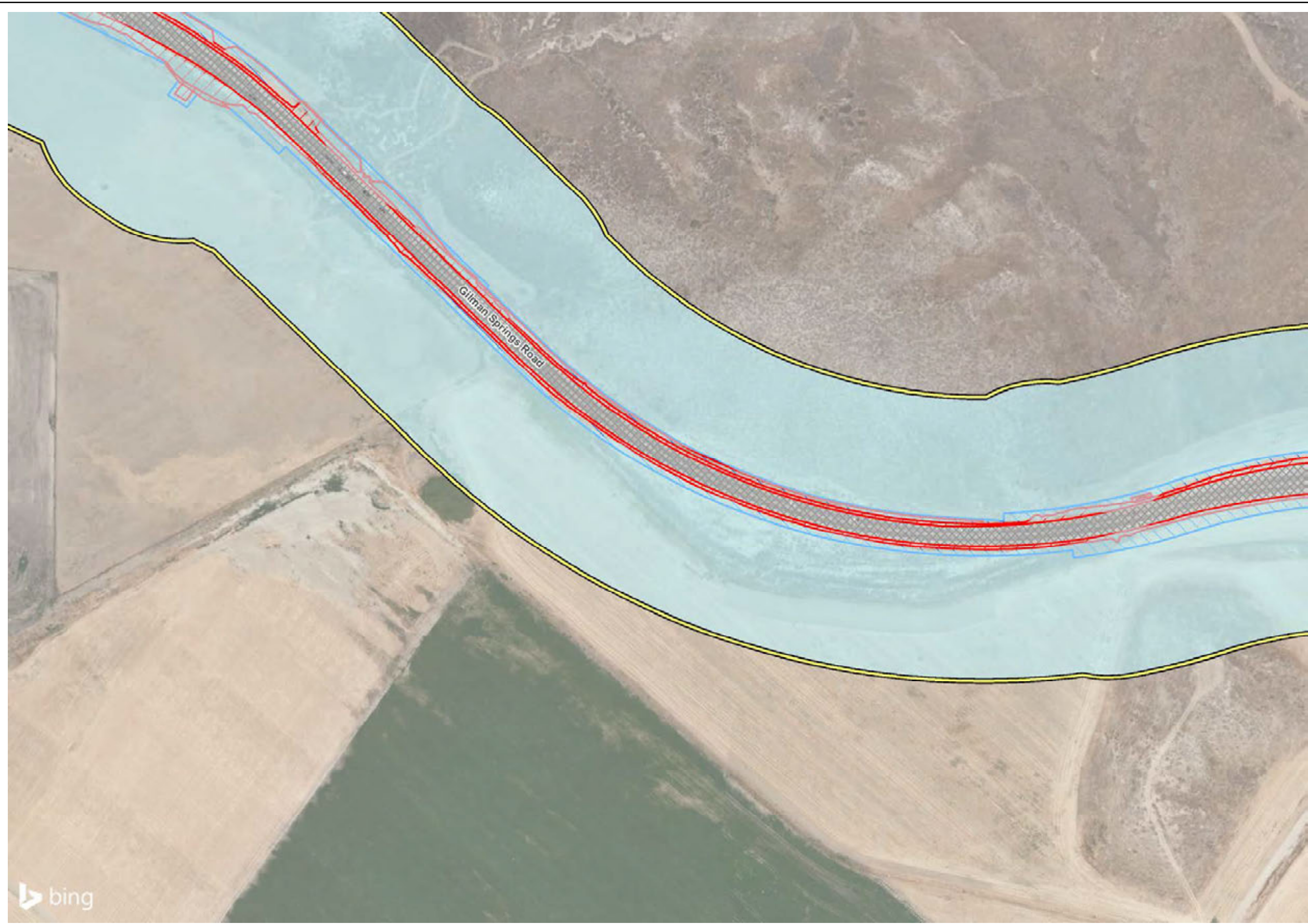


Figure 7 - Sheet 10
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project

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Legend

- 250-ft Buffer
- Permanent Impacts
- Temporary Impacts
- Roadway
- Small Mammal Suitable Habitat

Survey Areas

- L. A. Pocket Mouse Only Survey Area
- San Bernardino Kangaroo Rat and L.A. Pocket Mouse Survey Area
- Session 1 Trap Lines
- Session 2 Trap Lines

Source: RCTD (2021); ESRI (2017)

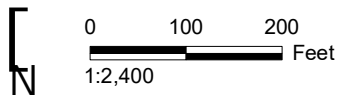
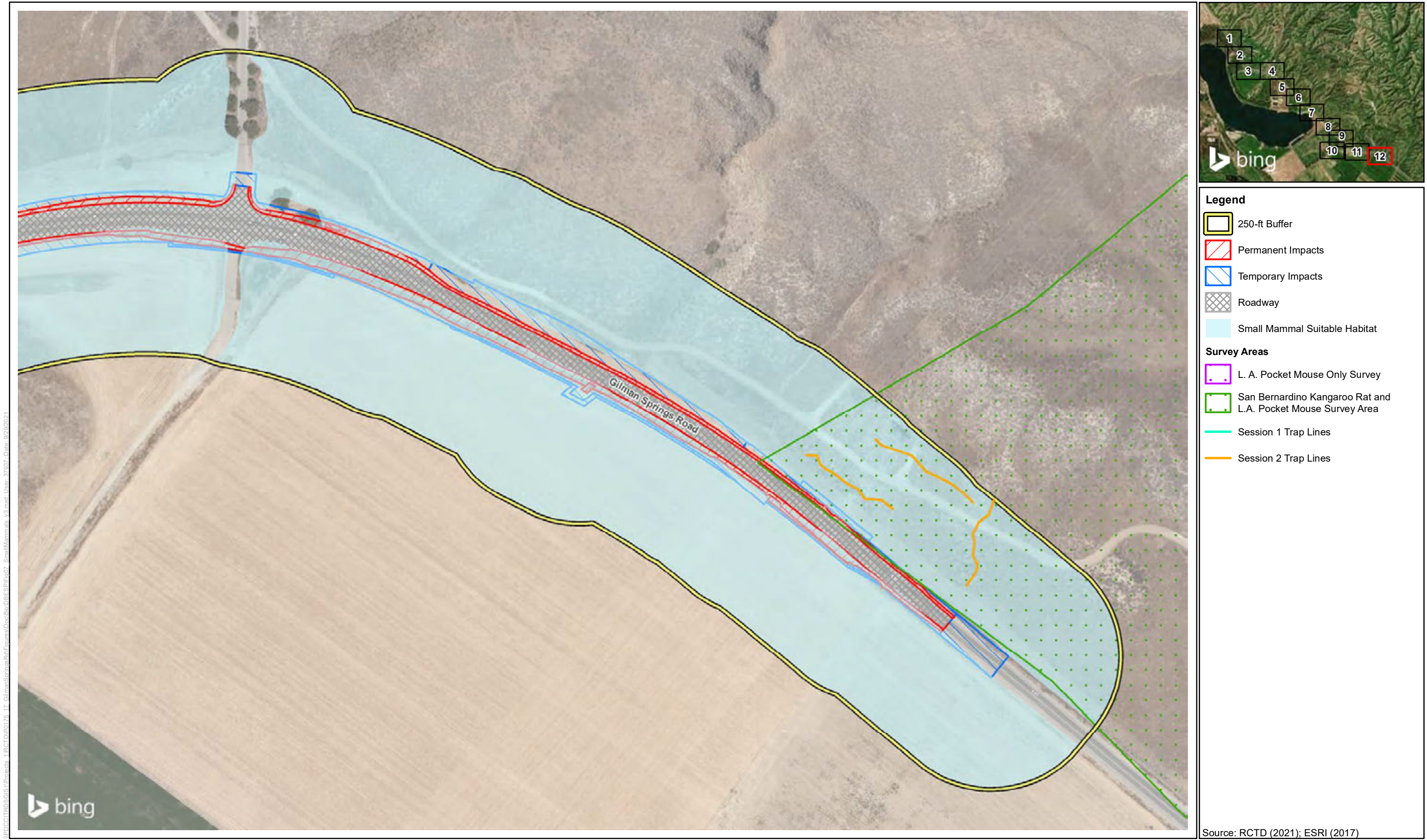


Figure 7 - Sheet 11
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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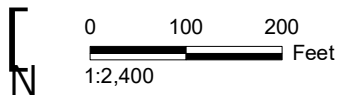
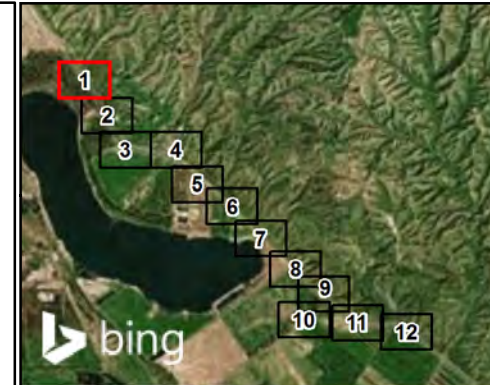
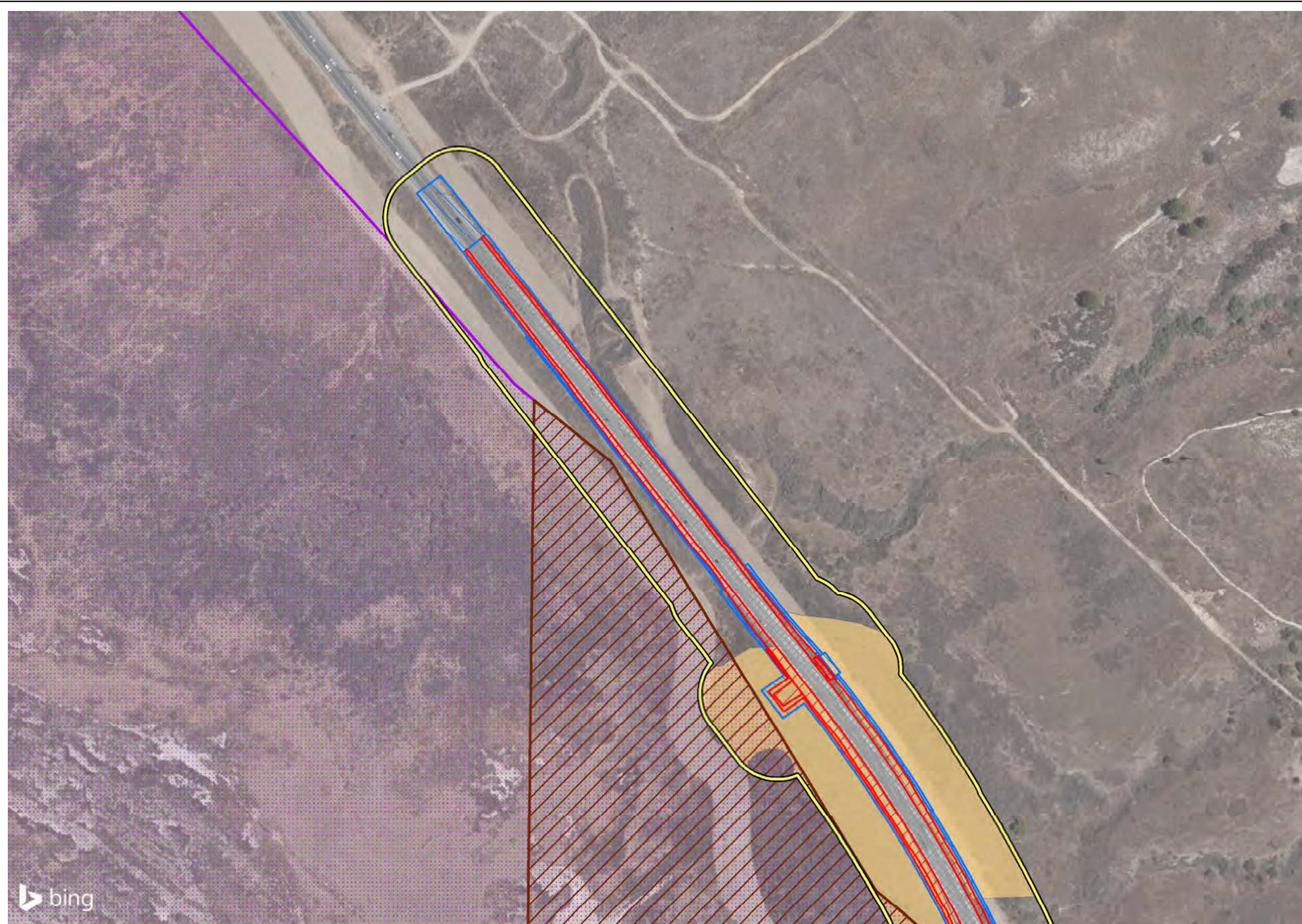


Figure 7 - Sheet 12
Small Mammal Surveys and Results
Gilman Springs Median and Shoulder Improvements Project

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Legend

- Study Area (100-ft Buffer)
- Bridge Street Study Area (100-ft Buffer)
- Permanent Impacts
- Temporary Impacts
- Roadway
- Special Status Plants Suitable Habitat

Survey Areas

- Narrow Endemic Plants Survey Area
- Criteria Area Plant Survey Area

Survey Results

- Smooth Tarplant (Total of 254 Individual Plants)
- Smooth Tarplant (Total of 100 Individuals)

Source: RCTD (2021); ESRI (2017)

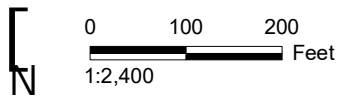
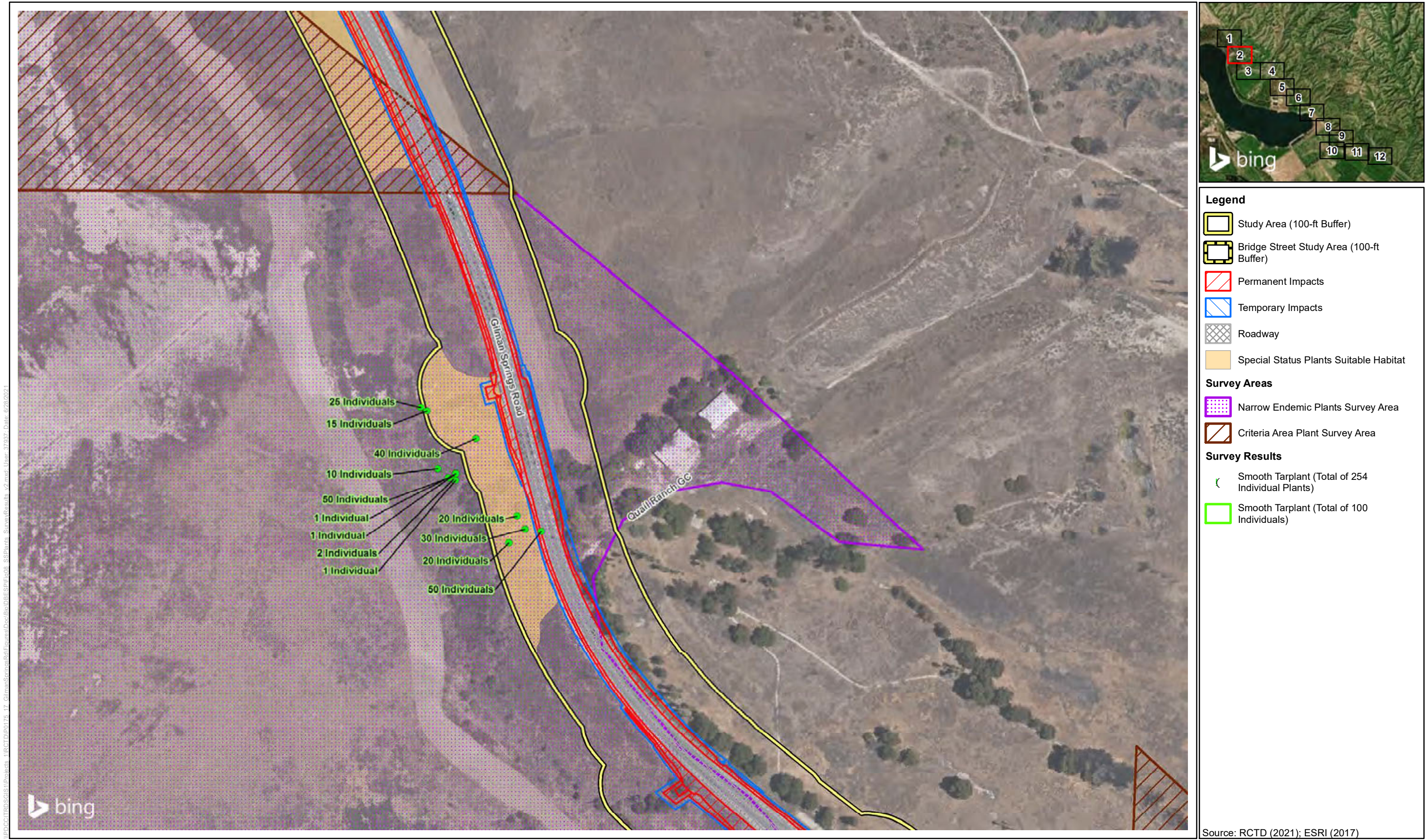


Figure 8 - Sheet 1
Rare Plant Surveys and Results
Gilman Springs Median and Shoulder Improvements Project



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Source: RCTD (2021); ESRI (2017)

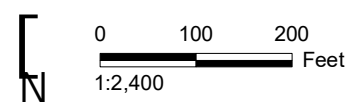


Figure 8 - Sheet 2
Rare Plant Surveys and Results
Gilman Springs Median and Shoulder Improvements Project