APPENDIX BRA1

PHASE 1 BIOLOGICAL RESOURCES ASSESSMENT

Biological Resources Assessment

MAHA RESORT AND GUENOC VALLEY DEVELOPMENT, PHASE 1
LAKE COUNTY, CALIFORNIA

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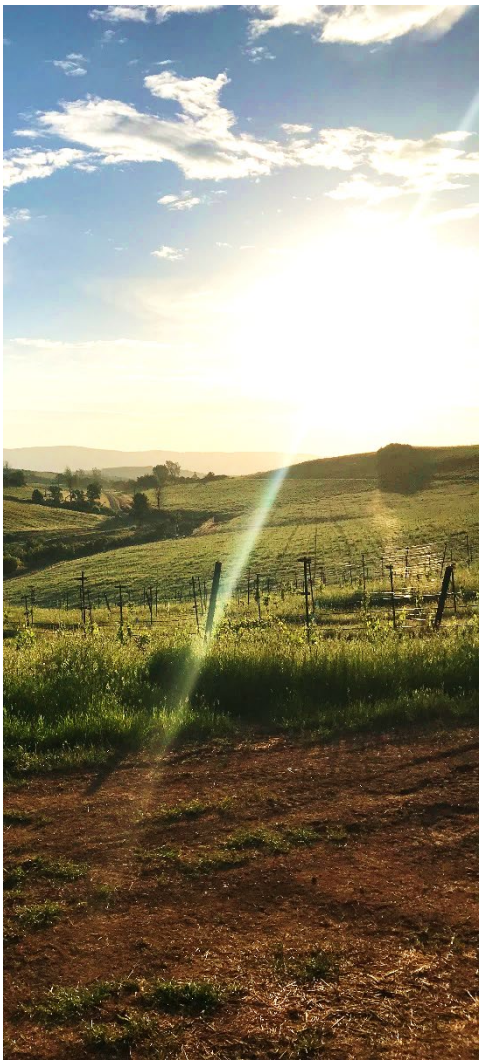
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WRA Project No. 27162-2



EXECUTIVE SUMMARY

This Biological Resources Assessment provides an assessment of biological communities and special-status plant and wildlife species within the approximately 4,977-acre Study Area for Phase 1 of the proposed located on the approximately 22,695-acre Guenoc Ranch. The Ranch is located in unincorporated Lake and Napa counties, California, with the Phase 1 Study Area occurring entirely within Lake County. The property contains a mix of undeveloped lands, agricultural lands including cattle pastures and vineyards, and minor areas of infrastructure to support vineyard, winery, and cattle operations.

On multiple dates in 2017, 2018, and 2019, WRA biologists conducted surveys to document baseline conditions to support an assessment of biological resources under the California Environmental Quality Act. The specific focus of WRA's efforts within the Phase 1 Study Area included (1) mapping biological communities and landcover types, (2) conducting seasonally timed surveys for special-status plants, (3) assessing the potential for special-status plants to occur in areas not subject to seasonally timed surveys, (4) conducting limited, focused surveys for special-status wildlife species, and (5) assessing the potential for special-status wildlife species to occur in areas not subject to focused surveys. Due to the nature of wildlife use and movement across the property, wildlife surveys covered both the Phase 1 Study Area and adjacent areas outside of the Phase 1 Study Area. This report describes the methods and results of those surveys and assessments and also provides recommendations for avoiding or minimizing impacts to sensitive resources, as well as mitigation measures for unavoidable impacts. WRA also conducted an official delineation of aquatic resources following guidance from the U.S. Army Corps of Engineers. The methods and results of that effort are documented in a separate Aquatic Resources Delineation report (WRA 2019a); a high-level overview of the delineation is included here.

WRA documented 22 biological communities and other land use designations, 660 plant taxa, and 130 wildlife species. Eleven sensitive biological community types covering 2,085 acres were identified; this includes approximately 99 acres of wetlands, 32 acres of ponds and reservoirs, and 51 acres and 342,904 linear feet of streams and ditches. Twenty-six special-status plant species were observed, and an additional 81 special-status plant species were determined to have at least moderate potential to occur, primarily associated with serpentine habitats found throughout the Phase 1 Study Area. Fourteen special-status wildlife species were observed, and an additional 21 special-status wildlife species were determined to have potential to occur in one or more habitats within the Phase 1 Study Area.

WRA documented several federal- and state-protected species including Keck's checkerbloom (*Sidalcea keckii*; Federal Endangered), Lake County western flax (*Hesperolinon didymocarpum;* State Endangered), bald eagle (*Haliaeetus leucocephalus*; Federal Bald and Golden Eagle Protection Act, State Endangered), golden eagle (*Aquila chrysaetos*; Federal Bald and Golden Eagle Protection Act, California Fully Protected Species), foothill yellow-legged frog (*Rana boylii*; State Candidate), white tailed kite (*Elanus leucurus*; California Fully Protected Species), and peregrine falcon (*Falco peregrinus*; California Fully Protected Species). Keck's checkerbloom, Lake County western flax, and foothill yellow-legged frog were documented within the Phase 1 footprint, whereas bald eagle, golden eagle, and peregrine falcon nests were observed outside of the Phase 1 Study Area, in association with Detert Reservoir, McCreary Lake, Lake Burgundy, and other areas. White tailed kite was observed foraging near Lower Bohn Lake and other areas outside of the Phase 1 Study Area, but was not documented nesting within the Phase 1 Study Area or the larger Guenoc Ranch.

The Project proposes to avoid as much as possible and to minimize impacts to sensitive resources to the fullest extent feasible and practicable through a combination of (1) extensive pre-planning surveys to document and avoid sensitive resources during the design phase, (2) pre-construction surveys to account for project phasing and potential changes in the distribution of sensitive resources following the original pre-planning surveys, (3) robust best management practices to avoid and/or minimize potential impacts when working around sensitive resources or within suitable habitat for special-status species. Where it is infeasible to avoid impacts, the project proposes to offset impacts through the conservation of open space and other selected portions of the Ranch that contain high-quality examples of the relevent resources in question.

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LIST OF ACRONYMS AND ABBREVIATIONS

BCC	USFWS Bird of Conservation Concern
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFP	California Fully Protected Species
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CRLF	California Red-Legged Frog
CWA	Clean Water Act
DBH	Diameter at Breast Height
EFH	Essential Fish Habitat
ESA	Federal Endangered Species Act
FC	Federal Candidate
FE	Federal-Endangered
FT	Federal-Threatened
FYLF	Foothill Yellow-Legged Frog
HMMP	Habitat Mitigation and Monitoring Plan
ITP	Individual Take Permit
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
OWHM	Ordinary High Water Mark
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality Control Board
SC	State-Candidate
SE	State-Endangered
SSC	CDFW Species of Special Concern
SSI	CDFW Special-Status Invertebrate
ST	State-Threatened
USDA	U.S. Department of Agriculture
USDOI	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WPT	Western pond turtle
WRA	WRA, Inc.

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1.0 INTRODUCTION

On multiple dates in 2017, 2018, and 2019, WRA, Inc. (WRA) performed an assessment of biological resources within the approximately 4,977-acre Study Area for Phase 1 of the proposed Maha Resort and Guenoc Valley Development located in Lake County, California (Figure 1, 2). The project is sited within the approximately 22,695-acre Guenoc Ranch, located on Butts Canyon Road, approximately 6 miles southeast of Middletown. Guenoc Ranch spans portions of both unincorporated Lake and Napa counties; however, the Study Area for Phase 1 occurs entirely within Lake County. The purpose of the assessment was to develop a baseline biological inventory to help guide planning efforts and to gather information on sensitive biological communities and special-status plant and wildlife species to support an evaluation of the proposed project under the California Environmental Quality Act (CEQA). This report describes the methods and results of the surveys and assessments conducted by WRA biologists to determine (1) the presence of sensitive biological communities, (2) the potential for biological communities on the site to support special-status plant and wildlife species, (3) the presence of any special-status plant or wildlife species encountered during seasonally timed, reconnaissance-level and focused surveys, and (4) the presence of any other sensitive natural resources protected by local, state, or federal laws and regulations.

A biological resources assessment provides general information on the presence, or potential presence, of sensitive habitats and species. The biological resources assessment is not an official protocol-level survey for listed species or an official wetland delineation that may be required for project approval by local, state, or federal agencies. An official delineation of aquatic resources was performed by WRA and is documented in a separate report (WRA 2020a). An overview of the delineation methods and results is provided here for completeness. The assessments presented here are based on information available at the time of the study and on conditions observed on the dates the site was visited.

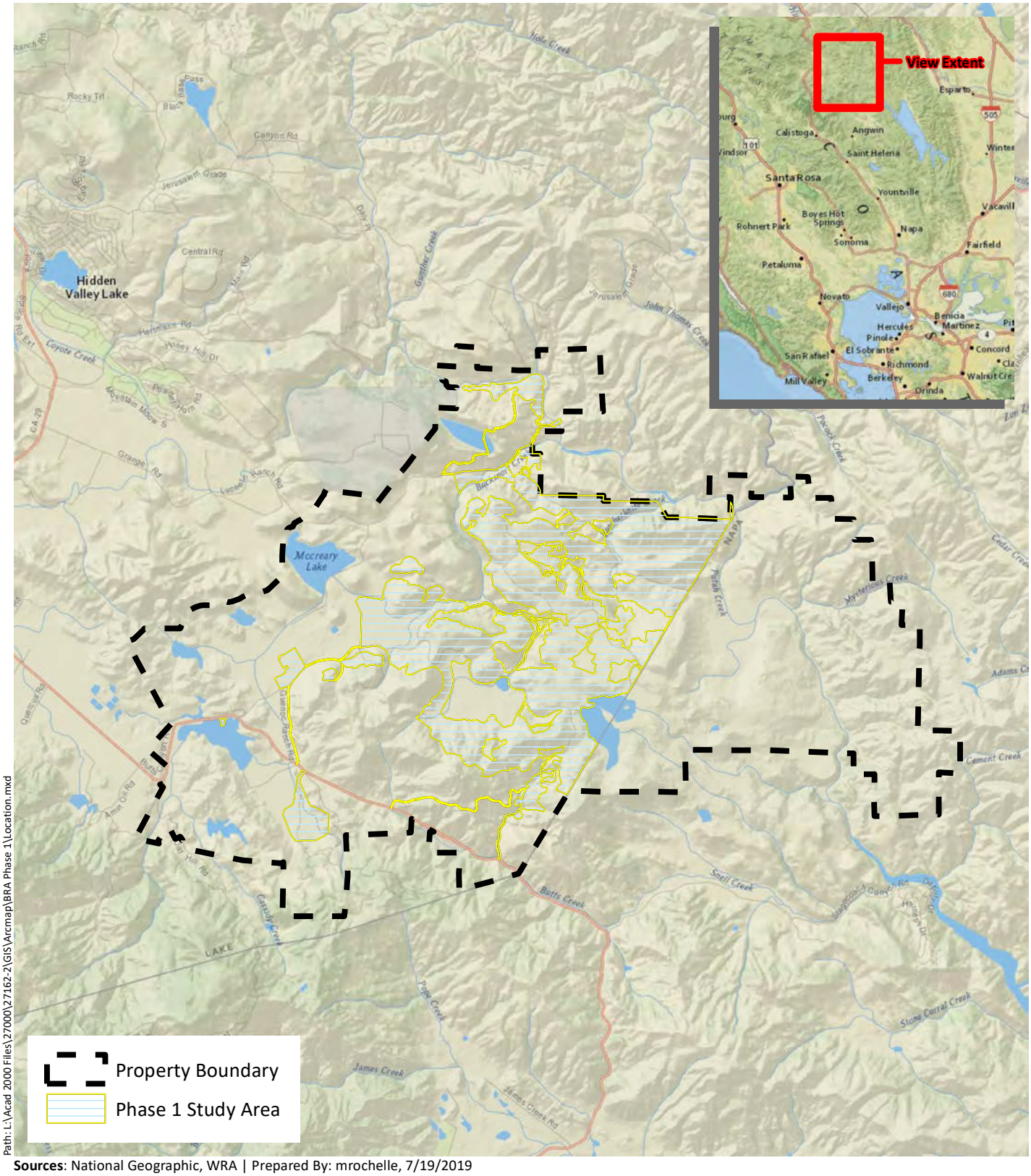
2.0 REGULATORY BACKGROUND

The following sections describe the regulatory context of the biological resources assessment, including laws and regulations that were applied to the field investigations.

2.1 Biological Communities

2.1.1 Non-Sensitive Biological Communities

Non-sensitive biological communities include plant communities with a California Department of Fish and Wildlife (CDFW) rarity ranking of S4 or S5, as well as other non-sensitive land use designations such as agriculture, developed areas, etc. These biological communities and land uses are not protected by federal, state, or local laws and are not considered sensitive under CEQA.



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Sources: National Geographic, WRA | Prepared By: mrochelle, 7/19/2019

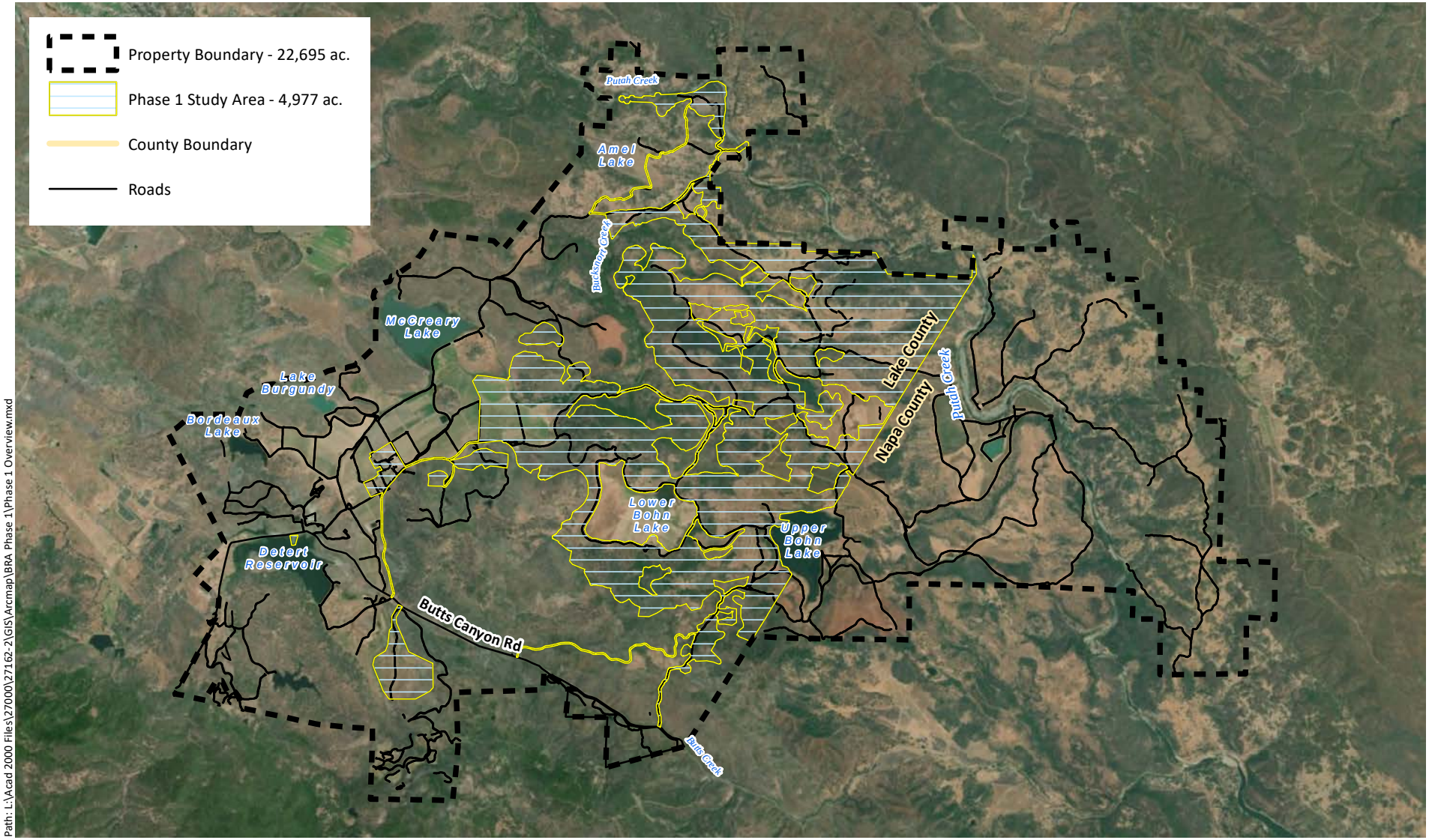
Figure 1. Phase 1 Study Area Location

Maha Resort and Guenoc Valley
Development, Phase 1
Lake County, California

0 1 2 Miles

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Sources: Esri Streaming - NAIP 2016, WRA | Prepared By: mrochelle, 7/19/2019

Figure 2. Phase 1 Study Area Overview

Maha Resort and Guenoc Valley
Development, Phase 1
Lake County, California

0 1 2 Miles

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2.1.2 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Clean Water Act (CWA); state regulations such as the Porter-Cologne Act, the California Fish and Game Code (CFGC), and CEQA; or local ordinances such as the County of Lake's Municipal Code and Zoning Ordinance.

Sensitive Terrestrial Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. The CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2019). Sensitive plant communities are also identified by CDFW (CDFW 2018a). Vegetation alliances are ranked 1 through 5 based on NatureServe's methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) are considered and evaluated under CEQA (California Code of Regulations [CCR] Title 14, Div. 6, Chap. 3). Specific habitats may also be identified as sensitive in city or county general plans or ordinances; the County of Lake specifically protects oak woodlands.

Sensitive Aquatic Communities

Waters of the United States

Section 404 of the Clean Water Act gives the Environmental Protection Agency (EPA) and the Corps regulatory and permitting authority regarding discharge of dredged or fill material into "navigable waters of the United States." Section 502(7) of the CWA defines "navigable waters" as "waters of the United States, including territorial seas." Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term "waters of the United States" as it applies to the jurisdictional limits of the authority of the Corps under the CWA. A summary of the definition of "waters of the United States" in 33 CFR 328.3 (a) includes (1) waters used for commerce; (2) interstate waters and wetlands; (3) territorial seas; (4) impoundments of waters listed here; (5) tributaries to the above waters; (6) waters and wetlands adjacent to the above waters; and (7) prairie potholes, Carolina and Delmarva bays, pocosins, western vernal pools, and Texas coastal prairie wetlands, provided these features have a significant nexus to the above listed waters[1]; (8) all waters located within the 100-year floodplain of waters listed above in items 1-3 or within 4,000 feet of the high tide line (HTL) or ordinary high water mark (OHWM) of a water listed above in items 1-5, provided those waters are determined to have a significant nexus to waters identified in items 1-3 above. For purposes of the determining Corps jurisdiction under the CWA, "navigable waters" as defined in the CWA are the same as "waters of the U.S." defined in 33 CFR 328.3.

[1] Wetlands and non-wetland waters in this category are similarly situated and are combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of 33 CFR 328.3.

Areas not considered to be “waters of the United States” as defined in 33 CFR 328.3 (a)(8), are summarized as follows: (1) waste treatment systems; (2) prior converted cropland; (3) specific classes of ditches, including (i) ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary, (ii) ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands, and (iii) ditches that do not flow, either directly or through another water, into a water identified in 33 CFR 328.3 paragraphs (a) (1) through (3); (4) artificially irrigated areas that would otherwise revert to dry land and manmade aquatic features in otherwise dry land such as stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, cooling ponds, reflecting pools, swimming pools, small ornamental waters, depressions incidental to mining and construction activity, erosional features, and puddles; (5) groundwater; (6) stormwater control features; (7) wastewater recycling structures, groundwater recharge basins, percolation ponds for wastewater recycling, and distribution networks for wastewater recycling.

Potential wetlands, as defined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Other areas such as streams and ponds, often referred to as “other waters”, are characterized by an ordinary high water mark (OHWM). The placement of fill material into Waters of the U.S generally requires an individual or nationwide permit from the Corps under Section 404 of the CWA.

Waters of the State

The term “Waters of the State” is defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes “isolated” wetlands and waters that may not be regulated by the Corps under Section 404 of the CWA. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600 to 1616 of the CFGC. Alterations to or work within or adjacent to streambeds or lakes generally require a Section 1602 Lake and Streambed Alteration Agreement. The term “stream”, which includes creeks and rivers, is defined as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term “stream” can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. “Riparian” is defined as “on, or pertaining to,

the banks of a stream." Riparian vegetation is defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself". Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

The County of Lake has developed a "Waterway Combining District" zoning designation that applies to all perennial and intermittent streams, including adjacent wetlands and riparian vegetation (Section 37 of the Zoning Ordinance). The County defines a protected riparian zone as an area extending:

- 30 feet from the top of bank any perennial stream,
- 20 feet from the top of bank of any intermittent stream,
- 20 feet from the edge of any adjacent wetlands or the ordinary high water mark of other bodies of water, or
- To the outer extent of vegetation dominated by common riparian species such as Fremont cottonwood (*Populus fremontii*), white alder (*Alnus rhombifolia*), box elder (*Acer negundo*), dogwood (*Cornus* spp.), willow (*Salix* spp.), and big leaf maple (*Acer macrophyllum*) (this latter zone may extend beyond 30 feet).

The County restricts development and other activities within the riparian zone defined above, with a number of exemptions for agriculture, management, and other resource-dependent activities as outlined in Sections 37.5 and 37.6 of the zoning ordinance.[2]

2.2 Special-Status Species

Special-status species include those plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (CNPS 2019a) with California Rare Plant Ranks (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Rank 3 and Rank 4 species are afforded little or no protection under CEQA, but are included in this analysis for completeness. A description of the CNPS Ranks is provided below in Table 1.

[2] Section 30-9 of the County Municipal Code provides different watercourse setbacks based on stream class and erosion hazard ratings. Based on conversations with the Lake County Planning Department, WRA believes that the watercourse setbacks provided in Article 37 of the Zoning Ordinance take precedence.

Table 1. Description of CNPS California Rare Plant Ranks and Threat Codes

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

The federal Bald and Golden Eagle Protection Act also provides broad protections to both eagle species. Additionally, CDFW Species of Special Concern (SSC), CDFW California Fully Protected (CFP) species, USFWS Birds of Conservation Concern (BCC), and CDFW Special-Status Invertebrates (SSI) are all considered special-status species. Although these aforementioned species generally have no special legal status, they are given special consideration under CEQA. Bat species are also evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity; bats named as a "High Priority" or "Medium Priority" species for conservation by the WBWG are typically considered special-status and also considered under CEQA.

In addition to regulations for species that carry a special designation, most native birds in the United States (including non-status species) have baseline protections under the federal Migratory Bird Treaty Act of 1918 (MBTA) and the CFGC under sections 3503, 3503.5 and 3513. In addition to prohibiting the unauthorized intentional take of adult birds, these laws codes also prohibit the destruction or collection of active nests, including eggs and young.

Critical Habitat

Critical habitat is a term defined in the ESA as a designated geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery.

3.0 ENVIRONMENTAL SETTING

The Property is an approximately 22,695-acre property located in unincorporated Lake and Napa counties, approximately 6 miles southeast of the town of Middletown (Figure 1). The property contains a mix of undeveloped lands, agricultural lands including cattle pastures and vineyards, and minor areas of infrastructure to support vineyard, winery, and cattle operations. The property is bounded to the north by the U.S. Coast Guard LORAN Reservation, Putah Creek, and the Cedars mountain range; to the east by Putah Creek and Mysterious Valley; to the south by Table Mountain and Pope Valley; and to the west by Long Valley and Coyote Valley.

The approximately 4,977-acre Phase 1 Study Area that was examined for this report contains a subset of Guenoc Ranch that occurs entirely within Lake County. The location and extent of the Phase 1 Study Area is shown on Figures 1 and 2.

3.1 Climate and Hydrology

The Property experiences a Mediterranean climate, with cool, wet winters and hot, dry summers. Average annual rainfall is approximately 43 inches, as measured at the Natural Resources Conservation Service (NRCS) weather station in Middletown, approximately 3.5 miles to the west of the site. The majority of rain falls between November and March. Average annual temperature is 51 degrees Fahrenheit, as measured at the NRCS weather station in Clear Lake, approximately 10 miles to the northwest of the property. The average summer temperature (June through August) is 71 degrees Fahrenheit; the average winter temperature (December through February) is 44 degrees. Nearly all precipitation falls as rain.

Guenoc Ranch is located entirely within the Putah Creek watershed which drains into Lake Berryessa, located approximately 8 miles to the southeast of the property. The property contains significant hydrologic resources, with a large network of ponds and reservoirs connected by perennial to intermittent streams and agricultural ditches and channels. Putah Creek, a perennial stream, runs along the northern and eastern portions of the property, and many of the drainages within the property drain into Putah Creek. Other major creeks within the property include Bucksnort Creek, Butcherknife Creek, Hunting Creek, Butts Creek, and Cassidy Creek. Major ponds and reservoirs within the Property include Detert Reservoir, McCreary Lake, Lake Burgundy, Lake Bordeaux, Upper Bohn Lake, Lower Bohn Lake, and Amel Lake. Many of the reservoirs within the property are connected through a network of natural streams and manmade ditches, allowing water to be moved across the site in response to management needs.

3.2 Geology and Soils

The Property contains a variety of geologic substrates including ultramafic rocks (primarily serpentinite, with minor inclusions of peridotite, gabbro, and diabase), rocks of the Franciscan complex (primarily sandstone with smaller amounts of shale, chert, limestone, and conglomerate), and volcanic flow rocks of the Clear Lake Volcanic Field (volcanic flow rocks with minor pyroclastic deposits, primarily andesite with minor amounts of dacite and basalt) (USGS 2017).

Soils mapped within Guenoc Ranch are shown on Figure 3. A list of soils and their acreage within the Phase 1 Study Area, as well as their parent material, is provided as Table 2. (California Soil Resources Lab [CSRL] 2019; USDA 1989). The ultramafic, or serpentine, origin of many of the soils found within the Phase 1 Study Area results in a unique physical and chemical composition that hinders the growth of most species that have not evolved on these soil types. As a result, serpentine soils harbor unique native plant assemblages that are resistant to invasion by non-

native species and often support numerous special-status plants that are restricted to serpentine soils (Kruckeberg 1984; Alexander et al. 2007). Volcanic soils on the property may provide a similarly unique edaphic, or soil, condition that supports an atypically high diversity of native plants, including many special-status species.

In addition to the unique soil conditions found at Guenoc Ranch, a large portion of the site burned in the Valley Fire of 2015, resulting in ideal conditions for many special-status plants known to occur following fires (i.e., "fire followers"). These species are present in the seedbank, but often require a release from competition and a unique germination trigger associated with fire such as heat or smoke. The high numbers of special-status plants observed at the site is in part due to the recent fire, and it is likely that many of the occurrences will dwindle in size or disappear over time as communities develop toward climax conditions.

3.3 Vegetation and Land Use

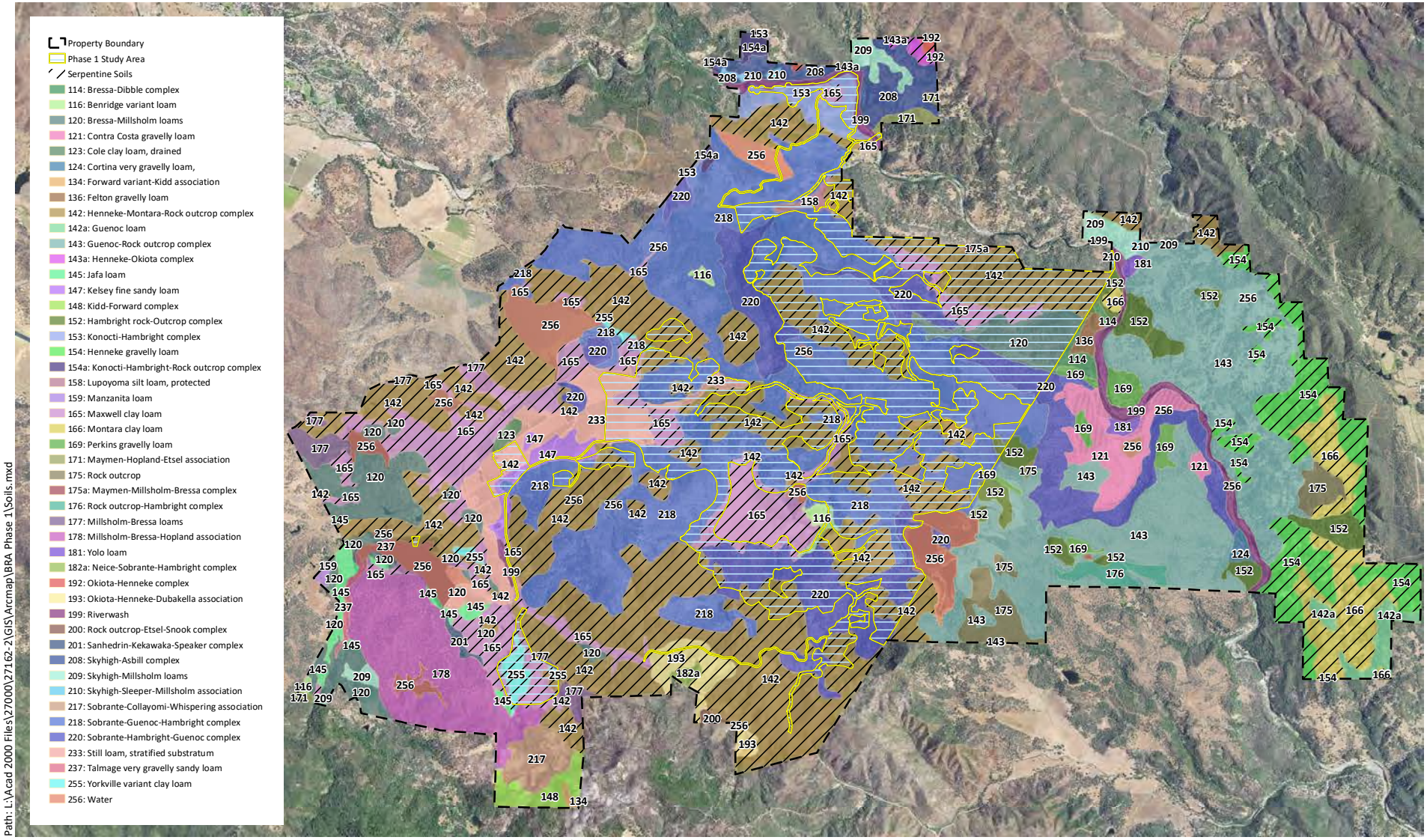
The Phase 1 Study Area is located within the Inner North Coast Ranges geographic subdivision described by the Jepson Flora Project (2019). This area is characterized by widespread serpentine and volcanic soils experiencing relatively low rainfall and hot, dry summers; the resulting vegetation is dominated by a mix of chaparral, foothill pine woodland, and blue oak woodland, with grasslands in valley bottoms and alluvial positions. As is the case with Guenoc Ranch, many of the valley bottoms and alluvial positions throughout the region were historically converted for grazing lands, vineyards, or other agricultural uses. Much of the vegetation across the property burned during the Valley Fire of 2015, leaving many communities in an early seral stage of development, often with relict snags and downed woody debris giving evidence of the climax community that was present before the fire and may return over time.

4.0 METHODS

On multiple dates in 2017, 2018, and 2019, the Phase 1 Study Area was traversed on foot to determine (1) plant communities present within the Phase 1 Study Area, (2) whether existing conditions provide suitable habitat for any special-status plant or wildlife species, and (3) whether sensitive habitats are present. A list of all survey dates and the associated level of effort (i.e., person hours) is provided as Table 3. All plant and wildlife species encountered during the surveys were documented. Plant nomenclature follows Baldwin et al. (2012) and subsequent revisions by the Jepson Flora Project (2019), except where noted. For cases in which regulatory agencies, CNPS, or other entities base rarity on older taxonomic treatments, precedence was given to the treatment used by those entities. Detailed methods for each component of the assessment are provided in the following sections.

4.1 Biological Communities

Prior to the site visits, detailed soil survey data for Lake and Napa counties was reviewed using the CSRL SoilWeb Google Earth application (2019) to determine whether any unique soil types that could support sensitive plant communities and/or aquatic features are present in the Phase 1 Study Area. WRA generated field maps at a scale sufficient (1:500) to navigate through the Phase 1 Study Area and to identify distinct features (e.g., changes in vegetation, individual trees, rock outcrops). Field maps contained recent (April – August 2016) high-quality aerial photographs overlain with 10-foot contour lines. Field maps were of sufficient resolution to allow biologists to hand-draw vegetation polygons and other features, with a ground resolution of 0.3 to 0.6 meter. Hand-drawn polygons were digitized in the office using ArcGIS software. Each biologist also



Path: L:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Soils.mxd

Sources: Esri Streaming - NAIP 2016, SURGGO Soils, WRA | Prepared By: mrochelle, 7/19/2019

Figure 3. Soils within the Property Boundary

Maha Resort and Guenoc Valley
Development, Phase 1
Lake County, California

0 1 2 Miles

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ENVIRONMENTAL CONSULTANTS

Table 2. Soils Mapped within the Phase 1 Study Area

Soil Map Unit	Parent Material	Acres
Benridge variant loam	Basalt	13.04
Bressa-Dibble complex	Sandstone and shale	0.43
Bressa-Millsholm loams	Sandstone	240.61
Cole clay loam, drained	Mixed alluvium	0.06
Hambright rock-Outcrop complex	Basic volcanic rock	12.95
Henneke-Montara-Rock outcrop complex	Serpentine	1,550.99
Kelsey fine sandy loam	Mixed alluvium	28.62
Konocti-Hambright complex	Basalt	71.57
Lupoyoma silt loam, protected	Mixed alluvium	17.47
Maxwell clay loam	Serpentine	379.92
Maymen-Hopland-Etsel association	Sandstone and shale	1.12
Maymen-Millsholm-Bressa complex	Sedimentary rock	7.28
Millsholm-Bressa-Hopland association	Sandstone and shale	0.01
Millsholm-Bressa loams	Sandstone and shale	3.59
Okiota-Henneke-Dubakella association	Serpentine	6.10
Perkins gravelly loam	Igneous rock	1.14
Riverwash	Mixed alluvium	19.42
Skyhigh-Sleeper-Millsholm association	Sandstone and shale	1.55
Sobrante-Guenoc-Hambright complex	Basalt	1,706.59
Sobrante-Hambright-Guenoc complex	Basalt	650.06
Still loam, stratified substratum	Sandstone and shale	186.50
Yorkville variant clay loam	Serpentine	59.11
Water	n/a	18.89
	Total:	4,977.02

Table 3. Summary of Survey Dates and Level of Effort

Survey Dates	Survey Description	Person Hours[3]
June 5-8, 2017	Special-status plant surveys, vegetation mapping	162
June 19, 2017	General wildlife surveys and assessments	20
June 26, 2017	General wildlife surveys and assessments	18
August 25, 2017	Special-status plant surveys	18
March 29-30, 2018	Special-status plant surveys	70
April 2-4, 2018	Focused raptor surveys and general wildlife surveys	90
April 16-20, 2018	Special-status plant surveys	220
April 24-26, 2018	Focused raptor surveys and general wildlife surveys	90
May 1-4, 2018	Delineation of aquatic resources	240
May 8-10, 2018	Focused raptor surveys and general wildlife surveys	90
May 15-17, 2018	Special-status plant surveys	178
May 22-24, 2018	Focused raptor surveys and general wildlife surveys	106
May 30-June 1, 2018	Delineation of aquatic resources	160
June 13-16, 2018	Special-status plant surveys	130
August 14-16, 2018	Focused amphibian surveys	40
August 21-22, 2018	Special-status plant surveys and delineation of aquatic resources	70
August 28, 2018	Special-status plant surveys	24
September 6-7, 2018	Special-status plant surveys and delineation of aquatic resources	50
April 24-26, 2019	Special-status plant surveys, vegetation mapping, and wetland delineation	57
May 2-3, 2019	Special-status plant surveys, vegetation mapping, and wetland delineation	40
May 7-9, 2019	Special-status plant surveys, vegetation mapping, and wetland delineation	97
May 14-15, 2019	General wildlife surveys and assessments	39
May 28, 2019	Special-status plant surveys	12

[3] Includes some overlap with surveys conducted within the Phase 2 and Open Space portions of the property; those surveys are documented in a separate report (WRA 2019b).

Survey Dates	Survey Description	Person Hours[3]
June 17, 2019	Wetland delineation	24
June 20, 2019	Wetland delineation	16
	Total:	**2,061**

carried a Trimble Geo XH GPS unit with sub-meter accuracy to map small-scale or localized features such as rare plant occurrences or wetland boundaries.

Terrestrial Communities

To map plant communities, WRA botanists traversed the site on foot during daylight hours and documented the plant communities observed using the field maps described above. Areas that were inaccessible due to dangerous or steep terrain, impenetrable chaparral, or dense poison oak were observed from an appropriate vantage using binoculars to allow for identification of plant alliances and an assessment of the potential for special-status plant species to occur in those areas. During the site visits, biological communities present in the Phase 1 Study Area were classified based on a hierarchical approach combining the habitat- and physiognomic-based community descriptions in the CDFG publication *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) with the species-based plant alliance descriptions in the CDFW and CNPS *Manual of California Vegetation* (CNPS 2019b). In some cases, it was necessary to identify variants of community types or to describe ruderal or non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by their CDFW ranking (CDFW 2019, CNPS 2019b), CEQA guidelines, and other applicable laws and regulations.

Aquatic Communities

During the assessment, WRA documented the extent of aquatic resources potentially subject to federal or state jurisdiction. To map extent of aquatic resources potentially subject to federal jurisdiction by the Corps, WRA followed the methods outlined in *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement; Corps 2008), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* ("OHWM Guide"; Lichvar and McColley 2008). Jurisdictional wetlands were identified and their boundaries mapped using the Routine Method described in the Corps Manual. The limits of federal of jurisdiction over non-wetland waters under Section 404 of the CWA were mapped based on field indicators described in the OHWM Guide.

In addition to mapping the extent of potential federal jurisdiction over aquatic resources, WRA also mapped the extent of potential state jurisdiction over aquatic resources, as potentially regulated by the RWQCB and/or CDFW. Neither of these agencies has formally issued guidance for determining the extent of their jurisdiction over aquatic resources. However, in common practice, the RWQCB regulates all wetlands, as well as streams to the top of bank or the outer edge of the riparian canopy. The CDFW commonly regulates all lakes to the OHWM and all streams to the top of bank or the outer edge of the riparian canopy. As such, WRA mapped

approximate extent of the top of bank and the riparian canopy along all streams within the Phase 1 Study Area.

A detailed accounting of the methods used to delineate aquatic resources can be found in the separate Aquatic Resources Delineation Report (WRA 2020a).

4.2 Special-Status Species

Literature Review

Potential occurrence of special-status species in the Phase 1 Study Area was evaluated by first determining which special-status species occur in the vicinity of the Phase 1 Study Area through a literature and database review. Database searches for known occurrences of special-status species focused on the 7.5-minute USGS quadrangles that include and surround the property: Aetna Springs, Calistoga, Chiles Valley, Clearlake Highlands, Detert Reservoir, Glascock Mountain, Jericho Valley, Knoxville, Lower Lake, Mark West Springs, Middletown, Mount Saint Helena, Saint Helena, Walter Springs, Whispering Pines, and Wilson Valley. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of these quadrangles:

- California Natural Diversity Database (CDFW 2019)
- USFWS Information for Planning and Conservation Species Lists (USFWS 2019)
- CNPS Rare Plant Inventory (CNPS 2019a)
- CDFG publication *California Bird Species of Special Concern* (Shuford and Gardali 2008)
- CDFW publication *Fish Species of Special Concern in California* (Moyle et. al. 2015)
- USFWS publication *Birds of Conservation Concern* (2008)
- Western Bat Working Group Online Species Accounts (2019)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)

Site Assessment

During the site assessment, habitat conditions observed within the Phase 1 Study Area were evaluated for their potential to support special-status plant and wildlife species documented from the literature and database review. The potential for each special-status species to occur in the Phase 1 Study Area was then evaluated according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

- **Present.** Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity to determine its potential to occur within the Phase 1 Study Area. The site assessment does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, all special-status species observed during the site visits were documented. Following seasonally timed surveys for special-status plants (see below), the potential for each species to occur was reassessed based on the results of the surveys.

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of WRA biologists with experience working with the species and habitats in question. If necessary, recognized experts in individual species biology were contacted to obtain the most up to date information regarding species biology and ecology.

For some species, a site assessment visit at the level conducted for this report may not be sufficient to determine presence or absence of a species to the specifications of regulatory agencies. In these cases, a species may be assumed to be present or further protocol-level special-status species surveys may be necessary. Special-status species for which further protocol-level surveys may be necessary are described below in Section 6.0.

Special-Status Plants

Seasonally timed reconnaissance-level surveys for special-status plants were conducted over multiple dates in 2017, 2018, 2019 (Table 3) to complement the special-status species habitat assessment. The majority of the Phase 1 Study Area was subject to a full suite of seasonally timed surveys, with at least one round of surveys each in the months of March, April, May, June, August, and September; however, some portions of the Phase 1 Study Area we only subject to a single round of late-season surveys in 2018 or a single round of early- to mid-season surveys in 2019; these areas are shown in Appendix E.

During these surveys, the Phase 1 Study Area was traversed on foot using intuitively guided, meandering transects. The locations of observed special-status plant species were recorded using a combination of Trimble Geo XH GPS units with sub-meter accuracy and hand-drawn locations on field maps that contained recent (April – August 2016), high-resolution (0.3- to 0.6-meter ground resolution) aerial photographs overlain with 10-foot contours. Hand-drawn locations were digitized in the office using ArcGIS software.

Special-Status Wildlife

General Wildlife Surveys

WRA biologists conducted biological site assessments and general wildlife surveys within the Phase 1 Study Area on multiple dates in 2017, 2018, and 2019 (Table 3). Because wildlife species have the ability to move into a project area and potential direct and indirect impacts to wildlife species could occur beyond the immediate footprint of any future development proposed for the site, wildlife surveys were covered both the Phase 1 Study Area, as well as selected portions of the remainder of the property within Lake County.

Surveys for fish and amphibian species were conducted in and around aquatic features using the naked eye and binoculars. Surveys for bats focused on visually investigating select buildings within the Phase 1 Study Area for the presence of roosting animals. In addition, a Sonobat recording device was deployed on the nights of August 14 and 15, 2018 at a small in-line reservoir determined to contain suitable bat habitat located south of the vineyards at Lower Bohn Lake. Audio generated from the recording device was analyzed using Sonobat software to determine what bat species are present within the area.

In addition to general wildlife surveys, WRA conducted several rounds of focused wildlife surveys, which investigated the property for the presence of raptors and special-status amphibians. The methods of those focused surveys are described below.

Raptor Surveys

In 2018, 12 days of focused raptor surveys were conducted over the course of four periods: April 2-4, April 24-26, May 8-10, and May 22-24. Over this two-month period, 50 fixed-point surveys were conducted during weather conducive to visual and auditory detections of raptors. Survey points were chosen based on a GIS viewshed analysis and were located on peaks throughout the property to maximize the area within line-of-sight. In addition to fixed-point surveys, 27 roving surveys were conducted within the Phase 1 Study Area, both from vehicle and on foot. These surveys were conducted to cover “blind spots” that were not directly visible from the fixed observation points. For a detailed description of the methods used during focused raptor surveys, see Appendix H.

Amphibian Visual Encounter Surveys

On August 14-16, 2018, and May 14-15, 2019, WRA biologists conducted night-time focused surveys for special-status native anurans, including California red-legged frog (*Rana draytonii*; CRLF) and foothill yellow-legged frog (*Rana boylii*; FYLF), at selected habitats across the Property. Stock ponds and other impoundments selected for surveys were smaller, more remote habitat features that were relatively isolated from large reservoirs and operational agricultural ponds that were more likely to support non-native aquatic predators. These smaller, isolated features were determined to have the highest potential to host CRLF, if present, due to their relative lack of predatory fish and bullfrogs (*Lithobates* sp.) compared to larger ponds and reservoirs that are connected by streams and manmade channels that allow these invasive species to move from one feature to another. Additionally, select reaches of several streams were also surveyed for the presence of FYLF and CRLF. Biologists traversed aquatic features by foot using flashlights and binoculars to detect species eyeshine within and adjacent to the aquatic features.

5.0 RESULTS

The following sections summarize the results of WRA's surveys from 2017 to 2019 within the Study Area for Phase 1. An overview of biological communities observed within the Phase 1 Study Area is provided as Table 4. Maps showing the location and extent of biological communities are provided as Appendix A; maps showing the location and extent of aquatic resources and riparian habitat are provided as Appendix B. A list of all plant species observed within the Phase 1 Study Area is provided as Appendix C. A summary of the special-status plant species documented from the region and their potential to occur within the Phase 1 Study Area is provided as Appendix D. Maps showing the location of special-status plants mapped within the Phase 1 Study Area are included as Appendix E. A list of all wildlife species observed within the property is provided as Appendix F. A summary of the special-status wildlife species documented from the region and their potential to occur within the Phase 1 Study Area is provided as Appendix G. Detailed methods and results of the focused raptor surveys are provided as Appendix H. Representative photographs of the Phase 1 Study Area are provided as Appendix I.

5.1 Biological Communities

The Phase 1 Study Area is dominated by a mix of blue oak woodland, foothill pine woodland, chamise chaparral, leather oak chaparral, and non-native annual grasslands, with other communities and specific plant alliances present over smaller areas. The large number of seeps, ponds, reservoirs, and major streams on the property have also resulted in a large amount of wetlands and wet meadow features. Many of these features have been historically altered to support ranching and agricultural activities.

The Phase 1 Study Area contains a large area of serpentine soils dominated by a mix of foothill pine woodland and chaparral communities. These serpentine habitats have a high concentration of native plant species compared to adjacent habitats on non-serpentine soils which are dominated by blue oak woodlands with a high concentration of non-native and invasive species in the understory. Serpentine habitats within the Phase 1 Study Area also contain a high concentration of special-status plant species, as discussed in Section 5.2.

Portions of the Phase 1 Study Area burned during the Valley Fire of 2015. In some areas, the burn was light and the pre-fire vegetation was not completely destroyed. In other areas, the burn was severe and the pre-fire vegetation was killed. In these areas, vegetation that was once dominated by foothill pine woodland or other woodland types has transitioned to shrub-dominated habitats such as scrub or leather oak chaparral. It is anticipated that vegetation in burn-affected areas will transition through a number of successional stages over the coming years to decades.

Table 4 summarizes the area of each biological community type or land use designation observed in the Phase 1 Study Area, including 11 non-sensitive communities or other non-vegetated land use designations and 11 sensitive communities, including aquatic habitat types. Biological communities and other land use designations mapped in the Phase 1 Study Area are shown in Appendix A; aquatic resources and riparian habitat are shown in Appendix B. Descriptions for each biological community are contained in the following sections, organized by non-sensitive and sensitive habitats and by growth form (i.e., tree, shrub, herb), with alliances listed alphabetically therein.

Table 4. Biological Communities Mapped within the Phase 1 Study Area

Vegetation Structure/ Land Use	Community (Holland 1986)	Vegetation Alliance (CDFW 2018a; CNPS 2019b)	Sensitive Status	Rarity Ranking	Acres within Phase 1 Study Area
Terrestrial Communities					
Tree-dominated	White alder riparian forest	White alder groves *Alnus rhombifolia* Forest Alliance	Sensitive[4]	G4S4	0.64[5]
	Serpentine digger [foothill] pine-chaparral woodland	Foothill pine woodland *Pinus sabiniana* woodland alliance	Non-sensitive[6]	G4S4	350.48
	Blue oak woodland	Blue oak woodland *Quercus douglasii* woodland alliance	Sensitive[7]	G4S4	1,041.14
		Blue oak savanna[8] *Quercus douglasii* woodland alliance	Sensitive[6]	G4S4	485.85
	Valley oak woodland	Valley oak woodland *Quercus lobata* woodland alliance	Sensitive	G3S3	42.66
	Interior live oak woodland	Interior live oak woodland *Quercus wislizeni* forest alliance	Sensitive[6]	G4S4	318.62
Shrub-dominated	Deer weed scrub	Deer weed scrub *Acmispon glaber* [*Lotus scoparius*] shrubland alliance	Non-sensitive	G5S5	4.67

[4] Although listed as apparently secure at the global (G4) and state (S4) levels by the CDFW, where they occur within the Study Area, white alder groves qualify as forested wetlands and are therefore treated as sensitive. White alder groves may also include one or more sensitive associations such as the white alder – American dogwood association or the white alder – western azalea association (CDFW 2018a).
[5] Includes 0.64 acre of habitat qualifying as forested wetlands subject to federal and state regulation.
[6] Although the foothill pine woodland alliance is listed as apparently secure at the global (G4) and state (S4) levels, there may be sensitive associations within the alliance present such the foothill pine – leather oak provisional alliance (CDFW 2018a).
[7] Although listed as apparently secure at the global (G4) and state (S4) levels by the CDFW, blue oak woodland, blue oak savanna, and interior live oak woodland are protected by the County of Lake and are therefore treated as sensitive.
[8] Blue oak savanna is not described by CDFW (2018a) or CNPS (2019b).

Vegetation Structure/ Land Use	Community (Holland 1986)	Vegetation Alliance (CDFW 2018a; CNPS 2019b)	Sensitive Status	Rarity Ranking	Acres within Phase 1 Study Area
Shrub-dominated	Chamise chaparral	Chamise chaparral *Adenostoma fasciculatum* shrubland alliance	Non-sensitive[9]	G5S5	541.32
	Serpentine chaparral	Whiteleaf manzanita chaparral *Arctostaphylos viscida* shrubland alliance	Non-sensitive[10]	G4S4	81.04
	Serpentine chaparral	Musk brush chaparral[11] *Ceanothus jepsonii* shrubland alliance	Sensitive[12]	n/a	31.11
	Serpentine chaparral	California yerba santa scrub *Eriodictyon californicum* shrubland alliance	Non-sensitive	G4S4	7.70
	Scrub oak chaparral	Scrub oak chaparral *Quercus berberidifolia* shrubland alliance	Non-sensitive	G4S4	40.16
	Leather oak chaparral	Leather oak chaparral *Quercus durata* shrubland alliance	Non-sensitive[13]	G4S4	316.33
	North coast riparian scrub	Brewer willow thickets *Salix breweri* Shrubland Alliance	Sensitive	G2S2	2.25[14]

[9] Although the chamise chaparral alliance is listed as apparently secure at the global (G4) and state (S4) levels, there may be sensitive associations within the alliance present such as the leather oak – chamise provisional association (CDFW 2018a).
[10] Although the whiteleaf manzanita chaparral alliance is listed as apparently secure at the global (G4) and state (S4) levels, there may be sensitive associations within the alliance present such as the whiteleaf manzanita – musk brush provisional association (CDFW 2018a).
[11] This community is not described by Holland (1986), CDFW (2018a), or CNPS (2019b), but may be considered part of the leather oak – musk brush provisional association (CDFW 2018a).
[12] This community is being treated as part of the leather oak – musk brush provisional association which is considered sensitive by the CDFW (2018a).
[13] Although the leather oak chaparral alliance is listed as apparently secure at the global (G4) and state (S4) levels, there may be sensitive associations within the alliance present such as the leather oak – chamise provisional association (CDFW 2018a).
[14] Includes 2.25 acres that qualify as scrub-shrub wetlands subject to federal and state regulation.

Vegetation Structure/ Land Use	Community (Holland 1986)	Vegetation Alliance (CDFW 2018a; CNPS 2019b)	Sensitive Status	Rarity Ranking	Acres within Phase 1 Study Area
Herb-dominated	Non-native grasslands	Multiple	Non-sensitive	n/a	910.45
	Valley needlegrass grasslands	Purple needle grass grasslands – (an association of needle grass – melic grass grassland [*Nassella* spp. – *Melica* spp. Herbaceous Alliance])	Sensitive[15]	G4S4	10.91
Aquatic Communities					
Emergent Wetlands	Multiple	Multiple	Sensitive	Multiple	99.28
Ponds and Reservoirs	n/a	n/a	Sensitive	n/a	31.99
Streams	n/a	n/a	Sensitive	n/a	51.4
Other Land Use Designations					
Agriculture	n/a	n/a	Non-sensitive	n/a	510.93
Developed	n/a	n/a	Non-sensitive	n/a	82.91
Rock Outcrop	n/a	n/a	Non-sensitive	n/a	15.18
				Total:	4977.02

[15] Although the Nassella – Melica herbaceous alliance is listed as apparently secure at the global (G4) and state (S4) levels, purple needlegrass grasslands are considered a sensitive plant association by the CDFW (2018a) and native grasslands are generally protected under CEQA; therefore purple needlegrass grasslands are treated as sensitive.

5.1.1 Non-Sensitive Biological Communities

Non-Sensitive Tree-Dominated Communities

Foothill pine woodland (*Pinus sabiniana* Woodland Alliance); Rank G4S4. Foothill pine woodland typically occurs on streamside terraces, valleys, slopes and ridges on shallow, often infertile, moderately drained soils throughout cismontane California. Often this alliance is intermixed with chaparral (CNPS 2019b). Within the Phase 1 Study Area, foothill pine woodland was located along alluvial terraces and on both rocky and finer-substrate slopes. On rocky substrates, it occurred with a chaparral understory, often on serpentine soils. In these situations, the overstory was composed of open foothill pine. The understory was variously composed of open to dense shrubs, including whiteleaf manzanita (*Arctostaphylos viscida*), leather oak (*Quercus durata*), and California yerba santa (*Eriodictyon californicum*). Herbaceous cover was typically of low density and included species such as woolly sunflower (*Eriophyllum lanatum*), small fescue (*Festuca microstachys*), golden buckwheat (*Eriogonum luteolum* var*. luteolum*), and Napa cryptantha (*Cryptantha hispidula*). Where soils are less rocky, foothill pine woodland often occurs in mixed stands of blue oak (*Quercus douglasii*) and interior live oak (*Q. wislizeni*). In such situations, blue oak and interior live oak can be co- or subdominant in the overstory, with overall canopy cover ranging from closed to somewhat open. The understory shrubs are generally sparse, consisting of species such as common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*) and poison oak (*Toxicodendron diversilobum*). Where canopy cover is dense, herbaceous cover is typically sparse. Where canopy cover is more open, the herbaceous layer is often dense grassland characterized by non-native annual species.

Foothill pine woodland intergrades with leather oak scrub, California yerba santa chaparral, whiteleaf manzanita scrub, blue oak woodland, and interior live oak woodland. In many areas, foothill pine was the dominant tree species prior to the Valley Fire of 2015, but was killed in the fire and is giving way to resprouting leather oak or California yerba santa. In these areas, the vegetation was mapped as foothill pine woodland if a large number of trees survived the fire; however, if only a small number of pines survived, the vegetation was mapped based on the dominant understory shrub, generally leather oak or yerba santa.

The foothill pine woodland alliance is considered non-sensitive; however, there may be sensitive associations within the alliance present within the Phase 1 Study Area such as the foothill pine – leather oak provisional association (CDFW 2018a).

Non-Sensitive Shrub-Dominated Communities

Deer weed scrub (*Acmispon glaber* shrubland Alliance); Rank G5S5. Deer weed scrub typically occurs in areas of recent disturbance such as clearing, fire, or intermittent flooding throughout cismontane California (CNPS 2019b). Within the Phase 1 Study Area, this alliance was observed in a limited number of areas affected by the Valley Fire of 2015, and it is expected that this community will transition into other shrub- or tree-dominated alliances in the years and decades to come. Trees were absent. The shrub layer was open to dense, dominated by deer weed, with lower cover of leather oak, yerba santa, and pitcher sage (*Lepechinia calycina*). The herbaceous layer was denser in more open stands and was characterized by annual grasses such as small fescue and soft chess (*Bromus hordeaceus*). Deer weed scrub is considered non-sensitive.

Chamise chaparral (*Adenostoma fasciculatum* Shrubland Alliance); Rank G5S5. Chamise chaparral is known from the interior North Coast Ranges south to interior and coastal South Coast Ranges, Transverse Ranges, and Sierra Nevada Foothills. This community is typically located on steep, dry, south-facing terrain underlain by shallow, often nutrient-poor (e.g., serpentine), well-drained substrates (CNPS 2019b). Within the Phase 1 Study Area, this community is located primarily on south-facing aspects and ridgelines underlain by well-drained stony clay loam derived from volcanic parent material and to a lesser extent from serpentine parent material. Chamise chaparral was typically dense and often monotypically composed of chamise. Occasional other shrub species were present, including leather oak and yerba santa. Occasional trees were present, including foothill pine, blue oak, and interior live oak. The herbaceous layer is typically sparse to absent, particularly in dense stands. In more open stands, the interstitial areas are characterized by sparse annual herbs.

Chamise chaparral is considered a non-sensitive alliance. However, there may be sensitive associations within the alliance present within the Phase 1 Study Area such as the leather oak – chamise provisional association (CDFW 2018a).

Whiteleaf manzanita chaparral (*Arctostaphylos viscida* Shrubland Alliance); Rank G4S4. Whiteleaf manzanita chaparral occurs on ridges and upper slopes on shallow, weathered substrate developed from sandstone, granitic, or ultramafic substrates in the northern and central cismontane mountain ranges of California (CNPS 2019b). Stands of whiteleaf manzanita chaparral were found at scattered locations within the Phase 1 Study Area on gently to moderately sloped serpentine substrate. The tree layer is sparse to absent, comprised of foothill pine and interior live oak. The shrub layer is typically dense and tall, dominated by whiteleaf manzanita, with leather oak, chamise, yerba santa, and toyon (*Heteromeles arbutifolia*). The herbaceous layer is often sparse, composed of species such as woolly sunflower, small fescue, and Napa cryptantha. In many areas, whiteleaf manzanita was present at high cover, but was mixed with foothill pine at greater than 10 percent cover, and in these areas, the vegetation was mapped as foothill pine woodland.

Whiteleaf manzanita chaparral is considered a non-sensitive alliance. However, there may be sensitive associations within the alliance present within the Phase 1 Study Area such as the whiteleaf manzanita – musk brush provisional association (CDFW 2018a)..

California yerba santa scrub (*Eriodictyon californicum* Shrubland Alliance); Rank G4S4. California yerba santa scrub typically occurs on lower to middle slopes of serpentine, metavolcanic, and plutonic substrates in the eastern foothills of the Northern Coast Range and along the western foothills of the Sierra Nevada Range in California (CNPS 2019b). Within the Study Area, California yerba santa scrub typically occurs in areas that burned in the 2015 Valley Fire, on rocky, serpentine and volcanic substrate. Stands range from dense to open, with the interstitial areas characterized by sparse herbs. The tree layer is sparse to absent and composed of foothill pine, blue oak, or interior live oak. The shrub layer is dominated by California yerba santa with chamise, buckbrush, deer weed, poison oak, and leather oak as sub-dominants. In many areas, this community forms a patchwork mosaic within larger stands of leather oak chaparral and chamise chaparral, making it difficult to draw distinctions between the California yerba santa scrub and the other two communities. In this cases, smaller stands of California yerba santa scrub were lumped into the larger surrounding community, whether leather oak or chamise. California yerba santa scrub is best described under Holland's mixed serpentine chaparral. California yerba santa scrub is considered non-sensitive.

Scrub oak chaparral (*Quercus berberidifolia* Shrubland Alliance); Rank G4S4. Scrub oak chaparral typically occurs on steep, north-facing slopes on deep to shallow, well-drained soils throughout cismontane California. This vegetation alliance is dominated by scrub oak in the shrub layer canopy with several other scrubby species present such as leather oak, yerba santa, and toyon. Emergent trees may be present at low cover (CNPS 2019b). Within the Phase 1 Study Area, scrub oak chaparral was located in a limited number of locations, typically on northern and eastern slopes on serpentine soils and along ridgelines and dry slopes on non-serpentine soils. Scrub oak chaparral is considered non-sensitive.

Leather oak chaparral (*Quercus durata* Shrubland Alliance); Rank G4S4. Leather oak chaparral is known from the North and Central Coast Ranges and Sierra Nevada Foothills from Del Norte County south to Santa Barbara County. This vegetation alliance is typically located on hills, steep slopes, and ridgelines underlain by shallow, rocky substrate derived from serpentine soils (CNPS2019b). Within the Phase 1 Study Area, leather oak chaparral is located on a range of aspects and on ridgelines underlain by soils derived from serpentine; often intergrading with foothill pine woodland. In areas affected by the Valley Fire, leather oak represents the dominant shrub, re-sprouting from its base in all but the most severely burned areas. The shrub canopy is generally open in areas burned during the Valley Fire and dense in unburned areas. Tree cover is sparse to absent, typically consisting of foothill pine. The shrub canopy is dominated by leather oak, with occasional co- or sub-dominance by toyon, yerba santa, whiteleaf manzanita, and chamise.

Leather oak chaparral is considered a non-sensitive alliance; however, there may be associations within this alliance that are considered sensitive by the CDFW such as the foothill pine – leather oak provisional association or the leather oak – chamise provisional association.

Non-Sensitive Herb-Dominated Communities

Non-native annual grasslands (various Semi-Natural Herbaceous Stands); No Rank. Non-native annual grasslands occur throughout California on all aspects and topographic positions underlain by a variety of substrates. Within the Phase 1 Study Area, non-native annual grasslands include elements of multiple vegetation alliances including:

- Wild oat grass grasslands (*Avena barbata, A. fatua* Herbaceous Semi-Natural Alliance); No Rank
- Annual brome grasslands (*Bromus diandrus, B. hordeaceus – Brachypodium distachyon* Herbaceous Semi-Natural Alliance); No Rank
- Wild barley grasslands (*Hordeum murinum* Herbaceous Semi-Natural Alliance; undescribed); No Rank
- Perennial ryegrass fields (*Festuca perennis* Herbaceous Semi-Natural Alliance); No Rank
- Barbed goat grass patches (*Aegilops triuncialis* Provisional Herbaceous Semi-Natural Alliance); No Rank
- Cheatgrass – medusahead grassland (*Bromus tectorum - Elymus caput-medusae* Herbaceous Semi-Natural Alliance); No Rank
- Yellow star-thistle fields (*Centaurea* [*solstitialis, melitensis*] Herbaceous Semi-Natural Alliance); No Rank

These grasslands are located on all aspects and topographic positions, and are underlain by nearly all mapped soil units found within the Phase 1 Study Area. Non-native annual grasslands

are considered non-sensitive. Yellow star-thistle fields is included in this category because this species typically occurred within the matrix of grasses. In cases where non-native annual grasslands occurred in seasonal wetland habitat, they were mapped as seasonal wetlands, rather than as grasslands and their acreage is incorporated into the seasonal wetland acreage reported in Table 4.

Other Non-Sensitive Land Use Designations

Agriculture. Large portions of the Phase 1 Study Area have been or are currently being converted to vineyard production. Areas of existing vineyards, as well as areas with active clearing, planting, and other vineyard creation activities were mapped as agricultural areas. These areas contain some natural vegetation, primarily non-native, weedy annual species, but in large part are dominated by grape vines with little to no understory. Soils within these areas are regularly disturbed, greatly reducing their potential to host special-status plants. Agricultural areas are not considered sensitive.

Developed. Some portions of the Phase 1 Study Area were historically converted to development supporting agriculture and ranching activities; these areas include roadways, work yards, barns, ranch houses, driveways, and other associated buildings and features, as well as landscaped vegetation such as lawns. Developed areas are not considered sensitive.

Rock Outcrop. While not described in the literature and generally considered non-sensitive, rock outcrops may provide important habitat features for special-status plant and wildlife species. Vegetation is typically absent to sparse, although some stunted vegetation may be present. Within the Phase 1 Study Area, rock outcrops occurred as large cliff faces and denuded serpentine ridges and other outcroppings.

5.1.2 Sensitive Biological Communities

Sensitive Tree-Dominated Communities

White alder groves (*Alnus rhombifolia* Forest Alliance); Rank G4S4. White alder groves typically occurs along riparian corridors, incised canyons, seeps, stream banks, mid-channel bars, floodplains, and stream terraces throughout California (CNPS 2019b). White alder is typically co-dominant with a variety of other riparian trees. The shrub layer is generally sparse to absent, and the herbaceous layer is variable. Within the Phase 1 Study Area, white alder groves occur along a low-gradient portion of Butcherknife Creek, where it occurred as the dominant with a mix of sedge and grass species in the understory. Where white alder groves occur within the Phase 1 Study Area, they qualify as forested wetlands subject to federal and state regulation. Although this alliance is not considered sensitive by the CDFW, because it is considered wetland habitat, it is treated as a sensitive community here. In addition, there may be sensitive associations within this alliance present within the Phase 1 Study Area such as white alder – American dogwood association or the white alder – western azalea association (CDFW 2018a).

Blue oak woodland & savanna (*Quercus douglasii* Woodland Alliance); Rank G4S4. Blue oak woodland and savanna are typically located on valley bottoms, foothills, and rocky outcrops on shallow, moderately to excessively drained soil low in fertility throughout cismontane California. Blue oaks are dominant or co-dominant with other oak species and species such as buckeye (*Aesculus californica*) and foothill pine. The canopy of blue oak woodland is typically intermittent to continuous, often occurring as broad savanna (CNPS 2019b). Within the Phase 1 Study Area,

blue oak woodland and savanna was observed on valley bottoms and slopes, typically on deeper, finer-textured serpentine and volcanic soils.

Although CDFW does not distinguish between blue oak woodland and savanna, blue oak habitats were mapped into these two categories to facilitate impact and mitigation calculations. Blue oak woodland and savanna we differentiated by a desktop visual assessment of tree density and canopy closure. Savanna included areas with approximately 60 percent or less total canopy cover and with less than two thirds of tree canopies touching; areas with greater cover of blue oaks or a higher percentage of tree canopies touching were considered woodland. Although it is not considered a sensitive alliance by the CDFW, blue oak woodland and savanna is protected by the County of Lake.

Valley oak woodland (*Quercus lobata* Woodland Alliance); Rank G3S3. Valley oak woodland is known from the southern Cascade Range, Coast Ranges, Central Valley, Transverse Range, and Sierra Valley Foothills from Siskiyou County south to Los Angeles County. This community is typically located on deep, poorly drained clay soils in valley bottoms, alluvial floodplains, and lower slopes (CNPS 2019b). Within the Phase 1 Study Area, valley oak woodland was observed in alluvial terraces along perennial streams. Canopy cover was continuous to intermittent, dominated by valley oak with scattered arroyo willow (*Salix lasiolepis*) and Fremont cottonwood. Valley oak woodland is considered a sensitive vegetation alliance by the CDFW, and where it occurs within the Phase 1 Study Area, it would generally be considered riparian vegetation, adding an additional layer of protection. Valley oak woodland is also protected by the County of Lake.

Interior live oak woodland (*Quercus wislizenii* Woodland Alliance); Rank G4S4. Interior live oak woodland typically occurs on upland slopes, valley bottoms, and terraces on shallow, moderately to excessively drained soils throughout cismontane California. Interior live oaks are dominant or co-dominant in the tree canopy layer with other oak species, California buckeye, madrone (*Arbutus menziesii*), and/or foothill pine. Canopy cover is intermittent or savanna-like (CNPS 2019b). Within the Phase 1 Study Area, interior live oak woodland was observed in a variety of topographic positions, both on and off of serpentine. In most cases, interior live oak woodland canopy was dense, characterized by pure interior live oak, with occasional co- or subdominance by blue oak or foothill pine. In dense canopy, the understory that was often open and sparse occasionally dense with shrubs as poison oak. Interior live oak woodland was sometimes characterized by a more open canopy, and in such situations, the understory was characterized either by dense shrubs such as chamise and common manzanita or by dense non-native annual grasses. Although it is not considered a sensitive alliance by the CDFW, interior live oak woodland is protected by the County of Lake.

Sensitive Shrub-Dominated Communities

Musk brush chaparral (*Ceanothus jepsonii* Shrubland Alliance); No Rank. While not described as its own alliance in the literature, musk brush (*Ceanothus jepsonii*) was observed as the dominant plant in chaparral communities on serpentine soils in several portions of the Phase 1 Study Area. The tree layer was sparse to absent and composed of foothill pine and interior live oak. The shrub layer was typically dense and dominated by musk brush, with leather oak, whiteleaf manzanita, and chamise as sub-dominants. The herbaceous layer is sparse to dense and composed of species such as small fescue, Napa cryptantha, and woolly sunflower, and woolly malacothrix (*Malacothrix floccifera*). This community is best described under Holland's mixed serpentine chaparral. Although CDFW does not recognize this community as its own

alliance, it does recognize a leather oak – musk brush provisional association, which is sensitive (CDFW 2018a); therefore, this community is considered sensitive.

Brewer willow thickets (*Salix breweri* Shrubland Alliance); Rank G2S2. Brewer willow thickets typically occur along creek bottoms and stream terraces, typically on serpentine-derived alluvium. This community occurs throughout the North Coast Range as well as the northern, interior portion of the South Coast Range. Brewer willow is the dominant species, with other shrubs such as coffeeberry (*Frangula californica*), spice bush (*Calycanthus occidentalis*), and western azalea (*Rhododendron occidentale*) as co-dominants (CNPS 2019b). Within the Phase 1 Study Area, Brewer willow thickets were primarily observed along McCain and Butts creeks. Stands were typically dense, dominated by Brewer willow, with other shrubs such as western azalea present at low cover. Where the community occurs along low-gradient streams, it generally qualified as scrub-shrub wetlands. Where the community occurs along relatively high-gradient streams, it generally did not qualify as scrub-shrub wetlands, but was considered riparian vegetation.

Sensitive Herb-Dominated Communities

Purple needle grass grasslands. Purple needle grass grasslands occurs in valley and foothill areas on all topographic locations. The community occurs throughout cismontane California. Purple needle grass grassland is part of the needle grass – melic grass grassland alliance (*Nassella* spp. – *Melica* spp. Herbaceous Alliance). Although this alliance is listed as apparently secure at the global (G4) and state (S4) levels by the CDFW, the purple needlegrass association within the alliance is considered sensitive (CDFW 2018a). Within the Phase 1 Study Area, purple needle grass grassland was observed in a limited number of locations set within larger expanses of non-native annual grassland. Following CNPS 2019b, stands of purple needle grass were mapped where purple needlegrass was characteristic, typically a minimum of 10 percent absolute cover. In most cases, non-native annual grasses comprised the highest cover. Although the broader needle grass – melic grass grassland alliance is not considered sensitive, the purple needle grass grassland association is considered sensitive by the CDFW. In addition, native grasslands are generally protected under CEQA.

Sensitive Aquatic Communities

A formal aquatic resources delineation documenting the extent of wetlands and non-wetland waters within the Phase 1 Study Area that are potentially subject to jurisdiction by the Corps, RWQCB, and/or CDFW was conducted during multiple site visits in 2018 and 2019 (Table 3). The vegetation-related results of the delineation are summarized here; for full details of the delineation, see the separate Aquatic Resources Delineation Report (WRA 2020a).

Emergent Wetlands; No Rank. A variety of wetland habitats were observed within the Phase 1 Study Area, including forested wetlands, scrub-shrub wetlands, perennial marshes, and seasonal wetlands. Forested and scrub-shrub wetlands are dominated by white alder groves along Butcherknife Creek and Brewer willow thickets along Butts Creek; these communities are described above in the sensitive tree and shrub sub-sections, respectively. Emergent wetlands included perennial marshes and seasonal wetlands, described below.

Perennial marshes occur at the edges of larger ponds and reservoirs and may occupy the entirety of more shallow features. These habitats are dominated by a range of perennial vegetation alliances including:

- Pale spike rush marsh (*Eleocharis macrostachya* Herbaceous Alliance); Rank G4S4
- Hardstem bulrush marsh (*Schoenoplectus acutus* Herbaceous Alliance); Rank G5S4
- Cattail marsh (*Typha latifolia* Herbaceous Alliance); Rank G5S5

Seasonal wetlands are biotic communities in which the water table is near the surface for a portion of the year long enough to support hydrophytic vegetation, but dries out during some portion of the normal growing season. Within the Phase 1 Study Area, several seasonal wetland types were observed which are best described by their different vegetation alliances:

- Bent grass-tall fescue meadows (*Agrostis gigantea, A. stolonifera-Festuca arundinacea* Herbaceous Semi-Natural Alliance); No Rank
- Fremont's goldfields – downingia vernal pools (*Lasthenia fremontii – Downingia* [*bicornuta*] Herbaceous Alliance; Rank G2S2
- California button celery patches (*Eryngium aristulatum* Herbaceous Alliance); Rank G3S3
- Common monkeyflower seeps (*Mimulus* [*guttatus*]) Herbaceous Alliance); Rank G4?S3?
- Meadow barley patches (*Hordeum brachyantherum* Herbaceous Alliance); Rank G4S3
- Mediterranean barley patches (*Hordeum marinum* Herbaceous Semi-Natural Alliance; undescribed); No Rank
- White-tip clover swales (*Trifolium variegatum* Herbaceous Alliance); Rank G3S3
- Rabbit's foot grass swales (*Polypogon monspeliensis* Herbaceous Semi-Natural Alliance; undescribed); No Rank

Although the wetland habitats observed within the Phase 1 Study Area contain a mix of sensitive and non-sensitive vegetation alliances, all wetland habitats are considered sensitive under CEQA and are protected under other federal and state laws.

Ponds and Reservoirs; No Rank. The Phase 1 Study Area contains a number of ponds and reservoirs, ranging from small depressions that pond water during only a portion of the growing season to larger features that hold water year round. Many of these features were historically created by damming natural drainage courses to support ranching and agricultural activities. These features provide a resource for wildlife species; however, because they offer a source of perennial water, they also support a number of non-native aquatic wildlife species that may limit the potential for other native aquatic species including American bullfrog (*Lithobates catesbeianus*) and a number of non-native fishes. Ponds and reservoirs, despite their origin, are generally considered sensitive under CEQA and are protected under other federal and state laws as aquatic habitats.

Streams; No Rank. The Phase 1 Study Area contains a number of ephemeral, intermittent, and perennial streams. Ephemeral streams are linear features within which water flows only during or immediately after a significant rain event. These streams are dry for the majority of the year. Intermittent streams are linear features within which water flows for a portion of the year, generally drying out during the driest time of the year. Perennial streams are linear features within which water flows the entire year, even during the dry season. For the purposes of this report, streams were classified as ephemeral, intermittent, or perennial based on the County Code, which defines streams based on their symbology on USGS maps, with solid blue line streams considered

perennial, dashed blue line streams considered intermittent, and all other streams considered ephemeral.

Larger streams within the Phase 1 Study Area include Putah Creek, Bucksnort Creek, Butts Creek, and Butcherknife Creek. These streams are intermittent to perennial and generally have a well-developed riparian corridor dominated by valley oak, white alder, and red, arroyo, and Brewer willows. Where these streams occur near old barns and homesteads, northern California black walnut (*Juglans hindsii*) is also present. These well-developed riparian corridors provide a valuable resource for wildlife species. The extent of riparian vegetation within the Phase 1 Study Area is shown in Appendix B. Streams and their riparian corridors are considered sensitive under CEQA and may be protected by other federal and state laws.

5.2 Special-Status Plant Species

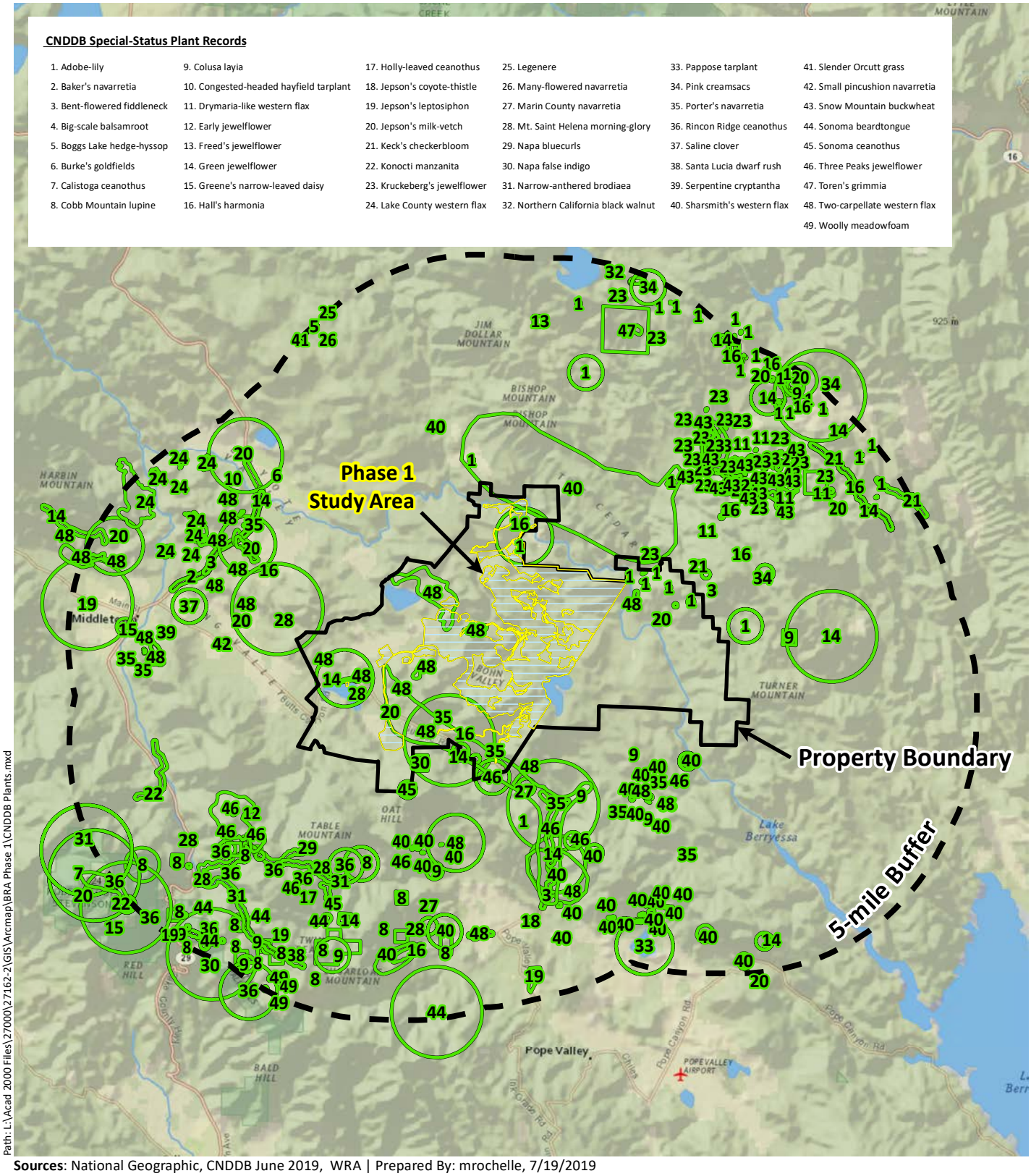
WRA botanists identified a total of 660 vascular plant taxa within the larger Guenoc Ranch property, including 500 native taxa, 160 non-native taxa. Of the 160 non-native species observed at the site, 60 are listed as invasive by the Cal-IPC (2019). A list of all plant species observed within the Guenoc Ranch property is provided as Appendix C.

Based upon a review of the resources and databases listed in Section 4.0, it was determined that 131 special-status plant species have been documented from one or more of the 7.5-minute quadrangles in the vicinity of the larger Guenoc Ranch property (see Section 4.0); Figure 4 shows the subset of those species that occur within 5 miles of the site. Appendix D lists all special-status species documented from the referenced quadrangles and provides a summary of their preferred habitats and their potential for occurring within the Phase 1 Study Area based on the types and condition of habitats found there. The Phase 1 Study Area does not contain designated Critical Habitat for any plant species.

During the site assessment and reconnaissance-level surveys, 26 special-status plant species were observed in the Phase 1 Study Area, and it was determined that the Phase 1 Study Area has moderate to high potential to support an additional 81 special-status plant species. The large area of serpentine and volcanic substrates and recent fire disturbance within the Phase 1 Study Area provides moderate to high potential for a large number of rare plant species to occur. The potential for these species to occur will undoubtedly change over time as plant communities undergo post-fire succession and/or future disturbances occur. The remaining 24 species were determined to have little to no potential to occur within the Phase 1 Study Area based on one or more of the following factors:

- The species is unique to a small, well-defined geographic range (i.e., a very limited range of endemism) and has never been observed in the vicinity of the Phase 1 Study Area;
- Specific hydrologic characteristics, such as perennial saline conditions, are absent from the Phase 1 Study Area;
- Unique pH characteristics, such as alkali scalds or acidic soils, are absent from the Phase 1 Study Area;
- Suitable habitat is not present such as redwood forest or other mesic coniferous forest, coastal habitats, alpine habitats, etc.

Special-status plant species observed within the Phase 1 Study Area are listed in Table 5 and described below; their locations and extents are shown in Appendix E. Additional special-status



Path: L:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\CNDDB Plants.mxd

Sources: National Geographic, CNDDB June 2019, WRA | Prepared By: mrochelle, 7/19/2019

Figure 4. CNDDB Special-Status Plant Records within 5 miles of the Guenoc Ranch

Maha Resort and Guenoc Valley
Development, Phase 1
Lake County, California

wra
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Table 5. Special-Status Plant Species Observed within the Phase 1 Study Area

Scientific Name	Common Name	Conservation Status	Acreage	Estimated Number of Individuals
Federal- and State-Listed				
Sidalcea keckii	Keck's checkerbloom	FE, Rank 1B.1	26.87	6,873
Hesperolinon didymocarpum	Lake County western flax	SE, Rank 1B.2	13.91	6,680
CNPS Rank 1				
Astragalus rattanii var. *jepsonianus*	Jepson's milk-vetch	Rank 1B.2	0.15	200
Balsamorhiza macrolepis	Big-scale balsamroot	Rank 1B.2	0.25	50
Erigeron greenei	Greene's narrow-leaved fleabane	Rank 1B.2	0.26	3,117
Hesperolinon bicarpellatum	Two-carpellate western flax	Rank 1B.2	48.54	58,272
Layia septentrionalis	Colusa layia	Rank 1B.2	16.70	30,045
Streptanthus hesperidis	Green jewelflower	Rank 1B.2	31.71	6,633
CNPS Rank 4				
Antirrhinum virga	Tall snapdragon	Rank 4.3	<0.01	3
Astragalus breweri	Brewer's milk-vetch	Rank 4.3	3.81	2,531
Astragalus clevelandii	Cleveland's milk-vetch	Rank 4.3	1.06	753
Calochortus uniflorus	Pink star-tulip	Rank 4.2	0.55	120
Calystegia collina ssp. *oxyphylla*	Mt. Saint Helena morning glory	Rank 4.2	8.58	8,688
Clarkia gracilis ssp. *tracyi*	Tracy's clarkia	Rank 4.2	1.77	531
Collomia diversifolia	Serpentine collomia	Rank 4.3	35.52	34,302
Delphinium uliginosum	Swamp larkspur	Rank 4.2	3.20	2,597
Erythranthe nudata	Bare monkeyflower	Rank 4.3	3.60	8,086
Erythronium helenae	St. Helena fawn lily	Rank 4.2	53.77	52,070

Scientific Name	Common Name	Conservation Status	Acreage	Estimated Number of Individuals
Fritillaria purdyi	Purdy's fritillary	Rank 4.3	1.99	680
Helianthus exilis	Serpentine sunflower	Rank 4.2	4.60	4,458
Lomatium hooveri	Hoover's lomatium	Rank 4.3	5.14	1,300
Monardella viridis	Green monardella	Rank 4.3	7.64	2,523
Navarretia cotulifolia	Cotula navarretia	Rank 4.2	0.67	1,785
Navarretia jepsonii	Jepson's navarretia	Rank 4.3	11.22	38,820
Senecio clevelandii var. clevelandii	Cleveland's ragwort	Rank 4.3	<0.01	20
Toxicoscordion fontanum	Marsh zigadenus	Rank 4.2	1.14	573

plant species determined to have moderate potential to occur within the Phase 1 Study Area are listed in Table 6 and their preferred habitats are listed in Appendix D.

5.2.1 Special-Status Plant Species Observed within the Phase 1 Study Area

Special-status plant species observed within the Phase 1 Study Area are described below, grouped by conservation status and organized alphabetically by scientific name therein.

Federal-Listed Species

Keck's checkerbloom (*Sidalcea keckii*); FE, Rank 1B.1. Keck's checkerbloom is an annual herb in the mallow (Malvaceae) family that blooms from April through June. It typically occurs on exposed serpentine clays in cismontane woodland or non-native valley and foothill grassland habitats at elevations ranging from 250 to 2,200 feet (CNPS 2019a). This species has a serpentine affinity rank of "strong indicator" (3) (Safford et al. 2005). The nearest and most recently documented occurrence in the vicinity of the property is from May 2002 near Pocock Creek, approximately 1.5 miles to the east (CDFW 2019).

Within the Phase 1 Study Area, thousands of individuals of Keck's checkerbloom were observed in several locations, primarily in the northern portion of the Study Area. The species occurred on all aspects on serpentine clay substrates in annual grassland or in grassy openings within chaparral and blue oak woodland. Associated species included small fescue, California plantain (*Plantago erecta*), Cleveland's tarweed (*Hemizonia congesta* ssp. *clevelandii*), and soft chess.

State-Listed Species

Lake County western flax (*Hesperolinon didymocarpum*); SE, Rank 1B.2. Lake County western flax is an annual forb in the flax family (Linaceae) that blooms from May through July. It typically occurs on serpentine substrates in chaparral, cismontane woodland, and valley and foothill grassland habitats at elevations ranging from 1,070 to 1,190 feet (CNPS 2019a, CDFW 2019). This species has a serpentine affinity rank of "strict endemic" (6.2) (Safford et al. 2005). The nearest documented occurrence in the vicinity of the property is from June 1994 near Middletown, approximately 5.5 miles west of the property (CDFW 2019). The most recent documented occurrence in the vicinity of the property is from May 2014 near Middletown, approximately 7.25 miles west of the Study Area (CDFW 2019).

Within the Phase 1 Study Area, thousands of individuals of Lake County western flax were observed in the central and southern portions of the Study Area. The species occurred in burned and unburned chaparral habitat on rocky, serpentine substrates. Associated species included small fescue, leather oak, yerba santa, woolly sunflower, common hareleaf (*Lagophylla ramosissima*), and common soaproot (*Chlorogalum pomeridianum* var. *pomeridianum*).

CNPS Rank 1 Species

Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*); Rank 1B.2. Jepson's milk-vetch is an annual herb in the pea family (Fabaceae) that blooms from March to June. It typically occurs in chaparral, cismontane woodland, and valley and foothill grassland, often on serpentine substrate, at elevations ranging from 970 to 2,300 feet (CNPS 2019a). This species has a serpentine affinity rank of "broad endemic/strong indicator" (4.3) (Safford et al. 2005). The nearest documented occurrence in the vicinity of the property is from April 1994, within the Phase 1 Study Area, at the intersection of Butts Canyon Road and an unnamed, paved road from Butts Canyon leading to the vineyards south of Butts Canyon Road. (CDFW 2019). The most recent

documented occurrence in the vicinity of the property is from April 2019, east of the University of California McLaughlin Reserve, approximately 5 miles northeast of the Study Area (Calflora 2019).

Within the Phase 1 Study Area, approximately 200 individuals of Jepson's milk-vetch were observed at a single location, on both sides of an intermittent stream southeast of the intersection of Butts Canyon Road and an unnamed, paved road leading from Butts Canyon Road to vineyards on the slope to the south. The species occurred on gravelly berms and adjacent gravelly areas, on serpentine substrate. Associated species included goat grass (*Aegilops triuncialis*), soft chess, red brome (*Bromus madritensis* ssp. *rubens*), and trefoil (*Acmispon* sp.).

Big-scale balsamroot (*Balsamorhiza macrolepis*); Rank 1B.2. Big-scale balsamroot is a perennial herb in the sunflower family (Asteraceae) that blooms from March to June. It typically occurs on thin, rocky substrates sometimes derived from serpentine or volcanics in cismontane woodland and valley and foothill grassland habitats at elevations ranging from 295 to 3,100 feet (CDFW 2019, CNPS 2019a). This species has a serpentine affinity rank of "strong indicator" (2.5) (Safford et al. 2005). The nearest and most recent documented occurrence in the vicinity of the property is from July 1986, south of Dunnigan Hill near the Lake/Napa county line, approximately 3 miles northeast of the property (CDFW 2019).

Within the Phase 1 Study Area, approximately 50 individuals of big-scale balsamroot were observed at two locations in the far northern portion of the Study Area, in north-facing blue oak woodland near Putah Creek. Associated species included non-native annual grasses, common soaproot, blue-eyed grass (*Sisyrinchium bellum*), and common buttercup (*Ranunculus californicus* var. *californicus*).

Greene's narrow-leaved fleabane (*Erigeron greenei*); Rank 1B.2. Greene's narrow-leaved fleabane is a perennial forb in the sunflower family (Asteraceae) that blooms from May to September. It typically occurs on rocky substrate derived from volcanics or serpentine within shrubby vegetation in chaparral habitat at elevations ranging from 260 to 3,270 feet (CDFW 2019, CNPS 2019a). This species has a serpentine affinity rank of strict endemic (5.7) (Safford et al. 2005); however, this species has been documented from volcanic substrates as well. The nearest documented occurrence in the vicinity of the property is from August 1971 at the foot of Rabbit Hill, approximately 6.5 miles west of the Study Area (CDFW 2019). The most recent documented occurrence in the vicinity of the property is from June 1996 between Soda Valley and Little Sugarloaf Peak, approximately 17.5 miles southeast of the Study Area (CDFW 2019).

Within the Phase 1 Study Area, thousands of individuals of Greene's narrow-leaved fleabane were observed in numerous locations throughout the Study Area. It occurred in rocky, sloped, burned and unburned chaparral habitat, usually on serpentine substrate. Observed associated species include leather oak, yerba santa, woolly sunflower, green monardella (*Monardella viridis*), and small fescue.

Two-carpellate western flax (*Hesperolinon bicarpellatum*); Rank 1B.2. Two-carpellate western flax is an annual forb in the flax family (Linaceae) that blooms from May through July. It typically occurs on serpentine substrates in chaparral habitat at elevations ranging from 195 to 3,270 feet (CNPS 2019a, CDFW 2019). This species has a serpentine affinity rank of strict endemic (6.2) (Safford et al. 2005). The nearest documented occurrence in the vicinity of the property is from June 2017, within the Phase 1 Study Area, just east of Bucksnort Creek near the southern border of the Study Area (CDFW 2019). The most recent documented occurrence in the vicinity of the property is from May 2018 along the upper slope of Dead Horse Flat, approximately 3.25 miles west of the Study Area (CDFW 2019).

Within the Phase 1 Study Area, tens of thousands of individuals of two-carpellate western flax were observed at numerous locations throughout the Study area. It occurred in burned and unburned areas, most commonly on rocky volcanic or serpentine substrates in chaparral or Sargent cypress woodland habitats, but it occasionally occurred on finer-textured substrates. Observed associated species include Sargent cypress, whiteleaf manzanita, green jewelflower (*Streptanthus hesperidis*), foothill pine, woolly sunflower, chamise, Sonoma lessingia (*Lessingia ramulosa*), and small fescue.

Colusa layia (*Layia septentrionalis*); Rank 1B.2. Colusa layia is an annual forb in the sunflower family (Asteraceae) that blooms from April through May. It typically occurs in openings and herbaceous areas underlain by serpentine substrates within chaparral, cismontane woodland, and valley and foothill grassland habitats at elevations ranging from 330 to 3,595 feet (CNPS 2019a, CDFW 2019). This species has a serpentine affinity rank of "strong indicator" (3.2) (Safford et al. 2005). The nearest documented occurrence in the vicinity of the property is from April 1980 in Routan Creek Canyon, approximately 1 mile south of the Study Area (CDFW 2019). The most recent documented occurrence in the vicinity of the property is from May 2010 between Snell Valley and Spanish Valley, approximately 2.25 miles south of the Study Area (CDFW 2019).

Within the Phase 1 Study Area, tens of thousands of individuals of Colusa layia were observed at several locations, primarily in the northern and central portions of the Study Area. The species occurred within and occasionally at the edges of blue oak woodland on sloping to flat terrain, typically in areas that were unburned or experienced low-intensity burns during the 2015 Valley Fire. Associated species included blue oak, Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), blue dicks (*Dichelostemma capitatum*), and several species of non-native annual grasses.

Green jewelflower (*Streptanthus hesperidis*); Rank 1B.2. Green jewelflower is an annual forb in the mustard family (Brassicaceae) that blooms from May through July. It typically occurs in openings of brushy wooded areas underlain by serpentine substrates in chaparral and cismontane woodland habitat at elevations ranging from 420 to 2,470 feet (CNPS 2019a, CDFW 2019). This species has a serpentine affinity rank of "strict endemic" (6.1) (Safford et al. 2005). The nearest documented occurrence to the property is from June 1952 along Butts Canyon Road, near the southern boundary of the Phase 1 Study Area (CDFW 2019). The most recent documented occurrence in the vicinity of the property is from June 2007 at the northern edge of Las Posadas State Forest, approximately 10.75 miles south of the Study Area (CDFW 2019).

Within the Phase 1 Study Area, thousands of individuals of green jewelflower were observed at numerous locations throughout the Study Area. The species occurred in burned and unburned, often sparsely vegetated rocky areas in chaparral on serpentine substrates. Associated species included leather oak, whiteleaf manzanita, yerba santa, serpentine collomia (*Collomia diversifolia*), woolly sunflower, golden buckwheat, Napa cryptantha, and small fescue.

CNPS Rank 4 Species

Tall snapdragon (*Antirrhinum virga*); Rank 4.3. Tall snapdragon is a perennial forb in the plantain (Plantaginaceae) family that blooms from June through July. The species typically occurs in rock openings on serpentine soils within chaparral and lower montane coniferous forests at elevations ranging from 300 to 6,045 feet (CNPS 2019a). This species has a serpentine affinity rank of "strong indicator" (2.8) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from June 1983 near Twin Peaks Mine, approximately 2.25 miles southwest of the Study Area (CCH 2019). The most recent documented occurrence

in the vicinity of the property is from June 2014 at Livermore Ranch, approximately 4.5 miles southwest of the Study Area (CCH 2019).

Within the Phase 1 Study Area, approximately three individuals of tall snapdragon were observed in a single location within the Phase 1 Study Area. The species occurred in chaparral and foothill pine woodland habitats on rhyolitic and sandstone substrates in areas that burned in the 2015 Valley Fire. Associated species included foothill pine, leather oak, deer weed, chamise, and yerba santa.

Brewer's milk-vetch (*Astragalus breweri*); Rank 4.3. Brewer's milk-vetch is an annual forb in the pea family (Fabaceae) that blooms from April through June. The species typically occurs in openings underlain by gravelly substrates derived serpentine or volcanic substrates in chaparral, cismontane woodland, meadows and seeps, and valley and foothill grassland habitat at elevations ranging from 290 to 2,375 feet (CNPS 2019a). This species has a serpentine affinity rank of "strong indicator" (3.2) (Safford et al. 2005). The nearest and most recent documented occurrence in the vicinity of the property is from January 2016 along Butts Canyon Road near Detert Reservoir, approximately 1 mile west of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, thousands of individuals of Brewer's milk-vetch were observed in the central portion of the Phase 1 Study Area. It occurred chaparral and grassland habitats on rocky and fine-textured serpentine substrates. Associated species included leather oak, woolly sunflower, Napa cryptantha, Italian ryegrass (*Festuca perennis*), and other non-native annual grass species.

Cleveland's milk-vetch (*Astragalus clevelandii*); Rank 4.3. Cleveland's milk-vetch is an annual forb in the pea family (Fabaceae) that blooms from June through September. It typically occurs on serpentine substrates, particularly in and around seeps and swales, within chaparral, cismontane woodland, and riparian forest habitats at elevations ranging from 650 to 4,875 feet (CNPS 2019a, CCH 2019). This species has a serpentine affinity rank of "strict endemic" (6.1) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from June 1945 along Butts Canyon Road, approximately 0.25 mile west of the Phase 1 Study Area (CCH 2018). The most recent previously documented occurrence in the vicinity of the property is from June 2018 in Morgan Valley, approximately 6 miles northeast of the Phase 1 Study Area (Calflora 2019).

Within the Phase 1 Study Area, hundreds of Cleveland's milk-vetch were observed at numerous locations in and along the edges of ephemeral to perennial streams, seeps, and wetlands on serpentine substrates. Associated species included Brewer's willow, swamp larkspur (*Delphinium uliginosum*), marsh zigadenus (*Toxicoscordion fontanum*), and seep monkeyflower (*Erythranthe guttata*).

Pink star-tulip (*Calochortus uniflorus*); Rank 4.2. Pink star-tulip is a perennial bulbiferous forb in the lily family (Liliaceae) that blooms from April through June. The species typically occurs in coastal prairie, coastal scrub, meadows and seeps, and North Coast coniferous forest at elevations ranging from 33 to 3,510 feet (CNPS 2019a). This species has a serpentine affinity rank of "weak indicator" (1.7) (Safford et al. 2005). Known associated species include California oatgrass (*Danthonia californica*), western buttercup (*Ranunculus occidentalis*), cream sacs (*Castilleja rubicundula*), cream cups (*Platystemon californicus*), and smooth tidytips (*Layia chrysanthemoides*). The nearest and most recent previously documented occurrence in the vicinity of the property is from May 1999 in Snell Valley, approximately 2.5 miles east of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, hundreds of individuals of pink star-tulip were observed at three locations in the central and western portions of the Phase 1 Study Area. The species occurs on serpentine substrate in seasonal wetland seeps in open, herbaceous areas adjacent to chaparral habitat. Associated species include swamp larkspur, marsh zigadenus, bare monkeyflower (*Erythranthe nudata*), and Italian ryegrass.

Mt. Saint Helena morning glory (*Calystegia collina* ssp. *oxyphylla*); Rank 4.2. Mt. Saint Helena morning-glory is a perennial forb in the morning-glory family (Convolvulaceae) that blooms from April through June. The species typically occurs on slopes and hillsides in barrens or openings within chaparral habitat at elevations ranging from 815 to 3,315 feet (CNPS 2019a). This species has a serpentine affinity rank of "strict endemic" (5.6) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from May 1998 along Butts Canyon Road, adjacent to the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is near Highway 29, approximately 5.5 miles southwest of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, thousands of individuals of Mt. Saint Helena morning glory were observed at numerous locations throughout the Phase 1 Study Area. The species occurs in chaparral and woodland habitats on rocky, typically serpentine substrates in burned and unburned areas. Associated species included leather oak, chamise, woolly sunflower, foothill pine, Sargent cypress, two-carpellate western flax, and small fescue.

Tracy's clarkia (*Clarkia gracilis* ssp. *tracyi*); Rank 4.2. Tracy's clarkia is an annual forb in the evening primrose family (Onagraceae) that blooms from April through July. The species typically occurs in openings and bare areas underlain by serpentine substrates within chaparral habitat at elevations ranging from 210 to 2,115 feet (CNPS 2019a, CDFW 2019). This species has a serpentine affinity rank of "broad endemic" (5.0) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from June 1980 along Butts Canyon Road, approximately 0.75 mile southeast of the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is from is from May 2016 at the University of California McLaughlin Reserve, approximately 6 miles northeast of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, hundreds of individuals of Tracy's clarkia were observed at several locations in the central and southern portions of the Phase 1 Study Area. The species occurred in chaparral and annual grassland habitats on serpentine substrates in areas that burned in the 2015 Valley Fire. Associated species included leather oak, small fescue, two-carpellate western flax, narrow tarplant (*Holocarpha virgata* ssp. *virgata*), and Coast Range mariposa lily (*Calochortus vestae*).

Serpentine collomia (*Collomia diversifolia*); Rank 4.3. Serpentine collomia is an annual forb in the phlox family (Polemoniaceae) that blooms from May through June. The species typically occurs on rocky or gravelly serpentine substrates within chaparral and cismontane woodland habitats at elevations ranging from 975 to 1,950 feet (CNPS 2019a). This species has a serpentine affinity rank of "strict endemic" (5.6) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from May 2015 along Butts Canyon Road, within the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is from May 2017 along Hunting Creek, approximately 3 miles east of the Phase 1 Study Area (Calfora 2019).

Within the Phase 1 Study Area, tens of thousands of individuals of serpentine collomia were observed at numerous locations throughout the Phase 1 Study Area. The species occurred on rocky, serpentine substrates in chaparral and woodland habitats. Associated species included leather oak, woolly sunflower, Mt. Saint Helena morning-glory, small fescue, green jewelflower, and toyon.

Swamp larkspur (*Delphinium uliginosum*); Rank 4.2. Swamp larkspur is a perennial herb in the buttercup (Ranunculaceae) family that blooms from May through June. The species typically occurs in serpentine seeps, chaparral openings, and valley and foothill grassland habitats at elevations ranging from 1,100 to 2,000 feet (CNPS 2019a). This species has a serpentine affinity rank of "strict endemic" (5.7) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from May 1952 along Butts Canyon Road, adjacent to the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is from May 2010 along Butts Canyon Road, approximately 1.25 miles southeast of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, thousands of individuals of swamp larkspur were observed at numerous locations in and along the edges of ephemeral to perennial streams, seeps, and wetlands on serpentine substrates. Associated species included Cleveland's milk-vetch, marsh zigadenus, seep monkeyflower, and Italian ryegrass.

Bare monkeyflower (*Erythranthe nudata*); Rank 4.3. Bare monkeyflower is an annual herb in the lopseed family (Phrymaceae) that blooms from May through June. The species typically occurs in seeps and other wet spots in chaparral and cismontane woodland habitats on serpentine substrates at elevations ranging from 655 feet to 2,300 feet (CNPS 2019a). This species has a serpentine affinity rank of "strict endemic" (5.6) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from May 2015 along Butts Canyon Road, within the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is also from May 2015 along Butts Canyon Road, but is approximately 1.25 miles southeast of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, thousands of individuals of bare monkeyflower were observed at numerous locations throughout the Phase 1 Study Area. The species occurred in and along the edges of ephemeral to perennial streams, seeps, and wetlands, as well as occasionally in mesic, non-wetland areas, but always on serpentine substrates. Associated species included foothill pine, seep monkeyflower, leather oak, woolly sunflower, and swamp larkspur.

St. Helena fawn lily (*Erythronium helenae*); Rank 4.2. St. Helena fawn lily is a perennial bulbiferous herb in the lily (Lilliaceae) family that blooms from March to May. The species typically occurs on volcanic or serpentine soils in chaparral, cismontane woodland, valley and foothill grassland, and lower montane coniferous forest habitats at elevations ranging from 1,050 to 1,660 feet (CNPS 2019a). This species has a serpentine affinity rank of "broad endemic" (4.5) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from March 1963 along Butts Canyon Road, within the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is from April 2016 along Livermore Road, near Highway 29, approximately 5.25 miles southwest of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, tens of thousands of individuals of St. Helena fawn lily were observed at several locations in the central and southern portions of the Phase 1 Study Area. The species occurred in burned and unburned areas on moderately steep, north-facing, rocky

slopes in leather oak chaparral habitat on serpentine substrates. Associated species included green monardella, toyon, Greene's narrow-leaved fleabane, coffeeberry, and whiteleaf manzanita.

Purdy's fritillary (*Fritillaria purdyi*); Rank 4.3. Purdy's fritillary is a low-growing, bulbiferous perennial forb in the lily family (Liliaceae) that blooms from March through June. The species typically occurs on dry ridges underlain by serpentine substrate in chaparral, cismontane woodland, and lower montane coniferous forest habitats at elevations ranging from 565 to 7,330 feet (CNPS 2019a, Jepson eFlora 2019). This species has a serpentine affinity rank of "broad endemic" (4.3) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from March 1982 along Butts Canyon Road, approximately 1.25 miles southeast of the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is from April 2005 at the McLaughlin Reserve, approximately 6 miles northeast of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, hundreds of individuals of Purdy's fritillary were observed at numerous locations in the central and southern portions of the Phase 1 Study Area. The species occurred on rocky, serpentine substrates in chaparral and woodland habitats in areas that burned in the 2015 Valley Fire. Associated species included leather oak, whiteleaf manzanita, foothill pine, green jewelflower, serpentine collomia, Napa cryptantha, and small fescue.

Serpentine sunflower (*Helianthus exilis*); Rank 4.2. Serpentine sunflower is an annual forb in the sunflower family that blooms from June through November. The species typically occurs in in seeps and other wet areas in chaparral and cismontane woodland on serpentine soils (CNPS 2019a). This species has a serpentine affinity rank of "strict endemic" (5.7) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from October 1994 along Butts Canyon Road, approximately 3 miles southeast of the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is from July 2005 at the McLaughlin Reserve, approximately 5 miles northeast of the Phase 1 Study Area (Calflora 2019).

Within the Phase 1 Study Area, thousands of individuals of serpentine sunflower were observed at numerous locations in the central and southern portions of the Phase 1 Study Area. The species occurred in and adjacent to wetlands, seeps, and streams on serpentine substrates. Associated species included Brewer's willow, swamp larkspur, Cleveland's ragwort (*Senecio clevelandii* var. *clevelandii*), white hedgenettle (*Stachys albens*), and leather oak.

Hoover's lomatium (*Lomatium hooveri*); Rank 4.3. Hoover's lomatium is a perennial herb in the carrot (Apiaceae) family that blooms from April through July. The species typically occurs in open chaparral and cismontane woodland habitats on rocky serpentine substrates at elevations ranging from 975 through 3,000 feet (CNPS 2019a). This species has a serpentine affinity rank of "strict endemic" (5.9) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from January 2007, near Aetna Springs, approximately 3.5 miles south of the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is from May 2007 at the McLaughlin Reserve, approximately 6 miles northeast of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, thousands of individuals of Hoover's lomatium were observed at numerous locations in the northern and central portions of the Phase 1 Study Area. The species occurred in unburned and burned areas, most commonly in shaded blue oak woodland and occasionally in chaparral on rocky, serpentine substrates. Associated species included blue oak,

leather oak, toyon, Hartweg's lomatium (*Lomatium marginatum* var. *marginatum*), Jepson's lomatium (*L. marginatum* var. *purpureum*), and a range of non-native annual grasses.

Green monardella (*Monardella viridis*); Rank 4.3. Green monardella is a perennial forb in the mint family (Lamiaceae) that blooms from June through September. The species typically occurs in chaparral, cismontane woodland, and broadleaf upland forest habitats on serpentine substrates at elevations ranging from 325 to 3,285 feet (CNPS 2019a). This species has a serpentine affinity rank of "broad endemic/strict indicator" (4.3) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from May 2015 along Butts Canyon Road, within the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is from June 2015 on Snell Peak, approximately 0.5 mile east of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, thousands of individuals of green monardella were observed at numerous locations throughout the Phase 1 Study Area. The species occurred in burned and unburned chaparral on serpentine and volcanic substrates. Associated species included woolly sunflower, leather oak, toyon, Mt. Saint Helena morning-glory, and small fescue.

Cotula navarretia (*Navarretia cotulifolia*); Rank 4.2. Cotula navarretia is an annual forb in the phlox family (Polemoniaceae) that blooms from May through June. The species typically occurs on vernally wet areas underlain by adobe clay in chaparral, cismontane woodland, and valley and foothill grassland habitats at elevations ranging from 10 to 6,005 feet (CNPS 2019a, Jepson Flora Project 2019). The species does not have a serpentine affinity rank (Safford et al. 2005), suggesting it does not have a particular affinity for serpentine soils. The nearest previously documented occurrence in the vicinity of the property is from April 1935 near Aetna Springs, approximately 1.5 miles south of the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is from May 1982 along Pope Canyon Rd, approximately 7 miles southeast of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, thousands of individuals of cotula navarretia were observed at three locations in the central and northern portions of the Phase 1 Study Area. The species occurred on heavy, serpentine clay soils in mesic grassland. Associated species included slim oat (*Avena barbata*), Italian ryegrass, small fescue, and Douglas' microseris (*Microseris douglasii* ssp. *douglasii*).

Jepson's navarretia (*Navarretia jepsonii*); Rank 4.3. Jepson's navarretia is an annual herb in the phlox (Polemoniaceae) family that blooms from April through June. The species typically occurs in transitional zones between cismontane woodland, chaparral, and valley and foothill annual grassland habitats on clay soils (often serpentine) at elevations ranging from 550 to 2,800 feet (CNPS 2019a). This species has a serpentine affinity rank of "strict endemic" (5.6) (Safford et al. 2005). The nearest previously documented occurrence in the vicinity of the property is from May 1946 near Detert Reservoir, approximately 1.25 miles west of the Phase 1 Study Area (CCH 2019). The most recent previously documented occurrence in the vicinity of the property is from May 2015 in the Missimer – Snell Valley Preserve, approximately 2.75 miles east of the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, tens of thousands of individuals of Jepson's navarretia were observed at numerous locations throughout the Phase 1 Study Area. The species occurred on heavy, sometimes rocky, serpentine or mixed serpentine/volcanic clay soils in grassland habitat or in grassy openings in chaparral and foothill pine woodland. Associated species included Cleveland's tarplant, small fescue, common soaproot, and trefoil.

Marsh zigadenus (*Toxicoscordion fontanum*); Rank 4.2. Marsh zigadenus is a bulbiferous perennial forb in the false-helleborine family (Melanthiaceae) that blooms from April to July. The species typically occurs in vernally mesic areas underlain by clay soils derived from serpentine in chaparral, cismontane woodland, lower montane coniferous forest, meadow and seep, and marsh and swamp habitats at elevations ranging from 45 to 3,250 feet (CNPS 2019a, CDFW 2019). This species has a serpentine affinity rank of "broad endemic/strong indicator" (3.8) (Safford et al. 2005). The nearest and most recent previously documented occurrence in the vicinity of the property is from May 2010 along Butts Canyon Road, within the Phase 1 Study Area (CCH 2019).

Within the Phase 1 Study Area, hundreds of individuals of marsh zigadenus were observed at numerous locations. The species occurred in and along the edges of ephemeral to perennial streams, seeps, and wetlands on serpentine substrates. Associated species included seep monkeyflower, Italian ryegrass, swamp larkspur, and iris-leaved rush (*Juncus xiphioides*).

5.2.2 Special-Status Plant Species with Potential to Occur

In addition to those special-status plant species that were observed within the Phase 1 Study Area, the 81 special-status plant species listed in Table 6 were determined to have at least a moderate potential to occur based on the types and condition of habitats found there. These species were not observed during seasonally appropriate surveys for special-status plants; however, their presence cannot be ruled out as suitable habitat is present and the species may be present in low numbers or may have been historically present and remain onsite in a dormant condition waiting for favorable climatic conditions. For example, many species may be present in the seed bank, but may only germinate following fire or during periods of substantial rainfall. The preferred habitat and blooming period for each of these species is described in Appendix D.

Table 6. Special-Status Plant Species with Potential to Occur within the Phase 1 Study Area

Scientific Name	Common Name	Conservation Status
Allium fimbriatum var. *purdyi*	Purdy's onion	Rank 4.3
Amorpha californica var. napensis	Napa false indigo	Rank 1B.2
Amsinckia lunaris	Bent-flowered fiddleneck	Rank 1B.2
Antirrhinum subcordatum	Dimorphic snapdragon	Rank 4.3
Arabis modesta	Modest rockcress	Rank 4.3
Arabis oregana	Oregon rockcress	Rank 4.3
Arctostaphylos manzanita ssp. *elegans*	Konocti manzanita	Rank 1B.3
Asclepias solanoana	Serpentine milkweed	Rank 4.2
Astragalus claranus	Clara Hunt's milk-vetch	FE, ST Rank 1B.3
Brasenia schreberi	Watershield	Rank 2B.3
Brodiaea leptandra	Narrow-anthered Brodiaea	Rank 1B.2
Calamagrostis ophitidis	Serpentine reed grass	Rank 4.3
Calyptridium quadripetalum	Four-petaled pussypaws	Rank 4.3
Calystegia collina ssp. *venusta*	South coast range morning-glory	Rank 4.3

Scientific Name	Common Name	Conservation Status
Castilleja rubicundula var. *rubicundula*	Pink cream sacs	Rank 1B.2
Ceanothus confusus	Rincon Ridge ceanothus	Rank 1B.1
Ceanothus divergens	Calistoga ceanothus	Rank 1B.2
Ceanothus purpureus	Holly-leaved ceanothus	Rank 1B.2
Ceanothus sonomensis	Sonoma ceanothus	Rank 1B.2
Chlorogalum pomeridianum var. minus	Dwarf soaproot	Rank 1B.2
Clarkia breweri	Brewer's clarkia	Rank 4.2
Cordylanthus tenuis ssp. brunneus	Serpentine bird's-beak	Rank 4.3
Cryptantha dissita	Serpentine cryptantha	Rank 1B.2
Cryptantha excavata	Deep-scarred cryptantha	Rank 1B.1
Cryptantha rostellata	Red-stemmed cryptantha	Rank 4.2
Downingia willamettensis	Cascade downingia	Rank 2B.2
Eriastrum brandegeeae	Brandegee's eriastrum	Rank 1B.1
Erigeron biolettii	Streamside daisy	Rank 3
Eriogonum nervulosum	Snow Mountain buckwheat	Rank 1B.2
Eriogonum umbellatum var. *bahiiforme*	Bay buckwheat	Rank 4.2
Eryngium constancei	Loch Lomond button celery	FE, SE Rank 1B.1
Eryngium jepsonii	Jepson's coyote thistle	Rank 1B.2
Fritillaria pluriflora	Adobe lily	Rank 1B.2
Gratiola heterosepala	Boggs Lake hedge hyssop	SE, Rank 1B.2
Harmonia hallii	Hall's harmonia	Rank 1B.2
Harmonia nutans	Nodding harmonia	Rank 4.3
Hemizonia congesta ssp. *congesta*	Congested-headed hayfield tarplant	Rank 1B.2
Hesperolinon adenophyllum	Glandular western flax	Rank 1B.2
Hesperolinon drymarioides	Drymaria-like western flax	Rank 1B.2
Hesperolinon sharsmithiae	Sharsmith's western flax	Rank 1B.2
Horkelia bolanderi	Bolander's horkelia	Rank 1B.2
Juncus luciensis	Santa Lucia dwarf rush	Rank 1B.2
Lasthenia burkei	Burke's goldfields	FE, SE Rank 1B.1
Legenere limosa	Legenere	Rank 1B.1
Leptosiphon acicularis	Bristly leptosiphon	Rank 4.2
Leptosiphon jepsonii	Jepson's leptosiphon	Rank 1B.2
Leptosiphon latisectus	Broad-lobed leptosiphon	Rank4.3

Scientific Name	Common Name	Conservation Status
Lessingia hololeuca	Woolly-headed lessingia	Rank 3
Lilium rubescens	Redwood lily	Rank 4.2
Limnanthes floccosa ssp. *floccosa*	Woolly meadowfoam	Rank 4.2
Limnanthes vinculans	Sebastopol meadowfoam	FE, SE Rank 1B.1
Lomatium repostum	Napa lomatium	Rank 4.3
Lupinus sericatus	Cobb Mountain lupine	Rank 1B.2
Malacothamnus helleri	Heller's bush-mallow	Rank 3.3
Micropus amphibolus	Mt.Diablo cottonweed	Rank 3.2
Microseris paludosa	Marsh microseris	Rank 1B.2
Microseris sylvatica	Sylvan microseris	Rank 4.2
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	Rank 1B.1
Navarretia myersii ssp. deminuta	Small pincushion navarretia	Rank 1B.2
Navarretia nigelliformis ssp. nigelliformis	Adobe navarretia	Rank 4.2
Navarretia paradoxinota	Porter's navarretia	Rank 1B.3
Navarretia rosulata	Marin County navarretia	Rank 1B.2
Orcuttia tenuis	Slender Orcutt grass	FT, SE, Rank 1B.1
Orobanche valida ssp. *howellii*	Howell's broomrape	Rank 4.3
Penstemon newberryi var. *sonomensis*	Sonoma beardtongue	Rank 1B.3
Plagiobothrys hystriculus	Bearded popcornflower	Rank 1B.1
Potamageton zosteriformis	Eel-grass pondweed	Rank 2B.2
Ranunculus lobbii	Lobb's aquatic buttercup	Rank 4.2
Sedella leiocarpa	Lake County stonecrop	FE, SE Rank 1B.1
Sidalcea hickmanii ssp. *napensis*	Napa checkerbloom	Rank 1B.1
Sidalcea oregana ssp. *hydrophila*	Marsh checkerbloom	Rank 1B.2
Streptanthus brachiatus ssp. *brachiatus*	Socrates Mine jewelflower	Rank 1B.2
Streptanthus brachiatus ssp. *hoffmanii*	Freed's jewelflower	Rank 1B.2
Streptanthus morrisonii ssp. elatus	Three Peaks jewelflower	Rank 1B.2
Streptanthus morrisonii ssp. *kruckebergii*	Kruckeberg's jewelflower	Rank 1B.2
Streptanthus vernalis	Early jewelflower	Rank 1B.2
Stuckenia filiformis ssp. alpina	Slender-leaved pondweed	Rank 2B.2
Thelypodium brachycarpum	Short-podded Thelypodium	Rank 4.2
Trichostema ruygtii	Napa bluecurls	Rank 1B.2

Scientific Name	Common Name	Conservation Status
Triteleia lugens	Dark-mouthed triteleia	Rank 4.3
Viburnum ellipticum	Oval-leaved viburnum	Rank 2B.3

5.3 Special-Status Wildlife Species

WRA wildlife biologists observed a total of 130 wildlife species within the larger Guenoc Ranch property[16], including 19 mammal species, 82 bird species, 12 reptile and amphibian species, 10 fish species, and seven invertebrate species. A list of all wildlife species observed is provided as Appendix F.

Based upon a review of the resources listed in Section 4.0, it was determined that 60 special-status wildlife species have been documented in one or more of the referenced 7.5-minute quadrangles in the vicinity of the larger Guenoc Ranch (see Section 4.0). Figure 5 shows the subset of those species that occur within 5 miles of the property. Appendix G summarizes the potential for each of these species to occur within the Phase 1 Study Area. Fourteen special-status wildlife species were observed within or adjacent to the Phase 1 Study Area, and an additional 21 special-status wildlife species were determined to have a moderate to high potential to occur within the Phase 1 Study Area. The Phase 1 Study Area does not contain designated Critical Habitat for any species. The remaining 25 species were determined to be unlikely or have no potential to occur in the Phase 1 Study Area for one or more of the following reasons:

- The Phase 1 Study Area is outside of the known or historical range of the species;
- The Phase 1 Study Area lacks specific habitat requirements (i.e. marsh, old growth conifers, etc.),
- Invasive or detrimental species, such as non-native fish and bullfrogs, are present and reduce habitat suitability; or,
- There are barriers to dispersal that make it unlikely for the species to occur on-site.

Table 7 lists the special-status wildlife species observed within the Phase 1 Study Area; Figure 6 shows their locations. Descriptions of these species, their preferred habitat, and their observed and potential distribution across the Phase 1 Study Area are provided below and summarized in Appendix G. Table 8 lists the special-status wildlife species determined to have moderate to high potential to occur within the Phase 1 Study Area.

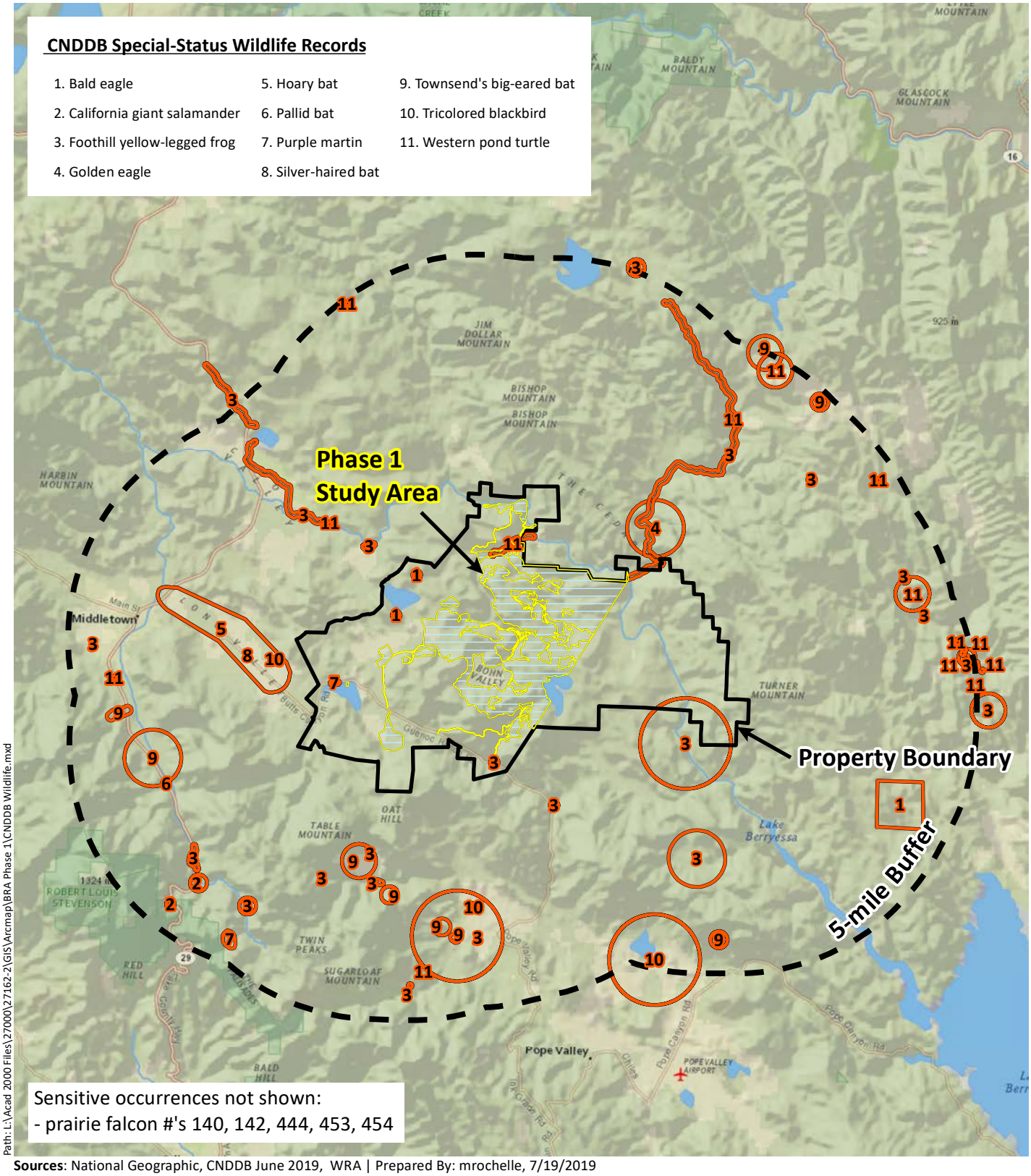
Focused raptor surveys in 2018 identified 14 raptor species and eight active raptor nests located within or adjacent to the Phase 1 Study Area. In 2019, an additional raptor species (Cooper's hawk) was observed. A total of 63 avian species were identified within the Property. Detailed results of focused raptor surveys are provided in Appendix H.

[16] All wildlife species observed within the Property in 2018 and 2019 were documented and are included in this list. Due to the ability of wildlife to move between suitable habitats within the Property, specific locations were not noted unless the species was special-status or a nesting raptor.

Focused surveys for amphibians determined that FYLF is present within the southern edge of the Phase 1 Study Area, in association with Butts Creek. Additionally, surveys identified FYLF egg masses in Butts Creek, indicating that the species breeds there. Although FYLF has been documented as extant in the Phase 1 Study Area, the presence of numerous non-native predators including American bullfrog, non-native centrarchid fishes, and crayfish, may be limiting the distribution and overall success of FYLF within the Phase 1 Study Area.

Focused surveys conducted for CRLF had negative results. All of the lentic and lotic habitats, at the time of the surveys, were documented to be infested with invasive American bullfrogs and sport fishes, including largemouth and smallmouth bass, bluegill, and green sunfish. Additionally signal-band crayfish were also observed in several of the habitats. Red swamp crayfish were observed in at least one area. The presence and density of these invasive aquatic species was determined to preclude the presence of CRLF from inhabiting the surveyed aquatic habitats and make it unlikely to occur within the Phase 1 Study Area.

In addition to the special-status wildlife species that may occur, non-status wildlife species occur and may use portions of the Phase 1 Study Area as a migration corridor. Large expanses of uncultivated land can be used by native species, such as mule deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), and black bear (*Ursus americanus*), to move to various territories seasonally and throughout their life cycle. Within the Phase 1 Study Area habitats including, but not limited to, open grassland valleys, oak woodlands, chaparral, and stream corridors may facilitate wildlife movement. Additionally, the many lakes, reservoirs, and ponds in and within close proximity to the Phase 1 Study Area are anticipated to attract native wildlife species. Therefore, portions of the Phase 1 Study Area may occur within one or more wildlife migration corridors and additional focused studies may be needed to identify those corridors.



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Sources: National Geographic, CNDDB June 2019, WRA | Prepared By: mrochelle, 7/19/2019

Figure 5. CNDDB Special-Status Wildlife Records within 5 miles of the Guenoc Ranch

Maha Resort and Guenoc Valley
Development, Phase 1
Lake County, California

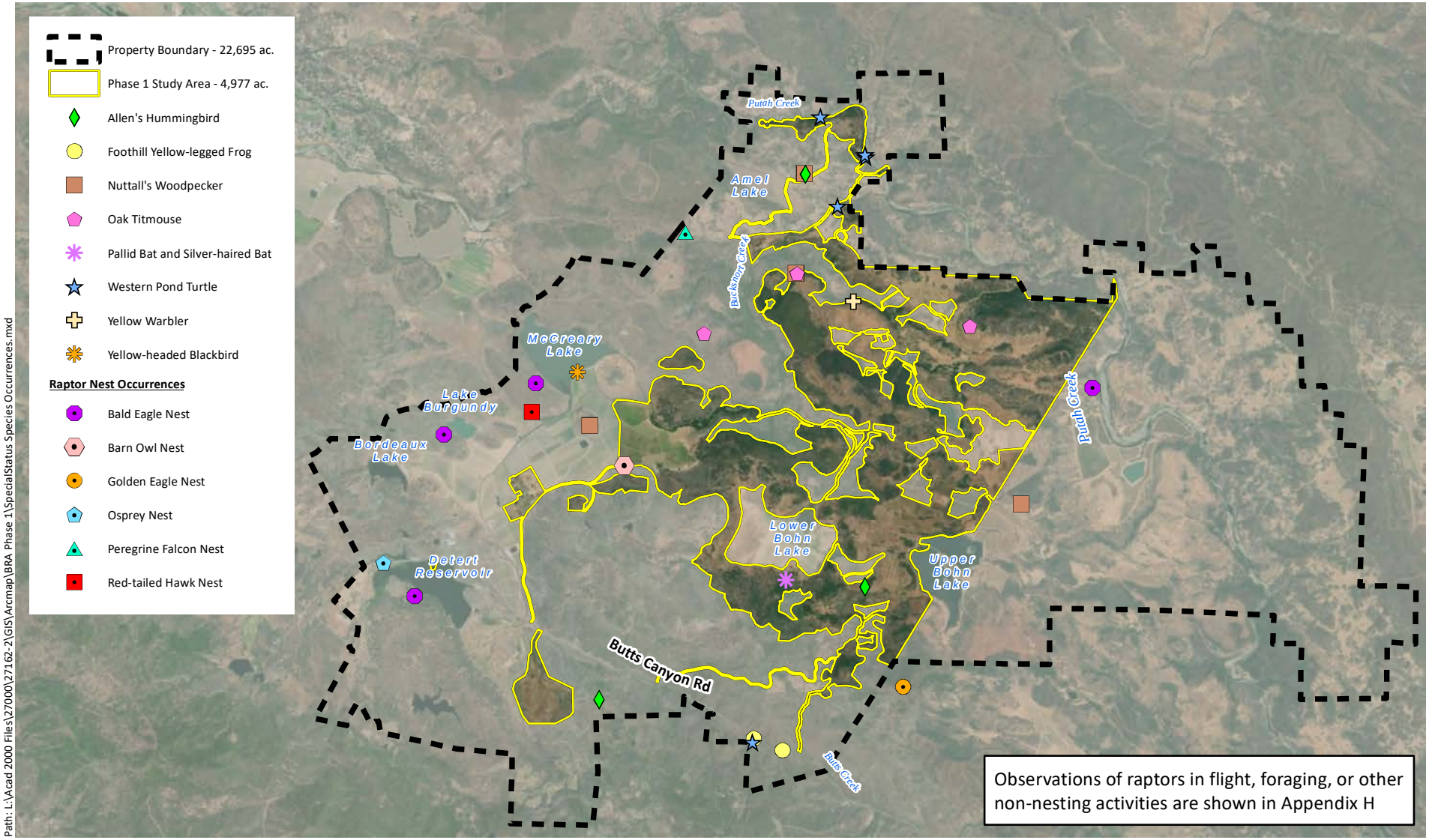
0 2.5 5 Miles

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ENVIRONMENTAL CONSULTANTS

Table 7. Special-Status Wildlife Species Observed within or adjacent to the Phase 1 Study Area

Scientific Name	Common Name	Conservation Status
Birds		
Aquila chrysaetos	Golden eagle	BGEA, CFP, BCC
Baeolophus inornatus	Oak titmouse	BCC
Circus cyaneus	Northern harrier	SSC
Elanus leucurus	White-tailed kite	CFP
Falco peregrinus	Peregrine falcon	CFP, BCC
Haliaeetus leucocephalus	Bald eagle	BGEA, SE, CFP, BCC
Picoides nuttallii	Nuttall's woodpecker	BCC
Selasphorus sasin	Allen's hummingbird	BCC
Setophaga petechia	Yellow warbler	BCC, SSC
Xanthocephalus xanthocephalus	Yellow-headed blackbird	SSC
Mammals		
Antrozous pallidus	Pallid bat	SSC, WBWG High
Lasionycteris noctivagans	Silver-haired bat	WBWG Medium
Reptiles and Amphibians		
Actinemys marmorata	Western pond turtle	SSC
Rana boylii	Foothill yellow-legged frog	SC, SSC



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Sources: Esri Streaming - NAIP 2016, WRA | Prepared By: mrochelle, 7/19/2019

Figure 6. Special-Status Wildlife Species Observed within the Guenoc Resort

Maha Resort and Guenoc Valley
Development, Phase 1
Lake County, California

0 1 2 Miles

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5.3.1 Special-Status Wildlife Species Observed within the Phase 1 Study Area

Special-status wildlife species observed or documented within the Phase 1 Study Area are described in the following sections, grouped by conservation status and alphabetically by scientific name within each group.

Federal-Protected and State-Listed Species

Golden eagle (*Aquila chrysaetos*); Federal Bald and Golden Eagle Protection Act, California Fully Protected Species, USFWS Bird of Conservation Concern. Golden eagle is a large raptor that occurs in open and semi-open areas from sea level to high elevations. Typical occupied habitats include grasslands, shrublands, deserts, woodlands, and coniferous forests. Breeding activity occurs broadly from January through August and is usually initiated from January to March in California. The large stick nests of this species are reused over multiple years and may be maintained throughout the year. Nests are most often located on the ledges of steep cliffs, but nesting also occurs in large trees and on tall manmade structures (e.g., utility towers) (Kochert et al. 2002). Golden eagles forage over wide areas, feeding primarily on medium-sized mammals (e.g., ground squirrels and rabbits), large birds, and carrion.

The Phase 1 Study Area contains suitable nesting and foraging habitat for this species. An active golden eagle nest was observed approximately 0.2 mile south of the Phase 1 Study Area (Figure 6). Adult and juvenile golden eagles were observed flying, foraging, and perching within a variety of habitats within the Phase 1 Study Area (Appendix H); however, no active golden eagle nests were observed within the Phase 1 Study Area. This species has potential to nest within the Phase 1 Study Area.

Bald eagle (*Haliaeetus leucocephalus*); Federal Bald and Golden Eagle Protection Act, State Endangered, CDFW Fully Protected Species, USFWS Bird of Conservation Concern. Bald eagle occurs primarily as a winter visitor but also as a year-round (breeding) resident throughout most of California. Habitat is somewhat variable, but the species is usually strongly associated with larger bodies of water including lakes, reservoirs, major river systems, estuaries, and the ocean. Breeding occurs primarily in forested areas near water bodies; wintering habitat is more general, but is generally located near water. Their sizable nests are typically built in in the upper portions of large, live trees that provide dominant views of surrounding areas (Buehler 2000). Bald eagles are highly opportunistic foragers; fish and waterfowl are usually favored, but a variety of live prey and carrion are consumed.

Adult and juvenile bald eagles were observed flying and roosting adjacent to multiple reservoirs in and adjacent to the Phase 1 Study Area, as well as in other habitats (Appendix H). In 2018, four bald eagle nests were observed in areas outside of the Phase 1 Study Area, including one each at Detert Reservoir, Lake Burgundy, McCreary Lake, and Putah Creek (Figure 6). Nests of this species have been previously documented in the CNDDB adjacent to the Phase 1 Study Area around McCreary Reservoir (CDFW 2019). No active nests were observed within the Phase 1 Study Area.

Foothill yellow-legged frog (*Rana boylii*); State Candidate Threatened. Foothill yellow-legged frog historically occurred in coastal and mountain streams from southern Oregon to Los Angeles County, but has declined in many parts of this range. This species is strongly associated with rivers and creeks, and prefers shallow, flowing water with a rocky substrate. Individuals do not typically move overland and are rarely observed far from a source of permanent water. In a study in northern California, adults were typically observed within ten feet and rarely over 40 feet

from streams (Bourque 2008). Although upland habitat usage is not well-studied, the data suggest that movements away from water are related to flood events (Kupferberg 1996, Bourque 2008, Thomson et al. 2016) or autumnal rains (Cook et al 2012). Frogs in intermittent streams may move more than those in perennial streams, but movements are generally limited to within the creek corridor (Kupferberg 1996, Bourque 2008, Gonsolin 2010). Aquatic breeding sites are often located near stream confluences, with egg masses typically deposited behind or sometimes under rocks in low-flow areas with cobble and/or gravel substrate (Thomson et al. 2016).

During site assessments by WRA, foothill yellow-legged frog was observed within the Phase 1 Study Area, in association with Butts Creek, near its confluence with McCain Creek (Figure 6). Perennial and intermittent streams with rocky substrates throughout the Phase 1 Study Area provide potentially suitable habitat for the species, including both Butts and Putah creeks and potentially portions of Butcherknife, Bucksnort, and McCain creeks when favorable water levels are present.

California Fully Protected Species

White-tailed kite (*Elanus leucurus*); California Fully Protected Species. The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates.

The Phase 1 Study Area contains open foraging habitat as well as trees and shrubs suitable for nesting by this species. White-tailed kite was observed foraging within the Phase 1 Study Area, primarily in association with Lower Bohn Lake (Appendix H); however, no indication of nesting was observed.

American peregrine falcon (*Falco peregrinus anatum*); California Fully Protected Species, USFWS Bird of Conservation Concern (Federal Delisted, State Delisted). This large falcon occurs as a generally uncommon resident as well as a winter visitor and migrant throughout much of California. Occupied habitat (both breeding and non-breeding) is highly variable, but this species is typically associated with open areas and/or bodies of water. Nesting typically occurs on the ledges of steep cliffs, or on man-made structures with ledges above sheer faces such as bridges and the tops of buildings (White et. al 2002). The peregrine falcon preys upon a wide variety of animals, mostly birds; on the Pacific coast, waterbirds (e.g., waterfowl, shorebirds, and seabirds) are especially favored (White et. al 2002). This species forages over wide areas, even during the breeding season.

Reservoirs and rocky cliffs within and adjacent to the Phase 1 Study Area provide potential foraging and nesting habitat for this species. An active peregrine falcon nest was observed on a south-facing rocky cliff north of Bucksnort Creek, less than 0.5 mile to the west of the Phase 1 Study Area (Figure 6); however, this species was not observed foraging or flying over the Phase 1 Study Area and no active nests were observed within the Phase 1 Study Area.

USFWS Birds of Concern, CDFW Species of Concern, WBWG Rated-Bats

Western pond turtle (*Actinemys marmorata*); CDFW Species of Special Concern. Western pond turtle (WPT) is the only native freshwater turtle in California. This turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and Transverse Ranges. Western pond turtle inhabits annual and perennial aquatic habitats, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet in elevation. Pond turtle also occupies man-made habitats such as stock ponds, wastewater storage, percolation ponds, canals, and reservoirs. This species requires low-flowing or stagnant freshwater aquatic habitat with suitable basking structures, including rocks, logs, algal mats, mud banks and sand. Warm, shallow, nutrient-rich waters are ideal as they support WPT prey items, which include aquatic invertebrates and occasionally fish, carrion, and vegetation. Turtles require suitable aquatic habitat for most of the year; however, WPT often occupies creeks, rivers, and coastal lagoons that become seasonally unsuitable. To escape periods of high water flow, high salinity, or prolonged dry conditions, WPT may move upstream and/or take refuge in vegetated, upland habitat for up to four months (Rathbun et al. 2002). Although upland habitat is utilized for refuging and nesting, this species preferentially utilizes aquatic and riparian corridors for movement and dispersal. WPT nests from late April through July. This species requires open, dry upland habitat with friable soils for nesting and prefer to nest on unshaded slopes within 15 to 330 feet of suitable aquatic habitat (Rathbun et al. 1992). Nests are well-concealed, though native mammals are occasionally able to locate and predate upon eggs.

Western Pond Turtle was observed within portions of Bucksnort Creek, Putah Creek, and an unnamed reservoir south of Butts Creek on the west side of Butts Canyon Road (Figure 6). In addition, the other streams and large open water reservoirs with the Phase 1 Study Area provide suitable aquatic habitat, and the associated open grasslands adjacent to these features may support nesting.

Pallid bat (*Antrozous pallidus*); CDFW Species of Special Concern, WBWG High Priority. Pallid bat is broadly distributed throughout much of western North America and typically occurs in association with open, rocky areas. Occupied habitats are highly variable and range from deserts to forests in lowland areas and include higher-elevation forests. Roosting may occur singly or in groups of up to hundreds of individuals. Roosts must offer protection from high temperatures and are typically located in rock crevices, mines, caves, or tree hollows; manmade structures are also used, including buildings (both vacant and occupied) and bridges. Pallid bats are primarily insectivorous, feeding on large prey that is usually taken on the ground but sometimes in flight (WBWG 2018).

The Phase 1 Study Area contains shrubland, forested habitats, rocky outcroppings, chaparral, agricultural areas and buildings that may be suitable for roosting by this species. In addition, the Phase 1 Study Area contains stream, riparian, and grassland habitats bordering open water which provides foraging habitat for this species. Pallid bat was detected within the Phase 1 Study Area using a Sonobat recording device located near a small reservoir south of Lower Bohn Lake (Figure 6). Pallid bat is assumed to be present in other portions of the Phase 1 Study Area, particularly near ponds and reservoirs.

Oak titmouse (*Baeolophus inornatus*); USFWS Bird of Conservation Concern. This relatively common species is year-round resident throughout much of California including most of the coastal slope, the Central Valley and the western Sierra Nevada foothills. In addition, the species may also occur in residential settings where landscaping provides foraging and nesting habitat. Its primary habitat is woodland dominated by oaks. Local populations have adapted to

woodlands of pines and/or junipers in some areas (Cicero 2000). The oak titmouse nests in tree cavities, usually natural cavities or those excavated by woodpeckers, though they may partially excavate their own (Cicero 2000). Seeds and arboreal invertebrates make up the birds' diet. The Phase 1 Study Area contains woodland and tree cavities suitable for nesting by this species.

Oak titmouse was observed in woodland communities throughout Guenoc Ranch, including at least one location within the Phase 1 Study Area (Figure 6). Although no nests were documented, it is assumed that this species nests within the Phase 1 Study Area.

Northern harrier (*Circus hudsonius [cyaneus]*); CDFW Species of Special Concern. The northern harrier occurs as a resident and winter visitor in open habitats throughout most of California, including freshwater and brackish marshes, grasslands and fields, agricultural areas, and deserts. Harriers typically nest in treeless areas within patches of dense, relatively tall, vegetation, the composition of which is highly variable; nests are placed on the ground and often located near water or within wetlands (Shuford and Gardali 2008). Harriers are birds of prey and subsist on a variety of small mammals and other vertebrates.

This species was observed foraging in marsh and grassland throughout the Phase 1 Study Area (Figure 6); however, no nesting activity was observed within or adjacent to the Phase 1 Study Area.

Silver-haired bat (*Lasionycteris noctivagans*); WBWG Medium Priority. Silver-haired bats occur in temperate forests (coniferous, deciduous, and mixed) from southern Alaska to northeastern Mexico. Females form maternity roosts almost exclusively inside hollows or under loose bark of large trees and may switch roosts several times (WBWG 2018). Hibernation occurs in trees, rock crevices, leaf litter, in and under buildings, and in caves and mines. Foraging for insects occurs above the tree canopy. Silver-haired bats are known to migrate south in the winter, although overwintering at northern latitudes has also been documented (WBWG 2018).

The Phase 1 Study Area contains potentially suitable woodland, forest, riparian, and open habitat suitable for this species. This species is likely to roost in hollow trees, snags, rock crevices, and buildings in the Phase 1 Study Area. Silver-haired bat was detected within the Phase 1 Study Area using a Sonobat recording device located near a small reservoir south of Lower Bohn Lake (Figure 6). Silver-haired bat is assumed to be present in other portions of the Phase 1 Study Area, particularly near ponds and reservoirs.

Nuttall's woodpecker (*Picoides nuttallii*); USFWS Bird of Conservation Concern. Nuttall's woodpecker, common in much of its range, is a year-round resident throughout most of California west of the Sierra Nevada Range. Typical habitat is oak or mixed woodland and riparian areas (Lowther 2000). Nesting occurs in tree cavities, principally those of oaks and larger riparian trees. Nuttall's woodpecker also occurs in older residential settings and orchards where large trees provide suitable foraging and nesting habitat. This species forages on a variety of arboreal invertebrates.

The Phase 1 Study Area contains numerous woodland areas and trees with cavities suitable for nesting by this species. Nuttall's woodpecker was observed within the woodland communities within and adjacent to the Phase 1 Study Area (Figure 6), and the species is assumed to nest there.

Allen's hummingbird (*Selasphorus sasin*); USFWS Bird of Conservation Concern. Allen's hummingbird, common in many portions of its range, is a summer resident along the majority of California's coast and a year-round resident in portions of coastal southern California and the Channel Islands. Breeding occurs in association with the coastal fog belt, and typical habitats used include coastal scrub, riparian, woodland and forest edges, and eucalyptus and cypress groves (Mitchell 2000). It feeds on nectar, as well as insects and spiders.

The Phase 1 Study Area contains woodland and riparian habitats with nectar sources that may support nesting. This species was observed in multiple locations within and adjacent to the Phase 1 Study Area (Figure 6) and has potential to occur in numerous habitats throughout the site.

(Brewster's) Yellow warbler (*Setophaga petechia brewsteri*); CDFW Species of Special Concern, USFWS Bird of Conservation Concern. The yellow warbler is a neotropical migrant bird that is widespread in North America, but has declined throughout much of its California breeding range. The Brewster's (*brewsteri*) subspecies is a summer resident and represents the vast majority of yellow warblers that breed in California. West of the Central Valley, typical yellow warbler breeding habitat consists of dense riparian vegetation along watercourses, including wet meadows, with willow growth especially being favored (Shuford and Gardali 2008). Insects comprise the majority of the diet.

The Phase 1 Study Area contains riparian areas with dense vegetation to support nesting by this species. This species was observed within at least one location within the Phase 1 Study Area (Figure 6) and has potential to occur within riparian habitat throughout the Phase 1 Study Area.

Yellow-headed blackbird (*Xanthocephalus xanthocephalus*); CDFW Species of Special Concern. The yellow-headed blackbird occurs as a summer resident and migrant in southern California, with a patchy breeding distribution. This species nests colonially or semi-colonially in marshes dominated by tall emergent vegetation (e.g., cattails, tules), and with relatively deep water. Because of the latter requirement, marshes utilized for nesting are often along the edges of lakes and larger ponds (Shuford and Gardali 2008). Adults during the breeding season forage primarily for large aquatic insects such as dragonflies and damselflies.

The Phase 1 Study Area contains marshes with tall emergent vegetation suitable for this species. Yellow-headed blackbird was observed nesting in emergent vegetation outside of the Phase 1 Study Area (Figure 6), near McCreary Lake, and has potential to occur in association with other large ponds and reservoirs throughout the Phase 1 Study Area.

5.3.2 Special-Status Wildlife Species with Potential to Occur

In addition to the wildlife species that were documented within or immediately adjacent to the Phase 1 Study Area, the 21 special-status wildlife species listed in Table 8 were determined to have moderate to high potential to occur based on the types and condition of habitats found there. The preferred habitat for each of these species is described in Appendix G.

Table 8. Special-Status Wildlife Species with Potential to Occur within the Phase 1 Study Area

Scientific Name	Common Name	Conservation Status
Mammals		
Bassariscus astutus	Ring-tailed cat (ringtail)	CFP
Corynorhinus townsendii	Townsend's big-eared bat	SSC, WBWG High
Lasiurus blossevillii	Western red bat	SSC, WBWG High
Lasiurus cinereus	Hoary bat	WBWG Medium
Myotis evotis	Long-eared myotis	WBWG Medium
Myotis thysanodes	Fringed myotis	WBWG High
Myotis volans	Long-legged myotis	WBWG High
Taxidea taxus	American badger	SSC
Birds		
Agelaius tricolor	Tricolored blackbird	ST, SSC, BCC
Ammodramus savannarum	Grasshopper sparrow	BCC
Asio otus	Long-eared owl	SSC
Athene cunicularia	Burrowing owl	SSC, BCC
Contopus cooperi	Olive-sided flycatcher	SSC, BCC
Falco mexicanus	Prairie falcon	BCC
Icteria virens	Yellow-breasted chat	SSC
Ixobrychus exilis	Least bittern	SSC, BCC
Lanius ludovicianus	Loggerhead shrike	SSC, BCC
Melanerpes lewis	Lewis' woodpecker	BCC
Progne subis	Purple martin	SSC
Spinus [*Carduelis*] *lawrencei*	Lawrence's goldfinch	BCC
Spizella atrogularis	Black-chinned sparrow	BCC

6.0 SUMMARY AND RECOMMENDATIONS

Ten sensitive plant communities were identified within the Phase 1 Study Area, including approximately 100 acres of wetlands, 51 acres and 345,000 linear feet of streams, and 32 acres of ponds, reservoirs, and other open-water habitats. Twenty-six special-status plant species and 14 special-status wildlife species were observed within the Phase 1 Study Area. An additional 81 special-status plant species and 21 special-status wildlife species were determined to have moderate to high potential to occur within the Phase 1 Study Area. The project has the potential to result in direct and indirect impacts to these sensitive resources, and the measures presented below are recommended to reduce those impacts to a less than significant level under CEQA.

The preferred approach for minimizing impacts to sensitive resources found within the Phase 1 Study Area is avoidance during project design. In some areas it may be impracticable or

infeasible to avoid sensitive resources and some impacts may be anticipated. These impacts should be minimized to the fullest extent practicable and feasible through the use of Best Management Practices (BMPs) and other measures. The remaining minor impacts may be mitigated through a combination of onsite preservation and enhancement of sensitive biological communities and habitats for special-status plant and wildlife species.

6.1 General Measures

The following general BMPs and avoidance and minimization measures are recommended:

1. An environmental awareness training program shall be provided to personnel working on the project. The training should include materials that describe the sensitive habitats and species present and the measures that have been incorporated into the project to protect those habitats and species. The training materials should be prepared by a qualified biologist who will train a member of the contractor's crew to provide follow-up trainings to newly hired employees during the construction period. These materials may be updated as new information is available.

2. All work areas, including parking and staging areas, should be the minimum size necessary to implement the project and should be clearly delimited prior to implementation of any work.

3. All trash and debris should be confined in enclosed bins located within staging areas.

4. No pets should be allowed within the construction area.

5. Any soil or other material stockpiled during construction that could be easily transported by wind or rain should be covered when not actively in use.

6. No materials should be placed where they may enter sensitive habitat, receiving waters, or a storm drain, or be subject to wind or runoff erosion and dispersion.

7. Appropriate washout, trackout, and dust control BMPs should be implemented during construction.

8. All vehicles and equipment scheduled for use in construction on the site should be clean and free of mud or vegetation that could introduce plant pathogens or propagules of non-native plants. This includes equipment hauled into the site. The importance of this measure will be discussed in the environmental awareness training materials.

9. No construction vehicles or machinery should be allowed outside of the delimited parking, staging, and work areas.

10. All vehicles and equipment used on site should be well maintained and checked upon site entry for fuel, oil, and hydraulic fluid leaks or other problems that could result in spills of toxic materials. Drip pans should be used under all vehicles and equipment when not in active use.

11. All vehicle fueling and maintenance activities should occur at least 100 feet away from any wetland, stream, or other water body.

12. Operation of vehicles and equipment should be limited to the hours from 7:00 am to 7:00 pm or from half an hour after sunrise to half an hour before sunset.

13. A Stormwater Pollution Prevention Plan (SWPPP) should be developed for the project in accordance with the Lake County Clean Water Program and all measures included in the SWPPP should be implemented during all phases of construction, as appropriate.

14. Temporary erosion control materials should be inspected on a regular basis consistent with the SWPPP during construction, and any required repairs should be implemented immediately.

15. For any work within aquatic features or their setback, the contractor should be prepared to handle any localized hazardous waste spills (e.g. gas, oil, or pesticides). Spill control and clean-up materials (e.g., oil absorbent pads, fiber rolls) should be kept on-site at all times in case a spill occurs. Any waste materials including, but not limited to, raw cement/concrete or washings thereof, asphalt, paint, construction waste, or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, should be prevented from contaminating the soil and/or entering any waterways.

16. All erosion control materials should use certified weed-free straw or other biodegradable, weed-free materials. No materials containing monofilament netting should be used.

6.2 Biological Communities

6.2.1 Sensitive Terrestrial Communities

The Phase 1 Study Area contains seven sensitive terrestrial communities including four woodland communities (blue oak woodland, blue oak savanna, interior live oak woodland, and valley oak woodland) and one herbaceous community (purple needle grass grassland). While they have no legal standing, chaparral communities on serpentine soils within the Phase 1 Study Area provide high value for rare plants and may contain one or more sensitive associations and should also be considered for avoidance to the extent feasible and practicable during project design and entitlement.

The following measures are recommended to avoid impacts to sensitive terrestrial communities:

1. Minimize impacts to sensitive terrestrial communities to the extent practicable and feasible through avoidance during project design.

2. Given the limited distribution of valley oak woodland, which has a CDFW rarity ranking of S3 indicating that it has limited distribution within California, as well as the difficulty in regenerating this community, it should be avoided in its entirety if possible and if not possible completely mitigated to include an increase in planting to meet the goal of no significant impact consistent with the Oak mitigation plan prepared under #4 below.

3. To mitigate for unavoidable impacts to oak trees, an oak woodland mitigation plan should be developed that minimizes impacts and compensates for any loss of oak woodland (or in the case of oak savannah, individual trees) through a combination of enhancement (e.g., weed management within existing oak woodlands), restoration or creation (e.g., oak planting or seeding), transplanting, and/or preservation (e.g., placement of conservation easements over existing stands of high quality oak woodlands at least acre per acre 1:1). The plan should also include a monitoring and adaptive management component and clear performance standards. The plan should be approved by the County of Lake prior to any impacts.

4. Purple needle grass grassland should be avoided to the extent practicable and feasible. To mitigate for unavoidable impacts to purple needle grass grassland, mitigation should be developed that minimizes impacts and compensates for any loss of native grassland through some combination of enhancement (e.g., weed management within existing native grasslands), restoration or creation (e.g., native grassland seeding), and preservation (e.g., placement of conservation easements over existing stands of high quality native grasslands). The mitigation should also include a robust monitoring and adaptive management component and clear performance standards. Mitigation should be approved by the County of Lake prior to any impacts.

5. To the extent feasible and practicable, minimize impacts to serpentine chaparral communities which have high potential to host rare plants and may contain one or more sensitive plant associations.

6.2.2 Sensitive Aquatic Communities

The Phase 1 Study Area contains a large network of wetlands, streams, ponds, and reservoirs, and riparian habitat, which are variously regulated by the Corps, RWQCB, and/or CDFW. The following measures are recommended to avoid, minimize, or mitigate for impacts to aquatic communities:

1. The County of Lake defines setbacks from streams, ponds, wetlands, and riparian habitats that should be incorporated into the project design:

    a) 30 feet from the top of bank any perennial stream,
    b) 20 feet from the top of bank of any intermittent stream,
    c) 20 feet from the edge of any adjacent wetlands or the ordinary high water mark of other bodies of water, or
    d) To the outer extent of vegetation dominated by common riparian species such as Fremont cottonwood (*Populus fremontii*), white alder (*Alnus rhombifolia*), box elder (*Acer negundo*), dogwood (*Cornus* spp.), willow (*Salix* spp.), and big leaf maple (*Acer macrophyllum*) (this latter zone may extend beyond 30 feet).

    No setbacks are clearly defined by the County for ephemeral streams. However, for the purposes of this report, it is assumed that ephemeral streams are “other bodies of water” as stated in c) above. Therefore, a minimum setback of 20 feet, or as directed by a qualified biologist, from the ordinary high water mark on natural

ephemeral streams should be incorporated. No setback is required for man-made stormwater or irrigation ditches. In areas where ground disturbance will occur in close proximity to aquatic resources or riparian habitat, sediment control measures such as silt fencing and/or straw wattles should be installed between the work area and the appropriate setback.

2. Prior to any impacts to protected aquatic resources, the project proponent should submit applications for necessary permits from the Corps, RWQCB, CDFW, and/or County of Lake. Any avoidance, minimization, or compensatory mitigation measures required by those permits should be incorporated into the project design. An aquatic resources mitigation plan (HMMP) will be submitted as part of the permit applications in accordance with federal and state requirements. It is likely that most of the compensatory mitigation actions can be accomplished on-site within the project boundaries; however, off-site mitigation and purchase of mitigation credits may also be appropriate in some cases.

6.3 Special-Status Plant Species

WRA documented 26 special-status plant species within the Phase 1 Study Area during seasonally timed surveys conducted in 2017, 2018, and 2019, including one federal-listed species, one state-listed species, six CNPS Rank 1 species, and 18 CNPS Rank 4 species. The bulk of these plants occur either on serpentine soils or in wetlands and along stream corridors; however, special-status plants occur in other habitats as well. The following measures are recommended to avoid, minimize, or mitigate for impacts to special-status plants:

1. Pre-construction botanical surveys of herb-dominated habitats with the potential to support special-status plants (i.e. grasslands, wetlands) shall be conducted prior to ground breaking for each specific project component if more than one complete year has passed since most recent survey (i.e. areas surveyed in 2017 require surveys in 2020, however areas surveyed in 2019 require surveys in 2021). Pre-construction surveys of shrub or woodland dominated habitats with the potential to support special-status plants shall be surveyed prior to groundbreaking for each specific project component if more than four years have passed since most recent survey (i.e. shrub/woodland areas surveyed in 2017 will require surveys in 2022). Initial vegetation clearing along proposed roadways for fire management shall also be subject to these standards. Pre-construction surveys shall be completed by a qualified biologist during the appropriate identification period for plants with the potential to occur in the area scheduled for ground breaking.

2. To the extent feasible and practicable, all occurrences of special-status plants should be avoided during project design. To ensure no indirect impacts, individual occurrences of special-status plants should be avoided by a minimum of 20 feet. Where ground disturbance will occur within 100 feet upslope of occurrences of special-status plants during the wet season (October 1 through April 1), silt fencing or straw wattles should be installed between the work area and the 20-foot setback and should not be removed until the disturbed areas have been revegetated or otherwise stabilized and the risk of erosion has been minimized.

3. When avoidance is not feasible or practicable, species-specific mitigation should be developed that minimizes impacts and compensates for any loss of federal or state listed rare, threatened, or endangered plant occurrences through a

combination of enhancement (e.g., weed management and supplemental seeding within existing stands of the species in question), restoration or creation (e.g., establishment of new populations), and preservation (e.g., placement of appropriate protective assurances over existing examples of high quality occurrences). This mitigation for these species may need approval by the appropriate federal and/or state agency under which they are listed as part of the permitting process.

4. Any mitigation should follow generally acceptable rare plant mitigation guidelines and should consider the specific ecology of the species in question, as well as the conservation status and the number of occurrences within the overall ranch. The mitigation should also include regularly scheduled monitoring, an adaptive management component, and clear performance standards to ensure success.

5. Federal-listed, state-listed, and CNPS Rank 1 species should be prioritized for avoidance. Where avoidance of these species is not possible, they should be considered for relocation or reestablishment in other portions of the property.

6. CNPS Rank 4 species that occur in limited numbers and/or limited locations (e.g., tall snapdragon, which occurred in only three locations across the Phase 1 Study Area) should be reviewed with the County of Lake to determine appropriate mitigation measures.

7. CNPS Rank 4 species that occur in large numbers and numerous locations (e.g., Jepson's navarretia, which occurred on serpentine balds in numerous locations across the property and numbered in the hundreds of thousands) should be reviewed with the County of Lake to determine appropriate mitigation measures.

8. Impacts to federal- or state-listed plant species may require consultation with the USFWS under Section 7 or Section 10 of the Endangered Species Act and/or application for a CFGC Section 2080 Consistency Determination (if a USFWS Biological Opinion is issued) or Section 2081 Incidental Take Permit (if a USFWS Biological Opinion is not issued or the species is state-listed only).

6.4 Special-Status Wildlife Species

Fourteen special-status wildlife species were documented within or adjacent to the Phase 1 Study Area, including one State-Endangered species, one State-Candidate species, and several California Fully Protected species, in addition to other special-status species. An additional 21 special-status wildlife species were determined to have potential to occur. The Phase 1 Study Area is not located within Critical Habitat as designated by USFWS or NMFS, as Lake Berryessa forms a total barrier to anadromous fish including steelhead and Chinook salmon. The following recommendations and potential constraints are provided based on the potential for special-status species and their habitat to occur within the Phase 1 Study Area. Where applicable, species with similar requirements and guidance are grouped together.

6.4.1 Special-Status Mammals

Bats

Two special-status bat species and five non-status bat species were observed within the Phase 1 Study Area. There is moderate or high potential for an additional six bat species to occur within the undisturbed oak woodland, riparian woodland, rock outcrops and buildings within the Phase 1 Study Area. Direct impacts to roosting special-status bat species could occur due to the removal or modification of large trees (diameter at breast height [DBH] >12 inches), snags, and/or buildings. The destruction or injury of special-status bats or loss of a maternity roost would constitute a potentially significant impact under CEQA and is a violation of the CFGC. Indirect impacts to maternity roosting and/or roosting bat species may include roost abandonment due to noise, increased nighttime lighting and/or other human disturbances during construction, and would also constitute a potentially significant impact under CEQA.

The following measures are recommended to avoid impacts to roosting bats:

1. Pre-construction survey(s) for bat roosts should be conducted by concentrating on large trees (DBH >12 inches), broadleaf trees in riparian woodland habitat, buildings, bridges, and cliffs/rocky outcroppings within 100 feet of any planned work areas. Surveys should occur no more than 14 days prior to the start of work, and one or more surveys may be needed for the biologist to evaluate whether potential roost habitat occurs and to determine the type (i.e., maternity or non-maternity) and status (i.e., active or inactive) of the roost. If an active maternity or special-status bat roost is found and is proposed to be removed or directly impacted as a result of project activities, consultation with CDFW may be required.

2. If large trees (DBH >12 inches) identified as potential bat roosts that are not active maternity or special-status roosts are to be removed, they should be flagged by the surveying biologist. On the first day of removal of flagged trees, if weather conditions permit, limbs shall be removed in the late afternoon from flagged trees. This disturbance should cause any roosting bats to locate an alternative roost during their nighttime foraging. As potentially roosting bats will have left over the course of the night, the rest of the tree can be harvested on the second day. On the second day, if weather conditions permit, the trees shall be felled as late in the afternoon as is practicable. If weather conditions are not conducive to having the tree taken down on the second day and the procedure has been interrupted, an additional emergence survey shall be conducted the evening before taking the tree down in late afternoon.

Other Mammals

American badger is a SSC with moderate potential to occur in the Phase 1 Study Area. Ringtail is a CFP species with moderate potential to occur in the Phase 1 Study Area. Direct impacts to open grassland and oak woodland could potentially impact habitat for American badger and ringtail. The following measures are recommended to avoid impacts to American badger and ringtail:

1. No more than 14 days before the start of ground disturbance activities within open grassland, oak woodland, or riparian forest habitat, a biologist should conduct pre-construction surveys to determine if American badger or ringtail dens are present.

2. If American badger dens are determined to be present, the biologist should monitor them for activity to determine whether the den is active. If the den is determined to be occupied by a female with young, ground disturbance and construction

activity should be avoided within 50 feet of the den until the young have matured and dispersed. If the den is determined to be active, but a female with young are not present, burrow exclusion using passive measures such as one-way doors or equivalent should be attempted for a minimum of three days to discourage their use prior to any project-related ground disturbance. If the biologist determines that the dens have become inactive as a result of the exclusion methods, the dens should be excavated by hand to prevent them from being re-occupied during construction.

3. If ringtail dens with young are determined to be present within the work area, the biologist should establish a clearly marked exclusionary buffer of no less than 50 feet and no ground disturbance should take place within the buffer until the biologist determines the den is no longer active with young.

6.4.2 Special-Status Birds

Raptors

Targeted raptor surveys determined that golden eagle, bald eagle, white-tailed kite, northern harrier and American peregrine falcon nest in portions of the larger Guenoc Ranch outside of the Phase 1 Study Area. Although it was not observed, suitable habitat for prairie falcon is present and it was determined that the species has a moderate potential to occur in the Phase 1 Study Area. The Phase 1 Study Area provides foraging habitat and has the potential to support nesting for each of these species. In 2018, surveys identified three bald eagle nests within 0.5 mile of the Phase 1 Study Area, active peregrine falcon nests within 0.75 mile of the Phase 1 Study Area, and a golden eagle nest within 0.2 mile of the Phase 1 Study Area, as well as non-status raptor nests within the Study Area.

Eagle nests are protected by the Bald and Golden Eagle Protection Act, the MBTA, and the CFGC. Direct impacts to nest trees (e.g., trimming or completely removing the nest tree or adjacent trees) while the nest is active may result in death or injury to eggs or young, and potentially adults as well. Additionally, indirect disturbance caused by project related activities (e.g., noise, vibration and/or visual disruption resulting from grading or construction), and introduction of toxic of otherwise harmful chemicals into the prey base of bald and golden eagles have the potential to impact eagle nesting activities. Any direct impacts that result in nest failure or mortality may constitute a violation of the Bald and Golden Eagle Protection Act, as well potentially the MBTA and multiple sections of the CFGC. White-tailed kite and peregrine falcon nests are also protected by the MBTA and CFGC. Protective exclusion buffers around active raptor nests can vary greatly and may extend up to 0.5 mile. The following measures are recommended to avoid impacts to raptors:

1. Prior to starting construction activities during the nesting season, generally defined as February 1 through August 31, targeted surveys for active raptor nests should be conducted. An active nest contains eggs or young.

2. For construction activities planned within 0.5 miles of a documented eagle or protected falcon species nest, pre-construction surveys should be conducted in accordance with the most current guidance available from USFWS and CDFW.

3. If a non-status raptor nest containing eggs or young is determined to be present within the work area, then a protective buffer should be implemented and no

project work should occur within the buffered area until the chicks have fledged and no longer require parental support for survival, or the nest has been determined to be inactive. Buffer size should be determined by the biologist based on species, nest location, planned disturbance footprint, and presence of any visual or auditory buffers.

4. If a special-status raptor nest is determined to be present within the work area, or within 0.5 mile of the work area, consultation with the USFWS and/or CDFW should occur and any measures recommended or required by those agencies should be incorporated into the project design.

Burrowing Owl

Burrowing owl is listed as a species of special concern by the CDFW. While the species was not observed during site assessments, ground squirrels and potentially suitable habitat was present, and suitable burrows may exist in the future. This species is migratory, and may occur in portions of the Phase 1 Study Area. Project activities that would remove or destroy burrows and impact grassland habitat containing suitable burrows, may result in a direct impact to burrowing owl. The following measures are recommended to avoid impacts to burrowing owls:

1. A pre-construction survey should be performed prior to start of ground disturbance activities where ground squirrel burrow complexes are present. This survey should occur regardless of the time of year, as burrowing owls may use the Study Area during the non-nesting season. The survey should be performed according to the standards set forth by the Staff Report for Burrowing Owl Mitigation (CDFW 2012), unless more current guidance has been released.

2. If the species or its sign, which includes feathers, pellets, or whitewash, are found at a burrow during the nesting period, project activities should excluded from within a 250-foot buffer surrounding the occupied burrows occur until the owls are no longer present or the burrows have been abandoned. The nesting period is defined as February 1 through August 31.

3. Passive exclusion techniques, such as one-way doors, can be used to exclude burrowing owl from occupied burrows outside the nesting season or if a burrow is determined not to support an active nest. An active nest include those with eggs or young. Once exclusion is completed, the burrows should be collapsed to avoid attracting owl back to the planned or active work area.

Nesting Birds

In addition to the aforementioned raptor species, the site assessment determined that special status bird species Allen's hummingbird, Nuttall's woodpecker, oak titmouse, yellow-headed blackbird, and yellow warbler are present within or adjacent to the Phase 1 Study Area. Ten other special status bird species, in addition to burrowing owl previously discussed, were determined to have a moderate to high potential to occur within the Phase 1 Study Area. A variety of native bird species protected under the MBTA as well as the CFCG may use the Phase 1 Study Area for nesting.

Avoidance of nesting birds is considered a general biological resources "best practice" in California and avoids potential enforcement action by the CDFW. Nesting bird pre-construction survey obligations are a common component of various permits and authorizations, including local

grading permits, and such, may be deemed applicable to project activities within the Phase 1 Study Area.

Initial vegetation removal, clearing, grubbing activities, along with building removal and demolition of structures, have the potential to affect nesting migratory birds including: prairie falcon, long-eared owl, least bittern, purple martin, olive-sided flycatcher, Allen's hummingbird, Nuttall's woodpecker, Lewis' woodpecker, loggerhead shrike, oak titmouse, yellow warbler, yellow-breasted chat, black-chinned sparrow grasshopper sparrow, Lawrence's goldfinch, yellow-headed blackbird, and tricolored blackbird. Adverse effects to nesting birds covered by the MBTA and the CFGC, including active nests, eggs and young, would constitute a potential impact that may occur as a result of these activities. While project-specific impacts may require additional measures, the following programmatic-level measures are recommended to avoid impacts to nesting birds:

1. If vegetation removal, demolition of buildings or work on bridges, or initial ground disturbance activity occur during the nesting season, defined as February 1 through August 31, then a pre-construction nesting bird survey within the work area should be completed by a biologist no more than 14 days (or the time interval set by Department permits issued for the project) prior to the start of work.

2. If active nests (nests with eggs and/or chicks) are observed during the pre-construction survey, project activities should avoid the area as determined by the biologist and resume the protective buffer only after the young have fledged the nest or the nest otherwise becomes inactive. Buffer size should be determined by the biologist based on species, nest location, planned disturbance footprint, and presence of any visual or auditory buffers.

6.4.3 Special-Status Reptiles and Amphibians

This assessment determined that western pond turtle (WPT) and foothill yellow-legged frog (FYLF) are present in the Phase 1 Study Area. Direct impacts to stream features, floodplains, wetlands, ponds, and reservoirs may result in the loss of suitable habitat or potential take of amphibian and reptile species. Work taking place within any river, stream, or lake in the Phase 1 Study Area subject to Fish and Wildlife jurisdiction would require a CDFW Lake or Streambed Alteration Agreement (LSAA). Measures that may be included in an LSAA are discussed below.

Western Pond Turtle

This assessment determined that western pond turtle (WPT) is present in the Phase 1 Study Area. Direct impacts to stream features, floodplains, wetlands, ponds, and reservoirs could result in the loss of suitable habitat or potential take of WPT if they are present. Direct mortality, loss of aquatic habitat, or loss of nesting habitat may be considered potentially significant impacts under CEQA. While project-specific impacts may require additional measures, the following programmatic-level measures are recommended to avoid impacts to WPT:

1. To the extent possible, initial ground disturbance, vegetation clearing, and associated project activities within 300 feet of ponds, reservoirs, or wetted streams which may support western pond turtle should occur between July 1 and October 31 to avoid the peak nesting season and winter inactivity periods for western pond turtle.

2. No more than 14 days prior to the start of work within 300 feet of ponds, reservoirs, or wetted streams with the potential to support western pond turtle, a pre-construction survey for western pond turtle shall be completed. If the species is observed, the biologist should provide measures to avoid direct impacts based on the planned work. Such measures may include a protective no-work buffer, exclusion fencing, monitoring, or coordination with CDFW if relocation is required.

Foothill Yellow-Legged Frog

Work within streams, riparian areas, and along streamside corridors could impact FYLF by disrupting migratory movements, rearing, or breeding and could result in direct injury or mortality of individuals. Additional impacts may occur from the removal or altering of habitat, such as those associated with the loss of cover or altering localized water flow. Although there is no time of year when complete avoidance of FYLF is possible if working in an area where the species is known to occur, there are periods when encountering the species is less likely (CDFW 2018b). Conducting work outside the typical FYLF breeding season away from wetted features allows for the greatest opportunity for avoidance (CDFW 2018b). While project-specific impacts may require additional measures, the following measures are recommended to avoid impacts to FYLF:

1. Work within 100 feet of any wetted stream feature or associated riparian area where foothill yellow-legged frog (FYLF) has been documented should occur during the dry months (July 1 through October 31) as possible. Timing shall also occur outside of the FYLF breeding season (March 1 to June 30) to the extent possible.

2. Pre-construction surveys for FYLF within any wetted stream feature near a work area should be conducted by a qualified biologist at least 14 days prior to the onset of construction activities. Surveys should cover at least 500 feet upstream and 500 feet downstream of the work area for presence of all life stages. Surveys should be conducted during the day and under optimal conditions for detecting FYLF. Additional pre-construction surveys may be required as determined by the qualified biologist. If FYLF are detected, measures to avoid the species should be implemented. Such measures may include, but are not limited to, a protective no-work buffer, exclusion fencing, monitoring, and/or coordination with CDFW.

FYLF is currently a candidate species for listing under CESA and as such is afforded the protections conveyed by CESA, including protection from “take” without a permit. The clade that occurs in the Project Area has been evaluated as not warranting listing under CESA at this time by the CDFW Staff Review and the CDFG commission has voted to adopt this finding. While the species is technically still a candidate for listing, the ending of candidacy for this clade is imminent and is not likely to result in listing under CESA. However, this clade will remain a species of special concern and will continue to be considered during CEQA processes and permitting processes administered by CDFW. While the implementation of the above described measures should minimize impacts to the species, there is a potential for incidental take of FYLF to occur during work activities in and adjacent to FYLF habitat and this take would still require an ITP, if it occurs during the candidacy period.

6.3.4 Wildlife Corridors

This assessment determined that portions of the Phase 1 Study Area may facilitate wildlife movement and may be considered a wildlife corridor. The conversion of raw land, conversion to

agriculture or installation of buildings and fencing, and increased prevalence of human disturbance can diminish or eliminate properties that make an area a corridor for native species. Under CEQA, project impacts to wildlife corridors should be assessed and evaluated.

WRA recommends that a wildlife corridor assessment be conducted utilizing GIS-based software or similar acceptable method to evaluate topography and biological communities as identified in the Phase 1 Study Area based on species-specific habitat requirements for wildlife species that utilize corridors for long-distance movement. The assessment will help identify areas where wildlife movement may be facilitated and help identify if avoidance and minimization measures should be implemented.

That being said there is an approximately 3,000 acre protect open space/wildlife corridor and preserved riparian corridors that runs through Phase 1 that provides wildlife passageways.

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APPENDIX A

BIOLOGICAL COMMUNITIES MAPPED WITHIN THE PHASE 1 STUDY AREA



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 1)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

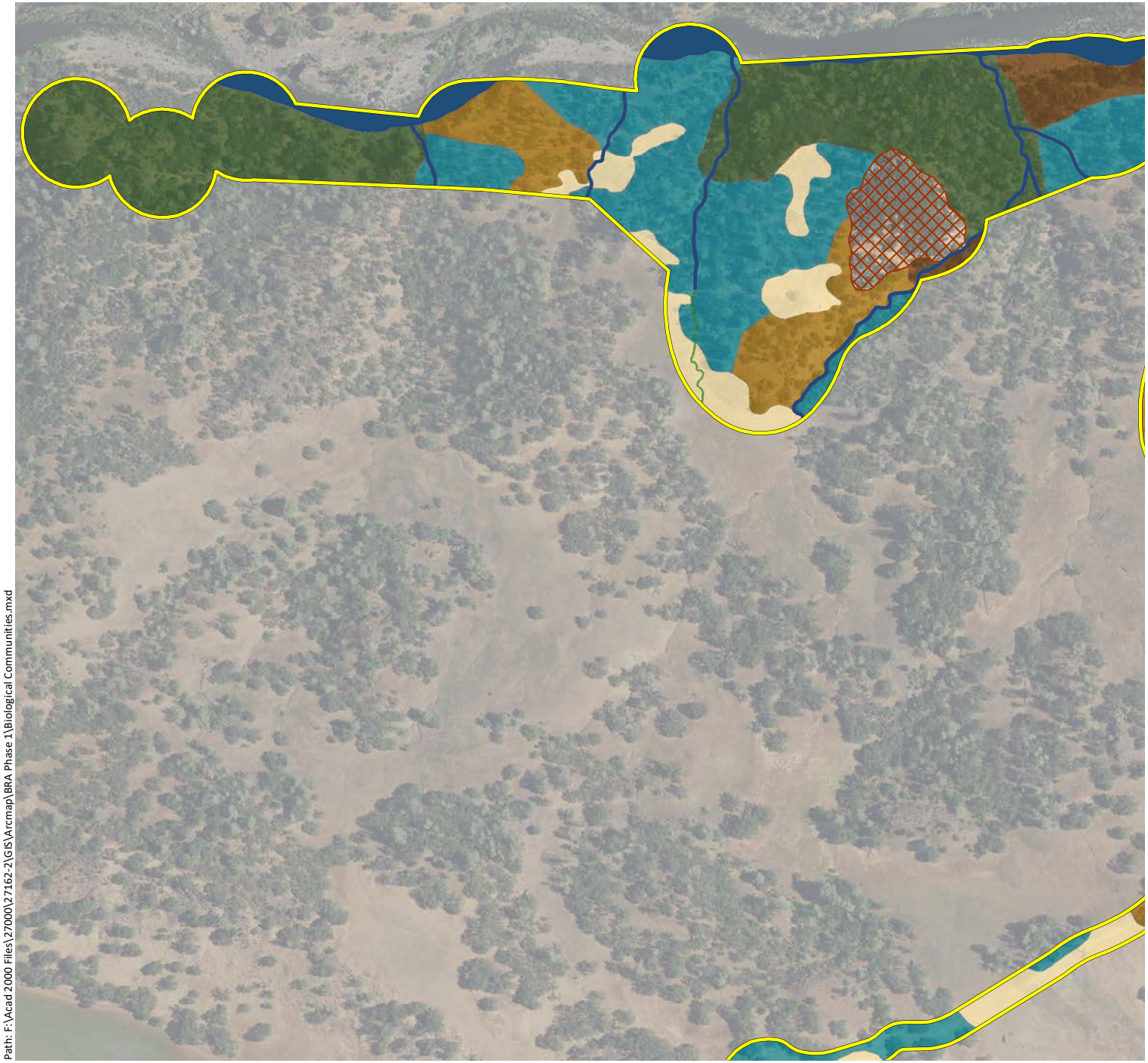
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 2)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 3)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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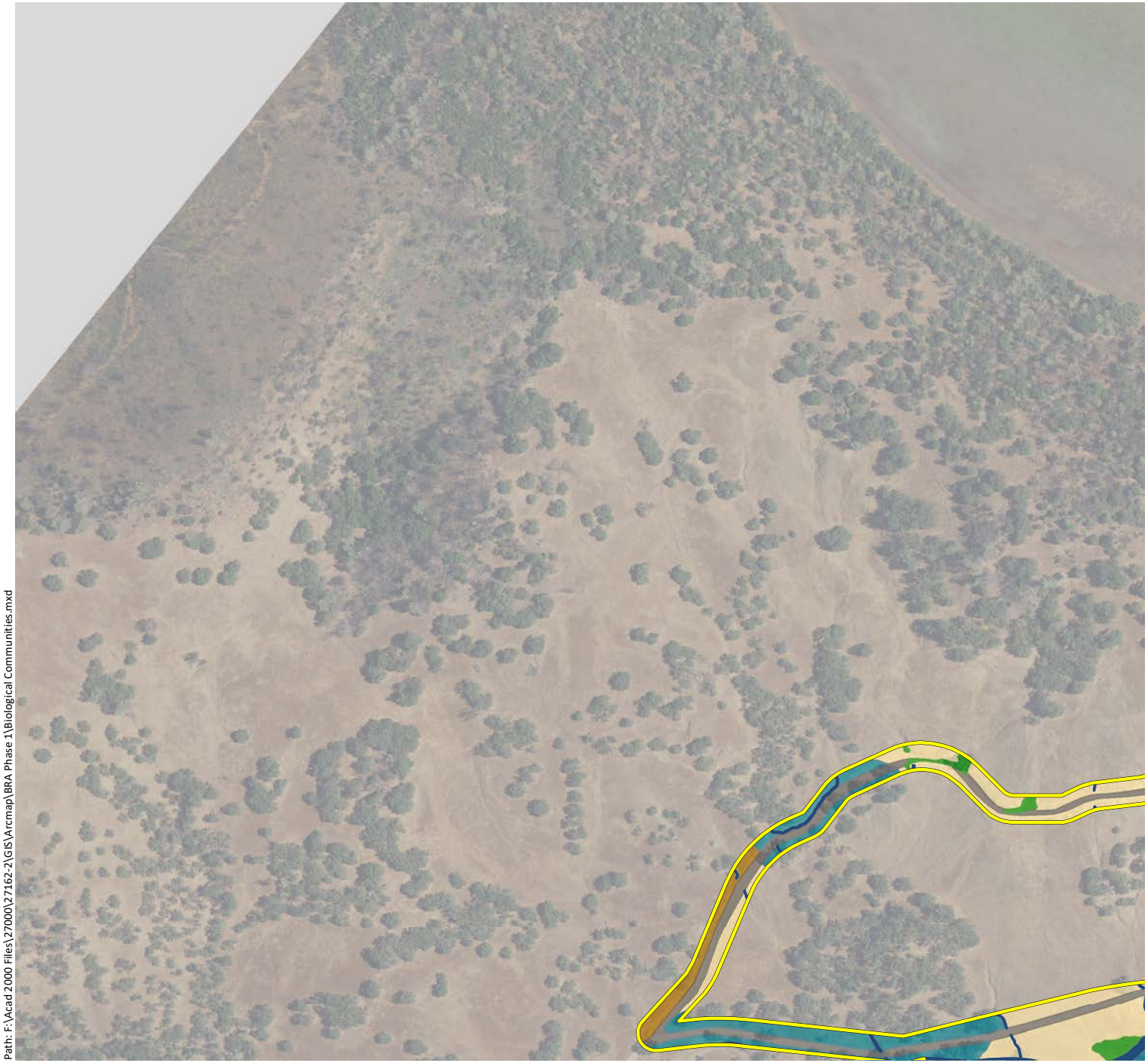
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 4)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 5)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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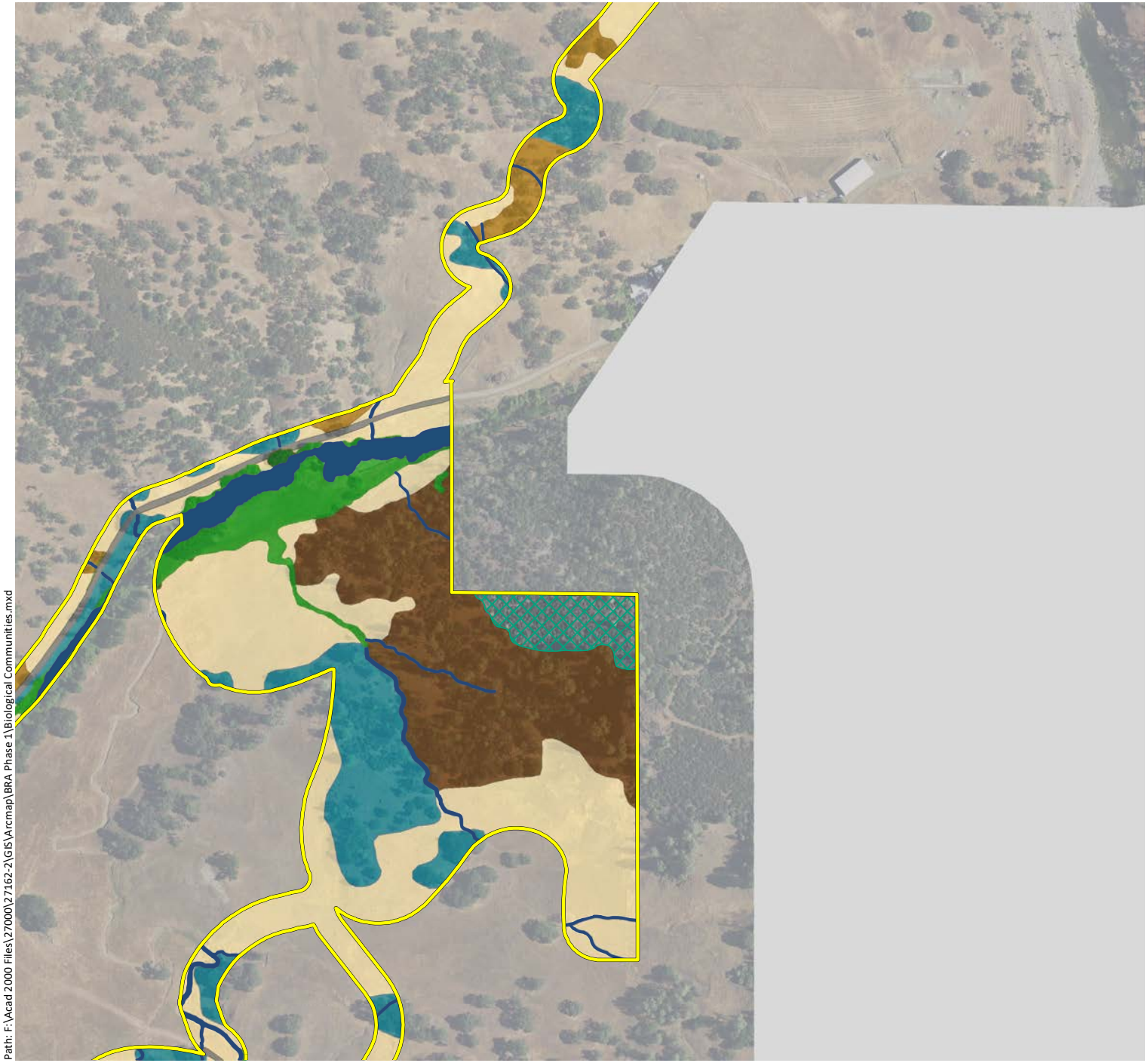
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 6)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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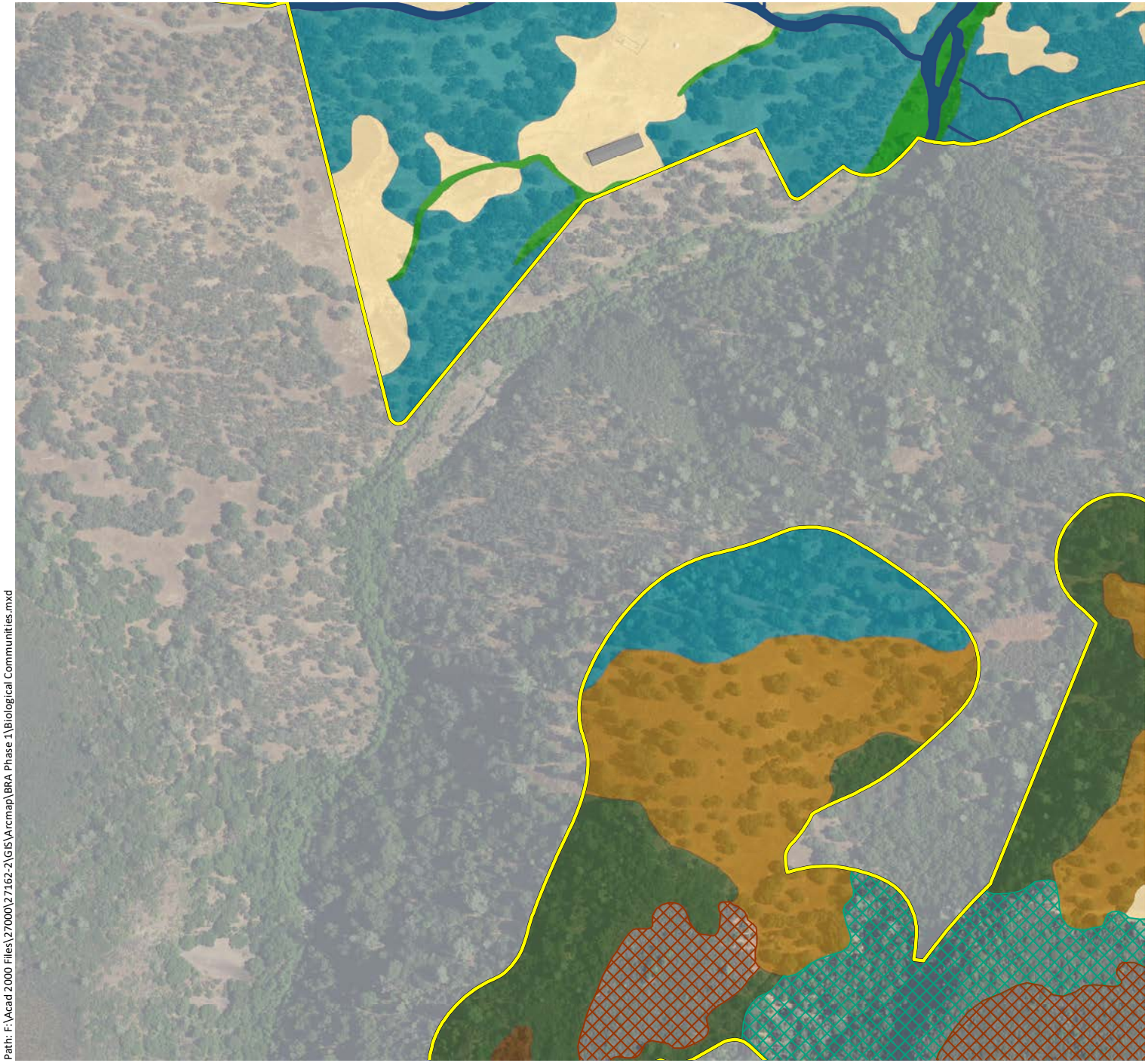
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 7)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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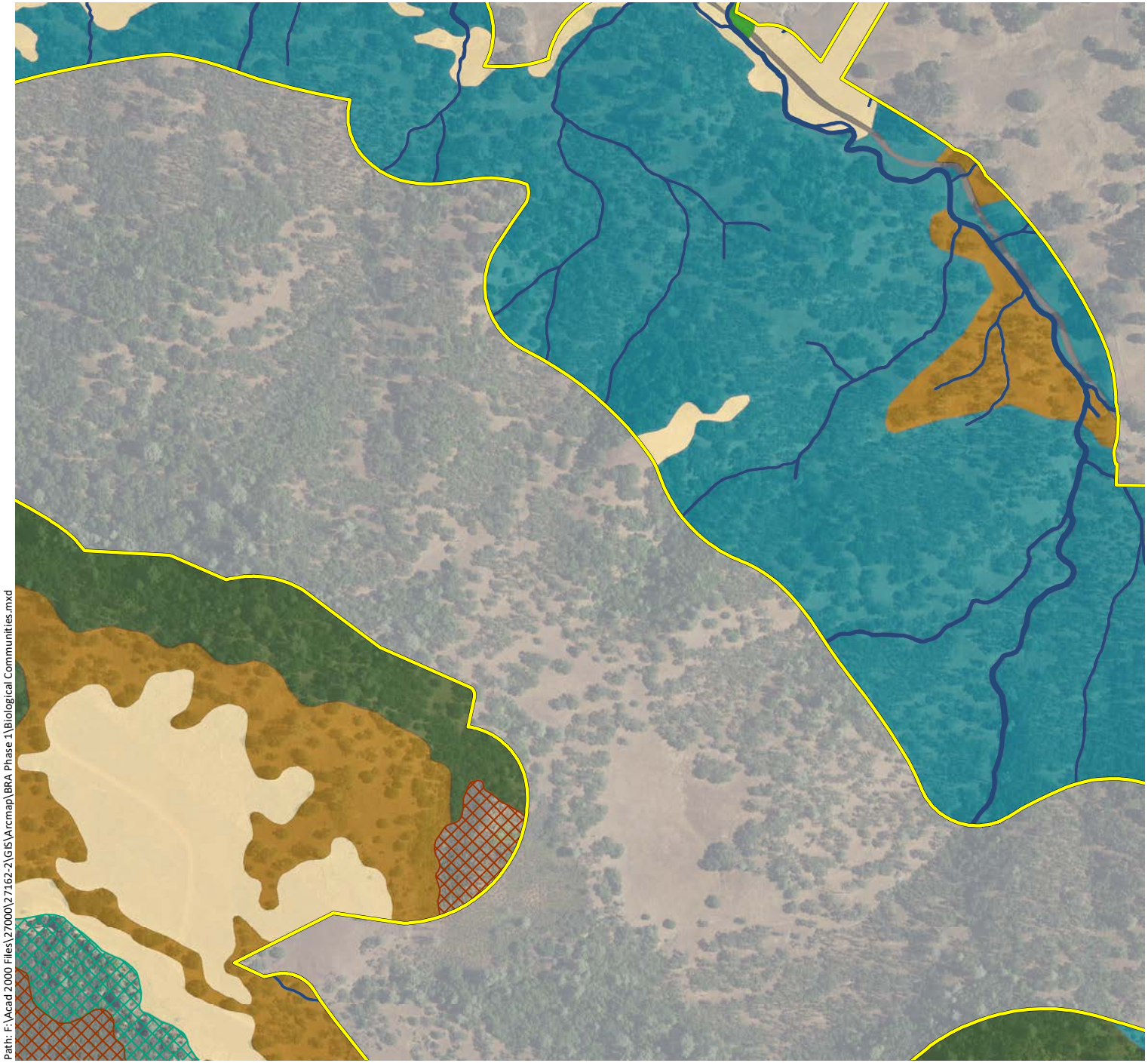
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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 8)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grasssland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 9)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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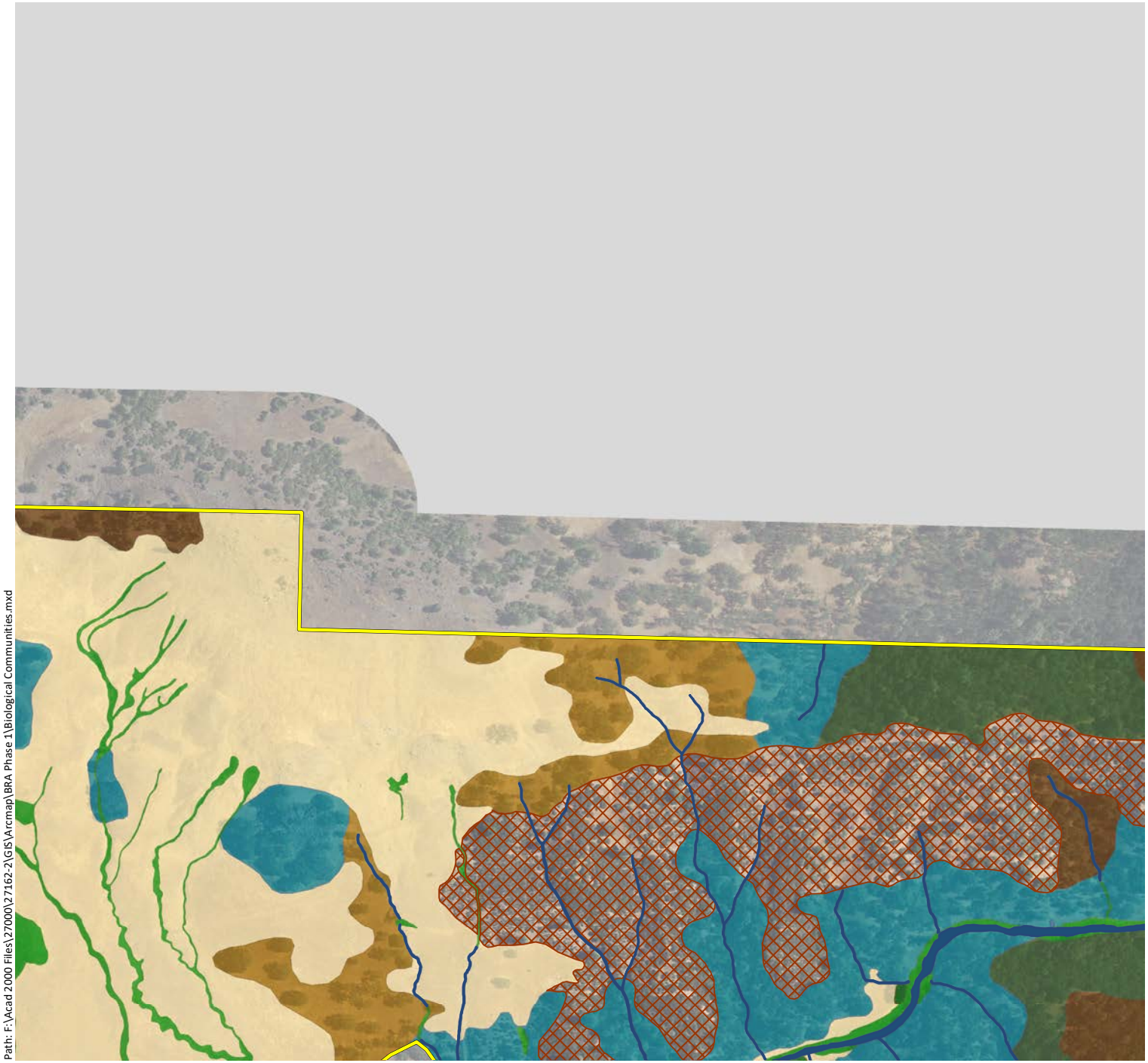
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 10)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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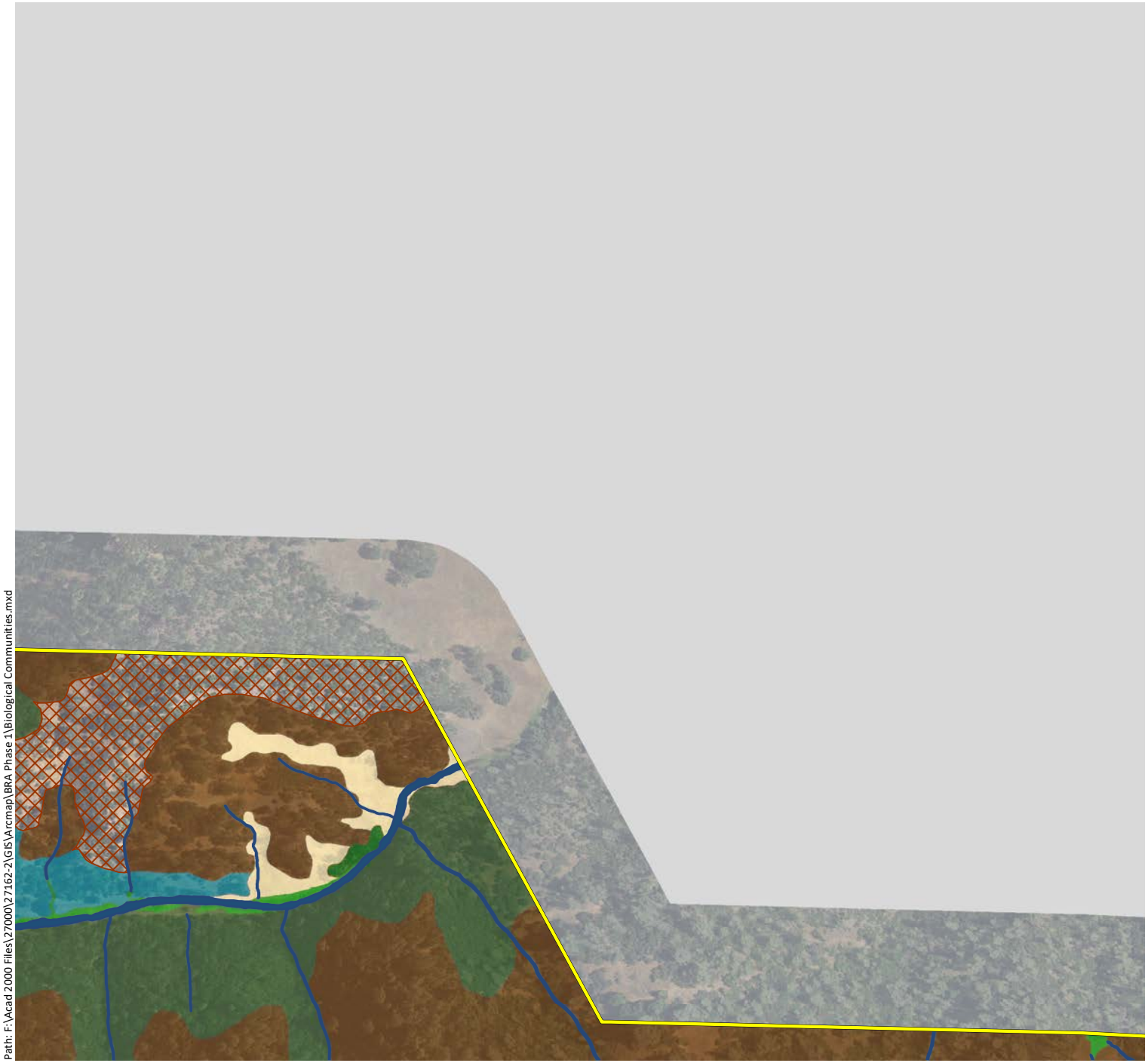
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 11)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 12)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 13)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 14)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

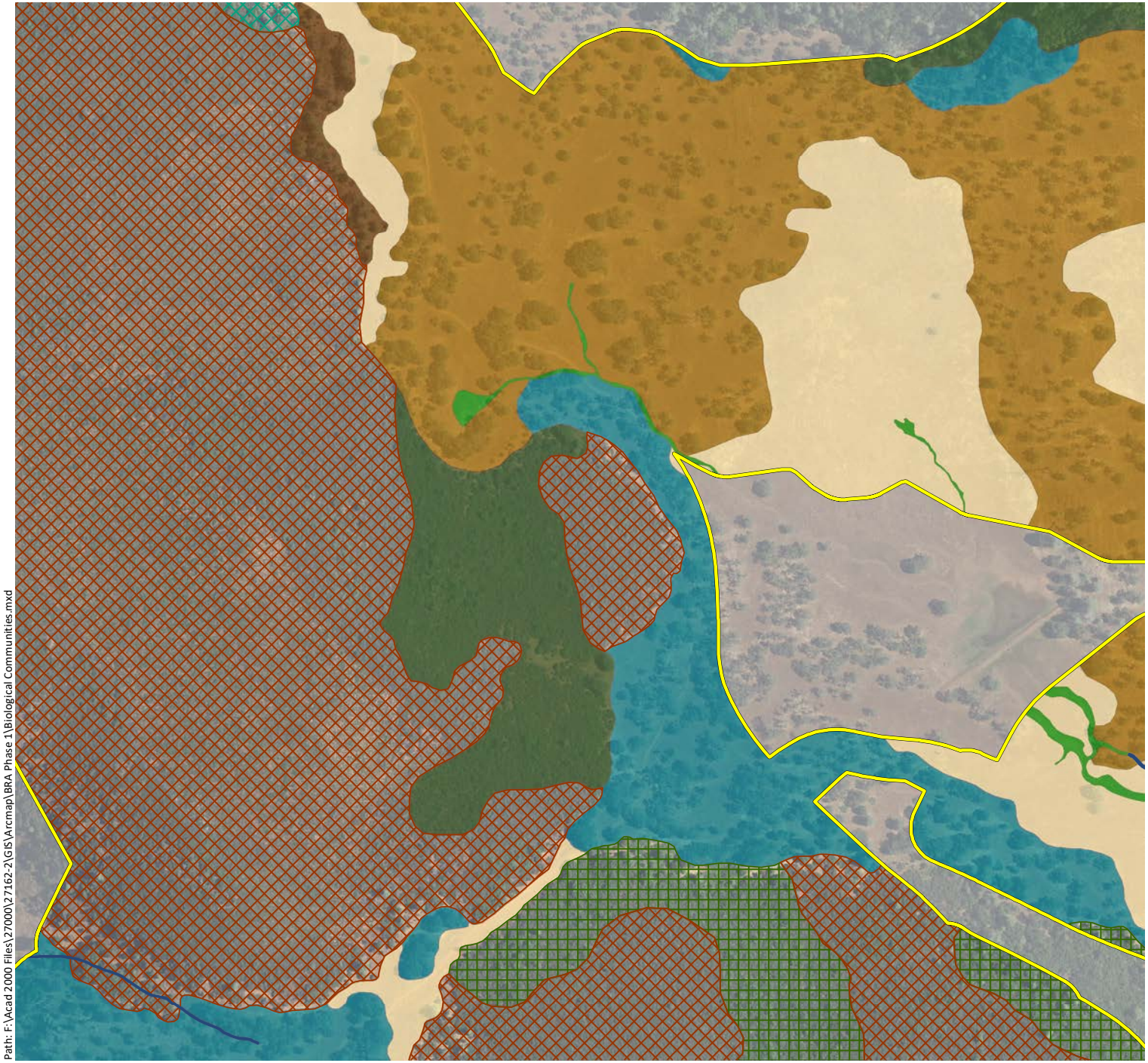
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 15)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

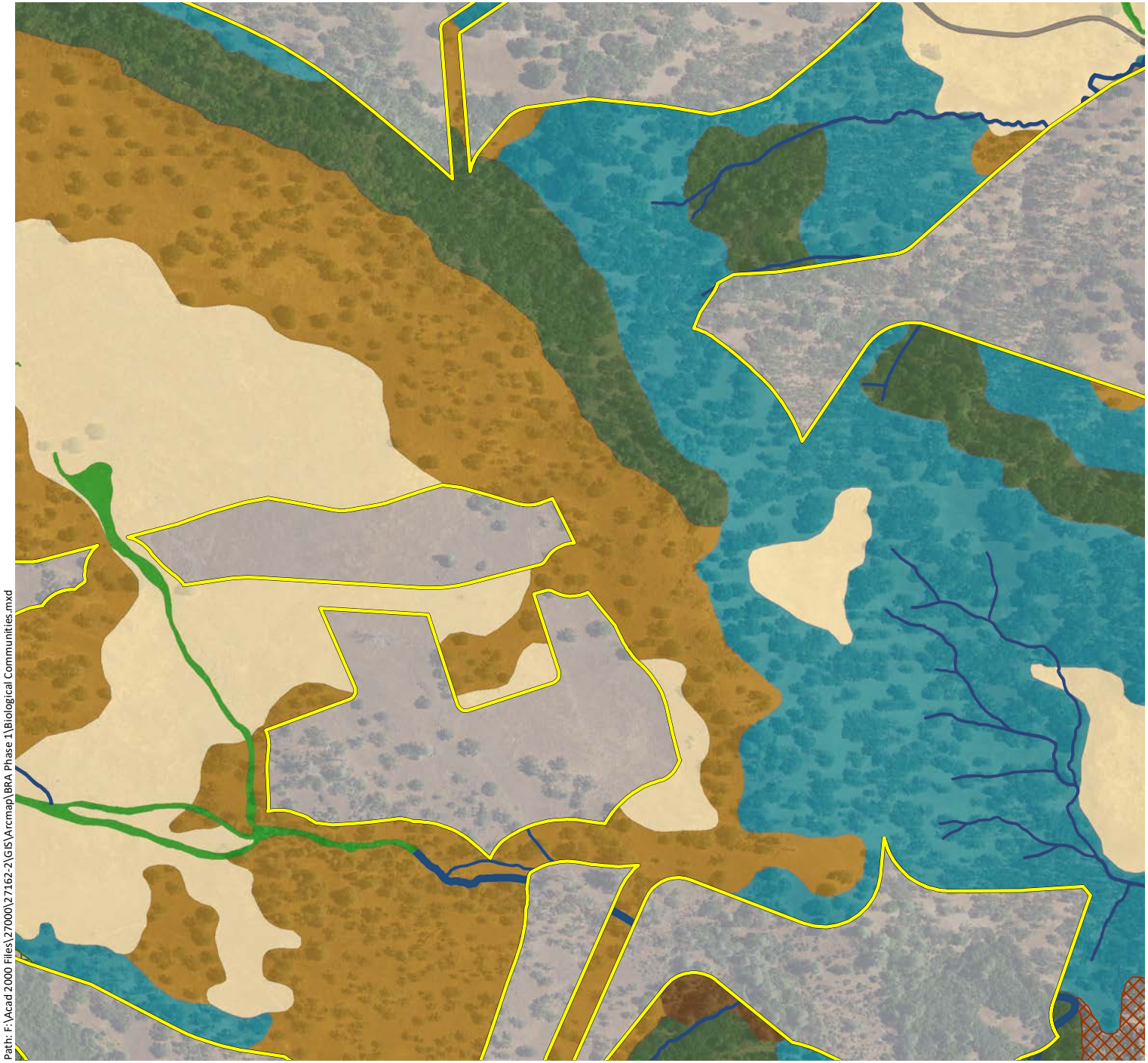
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 16)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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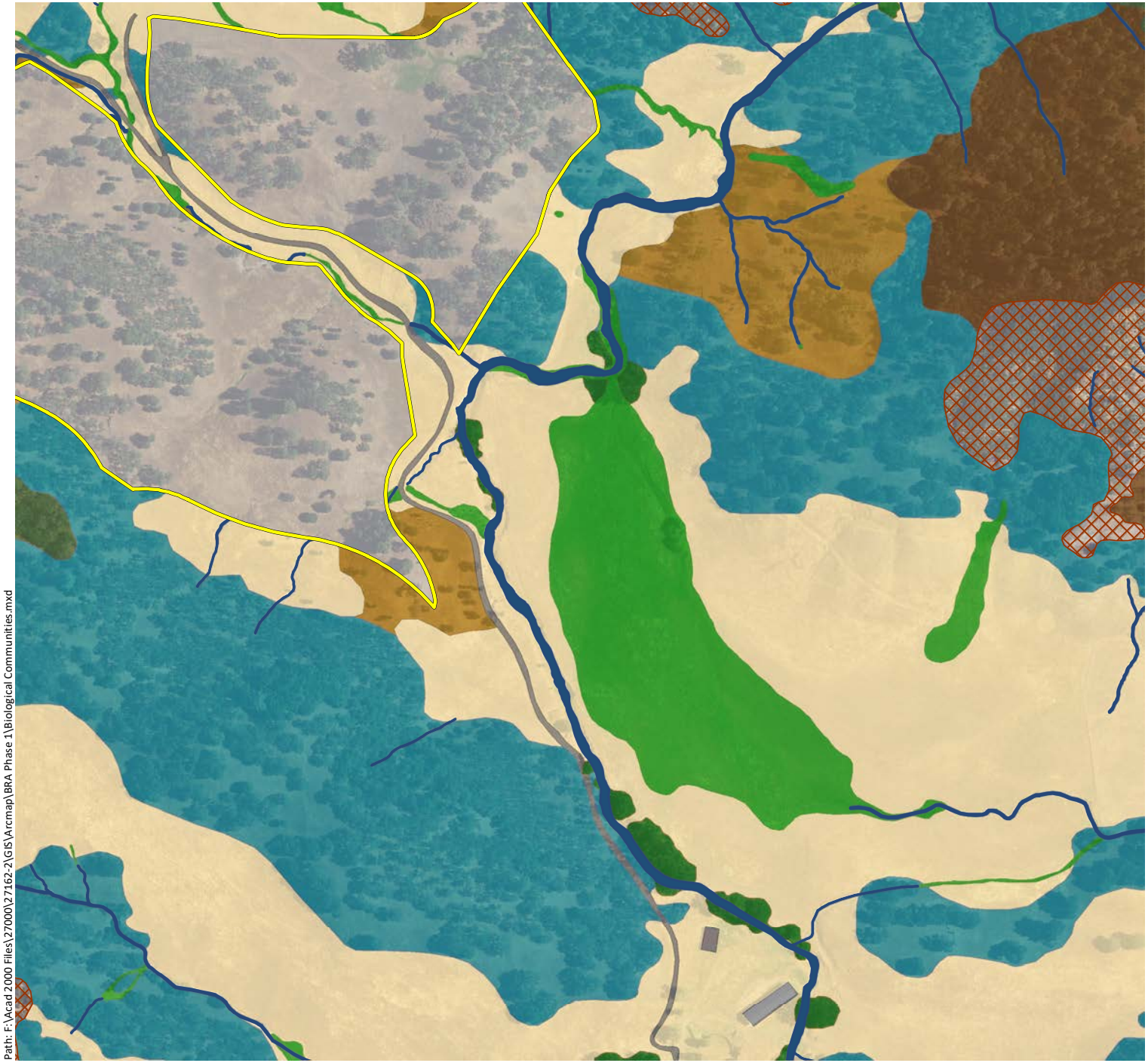
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 17)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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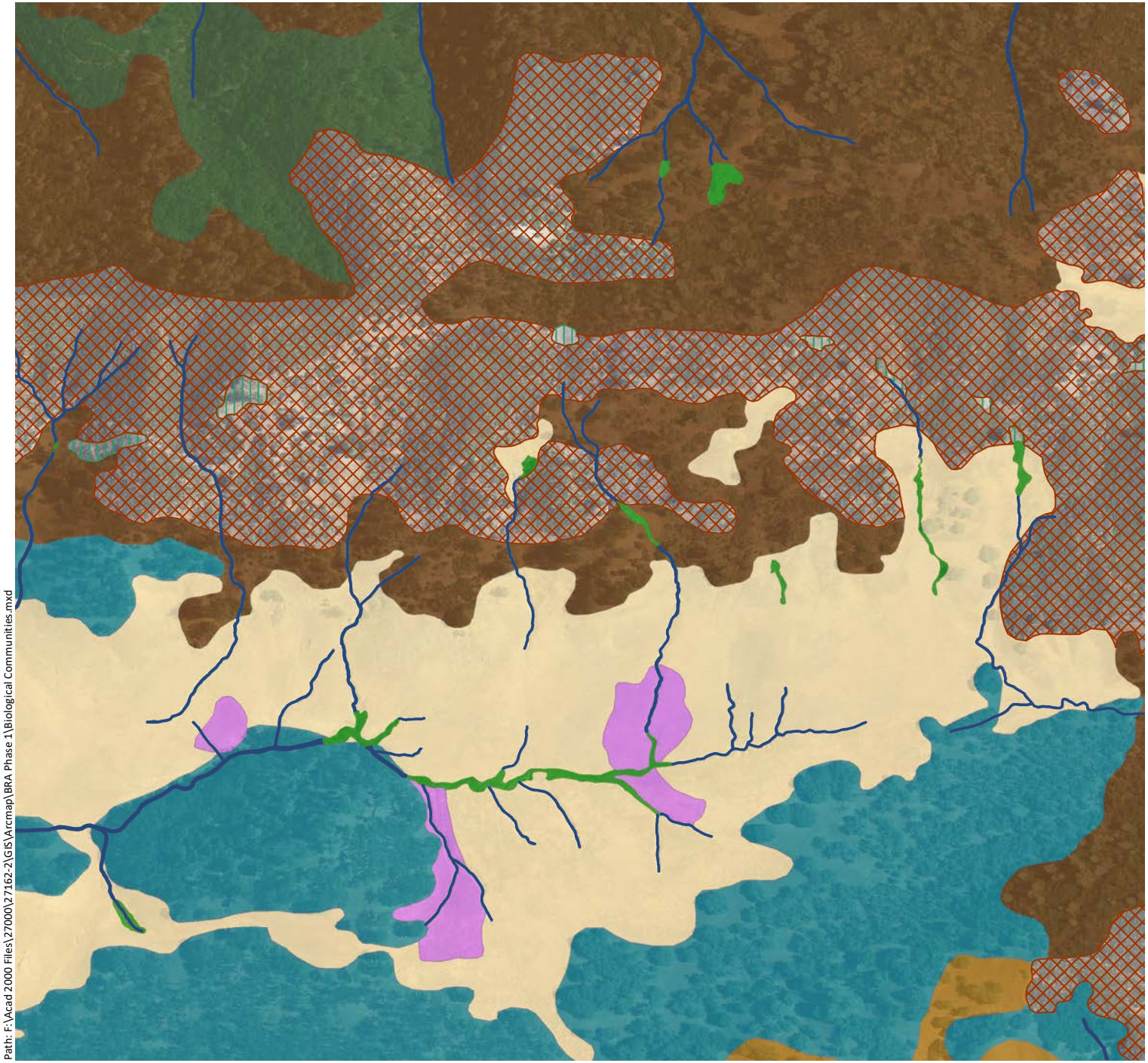
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 18)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 19)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 20)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

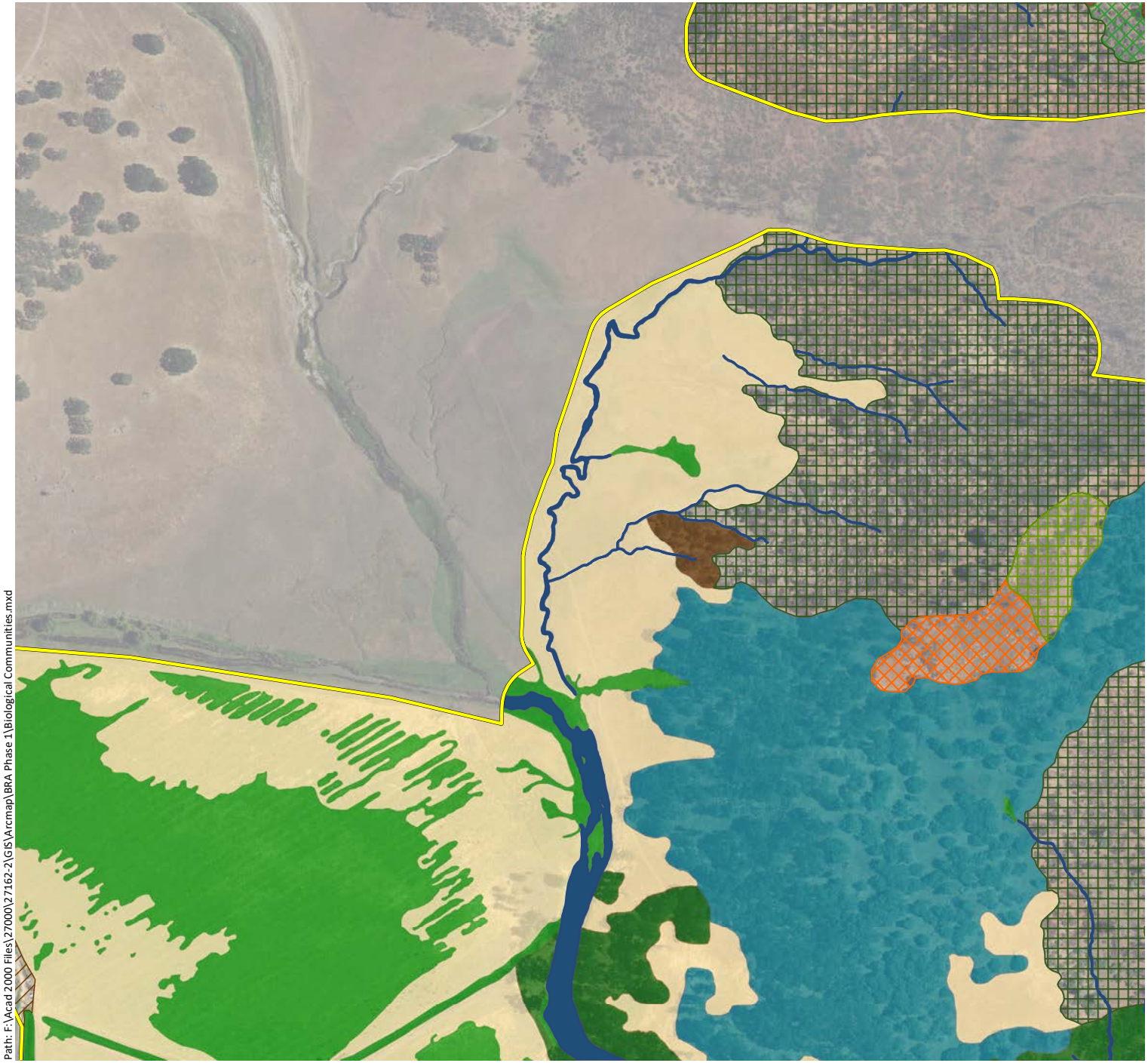
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 21)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

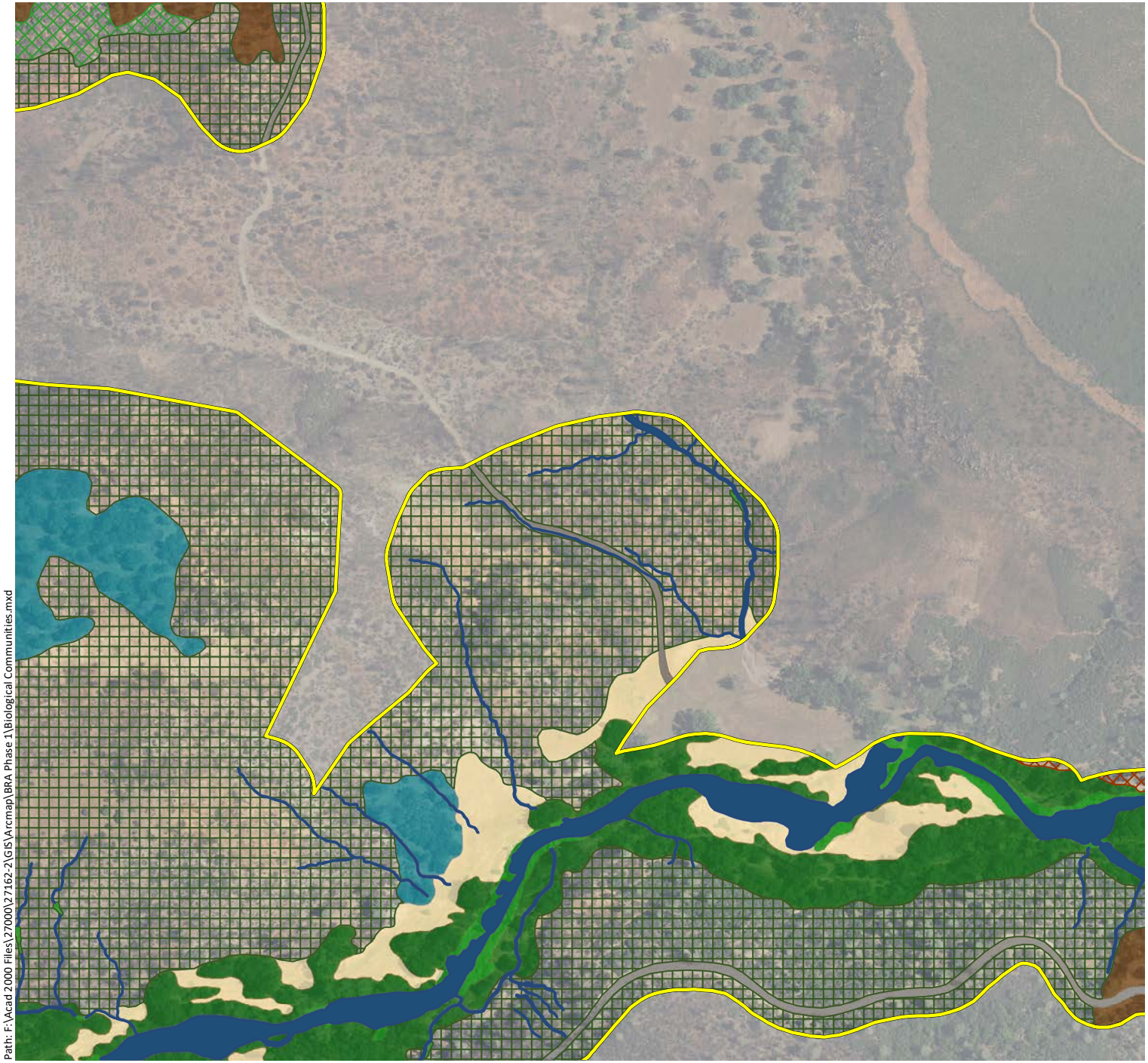
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 22)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

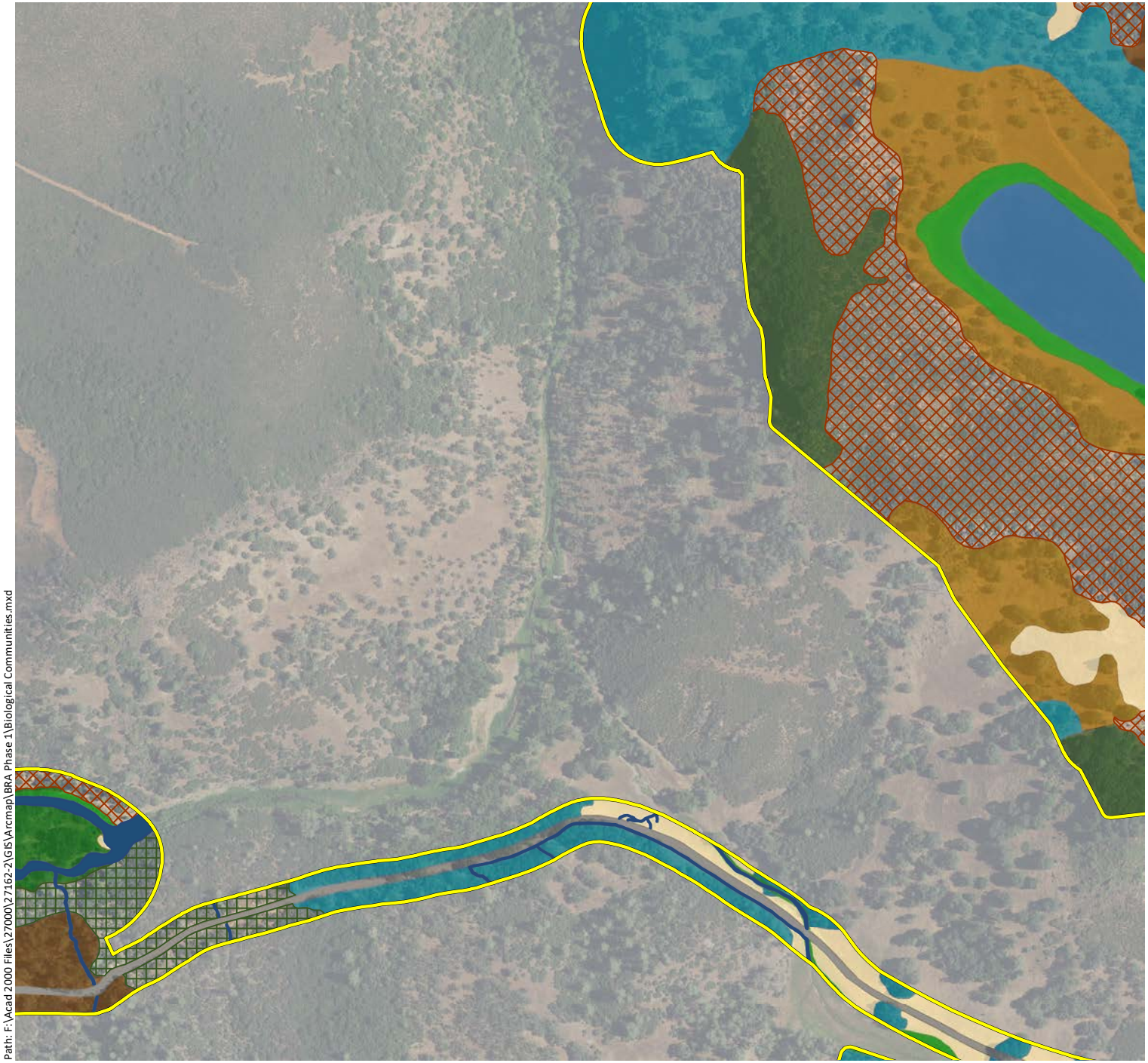
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 23)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

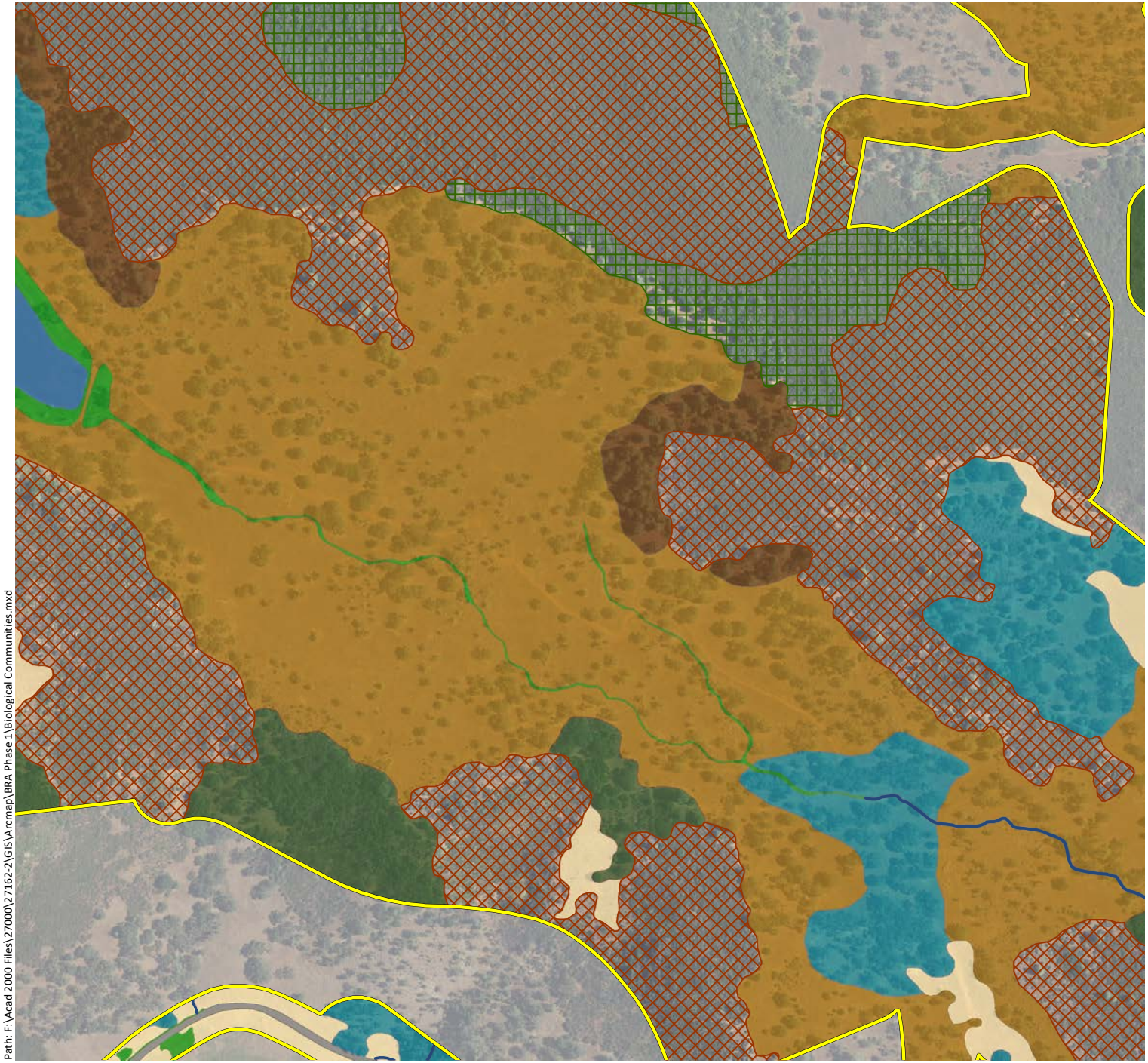
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 24)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

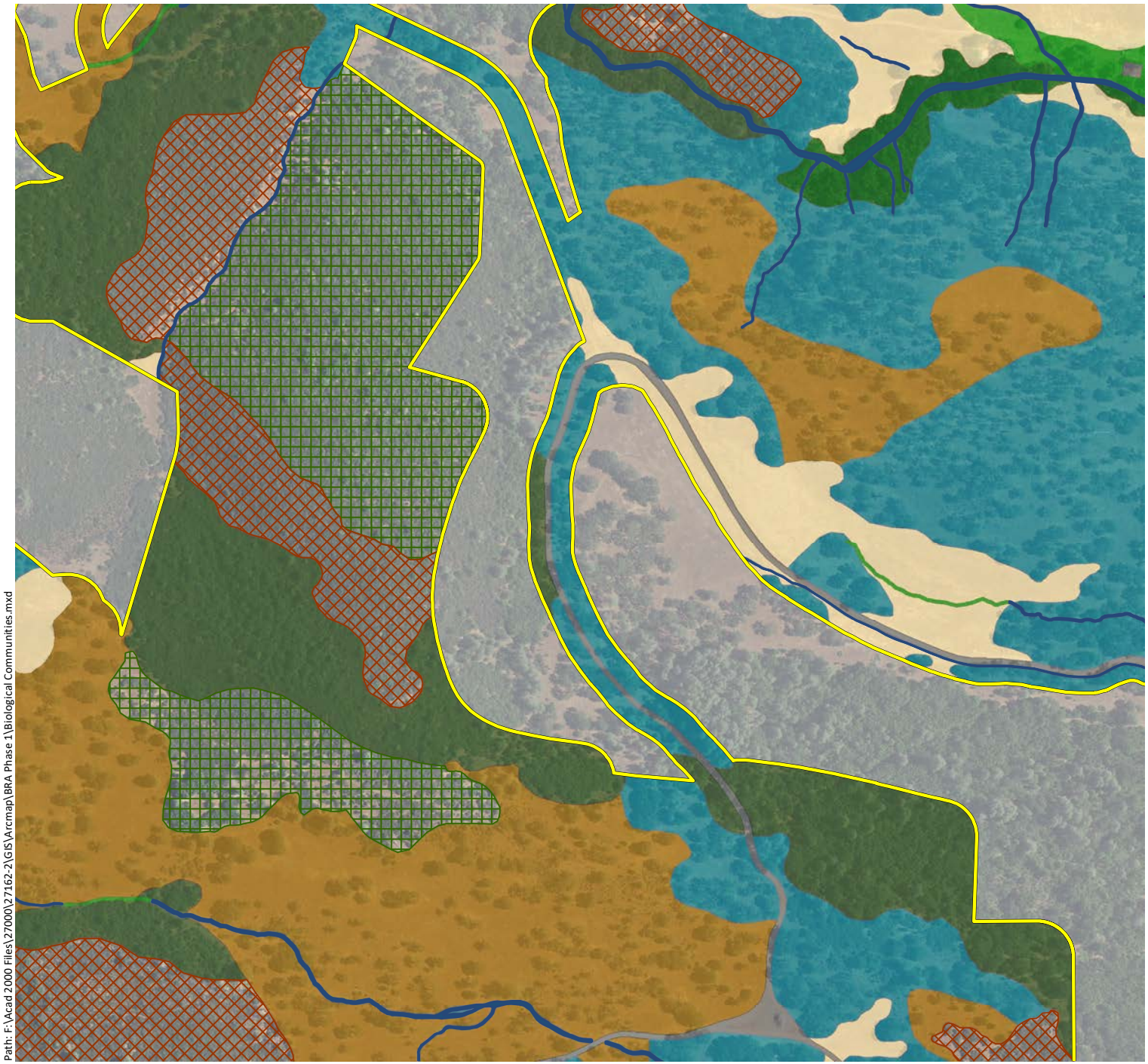
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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 25)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

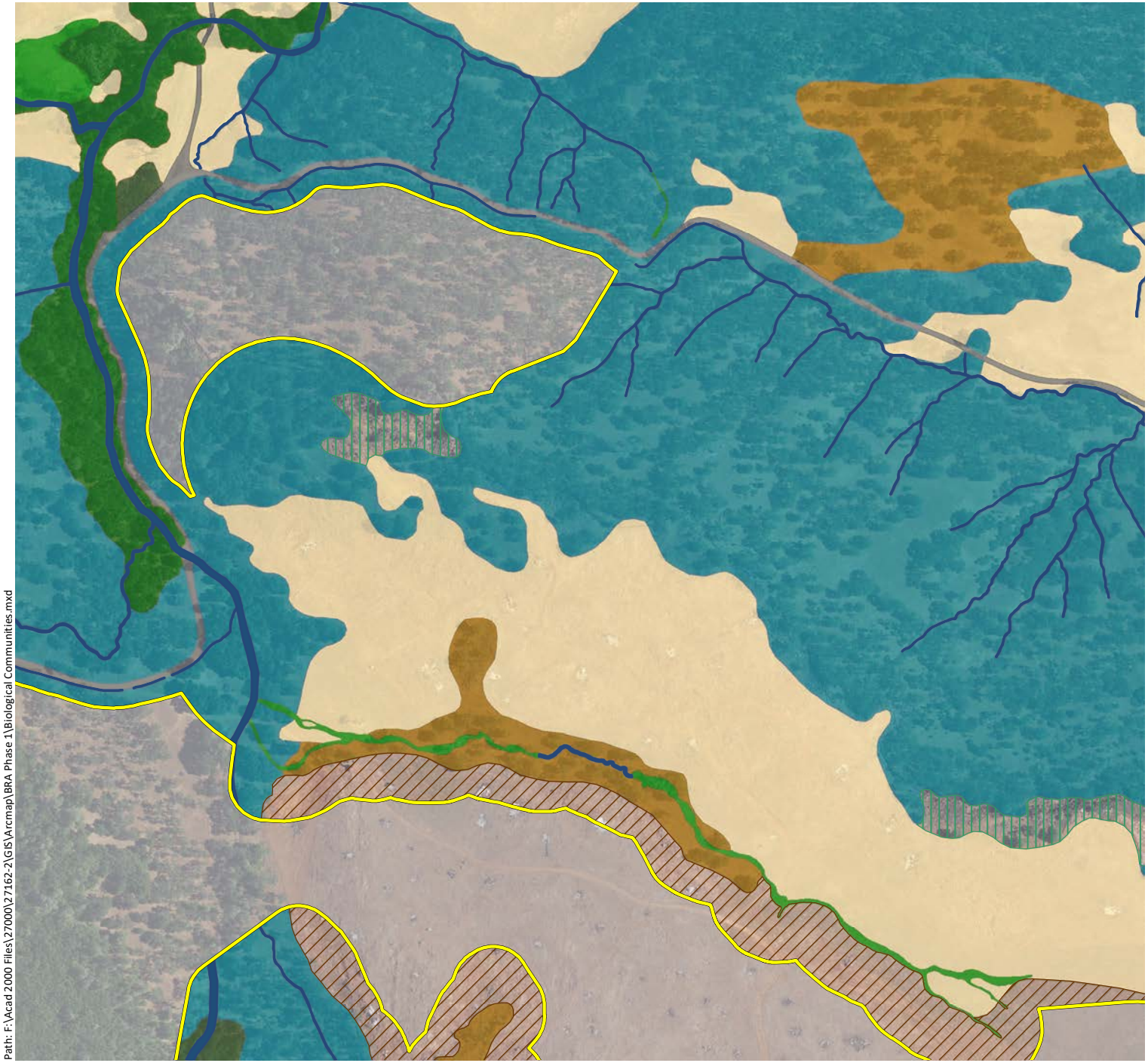
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 26)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

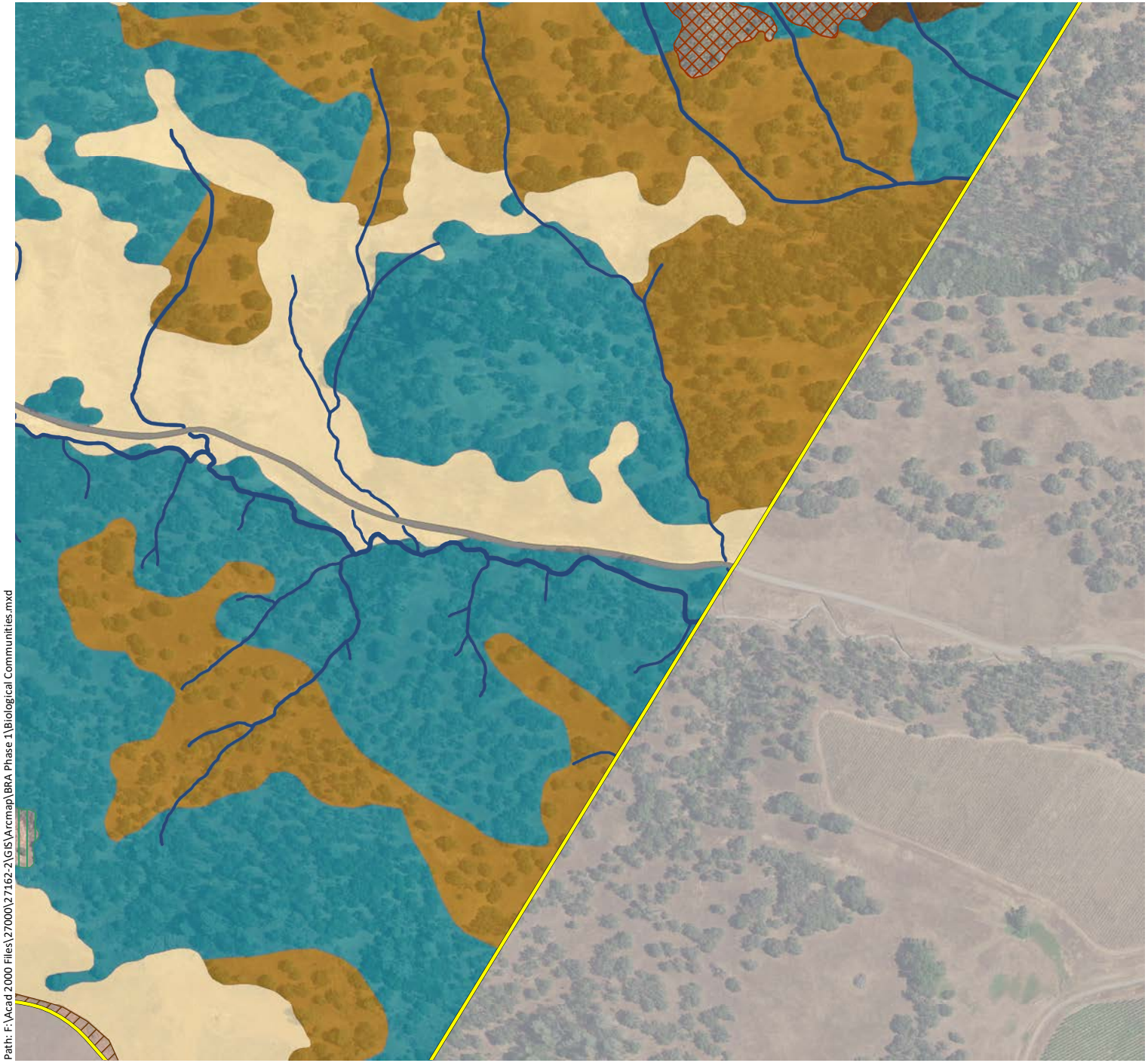
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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 27)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 28)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 29)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 30)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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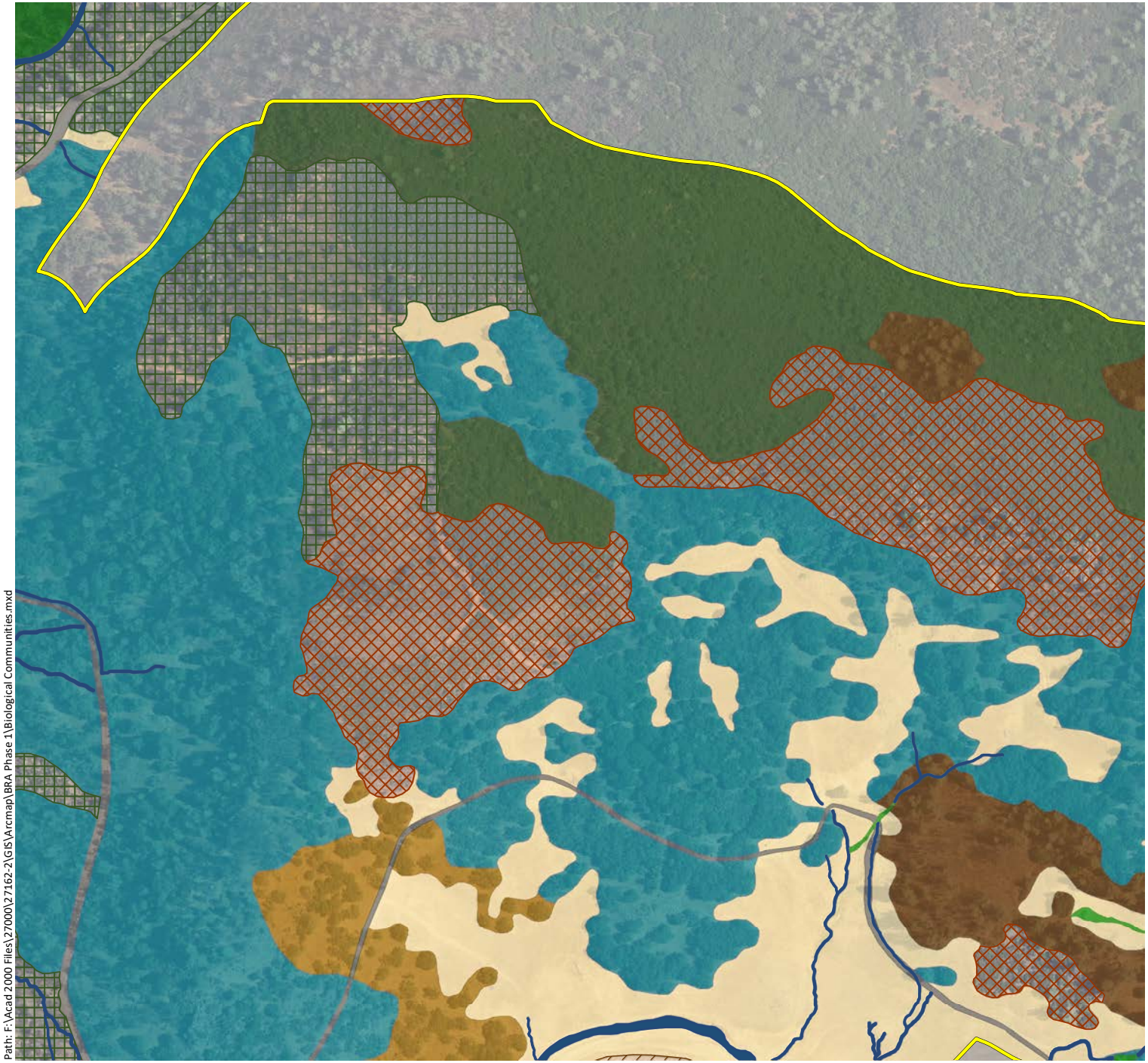
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 31)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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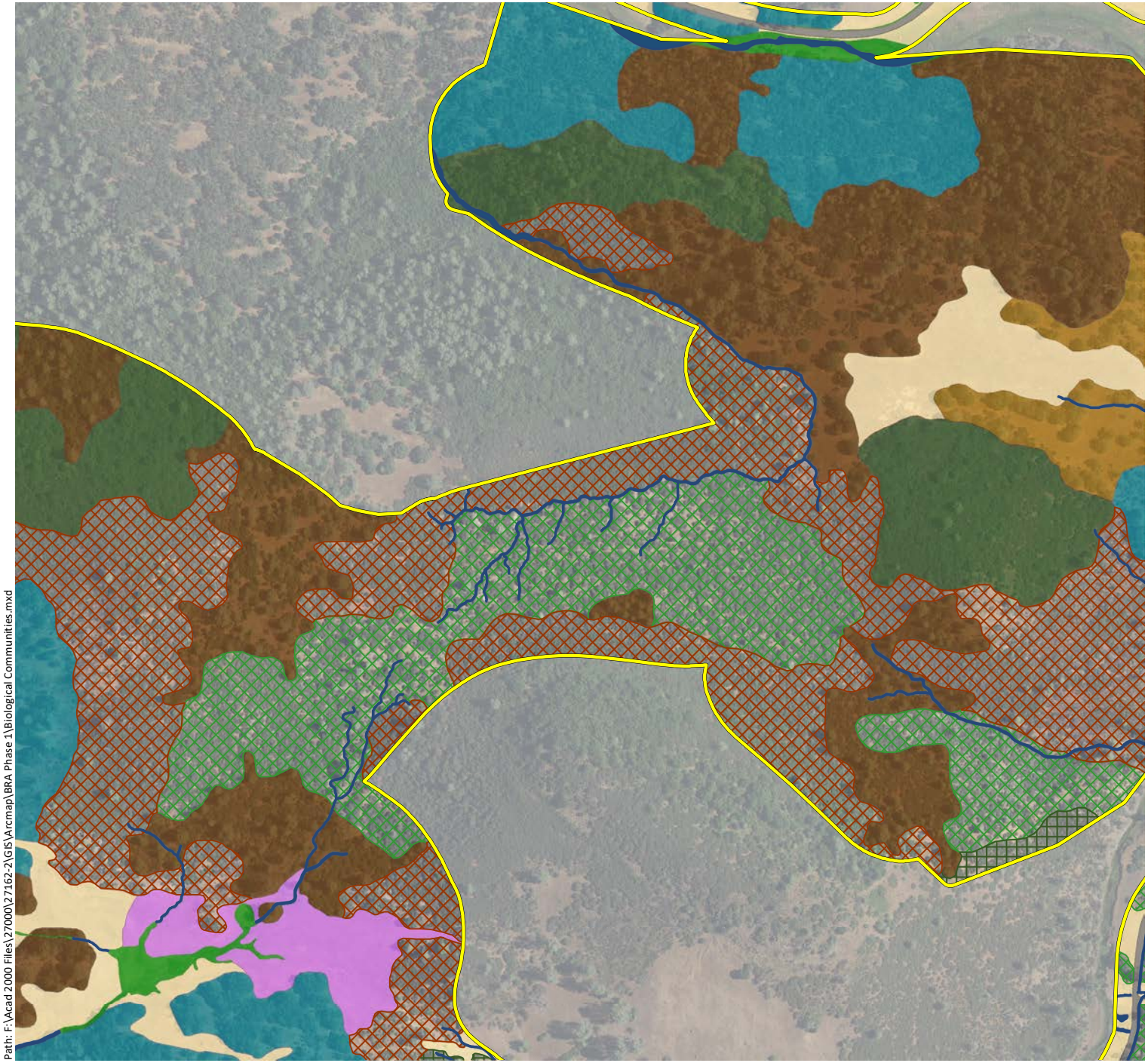
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 32)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

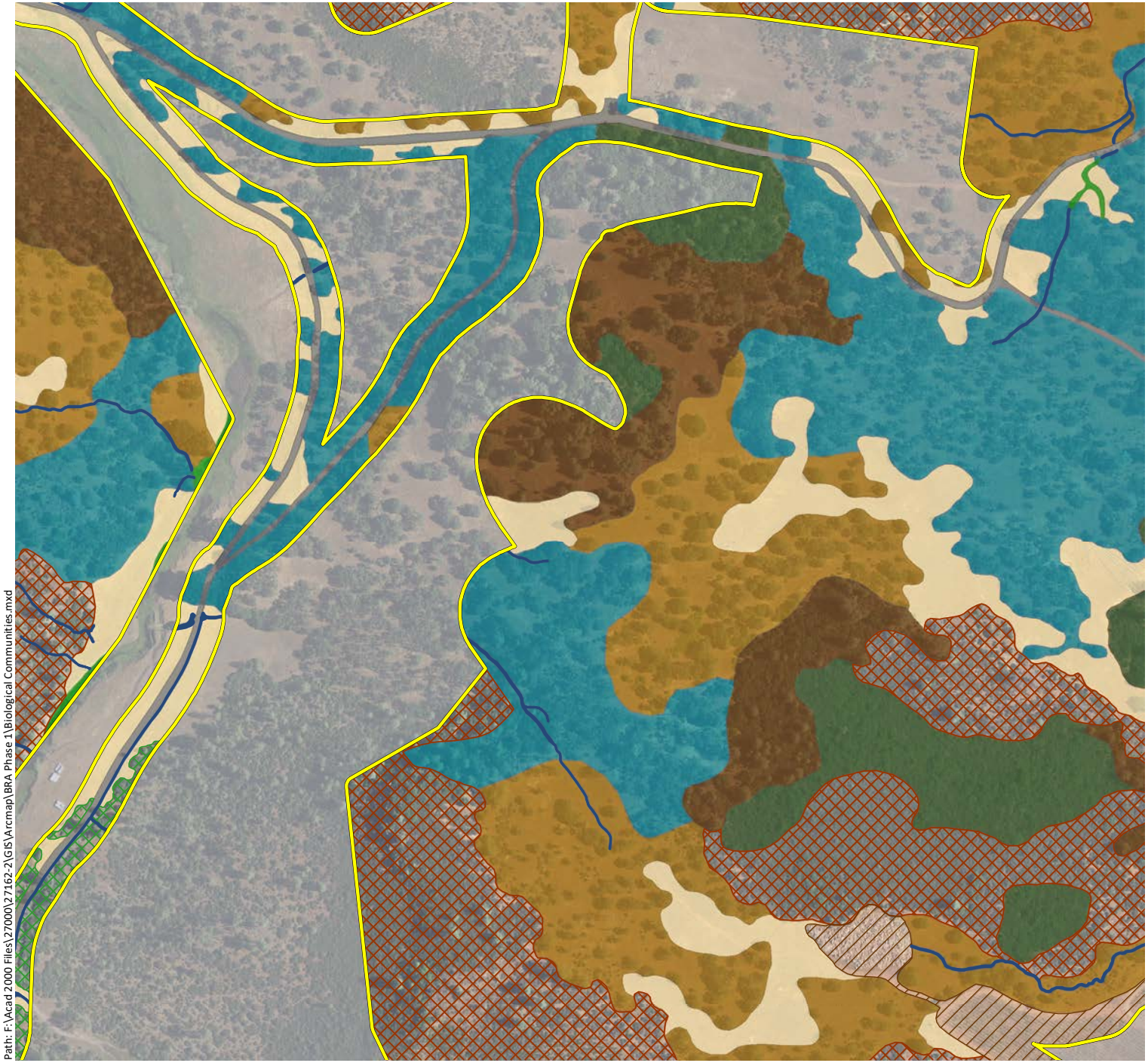
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 33)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
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- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

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- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
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- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

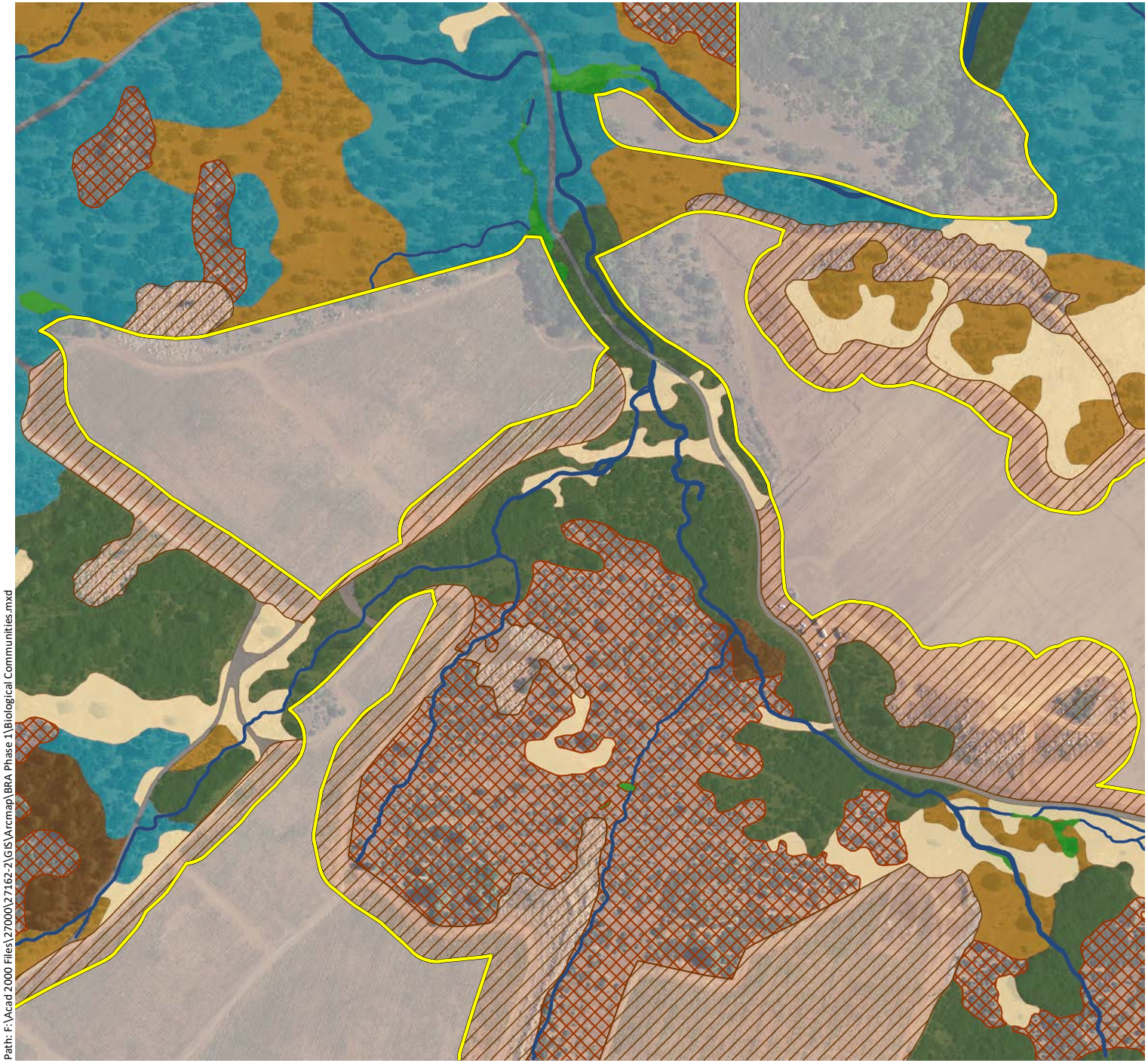
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 34)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

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- Deer Weed Scrub - 4.7 ac.
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- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 35)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
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- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
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- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 36)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

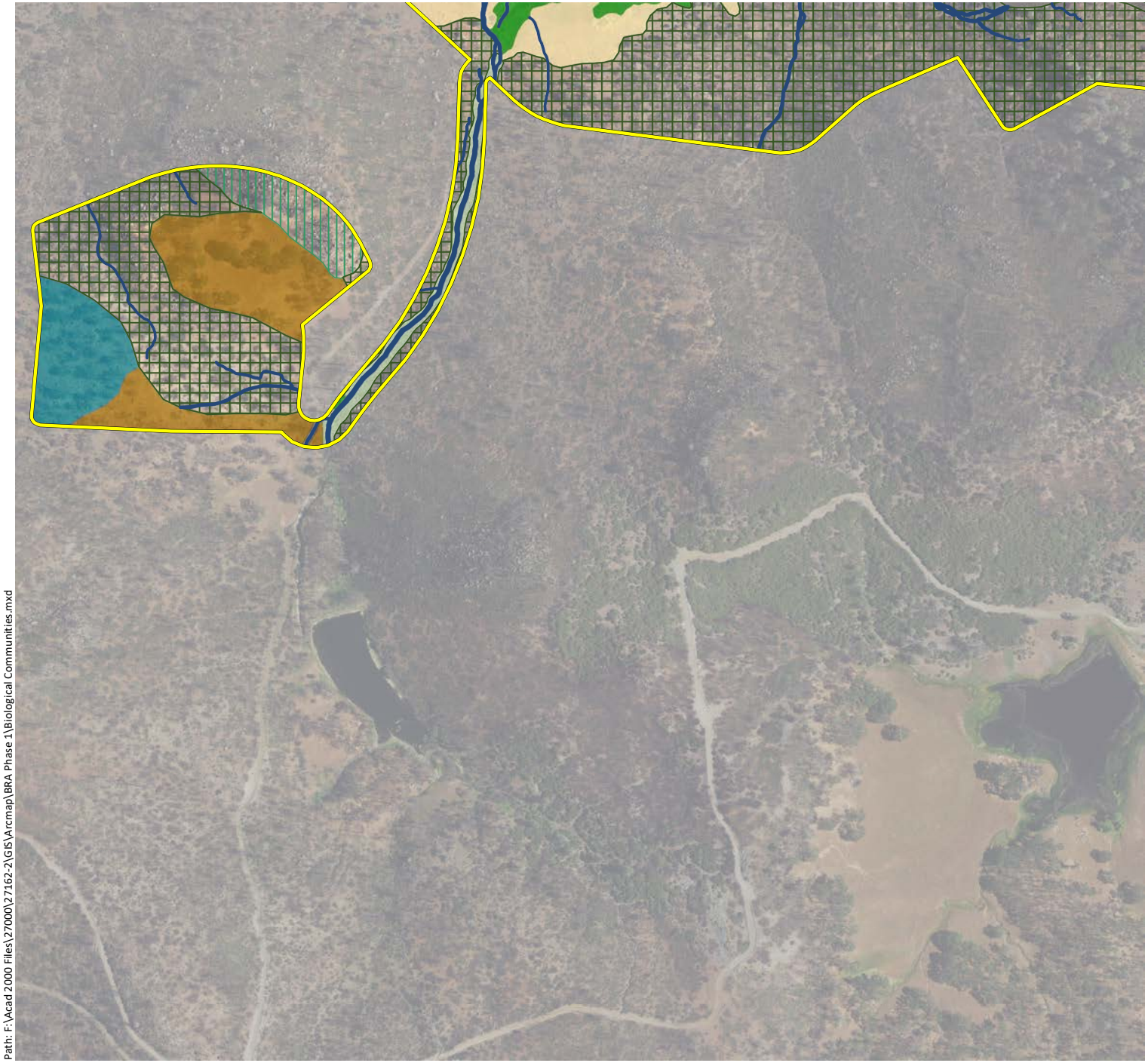
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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 37)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

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- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

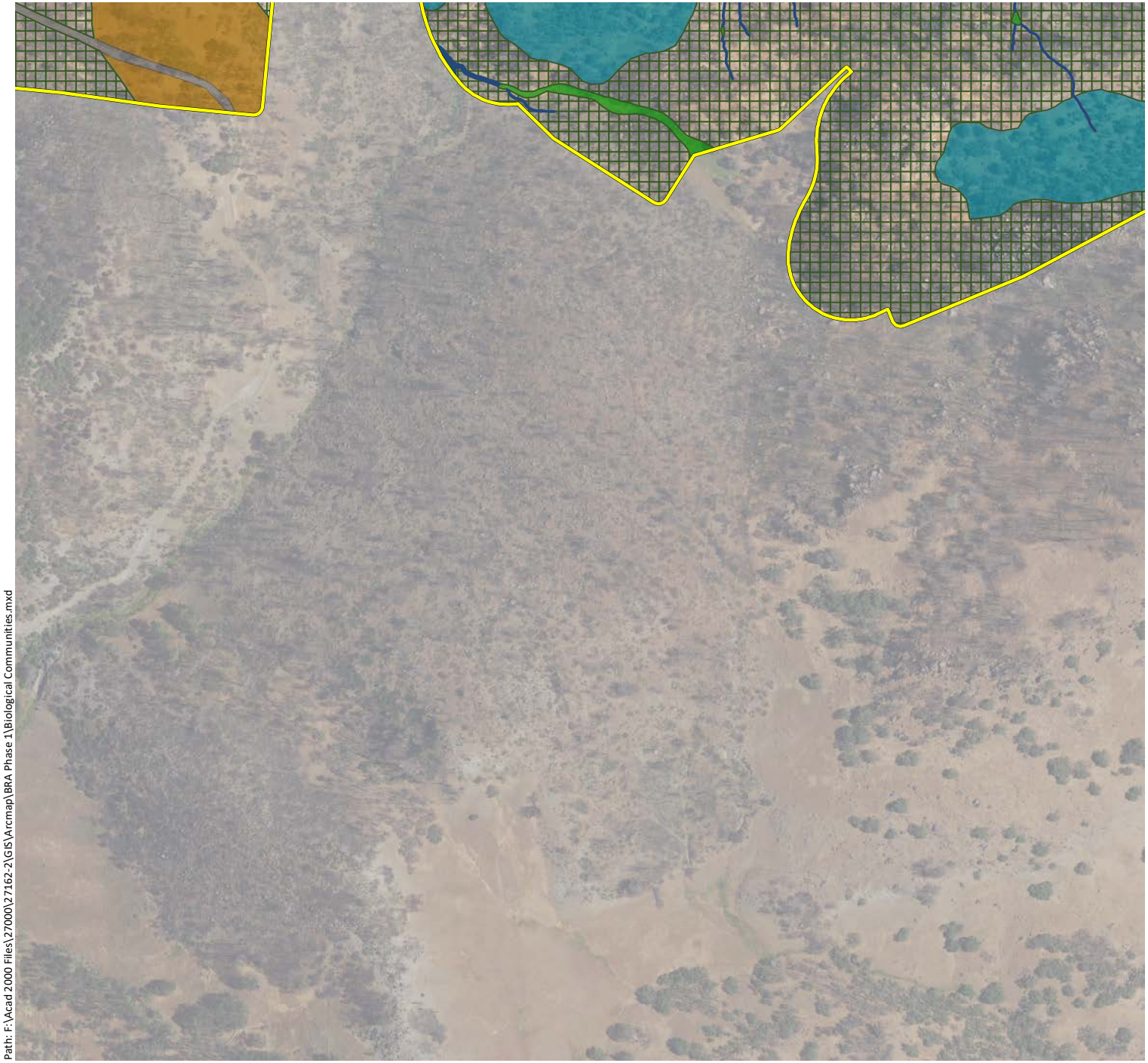
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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 38)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
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- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

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- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 39)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

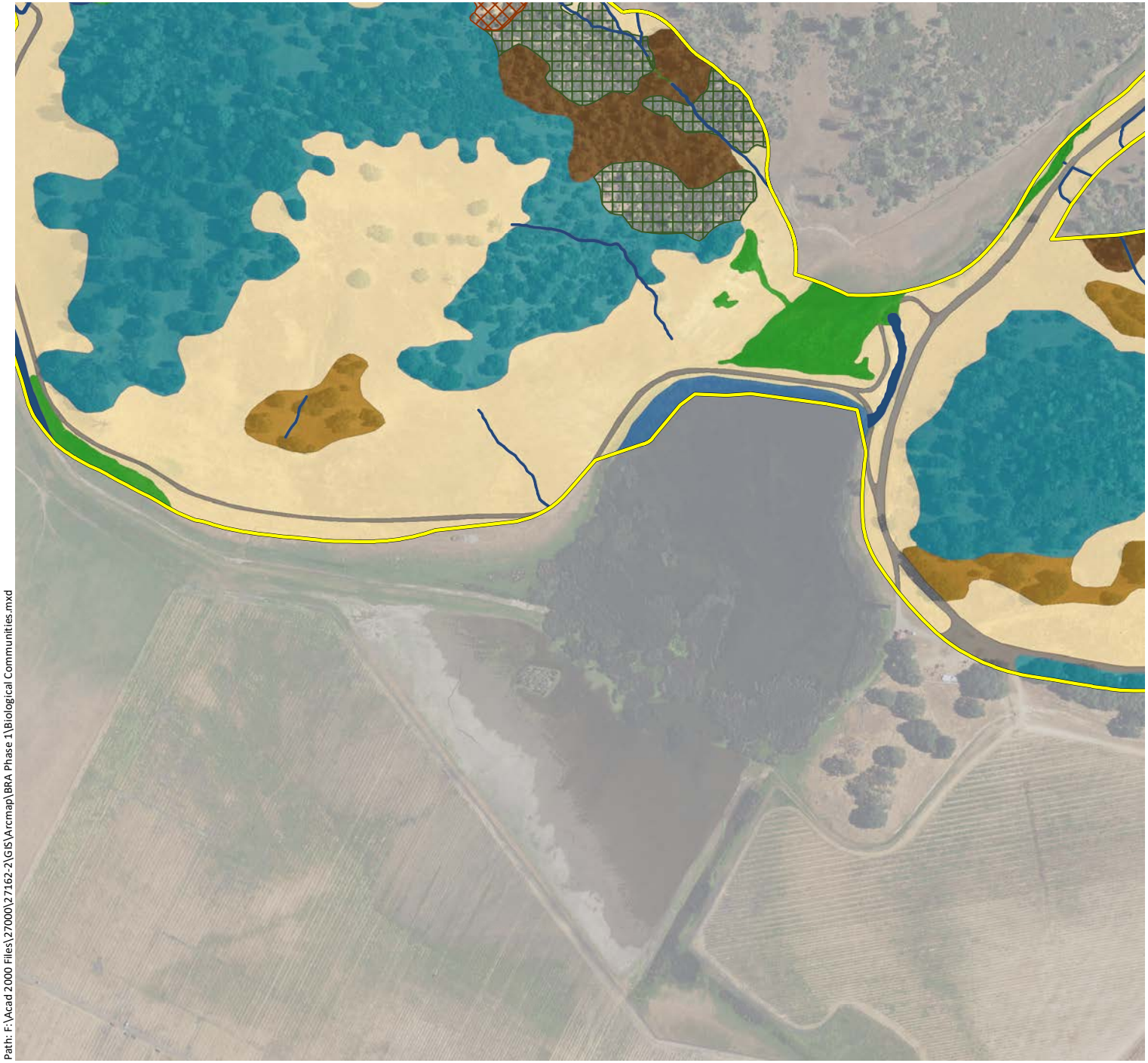
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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 40)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

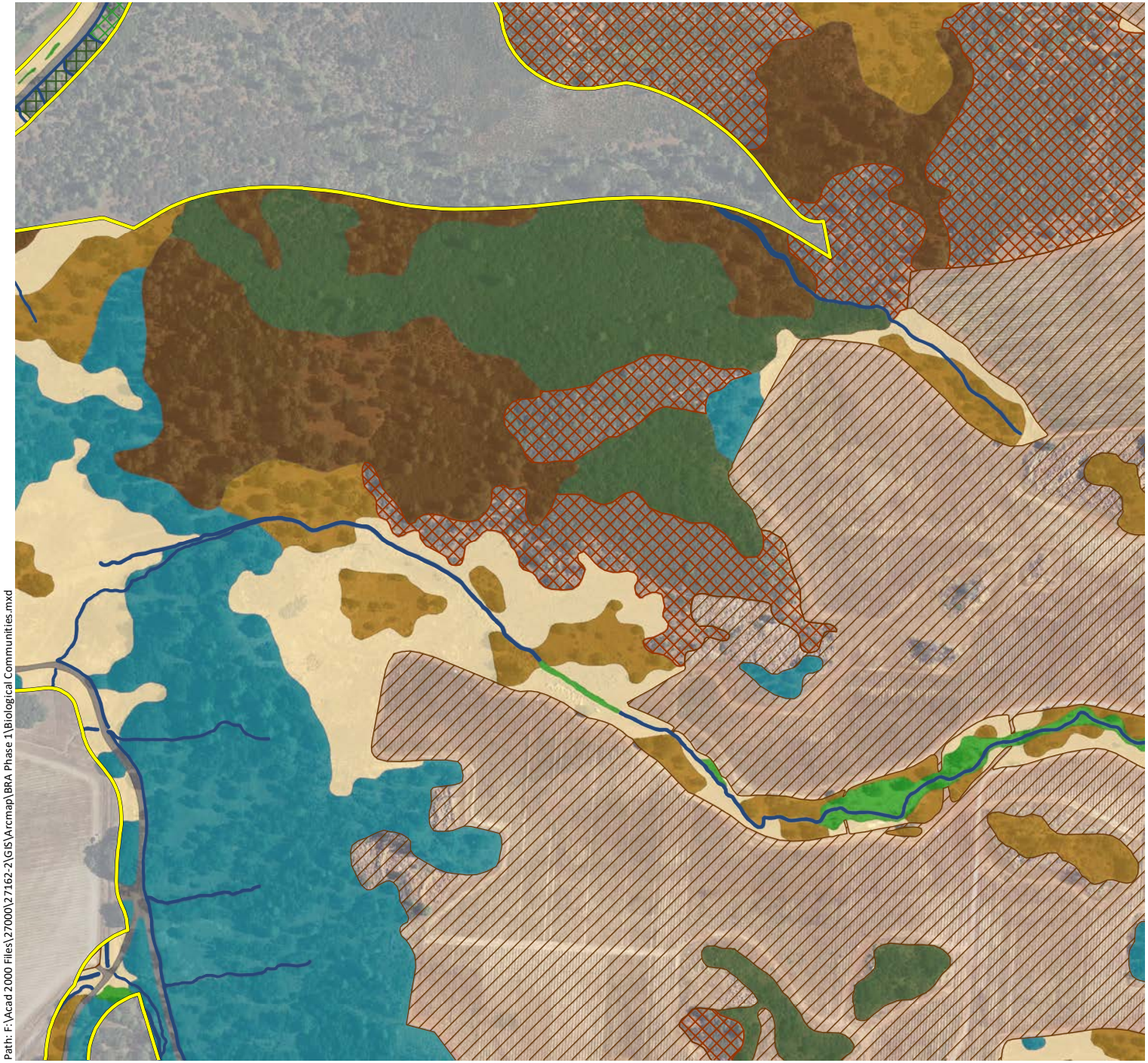
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Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 41)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
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- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area (Mapbook Sheet 42)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
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- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 43)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 44)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
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- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

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- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 45)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

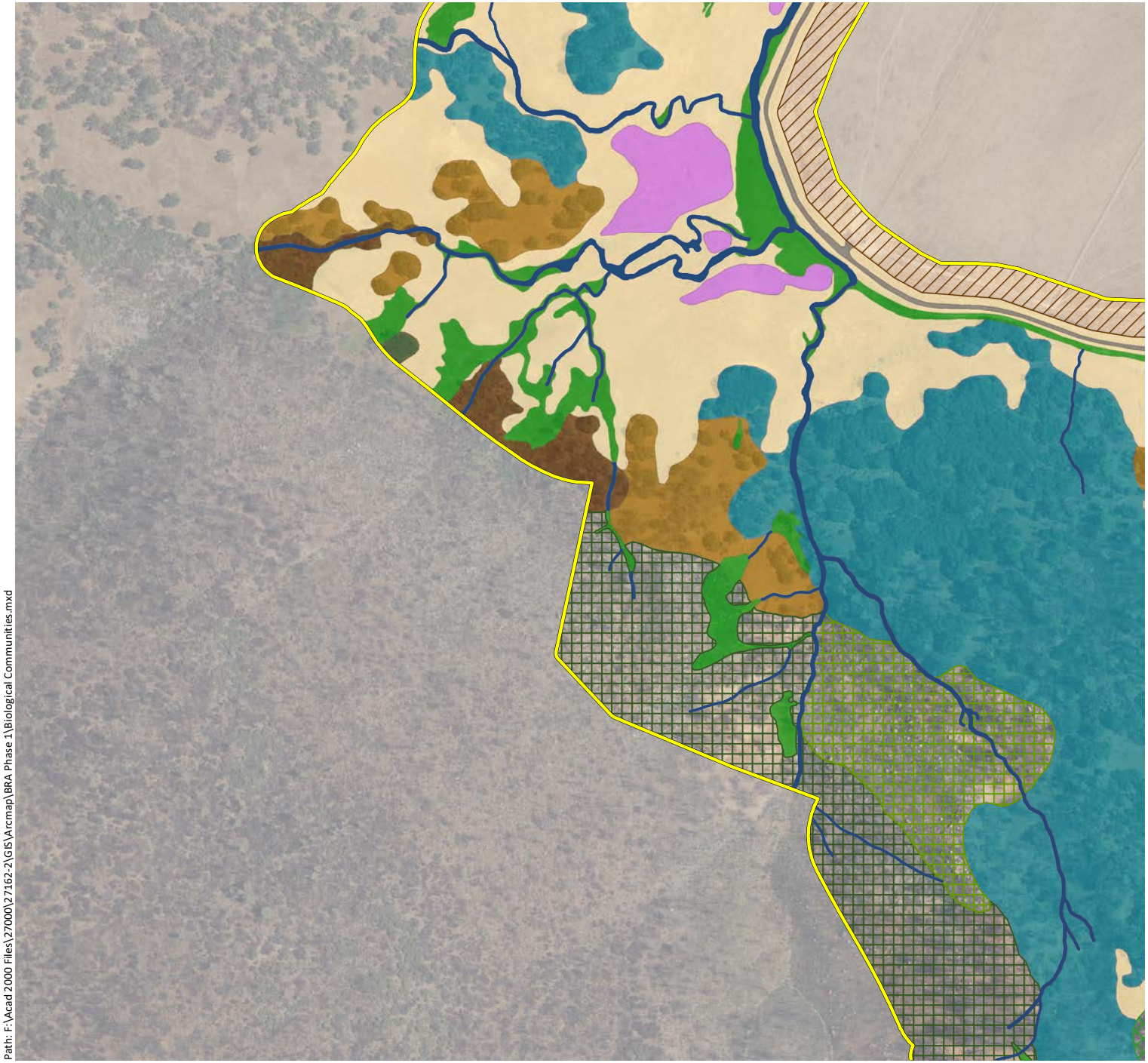
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 46)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

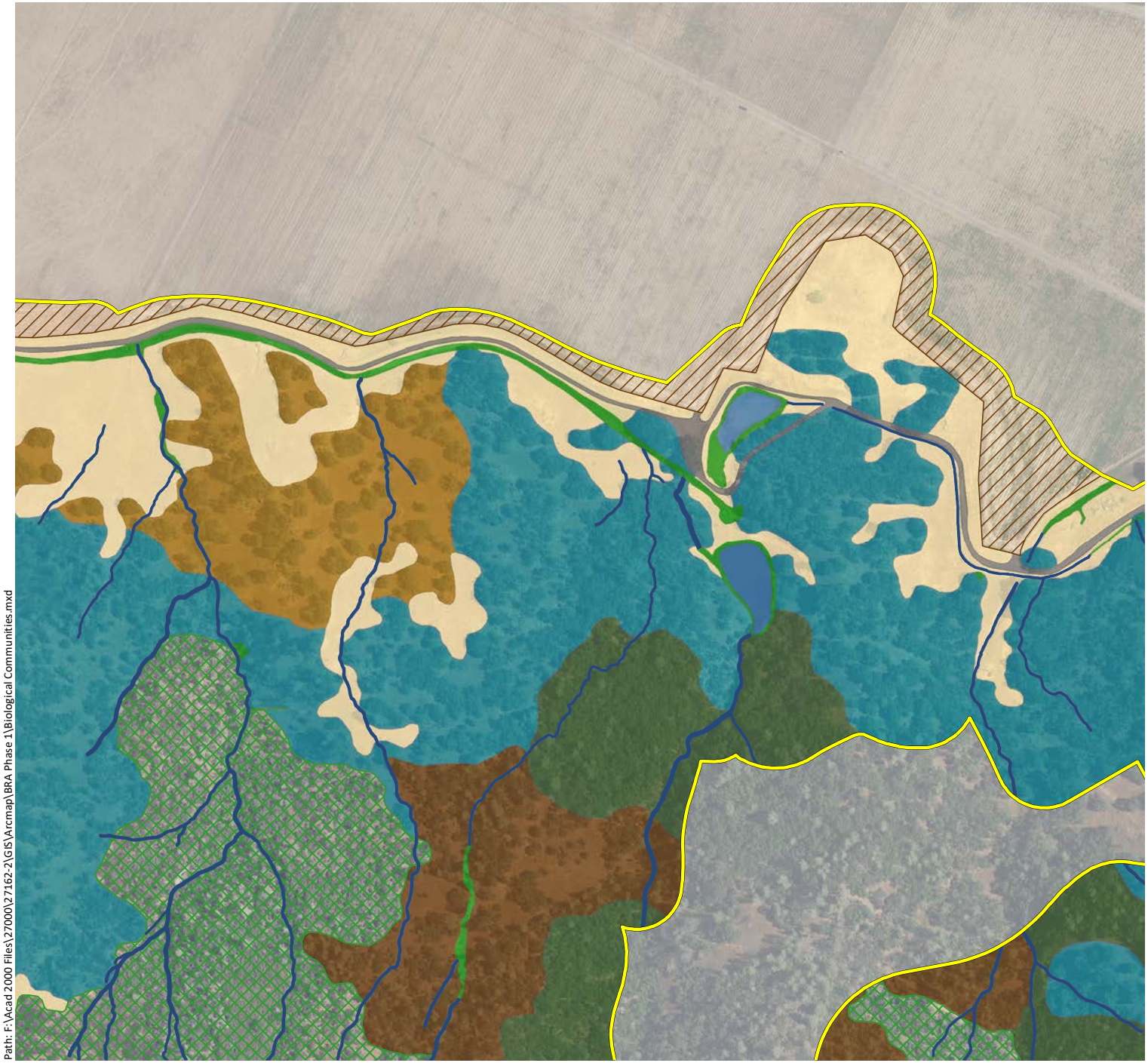
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 47)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

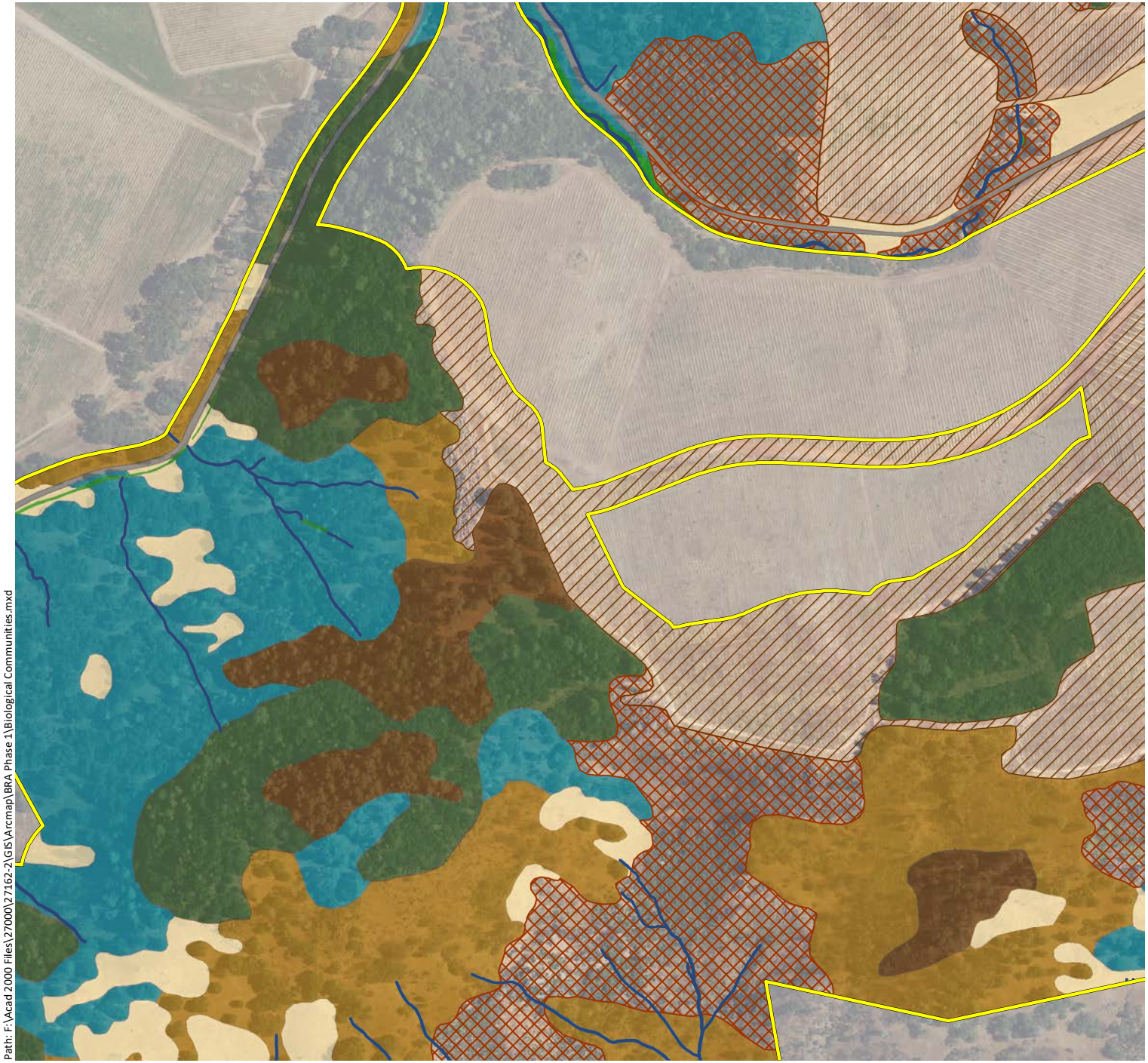
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 48)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 49)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

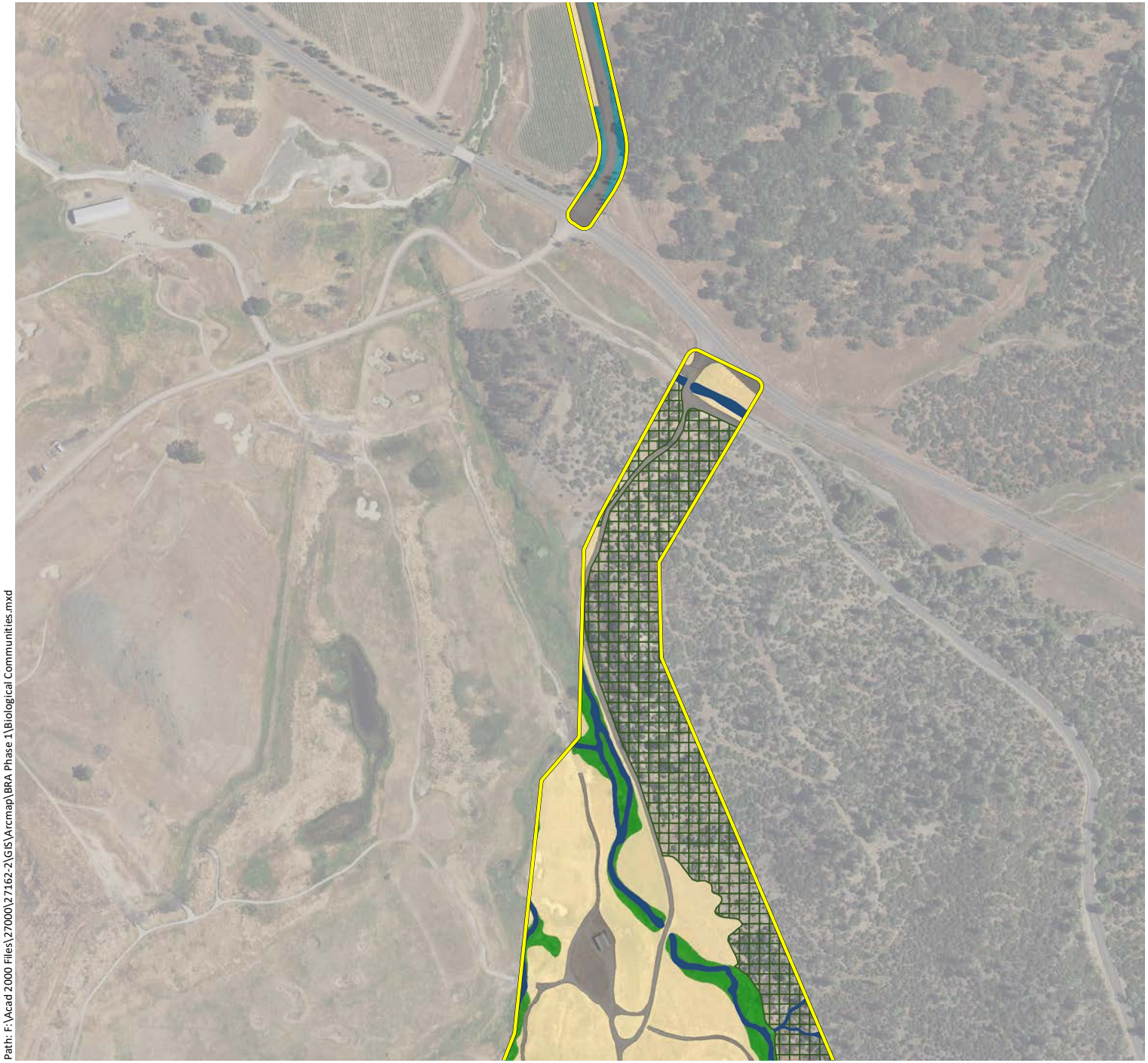
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 50)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 51)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 52)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 53)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

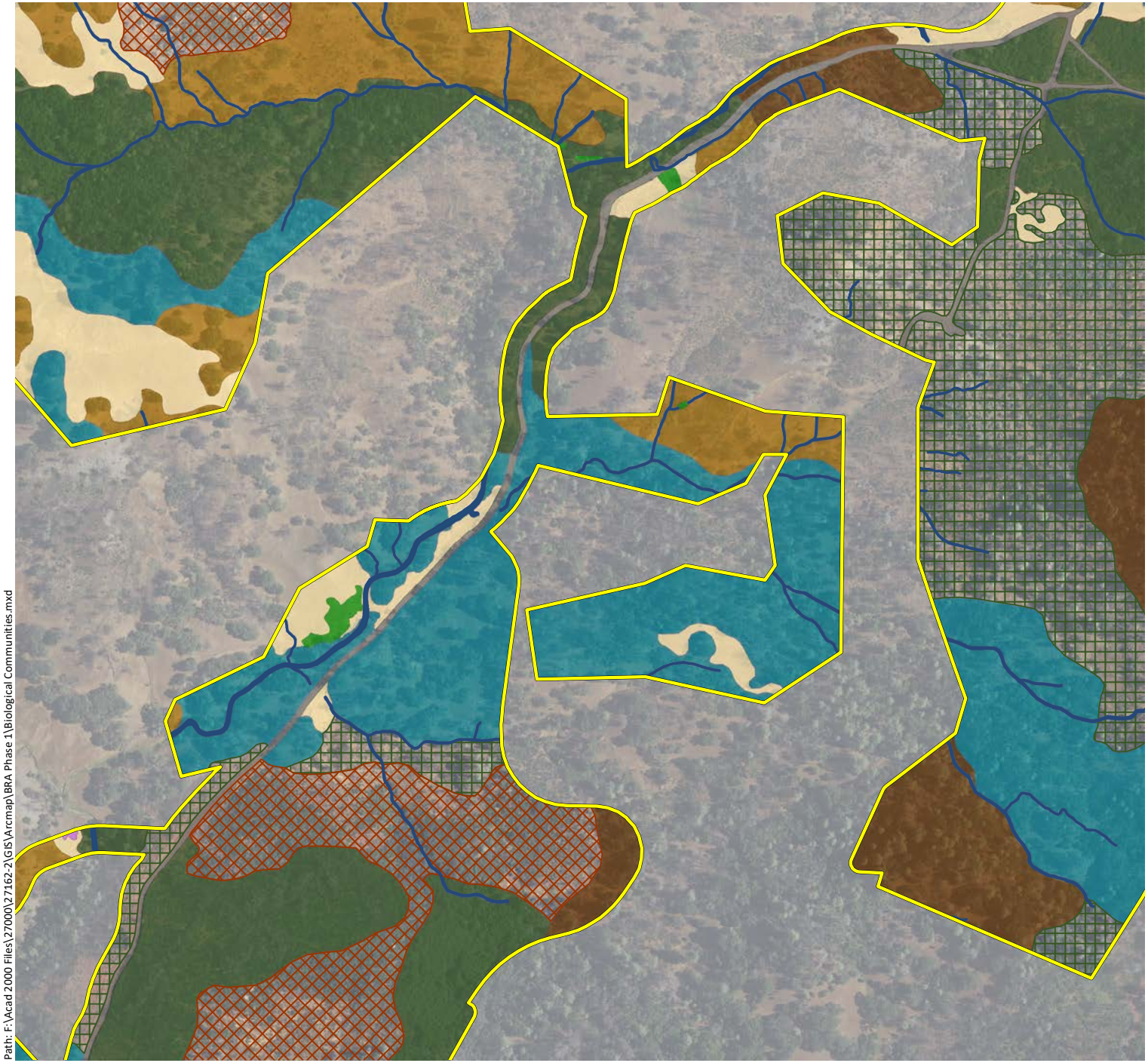
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 54)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 55)
Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 56)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

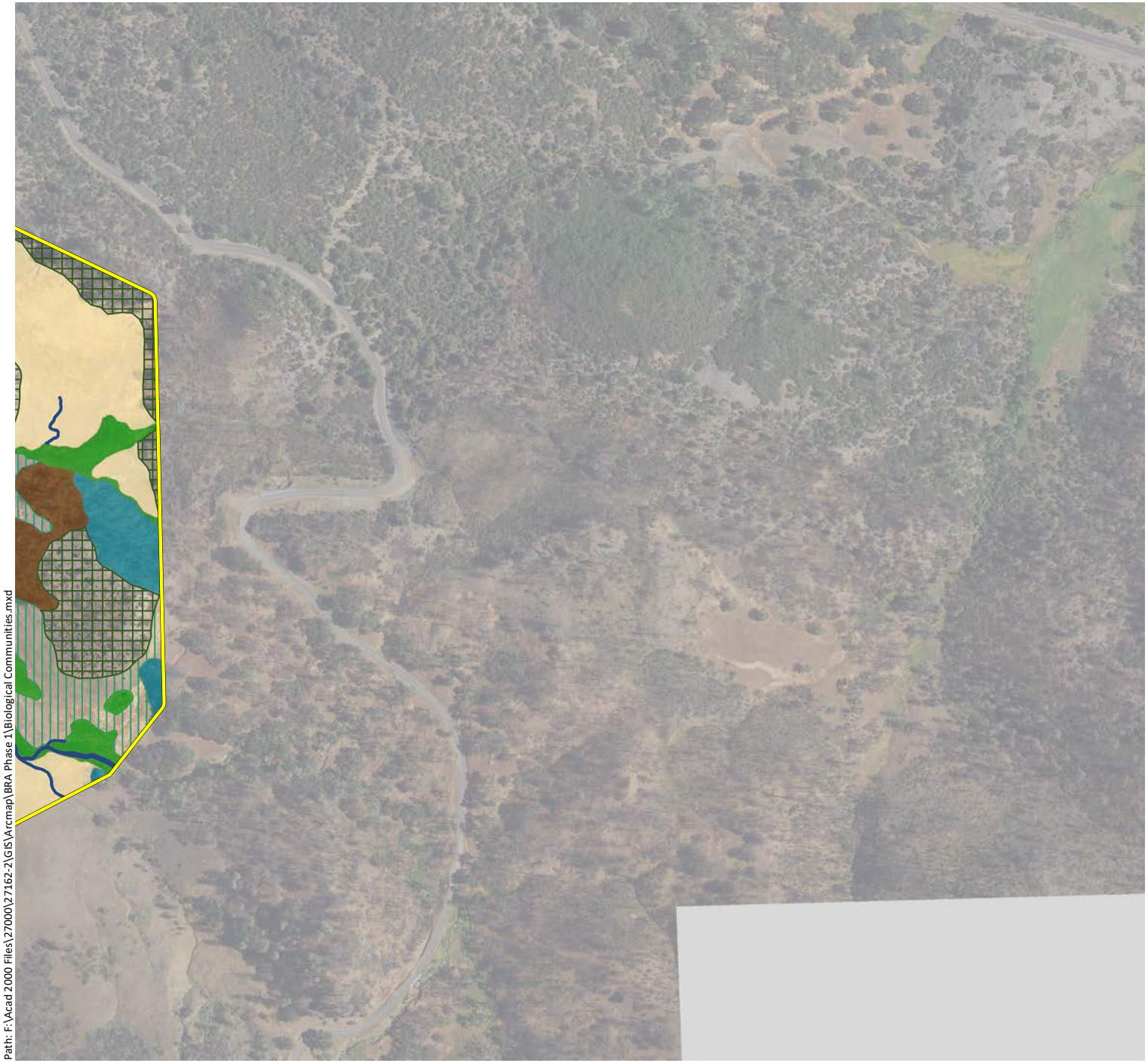
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 57)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 58)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 59)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

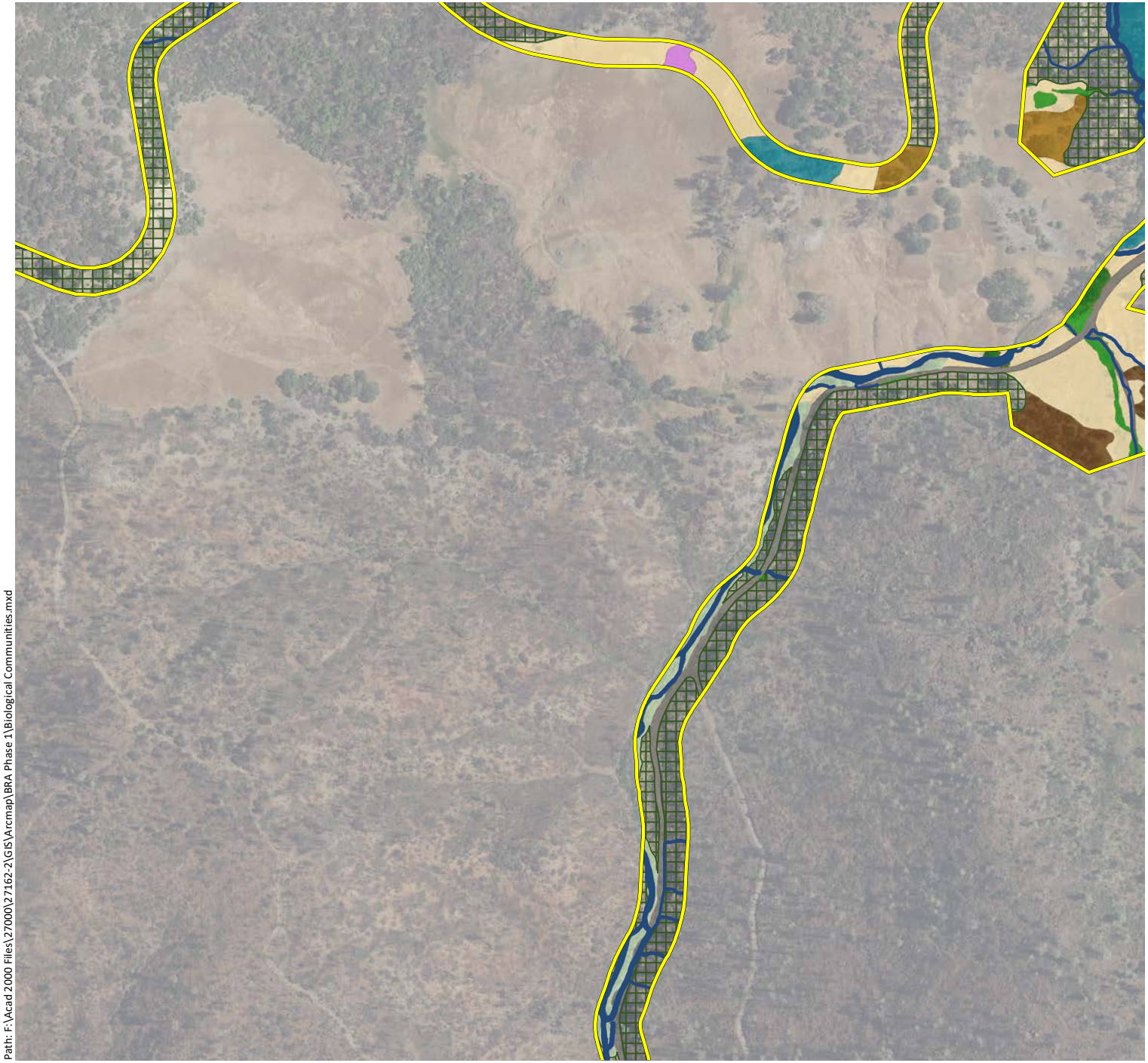
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 60)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 61)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

N

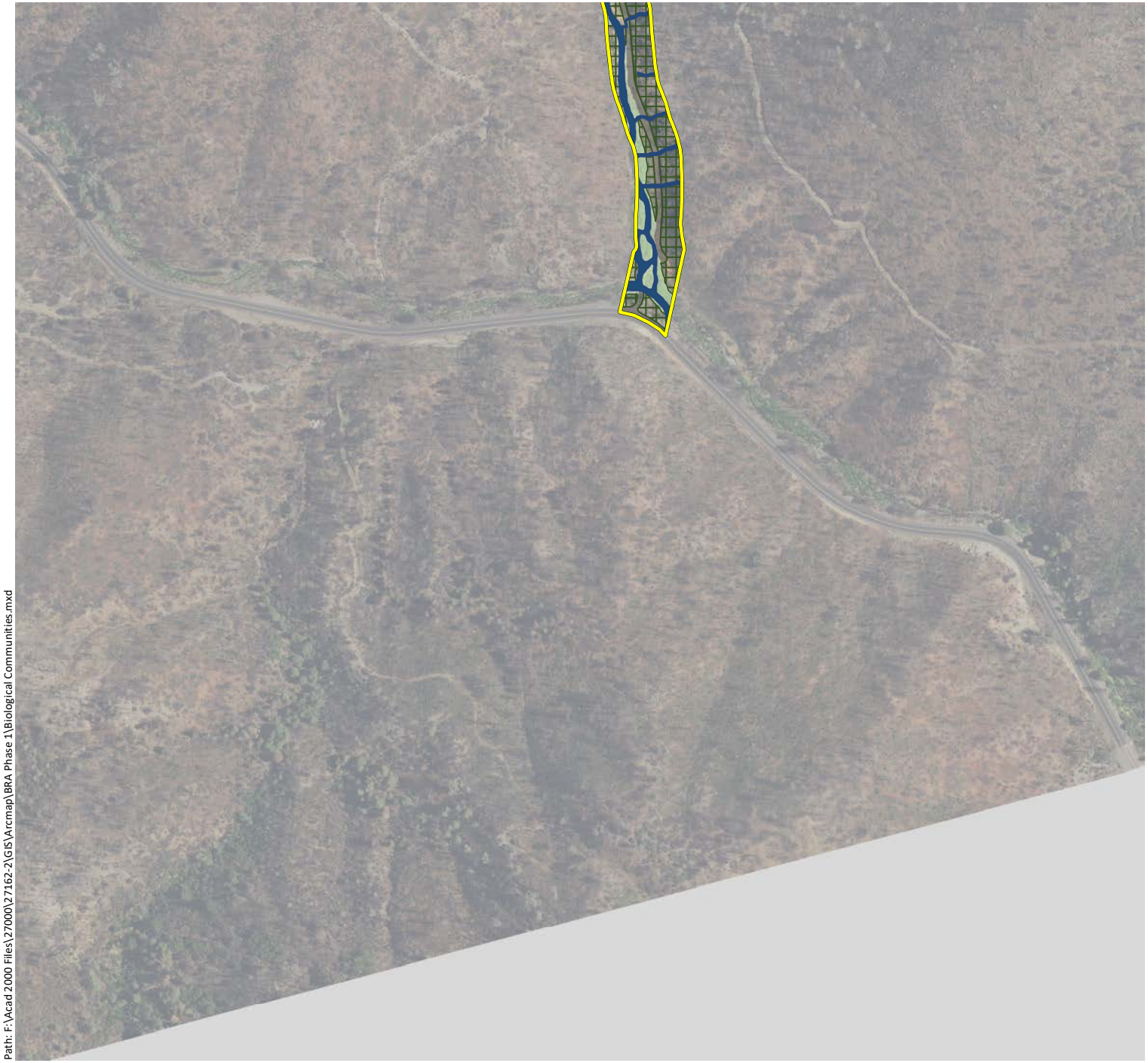
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix A.
Biological Communities Mapped within the Phase 1 Study Area
(Mapbook Sheet 62)
Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Sensitive Communities

- Musk Brush Chaparral - 31.1 ac.
- Blue Oak Savanna - 485.9 ac.
- Blue Oak Woodland - 1,041.1 ac.
- Valley Oak Woodland - 42.7 ac.
- Interior Live Oak Woodland - 318.6 ac.
- White Alder Groves - 0.6 ac.
- Brewer Willow Thickets - 2.3 ac.
- Purple Needlegrass Grassland - 10.9 ac.
- Emergent Wetlands - 99.3 ac.
- Ponds and Reservoirs - 32.0 ac.
- Streams - 51.4 ac.

Non-Sensitive Communities

- Foothill Pine Woodland - 350.5 ac.
- Deer Weed Scrub - 4.7 ac.
- Chamise Chaparral - 541.3 ac.
- Whiteleaf Manzanita Chaparral - 81.0 ac.
- California Yerba Santa Scrub - 7.7 ac.
- Scrub Oak Chaparral - 40.2 ac.
- Leather Oak Chaparral - 316.3 ac.
- Non-native Annual Grasslands - 910.5 ac.
- Rock Outcrop - 15.2 ac.
- Agriculture - 510.9 ac.
- Developed - 82.9 ac.

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Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Biological Communities.mxd

Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 1/8/2020

APPENDIX B

AQUATIC RESOURCES AND RIPARIAN HABITAT MAPPED WITHIN THE PHASE 1 STUDY AREA

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 1)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Riparian Woodland - 42.32 ac.

Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 2)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 3)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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ENVIRONMENTAL CONSULTANTS

Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 4)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 5)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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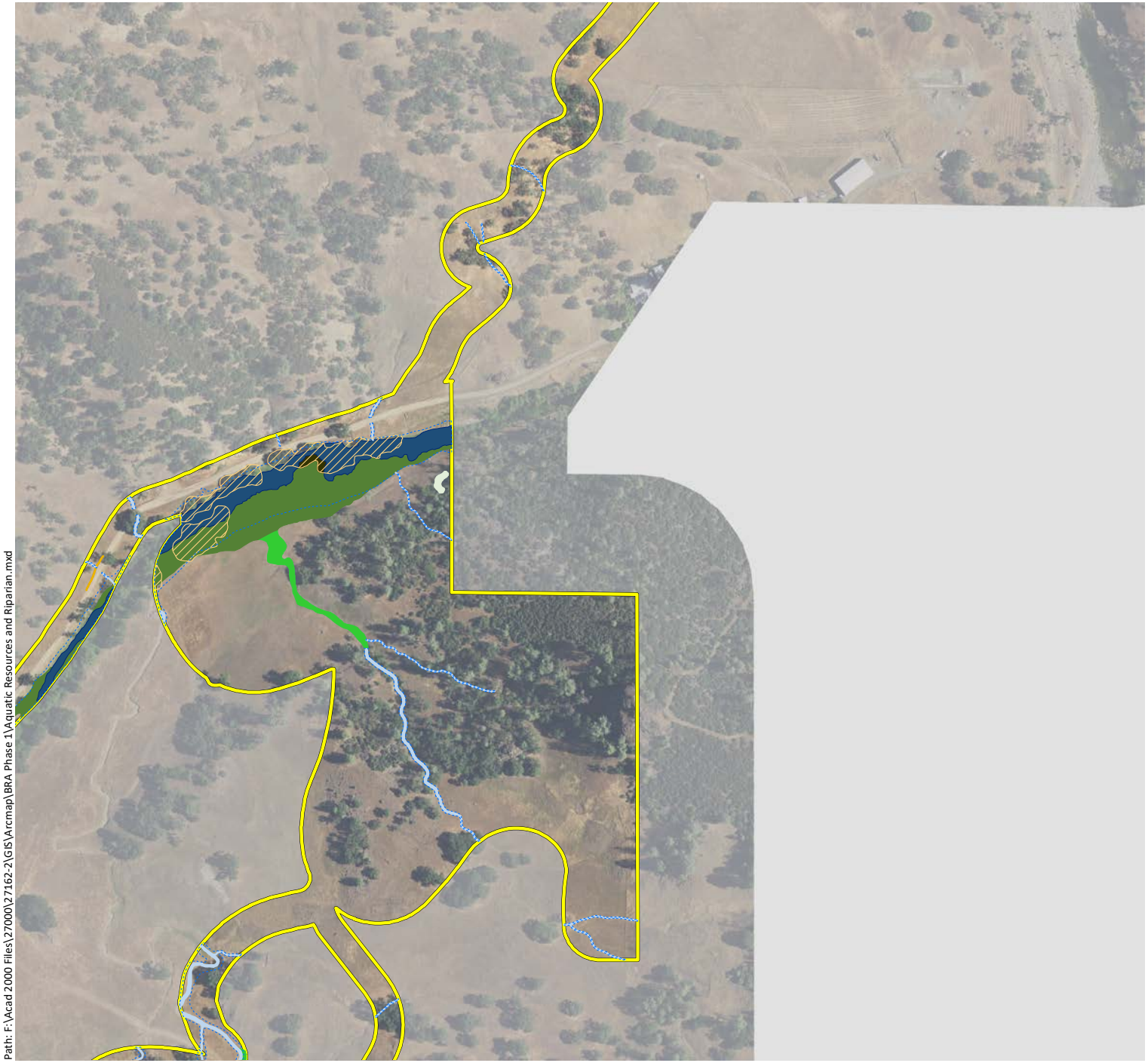
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 6)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 7)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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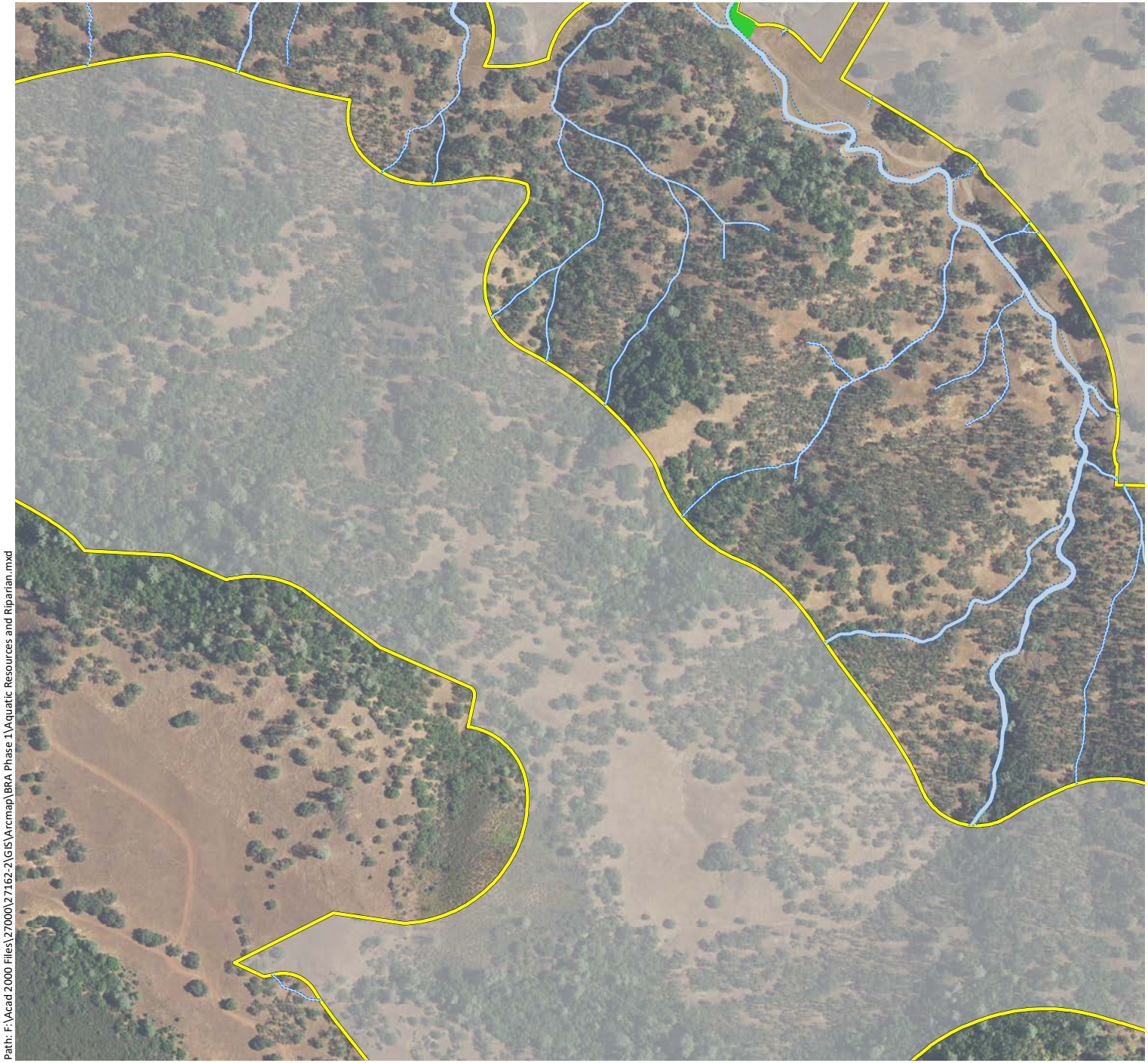
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 8)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 9)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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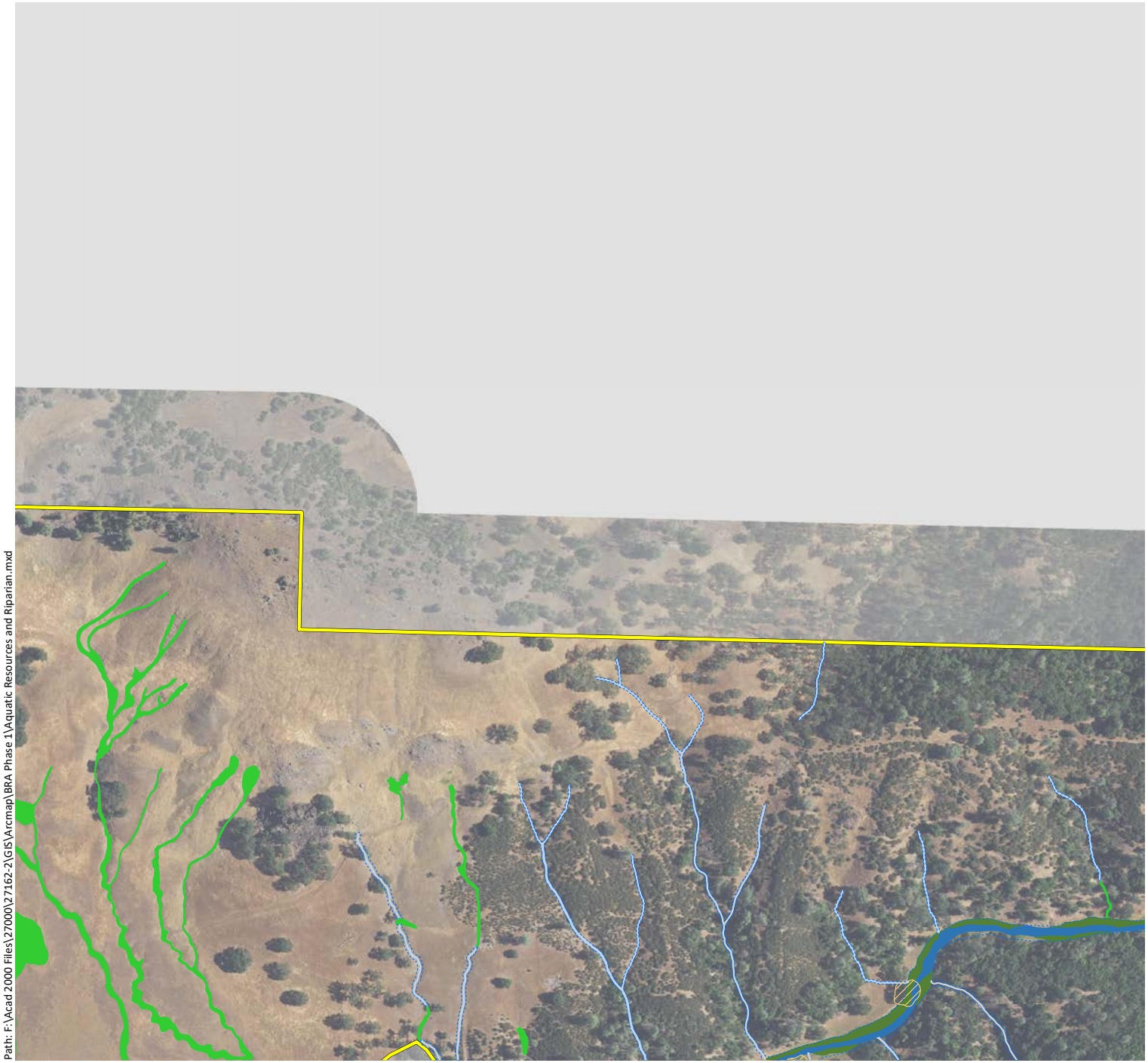
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 10)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 11)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Riparian Woodland - 42.32 ac.

Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 12)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

Forested Wetlands - 0.61 ac.
Seasonal Wetland Depressions - 0.94 ac.
Seasonal Wetland Ditches - 0.43 ac.
Seasonal Wetland Pond Fringes - 3.51 ac.
Seasonal Wetland Seeps/Swales - 31.91 ac.
Seasonal Wetland Wet Meadows - 40.17 ac.
Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

Ephemeral Ditches - 0.24 ac. & 6,380 LF
Ephemeral Streams - 18.52 ac. & 271,738 LF
Intermittent Streams - 11.86 ac. & 49,732 LF
Perennial Streams - 20.78 ac. & 15,054 LF
Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 13)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

Forested Wetlands - 0.61 ac.
Seasonal Wetland Depressions - 0.94 ac.
Seasonal Wetland Ditches - 0.43 ac.
Seasonal Wetland Pond Fringes - 3.51 ac.
Seasonal Wetland Seeps/Swales - 31.91 ac.
Seasonal Wetland Wet Meadows - 40.17 ac.
Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

Ephemeral Ditches - 0.24 ac. & 6,380 LF
Ephemeral Streams - 18.52 ac. & 271,738 LF
Intermittent Streams - 11.86 ac. & 49,732 LF
Perennial Streams - 20.78 ac. & 15,054 LF
Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 14)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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ENVIRONMENTAL CONSULTANTS

Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 15)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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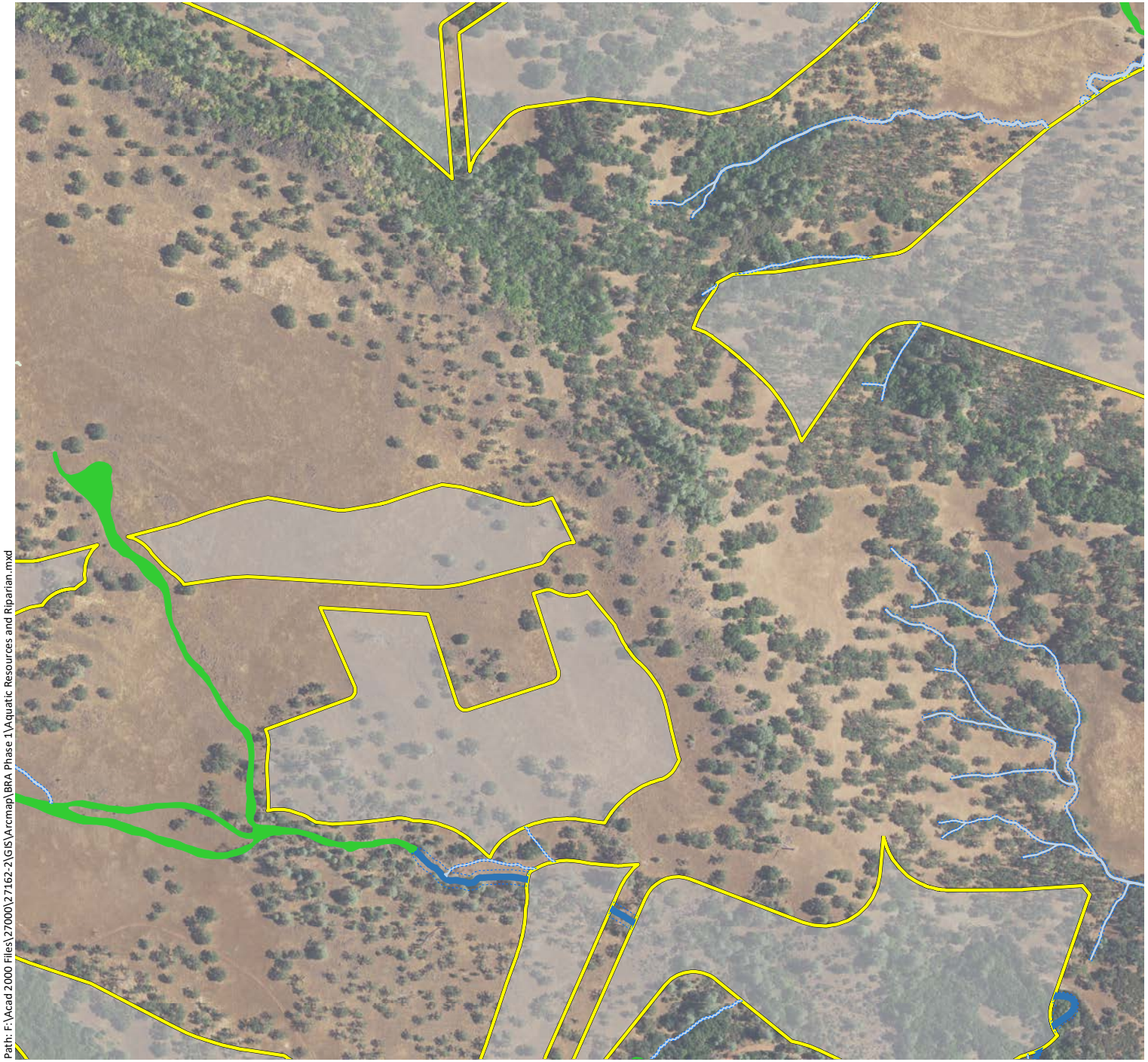
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 16)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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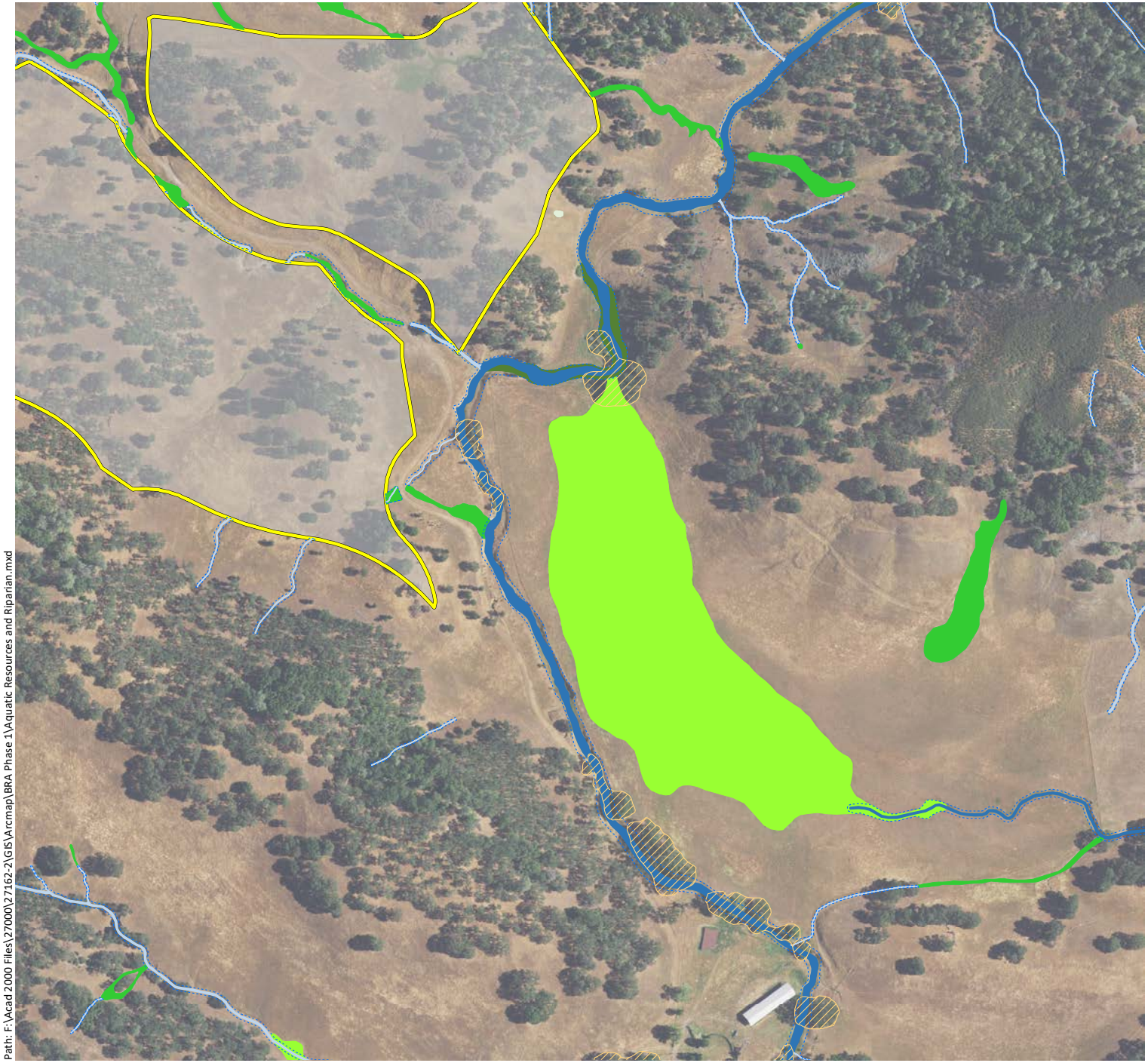
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 17)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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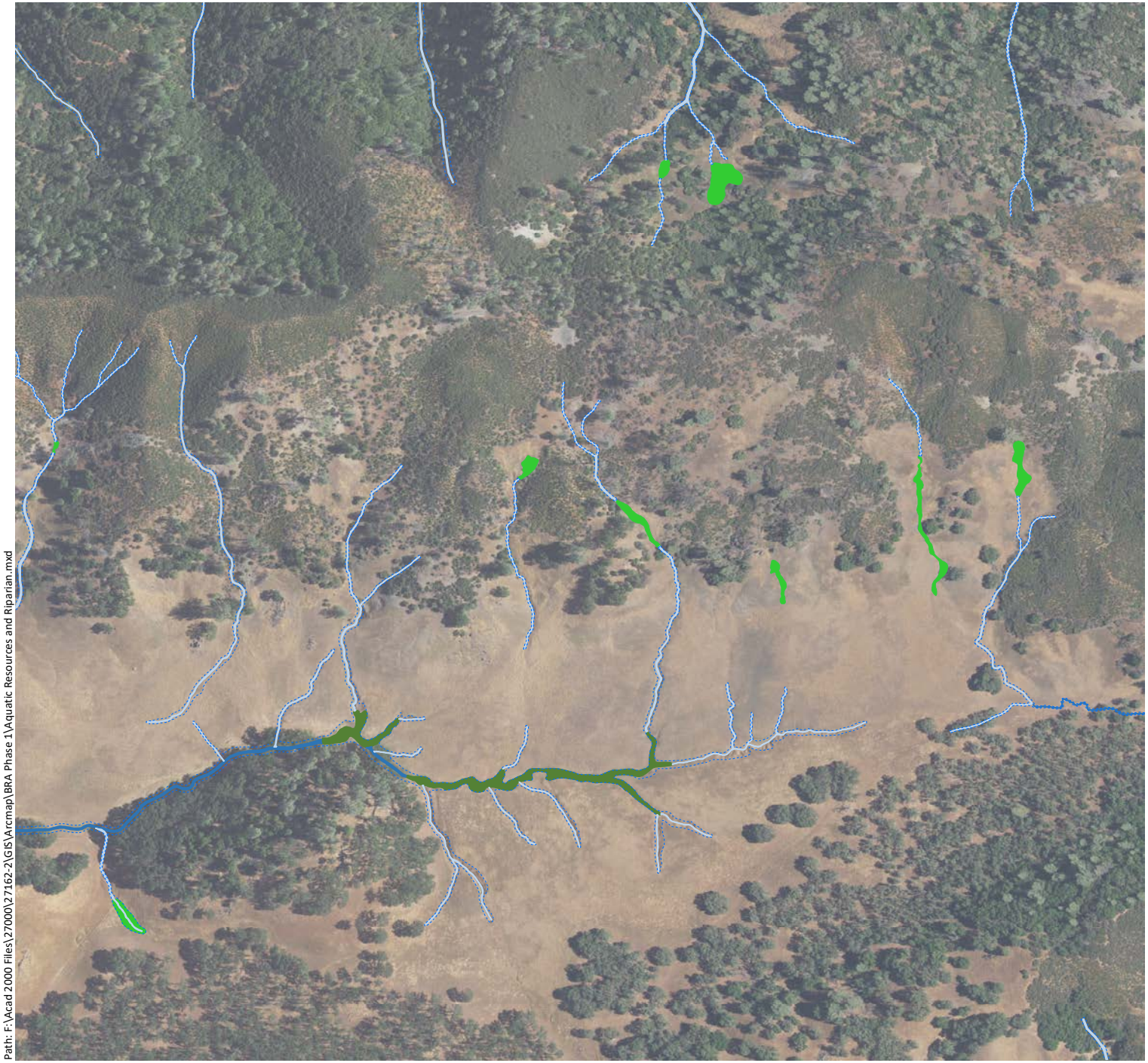
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 18)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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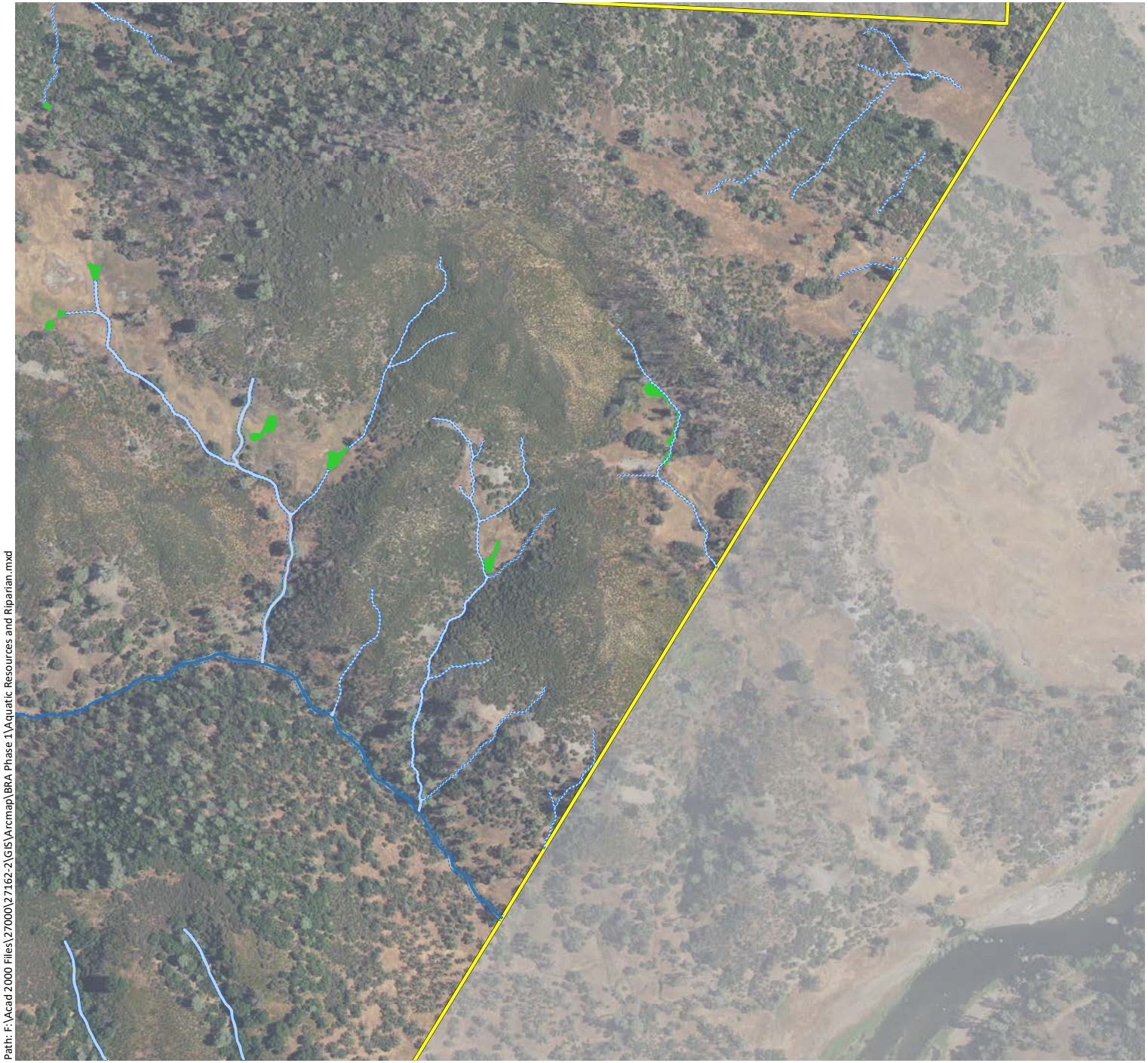
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 19)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Riparian Woodland - 42.32 ac.

Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 20)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

Forested Wetlands - 0.61 ac.
Seasonal Wetland Depressions - 0.94 ac.
Seasonal Wetland Ditches - 0.43 ac.
Seasonal Wetland Pond Fringes - 3.51 ac.
Seasonal Wetland Seeps/Swales - 31.91 ac.
Seasonal Wetland Wet Meadows - 40.17 ac.
Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

Ephemeral Ditches - 0.24 ac. & 6,380 LF
Ephemeral Streams - 18.52 ac. & 271,738 LF
Intermittent Streams - 11.86 ac. & 49,732 LF
Perennial Streams - 20.78 ac. & 15,054 LF
Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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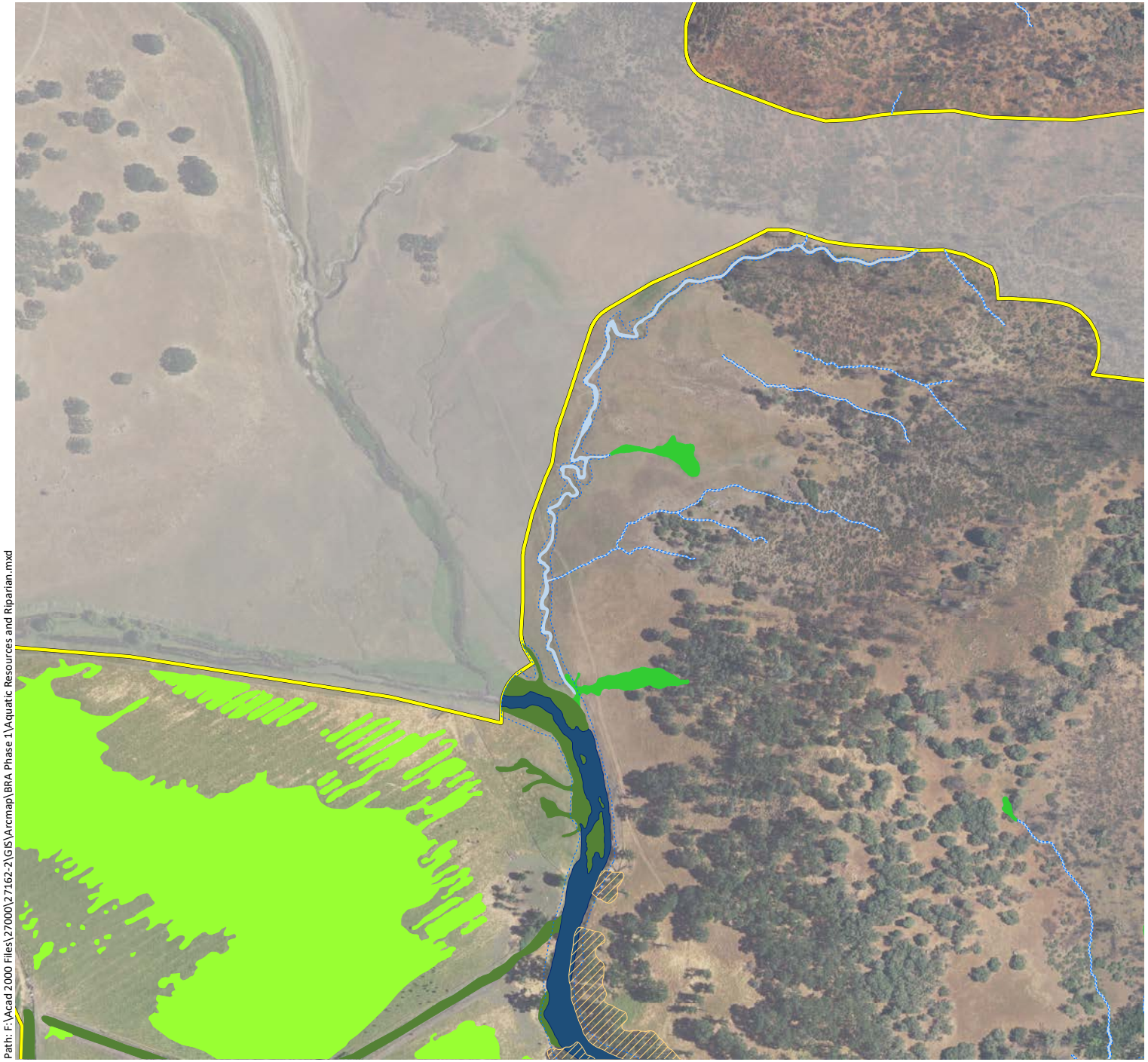
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 21)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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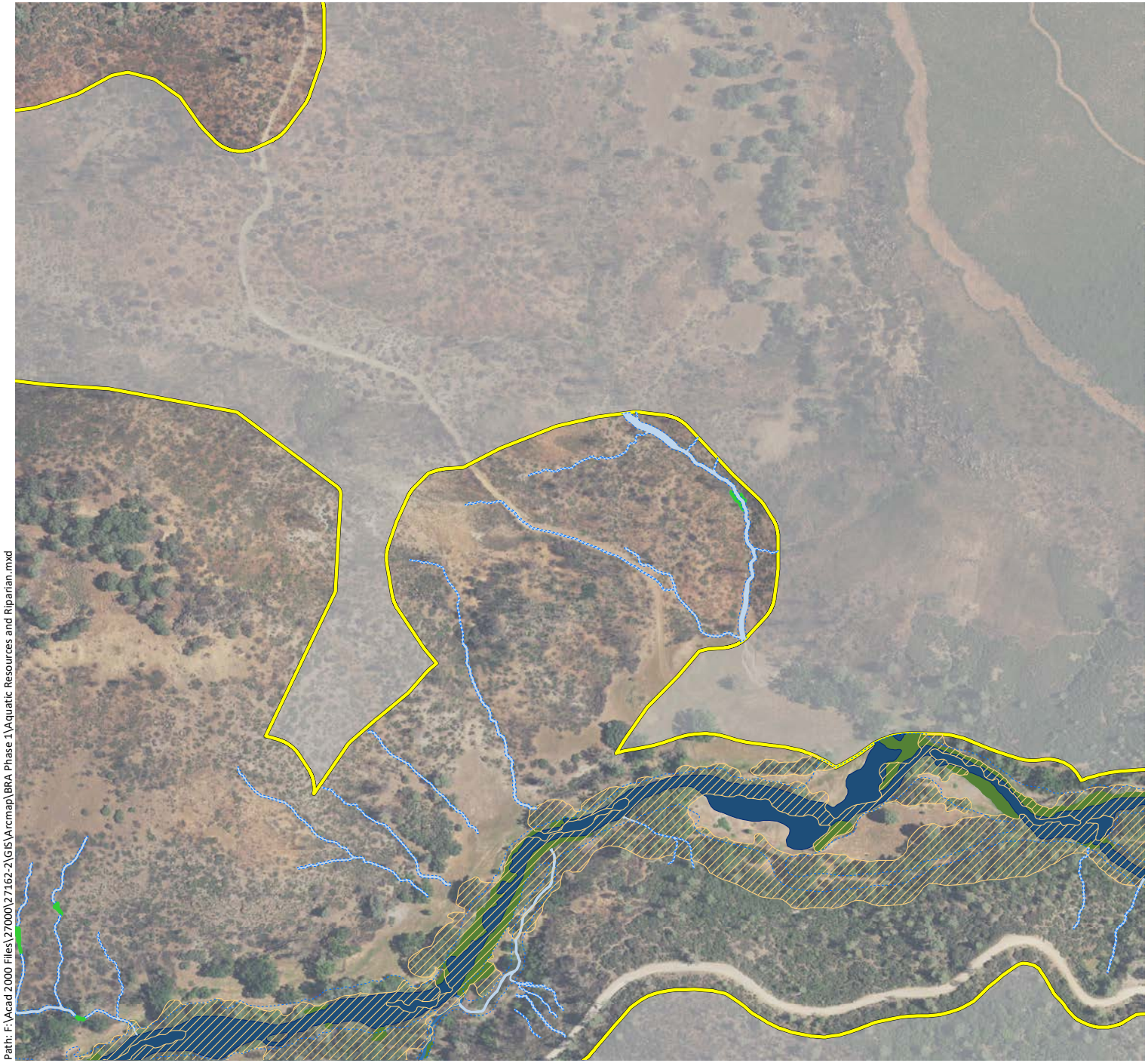
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 22)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

Forested Wetlands - 0.61 ac.
Seasonal Wetland Depressions - 0.94 ac.
Seasonal Wetland Ditches - 0.43 ac.
Seasonal Wetland Pond Fringes - 3.51 ac.
Seasonal Wetland Seeps/Swales - 31.91 ac.
Seasonal Wetland Wet Meadows - 40.17 ac.
Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

Ephemeral Ditches - 0.24 ac. & 6,380 LF
Ephemeral Streams - 18.52 ac. & 271,738 LF
Intermittent Streams - 11.86 ac. & 49,732 LF
Perennial Streams - 20.78 ac. & 15,054 LF
Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 23)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 24)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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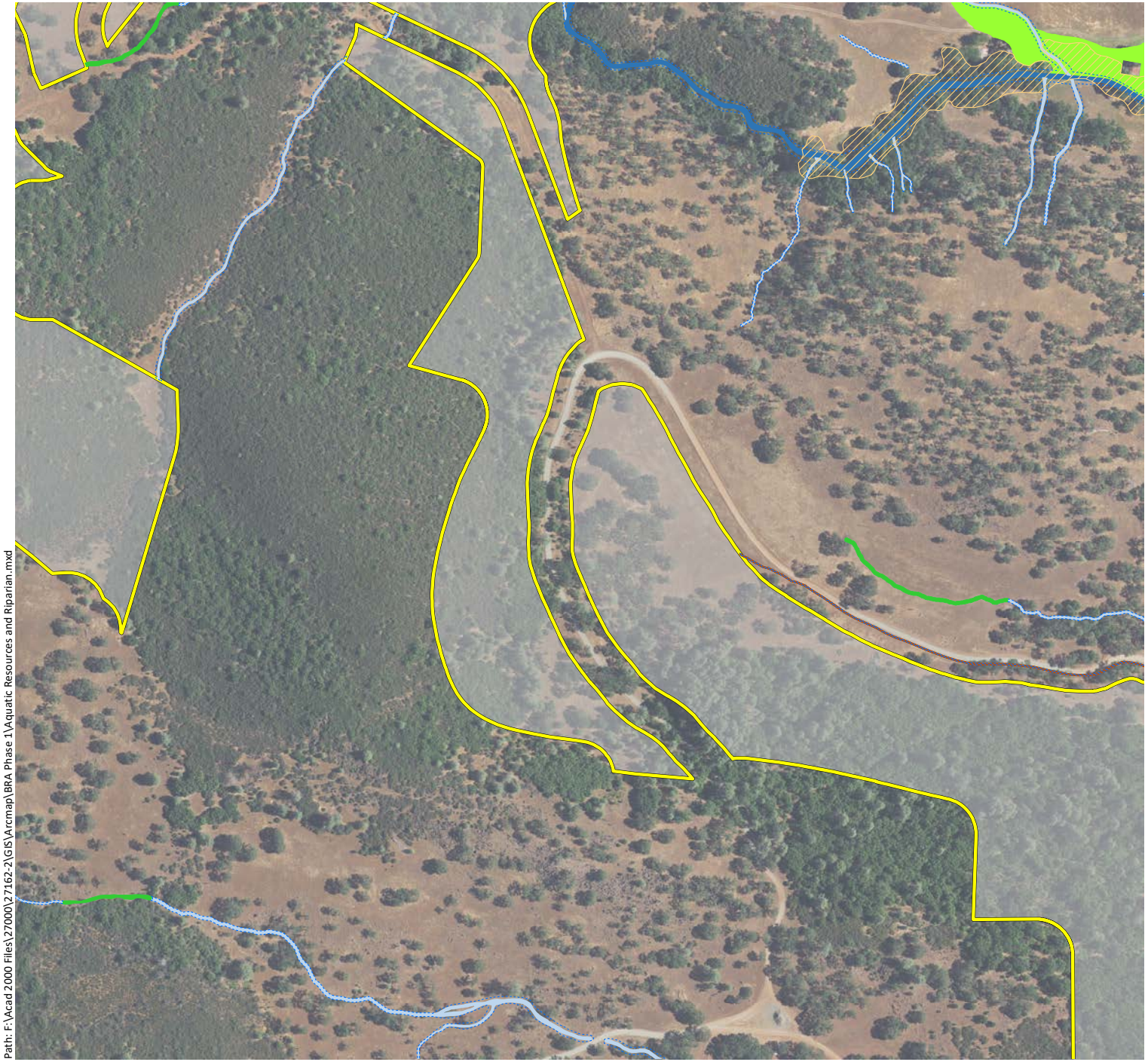
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 25)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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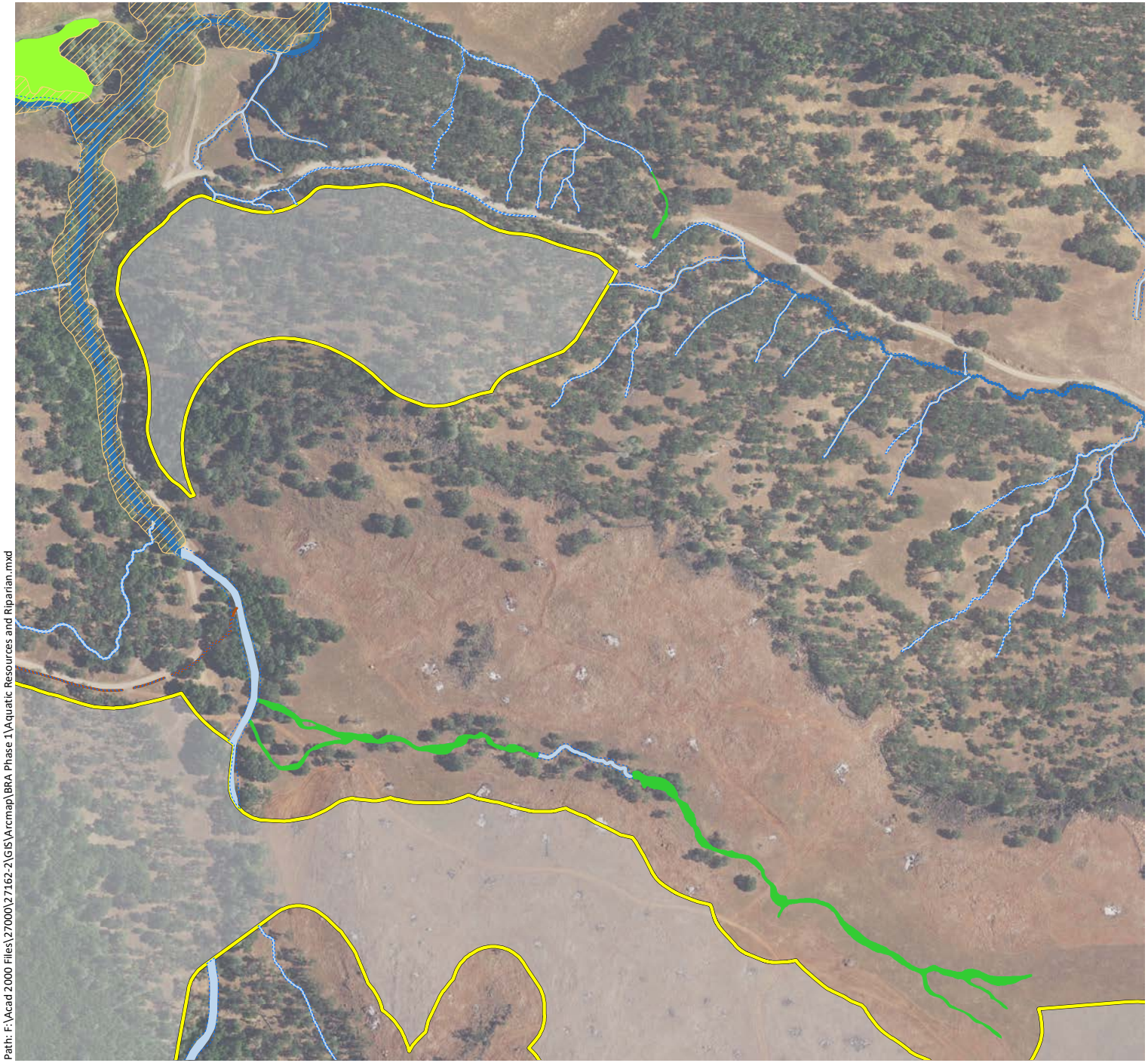
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 26)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 27)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 28)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

Forested Wetlands - 0.61 ac.
Seasonal Wetland Depressions - 0.94 ac.
Seasonal Wetland Ditches - 0.43 ac.
Seasonal Wetland Pond Fringes - 3.51 ac.
Seasonal Wetland Seeps/Swales - 31.91 ac.
Seasonal Wetland Wet Meadows - 40.17 ac.
Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

Ephemeral Ditches - 0.24 ac. & 6,380 LF
Ephemeral Streams - 18.52 ac. & 271,738 LF
Intermittent Streams - 11.86 ac. & 49,732 LF
Perennial Streams - 20.78 ac. & 15,054 LF
Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 29)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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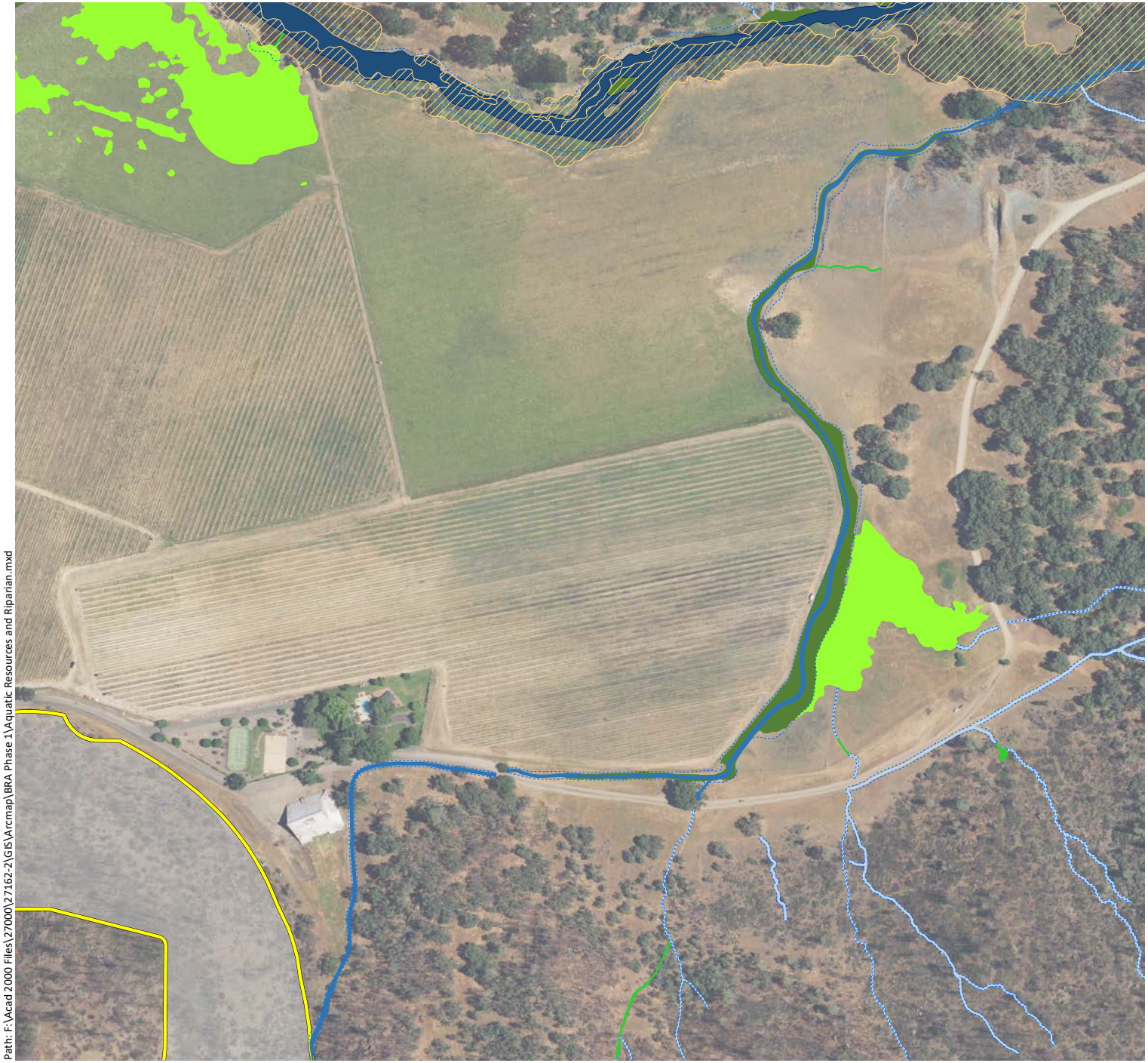
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 30)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 31)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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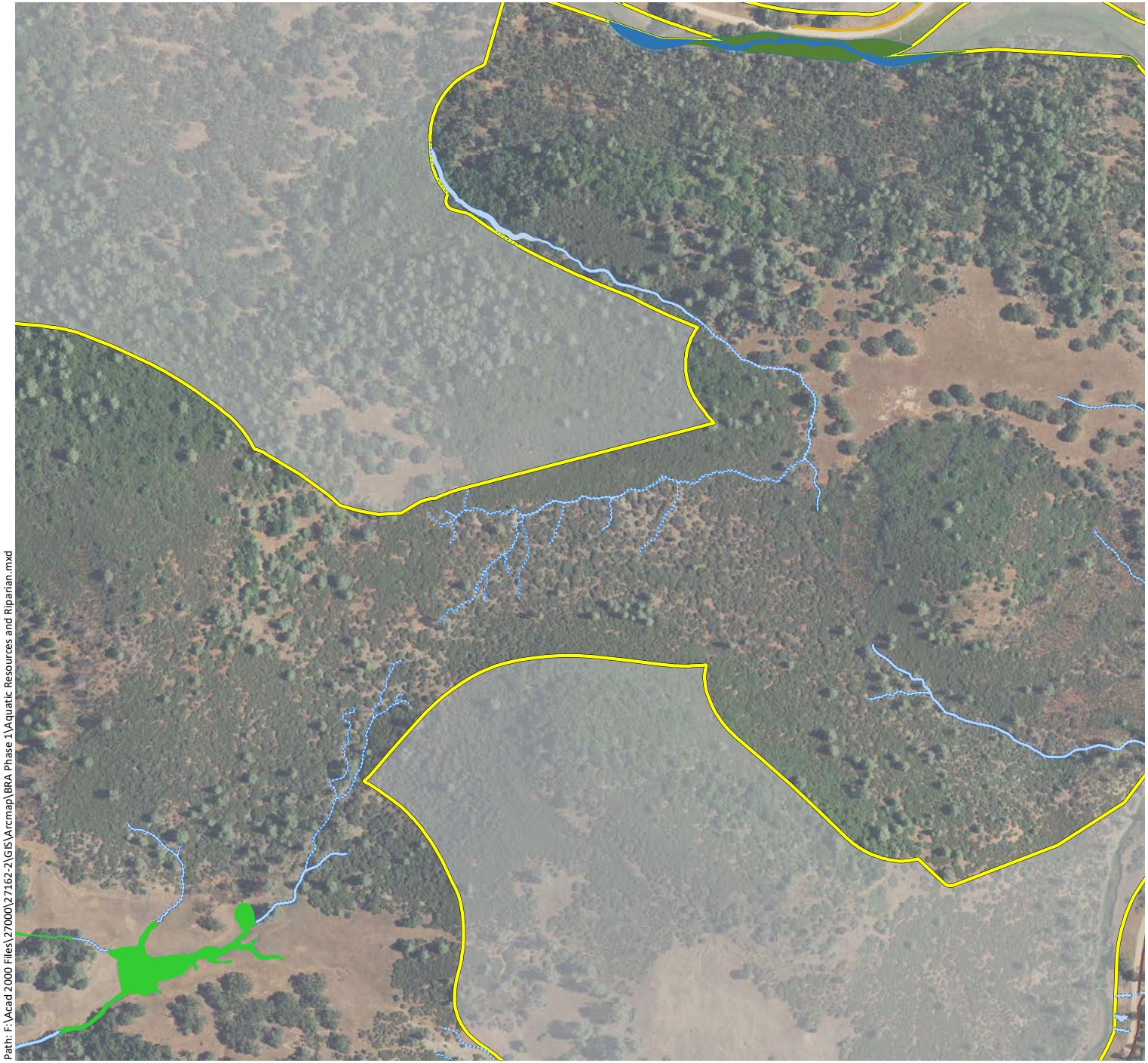
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 32)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

Forested Wetlands - 0.61 ac.
Seasonal Wetland Depressions - 0.94 ac.
Seasonal Wetland Ditches - 0.43 ac.
Seasonal Wetland Pond Fringes - 3.51 ac.
Seasonal Wetland Seeps/Swales - 31.91 ac.
Seasonal Wetland Wet Meadows - 40.17 ac.
Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

Ephemeral Ditches - 0.24 ac. & 6,380 LF
Ephemeral Streams - 18.52 ac. & 271,738 LF
Intermittent Streams - 11.86 ac. & 49,732 LF
Perennial Streams - 20.78 ac. & 15,054 LF
Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 33)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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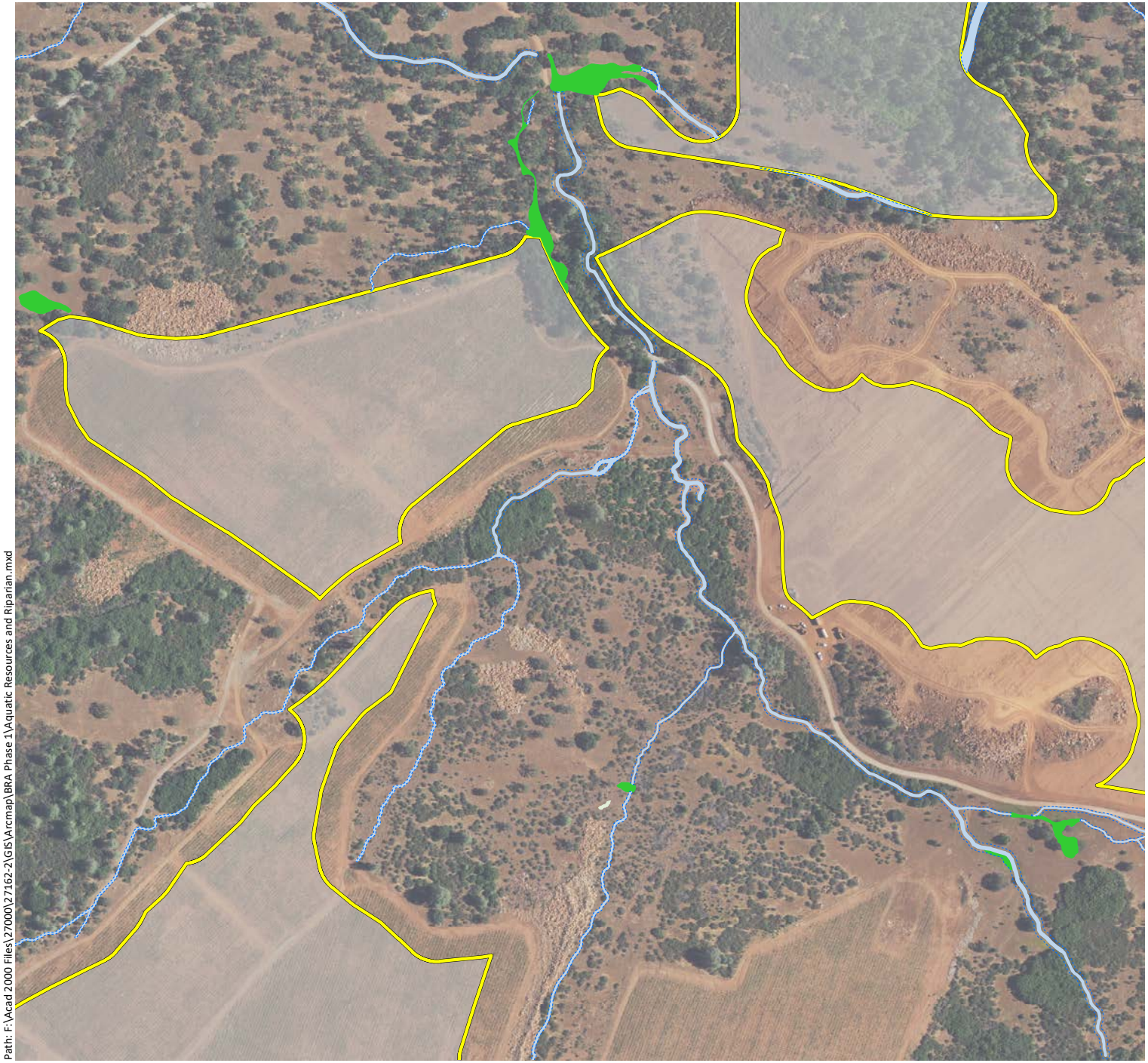
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 34)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

Forested Wetlands - 0.61 ac.
Seasonal Wetland Depressions - 0.94 ac.
Seasonal Wetland Ditches - 0.43 ac.
Seasonal Wetland Pond Fringes - 3.51 ac.
Seasonal Wetland Seeps/Swales - 31.91 ac.
Seasonal Wetland Wet Meadows - 40.17 ac.
Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

Ephemeral Ditches - 0.24 ac. & 6,380 LF
Ephemeral Streams - 18.52 ac. & 271,738 LF
Intermittent Streams - 11.86 ac. & 49,732 LF
Perennial Streams - 20.78 ac. & 15,054 LF
Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 35)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 36)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 37)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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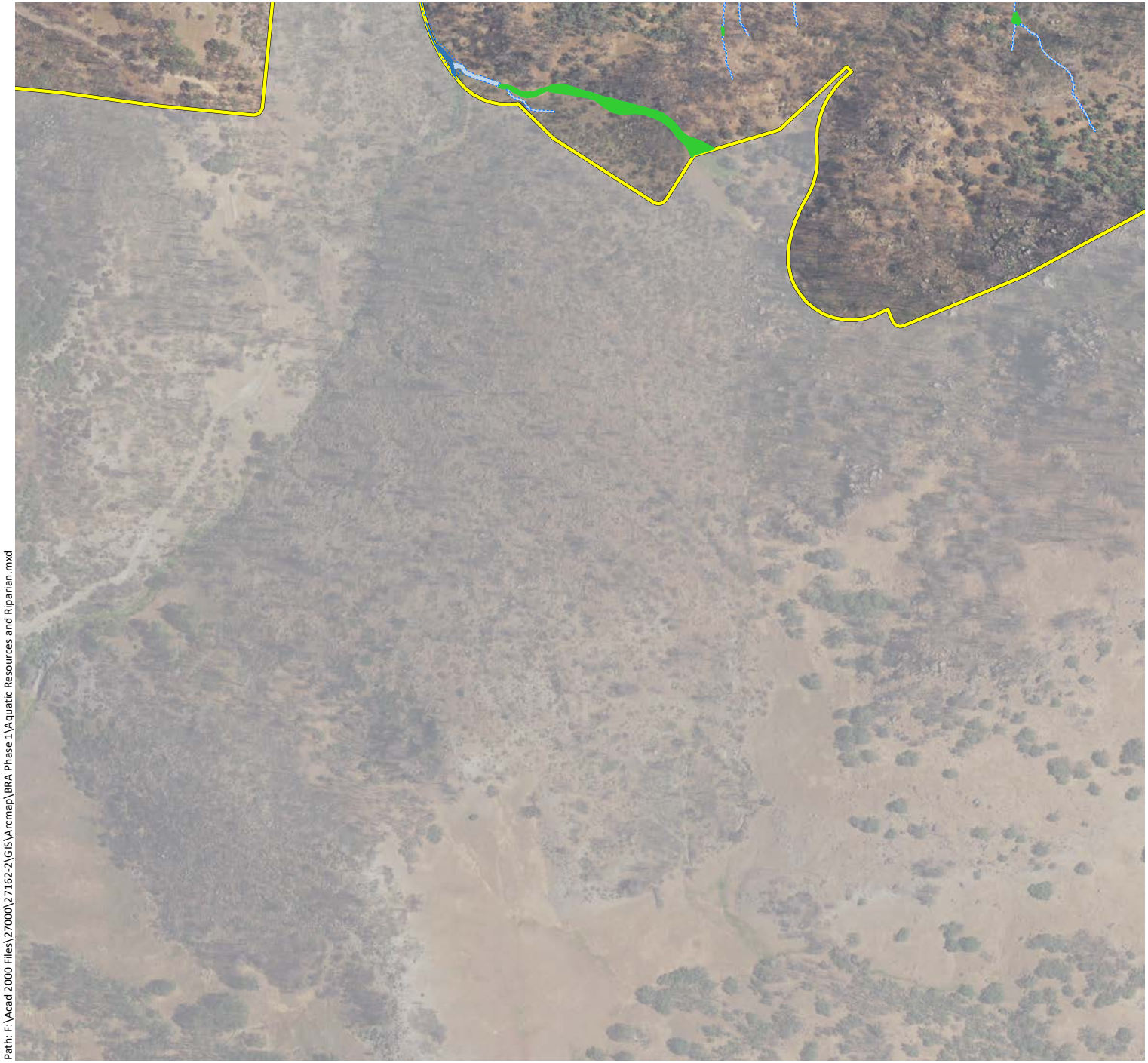
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 38)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 39)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 40)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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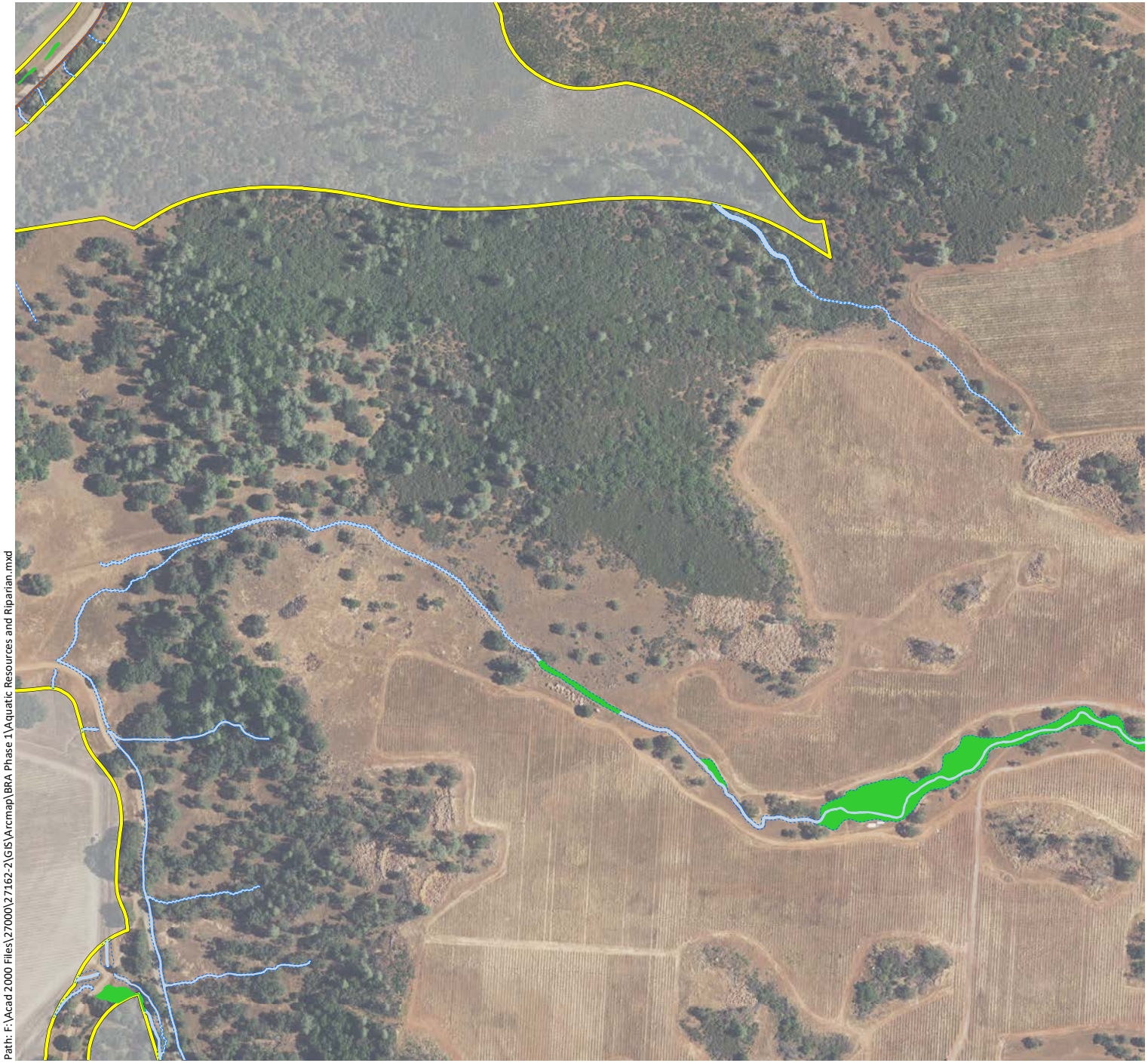
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 41)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 42)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

Forested Wetlands - 0.61 ac.
Seasonal Wetland Depressions - 0.94 ac.
Seasonal Wetland Ditches - 0.43 ac.
Seasonal Wetland Pond Fringes - 3.51 ac.
Seasonal Wetland Seeps/Swales - 31.91 ac.
Seasonal Wetland Wet Meadows - 40.17 ac.
Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

Ephemeral Ditches - 0.24 ac. & 6,380 LF
Ephemeral Streams - 18.52 ac. & 271,738 LF
Intermittent Streams - 11.86 ac. & 49,732 LF
Perennial Streams - 20.78 ac. & 15,054 LF
Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 43)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Aquatic Resources and Riparian.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 44)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Riparian Woodland - 42.32 ac.

Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 45)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Riparian Woodland - 42.32 ac.

Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 46)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 47)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 48)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 49)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 50)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 51)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Riparian Woodland - 42.32 ac.

Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
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Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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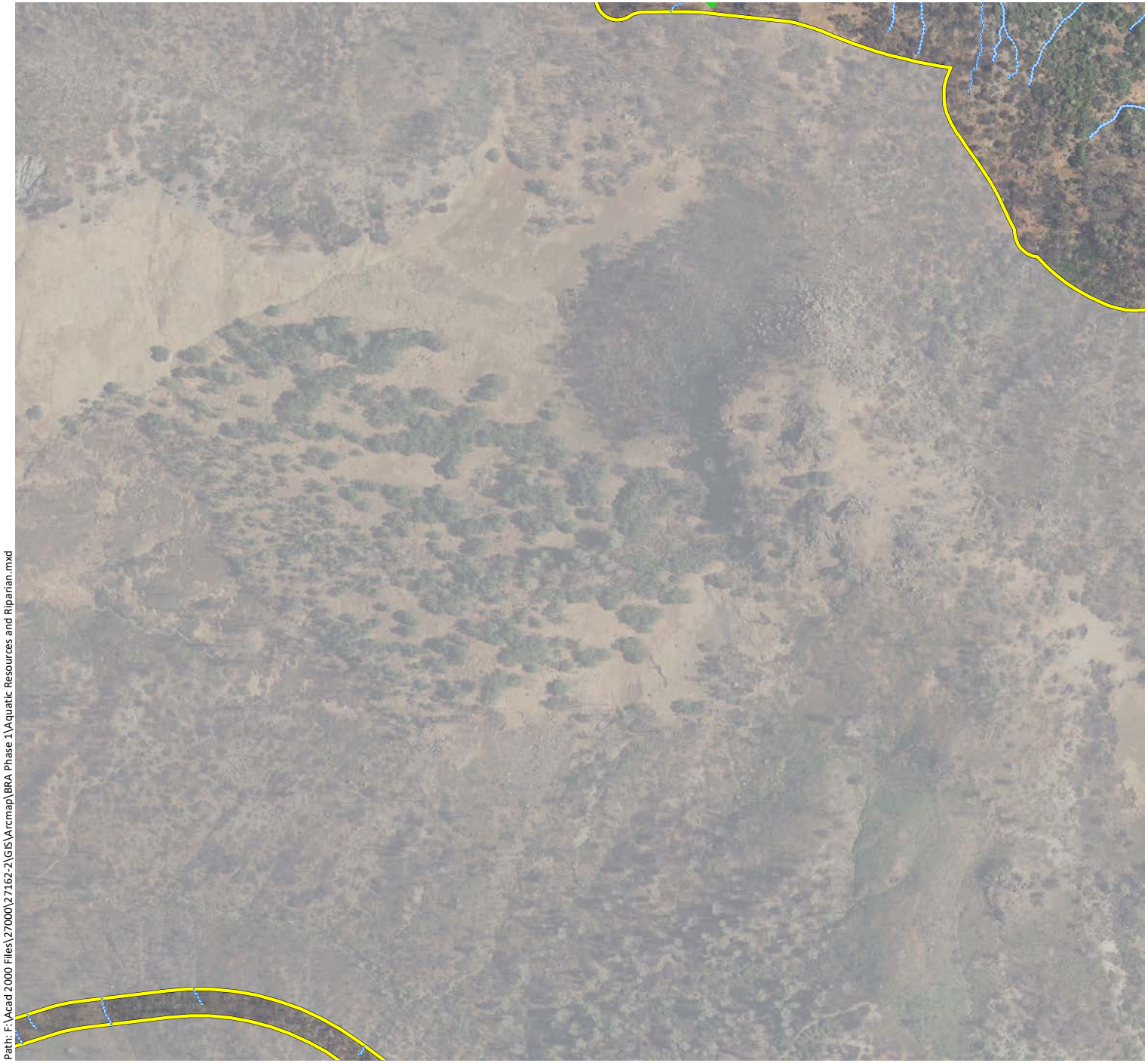
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 52)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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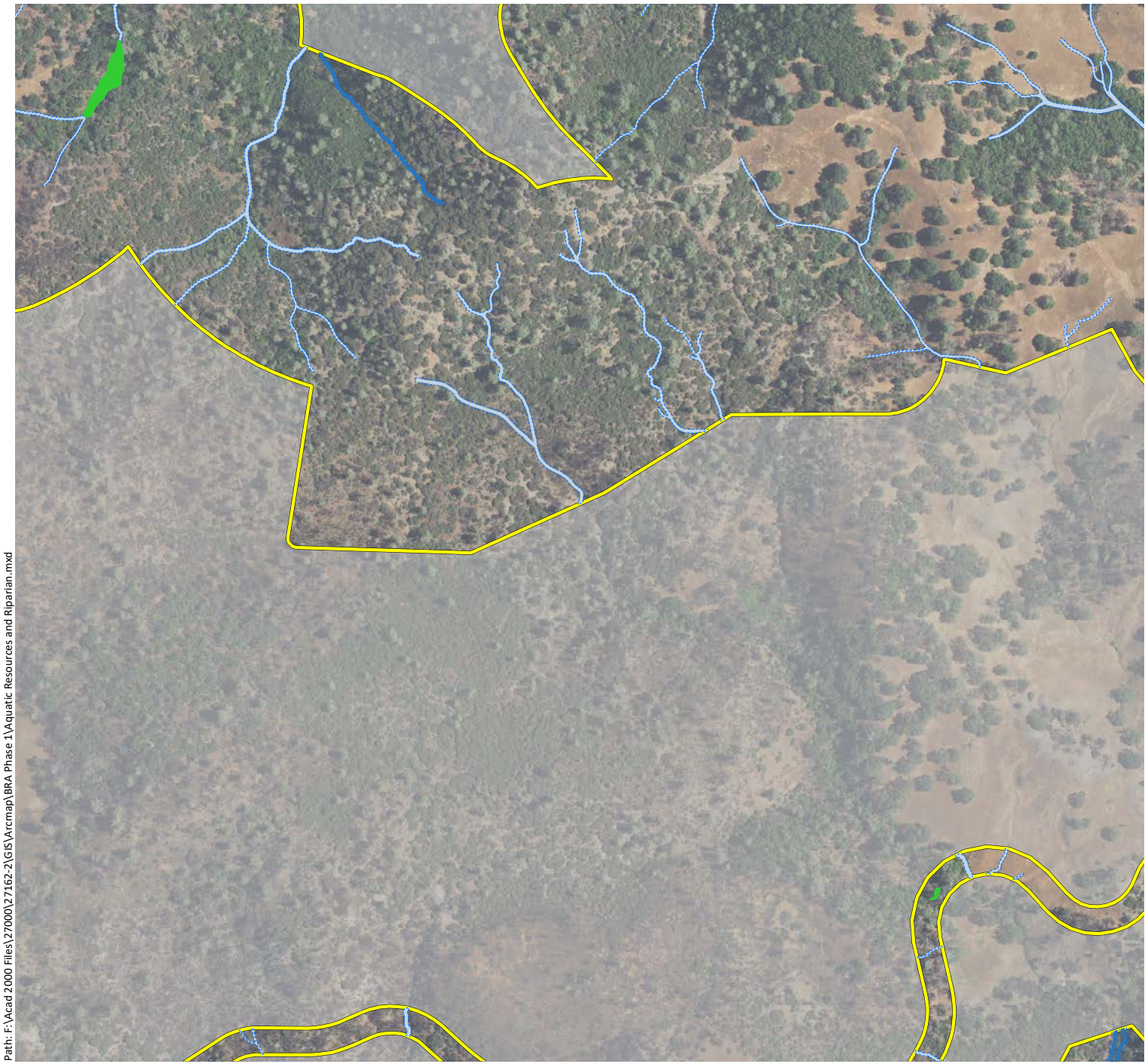
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Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 53)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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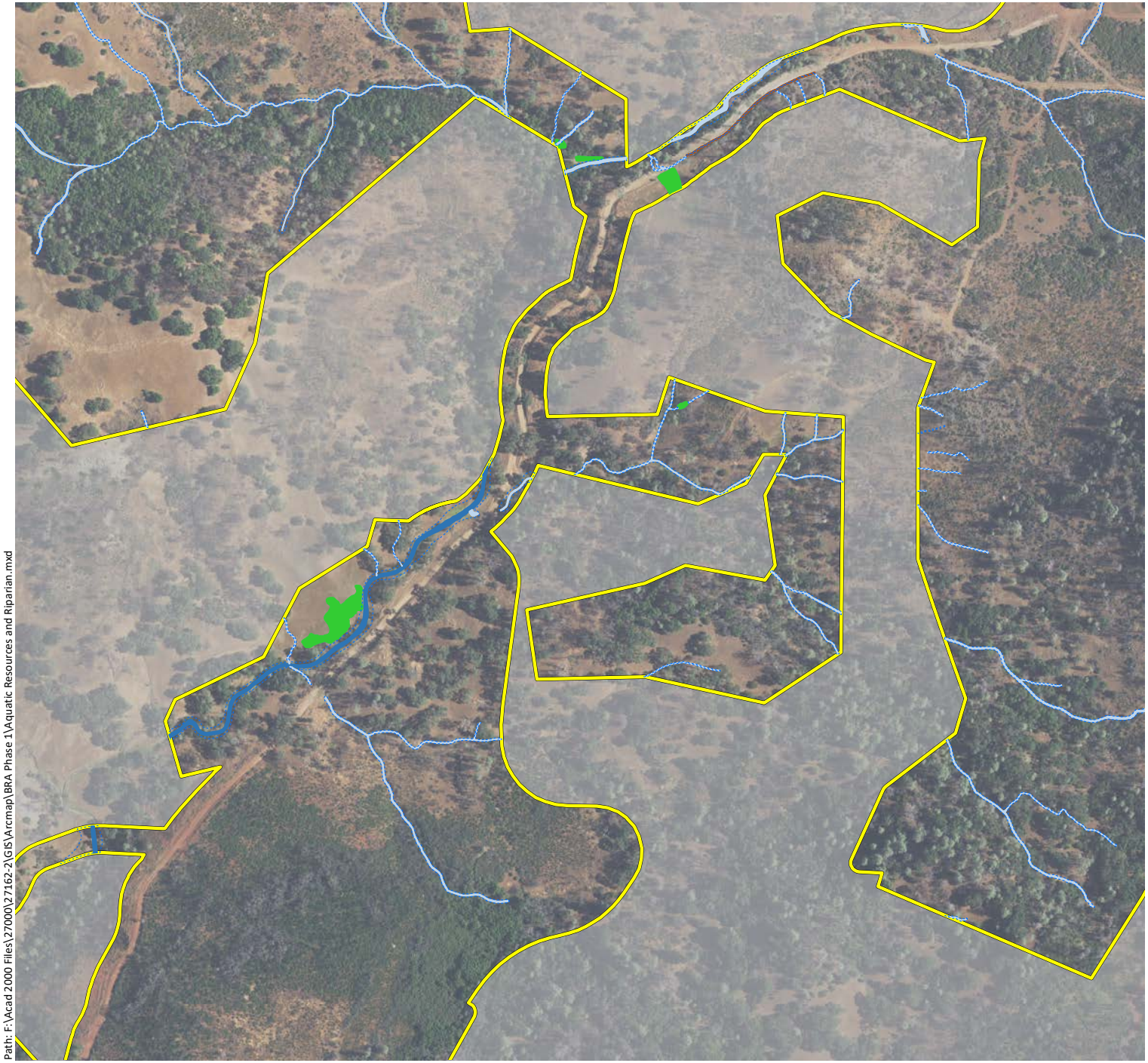
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 54)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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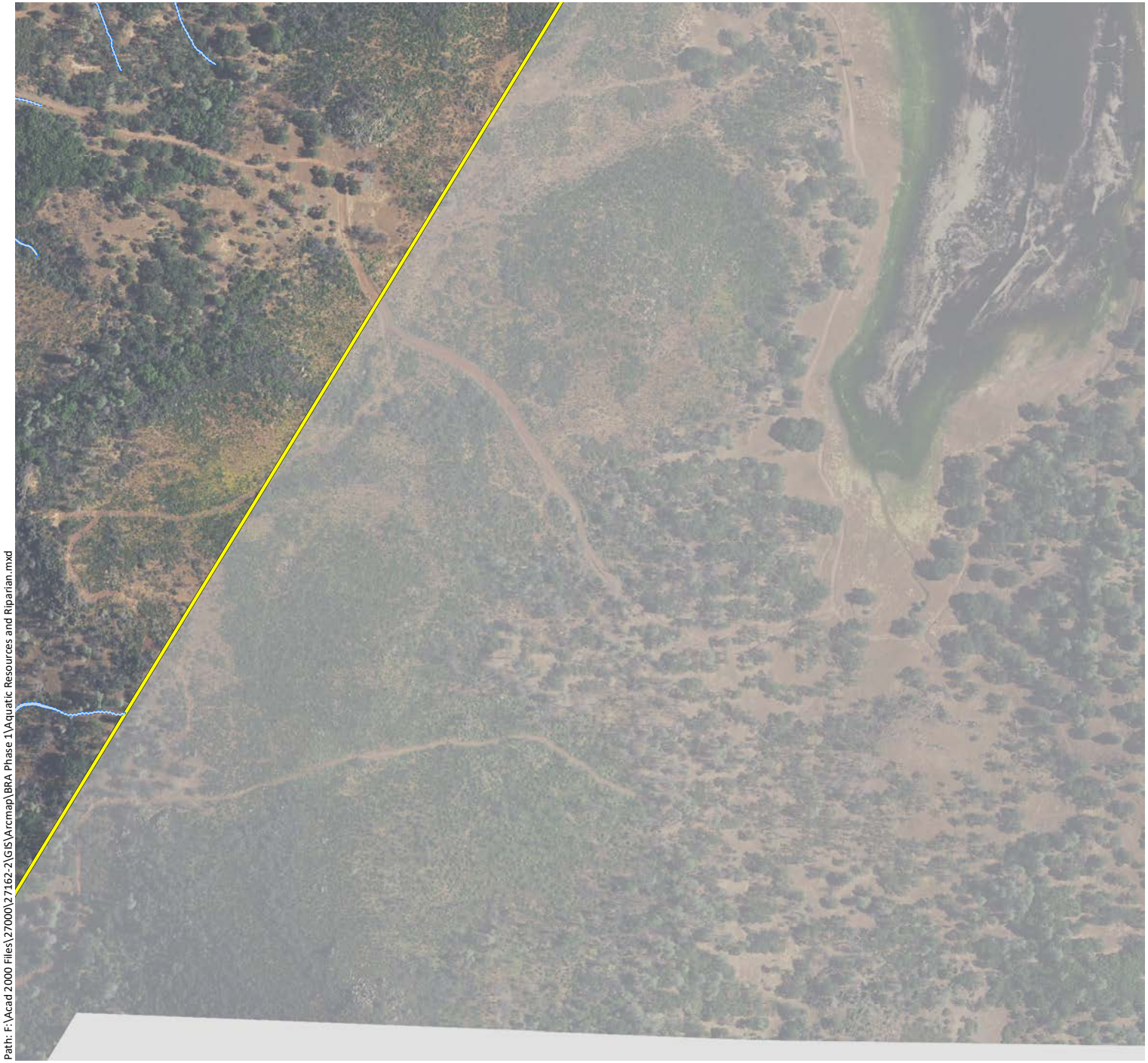
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 55)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

Forested Wetlands - 0.61 ac.
Seasonal Wetland Depressions - 0.94 ac.
Seasonal Wetland Ditches - 0.43 ac.
Seasonal Wetland Pond Fringes - 3.51 ac.
Seasonal Wetland Seeps/Swales - 31.91 ac.
Seasonal Wetland Wet Meadows - 40.17 ac.
Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

Ephemeral Ditches - 0.24 ac. & 6,380 LF
Ephemeral Streams - 18.52 ac. & 271,738 LF
Intermittent Streams - 11.86 ac. & 49,732 LF
Perennial Streams - 20.78 ac. & 15,054 LF
Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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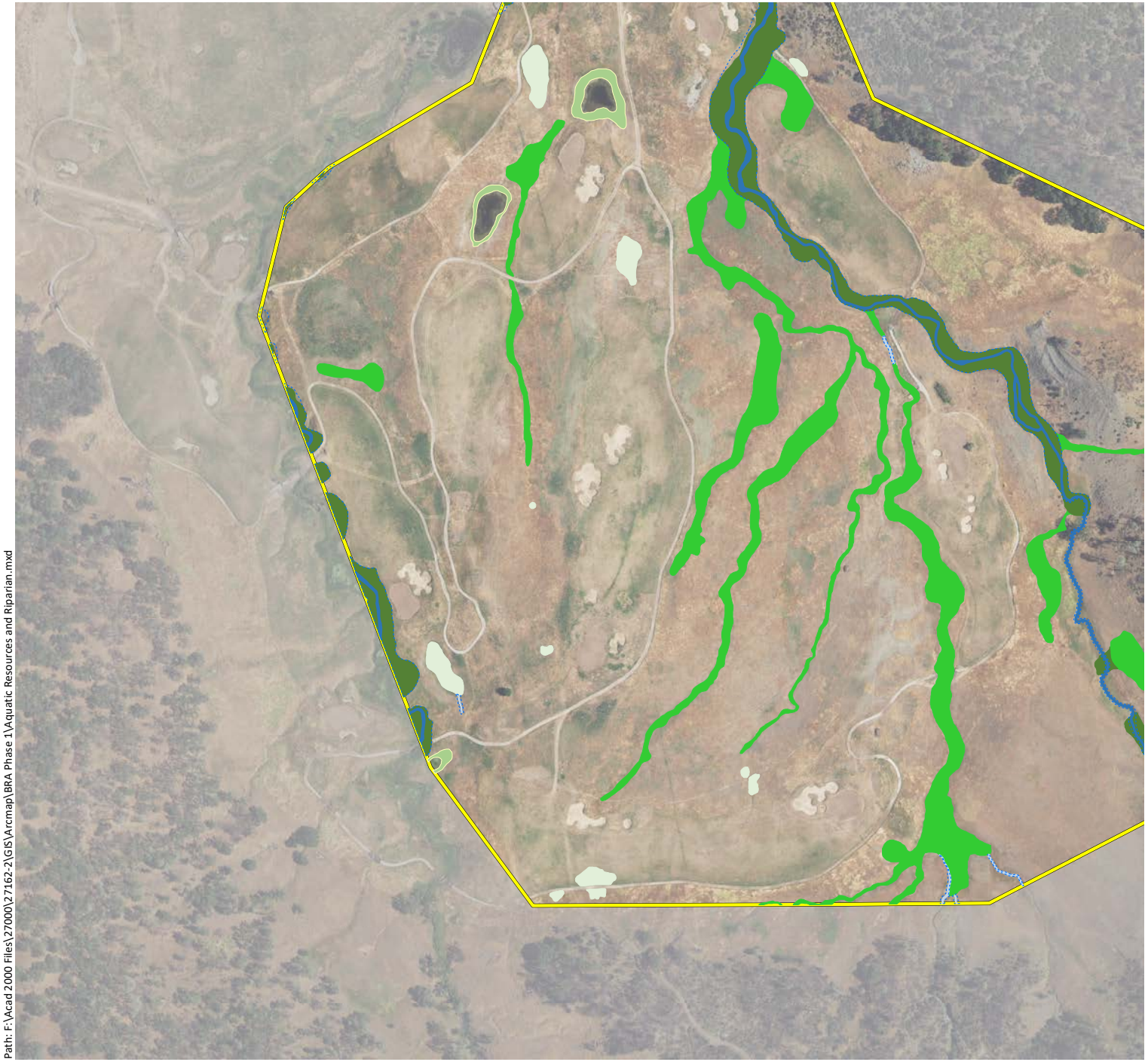
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 56)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Riparian Woodland - 42.32 ac.
Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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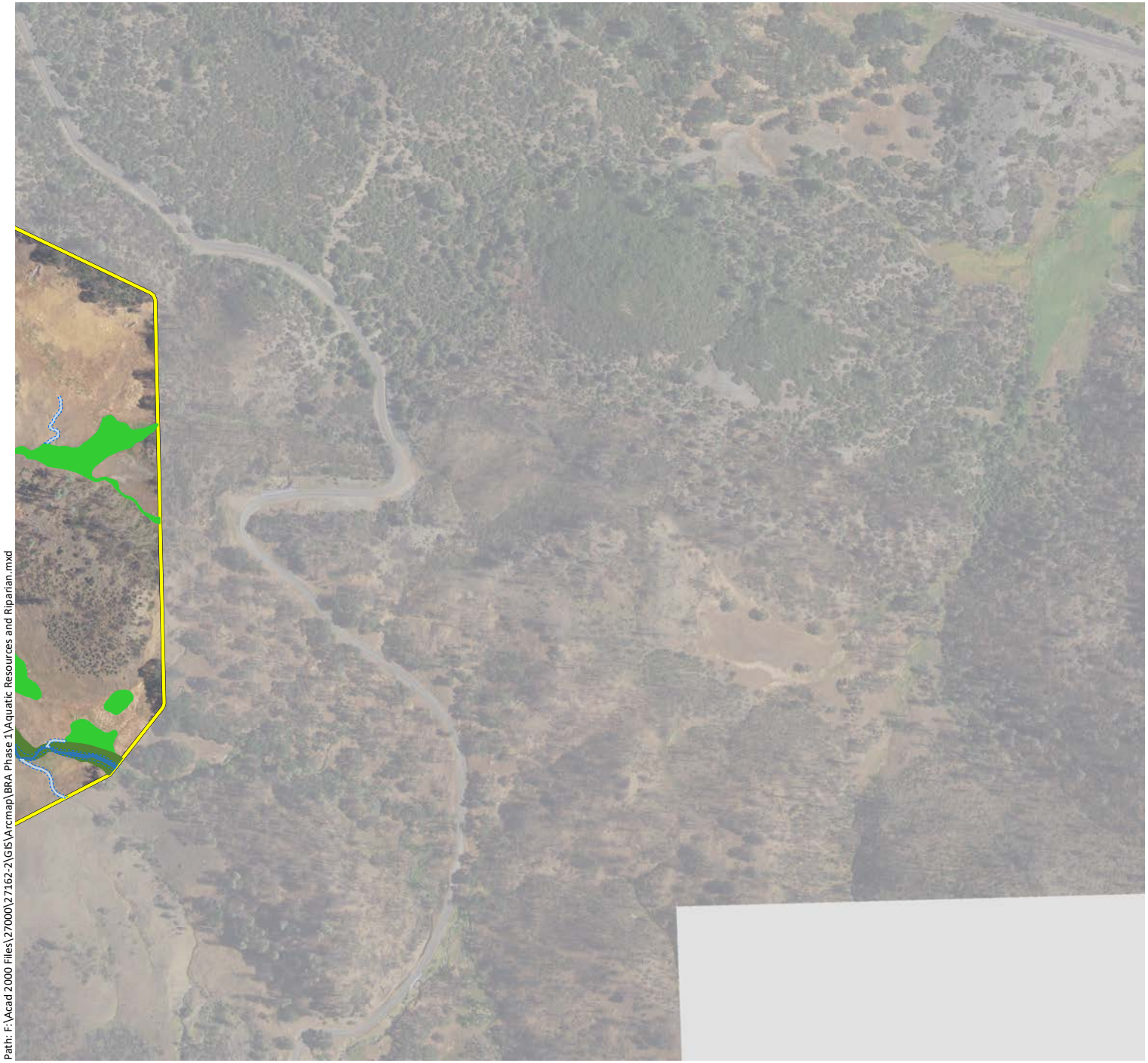
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 57)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 58)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 59)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
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Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 60)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Riparian Woodland - 42.32 ac.

Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
- Seasonal Wetland Seeps/Swales - 31.91 ac.
- Seasonal Wetland Wet Meadows - 40.17 ac.
- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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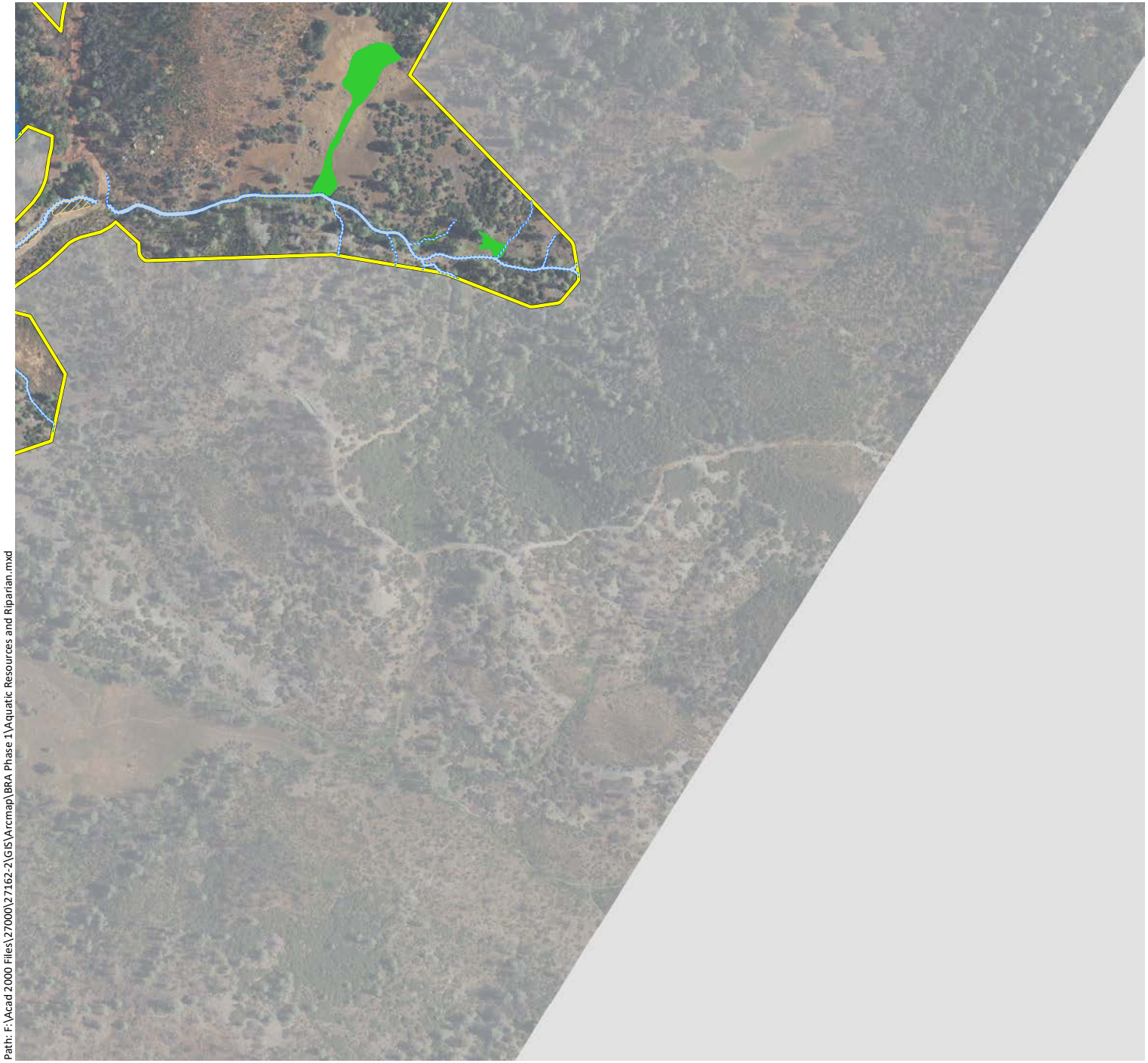
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 61)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
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- Seasonal Wetland Pond Fringes - 3.51 ac.
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- Ephemeral Ditches - 0.24 ac. & 6,380 LF
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- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

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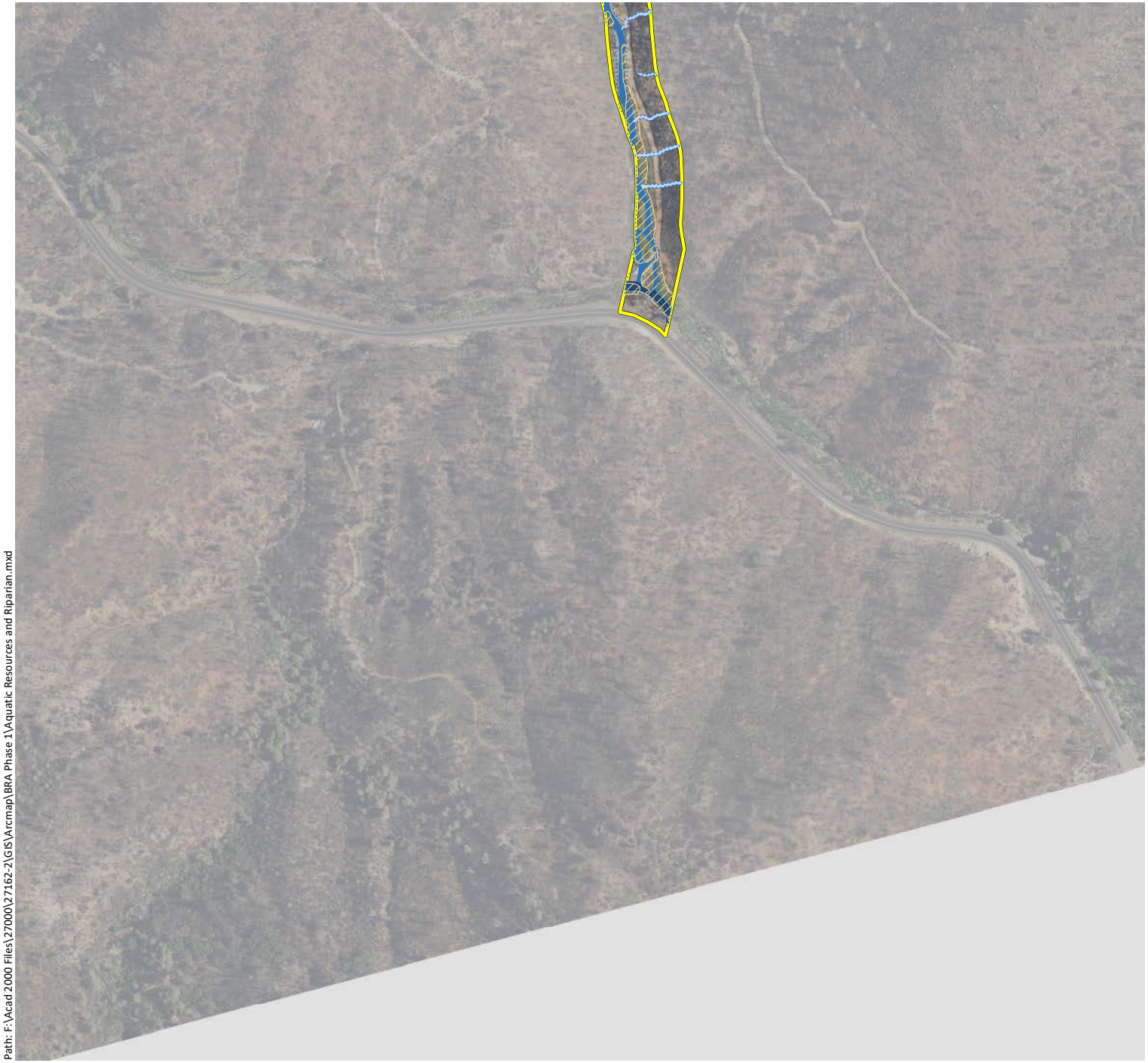
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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020



Appendix B.
Aquatic Resources and Riparian Habitat Mapped within the Phase 1 Study Area (Mapbook Sheet 62)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Riparian Woodland - 42.32 ac.
- Waters (Top of Bank) - 144.40 ac. & 342,904 LF

Wetlands - 99.28 ac.

- Forested Wetlands - 0.61 ac.
- Seasonal Wetland Depressions - 0.94 ac.
- Seasonal Wetland Ditches - 0.43 ac.
- Seasonal Wetland Pond Fringes - 3.51 ac.
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- Stream Fringe/In-Stream Wetlands - 21.71 ac.

Waters* - 83.39 ac. & 342,904 LF

- Ephemeral Ditches - 0.24 ac. & 6,380 LF
- Ephemeral Streams - 18.52 ac. & 271,738 LF
- Intermittent Streams - 11.86 ac. & 49,732 LF
- Perennial Streams - 20.78 ac. & 15,054 LF
- Open Waters - 31.99 ac.

* The extent of waters shown is based on the location of the ordinary high water mark

N

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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: mrochelle, 1/8/2020

APPENDIX C

LIST OF PLANT SPECIES OBSERVED WITHIN GUENOC RANCH

Appendix C. List of Plant Species Observed within Guenoc Ranch

Surveys were conducted by WRA biologists between 2017 and 2019. Plant nomenclature follows Baldwin et al. (2012) and subsequent revisions by the Jepson Flora Project (2019).

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Acer macrophyllum	Bigleaf maple	native	tree	-	-	FAC	-
Achillea millefolium	Yarrow	native	perennial herb	-	-	FACU	-
Achyrachaena mollis	Blow wives	native	annual herb	-	-	FAC	-
Acmispon americanus var. *americanus*	Spanish lotus	native	annual herb	-	-	UPL	-
Acmispon brachycarpus	Short podded lotus	native	annual herb	-	-	-	-
Acmispon glaber var. *glaber*	Deerweed	native	perennial herb	-	-	-	-
Acmispon parviflorus	Hill lotus	native	annual herb	-	-	-	-
Acmispon wrangelianus	Chilean trefoil	native	annual herb	-	-	-	-
Adenostoma fasciculatum var. *fasciculatum*	Chamise	native	tree, shrub	-	-	-	-
Adiantum jordanii	California maidenhair fern	native	fern	-	-	FAC	-
Aegilops triuncialis	Goatgrass	non-native (invasive)	annual grass	-	High	-	-
Aesculus californica	Buckeye	native	tree	-	-	-	-
Agoseris grandiflora var. *grandiflora*	Giant mountain dandelion	native	perennial herb	-	-	-	-
Agoseris heterophylla var. *cryptopleura*	Mountain dandelion	native	annual herb	-	-	-	-
Agoseris heterophylla var. *heterophylla*	Annual agoseris	native	annual herb	-	-	-	-
Agrostis avenacea	Pacific bentgrass	non-native (invasive)	perennial grass	-	Limited	FACW	-
Agrostis stolonifera	Redtop	non-native (invasive)	perennial grass	-	Limited	FACW	-
Aira caryophyllea	Silvery hairgrass	non-native	annual grass	-	-	FACU	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Alisma lanceolatum	Water plantain	non-native	perennial herb (aquatic)	-	-	OBL	-
Allium amplectens	Narrow leaved onion	native	perennial herb (bulb)	-	-	-	2.3
Allium falcifolium	Sickle leaf onion	native	perennial herb (bulb)	-	-	-	4.2
Allium fimbriatum var. *fimbriatum*	Fringed onion	native	perennial herb (bulb)	-	-	-	-
Allium serra	Jeweled onion	native	perennial herb (bulb)	-	-	-	2.6
Alnus rhombifolia	White alder	native	tree	-	-	FACW	-
Alopecurus pratensis	Meadow foxtail	non-native	perennial grass	-	Watch	FACW	-
Amaranthus retroflexus	Rough pigweed	non-native	annual herb	-	-	FACU	-
Amsinckia intermedia	Common fiddleneck	native	annual herb	-	-	-	-
Amsinckia lycopsoides	Tarweed fiddleneck	native	annual herb	-	-	-	-
Amsinckia menziesii	Fiddleneck	native	annual herb	-	-	-	-
Amsinckia retrorsa	Rigid fiddleneck	native	annual herb	-	-	-	-
Ancistrocarphus filagineus	Woolly fishhooks	native	annual herb	-	-	-	3.3
Angelica californica	California angelica	native	perennial herb	-	-	-	-
Angelica tomentosa	Woolly angelica	native	perennial herb	-	-	-	2.7
Anisocarpus madioides	Woodland madia	native	perennial herb	-	-	-	-
Anthemis cotula	Dog fennel	non-native	annual herb	-	-	FACU	-
Antirrhinum vexillocalyculatum ssp. *vexillocalyculatum*	Wiry snapdragon	native	annual herb	-	-	-	-
Antirrhinum virga	Tall snapdragon	native	perennial herb	Rank 4.3	-	-	2.8
Aphanes occidentalis	Ladie's mantle	native	annual, perennial herb	-	-	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Apiastrum angustifolium	Wild celery	native	annual herb	-	-	UPL	1.5
Aphyllon fasciculatum	Clustered broomrape	native	perennial herb (parasitic)	-	-	-	-
Apocynum cannabinum	Indian hemp	native	perennial herb	-	-	FAC	-
Aquilegia eximia	Serpentine columbine	native	perennial herb	-	-	OBL	4.2
Arbutus menziesii	Madrone	native	tree	-	-	-	-
Arceuthobium campylopodum	Pine dwarf mistletoe	native	perennial herb (parasitic)	-	-	-	-
Arctostaphylos glandulosa ssp. *cushingiana*	Cushing manzanita	native	shrub	-	-	-	-
Arctostaphylos manzanita ssp. *elegans*	Konocti manzanita	native	shrub	Rank 1B.3	-	-	-
Arctostaphylos manzanita ssp. *manzanita*	Common manzanita	native	shrub	-	-	-	-
Arctostaphylos viscida ssp. *pulchella*	White leaf manzanita	native	tree, shrub	-	-	-	5
Arctostaphylos viscida ssp. *viscida*	Smooth white leaf manzanita	native	tree, shrub	-	-	-	2.2
Arnica discoidea	Rayless arnica	native	perennial herb	-	-	-	-
Artemisia douglasiana	California mugwort	native	perennial herb	-	-	FAC	-
Asclepias cordifolia	Purple milkweed	native	perennial herb	-	-	-	-
Asclepias eriocarpa	Indian milkweed	native	perennial herb	-	-	-	-
Asclepias fascicularis	Milkweed	native	perennial herb	-	-	FAC	-
Aspidotis densa	Lace fern	native	fern	-	-	-	3.4
Astragalus breweri	Brewer's milk vetch	native	annual herb	Rank 4.2	-	-	3.2
Astragalus clevelandii	Cleveland's milk vetch	native	perennial herb	Rank 4.3	-	FAC	6.1
Astragalus gambelianus	Gambel's dwarf milk vetch	native	annual herb	-	-	-	-
Astragalus rattanii var. *jepsonianus*	Jepson's milk vetch	native	annual herb	Rank 1B.2	-	-	4.3

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Athyrium filix-femina var. *cyclosorum*	Western lady fern	native	fern	-	-	FAC	-
Athysanus pusillus	Dwarf athysanus	native	annual herb	-	-	-	-
Avena barbata	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-	-
Avena fatua	Wildoats	non-native (invasive)	annual grass	-	Moderate	-	-
Baccharis pilularis ssp. *consanguinea*	Coyote brush	native	shrub	-	-	-	-
Baccharis salicifolia ssp. *salicifolia*	Mule fat	native	shrub	-	-	FAC	-
Balsamorhiza macrolepis	Big scale balsam root	native	perennial herb	Rank 1B.2	-	-	-
Barbarea vulgaris	Yellow rocket	non-native	perennial herb	-	-	FAC	-
Bellardia trixago	Mediterranean lineseed	non-native (invasive)	annual herb	-	Limited	-	-
Brickellia californica	California brickellia	native	perennial herb	-	-	FACU	-
Briza maxima	Rattlesnake grass	non-native (invasive)	annual grass	-	Limited	-	-
Briza minor	Little rattlesnake grass	non-native	annual grass	-	-	FAC	-
Brodiaea elegans ssp. *elegans*	Harvest brodiaea	native	perennial herb	-	-	FACU	-
Brodiaea leptandra	Narrow-anthered brodiaea	native	perennial herb	Rank 1B.2	-	-	-
Bromus carinatus var. *carinatus*	California brome	native	perennial grass	-	-	-	-
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-	-
Bromus hordeaceus	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU	-
Bromus laevipes	Narrow flowered brome	native	annual, perennial grass	-	-	-	1.7

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Bromus madritensis ssp. *madritensis*	Foxtail chess	non-native	annual grass	-	-	UPL	-
Bromus madritensis ssp. *rubens*	Foxtail brome	non-native (invasive)	annual grass	-	High	UPL	-
Calandrinia menziesii	Red maids	native	annual herb	-	-	FACU	-
Callitriche heterophylla var. *bolanderi*	Bolander's water starwort	native	annual herb	-	-	OBL	-
Calochortus amabilis	Golden fairy lantern	native	perennial herb	-	-	-	-
Calochortus luteus	Yellow mariposa	native	perennial herb	-	-	-	-
Calochortus splendens	Splendid mariposa	native	perennial herb	-	-	-	-
Calochortus tolmiei	Hairy star tulip	native	perennial herb	-	-	-	-
Calochortus uniflorus	Large flowered star tulip	native	perennial herb	Rank 4.2	-	FACW	1.7
Calochortus vestae	Yellow mariposa	native	perennial herb	-	-	-	2
Calycadenia fremontii	Fremont's calycadenia	native	annual herb	-	-	-	-
Calycadenia pauciflora	Small flowered calycadenia	native	annual herb	-	-	-	5.3
Calycanthus occidentalis	Spicebush	native	shrub	-	-	FAC	-
Calystegia collina ssp. *collina*	Hillside morning glory	native	perennial herb	-	-	-	4.7
Calystegia collina ssp. *oxyphylla*	Mt. Saint Helena morning glory	native	perennial herb (rhizomatous)	Rank 4.2	-	-	5.6
Calystegia occidentalis ssp. *occidentalis*	Modoc morning glory	native	perennial herb	-	-	-	-
Calystegia purpurata ssp. *purpurata*	Smooth western morning glory	native	perennial herb	-	-	-	-
Camissoniopsis intermedia	Intermediate sun cups	native	annual herb	-	-	-	-
Campanula angustiflora	Eastwood's harebell	native	annual herb	-	-	-	3.9
Capsella bursa-pastoris	Shepherd's purse	non-native	annual herb	-	-	FACU	-
Cardamine hirsuta	Hairy bitter cress	non-native	annual herb	-	-	FACU	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Cardamine oligosperma	Idaho bittercress	native	annual, perennial herb	-	-	FAC	-
Carduus pycnocephalus ssp. *pycnocephalus*	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-	-
Carex barbarae	Valley sedge	native	perennial grasslike herb	-	-	FAC	-
Carex densa	Dense sedge	native	perennial grasslike herb	-	-	OBL	-
Carex multicaulis	Forest sedge	native	perennial grasslike herb	-	-	-	-
Carex nudata	Torrent sedge	native	perennial grasslike herb	-	-	FACW	-
Carex pellita	Woolly sedge	native	perennial grasslike herb	-	-	OBL	-
Carex praegracilis	Field sedge	native	perennial grasslike herb	-	-	FACW	-
Carex serratodens	Bifid sedge	native	perennial grasslike herb	-	-	FACW	4.9
Carex tumulicola	Split awn sedge	native	perennial grasslike herb	-	-	FACU	-
Castilleja affinis ssp. *affinis*	Coast Indian paint brush	native	perennial herb	-	-	-	-
Castilleja applegatei ssp. *martinii*	Martin's paintbrush	native	perennial herb	-	-	-	-
Castilleja attenuata	Narrow leaved owl's clover	native	annual herb	-	-	-	-
Castilleja densiflora ssp. *densiflora*	Dense flower owl's clover	native	annual herb	-	-	-	-
Castilleja exserta ssp. *exserta*	Purple owl's clover	native	annual herb	-	-	-	-
Castilleja foliolosa	Texas paintbrush	native	perennial herb	-	-	-	2.3
Castilleja minor	Little paintbrush	native	annual herb	-	-	OBL	-
Castilleja rubicundula ssp. *lithospermoides*	Cream sacs	native	annual herb	-	-	-	2.4
Caulanthus lasiophyllus	California mustard	native	annual herb	-	-	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Ceanothus cuneatus var. *cuneatus*	Buck brush	native	shrub	-	-	-	1.5
Ceanothus foliosus var. *foliosus*	Wavy leaved ceanothus	native	shrub	-	-	-	-
Ceanothus integerrimus var. *macrothyrsus*	Deerbrush	native	shrub	-	-	-	-
Ceanothus jepsonii	Musk brush	native	shrub	-	-	-	6
Centaurea calcitrapa	Purple star thistle	non-native (invasive)	annual, perennial herb	-	Moderate	-	-
Centaurea melitensis	Tocalote	non-native (invasive)	annual herb	-	Moderate	-	-
Centaurea solstitialis	Yellow starthistle	non-native (invasive)	annual herb	-	High	-	-
Centromadia fitchii	Spikeweed	native	annual herb	-	-	FACU	-
Cephalanthus occidentalis	Common buttonbush	native	shrub	-	-	OBL	-
Cerastium glomeratum	Large mouse ears	non-native	annual herb	-	-	UPL	-
Cercis occidentalis	Western redbud	native	tree, shrub	-	-	-	-
Cercocarpus betuloides var. *betuloides*	Birch leaf mountain mahogany	native	tree, shrub	-	-	-	-
Chaenactis glabriuscula var. *heterocarpha*	Variable fruited yellow chaenactis	native	annual herb	-	-	-	2.5
Chenopodium album	Lambs quarters	non-native	annual herb	-	-	FACU	-
Chlorogalum pomeridianum var. *pomeridianum*	Common soaproot	native	perennial herb	-	-	-	-
Chorizanthe membranacea	Pink spineflower	native	annual herb	-	-	-	-
Chorizanthe polygonoides var. *polygonoides*	Knotweed spineflower	native	annual herb	-	-	-	-
Cichorium intybus	Chicory	non-native	perennial herb	-	-	FACU	-
Cirsium cymosum var. *cymosum*	Peregrine thistle	native	perennial herb	-	-	-	-
Cirsium douglasii	Swamp thistle	native	perennial herb	-	-	OBL	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Cirsium occidentale var. *venustum*	Coulter's thistle	native	perennial herb	-	-	-	-
Cirsium vulgare	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU	-
Clarkia amoena ssp. *huntiana*	Farewell to spring	native	annual herb	-	-	-	-
Clarkia concinna ssp. *concinna*	Red ribbons	native	annual herb	-	-	-	-
Clarkia gracilis ssp. *tracyi*	Tracy's clarkia	native	annual herb	Rank 4.2	-	-	5
Clarkia purpurea ssp. *quadrivulnera*	Purple clarkia	native	annual herb	-	-	-	-
Clarkia rhomboidea	Tongue clarkia	native	annual herb	-	-	-	-
Clarkia unguiculata	Woodland clarkia	native	annual herb	-	-	-	-
Claytonia exigua ssp. *exigua*	Serpentine springbeauty	native	annual herb	-	-	-	3.4
Claytonia parviflora ssp. *parviflora*	Miner'slettuce	native	annual herb	-	-	FACU	-
Claytonia perfoliata ssp. *perfoliata*	Miner's lettuce	native	annual herb	-	-	FAC	-
Clematis lasiantha	Pipestem	native	perennial herb, vine	-	-	-	-
Clematis ligusticifolia	Creek clematis	native	perennial herb, vine	-	-	FAC	-
Collinsia greenei	Greene's collinsia	native	annual herb	-	-	-	5.2
Collinsia heterophylla var. *heterophylla*	Purple chinese houses	native	annual herb	-	-	-	-
Collinsia sparsiflora var. *sparsiflora*	Few flowered collinsia	native	annual herb	-	-	-	-
Collomia diversifolia	Serpentine collomia	native	annual herb	Rank 4.3	-	-	5.6
Collomia heterophylla	Varied leaved collomia	native	annual herb	-	-	-	-
Convolvulus arvensis	Field bindweed	non-native	perennial herb, vine	-	-	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Cordylanthus pilosus ssp. *pilosus*	Hairy bird's beak	native	annual herb	-	-	-	-
Cordylanthus tenuis ssp. *brunneus*	Serpentine bird's beak	native	annual herb (hemiparasitic)	Rank 4.3	-	-	5.1
Cornus nuttallii	Mountain dogwood	native	shrub	-	-	FACU	-
Cornus sericea ssp. *occidentalis*	Western dogwood	native	shrub	-	-	FACW	-
Crassula aquatica	Aquatic pygmy weed	native	annual herb	-	-	OBL	-
Crassula connata	Sand pygmy weed	native	annual herb	-	-	FAC	-
Crassula tillaea	Mediterranean pygmy weed	non-native	annual herb	-	-	FACU	-
Crocanthemum scoparium	Peak rush-rose	native	shrub	-	-	-	-
Croton setiger	Turkey-mullein	native	perennial herb	-	-	-	-
Crypsis sp.	Prickle grass	non-native	annual grass	-	-	FACW-OBL-	-
Cryptantha flaccida	Beaked cryptantha	native	annual herb	-	-	-	1.6
Cryptantha hispidula	Napa cryptantha	native	annual herb	-	-	-	6
Cuscuta brachycalyx	San joaquin dodder	native	annual herb, vine (parasitic)	-	-	-	-
Cynodon dactylon	Bermuda grass	non-native (invasive)	perennial grass	-	Moderate	FACU	-
Cynoglossum grande	Houndstongue	native	perennial herb	-	-	-	-
Cynosurus echinatus	Dogtail grass	non-native (invasive)	annual grass	-	Moderate	-	-
Cyperus eragrostis	Tall cyperus	native	perennial grasslike herb	-	-	FACW	-
Cytisus scoparius	Scotch broom	non-native (invasive)	shrub	-	High	-	-
Dactylis glomerata	Orchardgrass	non-native (invasive)	perennial grass	-	Limited	FACU	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Damasonium californicum	California damsonium	native	perennial herb (aquatic)	-	-	OBL	-
Danthonia californica	California oatgrass	native	perennial grass	-	-	FAC	-
Datisca glomerata	Durango root	native	perennial herb	-	-	FACW	-
Datura stramonium	Jimson weed	non-native	annual herb	-	-	-	-
Daucus pusillus	Wild carrot	native	annual herb	-	-	-	-
Delphinium hesperium ssp. *pallescens*	Western larkspur	native	perennial herb	-	-	FAC	-
Delphinium nudicaule	Canyon larkspur	native	perennial herb	-	-	-	-
Delphinium uliginosum	Swamp larkspur	native	perennial herb	Rank 4.2	-	OBL	5.7
Delphinium variegatum ssp. *variegatum*	Royal larkspur	native	perennial herb	-	-	-	-
Dendromecon rigida	Bush poppy	native	shrub	-	-	-	-
Deschampsia cespitosa ssp. *cespitosa*	Tufted hairgrass	native	perennial grass	-	-	FACW	-
Deschampsia danthonioides	Annual hairgrass	native	annual grass	-	-	FACW	-
Dichelostemma capitatum ssp. *capitatum*	Wild hyacinth	native	perennial herb	-	-	FACU	-
Dichelostemma congestum	Fork toothed ookow	native	perennial herb	-	-	-	-
Digitaria sanguinalis	Crabgrass	non-native	annual grass	-	-	FACU	-
Diplacus aurantiacus	Sticky monkeyflower	native	shrub	-	-	FACU	-
Diplacus congdonii	Congdon's monkeyflower	native	annual herb	-	-	FAC	-
Diplacus douglasii	Purple mouse ears	native	annual herb	-	-	FACW	2.7
Diplacus kelloggii	Kellogg's monkeyflower	native	annual herb	-	-	-	-
Diplacus tricolor	Tricolor monkeyflower	native	annual herb	-	-	OBL	-
Downingia concolor var. *concolor*	Spotted throat downingia	native	annual herb	-	-	OBL	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Downingia cuspidata	Toothed downingia	native	annual herb	-	-	OBL	-
Drymocallis glandulosa	Sticky cinquefoil	native	perennial herb	-	-	FAC	-
Dryopteris arguta	Wood fern	native	fern	-	-	-	-
Dudleya cymosa ssp. *cymosa*	Canyon dudleya	native	perennial herb	-	-	-	-
Echinochloa crus-galli	Barnyard grass	non-native	annual grass	-	-	FACW	-
Ehrendorferia chrysantha	Golden eardrops	native	perennial herb	-	-	-	1.1
Eleocharis acicularis	Needle spikerush	native	perennial grasslike herb	-	-	OBL	-
Eleocharis macrostachya	Spike rush	native	perennial grasslike herb	-	-	OBL	-
Elymus caput-medusae	Medusa head	non-native (invasive)	annual grass	-	High	-	-
Elymus elymoides var. *elymoides*	Squirrel tail grass	native	perennial grass	-	-	FACU	-
Elymus glaucus ssp. *glaucus*	Blue wild rye	native	perennial grass	-	-	FACU	-
Elymus multisetus	Big squirreltail grass	native	perennial grass	-	-	-	-
Elymus triticoides	Beardless wild rye	native	perennial grass	-	-	FAC	-
Epilobium brachycarpum	Willow herb	native	annual herb	-	-	-	-
Epilobium campestre	Smooth boisduvalia	native	annual herb	-	-	OBL	-
Epilobium canum ssp. *canum*	California fuchsia	native	perennial herb	-	-	-	-
Epilobium ciliatum	Slender willow herb	native	perennial herb	-	-	FACW	-
Epilobium densiflorum	Willow herb	native	annual herb	-	-	FACW	-
Epilobium minutum	Minute willowherb	native	annual herb	-	-	FACU	2
Epilobium torreyi	Narrow boisduvalia	native	annual herb	-	-	FACW	-
Epipactis gigantea	Stream orchid	native	perennial herb	-	-	OBL	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Equisetum hyemale ssp. *affine*	Giant scouring rush	native	fern	-	-	FACW	-
Equisetum laevigatum	Smooth scouring rush	native	fern	-	-	FACW	-
Ericameria arborescens	Golden fleece	native	shrub	-	-	-	1.3
Erigeron canadensis	Canada horseweed	native	annual herb	-	-	FACU	-
Erigeron greenei	Greene's narrow-leaved daisy	native	perennial herb	Rank 1B.2	-	-	-
Erigeron philadelphicus var. *philadelphicus*	Philadelphia fleabane	native	perennial herb	-	-	FACU	-
Eriodictyon californicum	Yerba santa	native	shrub	-	-	-	-
Eriogonum luteolum var. *luteolum*	Golden buckwheat	native	annual herb	-	-	-	3.8
Eriogonum nudum var. *nudum*	Nude buckwheat	native	shrub	-	-	-	-
Eriophyllum lanatum var. *achilleoides*	Yarrow leaved woolly sunflower	native	perennial herb	-	-	-	-
Erodium botrys	Big heron bill	non-native	annual herb	-	-	FACU	-
Erodium brachycarpum	White stemmed filaree	non-native	annual herb	-	-	-	-
Erodium cicutarium	Red stemmed filaree	non-native (invasive)	annual herb	-	Limited	-	-
Erodium moschatum	Whitestem filaree	non-native	annual herb	-	-	-	-
Eryngium aristulatum var. *aristulatum*	Jepson's button celery	native	perennial herb	-	-	OBL	-
Erythranthe guttata	Seep monkeyflower	native	perennial herb (rhizomatous)	-	-	OBL	-
Erythranthe latidens	Broad toothed monkeyflower	native	annual herb	-	-	OBL	-
Erythranthe microphylla	Seep monkeyflower	native	annual herb	-	-	OBL	-
Erythranthe nudata	Bare monkeyflower	native	annual herb	Rank 4.3	-	OBL	5.6
Erythronium helenae	St. Helena fawn lily	native	perennial herb (bulb)	Rank 4.2	-	-	4.5
Eschscholzia caespitosa	Tufted poppy	native	annual herb	-	-	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Eschscholzia californica	California poppy	native	annual, perennial herb	-	-	-	-
Eucalyptus camaldulensis	Red gum	non-native (invasive)	tree	-	Limited	FAC	-
Euphorbia serpyllifolia	Thyme-leaved spurge	native	annual herb	-	-	-	-
Euphorbia spathulata	Reticulate seeded spurge	native	annual herb	-	-	FAC	-
Eurybia radulina	Roughleaf aster	native	perennial herb				
Euthamia occidentalis	Western goldenrod	native	perennial herb	-	-	FACW	-
Festuca arundinacea	Reed fescue	non-native (invasive)	perennial grass	-	Moderate	FACU	-
Festuca bromoides	Brome fescue	non-native	annual grass	-	-	FACU	-
Festuca californica	California fescue	native	perennial grass	-	-	FACU	2.4
Festuca idahoensis	Blue fescue	native	perennial grass	-	-	FACU	1.3
Festuca microstachys	Small fescue	native	annual grass	-	-	-	-
Festuca myuros	Rattail sixweeks grass	non-native (invasive)	annual grass	-	Moderate	FACU	-
Festuca perennis	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC	-
Ficus carica	Common fig	non-native (invasive)	tree	-	Moderate	FACU	-
Frangula californica ssp. *tomentella*	Hoary coffeeberry	native	shrub	-	-	-	1.5
Fraxinus dipetala	Two petaled ash	native	tree, shrub	-	-	-	-
Fraxinus latifolia	Oregon ash	native	tree	-	-	FACW	-
Fritillaria affinis	Checker lily	native	perennial herb (bulb)	-	-	-	2
Fritillaria purdyi	Purdy's fritillary	native	perennial herb (bulb)	Rank 4.3	-	-	4.5

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Fritillaria recurva	Scarlet fritillary	native	perennial herb	-	-	-	-
Galium andrewsii ssp. *andrewsii*	Phlox leaved bedstraw	native	perennial herb	-	-	-	3.2
Galium aparine	Cleavers	native	annual herb	-	-	FACU	-
Galium bolanderi	Bolander's bedstraw	native	perennial herb	-	-	-	-
Galium californicum	California bedstraw	native	perennial herb	-	-	-	-
Galium murale	Tiny bedstraw	non-native	annual herb	-	-	-	-
Galium parisiense	Wall bedstraw	non-native	annual herb	-	-	UPL	-
Galium porrigens var. *porrigens*	Graceful bedstraw	native	vine, shrub	-	-	-	-
Galium porrigens var. *tenue*	Graceful bedstraw	native	vine, shrub	-	-	-	-
Garrya congdonii	Silk tassel	native	shrub	-	-	-	5
Gastridium phleoides	Nit grass	non-native	annual grass	-	-	FACU	-
Genista monspessulana	French broom	non-native (invasive)	shrub	-	High	-	-
Geranium dissectum	Wild geranium	non-native (invasive)	annual herb	-	Limited	-	-
Geranium molle	Crane's bill geranium	non-native	annual, perennial herb	-	-	-	-
Gilia capitata ssp. *capitata*	Blue field gilia	native	annual herb	-	-	-	1.6
Gilia clivorum	Purple spot gilia	native	annual herb	-	-	-	-
Gilia tricolor ssp. *diffusa*	Bird's eyes	native	annual herb	-	-	-	-
Githopsis specularioides	Venus' looking glass	native	annual herb	-	-	FACU	-
Glyceria declinata	Waxy mannagrass	non-native (invasive)	perennial grass	-	Moderate	FACW	-
Glycyrrhiza glabra	Licorice	non-native	perennial herb	-	-	-	-
Glycyrrhiza lepidota	American licorice	native	perennial herb	-	-	FAC	-
Gnaphalium palustre	Lowland cudweed	native	annual herb	-	-	FACW	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Gratiola ebracteata	Common hedge hyssop	native	annual herb	-	-	OBL	-
Grindelia hirsutula	Gumweed	native	perennial herb	-	-	FACW	1.4
Helenium bigelovii	Bigelow's sneezeweed	native	perennial herb	-	-	FACW	2.9
Helenium puberulum	Sneezeweed	native	perennial herb	-	-	FACW	-
Helianthella californica var. *californica*	California helianthella	native	perennial herb	-	-	-	-
Helianthus exilis	Serpentine sunflower	native	annual herb	Rank 4.2	-	FACU	5.7
Heliotropium curassavicum var. *oculatum*	Seaside heliotrope	native	perennial herb	-	-	FACU	-
Helminthotheca echioides	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC	-
Hemizonia congesta ssp. *clevelandii*	Cleveland's tarweed	native	annual herb	-	-	-	-
Hesperevax sparsiflora var. *sparsiflora*	Few flowered evax	native	annual herb	-	-	FACU	1.8
Hesperocyparis sargentii	Sargent cypress	native	tree, shrub	-	-	-	4.9
Hesperolinon bicarpellatum	Two carpellate western flax	native	annual herb	Rank 1B.2	-	-	6.2
Hesperolinon californicum	California western flax	native	annual herb	-	-	-	2.8
Hesperolinon didymocarpum	Lake County western flax	native	annual herb	SE, Rank 1B.2	-	-	6.2
Hesperolinon disjunctum	Coast range western flax	native	annual herb	-	-	-	6
Hesperolinon micranthum	Small flower western flax	native	annual herb	-	-	-	2.4
Hesperolinon spergulinum	Slender western flax	native	annual herb	-	-	-	4.7
Heterocodon rariflorum	Heterocodon	native	annual herb	-	-	FACW	-
Heteromeles arbutifolia	Toyon	native	shrub	-	-	-	-
Heterotheca oregona	Oregon golden aster	native	perennial herb	-	-	FACU	-
Hirschfeldia incana	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Hoita macrostachya	California hemp	native	perennial herb	-	-	OBL	-
Holocarpha virgata ssp. *virgata*	Narrow tarplant	native	annual herb	-	-	-	-
Hordeum brachyantherum ssp. *brachyantherum*	Meadow barley	native	perennial grass	-	-	FACW	-
Hordeum brachyantherum ssp. *californicum*	Meadow barley	native	perennial grass	-	-	FACW	3.1
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	non-native (invasive)	annual grass	-	Moderate	FAC	-
Hordeum murinum ssp. *glaucum*	Foxtail	non-native (invasive)	annual grass	-	Moderate	FACU	-
Hordeum murinum ssp. *leporinum*	Farmer's foxtail	non-native (invasive)	annual grass	-	Moderate	FACU	-
Hypericum concinnum	Gold wire	native	perennial herb	-	-	-	-
Hypericum perforatum ssp. *perforatum*	Klamathweed	non-native	perennial herb	-	Moderate	FACU	-
Hypochaeris glabra	Smooth cats ear	non-native (invasive)	annual herb	-	Limited	-	-
Hypochaeris radicata	Hairy cats ear	non-native (invasive)	perennial herb	-	Moderate	FACU	-
Iris fernaldii	Fernald's iris	native	perennial herb	-	-	-	-
Iris macrosiphon	Ground iris	native	perennial herb	-	-	-	1.1
Juglans hindsii	Northern California black walnut	native	tree	Rank 1B.1	-	FAC	-
Juncus balticus ssp. *ater*	Baltic rush	native	perennial grasslike herb	-	-	FACW	-
Juncus bufonius	Common toad rush	native	annual grasslike herb	-	-	FACW	-
Juncus effusus ssp. *pacificus*	Pacific rush	native	perennial grasslike herb	-	-	FACW	-
Juncus mexicanus	Mexican rush	native	perennial grasslike herb	-	-	FACW	-
Juncus occidentalis	Western rush	native	perennial grasslike herb	-	-	FACW	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Juncus patens	Common rush	native	perennial grasslike herb	-	-	FACW	-
Juncus phaeocephalus var. *phaeocephalus*	Brown headed rush	native	perennial grasslike herb	-	-	FACW	-
Juncus tenuis	Slender rush	native	perennial grasslike herb	-	-	FACW	-
Juncus xiphioides	Iris leaved rush	native	perennial grasslike herb	-	-	OBL	-
Keckiella breviflora var. *glabrisepala*	Hairless gaping keckiella	native	shrub	-	-	-	-
Kickxia elatine	Sharp point fluellin	non-native	perennial herb	-	-	UPL	-
Koeleria macrantha	June grass	native	perennial grass	-	-	-	-
Lactuca saligna	Willow lettuce	non-native	annual herb	-	-	UPL	-
Lactuca serriola	Prickly lettuce	non-native	annual herb	-	-	FACU	-
Lagophylla minor	Little hareleaf	native	annual herb	-	-	-	4.7
Lagophylla ramosissima	Common hareleaf	native	annual herb	-	-	-	-
Lamium amplexicaule	Henbit	non-native	annual herb	-	-	-	-
Lasthenia californica ssp. *californica*	California goldfields	native	annual herb	-	-	FACU	-
Lasthenia glaberrima	Smooth goldfields	native	annual herb	-	-	OBL	-
Lasthenia glabrata ssp. *glabrata*	Yellow rayed goldfields	native	annual herb	-	-	FACW	-
Lasthenia gracilis	Needle goldfields	native	annual herb	-	-	-	-
Lathyrus cicera	Red peavine	non-native	annual herb	-	-	-	-
Lathyrus hirsutus	Caley pea	non-native	annual herb	-	-	FAC	-
Lathyrus tingitanus	Tangier pea	non-native	annual herb	-	-	-	-
Lathyrus vestitus var. *vestitus*	Hillside pea	native	perennial herb	-	-	-	1.8
Layia chrysanthemoides	Smooth tidy tips	native	annual herb	-	-	FACW	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Layia septentrionalis	Colusa layia	native	annual herb	Rank 1B.2	-	-	3.2
Leontodon saxatilis ssp. *longirostris*	Hawkbit	non-native	annual herb	-	-	FACU	-
Lepechinia calycina	Pitcher sage	native	shrub	-	-	-	-
Lepidium latifolium	Perennial pepperweed	non-native (invasive)	perennial herb	-	High	FAC	-
Lepidium nitidum	Shining pepper grass	native	annual herb	-	-	FAC	-
Lepidium strictum	Peppergrass	native	annual herb	-	-	-	-
Leptosiphon bicolor	True babystars	native	annual herb	-	-	UPL	-
Leptosiphon ciliatus	Whiskerbrush	native	annual herb	-	-	-	-
Leptosiphon parviflorus	Variable linanthus	native	annual herb	-	-	-	-
Lessingia ramulosa	Sonoma lessingia	native	annual herb	-	-	-	5.4
Lewisia rediviva var. *rediviva*	Bitter root	native	perennial herb	-	-	-	-
Limnanthes douglasii ssp. *nivea*	Douglas' meadowfoam	native	annual herb	-	-	OBL	-
Linanthus dichotomus ssp. *meridianus*	Evening snow	native	annual herb	-	-	-	-
Lithophragma affine	Common woodland star	native	perennial herb	-	-	-	-
Lithophragma heterophyllum	Woodland star	native	perennial herb	-	-	-	-
Logfia filaginoides	California cottonrose	native	annual herb	-	-	-	-
Logfia gallica	Narrowleaf cottonrose	non-native	annual herb	-	-	-	-
Lomatium californicum	Celery weed	native	perennial herb	-	-	-	-
Lomatium dasycarpum ssp. *tomentosum*	Woolly fruited lomatium	native	perennial herb	-	-	-	-
Lomatium hooveri	Hoover's lomatium	native	perennial herb	Rank 4.3	-	-	5.9
Lomatium marginatum var. *marginatum*	Hartweg's lomatium	native	perennial herb	-	-	-	-
Lomatium marginatum var. *purpureum*	Jepson's lomatium	native	perennial herb	-	-	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Lomatium utriculatum	Hog fennel	native	perennial herb	-	-	-	1.7
Lonicera hispidula	Pink honeysuckle	native	vine, shrub	-	-	FACU	-
Lonicera interrupta	Chaparral honeysuckle	native	vine, shrub	-	-	-	-
Lotus corniculatus	Bird's foot trefoil	non-native	perennial herb	-	-	FAC	-
Lotus tenuis	Narrow-leaf bird’s foot trefoil	non-native	perennial herb	-	-	FACU	-
Lupinus albifrons var. *albifrons*	Silver bush lupine	native	shrub	-	-	-	-
Lupinus albifrons var. *collinus*	Silver bush lupine	native	shrub	-	-	-	-
Lupinus bicolor	Miniature lupine	native	annual, perennial herb	-	-	-	-
Lupinus latifolius var. *latifolius*	Broad leaf lupine	native	perennial herb	-	-	FACW	-
Lupinus microcarpus var. *densiflorus*	Dense-flowered chick lupine	native	annual herb	-	-	-	-
Lupinus microcarpus var. *microcarpus*	Chick lupine	native	annual herb	-	-	-	-
Lupinus nanus	Sky lupine	native	annual herb	-	-	-	-
Lupinus succulentus	Arroyo lupine	native	annual herb	-	-	-	-
Luzula comosa var. *comosa*	Hairy wood rush	native	perennial grasslike herb	-	-	FAC	-
Lysimachia arvensis	Scarlet pimpernel	non-native	annual herb	-	-	FAC	-
Lysimachia latifolia	Pacific starflower	native	perennial herb	-	-	FAC	-
Lythrum hyssopifolia	Hyssop loosestrife	non-native (invasive)	annual, perennial herb	-	Limited	OBL	-
Madia elegans	Common madia	native	annual herb	-	-	-	-
Madia exigua	Small tarweed	native	annual herb	-	-	-	1.8
Madia gracilis	Gumweed	native	annual herb	-	-	-	-
Malacothrix floccifera	Woolly malacothrix	native	annual herb	-	-	-	2.1
Malva nicaeensis	Bull mallow	non-native	annual herb	-	-	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Malva parviflora	Cheeseweed	non-native	annual herb	-	-	-	-
Malvella leprosa	Alkali mallow	native	perennial herb	-	-	FACU	-
Marah watsonii	Watson's wild cucumber	native	perennial herb, vine	-	-	-	-
Marrubium vulgare	White horehound	non-native (invasive)	perennial herb	-	Limited	FACU	-
Marsilea vestita ssp. *vestita*	Hairy pepperwort	native	fern	-	-	OBL	-
Matricaria discoidea	Pineapple weed	native	annual herb	-	-	FACU	-
Medicago polymorpha	California burclover	non-native (invasive)	annual herb	-	Limited	FACU	-
Melica californica	California melic	native	perennial grass	-	-	-	-
Melica torreyana	Torrey's melica	native	perennial grass	-	-	-	-
Melilotus albus	White sweetclover	non-native	annual, biennial herb	-	-	-	-
Melilotus indicus	Annual yellow sweetclover	non-native	annual herb	-	-	FACU	-
Mentha pulegium	Pennyroyal	non-native (invasive)	perennial herb	-	Moderate	OBL	-
Micranthes integrifolia	Smooth leaf saxifrage	native	perennial herb	-	-	FACW	-
Micropus californicus var. *californicus*	Slender cottonweed	native	annual herb	-	-	FACU	-
Microseris douglasii ssp. *douglasii*	Douglas' microseris	native	annual herb	-	-	FACU	-
Microseris elegans	Elegant silverpuffs	native	annual herb	-	-	-	-
Mimetanthe pilosa	Snouted monkey flower	native	annual herb	-	-	FACW	-
Minuartia californica	Sandwort	native	annual herb	-	-	FACU	1.7
Minuartia douglasii	Douglas' sandwort	native	annual herb	-	-	-	3
Monardella villosa ssp. *villosa*	Coyote mint	native	perennial herb	-	-	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Monardella viridis	Green monardella	native	perennial herb	Rank 4.3	-	-	1
Montia fontana	Water montia	native	annual herb	-	-	OBL	-
Morus alba	Mulberry	non-native	tree	-	-	FACU	-
Muhlenbergia rigens	Deergrass	native	perennial grass	-	-	FAC	-
Myriophyllum sp.	Water-milfoil	non-native	perennial herb	-	-	OBL	-
Myriopteris covillei	Coville's lip fern	native	fern	-	-	-	-
Narcissus pseudonarcissus	Daffodil	non-native	perennial herb (bulb)	-	-	-	-
Navarretia atractyloides	Holly leaf navarretia	native	annual herb	-	-	-	-
Navarretia cotulifolia	Cotula navarretia	native	annual herb	Rank 4.2	-	OBL	-
Navarretia intertexta	Interwoven navarretia	native	annual herb	-	-	FACW	-
Navarretia jepsonii	Jepson's navarretia	native	annual herb	Rank 4.3	-	FACW	5.6
Navarretia leucocephala ssp. *leucocephala*	White headed navarretia	native	annual herb	-	-	OBL	-
Navarretia mellita	Skunk navarretia	native	annual herb	-	-	FAC	-
Navarretia pubescens	Purple navarretia	native	annual herb	-	-	-	2
Navarretia squarrosa	Skunkweed	native	annual herb	-	-	FACU	-
Nemacladus montanus	Mountain nemacladus	native	annual herb	-	-	-	6
Nemophila heterophylla	Canyon nemophila	native	annual herb	-	-	-	-
Nemophila menziesii var. *atomaria*	Baby blue eyes	native	annual herb	-	-	-	-
Nemophila menziesii var. *menziesii*	Baby blue eyes	native	annual herb	-	-	-	-
Nemophila parviflora var. *parviflora*	Small flowered nemophila	native	annual herb	-	-	-	-
Nicotiana acuminata var. *multiflora*	Many flowered tobacco	non-native	annual herb	-	-	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Oemleria cerasiformis	Oso berry	native	shrub	-	-	FACU	-
Packera eurycephala var. *eurycephala*	Widehead groundsel	native	perennial herb	-	-	-	-
Packera greenei	Flame ragwort	native	perennial herb	-	-	-	-
Parentucellia viscosa	Yellow glandweed	non-native (invasive)	annual herb	-	Limited	FAC	-
Paspalum dilatatum	Dallis grass	non-native	perennial grass	-	-	FAC	-
Pectocarya pusilla	Little pectocarya	native	annual herb	-	-	-	1.3
Pedicularis densiflora	Indian warrior	native	perennial herb	-	-	-	-
Pellaea andromedifolia	Coffee fern	native	fern	-	-	-	-
Pellaea mucronata var. *mucronata*	Bird's foot fern	native	fern	-	-	-	-
Penstemon heterophyllus var. *heterophyllus*	Foothill penstemon	native	perennial herb	-	-	-	-
Penstemon heterophyllus var. *purdyi*	Purdy's foothill penstemon	native	perennial herb	-	-	-	-
Pentagramma triangularis	Gold back fern	native	fern	-	-	-	-
Perideridia gairdneri ssp. *borealis*	Northern Gairdner's yampah	native	perennial herb	-	-	FAC	-
Perideridia kelloggii	Kellogg's yampah	native	perennial herb	-	-	-	2.1
Persicaria amphibia	Water smartweed	native	perennial herb (aquatic)	-	-	OBL	-
Persicaria maculosa	Spotted ladysthumb	non-native	annual herb	-	-	FACW	-
Persicaria punctata	Dotted smartweed	native	perennial herb	-	-	OBL	-
Petrorhagia dubia	Windmill pink	non-native	annual herb	-	-	-	-
Phacelia distans	Common phacelia	native	annual herb	-	-	OBL	1.1
Phacelia imbricata var. *imbricata*	Imbricate phacelia	native	annual herb	-	-	-	-

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Phalaris aquatica	Harding grass	non-native (invasive)	perennial grass	-	Moderate	FACU	-
Phalaris lemmonii	Lemmon's canarygrass	native	annual grass	-	-	FACW	-
Phalaris minor	Mediterranean canarygrass	non-native	annual grass	-	-	-	-
Phalaris paradoxa	Hood canarygrass	non-native	annual grass	-	-	FAC	-
Phoradendron bolleanum	Bollean mistletoe	native	shrub (parasitic)	-	-	-	-
Phoradendron leucarpum ssp. *tomentosum*	Mistletoe	native	shrub (parasitic)	-	-	-	-
Phyla nodiflora	Common lippia	native	perennial herb	-	-	FACW	-
Physalis lanceifolia	Narrow leaf tomatillo	non-native	annual herb	-	-	UPL	-
Pickeringia montana var. *montana*	Chaparral pea	native	shrub	-	-	-	-
Pinus attenuata	Knobcone pine	native	tree	-	-	-	2.5
Pinus ponderosa var. *pacifica*	Pacific ponderosa pine	native	tree	-	-	FACU	-
Pinus sabiniana	Bull pine	native	tree	-	-	-	1.4
Piperia transversa	Mountain piperia	native	perennial herb	-	-	-	-
Plagiobothrys bracteatus	Bracted allocarya	native	annual herb	-	-	FACW	-
Plagiobothrys fulvus var. *campestris*	Tawny popcorn flower	native	annual herb	-	-	-	-
Plagiobothrys glyptocarpus var. *glyptocarpus*	Sculptured allocarya	native	annual herb	-	-	FACW	-
Plagiobothrys greenei	Greene's allocarya	native	annual herb	-	-	FACW	-
Plagiobothrys nothofulvus	Rusty haired popcorn flower	native	annual herb	-	-	FAC	-
Plagiobothrys stipitatus var. *micranthus*	Common vernal pool allocarya	native	annual herb	-	-	FACW	-
Plantago coronopus	Cut leaf plantain	non-native	annual herb	-	-	FAC	-
Plantago erecta	California plantain	native	annual herb	-	-	-	1

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Plantago lanceolata	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC	-
Plantago patagonica	Patagonia plantain	native	annual herb	-	-	-	-
Platanus ×hispanica	London plane tree	non-native	tree	-	-	-	-
Platystemon californicus	Cream cups	native	annual herb	-	-	-	1.7
Plectritis ciliosa	Long spurred plectritis	native	annual herb	-	-	FACU	-
Plectritis macrocera	Plectritis	native	annual herb	-	-	FACU	-
Pleuropogon californicus var. *californicus*	Annual semaphoregrass	native	annual grass	-	-	OBL	-
Poa annua	Annual blue grass	non-native	annual grass	-	-	FAC	-
Poa bulbosa ssp. *bulbosa*	Bulbous blue grass	non-native	perennial grass	-	-	FACU	-
Poa pratensis ssp. *pratensis*	Kentucky blue grass	non-native (invasive)	perennial grass	-	Limited	FAC	-
Poa secunda ssp. *secunda*	Sandberg's bluegrass	native	perennial grass	-	-	FACU	-
Pogogyne douglasii	Douglas' pogogyne	native	annual herb	-	-	OBL	-
Pogogyne zizyphoroides	Sacramento mint	native	annual herb	-	-	OBL	-
Polygala californica	Milkwort	native	perennial herb	-	-	-	-
Polygonum aviculare ssp. *aviculare*	Prostrate knotweed	non-native	annual, perennial herb	-	-	FACW	-
Polypodium californicum	California polypody	native	fern	-	-	-	-
Polypodium calirhiza	Licorice fern	native	fern	-	-	-	-
Polypogon interruptus	Ditch beard grass	non-native	perennial grass	-	-	FACW	-
Polypogon maritimus	Mediterranean beard grass	non-native	annual grass	-	-	OBL	-
Polypogon monspeliensis	Annual beard grass	non-native (invasive)	annual grass	-	Limited	FACW	-
Populus fremontii ssp. *fremontii*	Cottonwood	native	tree	-	-	FAC	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Portulaca oleracea	Common purslane	non-native	annual herb	-	-	FAC	-
Primula hendersonii	Mosquito bill	native	perennial herb	-	-	-	-
Prunus cerasifera	Cherry plum	non-native (invasive)	tree	-	Limited	-	-
Pseudognaphalium californicum	Ladies' tobacco	native	annual, perennial herb	-	-	-	-
Pseudognaphalium luteoalbum	Jersey cudweed	non-native	annual herb	-	-	FAC	-
Pseudotsuga menziesii var. *menziesii*	Douglas fir	native	tree	-	-	FACU	-
Psilocarphus brevissimus var. *brevissimus*	Woolly heads	native	annual herb	-	-	FACW	-
Psilocarphus chilensis	Round woolly marbles	native	annual herb	-	-	FACW	-
Pteridium aquilinum var. *pubescens*	Western bracken fern	native	fern	-	-	FACU	-
Pterostegia drymarioides	Fairy mist	native	annual herb	-	-	-	-
Quercus ×morehus	Oracle oak	native	tree	-	-	-	-
Quercus berberidifolia	Inland scrub oak	native	tree	-	-	-	-
Quercus chrysolepis	Gold cup live oak	native	tree	-	-	-	-
Quercus douglasii	Blue oak	native	tree	-	-	-	-
Quercus durata var. *durata*	Leather oak	native	shrub	-	-	-	5.8
Quercus kelloggii	California black oak	native	tree	-	-	-	-
Quercus lobata	Valley oak	native	tree	-	-	FACU	-
Quercus wislizeni var. *wislizeni*	Interior live oak	native	tree, shrub	-	-	-	-
Rafinesquia californica	California chicory	native	annual herb	-	-	-	-
Ranunculus aquatilis var. *aquatilis*	Whitewater crowfoot	native	perennial herb (aquatic)	-	-	OBL	-
Ranunculus californicus var. *californicus*	Common buttercup	native	perennial herb	-	-	FACU	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Ranunculus hebecarpus	Pubescent fruited buttercup	native	annual herb	-	-	-	-
Ranunculus muricatus	Buttercup	non-native	annual, perennial herb	-	-	FACW	-
Ranunculus occidentalis var. *occidentalis*	Western buttercup	native	perennial herb	-	-	FAC	-
Raphanus raphanistrum	Jointed charlock	non-native	annual, perennial herb	-	-	-	-
Raphanus sativus	Wild radish	non-native (invasive)	annual, biennial herb	-	Limited	-	-
Rhamnus ilicifolia	Evergreen buckthorn	native	shrub	-	-	-	-
Rhododendron occidentale	Western azalea	native	tree, shrub	-	-	FAC	-
Rhus aromatica	Fragrant sumac	native	shrub	-	-	FACU	-
Ribes malvaceum var. *malvaceum*	Chaparral currant	native	shrub	-	-	-	-
Rigiopappus leptocladus	Wire weed	native	annual herb	-	-	-	1.9
Robinia pseudoacacia	Black locust	non-native (invasive)	tree	-	Limited	FACU	-
Rosa californica	California wild rose	native	shrub	-	-	FAC	-
Rubus armeniacus	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC	-
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC	-
Rumex pulcher	Fiddleleaf dock	non-native	perennial herb	-	-	FAC	-
Salix breweri	Serpentine willow	native	shrub	-	-	FAC	6
Salix exigua var. *hindsiana*	Sandbar willow	native	tree, shrub	-	-	FACW	-
Salix gooddingii	Gooding's willow	native	tree	-	-	FACW	-
Salix laevigata	Polished willow	native	tree	-	-	FACW	-
Salix lasiolepis	Arroyo willow	native	tree, shrub	-	-	FACW	-
Salsola sp.	Russian thistle	non-native	annual herb	-	-	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Salvia columbariae	Chia sage	native	annual herb	-	-	-	-
Salvia sonomensis	Sonoma sage	native	perennial herb	-	-	-	1.6
Sambucus nigra ssp. *caerulea*	Blue elderberry	native	shrub	-	-	FAC	-
Sanicula bipinnata	Poison sanicle	native	perennial herb	-	-	-	-
Sanicula bipinnatifida	Purple sanicle	native	perennial herb	-	-	-	1.8
Sanicula crassicaulis	Pacific sanicle	native	perennial herb	-	-	-	-
Sanicula tuberosa	Turkey pea	native	perennial herb	-	-	-	1.3
Schoenoplectus acutus var. *occidentalis*	Tule	native	perennial grasslike herb	-	-	OBL	-
Schoenoplectus tabernaemontani	Softstem bulrush	native	perennial grasslike herb	-	-	OBL	-
Scleranthus annuus ssp. *annuus*	German knotgrass	non-native	annual herb	-	-	FACU	-
Scrophularia californica	California bee plant	native	perennial herb	-	-	FAC	-
Scutellaria antirrhinoides	Snapdragon skullcap	native	perennial herb	-	-	-	2.3
Scutellaria californica	California skullcap	native	perennial herb	-	-	-	-
Scutellaria siphocampyloides	Gray leaved skullcap	native	perennial herb	-	-	FACU	-
Scutellaria tuberosa	Dannie's skullcap	native	perennial herb	-	-	-	-
Senecio aronicoides	Butterweed	native	perennial herb	-	-	-	-
Senecio clevelandii var. *clevelandii*	Cleveland's ragwort	native	perennial herb	Rank 4.3	-	-	-
Senecio vulgaris	Common groundsel	non-native	annual herb	-	-	FACU	-
Sherardia arvensis	Field madder	non-native	annual herb	-	-	-	-
Sidalcea diploscypha	Fringed checker mallow	native	annual herb	-	-	-	2.6
Sidalcea hartwegii	Hartweg's checkerbloom	native	annual herb	-	-	-	1.6
Sidalcea hirsuta	Hairy checkerbloom	native	annual herb	-	-	OBL	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Sidalcea keckii	Keck's checkerbloom	native	annual herb	FE, Rank 1B.1	-	-	3
Silene gallica	Common catchfly	non-native	annual herb	-	-	-	-
Silene laciniata ssp. *californica*	California indian pink	native	perennial herb	-	-	-	-
Silybum marianum	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-	-
Sisymbrium irio	London rocket	non-native (invasive)	annual herb	-	Moderate	-	-
Sisymbrium officinale	Hedge mustard	non-native	annual herb	-	-	-	-
Sisyrinchium bellum	Blue eyed grass	native	perennial herb	-	-	FACW	-
Solanum parishii	Parish's purple nightshade	native	shrub	-	-	-	-
Solanum xanti	Nightshade	native	perennial herb, shrub	-	-	-	-
Solidago elongata	West coast canada goldenrod	native	perennial herb	-	-	FACU	-
Soliva sessilis	South american soliva	non-native	annual herb	-	-	FACU	-
Sonchus asper ssp. *asper*	Prickly sow thistle	non-native	annual herb	-	-	FAC	-
Sonchus oleraceus	Common sow thistle	non-native	annual herb	-	-	UPL	-
Sorghum halepense	Johnsongrass	non-native	perennial grass	-	-	FACU	-
Spartium junceum	Spanish broom	non-native (invasive)	shrub	-	High	-	-
Spergularia rubra	Purple sand spurry	non-native	annual, perennial herb	-	-	FAC	-
Spiranthes porrifolia	Western ladies tresses	native	perennial herb	-	-	FACW	-
Stachys albens	Cobwebby hedge nettle	native	perennial herb	-	-	OBL	-
Stachys rigida var. *quercetorum*	Rough hedgenettle	native	perennial herb	-	-	FACW	-
Stebbinsoseris heterocarpa	Grassland stebbinsoseris	native	annual herb	-	-	-	-
Stellaria media	Chickweed	non-native	annual herb	-	-	FACU	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Stephanomeria virgata ssp. *pleurocarpa*	Tall stephanomeria	native	annual herb	-	-	-	-
Stipa cernua	Nodding needle grass	native	perennial grass	-	-	-	-
Stipa lepida	Foothill needle grass	native	perennial grass	-	-	-	-
Stipa miliacea var. *miliacea*	Smilo grass	non-native (invasive)	perennial grass	-	Limited	-	-
Stipa pulchra	Purple needle grass	native	perennial grass	-	-	-	-
Streptanthus breweri	Brewer's jewelflower	native	annual herb	-	-	-	5.7
Streptanthus glandulosus ssp. *glandulosus*	Jewelflower	native	annual herb	-	-	-	-
Streptanthus hesperidis	Green jewel-flower	native	annual herb	Rank 1B.2	-	-	-
Streptanthus morrisonii	Morrison's jewelflower	native	perennial herb	Rank 1B.2	-	-	6.1
Symphoricarpos albus var. *laevigatus*	Common snowberry	native	shrub	-	-	FACU	-
Symphoricarpos mollis	Creeping snowberry	native	shrub	-	-	FACU	-
Tamarix parviflora	Tamarisk	non-native (invasive)	tree, shrub	-	High	FAC	-
Taraxacum officinale	Red seeded dandelion	non-native	perennial herb	-	-	FACU	-
Taraxia ovata	Sun cup	native	perennial herb	-	-	-	-
Tetrapteron graciliflorum	Hill sun cup	native	annual herb	-	-	-	-
Thalictrum fendleri var. *polycarpum*	Torrey's meadow rue	native	perennial herb	-	-	FAC	-
Thermopsis californica var. *californica*	California goldenbanner	native	perennial herb (rhizomatous)	-	-	-	-
Thysanocarpus curvipes ssp. *curvipes*	Fringe pod	native	annual herb	-	-	-	-
Torilis arvensis	Field hedge parsley	non-native (invasive)	annual herb	-	Moderate	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Torilis nodosa	Wild parsley	non-native	annual herb	-	-	-	-
Toxicodendron diversilobum	Poison oak	native	vine, shrub	-	-	FACU	-
Toxicoscordion fontanum	Marsh zigadenus	native	perennial herb	Rank 4.2	-	OBL	-
Toxicoscordion fremontii	Fremont's star lily	native	perennial herb	-	-	-	-
Toxicoscordion micranthum	Small flowered star lily	native	perennial herb	-	-	OBL	-
Tragopogon porrifolius	Salsify	non-native	perennial herb	-	-	-	-
Tribulus terrestris	Puncture vine	non-native (invasive)	annual herb	-	Limited	-	-
Trichostema lanceolatum	Vinegarweed	native	annual herb	-	-	FACU	-
Trichostema laxum	Turpentine weed	native	annual herb	-	-	-	4
Trifolium albopurpureum	Indian clover	native	annual herb	-	-	FACU	-
Trifolium bifidum var. *bifidum*	Pinole clover	native	annual herb	-	-	-	-
Trifolium campestre	Hop clover	non-native	annual herb	-	-	-	-
Trifolium ciliolatum	Tree clover	native	annual herb	-	-	-	-
Trifolium depauperatum var. *depauperatum*	Dwarf sack clover	native	annual herb	-	-	FAC	-
Trifolium depauperatum var. *truncatum*	Dwarf sack clover	native	annual herb	-	-	FAC	-
Trifolium dichotomum	Branched indian clover	native	annual herb	-	-	-	-
Trifolium dubium	Shamrock	non-native	annual herb	-	-	UPL	-
Trifolium fucatum	Bull clover	native	annual herb	-	-	FACU	1.3
Trifolium glomeratum	Clustered clover	non-native	annual herb	-	-	-	-
Trifolium gracilentum	Pin point clover	native	annual herb	-	-	-	1
Trifolium hirtum	Rose clover	non-native (invasive)	annual herb	-	Limited	-	-
Trifolium incarnatum	Crimson clover	non-native	annual herb	-	-	-	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Trifolium microcephalum	Small head clover	native	annual herb	-	-	FAC	1.4
Trifolium microdon	Valparaiso clover	native	annual herb	-	-	-	-
Trifolium pratense	Red clover	non-native	perennial herb	-	-	FACU	-
Trifolium subterraneum	Subterranean clover	non-native	annual herb	-	-	-	-
Trifolium tomentosum	Woolly clover	non-native	annual herb	-	-	-	-
Trifolium variegatum var. *geminiflorum*	Small-flowered variegated clover	native	annual herb	-	-	FAC	-
Trifolium variegatum var. *major*	Large variegated clover	native	annual herb	-	-	FAC	-
Trifolium variegatum var. *variegatum*	Variegated clover	native	annual herb	-	-	FAC	-
Trifolium willdenovii	Tomcat clover	native	annual herb	-	-	FACW	1.3
Triglochin scilloides	Flowering-quillwort	native	annual herb (aquatic)	-	-	OBL	-
Triphysaria eriantha ssp. *eriantha*	Butter 'n' eggs	native	annual herb	-	-	-	-
Triphysaria pusilla	Little owl's clover	native	annual herb	-	-	-	-
Triphysaria versicolor ssp. *faucibarbata*	Yellow owl's clover	native	annual herb	-	-	-	-
Triteleia hyacinthina	Wild hyacinth	native	perennial herb	-	-	FAC	-
Triteleia laxa	Ithuriel's spear	native	perennial herb	-	-	-	-
Triteleia lugens	Dark-mouthed triteleia	native	perennial herb	Rank 4.3	-	-	-
Triteleia peduncularis	Marsh triteleia	native	perennial herb	-	-	FACW	3.8
Typha angustifolia	Narrow leaf cattail	non-native	perennial herb (aquatic)	-	-	OBL	-
Typha latifolia	Broadleaf cattail	native	perennial herb (aquatic)	-	-	OBL	-
Ulmus pumila	Siberian elm	non-native	tree	-	-	UPL	-
Umbellularia californica	California bay	native	tree	-	-	FAC	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Uropappus lindleyi	Silver puffs	native	annual herb	-	-	-	-
Urtica dioica ssp. *holosericea*	Stinging nettle	native	perennial herb	-	-	FAC	-
Velezia rigida	Velezia	non-native	annual herb	-	-	-	-
Verbascum blattaria	Moth mullein	non-native	perennial herb	-	-	UPL	-
Verbascum thapsus	Woolly mullein	non-native (invasive)	perennial herb	-	Limited	FACU	-
Verbena lasiostachys var. *scabrida*	Robust vervain	native	perennial herb	-	-	FAC	-
Veronica anagallis-aquatica	Water speedwell	non-native	perennial herb	-	-	OBL	-
Veronica peregrina ssp. *xalapensis*	Speedwell	native	annual herb	-	-	FAC	-
Vicia benghalensis	Purple vetch	non-native	annual herb, vine	-	-	-	-
Vicia sativa ssp. *nigra*	Smaller common vetch	non-native	annual herb, vine	-	-	FACU	-
Vicia sativa ssp. *sativa*	Common vetch	non-native	annual herb, vine	-	-	FACU	-
Vicia villosa ssp. *varia*	Smooth vetch	non-native	annual herb, vine	-	-	-	-
Vicia villosa ssp. *villosa*	Hairy vetch	non-native	annual herb, vine	-	-	-	-
Viola douglasii	Douglas' violet	native	perennial herb	-	-	-	2.8
Viola purpurea ssp. *quercetorum*	Goosefoot yellow violet	native	perennial herb	-	-	-	-
Vitis californica	California wild grape	native	vine, shrub	-	-	FACU	-
Vitis vinifera	Cultivated grape	non-native	vine, shrub	-	-	-	-
Whipplea modesta	Modesty	native	vine, shrub	-	-	-	-
Woodwardia fimbriata	Western chain fern	native	fern	-	-	OBL	-
Wyethia angustifolia	Narrow leaved mule ears	native	perennial herb	-	-	FACU	-

Scientific Name	Common Name	Origin	Form	Conservation Status[1]	Cal-IPC Status[2]	Wetland Status[3]	Serpentine Affinity[4]
Wyethia glabra	Smooth mule ears	native	perennial herb	-	-	-	-
Wyethia helenioides	Gray mule ears	native	perennial herb	-	-	-	-
Xanthium strumarium	Cocklebur	native	annual herb	-	-	FAC	-
Zannichellia palustris	Horned pondweed	native	perennial herb	-	-	OBL	-
Zeltnera muehlenbergii	Muehlenberg's centaury	native	annual herb	-	-	FAC	-
Zeltnera trichantha	Alkali centaury	native	annual herb	-	-	FAC	-

[1]Key to Conservation Status (CNPS 2019a):

FE	Federal Endangered
FT	Federal Threatened
SE	State Endangered
ST	State Threatened
Rank 1A	CNPS Rank 1A: Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B.1	CNPS Rank 1B.1: Rare, threatened, or endangered in California and elsewhere (seriously threatened in California)
Rank 1B.2	CNPS Rank 1B.2: Rare, threatened, or endangered in California and elsewhere (moderately threatened in California)
Rank 1B.3	CNPS Rank 1B.3: Rare, threatened, or endangered in California and elsewhere (not very threatened in California)
Rank 2A	CNPS Rank 2A: Presumed extirpated in California, but more common elsewhere
Rank 2B.1	CNPS Rank 2B.1: Rare, threatened, or endangered in California, but more common elsewhere (seriously threatened in California)
Rank 2B.2	CNPS Rank 2B.2: Rare, threatened, or endangered in California, but more common elsewhere (moderately threatened in California)
Rank 2B.3	CNPS Rank 2B.3: Rare, threatened, or endangered in California, but more common elsewhere (not very threatened in California)
Rank 3.1	CNPS Rank 3.1: Plants about which more information is needed - A review list (seriously threatened in California)
Rank 3.2	CNPS Rank 3.2: Plants about which more information is needed - A review list (moderately threatened in California)
Rank 3.3	CNPS Rank 3.3: Plants about which more information is needed - A review list (not very threatened in California)
Rank 4.1	CNPS Rank 4.1: Plants of limited distribution - A watch list (seriously threatened in California)
Rank 4.2	CNPS Rank 4.2: Plants of limited distribution - A watch list (moderately threatened in California)
Rank 4.3	CNPS Rank 4.3: Plants of limited distribution - A watch list (not very threatened in California)

[2]Key to Cal-IPC Status (Cal-IPC 2019):

High: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate: These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

[3]Key to Wetland Status (Lichvar et al. 2016):

OBL Obligate plant; almost always occurs in wetlands.
FACW Facultative wetland plant; usually occurs in wetlands, but may occur in non-wetlands.
FAC Facultative plant; occurs in wetlands and nonwetlands.
FACU Facultative upland plant; usually occurs in non-wetlands, but may occur in wetlands.
UPL Upland plant; almost never occur in wetlands.

[4]Key to Serpentine Affinity (Safford et al. 2005):

6 95–100% of records occur on ultramafics
5 85–94% of records occur on ultramafics
4 75–84% of records occur on ultramafics
3 65–74% of records occur on ultramafics
2 55–64% of records occur on ultramafics
1 45–54% of records occur on ultramafics
0.75 35–44% of records occur on ultramafics
0.5 25–34% of records occur on ultramafics
0.25 15–24% of records occur on ultramafics
0.1 0–14% of records occur on ultramafics
0 0% of records occur on ultramafics

APPENDIX D

POTENTIAL FOR SPECIAL-STATUS PLANT SPECIES TO OCCUR WITHIN THE PHASE 1 STUDY AREA

Appendix D. Potential for Special-Status Plant Species to Occur within the Phase 1 Study Area

List compiled from database searches focused on the following 7.5-minute USGS quadrangles: Aetna Springs, Calistoga, Chiles Valley, Clearlake Highlands, Detert Reservoir, Glascock Mountain, Jericho Valley, Knoxville, Lower Lake, Mark West Springs, Middletown, Mount Saint Helena, Saint Helena, Walter Springs, Whispering Pines, and Wilson Valley (CNPS 2019a, CDFW 2019).

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Purdy's onion *Allium fimbriatum var. purdyi*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 980 to 1970 feet (300 to 600 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable rocky, serpentine substrate in chaparral, foothill pine woodland, and Sargent cypress woodland habitats exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Napa false indigo *Amorpha californica var. napensis*	Rank 1B.2	Broadleaved upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 390 to 6560 feet (120 to 2000 meters). Blooms Apr-Jul.	**Moderate Potential.** Potentially suitable, cool, forested habitat on north-facing slopes and/or along draws exists within the Phase 1 Study Area, and the species is known from a nearby occurrence.	No further actions are recommended for this species.
bent-flowered fiddleneck *Amsinckia lunaris*	Rank 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 5 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	**Moderate Potential.** Potentially suitable grassland, chaparral, and scrub habitats exist within the Phase 1 Study Area, and the species is known from nearby occurrences.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
dimorphic snapdragon *Antirrhinum subcordatum*	Rank 4.3	Chaparral, lower montane coniferous forest. Elevation ranges from 605 to 2625 feet (185 to 800 meters). Blooms Apr-Jul.	**Moderate Potential.** Potentially suitable chaparral, foothill pine woodland, and blue oak woodland on serpentine substrate exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
twig-like snapdragon *Antirrhinum virga*	Rank 4.3	Chaparral, lower montane coniferous forest. Elevation ranges from 325 to 6610 feet (100 to 2015 meters). Blooms Jun-Jul.	**Present.** This species was observed in one location within the Phase 1 Study Area on sandstone substrate in deer weed scrub habitat. It has also been observed on the Guenoc Ranch property outside of the Phase 1 Study Area on rhyolite substrate in chaparral habitat.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
modest rockcress *Arabis modesta*	Rank 4.3	Chaparral, lower montane coniferous forest. Elevation ranges from 390 to 2625 feet (120 to 800 meters). Blooms Mar-Jul.	**Moderate Potential.** Potentially suitable rocky chaparral, Sargent cypress, and Douglas fir forest habitats exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Oregon rockcress *Arabis oregana*	Rank 4.3	Chaparral, lower montane coniferous forest. Elevation ranges from 1965 to 6005 feet (600 to 1830 meters). Blooms May.	**Moderate Potential.** Potentially suitable rocky chaparral, Sargent cypress, and Douglas fir forest habitats exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	Rank 1B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 1295 to 5300 feet (395 to 1615 meters). Blooms (Jan)Mar-May(Jul).	**High Potential.** This species was observed in two locations on the Guenoc Ranch property outside of the Phase 1 Study Area, in blue oak woodland. Similar suitable habitat exists in the Phase 1 Study Area.	Although this species was not observed in the Phase 1 Study Area, it was observed in other parts of the property and was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Rincon Ridge manzanita *Arctostaphylos stanfordiana ssp. decumbens*	Rank 1B.1	Chaparral (rhyolitic), cismontane woodland. Elevation ranges from 245 to 1215 feet (75 to 370 meters). Blooms Feb-Apr(May).	**Unlikely.** The species is limited to volcanic mudflows in the Mayacama Mountains, which is located outside of the Phase 1 Study Area.	No further actions are recommended for this species.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Raiche's manzanita *Arctostaphylos stanfordiana ssp. raichei*	Rank 1B.1	Chaparral, lower montane coniferous forest (openings). Elevation ranges from 1475 to 3395 feet (450 to 1035 meters). Blooms Feb-Apr.	**Unlikely.** The Phase 1 Study Area is well outside of the known range of this species, which is known only from near the Lake/Mendocino County boundary west of Clear Lake and from far northern Mendocino County. The nearest known occurrence is approximately 15 miles northwest of the Phase 1 Study Area.	No further actions are recommended for this species.
serpentine milkweed *Asclepias solanoana*	Rank 4.2	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 750 to 6100 feet (230 to 1860 meters). Blooms May-Jul(Aug).	**Moderate Potential.** Potentially suitable rocky, serpentine barrens exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Brewer's milk-vetch *Astragalus breweri*	Rank 4.2	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (open, often gravelly). Elevation ranges from 295 to 2395 feet (90 to 730 meters). Blooms Apr-Jun.	**Present.** This species was observed in a small number of locations in the central portion of the Phase 1 Study Area on rocky and fine-textured serpentine substrates in chaparral and grassland habitats.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
Clara Hunt's milk-vetch *Astragalus claranus*	FE, ST, Rank 1B.1	Chaparral (openings), cismontane woodland, valley and foothill grassland. Elevation ranges from 245 to 900 feet (75 to 275 meters). Blooms Mar-May.	**Moderate Potential.** Potentially suitable thin, volcanic, seasonally moist clay soils exist within the Phase 1 Study Area, and this species is known from within the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Cleveland's milk-vetch *Astragalus clevelandii*	Rank 4.3	Chaparral, cismontane woodland, riparian forest. Elevation ranges from 655 to 4920 feet (200 to 1500 meters). Blooms Jun-Sep.	**Present.** This species was observed in numerous locations within the Phase 1 Study Area in and along ephemeral to intermittent streams on serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 965 to 2295 feet (295 to 700 meters). Blooms Mar-Jun.	**Present.** This taxon was observed within the Phase 1 Study Area on gravelly serpentine berms along an intermittent stream at the intersection of Butts Canyon Road and Tephra Road.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
big-scale balsamroot *Balsamorhiza macrolepis*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 5100 feet (45 to 1555 meters). Blooms Mar-Jun.	**Present.** This species was observed in one location in the far northern portion of the Phase 1 Study Area in blue oak woodland.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
watershield *Brasenia schreberi*	Rank 2B.3	Marshes and swamps (freshwater). Elevation ranges from 95 to 7220 feet (30 to 2200 meters). Blooms Jun-Sep.	**Moderate Potential.** Potentially suitable lake and reservoir habitat exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
narrow-anthered brodiaea *Brodiaea leptandra*	Rank 1B.2	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 360 to 3000 feet (110 to 915 meters). Blooms May-Jul.	**High Potential.** This species was observed in one location within the Guenoc Ranch property outside of the Phase 1 Study Area, and potentially suitable chaparral, rocky grassland, and rocky openings in woodland habitats on volcanic substrate exist within the Phase 1 Study Area**.**	Although this species was not observed within the Phase 1 Study Area, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Indian Valley brodiaea *Brodiaea rosea ssp. rosea*	SE, Rank 3.1	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 1095 to 4755 feet (335 to 1450 meters). Blooms May-Jun.	**Unlikely.** The Phase 1 Study Area is well outside of the known range of this species. Although the Phase 1 Study Area contains serpentine substrate, the nearest documented occurrence is approximately 16 miles north-northwest of the Phase 1 Study Area.	No further actions are recommended for this species.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
serpentine reed grass *Calamagrostis ophitidis*	Rank 4.3	Chaparral (open, often north-facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grassland. Elevation ranges from 295 to 3495 feet (90 to 1065 meters). Blooms Apr-Jul.	**Moderate Potential.** Potentially suitable rocky, serpentine habitat exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
pink star-tulip *Calochortus uniflorus*	Rank 4.2	Coastal prairie, coastal scrub, meadows and seeps, north coast coniferous forest. Elevation ranges from 30 to 3510 feet (10 to 1070 meters). Blooms Apr-Jun.	**Present.** This species was observed in three locations in the central and western portions of the Phase 1 Study Area in seasonally wet areas on serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
four-petaled pussypaws *Calyptridium quadripetalum*	Rank 4.3	Chaparral, lower montane coniferous forest. Elevation ranges from 1030 to 6695 feet (315 to 2040 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable sandy or gravelly serpentine substrate exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Mt. Saint Helena morning-glory *Calystegia collina ssp. oxyphylla*	Rank 4.2	Chaparral, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 915 to 3315 feet (279 to 1010 meters). Blooms Apr-Jun.	**Present.** This taxon has been observed in numerous locations within the Phase 1 Study Area on rocky, serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
South Coast Range morning-glory *Calystegia collina ssp. venusta*	Rank 4.3	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 1390 to 4890 feet (425 to 1490 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable rocky, serpentine areas exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
northern meadow sedge *Carex praticola*	Rank 2B.2	Meadows and seeps (mesic). Elevation ranges from 0 to 10500 feet (0 to 3200 meters). Blooms May-Jul.	**Unlikely.** Although the Phase 1 Study Area contains meadows and seeps, there is only one documented occurrence of this species in the region (approximately 6 miles west of the Phase 1 Study Area), and the identity of this occurrence is uncertain. The Phase 1 Study Area is otherwise well outside the known region of the species.	No further actions are recommended for this species.
johnny-nip *Castilleja ambigua var. ambigua*	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins. Elevation ranges from 0 to 1425 feet (0 to 435 meters). Blooms Mar-Aug.	**Unlikely.** The Phase 1 Study Area lacks potentially suitable mesic grassland habitat with coastal influence required for this species.	No further actions are recommended for this species.
pink creamsacs *Castilleja rubicundula var. rubicundula*	Rank 1B.2	Chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland. Elevation ranges from 65 to 2985 feet (20 to 910 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable mesic, open areas on serpentine substrate in chaparral and grassland habitats exist within the Phase 1 Study Area, and the species is known from nearby occurrences.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Rincon Ridge ceanothus *Ceanothus confusus*	Rank 1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland. Elevation ranges from 245 to 3495 feet (75 to 1065 meters). Blooms Feb-Jun.	**Moderate Potential.** Potentially suitable volcanic and serpentine substrate in Sargent cypress forest and chaparral habitats exist within the Phase 1 Study Area, and the species is known from nearby occurrences.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Calistoga ceanothus *Ceanothus divergens*	Rank 1B.2	Chaparral (serpentine or volcanic, rocky). Elevation ranges from 555 to 3115 feet (170 to 950 meters). Blooms Feb-Apr.	**Moderate Potential.** Potentially suitable chaparral habitat on rocky volcanic and serpentine substrates exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
holly-leaved ceanothus *Ceanothus purpureus*	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 390 to 2100 feet (120 to 640 meters). Blooms Feb-Jun.	**Moderate Potential.** Potentially suitable chaparral and oak woodland edge habitats on rocky volcanic slopes exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Sonoma ceanothus *Ceanothus sonomensis*	Rank 1B.2	Chaparral (sandy, serpentine or volcanic). Elevation ranges from 705 to 2625 feet (215 to 800 meters). Blooms Feb-Apr.	**Moderate Potential.** Potentially suitable chaparral habitat on volcanic substrate exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
pappose tarplant *Centromadia parryi ssp. parryi*	Rank 1B.2	Chaparral, coastal prairie, meadows and seeps, marshes and swamps (coastal salt), valley and foothill grassland (vernally mesic). Elevation ranges from 0 to 1380 feet (0 to 420 meters). Blooms May-Nov.	**Unlikely.** This species is known from alkaline substrate, which is not present within the Phase 1 Study Area.	No further actions are recommended for this species.
dwarf soaproot *Chlorogalum pomeridianum var. minus*	Rank 1B.2	Chaparral (serpentine). Elevation ranges from 1000 to 3280 feet (305 to 1000 meters). Blooms May-Aug.	**Moderate Potential.** Potentially suitable chaparral habitat on serpentine substrate exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Brewer's clarkia *Clarkia breweri*	Rank 4.2	Chaparral, cismontane woodland, coastal scrub. Elevation ranges from 705 to 3660 feet (215 to 1115 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable chaparral and oak woodland habitats on serpentine substrate exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Tracy's clarkia *Clarkia gracilis ssp. tracyi*	Rank 4.2	Chaparral (openings, usually serpentine). Elevation ranges from 210 to 2135 feet (65 to 650 meters). Blooms Apr-Jul.	**Present.** This species was observed in several locations within the Phase 1 Study Area in chaparral habitat on serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
serpentine collomia *Collomia diversifolia*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 655 to 1970 feet (200 to 600 meters). Blooms May-Jun.	**Present.** This species was observed in several locations within the Phase 1 Study Area in chaparral habitat on serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
serpentine bird's-beak *Cordylanthus tenuis ssp. brunneus*	Rank 4.3	Closed-cone coniferous forest, chaparral, cismontane woodland. Elevation ranges from 1000 to 3000 feet (305 to 915 meters). Blooms Jul-Aug.	**High Potential.** Potentially suitable chaparral, foothill pine woodland, and Sargent cypress woodland habitats on rocky, serpentine substrate exists within the Phase 1 Study Area. This species was observed within the Guenoc Ranch property, outside of the Phase 1 Study Area, in leather oak chaparral and foothill pine woodland.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
serpentine cryptantha *Cryptantha dissita*	Rank 1B.2	Chaparral (serpentine). Elevation ranges from 1295 to 1905 feet (395 to 580 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable chaparral habitat on serpentine substrate exists within the Phase 1 Study Area, and the species is known from nearby occurrences.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
deep-scarred cryptantha *Cryptantha excavata*	Rank 1B.1	Cismontane woodland (sandy or gravelly). Elevation ranges from 325 to 1640 feet (100 to 500 meters). Blooms Apr-May.	**Moderate Potential.** Potentially suitable sandy, gravelly, dry streambank habitat is present within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
red-stemmed cryptantha *Cryptantha rostellata*	Rank 4.2	Cismontane woodland, valley and foothill grassland. Elevation ranges from 130 to 2625 feet (40 to 800 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable open, rocky, dry sites in grassland, chaparral, and oak and pine woodland habitats exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
mountain lady's-slipper *Cypripedium montanum*	Rank 4.2	Broadleaved upland forest, cismontane woodland, lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 605 to 7300 feet (185 to 2225 meters). Blooms Mar-Aug.	**Unlikely.** The Phase 1 Study Area lacks potentially suitable habitat for this species which prefers cooler/mesic coniferous forest with partial to closed canopy, often near streams and wetlands.	No further actions are recommended for this species.
swamp larkspur *Delphinium uliginosum*	Rank 4.2	Chaparral, valley and foothill grassland. Elevation ranges from 1115 to 2000 feet (340 to 610 meters). Blooms May-Jun.	**Present.** This species has been observed in numerous locations within the Phase 1 Study Area in seeps, wet meadows, and along streams on serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
Cascade downingia *Downingia willamettensis*	Rank 2B.2	Cismontane woodland (lake margins), valley and foothill grassland (lake margins), vernal pools. Elevation ranges from 45 to 3640 feet (15 to 1110 meters). Blooms Jun-Jul(Sep).	**Moderate Potential.** Potentially suitable lake margin habitat is present within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
marsh horsetail *Equisetum palustre*	Rank 3	Marshes and swamps. Elevation ranges from 145 to 3280 feet (45 to 1000 meters). Blooms unk.	**Unlikely.** The nearest known occurrences are in the immediate San Francisco Bay area; occurrences in Lake County are dubious (documented from a second source, not based on voucher specimen or direct observation).	No further actions are recommended for this species.
Brandegee's eriastrum *Eriastrum brandegeeae*	Rank 1B.1	Chaparral, cismontane woodland. Elevation ranges from 1390 to 2755 feet (425 to 840 meters). Blooms Apr-Aug.	**Moderate Potential.** Potentially suitable barren, volcanic substrate is present within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
streamside daisy *Erigeron biolettii*	Rank 3	Broadleaved upland forest, cismontane woodland, north coast coniferous forest. Elevation ranges from 95 to 3610 feet (30 to 1100 meters). Blooms Jun-Oct.	**Moderate Potential.** Potentially suitable rocky volcanic and serpentine substrates exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Greene's narrow-leaved daisy *Erigeron greenei*	Rank 1B.2	Chaparral (serpentine or volcanic). Elevation ranges from 260 to 3295 feet (80 to 1005 meters). Blooms May-Sep.	**Present.** This species was observed in numerous locations within the Phase 1 Study Area in rocky, chaparral habitat, usually on serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
Snow Mountain buckwheat *Eriogonum nervulosum*	Rank 1B.2	Chaparral (serpentine). Elevation ranges from 980 to 6905 feet (300 to 2105 meters). Blooms Jun-Sep.	**Moderate Potential.** Potentially suitable chaparral habitat on rocky, serpentine substrate exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
bay buckwheat *Eriogonum umbellatum var. bahiiforme*	Rank 4.2	Cismontane woodland, lower montane coniferous forest. Elevation ranges from 2295 to 7220 feet (700 to 2200 meters). Blooms Jul-Sep.	**Moderate Potential.** Potentially suitable chaparral and oak and foothill pine woodland habitats on rocky, serpentine and volcanic substrates exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Loch Lomond button-celery *Eryngium constancei*	FE, SE, Rank 1B.1	Vernal pools. Elevation ranges from 1505 to 2805 feet (460 to 855 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable vernal wetland habitat exists within the Phase 1 Study Area at waterbodies such as Wildcat Lake, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Jepson's coyote thistle *Eryngium jepsonii*	Rank 1B.2	Valley and foothill grassland, vernal pools. Elevation ranges from 5 to 985 feet (3 to 300 meters). Blooms Apr-Aug.	**Moderate Potential.** Potentially suitable seasonal wetlands on clay substrate are present within the Phase 1 Study Area.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
bare monkeyflower *Erythranthe nudata*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 655 to 2295 feet (200 to 700 meters). Blooms May-Jun.	**Present.** This species has been observed in numerous locations within the Phase 1 Study Area in mesic areas, seeps, and along streams on serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
St. Helena fawn lily *Erythronium helenae*	Rank 4.2	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 1145 to 4005 feet (350 to 1220 meters). Blooms Mar-May.	**Present.** This species has been observed in multiple locations within the Phase 1 Study Area on north-facing slopes in rocky, chaparral habitat on serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
San Joaquin spearscale *Extriplex joaquinana*	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland. Elevation ranges from 0 to 2740 feet (1 to 835 meters). Blooms Apr-Oct.	**Unlikely.** The Phase 1 Study Area lacks potentially suitable alkaline habitat for this species.	No further actions are recommended for this species.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
adobe-lily *Fritillaria pluriflora*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 195 to 2315 feet (60 to 705 meters). Blooms Feb-Apr.	**Moderate Potential.** Potentially suitable heavy soils in chaparral and grassland habitats exists within the Phase 1 Study Area, and several occurrences of this species have been documented surrounding and within the larger Guenoc Ranch property.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Purdy's fritillary *Fritillaria purdyi*	Rank 4.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 570 to 7400 feet (175 to 2255 meters). Blooms Mar-Jun.	**Present.** This species has been documented in multiple locations within the Phase 1 Study Area on rocky, serpentine substrate in chaparral and foothill pine woodland habitats, and similar habitat exists elsewhere within the Phase 1 Study Area.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	SE, Rank 1B.2	Marshes and swamps (lake margins), vernal pools. Elevation ranges from 30 to 7790 feet (10 to 2375 meters). Blooms Apr-Aug.	**Moderate Potential.** Potentially suitable habitat exists along and within Wildcat Lake and Blacktail Lake.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Hall's harmonia *Harmonia hallii*	Rank 1B.2	Chaparral (serpentine). Elevation ranges from 1000 to 3200 feet (305 to 975 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable chaparral habitat on rocky, serpentine substrate exists within the Phase 1 Study Area, and the species is known from nearby occurrences.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
nodding harmonia *Harmonia nutans*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 245 to 3200 feet (75 to 975 meters). Blooms Mar-May.	**Moderate Potential.** Potentially suitable chaparral and foothill pine woodland habitats on rocky, volcanic substrate exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
serpentine sunflower *Helianthus exilis*	Rank 4.2	Chaparral, cismontane woodland. Elevation ranges from 490 to 5005 feet (150 to 1525 meters). Blooms Jun-Nov.	**Present.** This species has been observed in numerous locations within the Phase 1 Study Area on serpentine substrate in seasonally wet areas on such as seeps, meadows, and along streams.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
congested-headed hayfield tarplant *Hemizonia congesta ssp. congesta*	Rank 1B.2	Valley and foothill grassland. Elevation ranges from 65 to 1835 feet (20 to 560 meters). Blooms Apr-Nov.	**Moderate Potential.** Potentially suitable grassland habitat exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
glandular western flax *Hesperolinon adenophyllum*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 490 to 4315 feet (150 to 1315 meters). Blooms May-Aug.	**Moderate Potential.** Potentially suitable chaparral and foothill pine woodland habitat on rocky, serpentine substrate exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
two-carpellate western flax *Hesperolinon bicarpellatum*	Rank 1B.2	Chaparral (serpentine). Elevation ranges from 195 to 3295 feet (60 to 1005 meters). Blooms May-Jul.	**Present.** This species has been observed in several locations in chaparral, foothill pine woodland, and Sargent cypress woodland habitats on rocky serpentine and volcanic substrates.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
Lake County western flax *Hesperolinon didymocarpum*	SE, Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 1080 to 1200 feet (330 to 365 meters). Blooms May-Jul.	**Present.** This species has been observed in multiple locations in the central and southern portions of the Phase 1 Study Area in chaparral habitat on rocky, serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
drymaria-like western flax *Hesperolinon drymarioides*	Rank 1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 325 to 3705 feet (100 to 1130 meters). Blooms May-Aug.	**Moderate Potential.** Potentially suitable chaparral, foothill pine woodland, and Sargent cypress woodland habitats on rocky, serpentine substrate exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Sharsmith's western flax *Hesperolinon sharsmithiae*	Rank 1B.2	Chaparral. Elevation ranges from 885 to 985 feet (270 to 300 meters). Blooms May-Jul.	**Moderate Potential.** Potentially suitable chaparral habitat on serpentine substrate exists within the Phase 1 Study Area, and the species is known from nearby occurrences.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Bolander's horkelia *Horkelia bolanderi*	Rank 1B.2	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland. Elevation ranges from 1475 to 3610 feet (450 to 1100 meters). Blooms (May)Jun-Aug.	**Moderate Potential.** Potentially suitable habitat exists within the Phase 2/Open Space Study Area and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
California satintail *Imperata brevifolia*	Rank 2B.1	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub. Elevation ranges from 0 to 3985 feet (0 to 1215 meters). Blooms Sep-May.	**Unlikely.** This species is only known in the region from a single, historic (1928) occurrence located approximately 11 miles northwest of the Phase 1 Study Area. The native status of the single plant observed is also in doubt. In addition, the Phase 1 Study Area lacks alkaline substrate.	No further actions are recommended for this species.
Northern California black walnut *Juglans hindsii*	Rank 1B.1[3]	Riparian forest, riparian woodland. Elevation ranges from 0 to 1445 feet (0 to 440 meters). Blooms Apr-May.	**Present.** This species was observed in low numbers associated with old home sites, barns, and similar sites across the Phase 1 Study Area. Occurrences of this species within the Phase 1 Study Area have been planted or are offspring of planted individuals and should not be considered special-status (Potter et al. 2018).	Although this species was observed within multiple locations across the Phase 1 Study Area, it is associated with old home sites, barns, and similar areas and represents planted specimens that should not be considered special-status and is therefore not addressed in this report. No additional actions are recommended for this species.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Santa Lucia dwarf rush *Juncus luciensis*	Rank 1B.2	Chaparral, great basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools. Elevation ranges from 980 to 6695 feet (300 to 2040 meters). Blooms Apr-Jul.	**Moderate Potential.** Potentially suitable wetland habitat exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Burke's goldfields *Lasthenia burkei*	FE, SE, Rank 1B.1	Meadows and seeps (mesic), vernal pools. Elevation ranges from 45 to 1970 feet (15 to 600 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable vernal wetland habitat exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Contra Costa goldfields *Lasthenia conjugens*	FE, Rank 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun.	**Unlikely.** The Phase 1 Study Area lacks potentially suitable alkaline habitat required for this species.	No further actions are recommended for this species.
Colusa layia *Layia septentrionalis*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 325 to 3595 feet (100 to 1095 meters). Blooms Apr-May.	**Present.** This species was observed in numerous locations within the Phase 1 Study Area, always in association with blue oak woodland.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
legenere *Legenere limosa*	Rank 1B.1	Vernal pools. Elevation ranges from 0 to 2885 feet (1 to 880 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable vernal wetland habitat exists within the Phase 1 Study Area in along and within Wildcat Lake and Blacktail Lake, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
bristly leptosiphon *Leptosiphon acicularis*	Rank 4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 180 to 4920 feet (55 to 1500 meters). Blooms Apr-Jul.	**Moderate Potential.** Potentially suitable grassland and grassy openings in oak woodland, foothill pine woodland, scrub, and chaparral habitats exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Jepson's leptosiphon *Leptosiphon jepsonii*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 325 to 1640 feet (100 to 500 meters). Blooms Mar-May.	**Moderate Potential.** Potentially suitable grassland and grassy openings in chaparral, oak woodland, and foothill pine woodland on volcanic and serpentine substrates exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
broad-lobed leptosiphon *Leptosiphon latisectus*	Rank 4.3	Broadleaved upland forest, cismontane woodland. Elevation ranges from 555 to 4920 feet (170 to 1500 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable grassland and grassy openings in woodland exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
woolly-headed lessingia *Lessingia hololeuca*	Rank 3	Broadleaved upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 45 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	**Moderate Potential.** Potentially suitable clay and serpentine substrate exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Bolander's lily *Lilium bolanderi*	Rank 4.2	Chaparral, lower montane coniferous forest. Elevation ranges from 95 to 5250 feet (30 to 1600 meters). Blooms Jun-Jul.	**Unlikely.** Although potentially suitable open, clay, serpentine substrate is present, the bulk of known occurrences of this plant are located in Del Norte, Humboldt, and Siskiyou counties.	No further actions are recommended for this species.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
redwood lily *Lilium rubescens*	Rank 4.2	Broadleaved upland forest, chaparral, lower montane coniferous forest, north coast coniferous forest, upper montane coniferous forest. Elevation ranges from 95 to 6265 feet (30 to 1910 meters). Blooms Apr-Aug(Sep).	**Moderate Potential.** Potentially suitable chaparral habitat exists within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
woolly meadowfoam *Limnanthes floccosa ssp. floccosa*	Rank 4.2	Chaparral, cismontane woodland, valley and foothill grassland, vernal pools. Elevation ranges from 195 to 4380 feet (60 to 1335 meters). Blooms Mar-May(Jun).	**Moderate Potential.** Potentially suitable vernally wet areas and pond/lake margins exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Sebastopol meadowfoam *Limnanthes vinculans*	FE, SE, Rank 1B.1	Meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 45 to 1000 feet (15 to 305 meters). Blooms Apr-May.	**Moderate Potential.** Potentially suitable vernally wet areas in grassland and oak woodland exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Hoover's lomatium *Lomatium hooveri*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 980 to 2905 feet (300 to 885 meters). Blooms Apr-Jul.	**Present.** This species was observed in several locations within the Phase 1 Study Area in shady draws in blue oak woodland and in rocky chaparral habitat.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
Napa lomatium *Lomatium repostum*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 295 to 2725 feet (90 to 830 meters). Blooms Mar-Jun.	**Moderate Potential.** Potentially suitable rocky, volcanic and serpentine substrate in chaparral, foothill pine woodland and Sargent cypress woodland exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Cobb Mountain lupine *Lupinus sericatus*	Rank 1B.2	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 900 to 5005 feet (275 to 1525 meters). Blooms Mar-Jun.	**Moderate Potential.** Potentially suitable gravelly substrate in chaparral, foothill pine woodland, Sargent cypress woodland, and oak woodland habitats exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Heller's bush-mallow *Malacothamnus helleri*	Rank 3.3	Chaparral (sandstone), riparian woodland (gravel). Elevation ranges from 1000 to 2085 feet (305 to 635 meters). Blooms May-Jul.	**Moderate Potential.** Potentially suitable chaparral habitat on sandstone substrate and gravelly riparian habitat exists within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Mt. Diablo cottonweed *Micropus amphibolus*	Rank 3.2	Broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 2705 feet (45 to 825 meters). Blooms Mar-May.	**Moderate Potential.** Potentially suitable sparsely vegetated oak woodland, foothill pine woodland, chaparral, scrub, and grassland habitats exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
marsh microseris *Microseris paludosa*	Rank 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 1165 feet (5 to 355 meters). Blooms Apr-Jun(Jul).	**Moderate Potential.** Potentially suitable grassland and openings in oak woodland, foothill pine woodland, chaparral, and scrub on fine-textured substrate exist within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
sylvan microseris *Microseris sylvatica*	Rank 4.2	Chaparral, cismontane woodland, great basin scrub, pinyon and juniper woodland, valley and foothill grassland (serpentine). Elevation ranges from 145 to 4920 feet (45 to 1500 meters). Blooms Mar-Jun.	**Moderate Potential.** Potentially suitable grassland and grassy openings in oak and foothill pine woodlands exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
green monardella *Monardella viridis*	Rank 4.3	Broadleaved upland forest, chaparral, cismontane woodland. Elevation ranges from 325 to 3315 feet (100 to 1010 meters). Blooms Jun-Sep.	**Present.** This species was observed in abundance within the Phase 1 Study Area in rocky, chaparral habitat on serpentine and volcanic substrates.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
little mousetail *Myosurus minimus ssp. apus*	Rank 3.1	Valley and foothill grassland, vernal pools (alkaline). Elevation ranges from 65 to 2100 feet (20 to 640 meters). Blooms Mar-Jun.	**Unlikely.** Alkaline soils are not present within the Phase 1 Study Area.	No further actions are recommended for this species.
cotula navarretia *Navarretia cotulifolia*	Rank 4.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 10 to 6005 feet (4 to 1830 meters). Blooms May-Jun.	**Present.** This species was observed at three locations within the Phase 1 Study Area on heavy, serpentine soils in mesic grassland.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
Jepson's navarretia *Navarretia jepsonii*	Rank 4.3	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 570 to 2805 feet (175 to 855 meters). Blooms Apr-Jun.	**Present.** This species was observed at numerous locations throughout the Phase 1 Study Area in grassland or grassy openings in chaparral and foothill pine woodland habitats on serpentine and volcanic clay soils.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	Rank 1B.1	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 15 to 5710 feet (5 to 1740 meters). Blooms Apr-Jul.	**Moderate Potential.** Potentially suitable vernal wetlands on clay soils are present within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
few-flowered navarretia *Navarretia leucocephala ssp. pauciflora*	FE, ST, Rank 1B.1	Vernal pools (volcanic ash flow). Elevation ranges from 1310 to 2805 feet (400 to 855 meters). Blooms May-Jun.	**Unlikely.** The Phase 1 Study Area lacks potentially suitable vernal pool habitat with volcanic ash flow substrate required for this species.	No further actions are recommended for this species.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	FE, SE, Rank 1B.2	Vernal pools (volcanic ash flow). Elevation ranges from 95 to 3115 feet (30 to 950 meters). Blooms May-Jun.	**Unlikely.** The Phase 1 Study Area lacks potentially suitable vernal pool habitat with volcanic ash flow substrate required for this species.	No further actions are recommended for this species.
small pincushion navarretia *Navarretia myersii ssp. deminuta*	Rank 1B.1	Vernal pools (clay loam). Elevation ranges from 1160 to 1165 feet (355 to 355 meters). Blooms Apr-May.	**Moderate Potential.** Potentially suitable vernal wetland habitat exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
adobe navarretia *Navarretia nigelliformis ssp. nigelliformis*	Rank 4.2	Valley and foothill grassland vernally mesic, vernal pools sometimes. Elevation ranges from 325 to 3280 feet (100 to 1000 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable, vernally mesic clay substrate in grassland habitat exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Porter's navarretia *Navarretia paradoxinota*	Rank 1B.3	Meadows and seeps. Elevation ranges from 540 to 2755 feet (165 to 840 meters). Blooms May-Jun(Jul).	**Moderate Potential.** Potentially suitable, vernally mesic openings on serpentine substrate exist within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Marin County navarretia *Navarretia rosulata*	Rank 1B.2	Closed-cone coniferous forest, chaparral. Elevation ranges from 655 to 2085 feet (200 to 635 meters). Blooms May-Jul.	**Moderate Potential.** Potentially suitable, dry, rocky substrate in Sargent cypress woodland, chaparral, and scrub habitats exists within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
slender Orcutt grass *Orcuttia tenuis*	FT, SE, Rank 1B.1	Vernal pools. Elevation ranges from 110 to 5775 feet (35 to 1760 meters). Blooms May-Sep(Oct).	**Moderate Potential.** Potentially suitable vernal wetland habitat exists within the Phase 1 Study Area in Blacktail Lake, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Howell's broomrape *Orobanche valida ssp. howellii*	Rank 4.3	Chaparral (serpentine or volcanic). Elevation ranges from 590 to 5710 feet (180 to 1740 meters). Blooms Jun-Sep.	**Moderate Potential.** Potentially suitable chaparral habitat in rocky, volcanic and serpentine substrates exists within the Phase 1 Study Area, and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Geysers panicum *Panicum acuminatum var. thermale*	SE, Rank 1B.2	Closed-cone coniferous forest, riparian forest, valley and foothill grassland. Elevation ranges from 1000 to 8105 feet (305 to 2470 meters). Blooms Jun-Aug.	**Unlikely.** This species is associated with hot springs, and such habitat is not present within the Phase 1 Study Area. The nearest occurrence of this species is approximately 10 miles west of the Phase 1 Study Area.	No further actions are recommended for this species.
Sonoma beardtongue *Penstemon newberryi var. sonomensis*	Rank 1B.3	Chaparral (rocky). Elevation ranges from 2295 to 4495 feet (700 to 1370 meters). Blooms Apr-Aug.	**Moderate Potential.** Potentially suitable rock outcrops in chaparral habitat exist within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Michael's rein orchid *Piperia michaelii*	Rank 4.2	Coastal bluff scrub, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest. Elevation ranges from 5 to 3000 feet (3 to 915 meters). Blooms Apr-Aug.	**Unlikely.** This species is typically associated with substrates comprised of mudstone and humus, which are not present within the Phase 1 Study Area.	No further actions are recommended for this species.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
bearded popcornflower *Plagiobothrys hystriculus*	Rank 1B.1	Valley and foothill grassland (mesic), vernal pools margins. Elevation ranges from 0 to 900 feet (0 to 274 meters). Blooms Apr-May.	**Moderate Potential.** Potentially suitable vernally mesic areas in grassland habitat are present within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Calistoga popcornflower *Plagiobothrys strictus*	FE, ST, Rank 1B.1	Meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 295 to 525 feet (90 to 160 meters). Blooms Mar-Jun.	**Unlikely.** The Phase 1 Study Area lacks alkaline sites suitable for this species.	No further actions are recommended for this species.
Napa blue grass *Poa napensis*	FE, SE, Rank 1B.1	Meadows and seeps, valley and foothill grassland. Elevation ranges from 325 to 655 feet (100 to 200 meters). Blooms May-Aug.	**Unlikely.** The Phase 1 Study Area lacks alkaline sites suitable for this species.	No further actions are recommended for this species.
eel-grass pondweed *Potamogeton zosteriformis*	Rank 2B.2	Marshes and swamps (assorted freshwater). Elevation ranges from 0 to 6100 feet (0 to 1860 meters). Blooms Jun-Jul.	**Moderate Potential.** Potentially suitable lake and reservoir habitats are present within the Phase 1 Study Area and the species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
California alkali grass *Puccinellia simplex*	Rank 1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 5 to 3050 feet (2 to 930 meters). Blooms Mar-May.	**Unlikely.** The Phase 1 Study Area lacks alkaline sites suitable for this species.	No further actions are recommended for this species.
Lobb's aquatic buttercup *Ranunculus lobbii*	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 45 to 1540 feet (15 to 470 meters). Blooms Feb-May.	**Moderate Potential.** Potentially suitable seasonally ponded sites exist within the Phase 1 Study Area	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Lake County stonecrop *Sedella leiocarpa*	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland, vernal pools. Elevation ranges from 1195 to 2590 feet (365 to 790 meters). Blooms Apr-May.	**Moderate Potential.** Potentially suitable vernally wet areas in oak woodland and grassland habitats and volcanic substrate exist within the Phase 1 Study Area.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Cleveland's ragwort *Senecio clevelandii var. clevelandii*	Rank 4.3	Chaparral (serpentine seeps). Elevation ranges from 1195 to 2955 feet (365 to 900 meters). Blooms Jun-Jul.	**Present.** This species was observed in multiple locations within the Phase 1 Study Area and from within multiple locations on Guenoc Ranch outside of the Phase 1 Study Area.	Recommendations for this species can be found in Section 6.3.
Napa checkerbloom *Sidalcea hickmanii ssp. napensis*	Rank 1B.1	Chaparral. Elevation ranges from 1360 to 2000 feet (415 to 610 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable chaparral habitat on rhyolitic substrates exists within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Keck's checkerbloom *Sidalcea keckii*	FE, Rank 1B.1	Cismontane woodland, valley and foothill grassland. Elevation ranges from 245 to 2135 feet (75 to 650 meters). Blooms Apr-May(Jun).	**Present.** This species was observed in several locations, primarily in the northern portion of the Phase 1 Study Area on serpentine clay substrate in annual grassland or in grassy openings within chaparral and blue oak woodland.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
marsh checkerbloom *Sidalcea oregana ssp. hydrophila*	Rank 1B.2	Meadows and seeps, riparian forest. Elevation ranges from 3605 to 7545 feet (1100 to 2300 meters). Blooms (Jun)Jul-Aug.	**Moderate Potential.** Potentially suitable streambank and wetland meadow habitat exists within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Kenwood Marsh checkerbloom *Sidalcea oregana ssp. valida*	FE, SE, Rank 1B.1	Marshes and swamps (freshwater). Elevation ranges from 375 to 490 feet (115 to 150 meters). Blooms Jun-Sep.	**Unlikely.** This species is highly restricted to two known locations, the nearest of which is approximately 12 miles southwest of the Phase 1 Study Area.	No further actions are recommended for this species.
long-styled sand-spurrey *Spergularia macrotheca var. longistyla*	Rank 1B.2	Meadows and seeps, marshes and swamps. Elevation ranges from 0 to 835 feet (0 to 255 meters). Blooms Feb-May.	**Unlikely.** The Phase 1 Study Area lacks alkaline sites suitable for this species.	No further actions are recommended for this species.
Tamalpais jewelflower *Streptanthus batrachopus*	Rank 1B.3	Closed-cone coniferous forest, chaparral. Elevation ranges from 1000 to 2135 feet (305 to 650 meters). Blooms Apr-Jul.	**Unlikely.** Potentially suitable habitat but the Phase 1 Study Area is greatly removed from the nearest known occurrence of this species, which is highly restricted to the vicinity of Mt. Tamalpais in Marin County.	No further actions are recommended for this species.
Socrates Mine jewelflower *Streptanthus brachiatus ssp. brachiatus*	Rank 1B.2	Closed-cone coniferous forest, chaparral. Elevation ranges from 1785 to 3280 feet (545 to 1000 meters). Blooms May-Jun.	**Moderate Potential.** Potentially suitable Sargent cypress woodland, foothill pine woodland, and chaparral habitats on serpentine substrate exist within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Freed's jewelflower *Streptanthus brachiatus ssp. hoffmanii*	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 1605 to 4005 feet (490 to 1220 meters). Blooms May-Jul.	**Moderate Potential.** Potentially suitable Sargent cypress woodland, foothill pine woodland, and chaparral habitats on serpentine substrate exist within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
green jewelflower *Streptanthus hesperidis*	Rank 1B.2	Chaparral (openings), cismontane woodland. Elevation ranges from 425 to 2495 feet (130 to 760 meters). Blooms May-Jul.	**Present.** This species was observed at numerous locations throughout the Phase 1 Study Area in chaparral and foothill pine woodland habitats on rocky, serpentine substrates.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Three Peaks jewelflower *Streptanthus morrisonii ssp. elatus*	Rank 1B.2	Chaparral (serpentine). Elevation ranges from 295 to 2675 feet (90 to 815 meters). Blooms Jun-Sep.	**High Potential.** Potentially suitable rocky, serpentine outcrops in Sargent cypress woodland, foothill pine woodland, and chaparral habitats exist within the Phase 1 Study Area. This taxon is known from nearby occurrences, and plants that were intermediate between ssp. *elatus* and ssp. *hirtiflorus* were observed within the Guenoc Ranch property, outside of the Phase 1 Study Area.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
Kruckeberg's jewelflower *Streptanthus morrisonii ssp. kruckebergii*	Rank 1B.2	Cismontane woodland (serpentine). Elevation ranges from 705 to 3395 feet (215 to 1035 meters). Blooms Apr-Jul.	**Moderate Potential.** Potentially suitable rocky, serpentine outcrops in Sargent cypress woodland, foothill pine woodland, and chaparral habitats exist within the Phase 1 Study Area, and this species is known from nearby occurrences.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
early jewelflower *Streptanthus vernalis*	Rank 1B.2	Closed-cone coniferous forest, chaparral. Elevation ranges from 2000 to 2000 feet (610 to 610 meters). Blooms Mar-May.	**Moderate Potential.** Potentially suitable Sargent cypress woodland, foothill pine woodland, and chaparral habitats on serpentine substrate exist within the Phase 1 Study Area, and this species is known from nearby occurrences.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
slender-leaved pondweed *Stuckenia filiformis ssp. alpina*	Rank 2B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 980 to 7055 feet (300 to 2150 meters). Blooms May-Jul.	**Moderate Potential.** Potentially suitable pond and reservoir habitats exist within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
short-podded thelypodium *Thelypodium brachycarpum*	Rank 4.2	Chaparral, lower montane coniferous forest, meadows and seeps. Elevation ranges from 2195 to 8400 feet (670 to 2560 meters). Blooms May-Aug.	**Moderate Potential.** Potentially suitable chaparral, foothill pine woodland, and Sargent cypress woodland on serpentine substrates exist within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
marsh zigadenus *Toxicoscordion fontanum*	Rank 4.2	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, marshes and swamps. Elevation ranges from 45 to 3280 feet (15 to 1000 meters). Blooms Apr-Jul.	**Present.** This species has been observed in numerous locations within the Phase 1 Study Area in seeps, wet meadows, and along streams on serpentine substrate.	This species was observed in one or more locations within the Phase 1 Study Area. Recommendations for this species can be found in Section 6.3.
Napa bluecurls *Trichostema ruygtii*	Rank 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 95 to 2230 feet (30 to 680 meters). Blooms Jun-Oct.	**Moderate Potential.** Potentially suitable mesic areas on volcanic substrate in chaparral, blue oak woodland, foothill pine woodland, and grassland habitats exist within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.
saline clover *Trifolium hydrophilum*	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun.	**Unlikely.** The Phase 1 Study Area lacks alkaline sites suitable for this species.	No further actions are recommended for this species.
Dark-mouth triteleia *Triteleia lugens*	Rank 4.3	Broadleaved upland forest, chaparral, coastal scrub, lower montane coniferous forest. Elevation ranges from 328 to 3280 feet (100 to1000 meters). Blooms Apr-Jun	**High Potential.** Potentially suitable chaparral and foothill pine woodland habitats on volcanic substrate exist within the Phase 1 Study Area. This species was observed within the Guenoc Ranch property, outside of the Phase 1 Study Area, on rocky, volcanic substrate.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
oval-leaved viburnum *Viburnum ellipticum*	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 705 to 4595 feet (215 to 1400 meters). Blooms May-Jun.	**Moderate Potential.** Potentially suitable chaparral, foothill pine woodland, and oak woodland habitats are present within the Phase 1 Study Area, and this species is known from the region.	Although this species was not observed, it was determined to have potential to occur within the Phase 1 Study Area based on the habitats present and nearby occurrences. Recommendations for this species can be found in Section 6.3.

[1]Key to Conservation Status:

FE	Federal Endangered
FT	Federal Threatened
SE	State Endangered
ST	State Threatened
Rank 1B.1	CNPS Rank 1B.1: Rare, threatened, or endangered in California and elsewhere (seriously threatened in California)
Rank 1B.2	CNPS Rank 1B.2: Rare, threatened, or endangered in California and elsewhere (moderately threatened in California)
Rank 1B.3	CNPS Rank 1B.3: Rare, threatened, or endangered in California and elsewhere (not very threatened in California)
Rank 2B.1	CNPS Rank 2B.1: Rare, threatened, or endangered in California, but more common elsewhere (seriously threatened in California)
Rank 2B.2	CNPS Rank 2B.2: Rare, threatened, or endangered in California, but more common elsewhere (moderately threatened in California)
Rank 2B.3	CNPS Rank 2B.3: Rare, threatened, or endangered in California, but more common elsewhere (not very threatened in California)
Rank 3.1	CNPS Rank 3.1: Plants about which more information is needed - A review list (seriously threatened in California)
Rank 3.2	CNPS Rank 3.2: Plants about which more information is needed - A review list (moderately threatened in California)
Rank 3.3	CNPS Rank 3.3: Plants about which more information is needed - A review list (not very threatened in California)
Rank 4.2	CNPS Rank 4.2: Plants of limited distribution - A watch list (moderately threatened in California)
Rank 4.3	CNPS Rank 4.3: Plants of limited distribution - A watch list (not very threatened in California)

[2]Key to Potential for Occurrence:

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Present. Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

[3]Although this species is listed as Rank 1B.1, recent data suggests that this species should not be considered special-status (Potter et al. 2018)

APPENDIX E

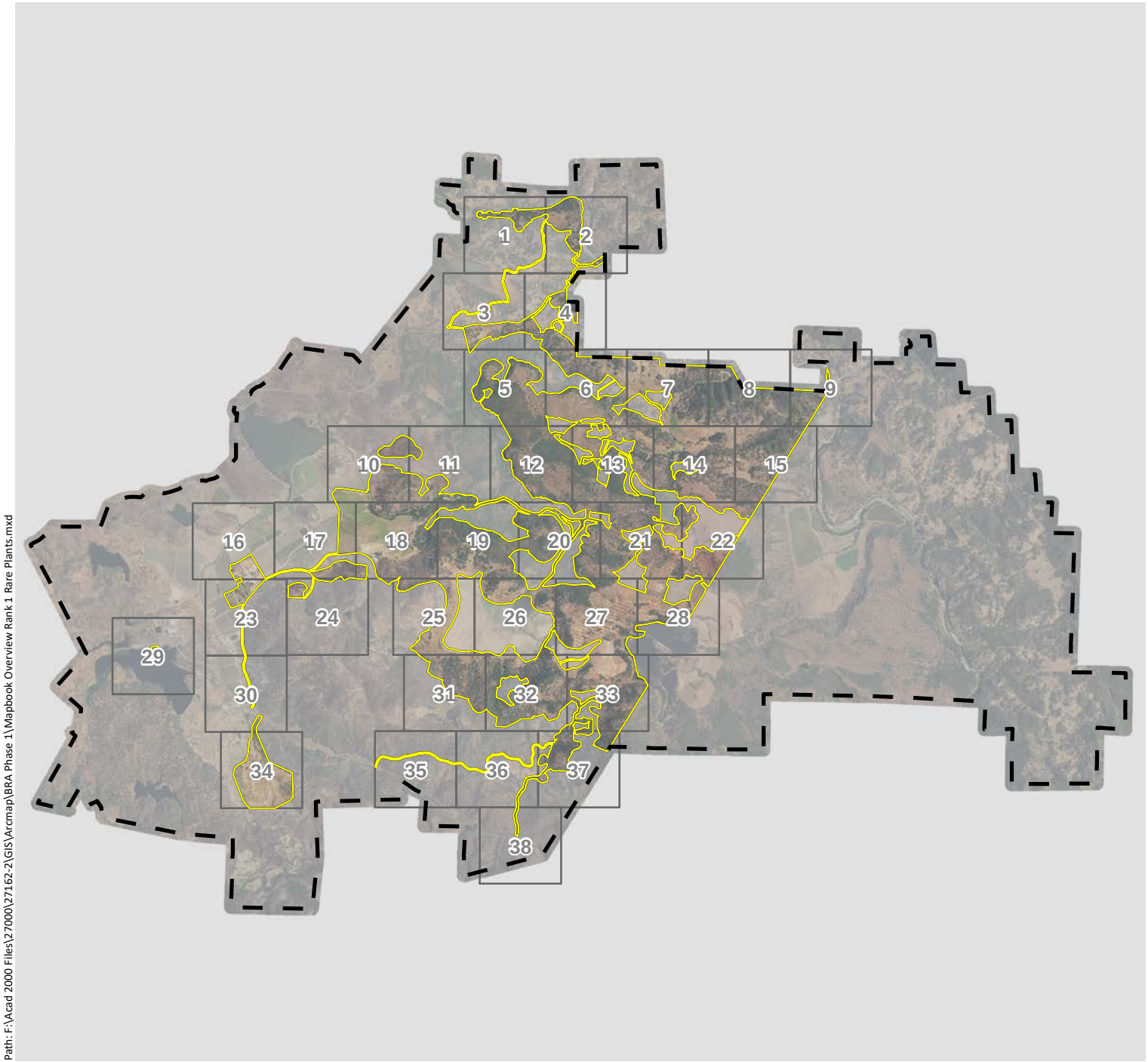
SPECIAL-STATUS PLANT SPECIES OBSERVED WITHIN THE PHASE 1 STUDY AREA

APPENDIX E1

FEDERAL, STATE, AND CNPS RANK 1 SPECIAL-STATUS PLANT SPECIES OBSERVED WITHIN THE PHASE 1 STUDY AREA

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Overview)

Maha Resort and Guenoc Valley Development, Phase 1



Property Boundary
Phase 1 Study Area
Mapbook Grid

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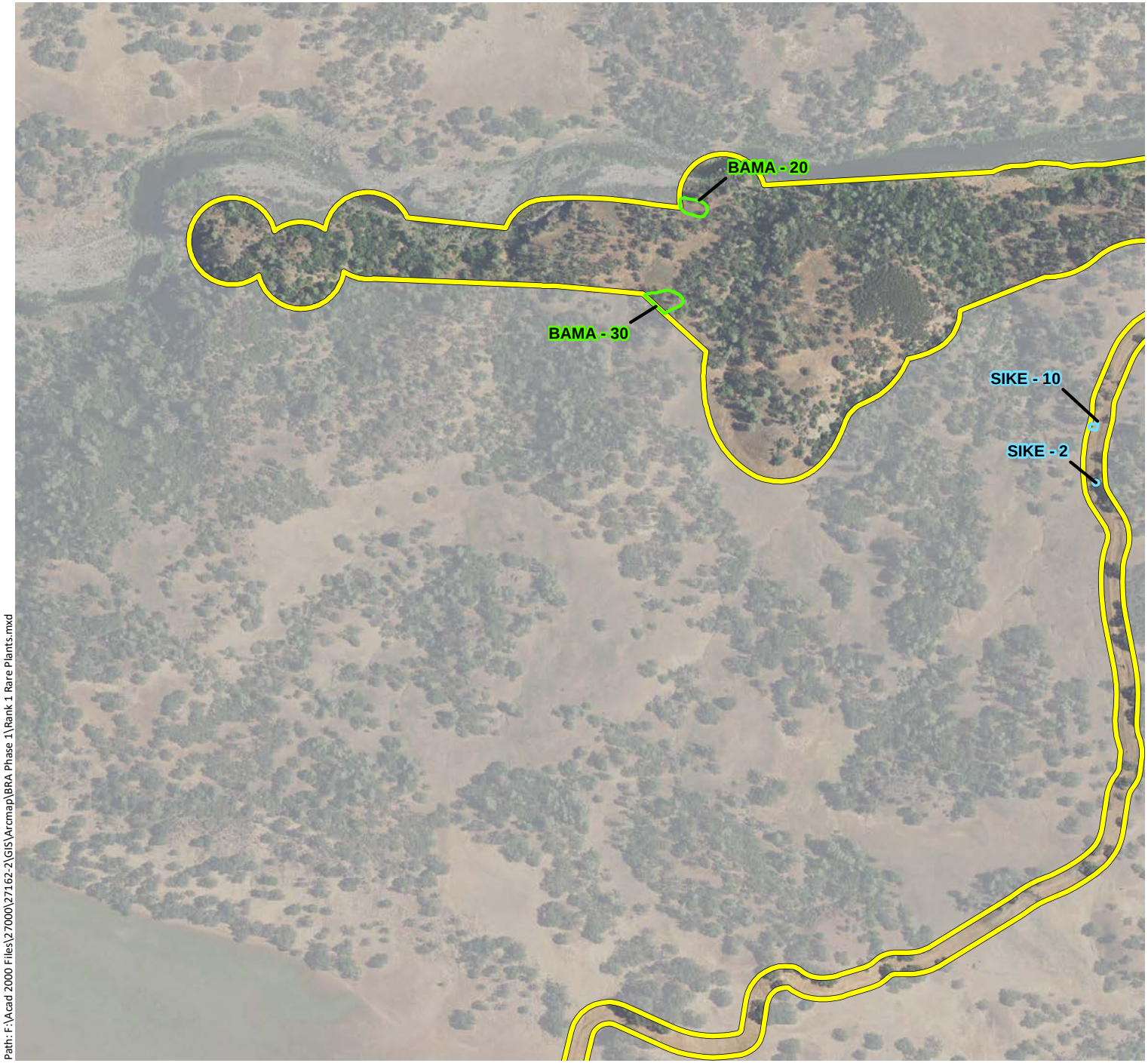
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Sources: Hexagon 2016 Aerial, WRA | Prepared By: mrochelle, 6/28/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 1)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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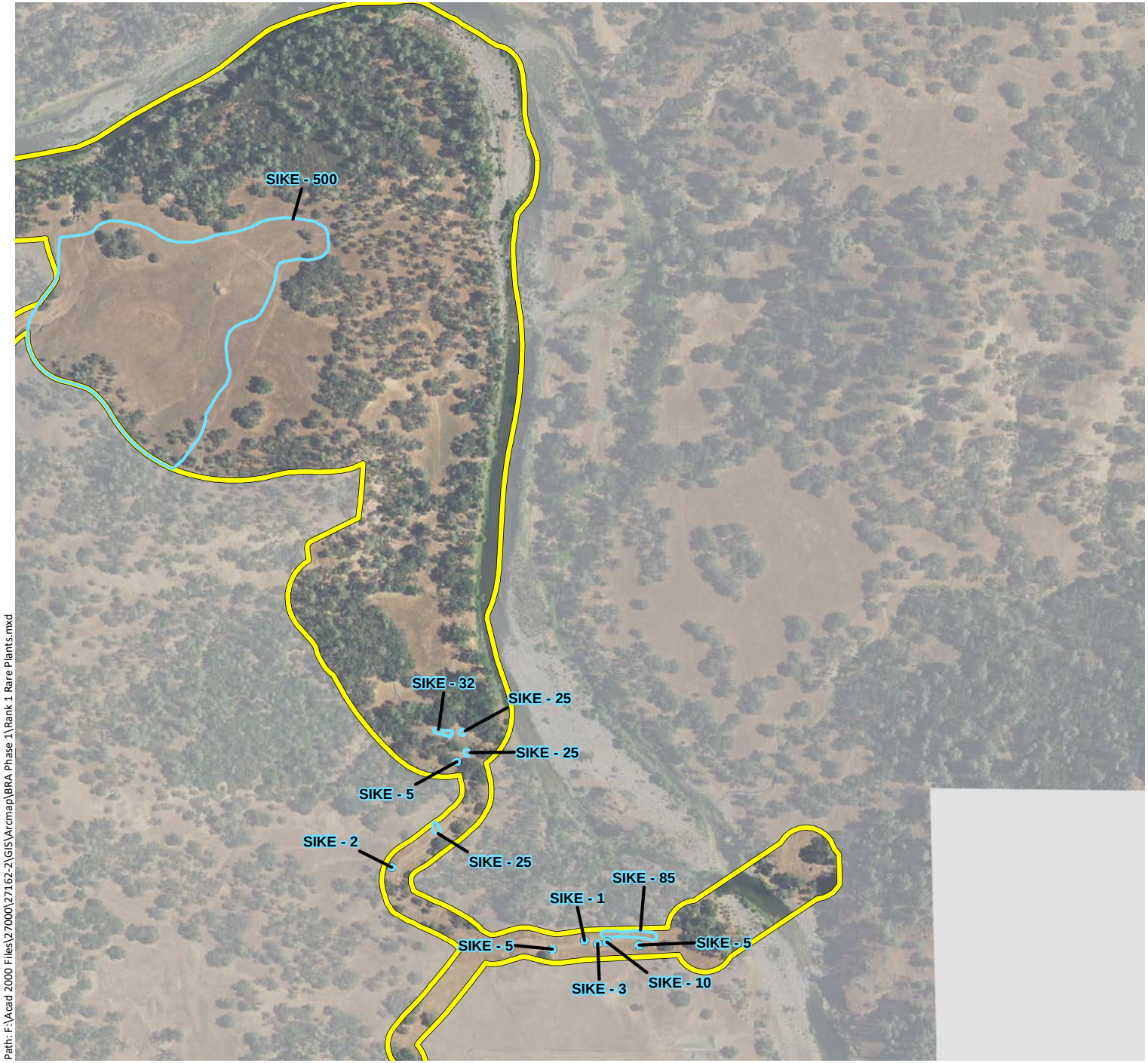
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 2)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 3)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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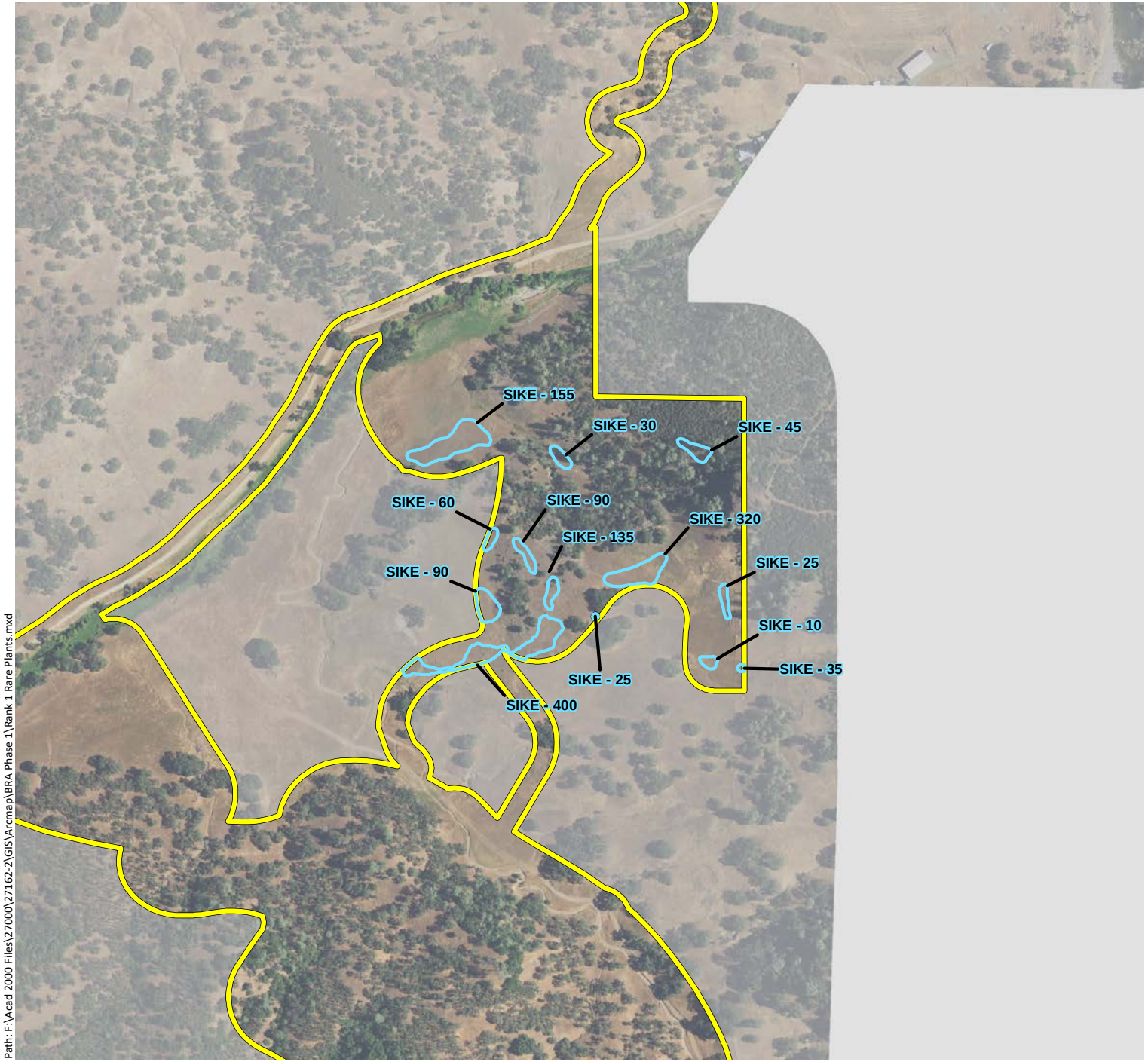
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 4)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Federally-Endangered Plants

State-Endangered Plants

CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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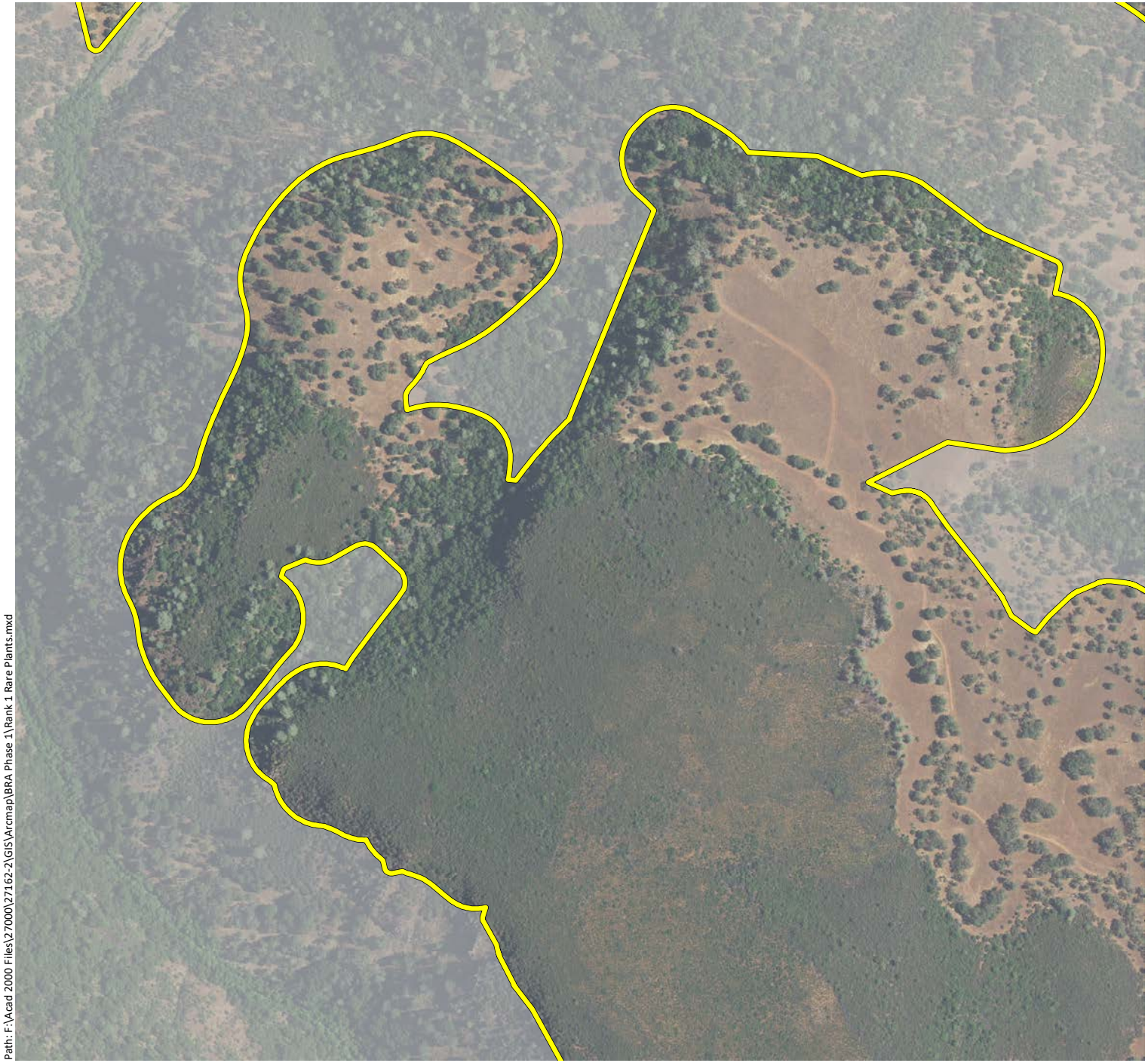
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 5)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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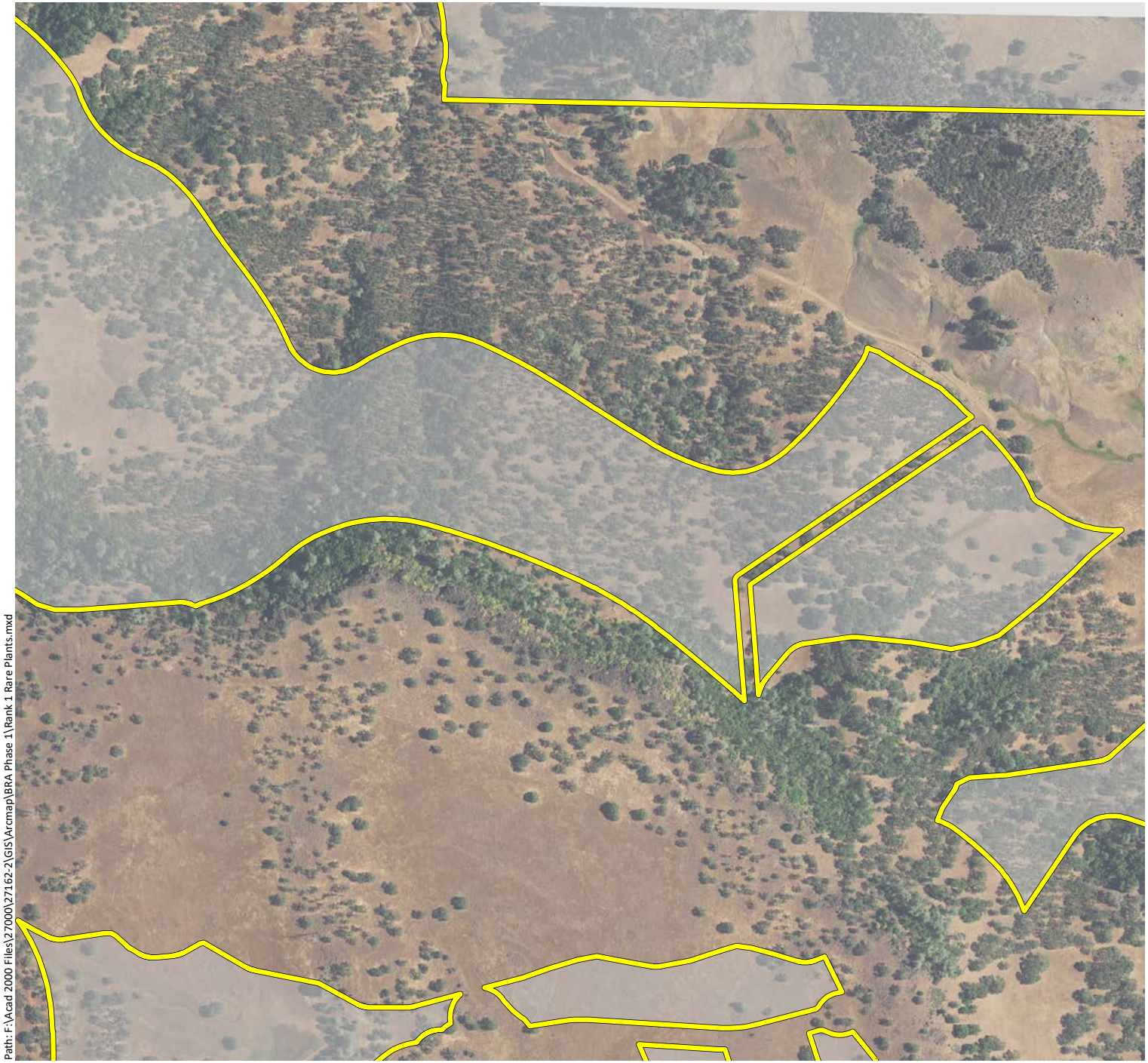
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 6)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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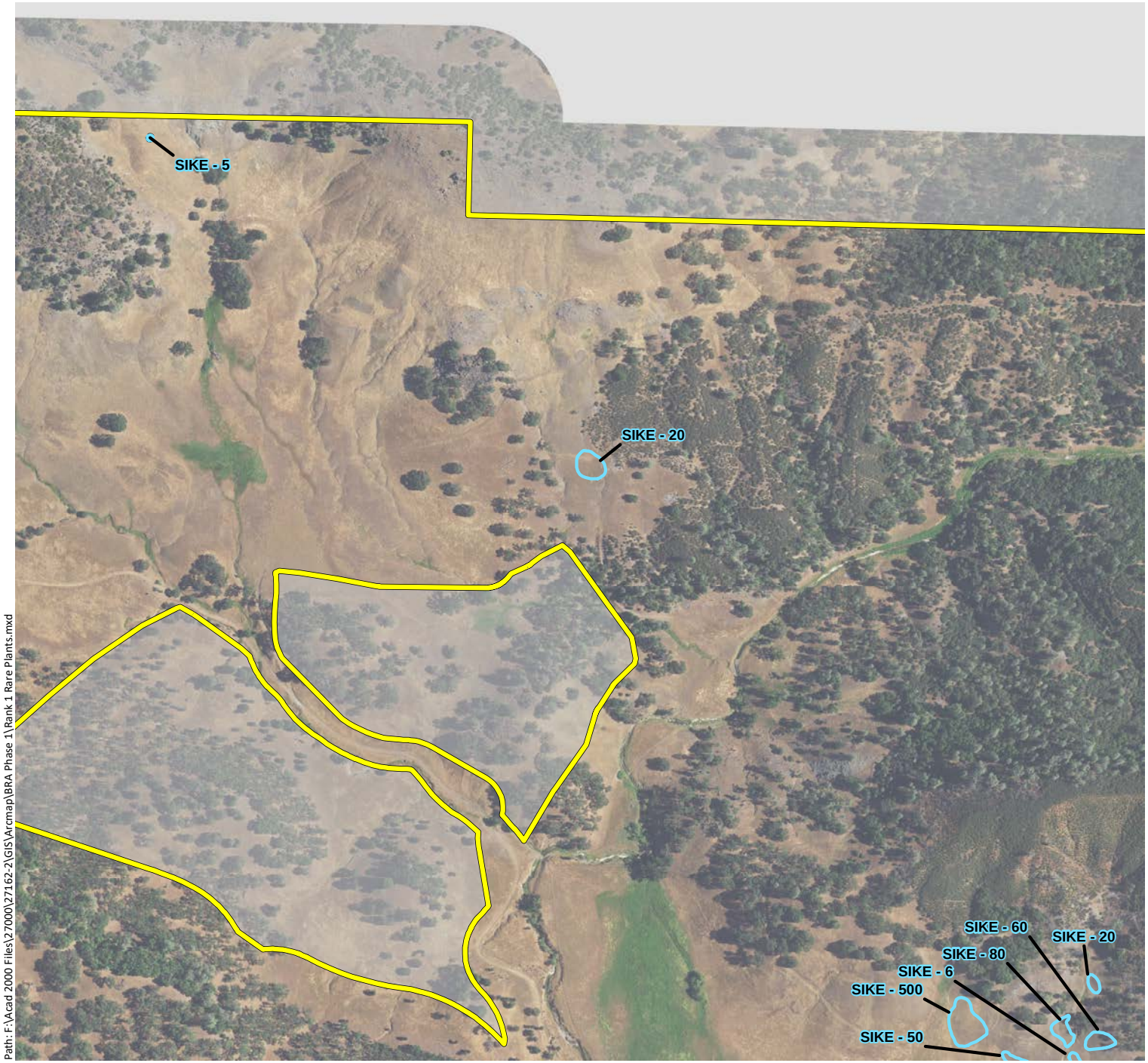
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 7)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 8)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Federally-Endangered Plants
State-Endangered Plants
CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch
BAMA: Big-scale balsamroot
BRLE: Narrow-flowered California brodiaea
ERGR: Greene's narrow-leaved fleabane
HEBI: Two carpellate western flax
LASE: Colusa layia
STHE: Green jewelflower
STMO: Morrison's jewelflower

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 9)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Federally-Endangered Plants

State-Endangered Plants

CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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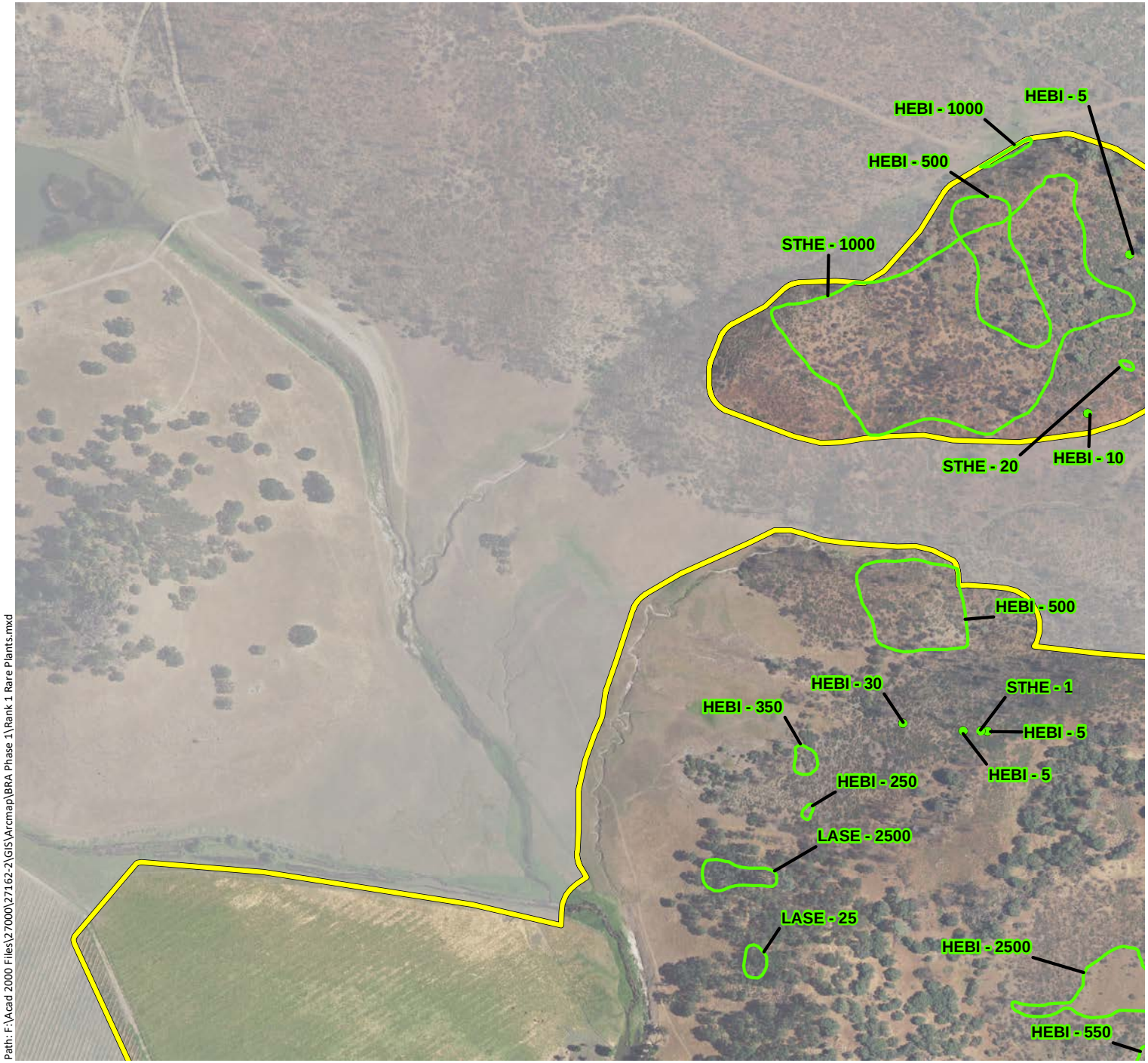
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 10)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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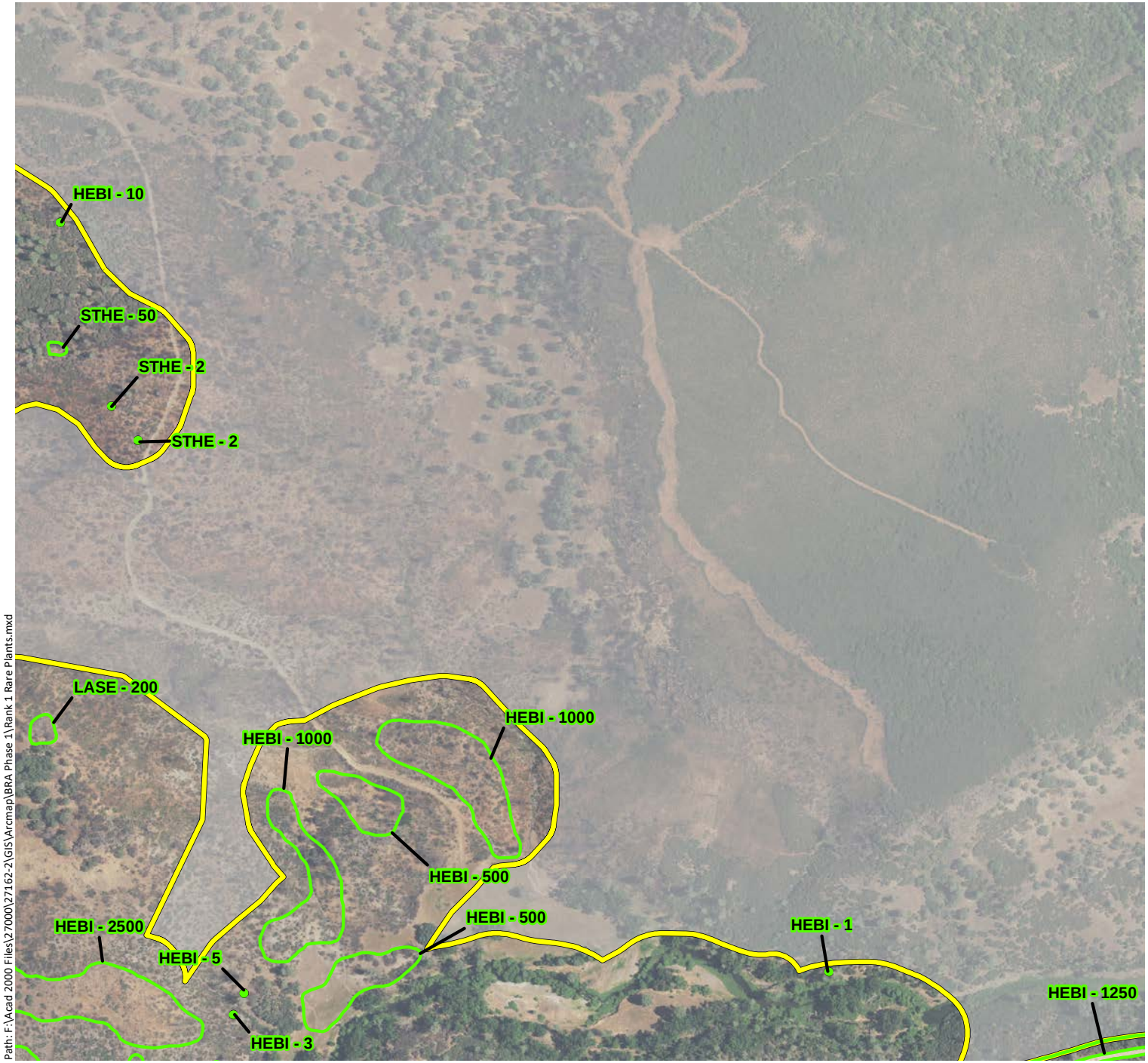
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 11)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Federally-Endangered Plants
State-Endangered Plants
CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 12)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Federally-Endangered Plants

State-Endangered Plants

CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

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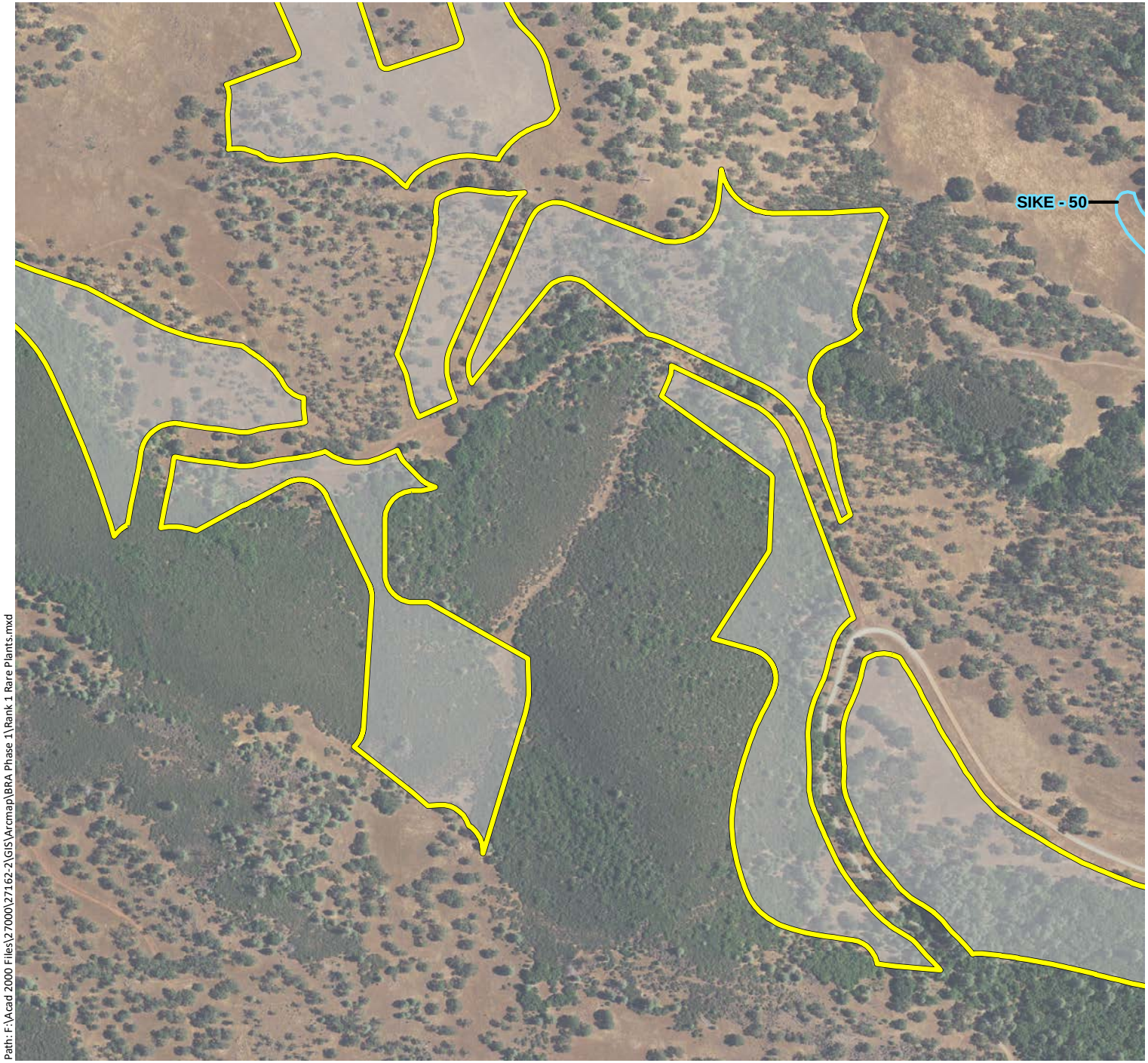
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 13)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

0 500 1,000

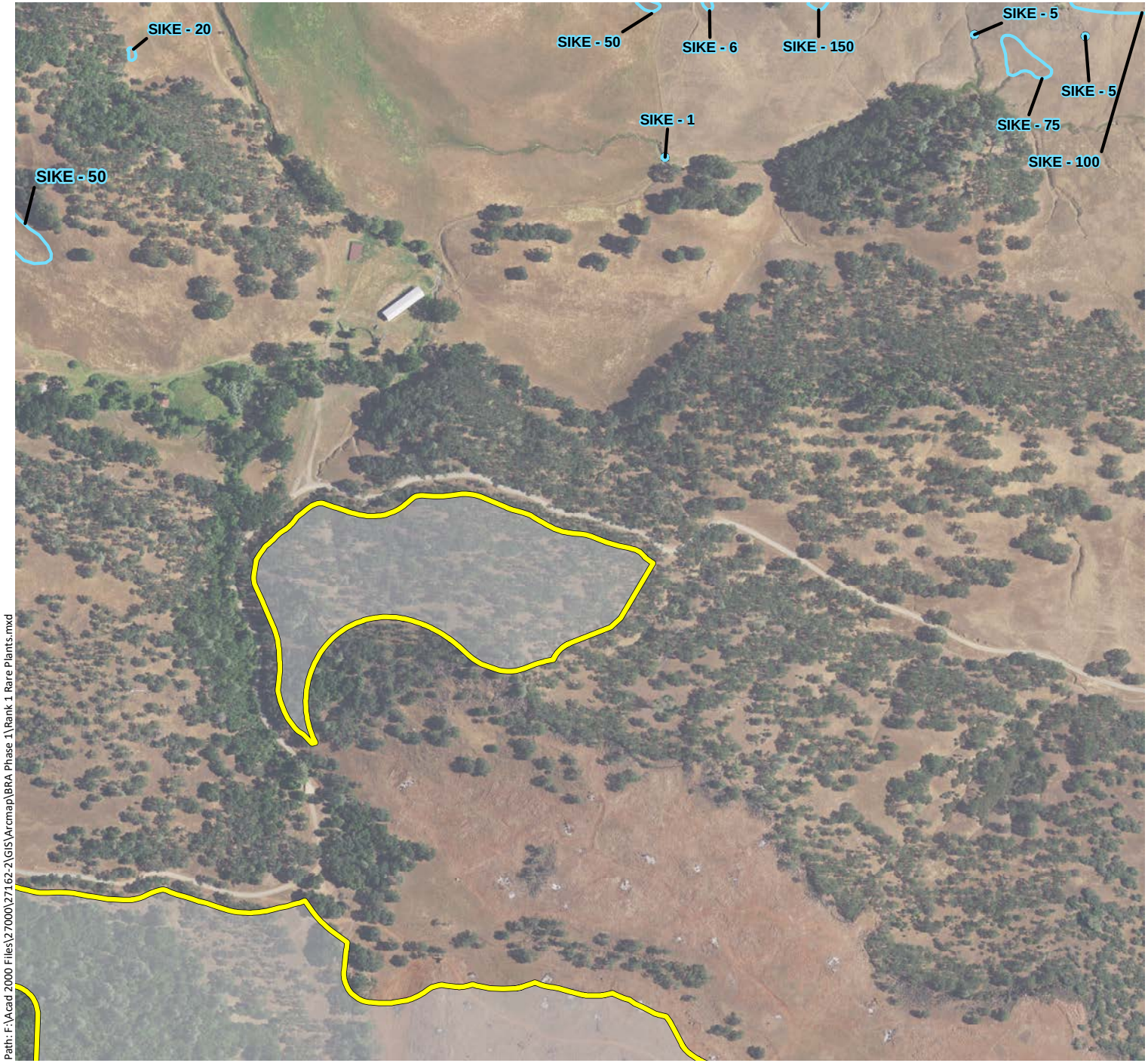
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 14)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

0 500 1,000

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 15)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 16)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 17)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

Federally-Endangered Plants

State-Endangered Plants

CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

0 500 1,000

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 18)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

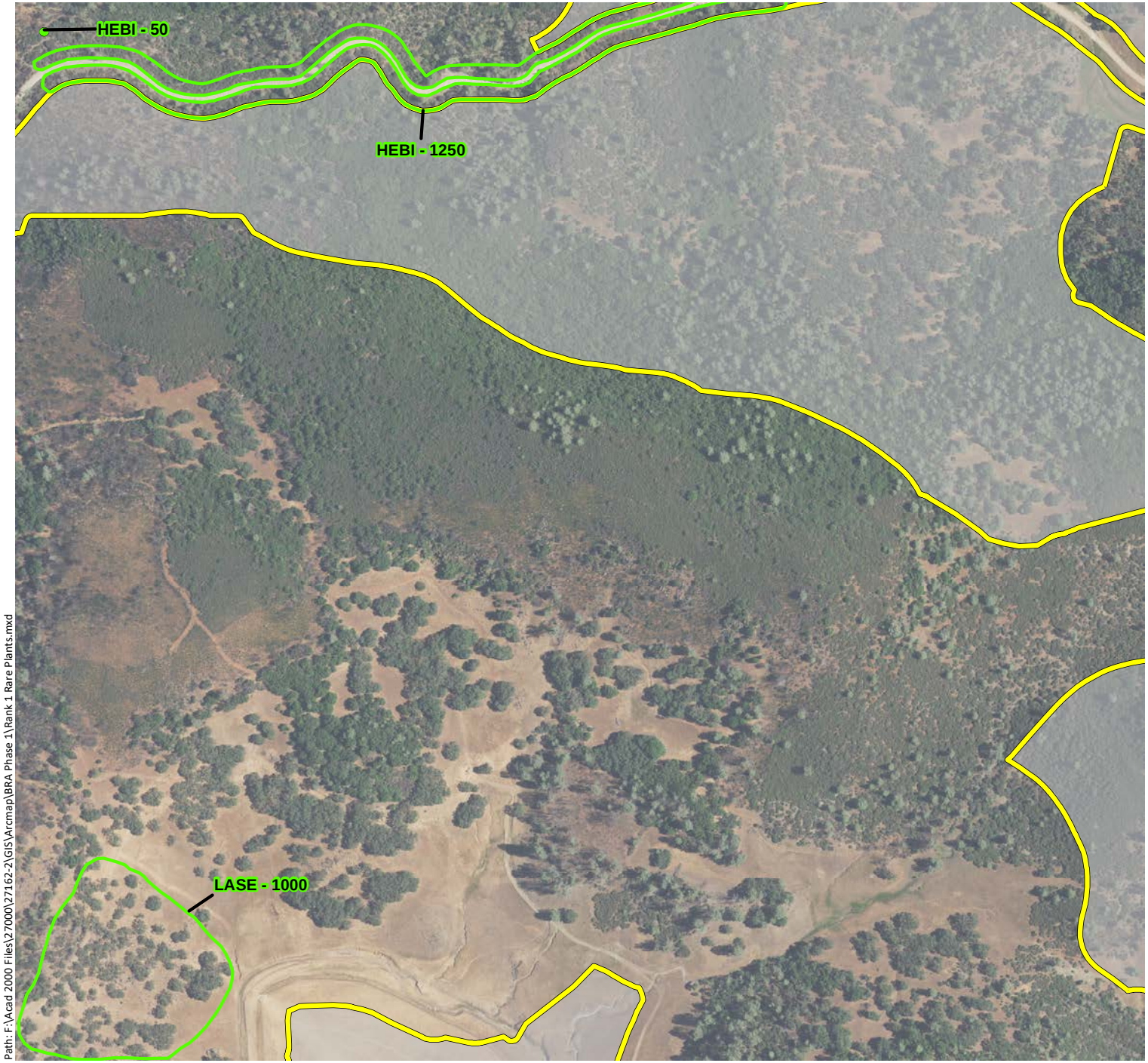
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 19)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 20)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

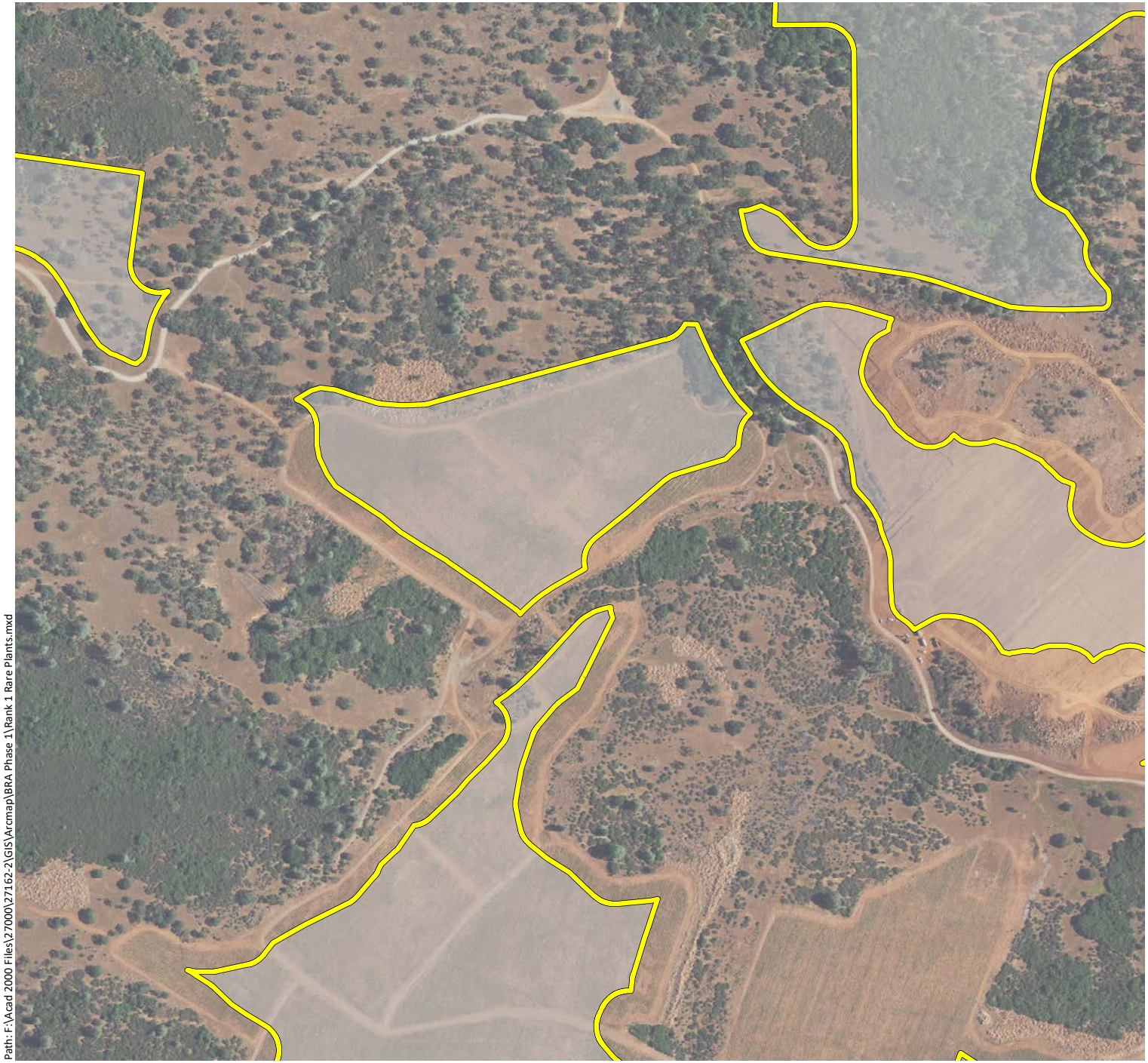
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 21)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

0 500 1,000

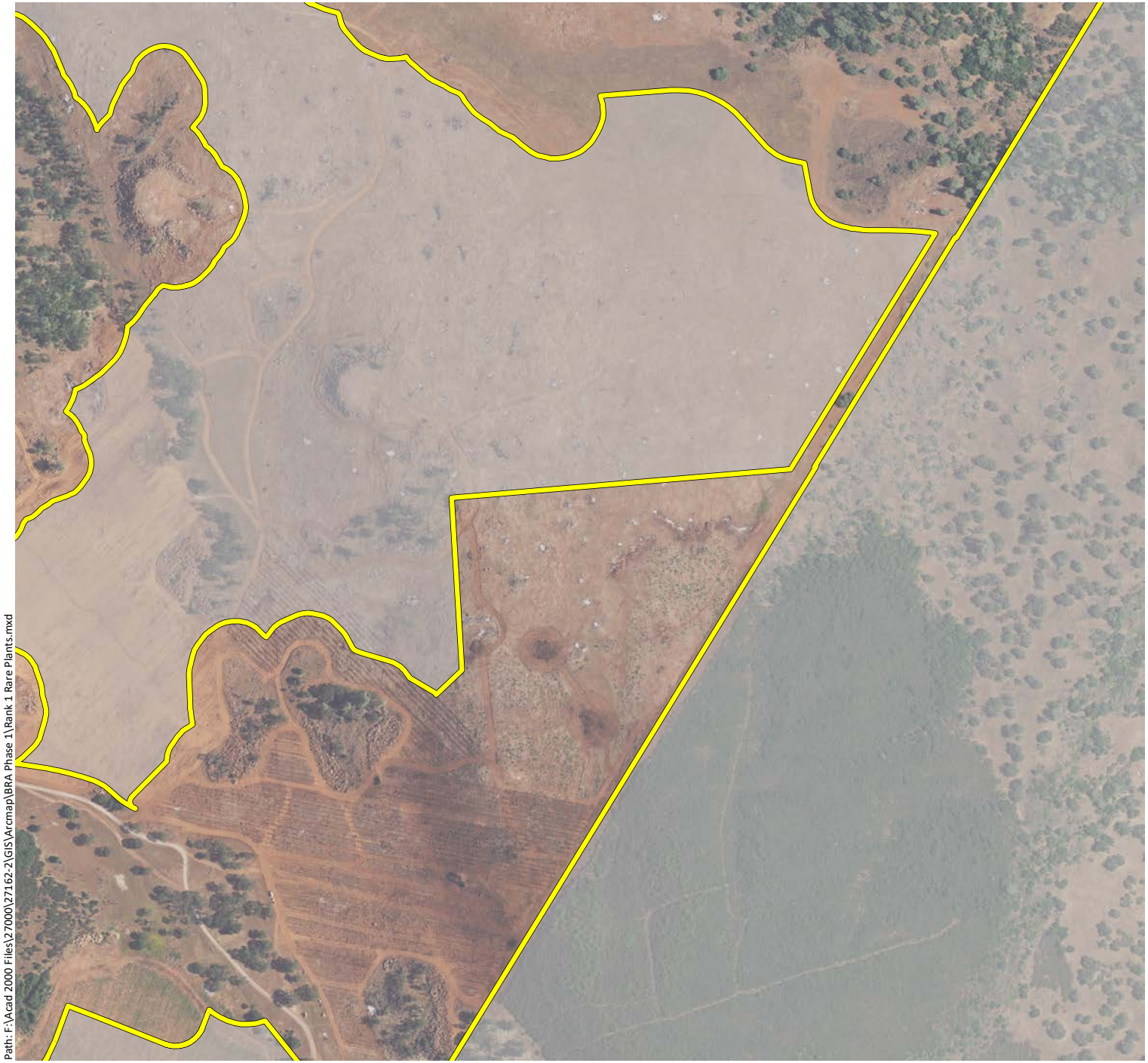
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 22)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 23)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

0 500 1,000

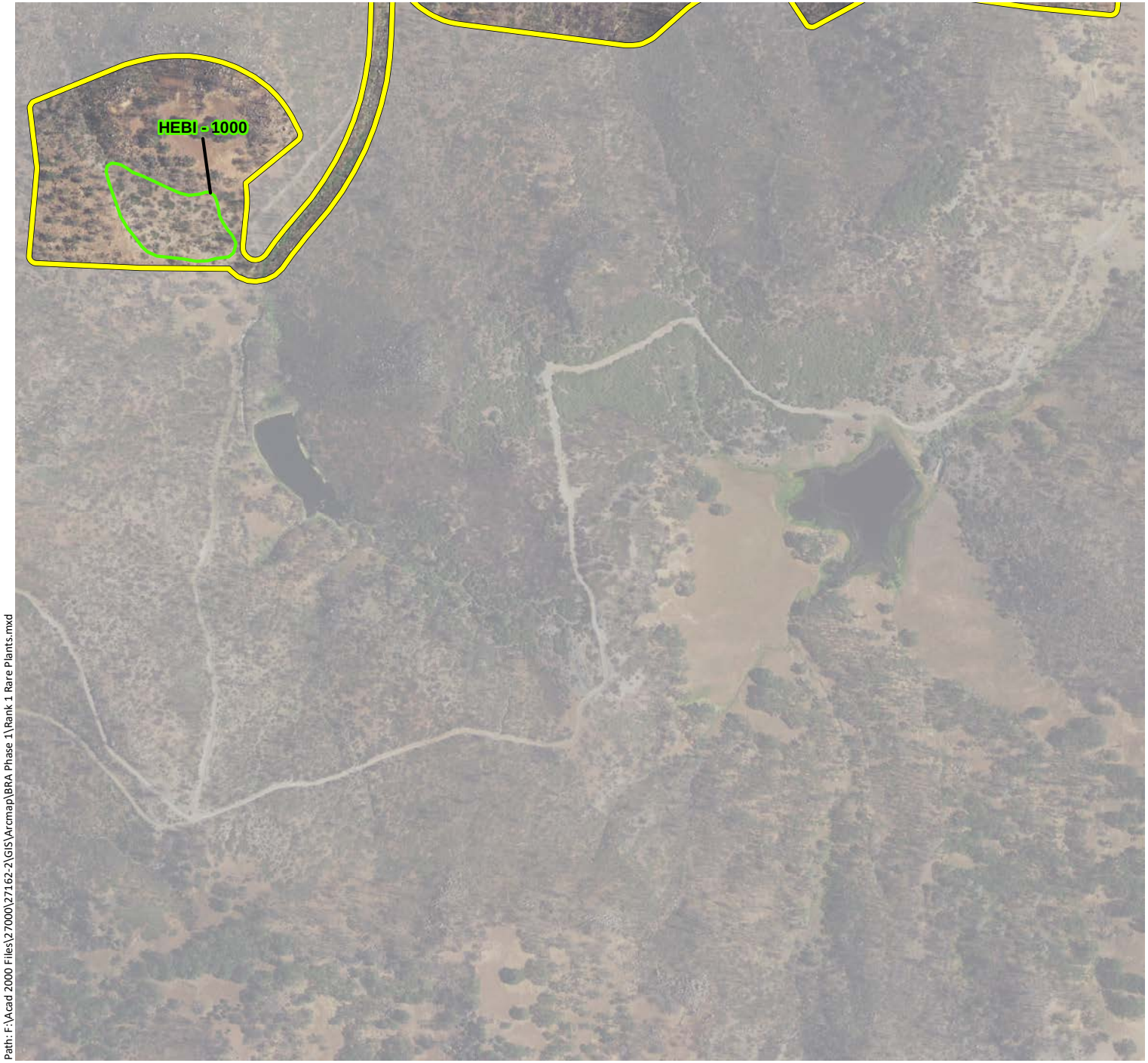
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 24)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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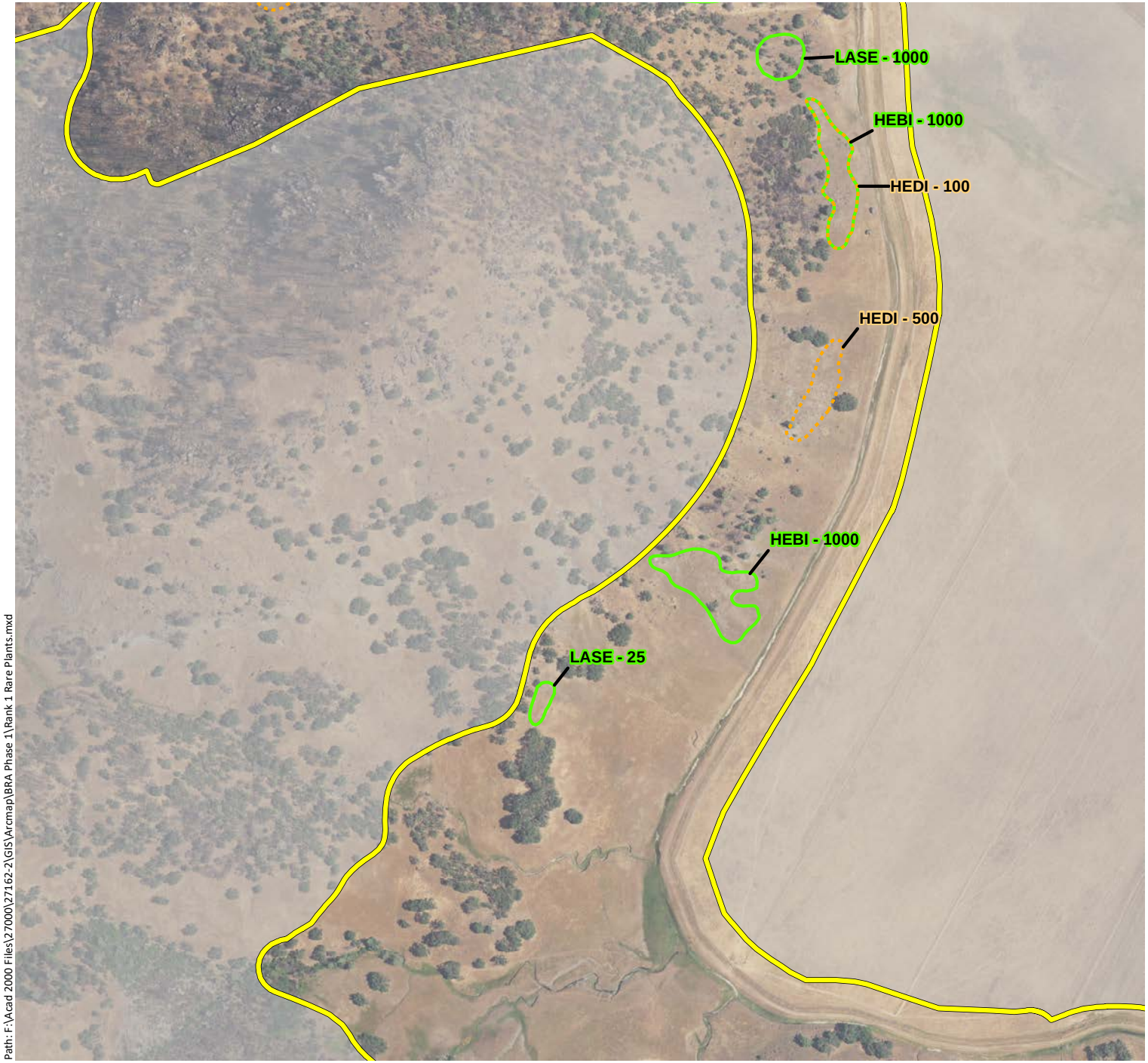
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 25)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

0 500 1,000

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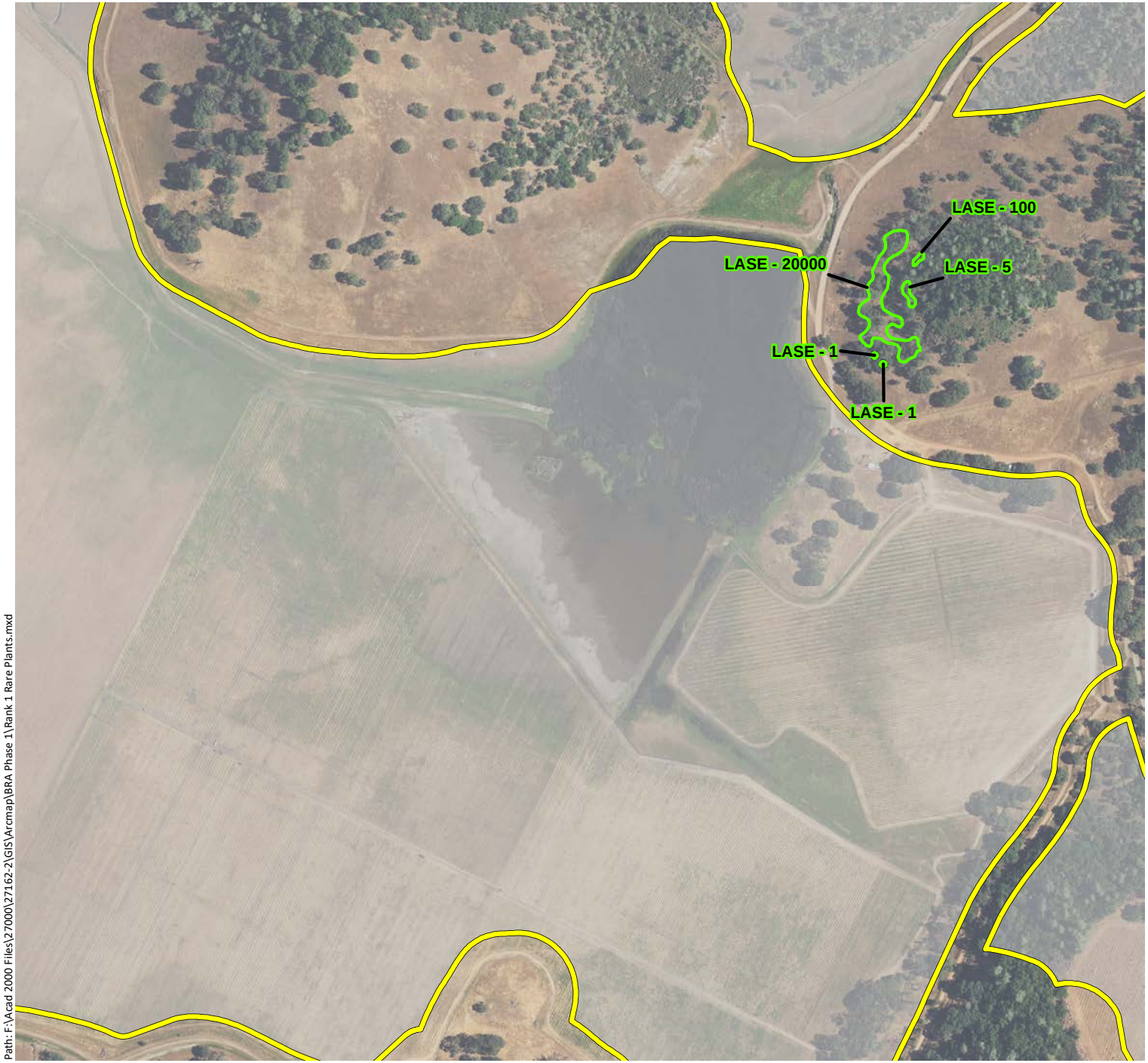
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 26)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Federally-Endangered Plants
State-Endangered Plants
CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch
BAMA: Big-scale balsamroot
BRLE: Narrow-flowered California brodiaea
ERGR: Greene's narrow-leaved fleabane
HEBI: Two carpellate western flax
LASE: Colusa layia
STHE: Green jewelflower
STMO: Morrison's jewelflower

N

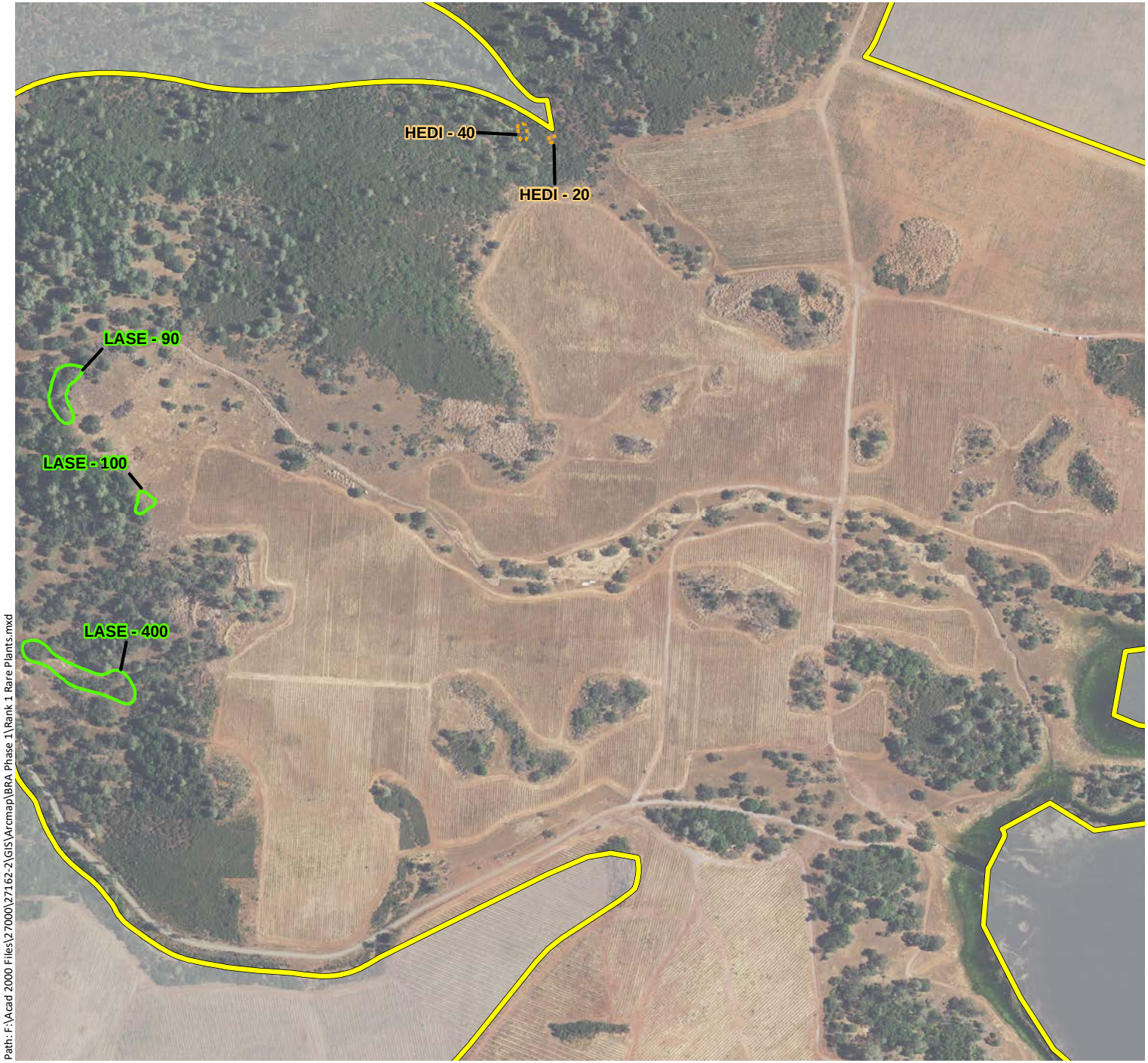
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 27)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

0 500 1,000

Feet

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ENVIRONMENTAL CONSULTANTS

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 28)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

0 500 1,000

Feet

wra

ENVIRONMENTAL CONSULTANTS

Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Rank 1 Rare Plants.mxd

Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 29)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Federally-Endangered Plants
State-Endangered Plants
CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

N

0 500 1,000

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ENVIRONMENTAL CONSULTANTS

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 30)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Federally-Endangered Plants
State-Endangered Plants
CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch
BAMA: Big-scale balsamroot
BRLE: Narrow-flowered California brodiaea
ERGR: Greene's narrow-leaved fleabane
HEBI: Two carpellate western flax
LASE: Colusa layia
STHE: Green jewelflower
STMO: Morrison's jewelflower

N

0 500 1,000

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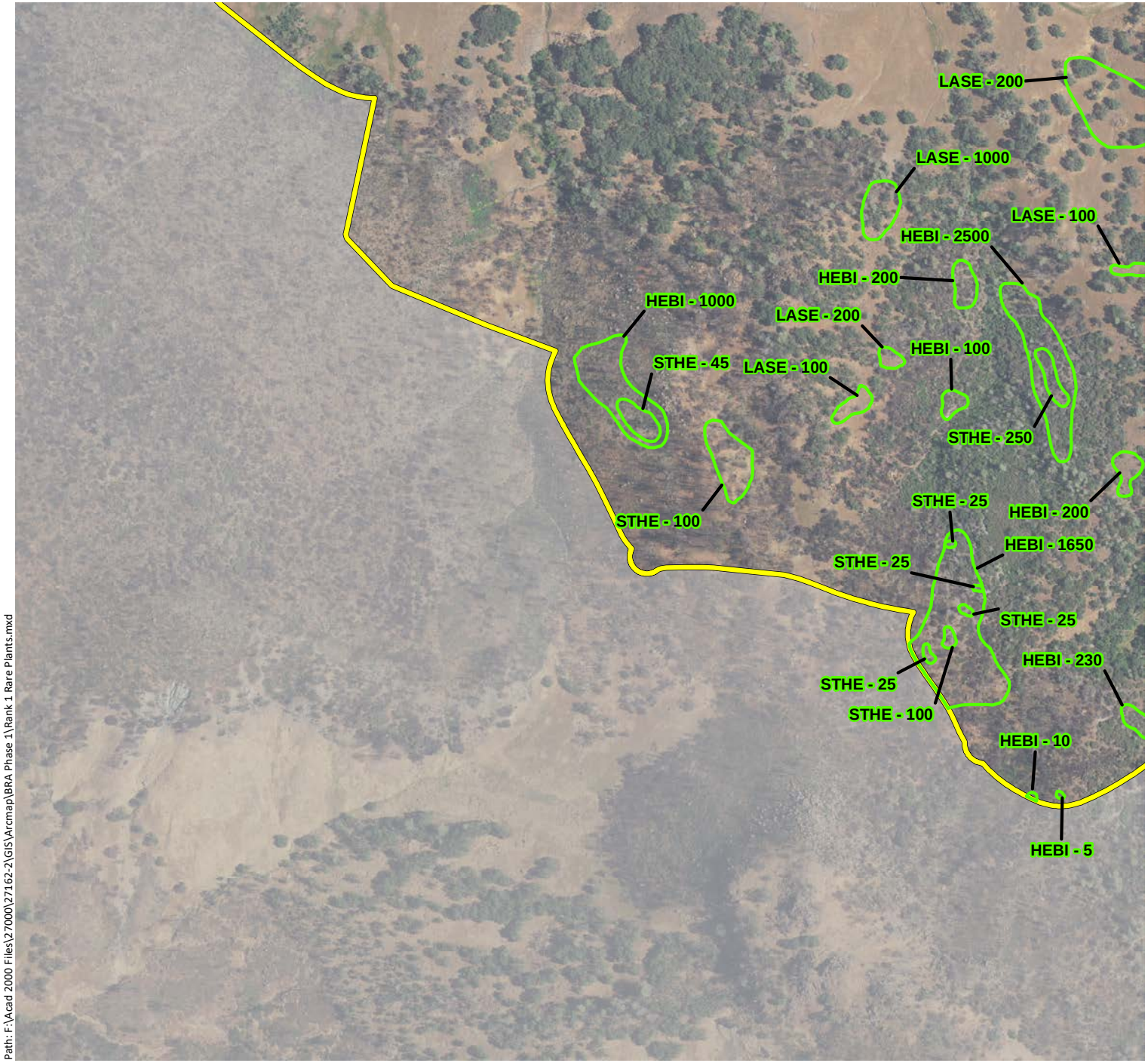
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 31)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Federally-Endangered Plants
State-Endangered Plants
CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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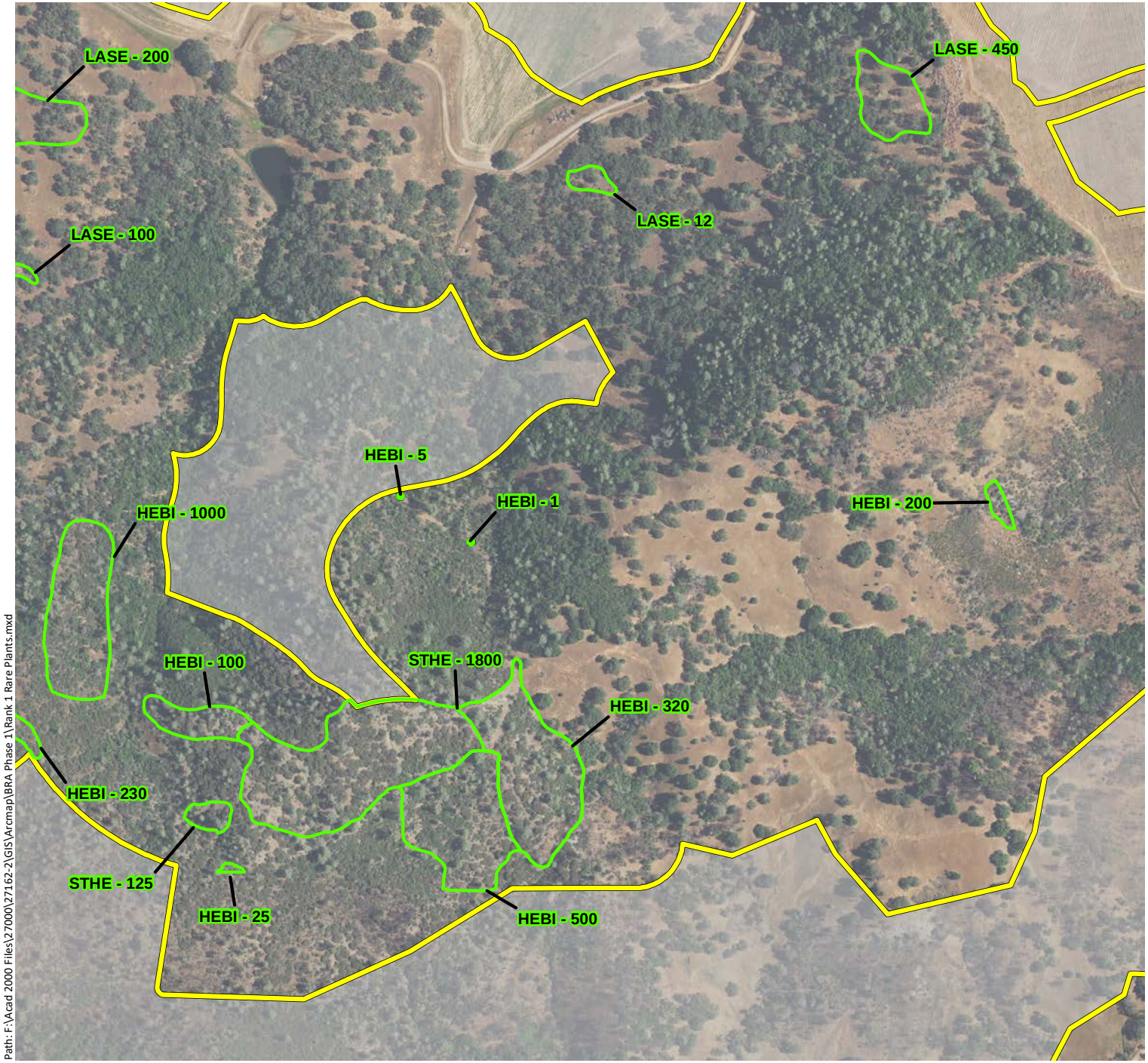
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 32)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.
Federally-Endangered Plants
State-Endangered Plants
CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch
BAMA: Big-scale balsamroot
BRLE: Narrow-flowered California brodiaea
ERGR: Greene's narrow-leaved fleabane
HEBI: Two carpellate western flax
LASE: Colusa layia
STHE: Green jewelflower
STMO: Morrison's jewelflower

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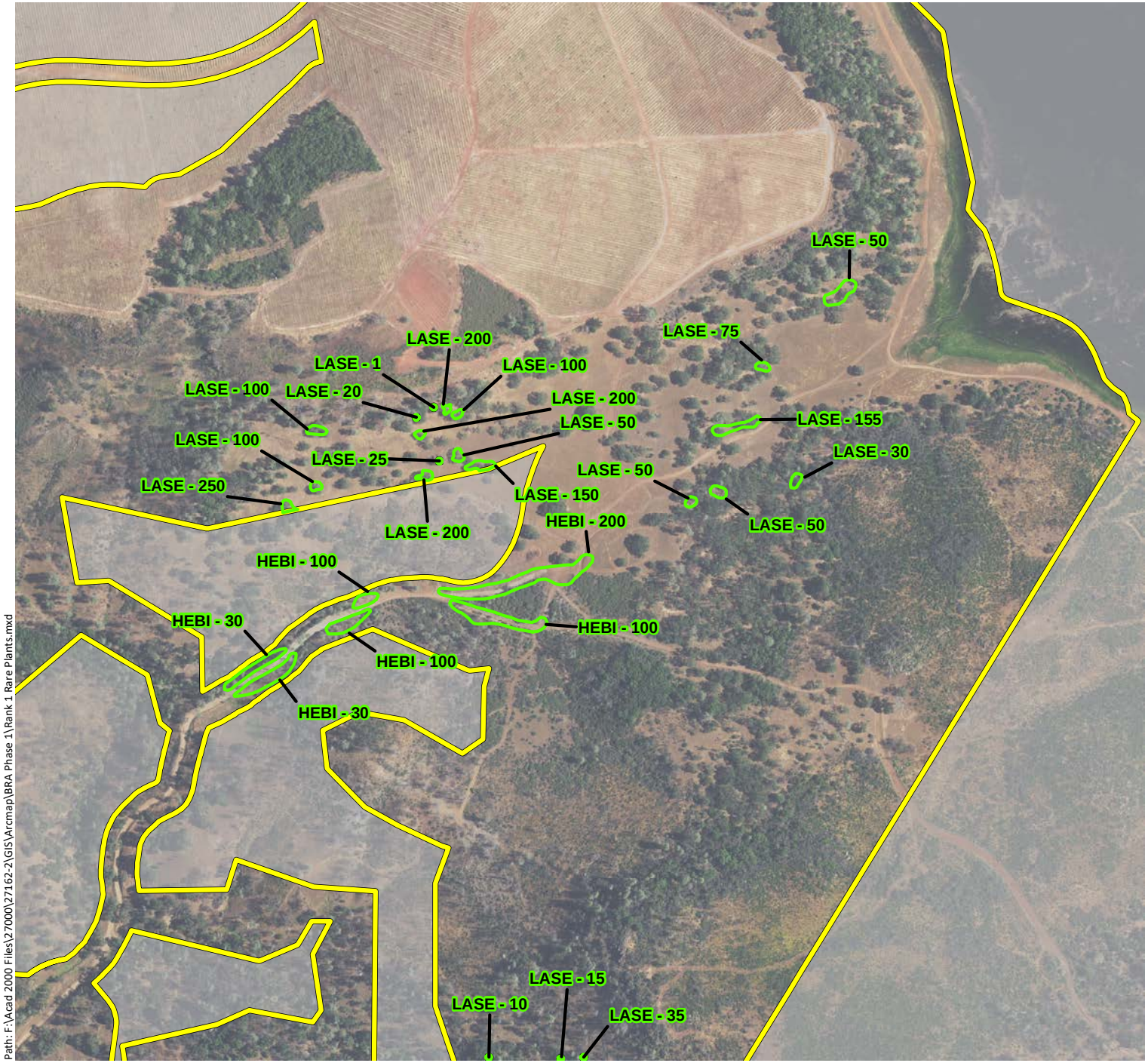
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Rank 1 Rare Plants.mxd

Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 33)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

Federally-Endangered Plants

State-Endangered Plants

CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

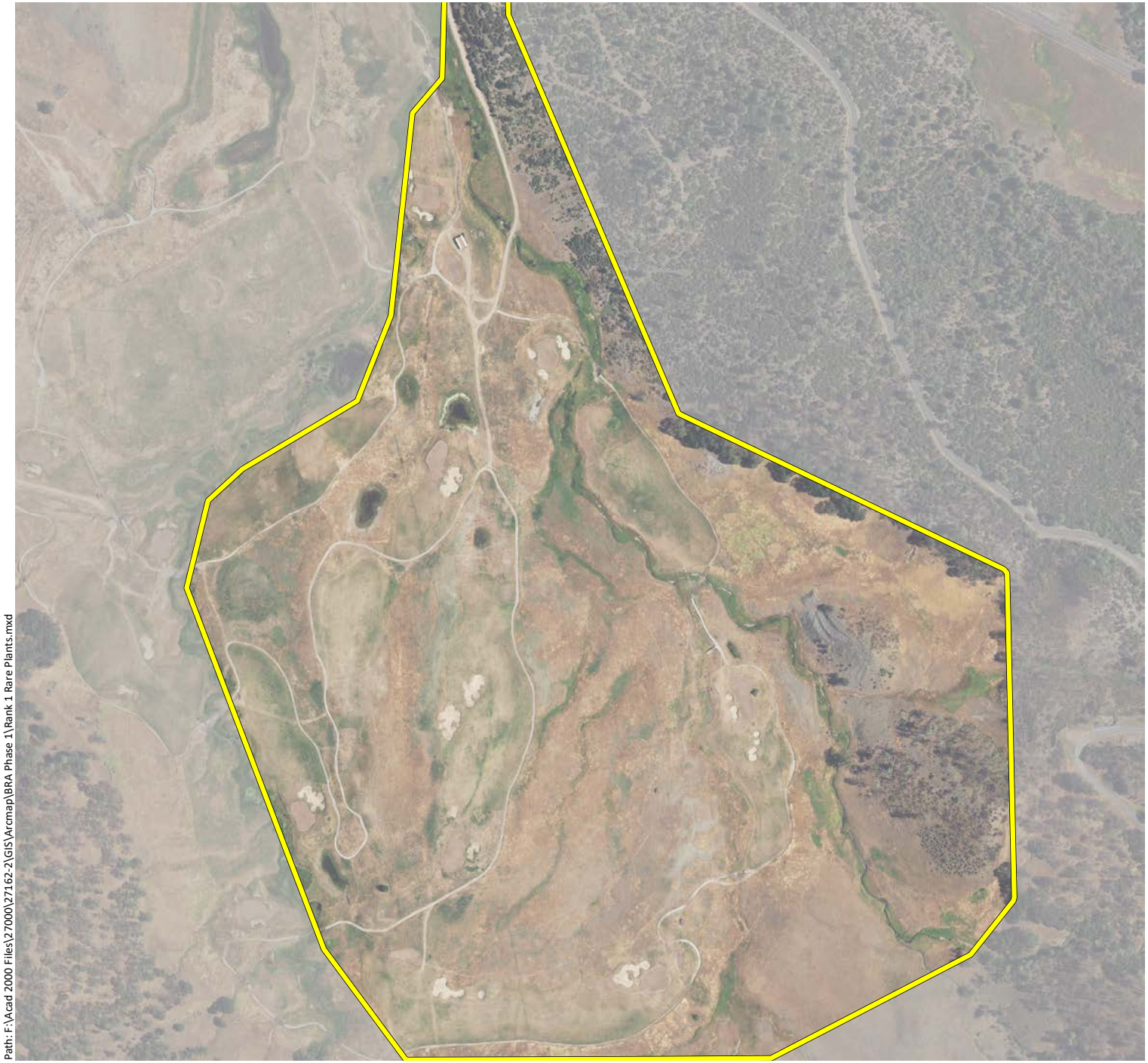
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Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 34)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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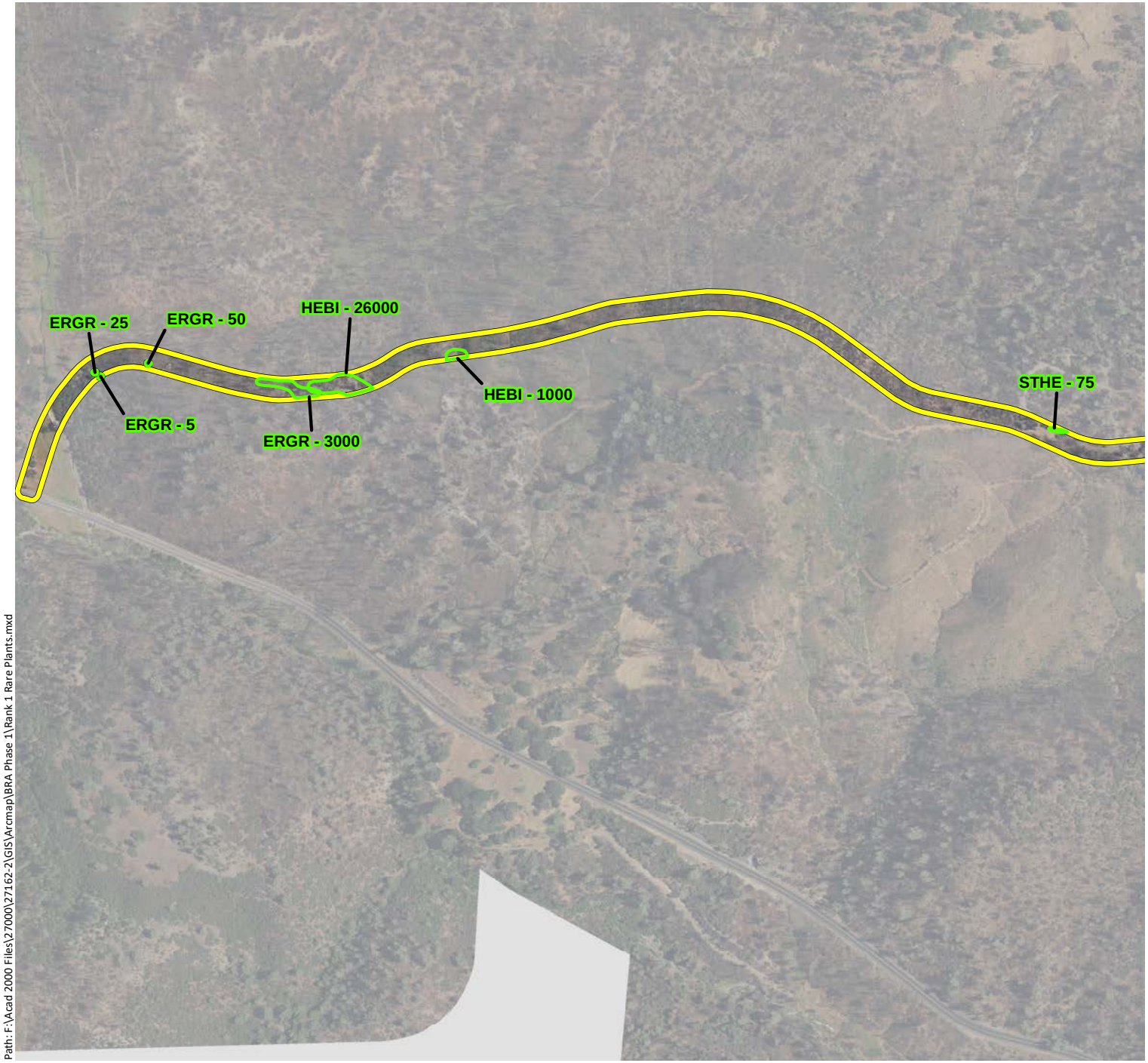
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 35)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Federally-Endangered Plants
State-Endangered Plants
CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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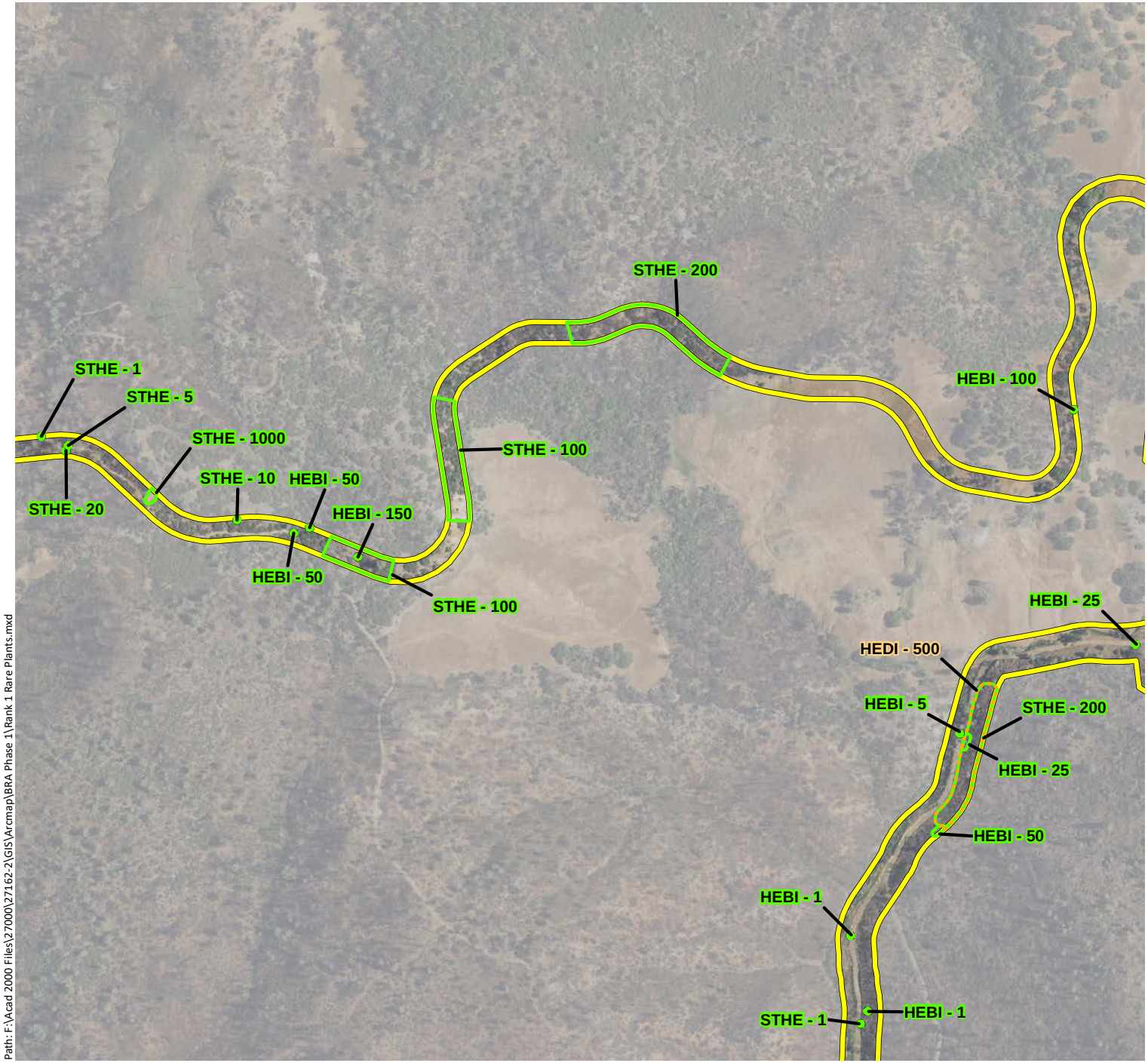
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E1.
Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 36)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.
Federally-Endangered Plants
State-Endangered Plants
CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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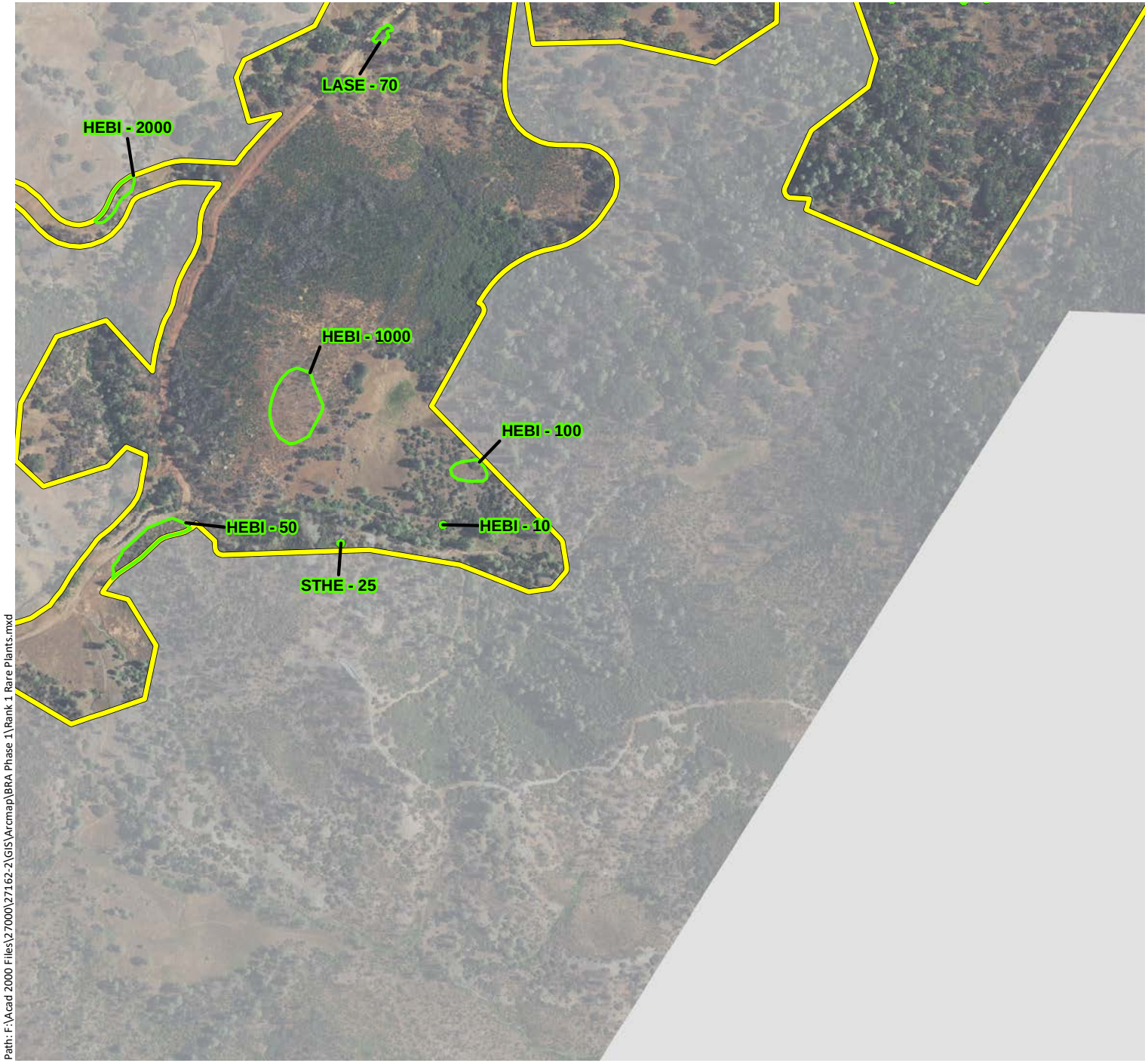
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 37)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E1. Federal, State, and CNPS Rank 1 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 38)

Maha Resort and Guenoc Valley Development, Phase 1

- Phase 1 Study Area - 4,977 ac.
- Federally-Endangered Plants
- State-Endangered Plants
- CNPS Rank 1 Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

ASJE: Jepson's milkvetch

BAMA: Big-scale balsamroot

BRLE: Narrow-flowered California brodiaea

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

STHE: Green jewelflower

STMO: Morrison's jewelflower

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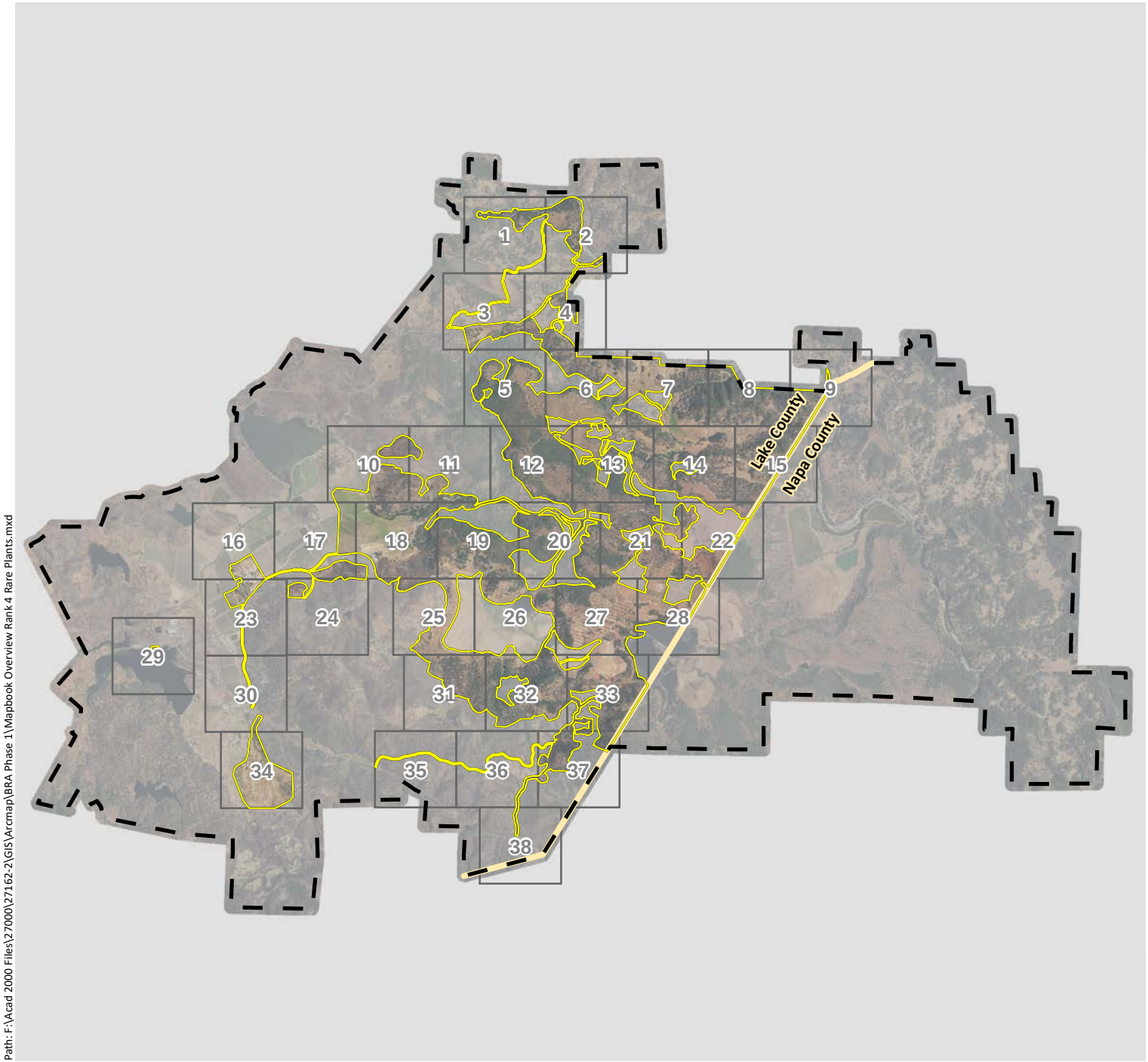
Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

APPENDIX E2

CNPS RANK 4 SPECIAL-STATUS PLANT SPECIES OBSERVED WITHIN THE PHASE 1 STUDY AREA

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Overview)

Maha Resort and Guenoc Valley Development, Phase 1



Property Boundary
Phase 1 Study Area
Mapbook Grid
County Boundary

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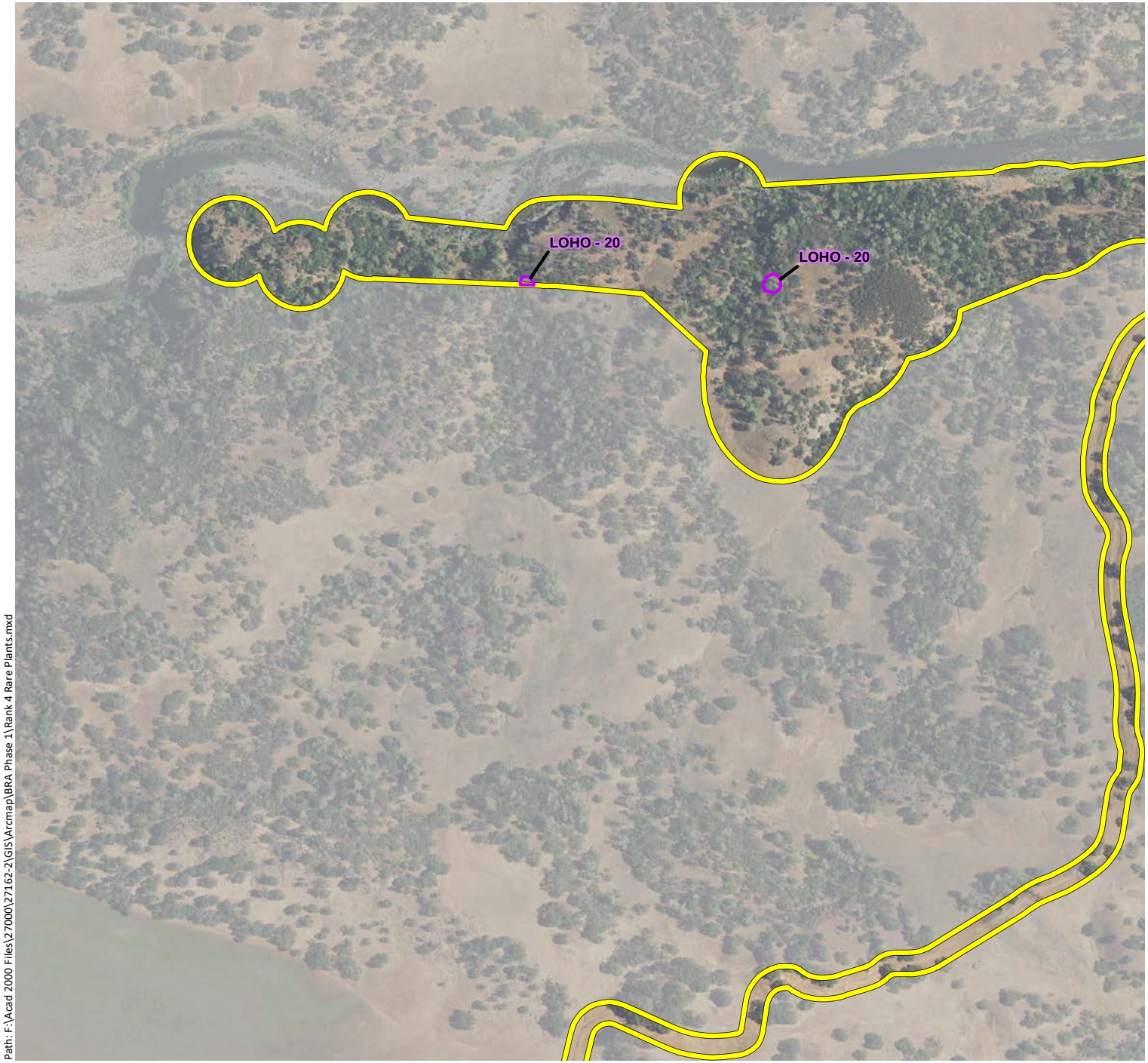
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Sources: Hexagon 2016 Aerial, WRA | Prepared By: mrochelle, 6/28/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 1)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

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ENVIRONMENTAL CONSULTANTS

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 2)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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ENVIRONMENTAL CONSULTANTS

Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Rank 4 Rare Plants.mxd

Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 3)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

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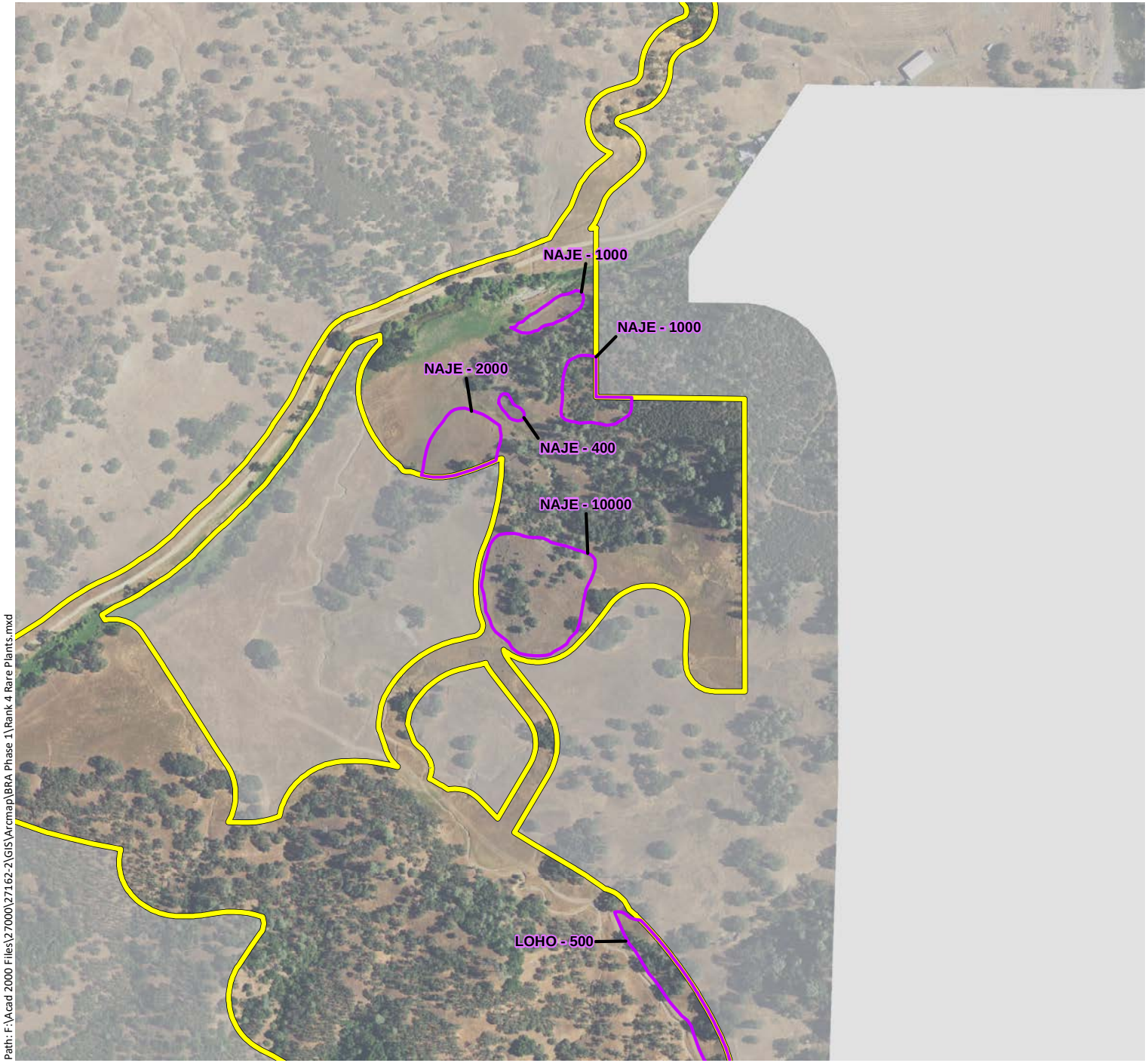
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 4)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

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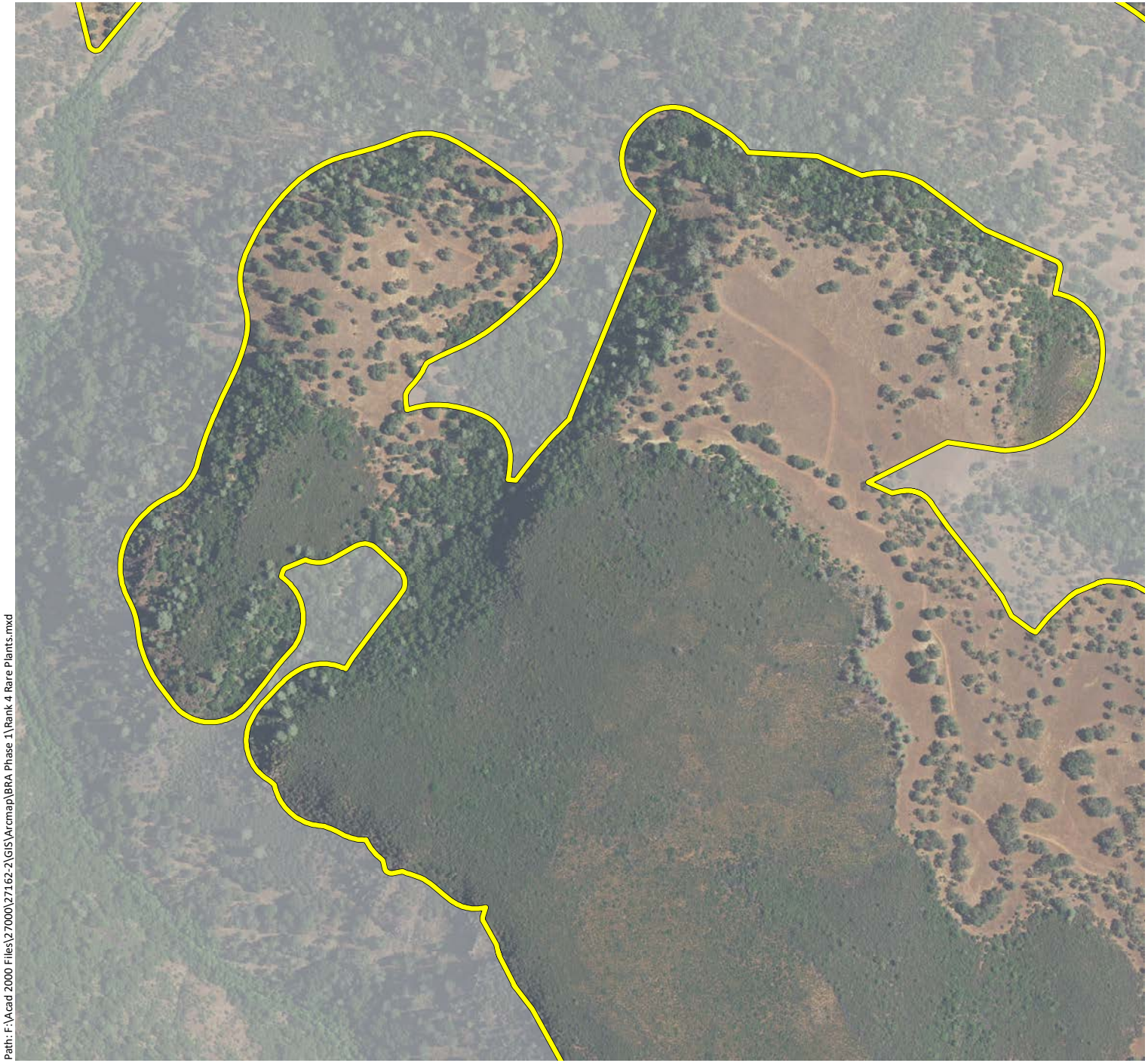
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 5)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

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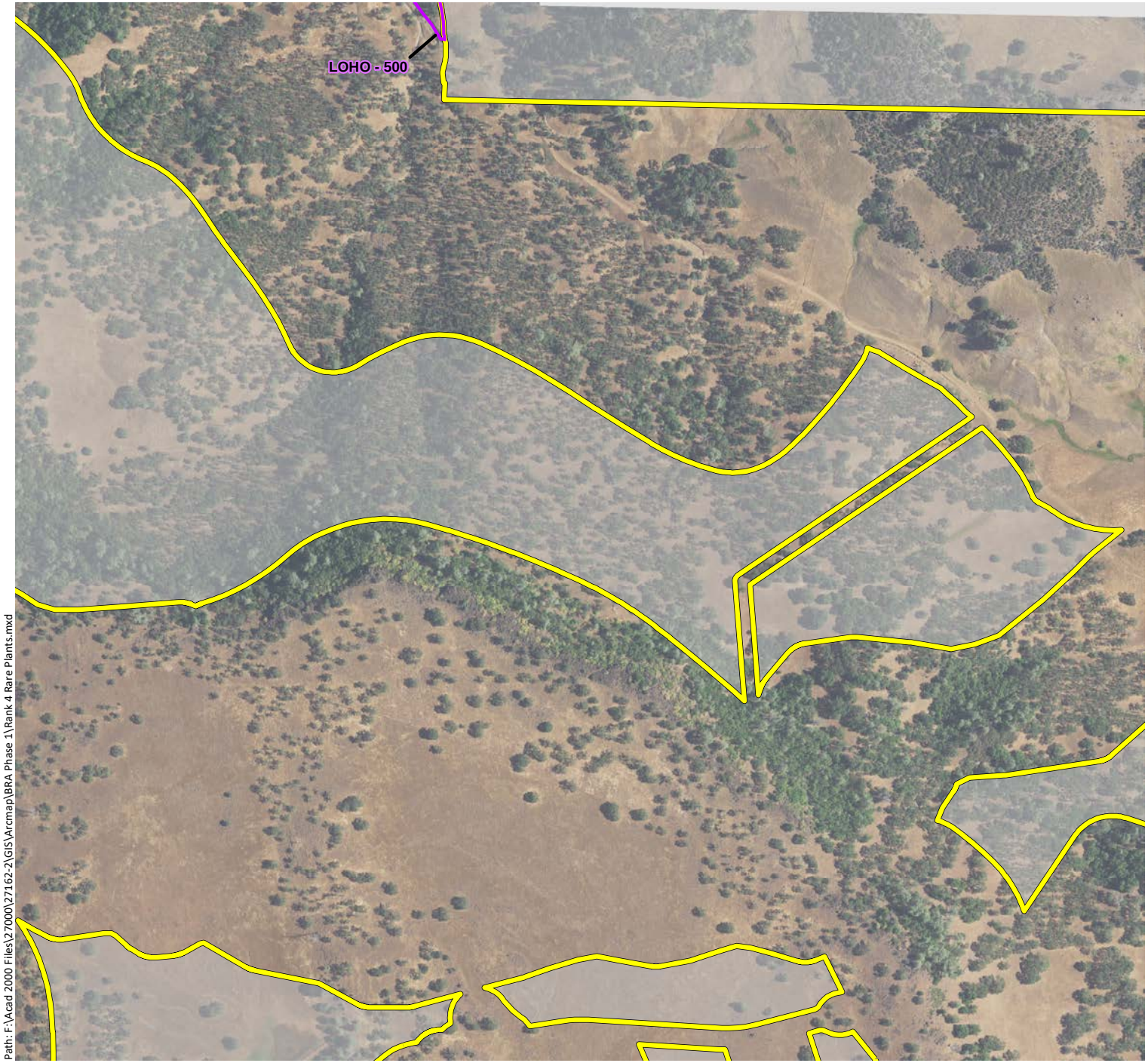
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ENVIRONMENTAL CONSULTANTS

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 6)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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Feet

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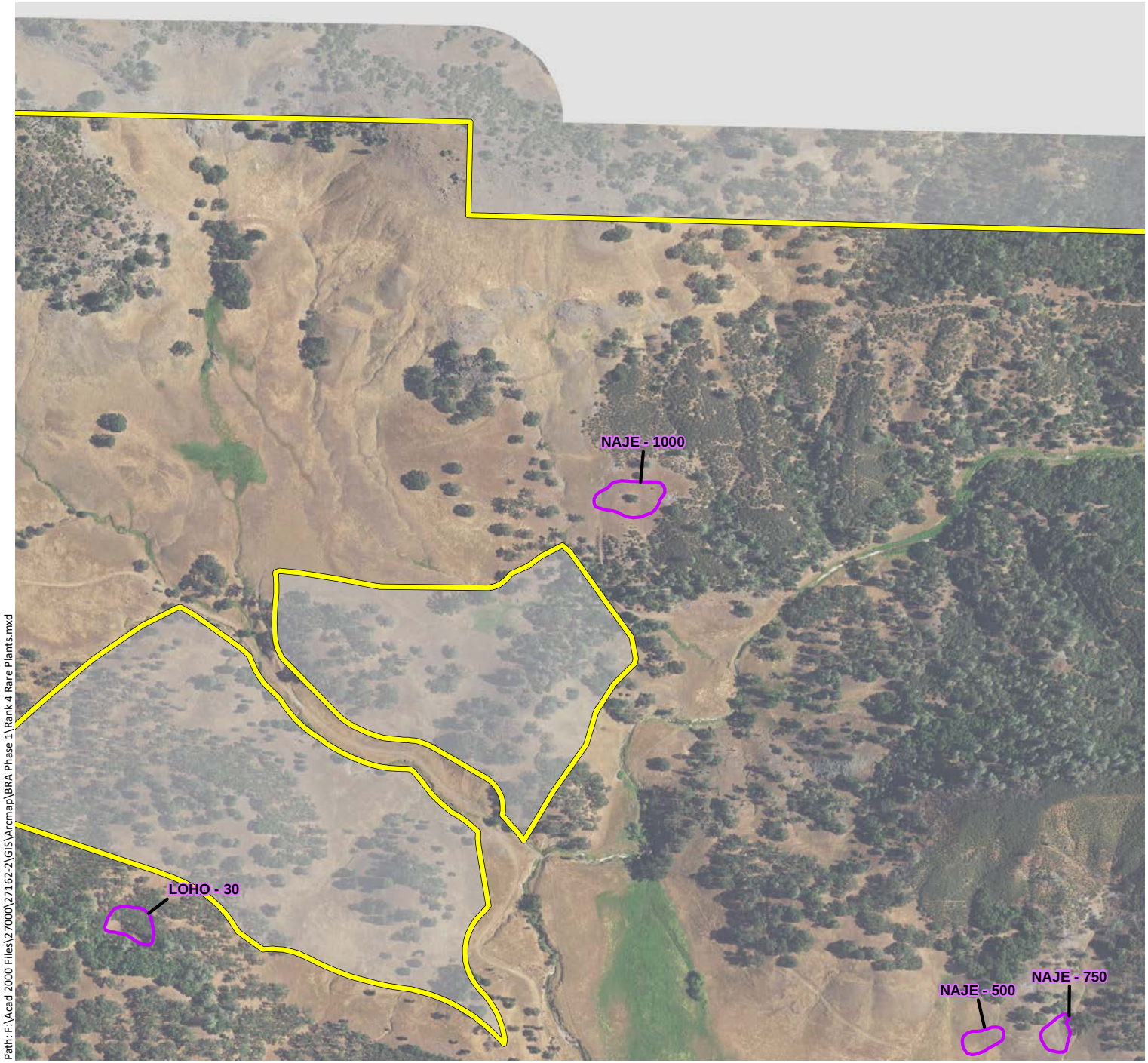
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 7)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

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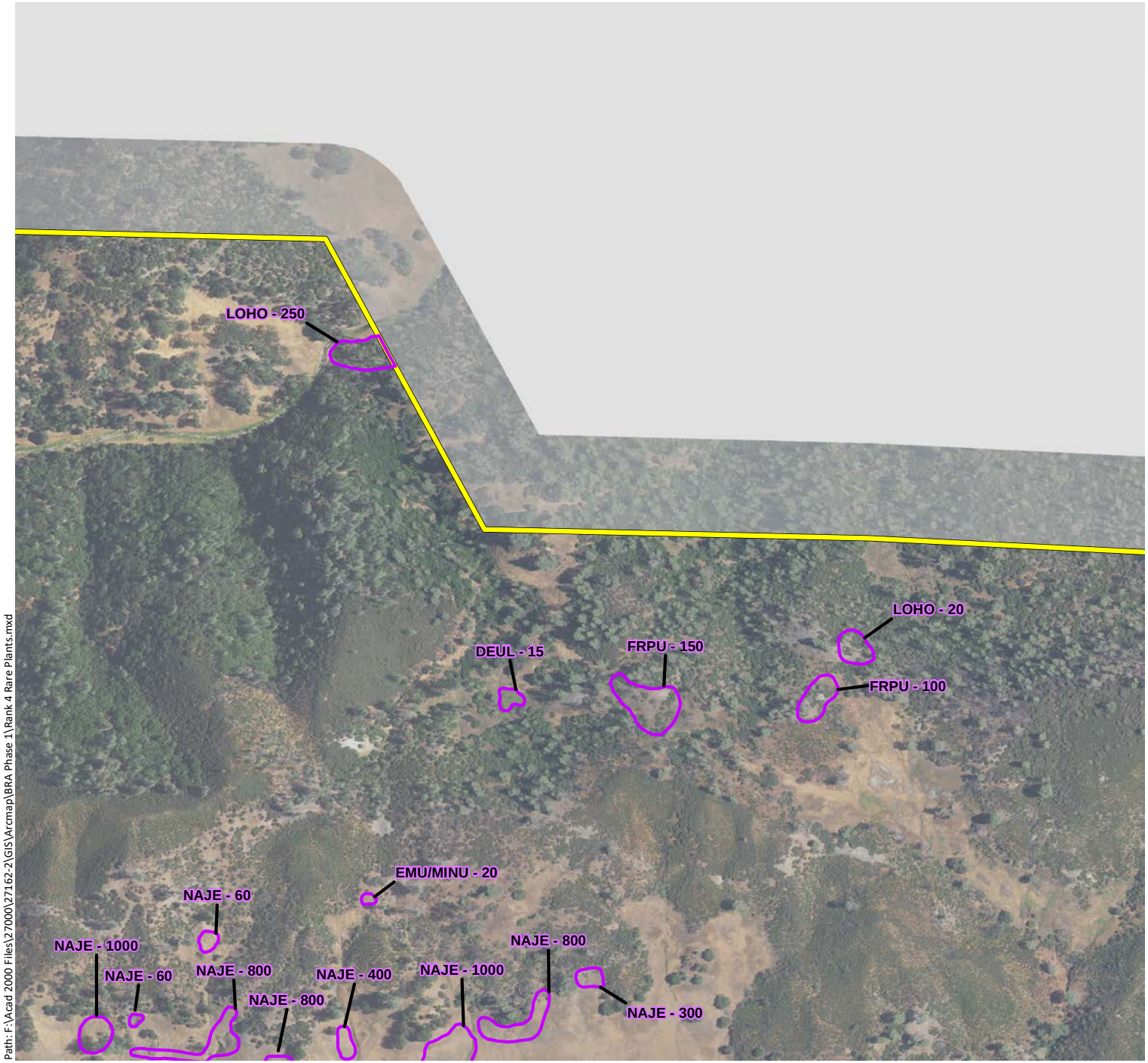
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 8)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

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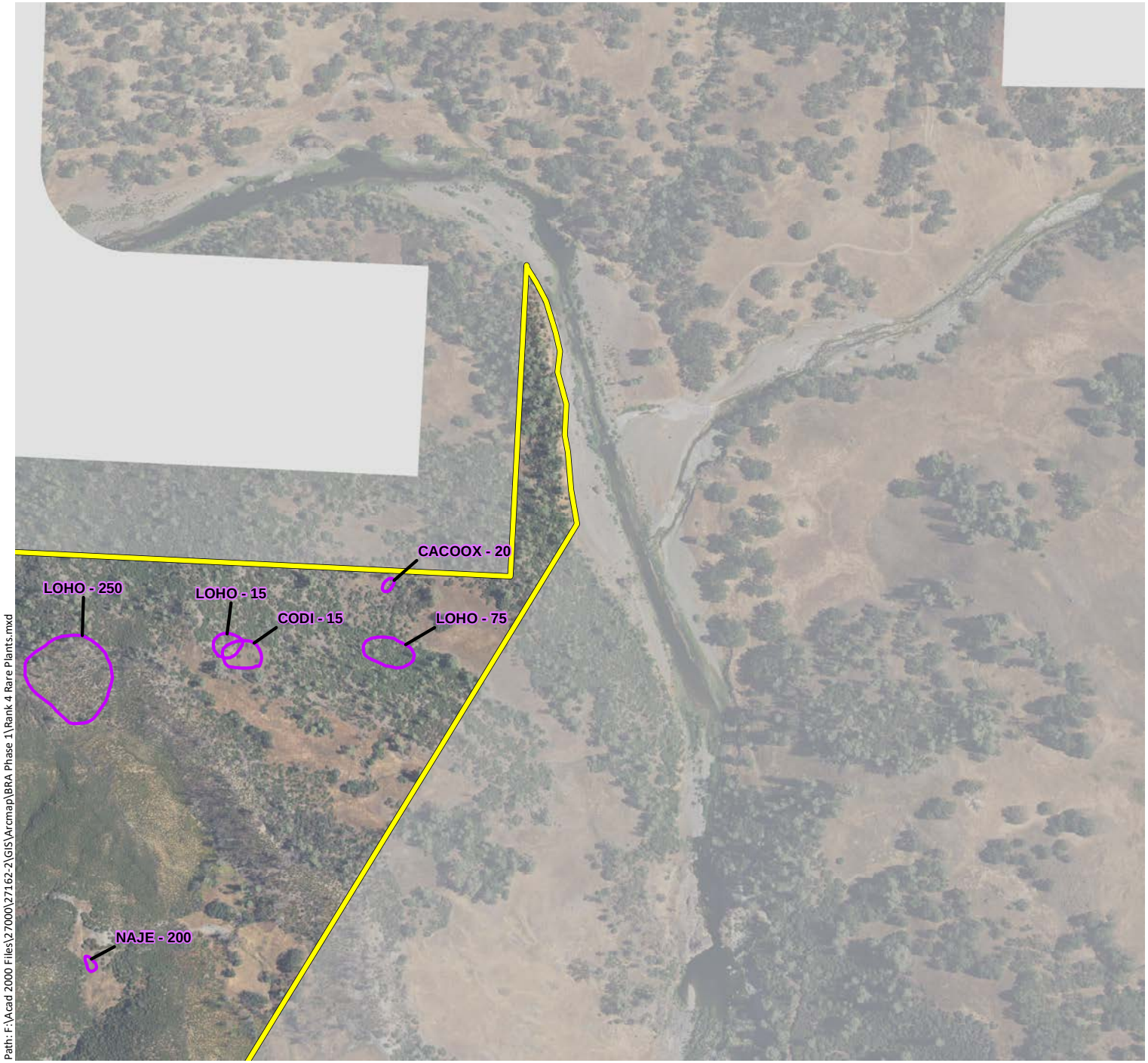
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 9)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

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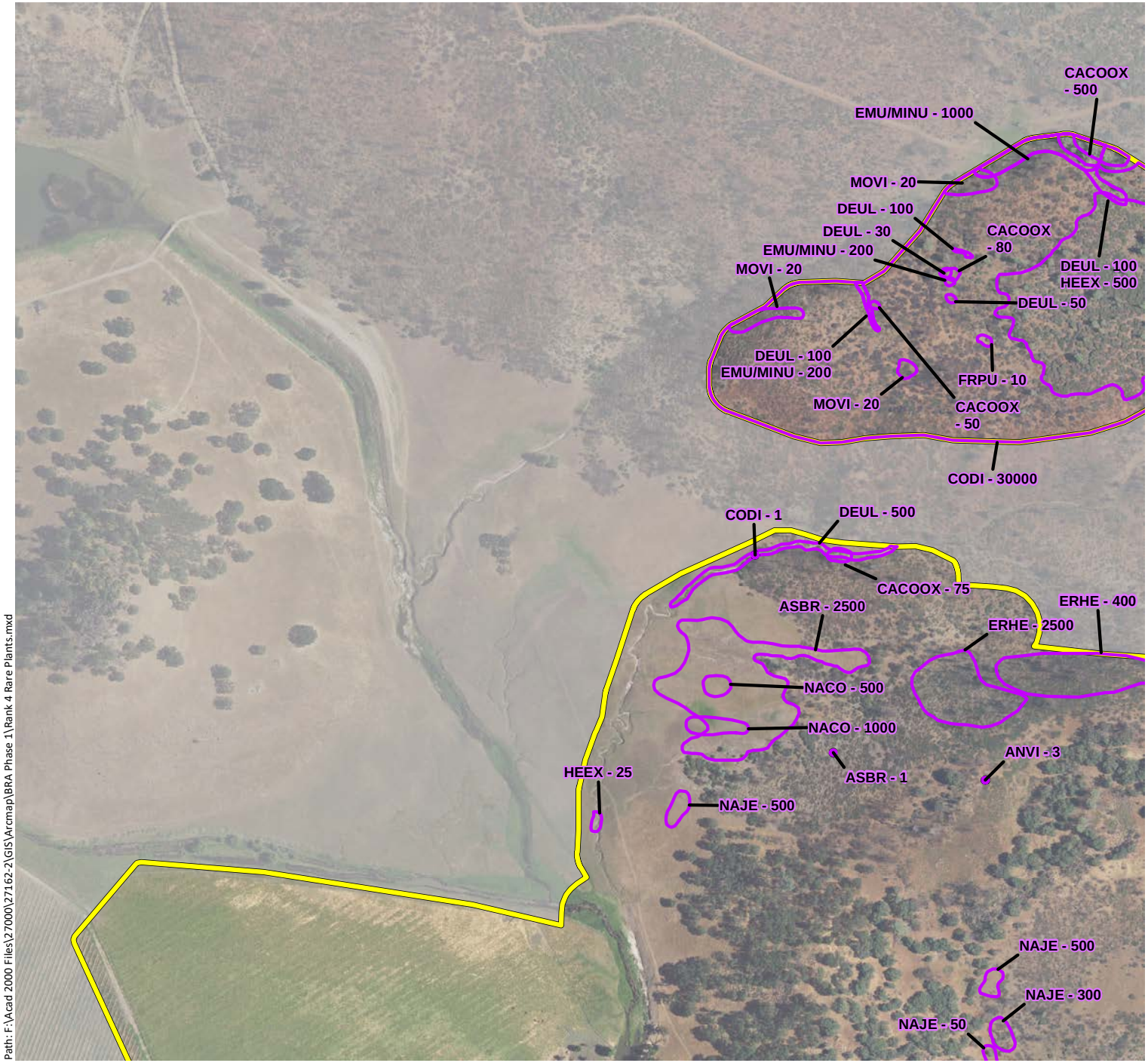
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2. CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 10)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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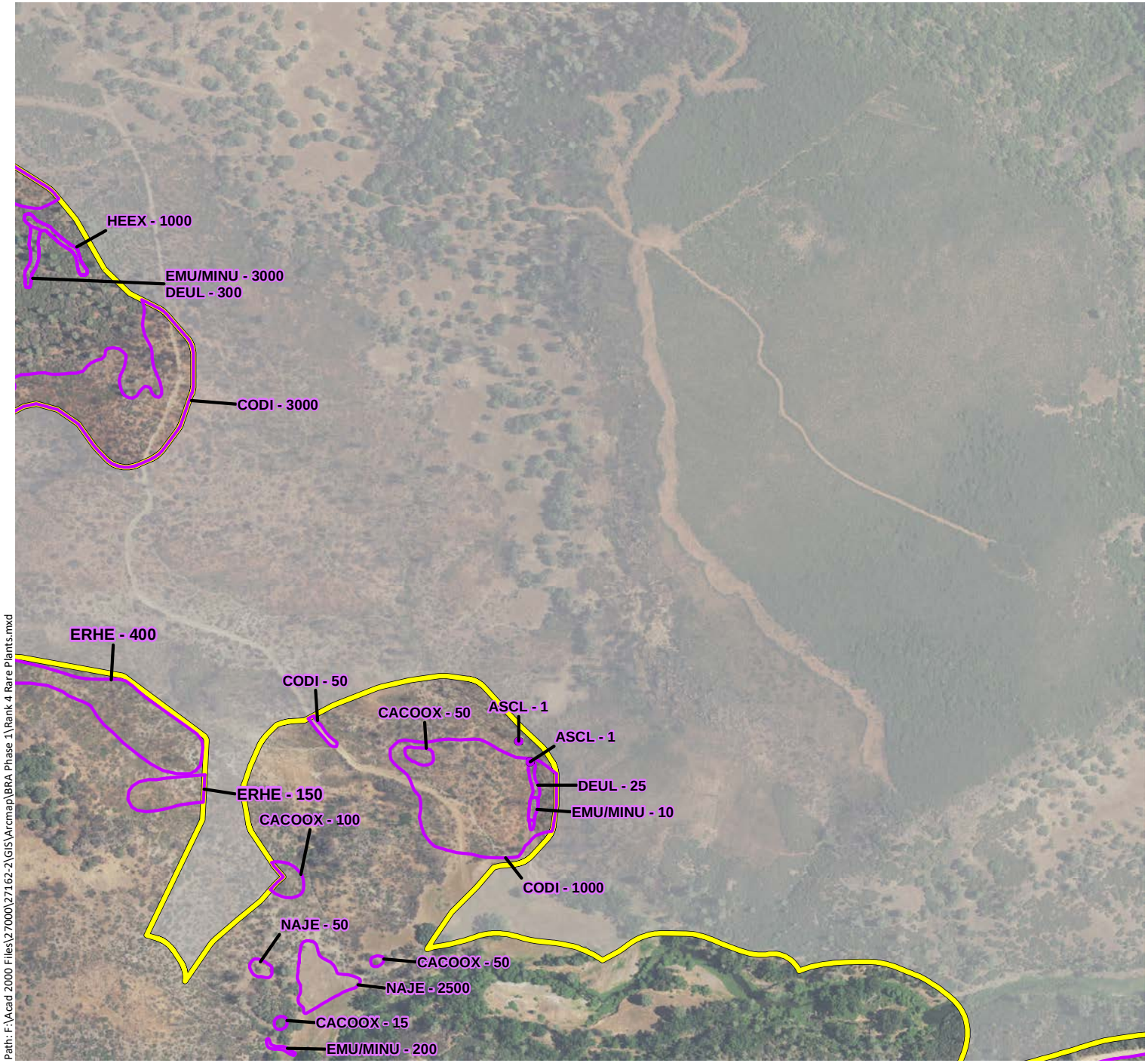
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 11)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 12)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

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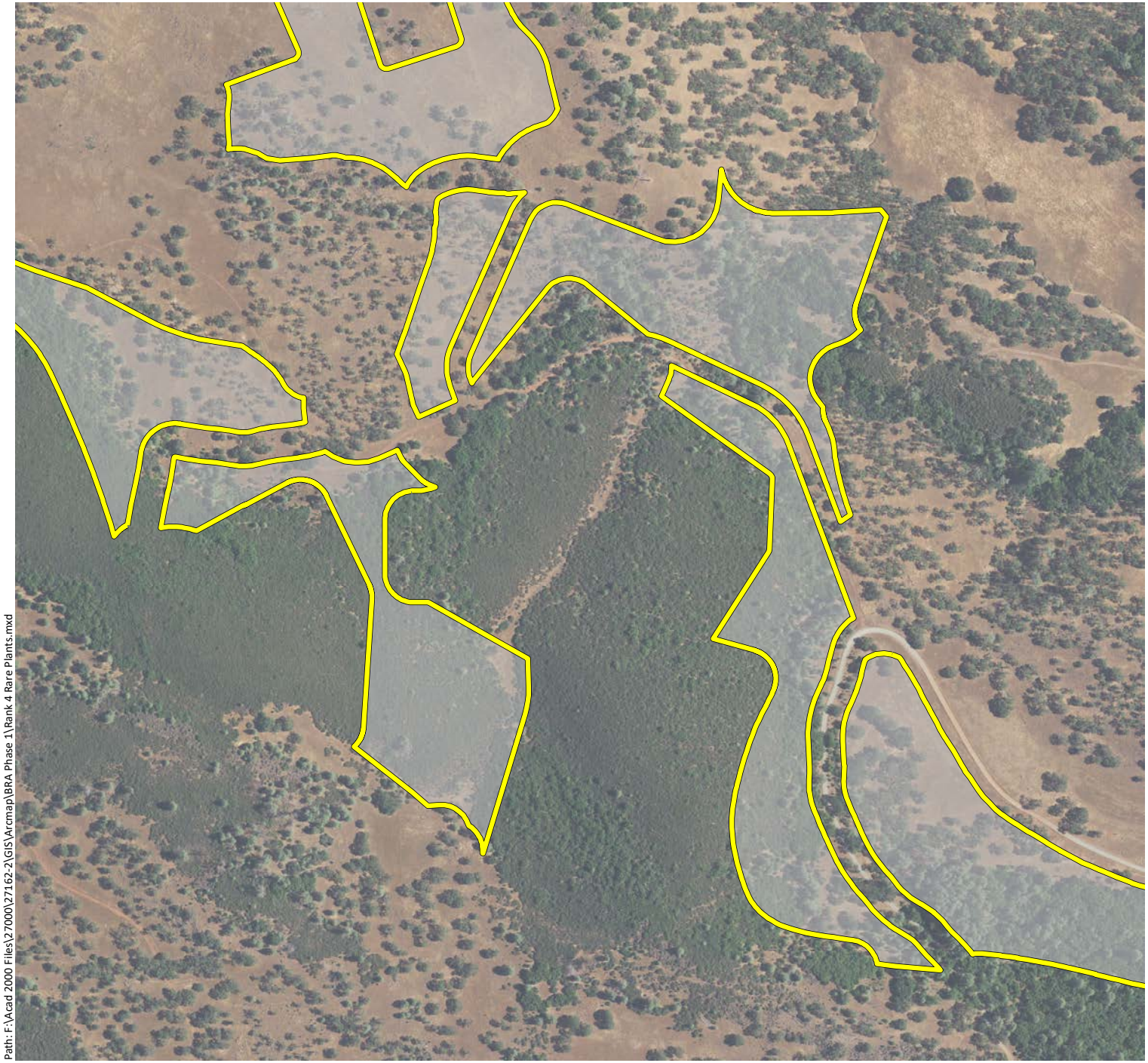
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 13)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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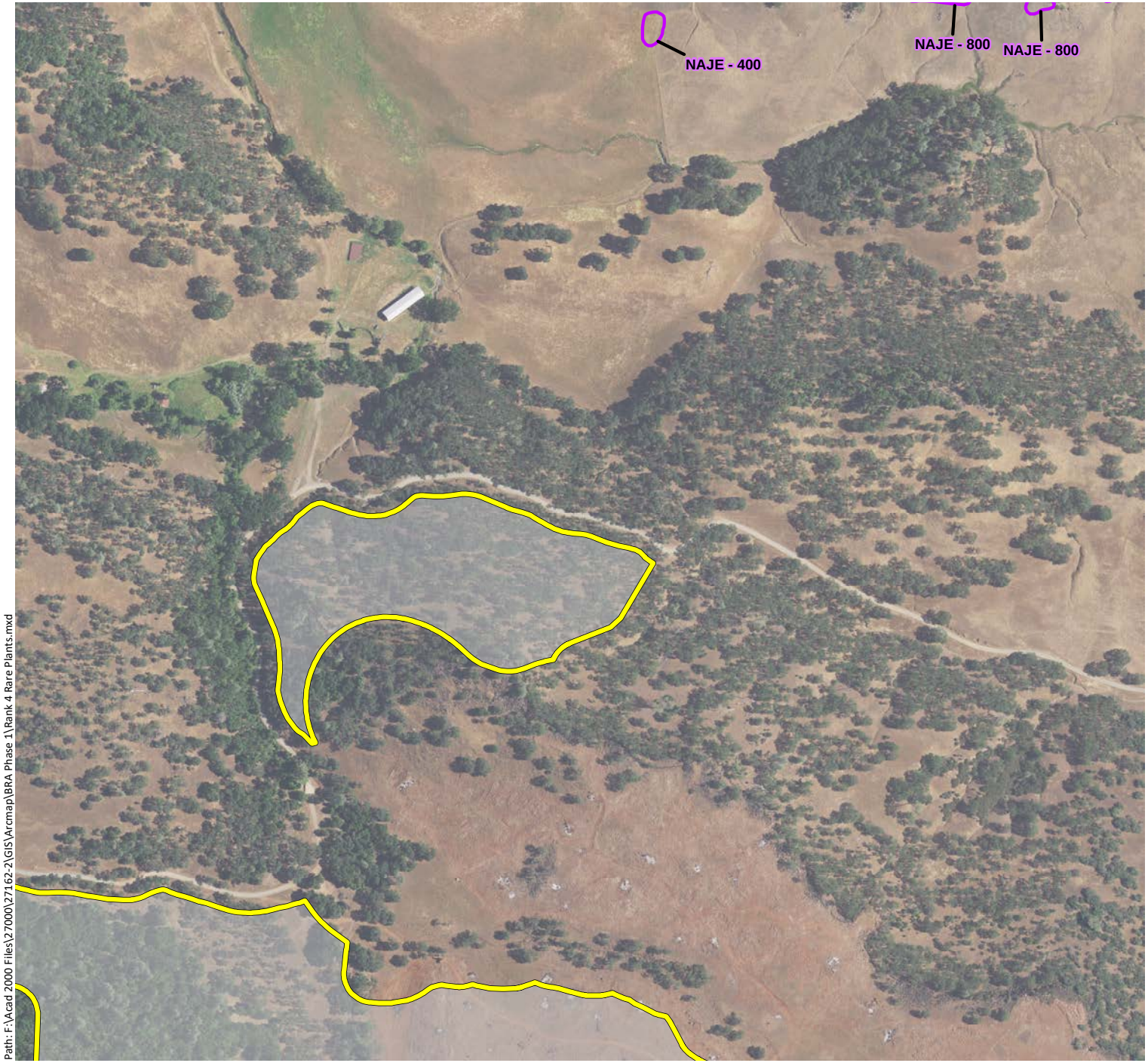
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 14)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

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ENVIRONMENTAL CONSULTANTS

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 15)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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Feet

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ENVIRONMENTAL CONSULTANTS

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 16)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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Feet

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ENVIRONMENTAL CONSULTANTS

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 17)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

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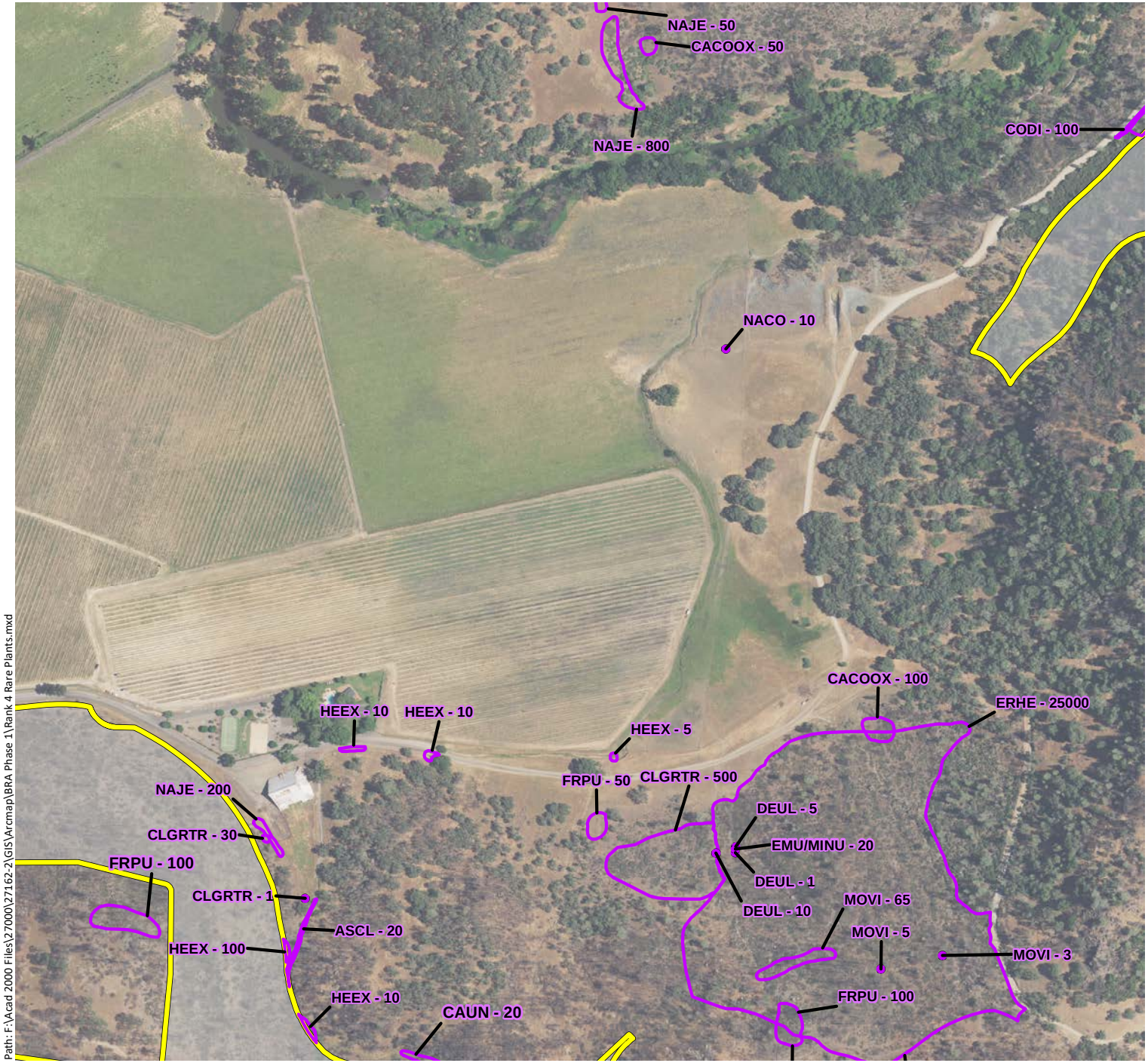
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 18)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

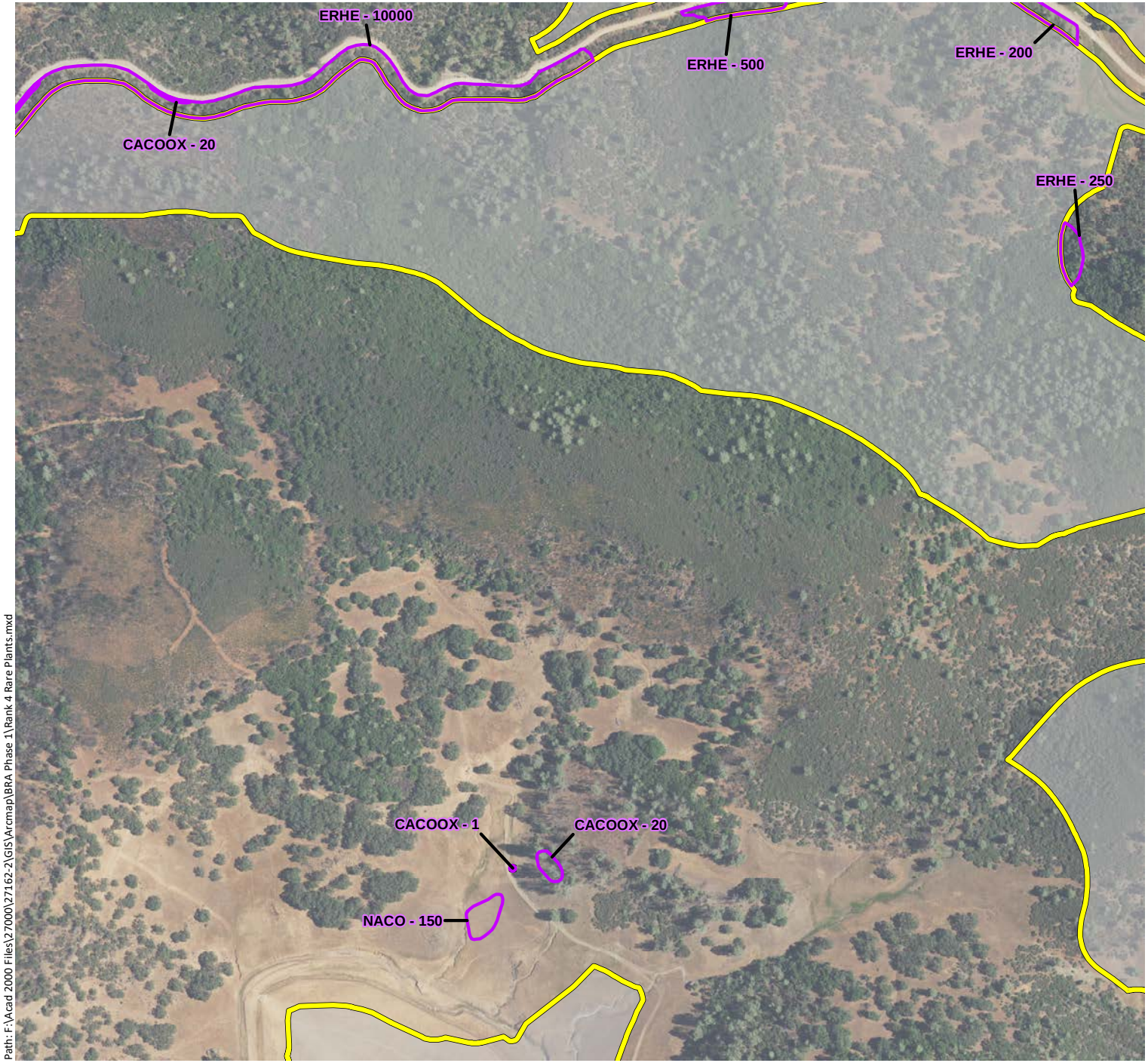
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 19)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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Feet

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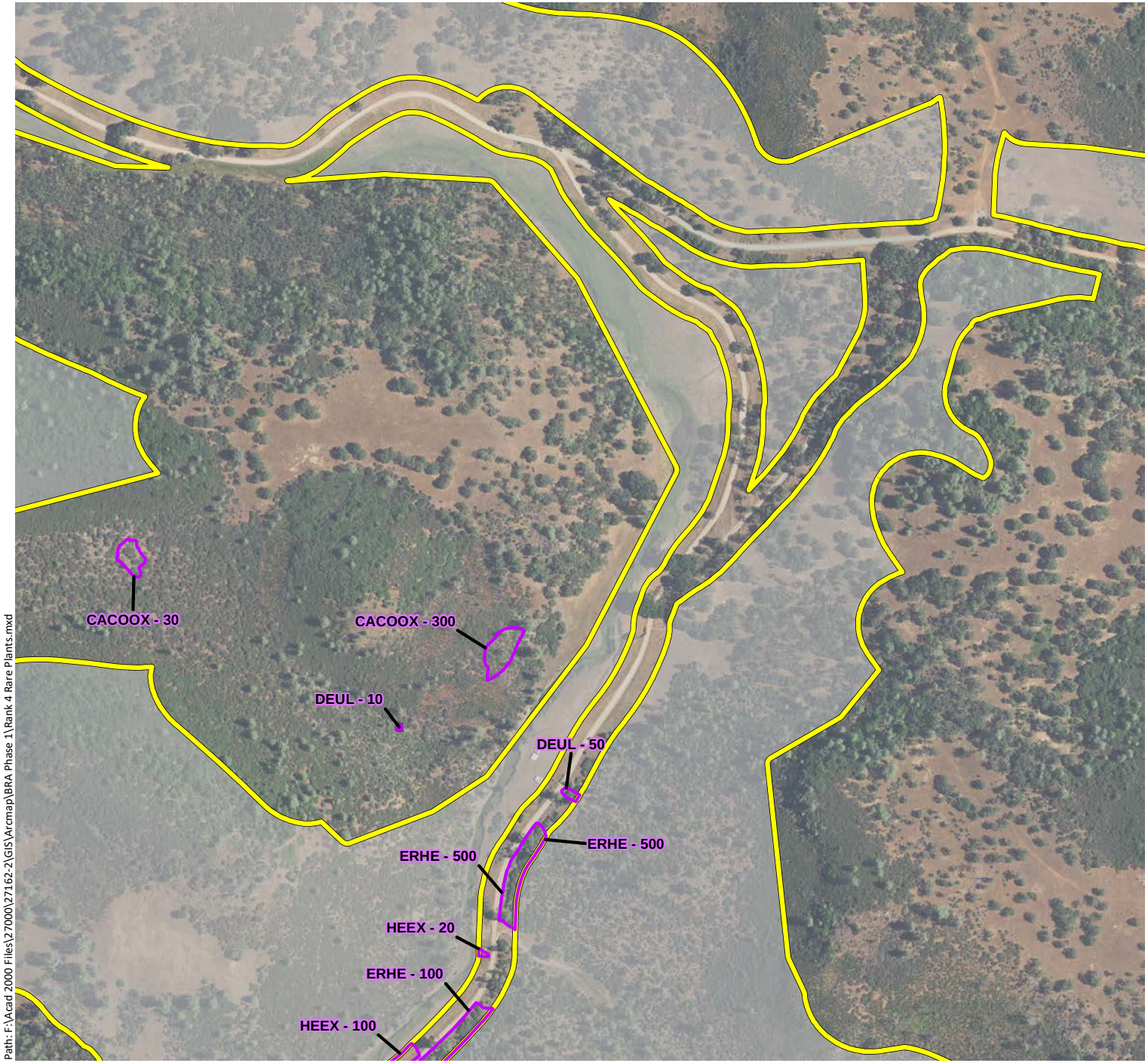
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 20)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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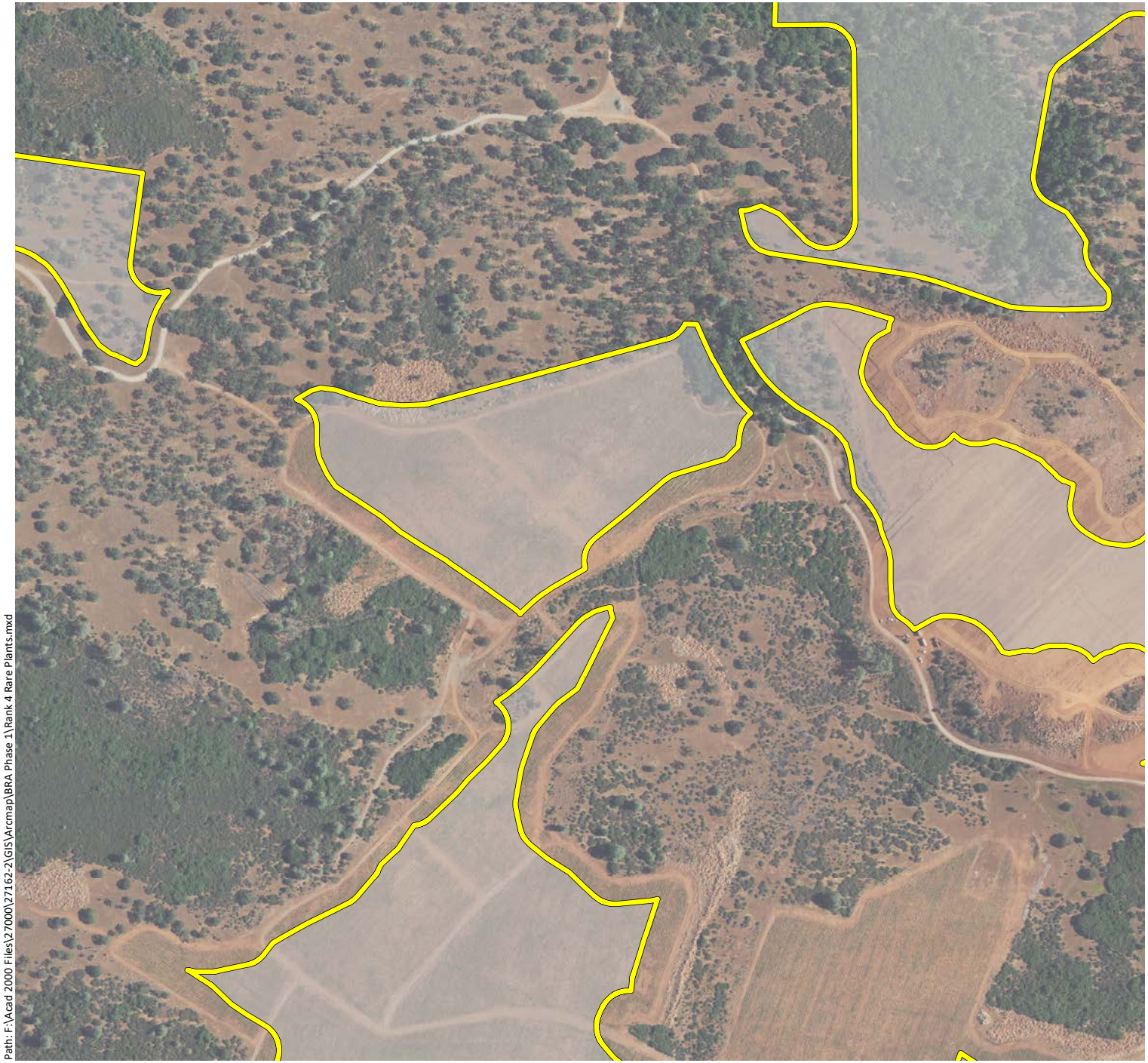
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 21)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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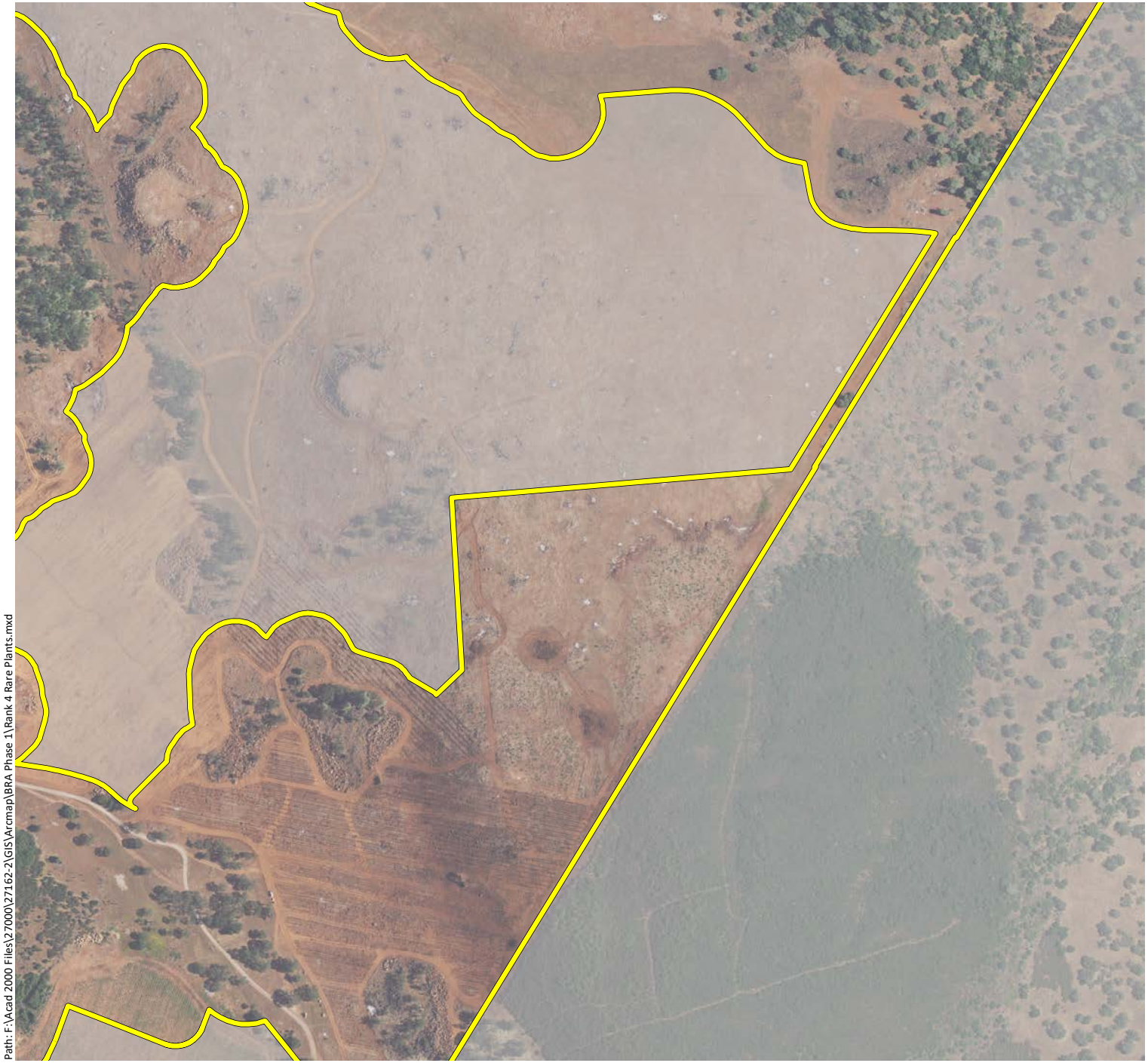
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 22)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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Feet

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ENVIRONMENTAL CONSULTANTS

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 23)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

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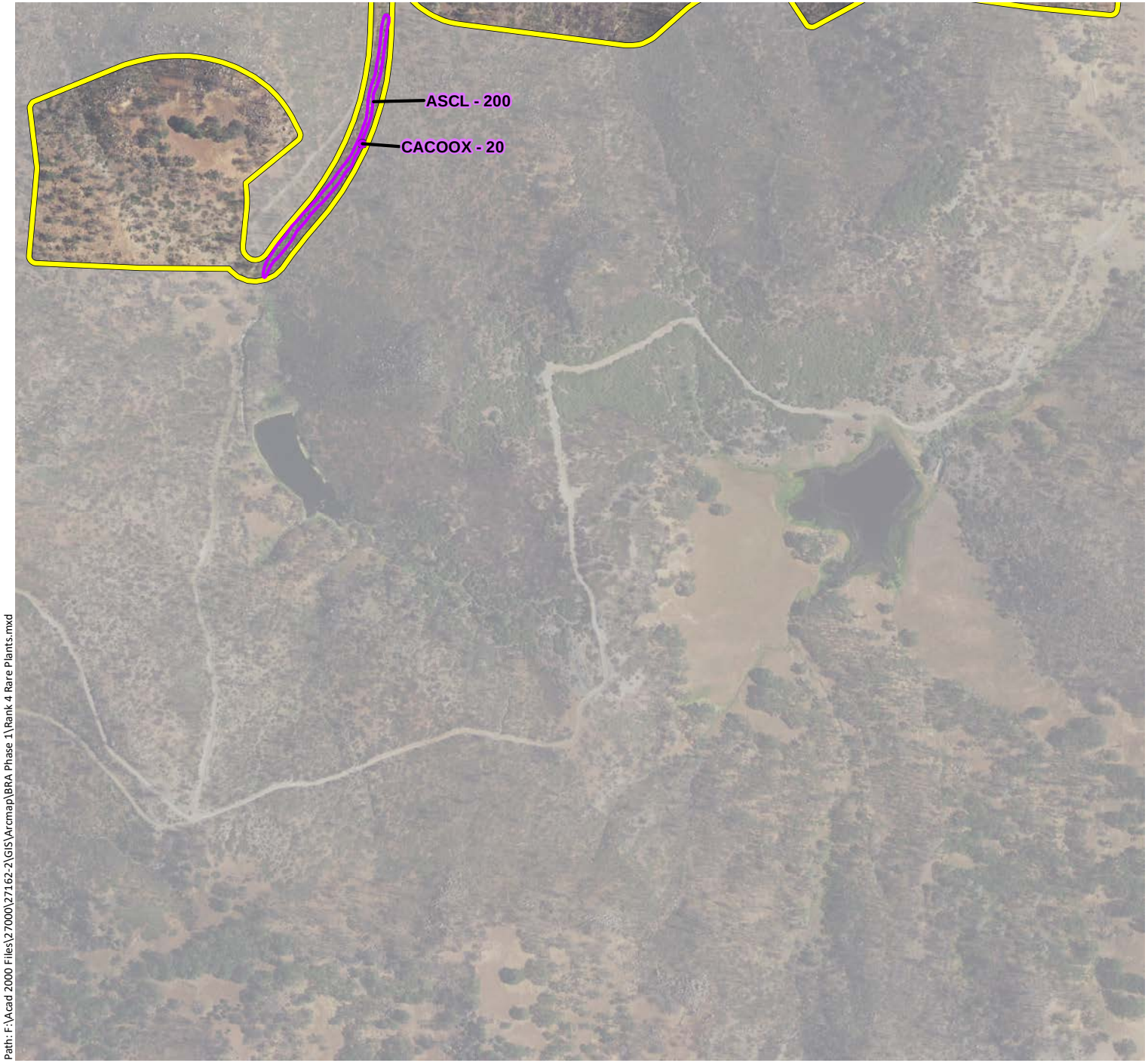
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 24)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

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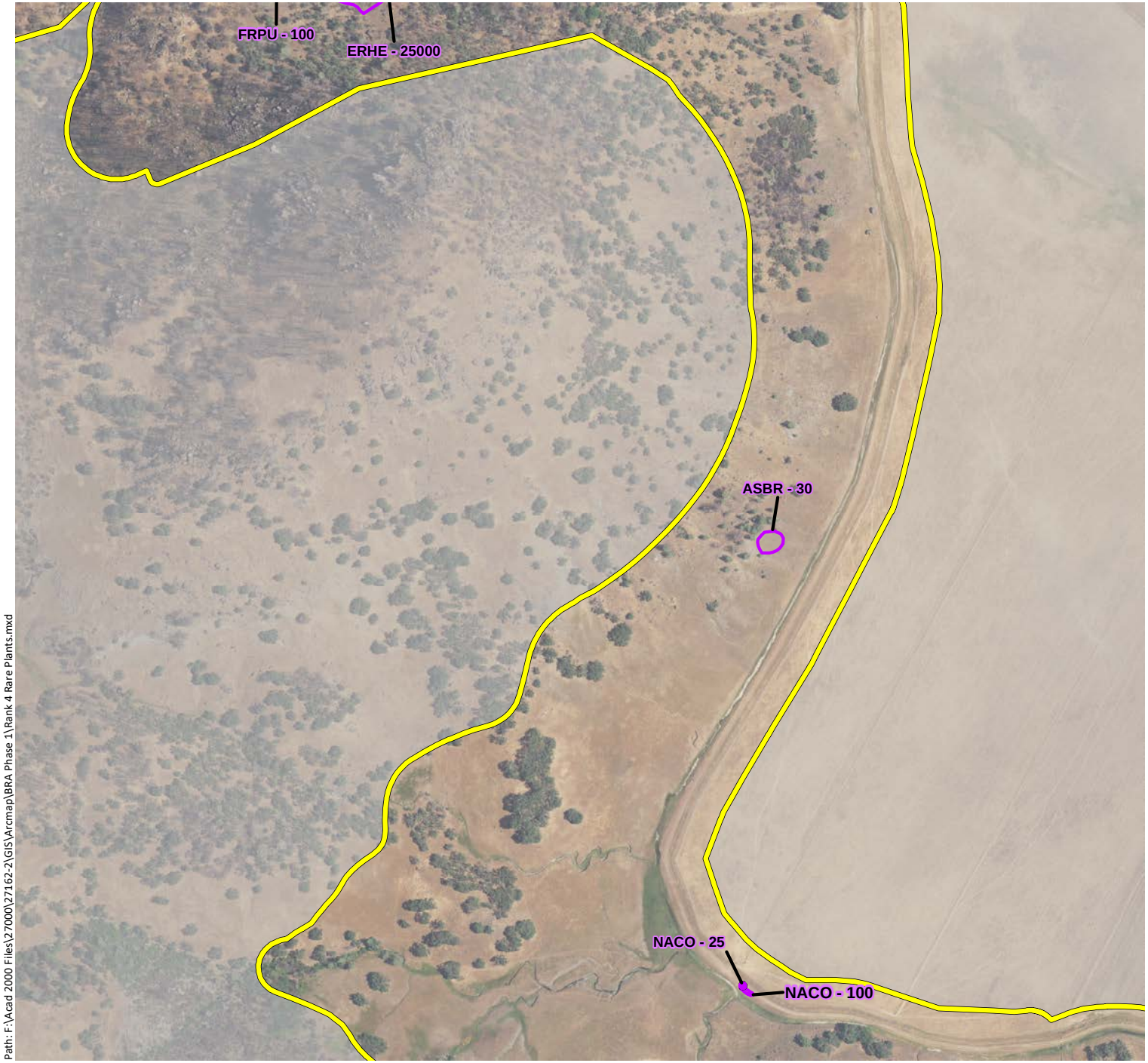
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 25)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

- ANVI: Tall snapdragon
- ASBR: Brewer's milk-vetch
- ASCL: Cleveland's milk-vetch
- CACOOX: Mt. Saint Helena morning glory
- CAUN: Pink star-tulip
- CLGRTR: Tracy's clarkia
- CODI: Serpentine collomia
- DEUL: Swamp Larksbur
- EMU/MINU: Bare monkeyflower
- ERHE: Mt. Saint Helena fawn lily
- FRPU: Purdy's fritillary
- HEEX: Serpentine sunflower
- LOHO: Hoover's lomatium
- MOVI: Green monardella
- NACO: Cotula navarretia
- NAJE: Jepson's navarretia
- SECLCL: Cleaveland's ragwort
- TOFO: Marsh zigadenus

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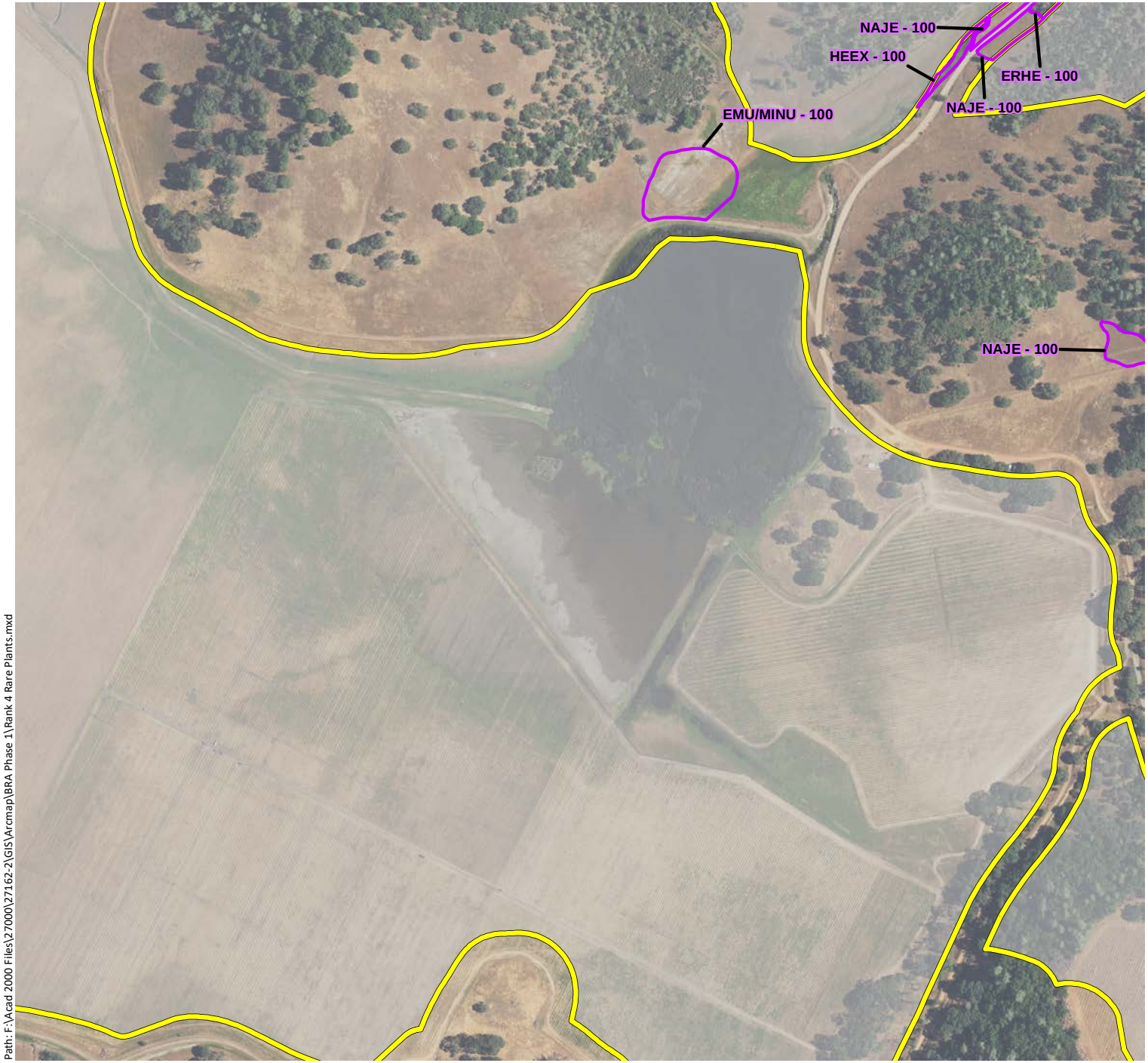
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ENVIRONMENTAL CONSULTANTS

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 26)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

wra

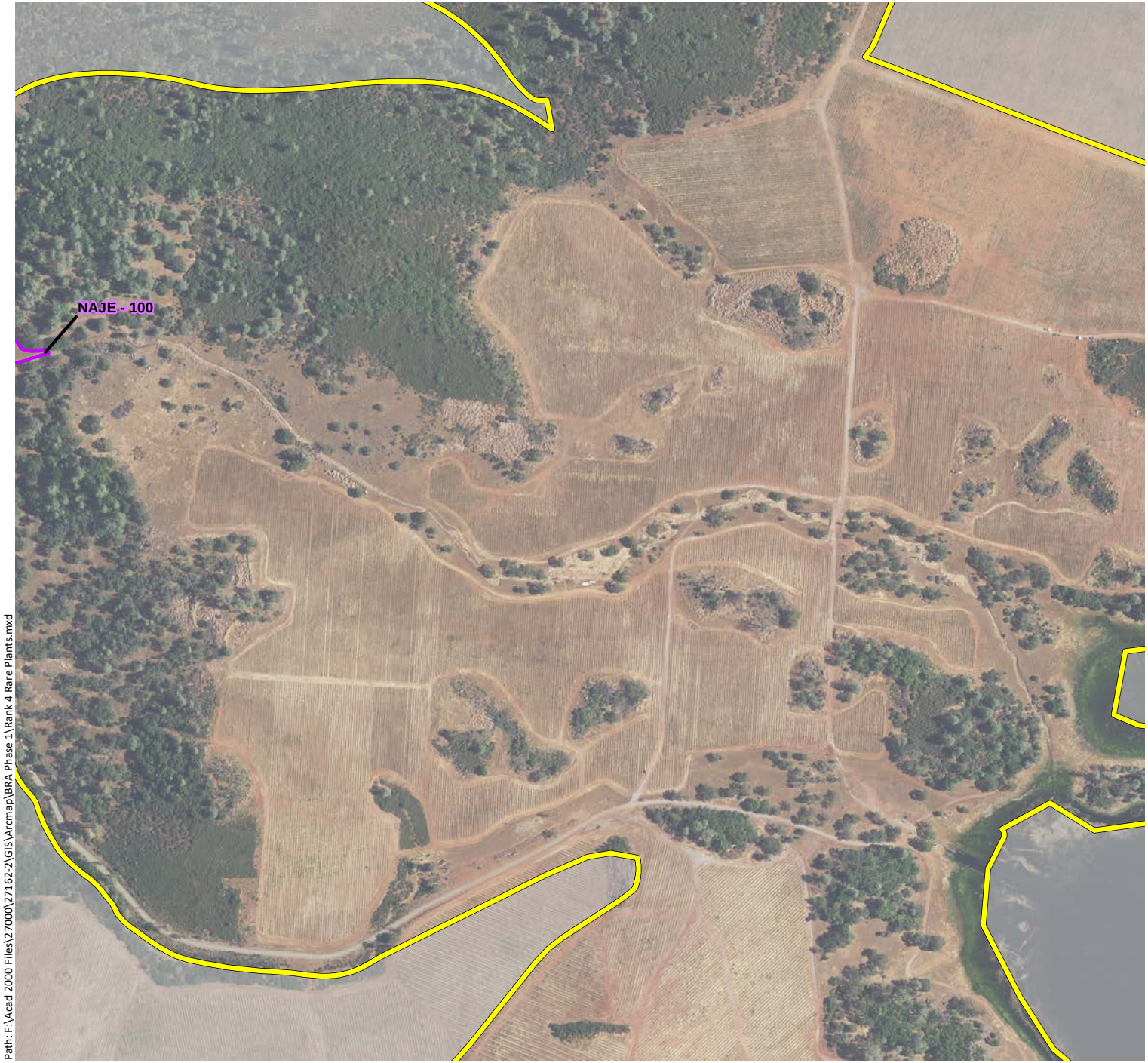
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 27)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

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ENVIRONMENTAL CONSULTANTS

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 28)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 29)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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Feet

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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 30)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

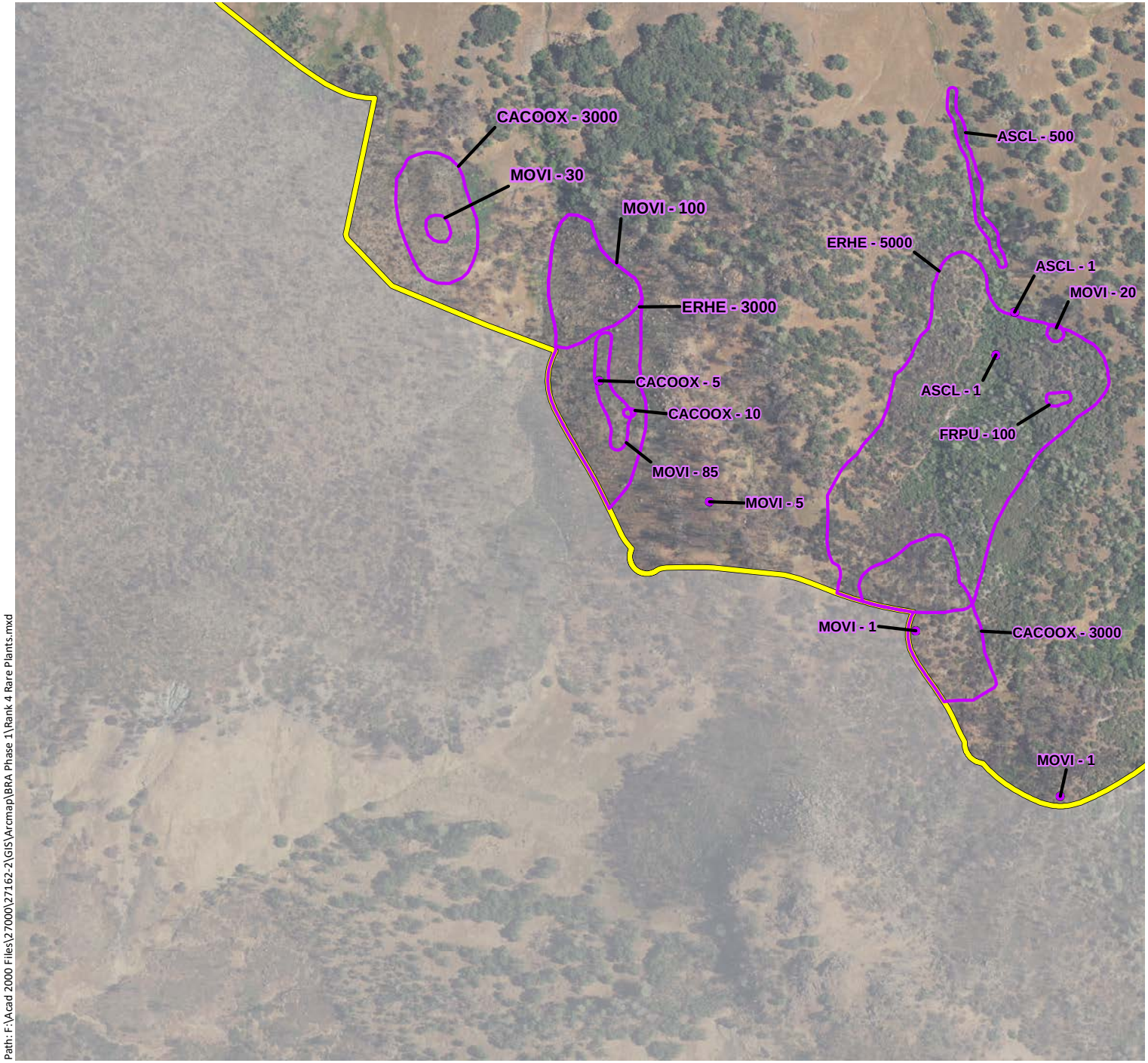
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 31)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

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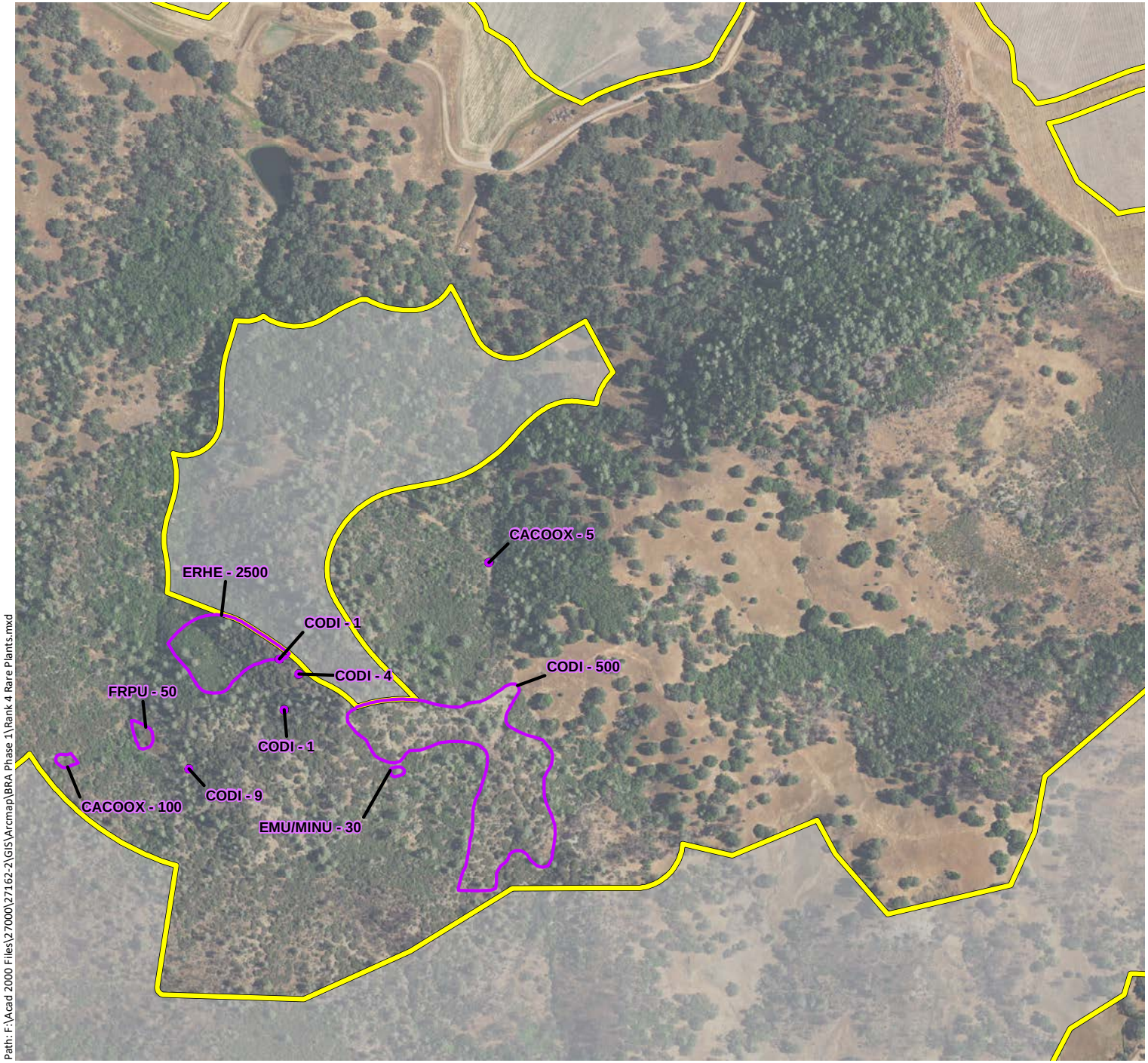
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 32)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

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0 500 1,000

Feet

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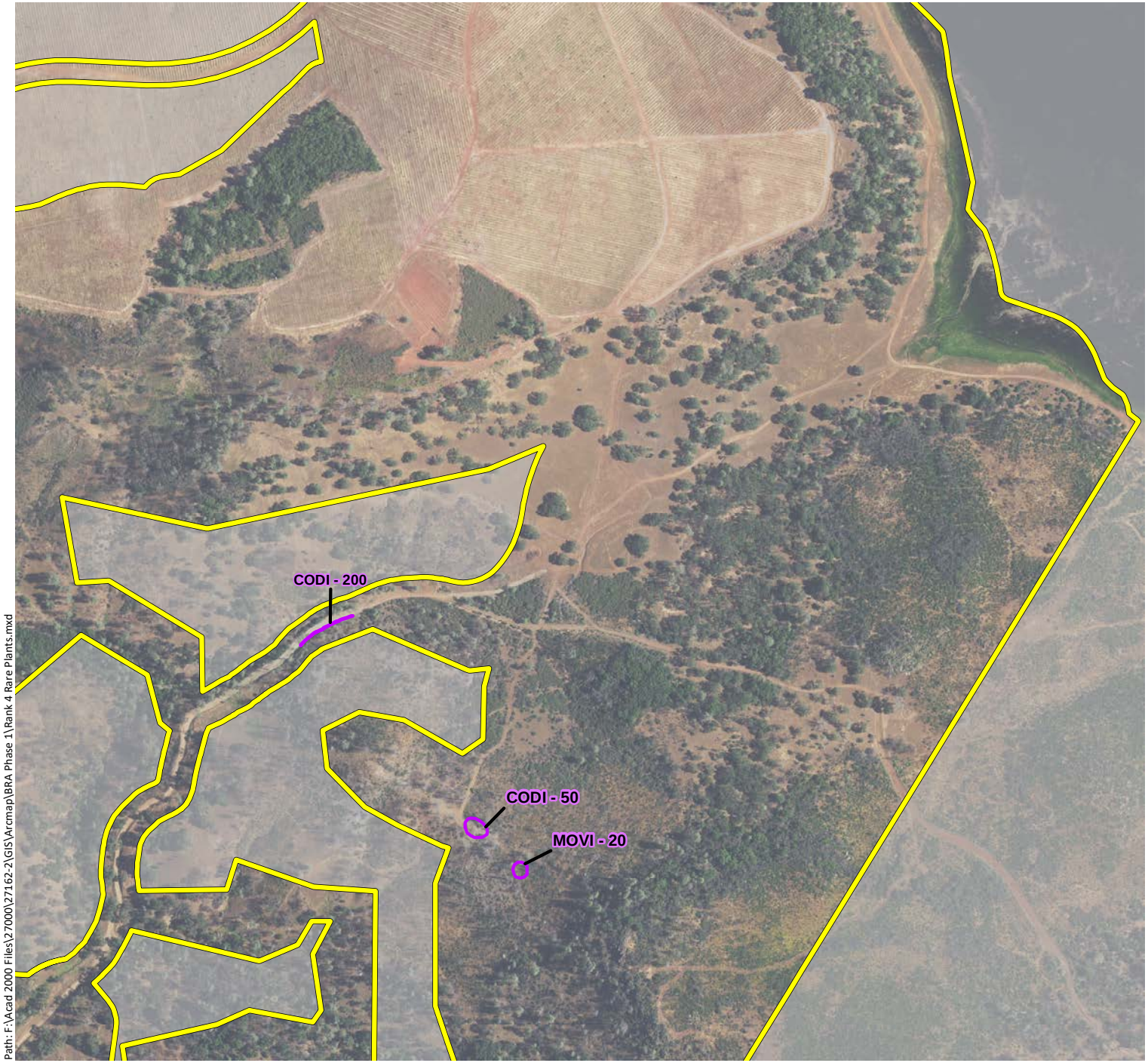
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 33)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

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CLGRTR: Tracy's clarkia

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LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

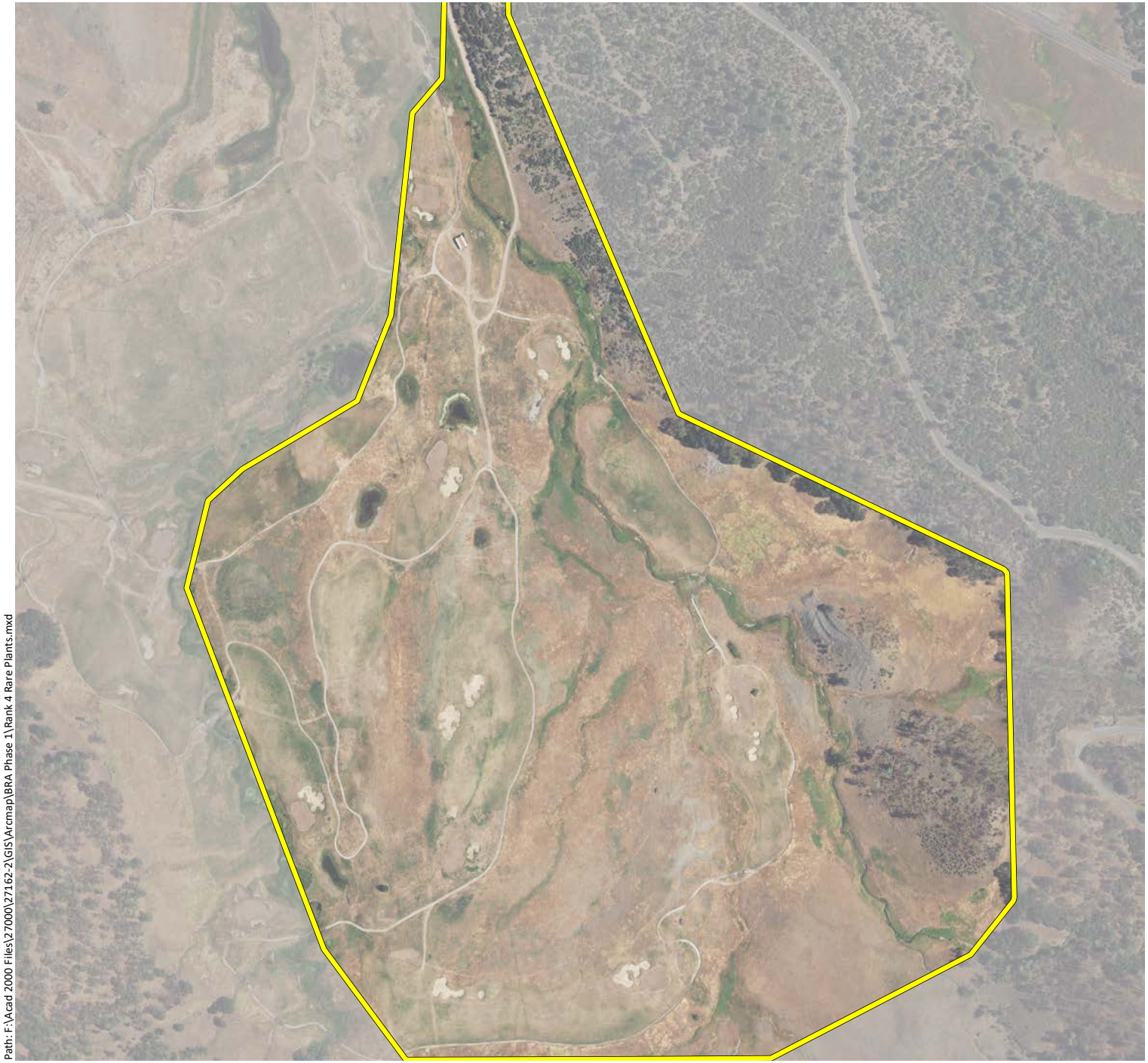
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 34)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

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HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

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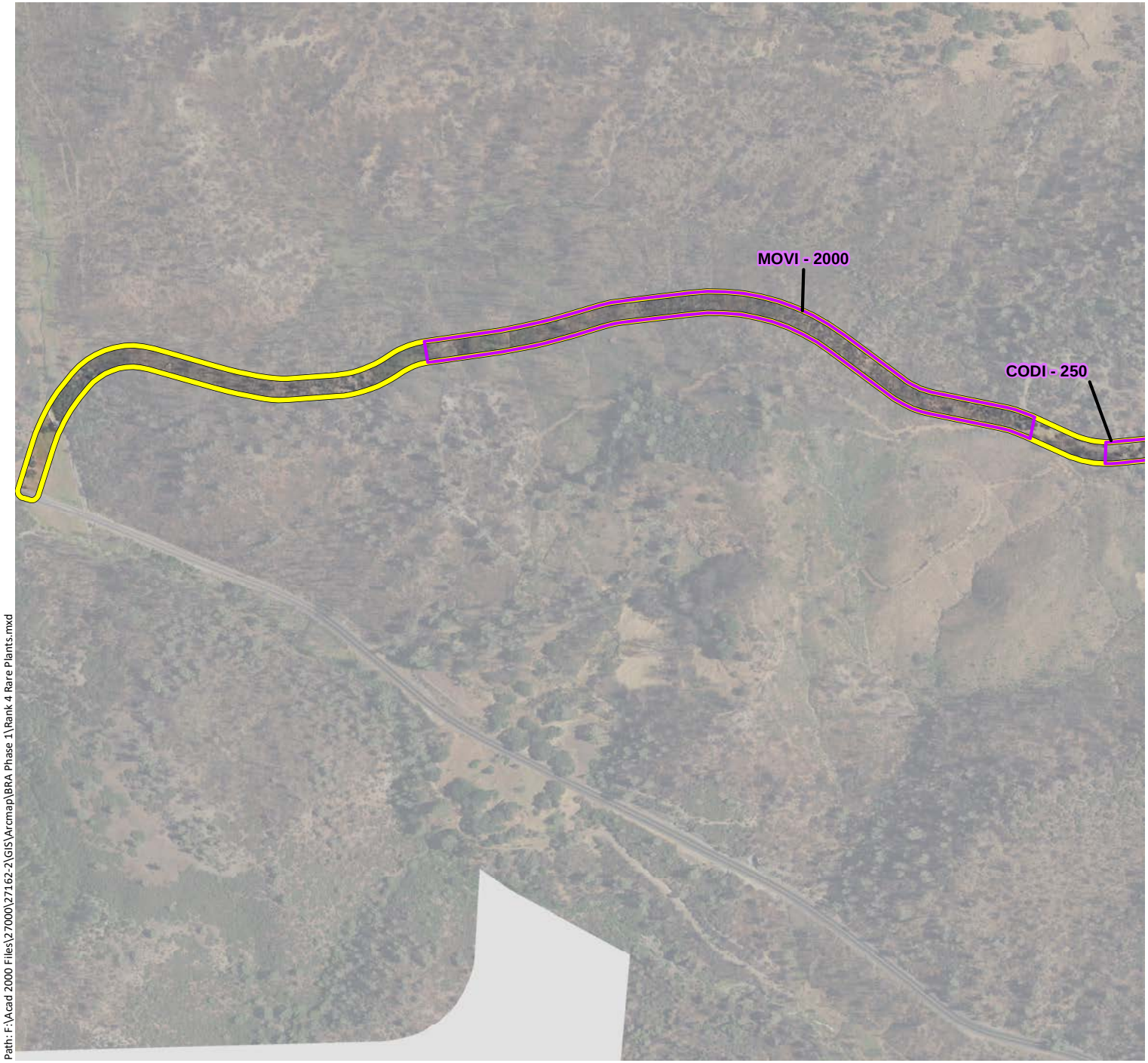
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 35)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

DEUL: Swamp Larksbur

EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

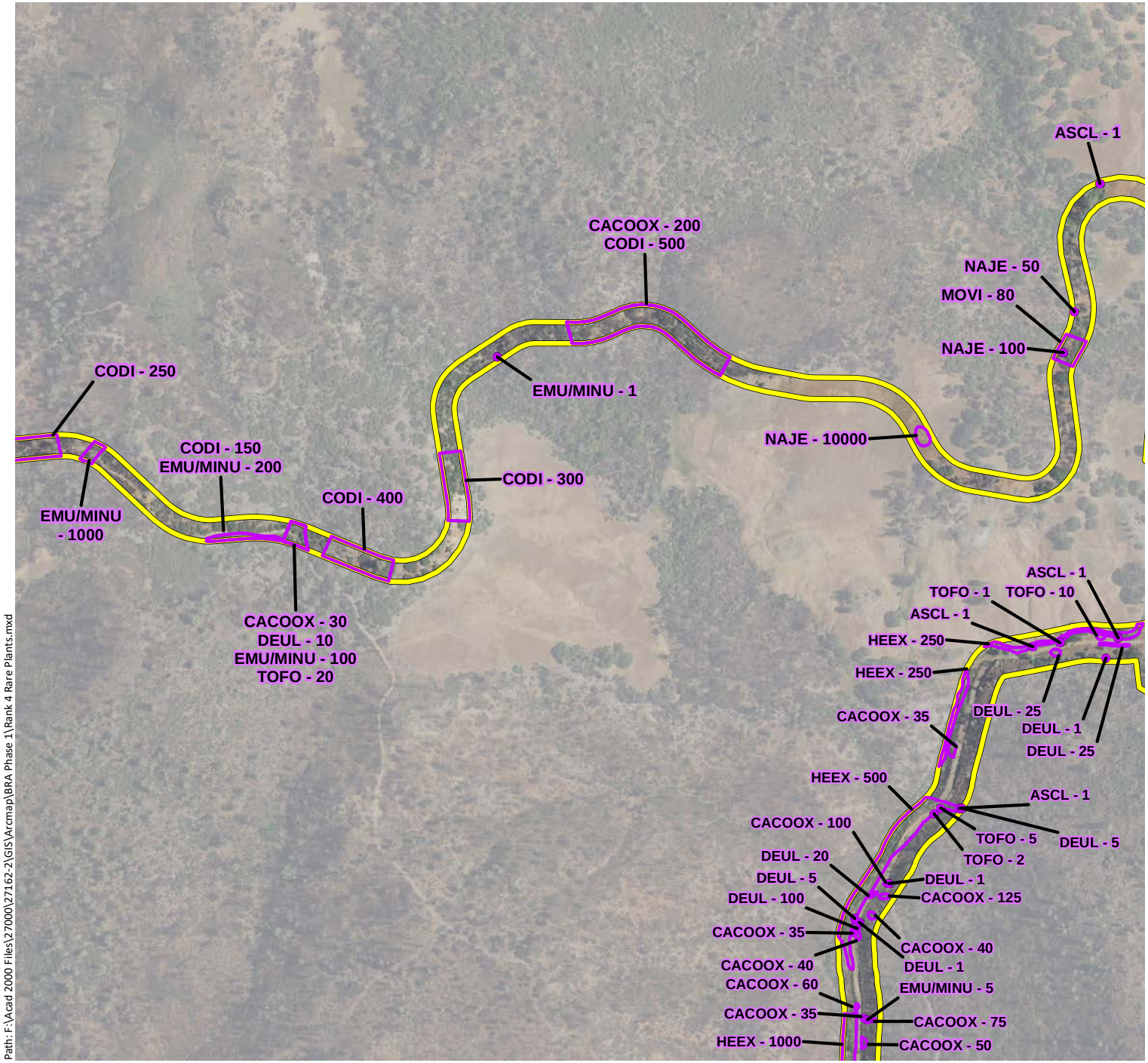
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 36)

Maha Resort and Guenoc Valley Development, Phase 1



Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

CAUN: Pink star-tulip

CLGRTR: Tracy's clarkia

CODI: Serpentine collomia

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EMU/MINU: Bare monkeyflower

ERHE: Mt. Saint Helena fawn lily

FRPU: Purdy's fritillary

HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

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Feet

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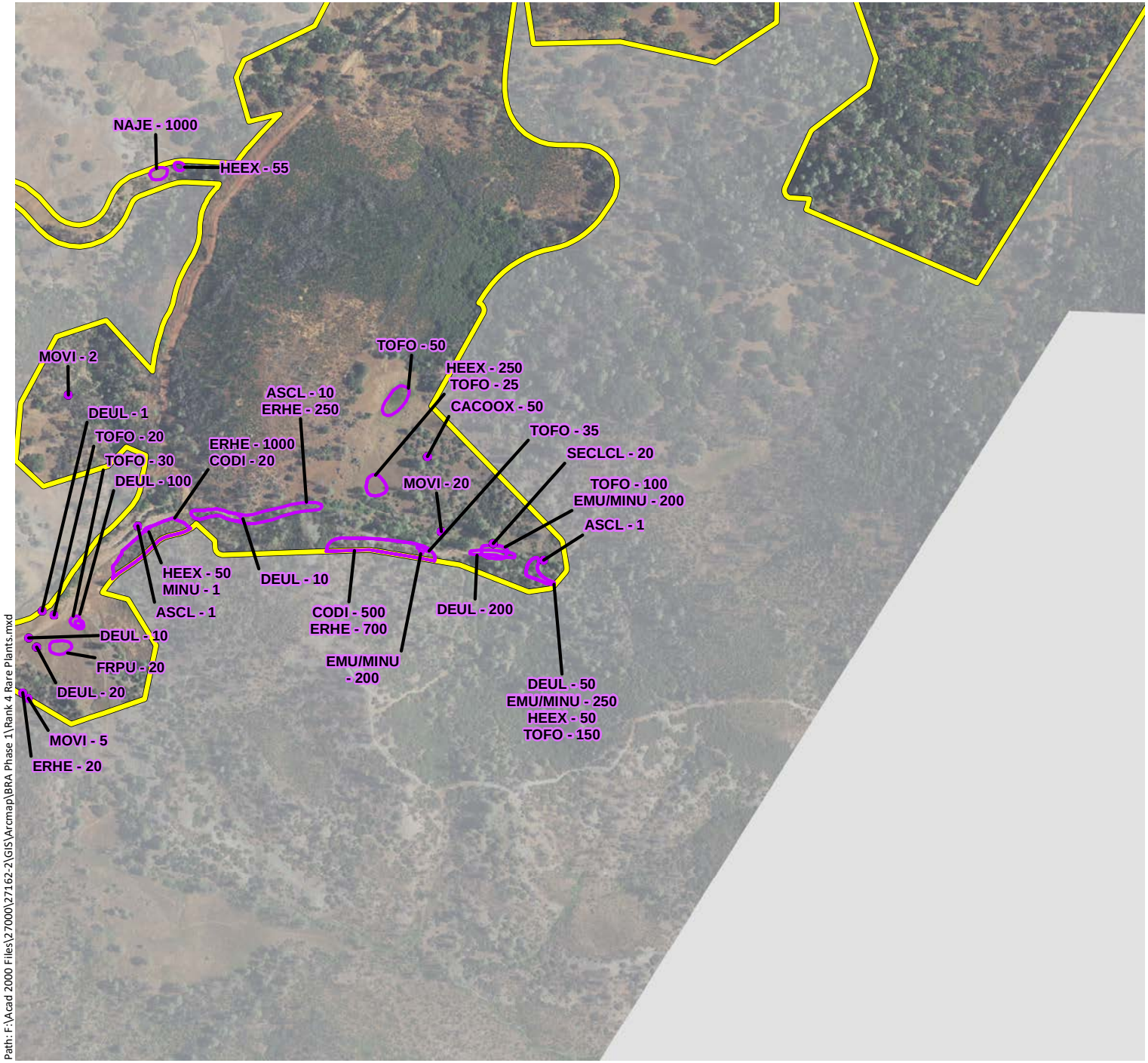
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Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 37)

Maha Resort and Guenoc Valley Development, Phase 1



Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Rank 4 Rare Plants.mxd

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

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CACOOX: Mt. Saint Helena morning glory

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HEEX: Serpentine sunflower

LOHO: Hoover's lomatium

MOVI: Green monardella

NACO: Cotula navarretia

NAJE: Jepson's navarretia

SECLCL: Cleaveland's ragwort

TOFO: Marsh zigadenus

N

0 500 1,000

Feet

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ENVIRONMENTAL CONSULTANTS

Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019



Appendix E2.
CNPS Rank 4 Special-Status Plant Species Observed within the Phase 1 Study Area (Mapbook Sheet 38)

Maha Resort and Guenoc Valley Development, Phase 1

Phase 1 Study Area - 4,977 ac.

CNPS Rank 4 Plants

Key to Species Codes

ANVI: Tall snapdragon

ASBR: Brewer's milk-vetch

ASCL: Cleveland's milk-vetch

CACOOX: Mt. Saint Helena morning glory

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CLGRTR: Tracy's clarkia

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LOHO: Hoover's lomatium

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TOFO: Marsh zigadenus

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ENVIRONMENTAL CONSULTANTS

Path: F:\Acad 2000 Files\27000\27162-2\GIS\Arcmap\BRA Phase 1\Rank 4 Rare Plants.mxd

Sources: 2016 Hexagon Aerial, WRA | Prepared By: mrochelle, 6/27/2019

APPENDIX F

LIST OF WILDLIFE SPECIES OBSERVED WITHIN GUENOC RANCH

Appendix F. List of Wildlife Species Observed within Guenoc Ranch

Surveys were conducted by WRA wildlife biologists between 2017 and 2019.

Scientific Name	Common Name	Conservation Status[1]
Mammals		
Antrozous pallidus	Pallid bat	SSC WBWG High
Canis latrans	Coyote	-
Dipodomys californicus	California kangaroo rat	-
Eptesicus fuscus	Big brown bat	-
Geomyidae sp.	Gopher sp.	-
Lasionycteris noctivagans	Silver-haired bat	WBWG Medium
Lepus californicus	Black-tailed jackrabbit	-
Lynx rufus	Bobcat	-
Mephitis mephitis	Skunk	-
Myotis californicus	California myotis	-
Myotis yumanensis	Yuma myotis	-
Odocoileus hemionus californicus	California mule deer	-
Otospermophilus beecheyi	California ground squirrel	-
Parastrellus hesperus	Canyon bat	-
Procyon lotor	Raccoon	-
Sciurus griseus	Western gray squirrel	-
Sciurus niger	Eastern fox squirrel	-
Sus scrofa	Feral pig	-
Tadarida brasiliensis	Mexican free-tailed bat	-
Birds		
Accipiter cooperii	Cooper's hawk	-

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Scientific Name	Common Name	Conservation Status[1]
Aechmophorus clarkii	Clark's grebe	-
Aechmophorus occidentalis	Western grebe	-
Agelaius phoeniceus	Red-winged blackbird	-
Aimophila ruficeps	Rufous-crowned sparrow	-
Aix sponsa	Wood duck	-
Anas platyrhynchos	Mallard	-
Anas strepera	Gadwall	-
Aphelocoma californica	California scrub-jay	-
Apodidae sp.	Swift sp.	-
Aquila chrysaetos	Golden eagle	CFP, BCC
Ardea herodias	Great blue heron	-
Baeolophus inornatus	Oak titmouse	BCC
Branta canadensis	Canada goose	-
Bubo virginianus	Great horned owl	-
Buteo jamaicensis	Red-tailed hawk	-
Buteo lineatus	Red-shouldered hawk	-
Butorides virescens	Green heron	-
Callipepla californica	California quail	-
Calypte anna	Anna's hummingbird	-
Cathartes aura	Turkey vulture	-
Charadrius vociferus	Killdeer	-
Chondestes grammacus	Lark sparrow	-
Circus cyaneus	Northern harrier	SSC
Cistothorus palustris	Marsh wren	-
Colaptes auratus	Northern flicker	-

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Scientific Name	Common Name	Conservation Status[1]
Columba livia	Rock pigeon	-
Corvus brachyrhynchos	American crow	-
Corvus corax	Common raven	-
Elanus leucurus	White-tailed kite	CFP
Eremophila alpestris	Horned lark	-
Euphagus cyanocephalus	Brewer's blackbird	-
Falco peregrinus	Peregrine falcon	CFP, BCC
Falco sparverius	American kestrel	-
Falco spp.	Falcon	-
Geothlypis trichas	Common yellowthroat	-
Haemorhous mexicanus	House finch	-
Haliaeetus leucocephalus	Bald eagle	SE, CFP, BCC
Hirundo rustica	Barn swallow	-
Junco hyemalis	Dark-eyed junco	-
Megaceryle alcyon	Belted kingfisher	-
Megascops kennicottii	Western screech owl	-
Melanerpes formicivorus	Acorn woodpecker	-
Meleagris gallopavo	Wild turkey	-
Melospiza melodia	Song sparrow	-
Melozone crissalis	California towhee	-
Mimus polyglottos	Northern mockingbird	-
Myiarchus cinerascens	Ash-throated flycatcher	-
Nycticorax nycticorax	Black-crowned night heron	-
Pandion haliaetus	Osprey	-
Petrochelidon pyrrhonota	Cliff swallow	-

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Scientific Name	Common Name	Conservation Status[1]
Phalacrocorax auritus	Double-crested cormorant	-
Phalaenoptilus nuttallii	Common poorwill	-
Picoides nuttallii	Nuttall's woodpecker	BCC
Podilymbus podiceps	Pied-billed grebe	-
Poecile rufescens	Chestnut-backed chickadee	-
Psaltriparus minimus	Bushtit	-
Quiscalus mexicanus	Great-tailed grackle	-
Sayornis nigricans	Black phoebe	-
Selasphorus sasin	Allen's hummingbird	BCC
Setophaga petechia	Yellow warbler	SSC, BCC
Setophaga townsendi	Townsend's warbler	-
Sialia mexicana	Western bluebird	-
Sitta carolinensis	White-breasted nuthatch	-
Sphyrapicus ruber	Red-breasted sapsucker	-
Spinus psaltria	Lesser goldfinch	-
Spinus tristis	American goldfinch	-
Stelgidopteryx serripennis	Northern rough-winged swallow	-
Streptopelia decaocto	Eurasian collared-dove	-
Sturnella sp.	Meadow lark	-
Sturnella neglecta	Western meadowlark	-
Sturnus vulgaris	European starling	-
Tachycineta bicolor	Tree swallow	-
Tachycineta thalassina	Violet green swallow	-
Thryomanes bewickii	Bewick's wren	-
Troglodytes aedon	House wren	-

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Scientific Name	Common Name	Conservation Status[1]
Turdus migratorius	American robin	-
Tringa melanoleuca	greater yellowlegs	-
Tyrannus verticalis	Western kingbird	-
Tyto alba	Barn owl	-
Xanthocephalus xanthocephalus	Yellow-headed blackbird	SSC
Zenaida macroura	Mourning dove	-
Reptiles and Amphibians		
Actinemys marmorata	Western pond turtle	SSC
Anaxyrus boreas	Western toad	-
Lampropeltis getula californiae	California kingsnake	-
Lithobates catesbeianus	American bullfrog	-
Pituophis catenifer	Gopher snake	-
Plestiodon skiltonianus	Western skink	-
Pseudacris regilla	Pacific tree frog	-
Pseudacris sierra	Sierran treefrog	-
Rana boylii	Foothill yellow-legged frog	SC, SSC
Sceloporus occidentalis	Western fence lizard	-
Taricha granulosa	Rough-skinned newt	-
Thamnophis sirtalis	Common garter snake	-
Fishes		
Catostomus occidentalis	Sacramento sucker	-
Cyprinus carpio	Common carp	-
Gambusia affinis	Western mosquitofish	-
Lavinia symmetricus symmetricus	Central California roach	-
Lepomis cyanellus	Green sunfish	-

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Scientific Name	Common Name	Conservation Status[1]
Lepomis macrochirus	Bluegill	-
Micropterus dolomieu	Smallmouth bass	-
Micropterus salmoides	Largemouth bass	-
Oncorhynchus mykiss	Rainbow trout	-
Ptychocheilus grandis	Sacramento pikeminnow	-
Invertebrates		
Euphydryas chalcedona	Variable checkerspot butterfly	-
Junonia coenia	Buckeye butterfly	-
Lethocerus americanus	Giant water bug	-
Pacifastacus leniusculus	Signal crayfish	-
Papilio zelicaon	Anise swallowtail butterfly	-
Pieris rapae	Cabbage white butterfly	-
Vanessa cardui	Painted lady butterfly	-

[1]Key to Conservation Status:

SC	State Candidate
SE	State Endangered
CFP	CDFW Fully Protected Animal
SSC	CDFW Species of Special Concern
BCC	USFWS Birds of Conservation Concern
WBWG	Western Bat Working Group

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APPENDIX G

POTENTIAL FOR SPECIAL-STATUS WILDLIFE SPECIES TO OCCUR WITHIN THE PHASE 1 STUDY AREA

Appendix G. Potential for Special-Status Wildlife Species to occur within the Phase 1 Study Area

List compiled from database searches focused on the following 7.5-minute USGS quadrangles: Aetna Springs, Calistoga, Chiles Valley, Clearlake Highlands, Detert Reservoir, Glascock Mountain, Jericho Valley, Knoxville, Lower Lake, Mark West Springs, Middletown, Mount St. Helena, St. Helena, Walter Springs, Whispering Pines, and Wilson Valley USGS 7.5' quadrangles (CDFW 2019; USFWS 2019). List also compiled by a review of other CDFW and USFWS lists and publications (Tomson et al. 2016, Shuford and Gardali 2008, Moyle et al. 2015, USFWS 2008, Bolster 1998, WBWG 2019) focused on the region.

Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Mammals				
Pallid bat *Antrozous pallidus*	SSC, WBWG	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various human structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Sensitive to disturbance of roosting sites.	**Present.** This species was documented on the property in 2018. The Phase 1 Study Area contains shrubland, forested habitats, rocky outcroppings, chaparral, agricultural areas and buildings that are typically associated with the species. Stream, riparian, and grassland boarding open water provide foraging for this species.	Recommendations for this species can be found in Section 6.4.
Ring-tailed cat (Ringtail) *Bassariscus astutus*	CFP	Widely distributed throughout most of California, absent from some portions of the Central Valley and northeastern California. Found in a variety of habitats throughout the western US including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests usually under 1400m in elevation. Typically uses cliffs or large trees for shelter.	**Moderate Potential.** Oak woodland, riparian, scrub and chaparral within the Phase 1 Study Area provide potentially suitable habitat for this species. Additionally, the property is within a greater area that is largely undeveloped and densely vegetated that may provide suitable habitat for this species.	Recommendations for this species can be found in Section 6.4.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Townsend's big-eared bat *Corynorhinus townsendii*	SSC, WBWG	This species is associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves and mines and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	**High Potential.** The Phase 1 Phase 1 Study Area contains buildings that may be suitable for roosting, along with the mixed forest and many water features which provide foraging habitat. There are also many occurrences of this species within five miles of the Phase 1 Study Area (CDFW 2019).	Recommendations for this species can be found in Section 6.4.
Silver-haired bat *Lasionycteris noctivagans*	WBWG	Primarily a forest dweller, feeding over streams, ponds, and open brushy areas. Summer habitats include a variety of forest and woodland types, both coastal and montane. Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark.	**Present.** This species was detected on the property during surveys in 2018. The Phase 1 Study Area contains woodland, forest, riparian and open habitat suitable for this species. The Phase 1 Study Area could also support roosting in hollow trees, snags, rock crevices, and buildings.	Recommendations for this species can be found in Section 6.4.
Western red bat *Lasiurus blossevillii*	SSC, WBWG	This species is highly migratory and is typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	**Moderate Potential.** This species has not been documented within 10 miles of the property (CDFW 2019). However, the Phase 1 Study Area contains broad-leaved tree species typically associated with this species. Stream channel, riparian, open water and edge habitats provide suitable foraging habitat for this species.	Recommendations for this species can be found in Section 6.4.
Hoary bat *Lasiurus cinereus*	WBWG	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**High Potential.** The Phase 1 Phase 1 Study Area contains forested habitats and habitat mosaics, with large pine and oak trees throughout. Grassland boarding open water and edge habitats along forested areas provide foraging for this species.	Recommendations for this species can be found in Section 6.4.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Fisher, west coast DPS *Martes pennanti* [*M. pennant pacifica*]	SSC	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Use cavities, snags, logs and rocky areas for cover and denning. Need large areas of mature, dense forest.	**No Potential.** The project does not contain suitable coniferous forest and is located outside of the species range.	No further actions are recommended for this species.
Long-eared myotis *Myotis evotis*	WBWG	Occurs in semiarid shrublands, sage, chaparral, and agricultural areas, but is usually associated with coniferous forests from sea level to 9000 feet. Individuals roost under exfoliating tree bark, and in hollow trees, caves, mines, cliff crevices, and rocky outcrops on the ground. They also sometimes roost in buildings and under bridges.	**High Potential.** The Phase 1 Study Area contains shrubland, forested habitats, rocky outcroppings, chaparral, agricultural areas and buildings that are typically associated with the species. Grassland boarding open water and edge habitats along forested areas provide foraging for this species.	Recommendations for this species can be found in Section 6.4.
Fringed myotis *Myotis thysanodes*	WBWG	Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Buildings, mines and large trees and snags are important day and night roosts.	**Moderate Potential.** The Phase 1 Study Area contains dry woodland and grassland habitat that could provide suitable foraging for this species. Buildings and trees within the Phase 1 Study Area could also provide suitable roosting habitat for this species.	Recommendations for this species can be found in Section 6.4.
Long-legged myotis *Myotis volans*	WBWG	Primarily found in coniferous forests, but also occurs seasonally in riparian and desert habitats. Large hollow trees, rock crevices and buildings are important day roosts. Other roosts include caves, mines and buildings.	**Moderate Potential.** The Phase 1 Study Area contains dry woodland and grassland habitat that could provide suitable foraging for this species. Buildings, rock crevices, and trees within the Phase 1 Study Area could also provide suitable roosting habitat for this species.	Recommendations for this species can be found in Section 6.4.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
American badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Moderate Potential.** The Phase 1 Study Area contains, and is surrounded by, large expanses of uncultivated open ground with shrub, grassland, and forest habitat. Few burrowing rodents were observed within the Phase 1 Study Area, which may support a prey base for the species.	Recommendations for this species can be found in Section 6.4.
Birds				
Tricolored blackbird *Agelaius tricolor*	BCC, SSC, ST	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	**High Potential.** The Phase 1 Study Area is directly adjacent to several reservoirs containing extensive amounts of emergent vegetation that may support nesting and the species has been documented to nest within 1 mile of the property (CDFW 2019).	Recommendations for this species can be found in Section 6.4.
Grasshopper sparrow *Ammodramus savannarum*	SSC	Summer resident. Breeds in open grasslands, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	**High Potential.** The Phase 1 Study Area is within this species' breeding range, and the Phase 1 Study Area contains large areas of grasslands to support foraging and nesting (CDFW 2019, eBird 2019). This species has been documented within 0.5 mile of the property (eBird 2019).	Recommendations for this species can be found in Section 6.4.
Golden eagle *Aquila chrysaetos*	BCC, CFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	**Present.** This species was observed nesting just south of property in 2018. Adult and juvenile golden eagles were observed in oak woodland communities within the property. The Phase 1 Study Area contains suitable open areas with large trees to support nesting and foraging.	Recommendations for this species can be found in Section 6.4.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Short-eared owl *Asio flammeus*	SSC	Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	**Unlikely.** The Phase 1 Study Area contains suitable grassland foraging habitat for this species, which may winter there. However, this species does not breed in Lake County (CDFW 2019, eBird 2019).	No further actions are recommended for this species.
Long-eared owl *Asio otus*	SSC	Occurs year-round in California. Nests in trees in a variety of woodland habitats, including oak and riparian, as well as tree groves. Requires adjacent open land with rodents for foraging, and the presence of old nests of larger birds (hawks, crows, magpies) for breeding.	**Moderate Potential.** The Phase 1 Study Area contains oak and riparian habitats adjacent to open lands that could support foraging and nesting.	Recommendations for this species can be found in Section 6.4.
Burrowing owl *Athene cunicularia*	SSC, BCC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	**Moderate Potential.** This species has not been documented breeding in Lake County (CDFW 2019, eBird 2019). This species may occasionally winter within uncanopied grassland areas within the Phase 1 Study Area with suitable burrows. This species has been documented to winter within 2 miles of the property (CDFW 2019). Burrows suitable for burrowing owl occupation were observed in open grassland within the property. In addition, ground squirrels were observed throughout the Phase 1 Study Area and additional suitable burrow habitat for owls may arise in the future.	Recommendations for this species can be found in Section 6.4.
Oak titmouse *Baeolophus inornatus*	BCC	Occurs year-round in woodland and savannah habitats where oaks are present, as well as riparian areas. Nests in tree cavities.	**Present.** This species was observed within the woodland communities on the property in 2018 and 2019. The Phase 1 Study Area contains woodland and tree cavities suitable for nesting.	Recommendations for this species can be found in Section 6.4.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Vaux's swift *Chaetura vauxi*	SSC	Summer resident, breeding primarily in forested areas. Nests in tree cavities, favoring those with a large vertical extent; also uses chimneys and other man-made substrates. Forages aerially for insects.	**Unlikely.** The Phase 1 Study Area does not contain the dense coniferous forest this species prefers, and is outside of the known breeding range of the species (CDFW 2019).	No further actions are recommended for this species.
Northern harrier *Circus cyaneus*	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	**Present.** Although this species was observed foraging within the Phase 1 Study Area in 2018. The Phase 1 Study Area contains open grassland which may support nesting and foraging by this species.	No further actions are recommended for this species.
Olive-sided flycatcher *Contopus cooperi*	SSC, BCC	Summer resident. Typical breeding habitat is montane coniferous forests. At lower elevations, also occurs in wooded canyons and mixed forests and woodlands. Often associated with forest edges. Arboreal nest sites located well off the ground.	**Moderate Potential.** The Phase 1 Study Area contains woodland and riparian habitats that may support nesting.	Recommendations for this species can be found in Section 6.4.
White-tailed kite *Elanus leucurus*	CFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	**Present.** This species was observed within the Phase 1 Study Area in 2018. The Phase 1 Study Area provides open foraging habitat for this species and large trees and shrubs suitable for nesting.	Recommendations for this species can be found in Section 6.4.
Prairie falcon *Falco mexicanus*	BCC	Year-round resident and winter visitor. Inhabits dry, open terrains, including foothills and valleys. Breeding sites located on steep cliffs. Forages widely.	**Moderate Potential.** The Phase 1 Study Area contains open areas and rocky cliffs that provide potential foraging and nesting habitat for this species.	Recommendations for this species can be found in Section 6.4.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
American peregrine falcon *Falco peregrinus anatum*	CFP, BCC	Year-round resident and winter visitor. Occurs in a wide variety of habitats, though often associated with coasts, bays, marshes and other bodies of water. Nests on protected cliffs and also on man-made structures including buildings and bridges. Preys on birds, especially waterbirds. Forages widely.	**Present.** This species was observed nesting on exposed cliffs within the property in 2018, approx. 0.75 mile west of Phase 1 Study Area. The Phase 1 Study Area is adjacent to several reservoirs and rocky cliffs that provide potential foraging and nesting habitat for this species.	Recommendations for this species can be found in Section 6.4.
Bald eagle *Haliaeetus leucocephalus*	SE, CFP, BCC	Occurs year-round in California, but primarily a winter visitor. Nests in large trees in the vicinity of larger lakes, reservoirs and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	**Present.** Adult and juvenile bald eagles were observed flying and roosting adjacent to multiple reservoirs within and adjacent to the Phase 1 Study Area in 2018 and 2019. This species has been previously documented to nest within the property around McCreary Reservoir, and nest structures attended by eagles were observed in this vicinity during the site visits (CDFW 2019).	Recommendations for this species can be found in Section 6.4.
Yellow-breasted chat *Icteria virens*	SSC	Summer resident, occurring in riparian areas with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow, blackberry, and wild grape.	**Moderate Potential.** The Phase 1 Study Area contains riparian areas with dense vegetation to support nesting, and this species has been documented approximately 3 miles south of the property (eBird 2019).	Recommendations for this species can be found in Section 6.4.
Least bittern *Ixobrychus exilis*	SSC, BCC	Summer resident primarily in portions of the Central Valley and southern California. Typically breeds in deeper freshwater marshes with dense emergent and woody vegetation.	**Moderate Potential.** The Phase 1 Study Area is adjacent to several deep reservoirs containing extensive emergent vegetation.	Recommendations for this species can be found in Section 6.4.
Loggerhead shrike *Lanius ludovicianus*	BCC, SSC	Year-round resident in open woodland, grassland, savannah and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.	**High Potential.** The Phase 1 Study Area provides open areas for foraging as well as suitably dense vegetation in scrub and woodland communities to support nesting. This species has been documented within 1.5 miles of the property (eBird 2019).	Recommendations for this species can be found in Section 6.4.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Lewis's woodpecker *Melanerpes lewis*	BCC	Uncommon resident in California occurring on open oak savannahs, broken deciduous and coniferous habitats. Breeds primarily in ponderosa pine forests, riparian woodlands and disturbed pine forests but is also known to nest in orchards and oak woodlands.	**High Potential.** The Phase 1 Study Area contains oak savannah and woodland habitat to support this species, and the Phase 1 Study Area is within the known breeding range of this species. This species has been documented within the property, within 0.5 miles of the Phase 1 Study Area (eBird 2019).	Recommendations for this species can be found in Section 6.4.
Flammulated owl *Otus flammeolus*	BCC	Nesting habitat includes multi-age class stands with multiple canopy layers, including a veteran tree component for nesting and roosting. Secondary cavity nester, utilizing natural cavities or those excavated by woodpeckers.	**Unlikely.** The Phase 1 Study Area does not contain dense canopied-coniferous forest habitat that this species prefers, and this species is not known to inhabit eastern Lake County (CDFW 2019)	No further actions are recommended for this species.
Nuttall's woodpecker *Picoides nuttallii*	BCC	Year-round resident in lowland woodlands throughout much of California west of the Sierra Nevada. Typical habitat is dominated by oaks; also occurs in riparian woodland. Nests in tree cavities.	**Present.** This species was observed within the woodland communities in the property. The Phase 1 Study Area contains woodland and tree cavities suitable for nesting.	Recommendations for this species can be found in Section 6.4.
Purple martin *Progne subis*	SSC	Inhabits woodlands and low elevation coniferous forests. Nests in old woodpecker cavities and human-made structures. Nest is often located in tall, isolated tree or snag.	**High Potential.** The Phase 1 Study Area contains woodlands with snags and cavities to support nesting, and this species has been documented to nest on the property within 0.5 mile of the Phase 1 Study Area (CDFW 2019).	Recommendations for this species can be found in Section 6.4.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Bank swallow *Riparia riparia*	ST	Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	**Unlikely.** The Phase 1 Study Area is outside of the breeding range for this species. There are no documented sightings of this species within 12 miles of the Phase 1 Study Area (CDFW 2019).	No further actions are recommended for this species.
Allen's hummingbird *Selasphorus sasin*	BCC	Summer resident along the California coast, breeding in a variety of woodland and forest habitats, including parks and gardens with abundant nectar sources. Nest in shrubs and trees with dense vegetation.	**Present.** This species was observed within the property during site assessments in 2018. The Phase 1 Study Area contains woodland and riparian habitats with nectar sources that may support nesting.	Recommendations for this species can be found in Section 6.4.
Yellow warbler *Setophaga* [*Dendroica*] *petechia brewsteri*	SSC, BCC	Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting variable, but dense willow growth is typical. Occurs widely on migration.	**Present.** This species was observed in the property in 2018. The Phase 1 Study Area contains riparian areas with dense vegetation to support nesting.	Recommendations for this species can be found in Section 6.4.
Lawrence's goldfinch *Spinus* [*Carduelis*] *lawrencei*	BCC	Summer resident; generally uncommon and local. Typically found in arid open woodlands, including oak savannah. Breeding distribution is erratic from year to year.	**Moderate Potential.** The Phase 1 Study Area contains undisturbed oak savannah, which provides breeding habitat for this species.	Recommendations for this species can be found in Section 6.4.
Black-chinned sparrow *Spizella atrogularis*	BCC	Prefers sloping ground in mixed chaparral, chamise-redshank chaparral, sagebrush, and similar brushy habitats. Often on arid, south-facing slopes with ceanothus, manzanita, sagebrush, and chamise.	**High Potential.** The property is within this species' breeding range, and the Phase 1 Study Area contains dense shrub and chaparral habitats this species requires for nesting (eBird 2019).	Recommendations for this species can be found in Section 6.4.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Northern spotted owl *Strix occidentalis caurina*	FT, ST, SSC	Year-round resident in dense, structurally complex forests, primarily those with old-growth conifers. . Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys on mammals.	**No Potential.** The Phase 1 Study Area does not contain the dense, old growth coniferous forest this species prefers. The nearest documented occurrence of this species is near Robert Louis Stevenson State Park, 5 miles southwest of the property (CDFW 2019).	No further actions are recommended for this species.
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	SSC	Summer resident. Breeds colonially in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Requires abundant large insects such as dragonflies; nesting is timed for maximum emergence of insect prey.	**Present.** This species was observed nesting in emergent vegetation in the property, directly adjacent to the Phase 1 Study Area in 2018 and 2019. The Phase 1 Study Area has freshwater emergent vegetation and may support nesting by this species.	Recommendations for this species can be found in Section 6.4.
Reptiles and Amphibians				
Western pond turtle *Actinemys marmorata*	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	**Present.** The species was observed within portions of Bucksnort Creek. The various streams and large open-water reservoirs within the property provide suitable aquatic habitat, and the associated open grasslands adjacent to these features may support nesting. This species has also been documented in CNDDB within the Phase 1 Study Area (CDFW 2019).	Recommendations for this species can be found in Section 6.4.
California giant salamander *Dicamptodon ensatus*	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	**Unlikely.** The Phase 1 Study Area does not contain suitable coniferous forest typical of the species habitat requirements. Streams in the Phase 1 Study Area are suboptimal to unsuitable for this species with warm summer water temperatures and non-native predatory fish and bullfrogs. The property is also located outside of the species known range.	No further actions are recommended for this species.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Foothill yellow-legged frog *Rana boylii*	SSC, SC	Found in or near rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	**Present.** The species was observed within the property, in association with Butts Creek. Perennial streams with rocky substrate provide suitable habitat for the species, including both Butts Creek and Putah Creek. This species has also been documented in CNDDB within the property (CDFW 2019).	Recommendations for this species can be found in Section 6.4.
California red-legged frog *Rana draytonii*	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains.	**Unlikely.** Focused surveys for the species were conducted within the property in 2018 and 2019 and found no individuals. Aquatic habitat features within the Phase 1 Study Area are dominated by several non-native predators including bass, sunfish, American bullfrog, and crayfish. There are no CNDDB occurrences of the species within 10-miles of the site. Due to the lack of detections during focused nighttime surveys, non-native predator dominated aquatic habitat, and absence of nearby documented occurrences, it is unlikely that the species would occur within the Phase 2 and Open Space Study Area.	No further actions are recommended for this species.
Red-bellied newt *Taricha rivularis*	SSC	Inhabits coastal forests from southern Sonoma County northward, with an isolated population in Santa Clara County. Redwood forest provides typical habitat, though other forest types (e.g., hardwood) are also occupied. Adults are terrestrial and fossorial. Breeding occurs in streams, usually with relatively strong flow.	**Unlikely.** The Phase 1 Study Area does not contain suitable redwood or hardwood forest typical of the species habitat requirements. The property is also located outside of the species known range.	No further actions are recommended for this species.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Fishes				
Pacific lamprey *Entosphenus* [*Lampetra*] *tridentatus*	SSC	Spawns between March and July in gravel bottomed streams in riffle habitat. Larvae drift downstream to areas of low velocity and fine substrates and are relatively immobile in the stream substrates.	**No Potential.** The property does not contain anadromous aquatic habitat necessary to support this species. The property is within the upper Putah Creek Watershed that drains into Lake Berryessa, which forms a complete fish passage barrier for fish returning from the ocean and blocks this species from the Phase 1 Study Area.	No further actions are recommended for this species.
Clear Lake tule perch *Hysterocarpus traski lagunae*	SSC	Occurs in low elevation streams of the Russian River system. Requires clear, flowing water with abundant cover and deep (> 1 m) pools.	**Unlikely.** The property is within the upper Putah Creek Watershed that drains into Lake Berryessa. This species is only known for Clear Lake and associated tributaries; which is outside of the Phase 1 Study Area. Tule perch is not known for the upper Putah Creek Watershed.	No further actions are recommended for this species.
Russian River tule perch *Hysterocarpus traski pomo*	SSC	Occurs in low elevation streams of the Russian River system. Requires clear, flowing water with abundant cover and deep (> 1 m) pools.	**Unlikely.** The property is within the upper Putah Creek Watershed that drains into Lake Berryessa. This species is only known for the Russian River and its tributaries; which is outside of the Phase 1 Study Area.	No further actions are recommended for this species.
River lamprey *Lampetra ayresi*	SSC	Lower Sacramento River, San Joaquin River and Russian River. May occur in coastal streams north of San Francisco Bay. Adults need clean, gravelly riffles, Ammocoetes need sandy backwaters or stream edges, good water quality and temps < 25 degrees C.	**No Potential.** The Phase 1 Study Area does not contain anadromous aquatic habitat necessary to support this species. The property is within the upper Putah Creek Watershed that drains into Lake Berryessa, which forms a complete fish passage barrier for fish returning from the ocean and blocks this species from the Phase 1 Study Area.	No further actions are recommended for this species.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Clear Lake hitch *Lavinia exilicauda chi*	ST, SSC	Found only in Clear Lake, Lake County, and associated ponds. Spawns in streams flowing into Clear Lake. Adults found in the limnetic zone. Juveniles found in the nearshore shallow-water habitat hiding in the vegetation.	**Unlikely.** The property is within the upper Putah Creek Watershed that drains into Lake Berryessa. This species is only known for Clear Lake and associated tributaries; which is outside of the property.	No further actions are recommended for this species.
Clear Lake – Russian River roach *Lavinia symmetricus ssp. 4*	SSC	Habitat generalists. Found in warm intermittent streams as well as cold, well-aerated streams.	**Unlikely.** The Phase 1 Study Area is within the upper Putah Creek Watershed that drains into Lake Berryessa. This species is only known for Clear Lake and associated tributaries; which is outside of the Phase 1 Study Area. Roach in the Phase 1 Study Area are within the range and distribution of Central California roach, which are not a special-status species.	No further actions are recommended for this species.
Navarro roach *Lavinia symmetricus navarroensis*	SSC	Occurs only in the Navarro River and its tributaries. Adaptable; found in warm, intermittent streams as well as cold, well-aerated streams.	**Unlikely.** The property is within the upper Putah Creek Watershed that drains into Lake Berryessa. This species is only known for the Navarro River and its tributaries; which is outside of the property.	No further actions are recommended for this species.
Coho salmon - central CA coast ESU *Oncorhynchus kisutch*	FE, SE	Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only. Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	**No Potential.** This species is considered extirpated from San Francisco Bay and associated tributaries, including the greater Sacramento River Watershed. The Phase 1 Study Area does not contain anadromous aquatic habitat necessary to support this species. The property is within the upper Putah Creek Watershed that drains into Lake Berryessa, which forms a complete fish passage barrier for fish returning from the ocean and blocks this species from the Phase 1 Study Area.	No further actions are recommended for this species.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Steelhead - Central Valley DPS *Oncorhynchus mykiss*	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**Unlikely.** The Phase 1 Study Area does not contain anadromous aquatic habitat necessary to support this species. The property is within the upper Putah Creek Watershed that drains into Lake Berryessa, which forms a complete fish passage barrier for fish returning from the ocean and blocks this species from the Phase 1 Study Area. The resident form, rainbow trout, is known to occur in Lake Berryessa and may utilize portions of upper Putah Creek and associated tributaries that are within the Phase 1 Study Area. Rainbow trout was observed within Butts Creek in 2018. However, the resident form of the species is not protected as a steelhead in areas where anadromy is blocked, such as the waters within the Phase 1 Study Area.	No further actions are recommended for this species.
Chinook salmon - California coastal ESU *Oncorhynchus tshawytscha*	FT	California Coastal Chinook Salmon ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River (exclusive) to the Russian River (inclusive). Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27 degrees C lethal to adults.	**No Potential.** The Phase 1 Study Area does not contain anadromous aquatic habitat necessary to support this species. The property is within the upper Putah Creek Watershed that drains into Lake Berryessa, which forms a complete fish passage barrier for fish returning from the ocean and blocks this species from the Phase 1 Study Area.	No further actions are recommended for this species.
Invertebrates				
Crotch bumble bee *Bombus crotchii*	SC	Crotch bumble bee occurs primarily in the Mediterranean region, pacific coast, western desert, and great valley of southwestern California. Populations used to extend through the southern two-thirds of California, but is now absent through much of its historic range.	**Unlikely.** The property is north of this species current range.	

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Western bumble bee *Bombus occidentalis*	SC	Once widespread in the western United States and Canada, populations of this insect have drastically declined in recent decades. Pollinates a variety of wild flowering plants and crops. Recent studies have shown this species range in California limited to high elevations sites in the Sierra Nevada with some observations on the northern California coast.	**Unlikely.** Although this species historically occurred throughout California, recent studies have shown that the property is outside of this species current extent of occurrence.	No further actions are recommended for this species.
Conservancy fairy shrimp *Branchinecta conservation*	FE	Endemic to the grasslands of the northern two-thirds of the Central Valley, found in large, turbid pools. Inhabits astatic pools located in swales formed by old, braided alluvium, filled by winter/spring rains, lasting until June.	**Unlikely.** Although there are vernal pools that are a part of the Lake-Napa Vernal Pool complex about 2 miles north west of the property, this species has not been documented in Lake County (CDFW 2019, Erikson and Belk, 1999). Additionally, no vernal pools with soil and/or hydrological characteristics that could support this species were observed within the Phase 1 Study Area.	No further actions are recommended for this species.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabits small, clear-water sandstone-depression pools, and grassy swales, earth slumps, or basalt-flow depression pools.	**Unlikely.** Although there are vernal pools that are a part of the Lake-Napa Vernal Pool complex about 2 miles north west of the property, this species has not been documented in Lake County (CDFW 2019, Erikson and Belk, 1999). Additionally, no vernal pools with soil and/or hydrological characteristics that could support this species were observed within the Phase 1 Study Area.	No further actions are recommended for this species.

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Species	Conservation Status[1]	Habitat	Potential for Occurrence[2]	Recommendations
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	Occurs only in the central valley of California, in association with blue elderberry (*Sambucus mexicana*). Prefers to lay eggs in elderberry 2 to 8 inches in diameter; some preference shown for "stressed" elderberry.	**Unlikely.** The property is located west of this species' documented range in the Central Valley. A non-listed subspecies, *Desmocerus californicus californicus*, is known to occur in the coast range hills. The closest documented occurrence of valley elderberry longhorn beetle is 12 miles northeast of the property (CDFW 2019.) Given the low dispersal ability of this species, it is unlikely to occur within the property (Collinge et al. 2001)	No further actions are recommended for this species.
California freshwater shrimp *Syncaris pacifica*	FE, SE	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main stream flow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	**Unlikely.** Although the Phase 1 Study Area contains perennial streams, this species has not been documented in Lake County and the nearest documented occurrence is over 10 miles southwest of the property near Calistoga, in a different watershed from the Phase 1 Study Area (CDFW 2019).	No further actions are recommended for this species.

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[1]Key to Conservation Status:

FE	Federal Endangered
FT	Federal Threatened
FC	Federal Candidate
BCC	USFWS Birds of Conservation Concern
SE	State Endangered
ST	State Threatened
SC	State Candidate
SSC	CDFW Species of Special Concern
CFP	California Fully Protected Animal
WBWG	Western Bat Working Group High or Medium Priority Species

[2]Key to Potential for Occurrence:

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Present. Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

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APPENDIX H

FOCUSED RAPTOR SURVEYS

Appendix H. Focused Raptor Surveys

1.0 INTRODUCTION

This raptor study documents the findings of focused raptor surveys performed by WRA for Phase 1 Study Area of the proposed Maha Resort and Guenoc Valley Development. The surveys covered the Phase 1 Study Area, as well as surrounding areas within the larger Guenoc Ranch (property) located in unincorporated Lake County, California. The purpose of the survey effort was to evaluate baseline levels of raptor activity during the breeding season; including species presence, nesting, and behavioral activity with a particular focus on bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*). The surveys were indented to identify areas where eagle and special-status raptors nesting occurred, the number of nesting pairs of eagle, document species presence and diversity of raptor species, and identify activity or "hot spot" areas for raptors in the property. This analysis of sensitive resources is intended to support project planning and development of conservation measures for the Phase 1 Study Area. This report describes the methods and results of the surveys conducted along with information relevant to special-status and non-status raptor species protected by local, state, or federal laws and regulations.

2.0 STUDY AREA

The Phase 1 Study Area is an approximately 4,977-acre mix of undeveloped lands, agricultural lands, and minor infrastructure to support vineyard, winery, and cattle operations located within the larger property of Guenoc Ranch. The property includes 22,695-acres located in unincorporated Lake and Napa counties, four miles east of Middletown. The Phase 1 Study Area and property are bounded to the north by the U.S. Coast Guard LORAN Reservation, Putah Creek, and the Cedars mountain range; to the east by Putah Creek and Mysterious Valley; to the south by Table Mountain and the Pope Valley; and to the west by Long Valley and Coyote Valley. The raptor survey effort was focused on the Phase 1 Study Area.

3.0 REGULATORY BACKGROUND

Federal and State laws, regulations and designations applicable to raptors with potential to occur within the property are discussed below. Within the context of this document and standard environmental review, the term "special-status" is typically used to refer to species with heightened legal protections beyond baseline levels, if any such exist. Federal regulations and applied designations for raptors include:

- Federal Endangered Species Act
- Bald and Golden Eagle Protection Act
- Migratory Bird Treaty Act
- US Fish and Wildlife Service Birds of Conservation Concern through the Fish and Wildlife Conservation Act

State regulations and applied designations for raptors include:

- California Endangered Species Act
- California Fish and Game Code
- Fully Protected Species through the California Fish and Game Code

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- Species of Special Concern through the California Fish and Game Code

A brief description of each regulation and additional designation are provided below.

Federal Endangered Species Act. The Endangered Species Act of 1973, as amended, herein the Federal Endangered Species Act (ESA), was enacted to provide a means to identify and protect endangered and threatened species. The ESA is implemented by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Pursuant to Section 4 of ESA, the USFWS and NMFS maintain lists of "endangered" and "threatened" plant and animal species (referred to as "listed species"). Under ESA Section 9, it is unlawful to take any listed species; take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Harass is defined in regulation as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). Harm is defined in regulation as an act which actually kills or injures fish or wildlife, and may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 17.3; 50 CFR 222.102). Actions that may result in a "take" of an ESA-listed species are subject to USFWS permit issuance ("take authorization") and monitoring.

Bald and Golden Eagle Protection Act. Golden and bald eagles have various protections at both the state and federal levels and are considered special-status species. While golden and bald eagles are not currently listed under the ESA, these species are afforded a somewhat analogous level of protection under the federal Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). The Act prohibits the taking, possession and/or commerce of eagles and establishes civil penalties for violations. Similar to the ESA, "take" is defined as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb. Disturb means "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 CFR 22.3).

Migratory Bird Treaty Act. In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918 (MBTA) and the CFGC (Section 3503). The MBTA establishes a federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention" (16 USC 703). Recently, the U.S. Department of the Interior (USDOI; 2017) issued guidance clarifying that the MBTA only applies to the intentional/deliberate killing, harm or collection of covered species, and that unintentional impacts to birds/nests that occur within the context of otherwise lawful activities are not violations of the MBTA.

USFWS Birds of Conservation Concern. The Fish and Wildlife Conservation Act, as amended in 1988, requires USFWS to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing" under ESA. The USFWS names bird species that represent conservation priorities as

Birds of Conservation Concern (BCC), with the most recent list issued in 2008. Although BCC species generally have no heightened legal status, they are typically given special consideration under CEQA.

California Endangered Species Act. The California Endangered Species Act (CESA) (California Fish and Game Code [CFGC] 2050 *et seq*.) prohibits a "take" of any plant and animal species that the California Fish and Game Commission determines to be an endangered or threatened species in California. CESA regulations differ from the ESA in that under the CESA omits "harm and harassment" from their definition of “take”. In addition, the CESA authorizes the take of endangered, threatened, or candidate species if the take is incidental to otherwise lawful activity and specific criteria are met. These provisions also require the CDFW to consult with the USFWS for actions involving state-listed species that are also listed under the ESA. In certain circumstances, the CESA allows the CDFW to adopt an incidental take authorization from the USFWS or NMFS as satisfactory for the purposes of CEQA based on findings that the federal permit adequately protects the species and is consistent with state law. A CESA permit may not authorize the take of fully protected species that are protected in other provisions of the CFGC, discussed further below.

California Fish and Game Code. In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by CFGC under sections 3503, 3503.5 and 3513. Section 3503 and 3503.5 prohibits the killing of birds and raptors or the destruction or collection of active bird or raptor nests, including eggs and young. Section 3513 prohibits unlawful take or possession of birds designated by the MBTA.

CDFW Fully Protected Species. The CFGC Section 3511 explicitly designates Fully Protected birds. Fully Protected species may not be taken or possessed at any time. No licenses or permits may be issued for take of fully protected species, except for necessary scientific research and relocation of fully protected bird species for the protection of livestock. The definition of "take" is the same under the CFGC and the CESA. However, unlike species listed under the ESA or the CESA, incidental take of Fully Protected species is not authorized by law.

CDFW Species of Special Concern. The CDFW names species native to California susceptible to conservation risk as Species of Special Concern (SSC). The original list was published in 1978 and was updated to the current list in 2008. CDFW defines a California bird as an SSC as “those species, subspecies, or distinct populations of native birds that currently satisfy one or more criteria on populations size and trend, range size and trend, threats, and population concentration.” Although SSC species generally have no heightened legal status, they are typically given special consideration under CEQA.

4.0 BIOLOGICAL BACKGROUND

Raptors are a biologically diverse group of predatory birds that includes hawk, eagle, falcon, vulture, kite, and owl. Raptors can occupy a variety of habitats ranging from large open fields to tall manmade structures. Raptors may nest on the ground, on cliffs, in trees (many types and settings, including in cavities) and large shrubs, and on anthropogenic structures such utility towers and buildings. Nests are often in remote locations and/or cryptic, and detection of an active nest often occurs via observations of behavior, adult or nestling calls, or sign of recent activity (i.e. whitewash [feces stains], prey remains). Several raptor species may also reuse a nest site, setting up a territory and returning for several years to breed and forage in the same general area. Because of this, these often large charismatic species, may be observed flying or soaring over large areas but may be reliant on more discrete locations to complete important parts

of their life history, such as breeding. Identifying these locations can help inform the number of breeding pairs and preferred nesting locations in an area for special-status raptors, such as eagles and falcons.

5.0 METHODS

The methodology was based on the protocol outlined in the site-specific Raptor Study Plan developed by WRA and summarized below. Surveys took place in April and May of 2018, during the active breeding period for raptor species most likely to occur within the region. All surveys occurred during weather conducive to visual and auditory detections of raptors (i.e. no heavy rainfall or dense fog). WRA wildlife biologists with the training and field experience necessary to identify raptor species known to occur within the region conducted the fieldwork, which consisted of a combination of fixed-point surveys and roving surveys. Surveys were focused on diurnal raptors (hawks, eagle and allies, falcons, and vultures). Any nocturnal raptors (i.e. owl) observed incidentally were recorded and mapped.

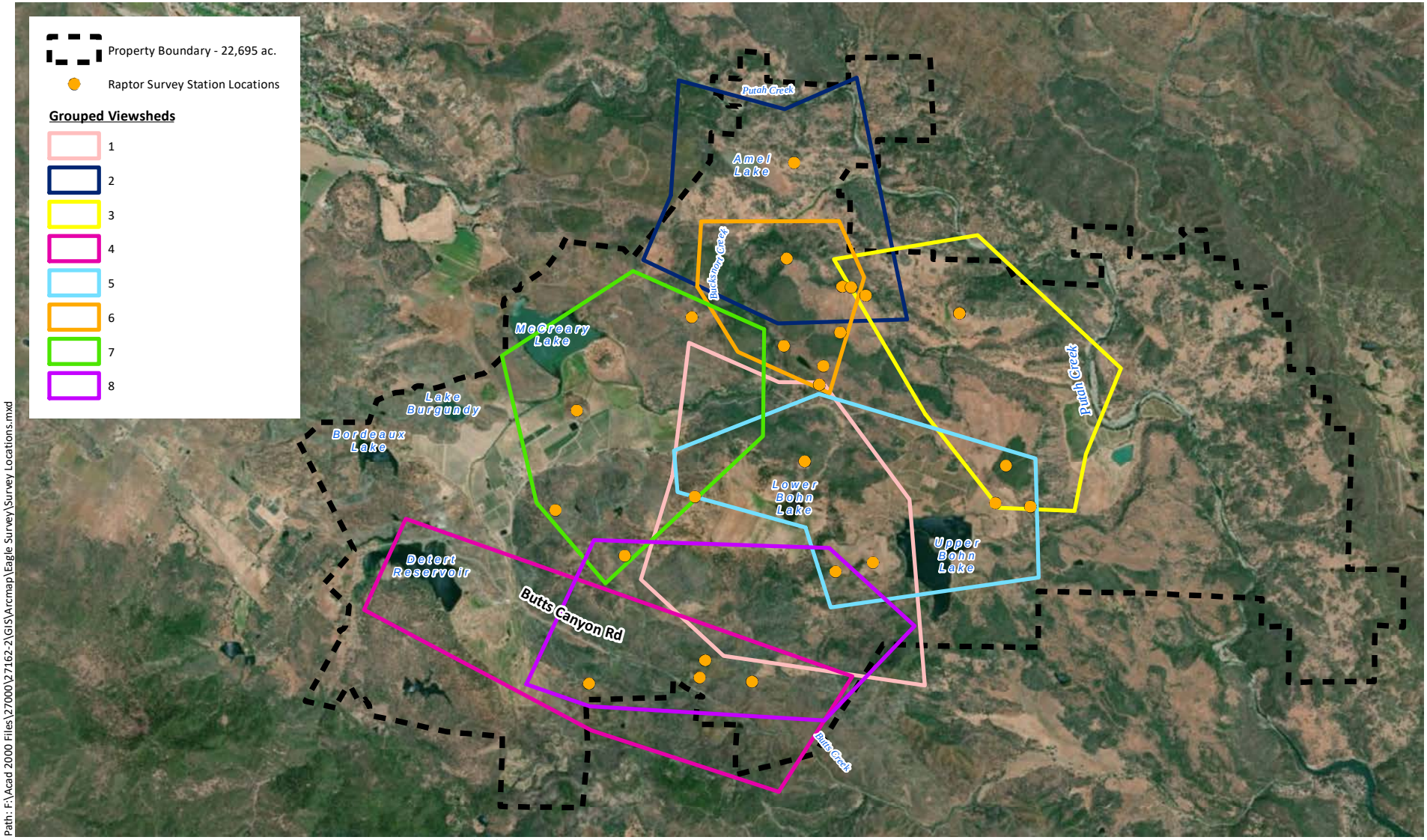
Fixed-Point Surveys

Prior to the initiation of surveys, fixed survey points were identified across the property using a GIS-based viewshed analysis intended to provide maximum survey coverage of the Phase 1 Study Area and surrounding habitats. The Phase 1 Study Area was broken into eight grouped viewsheds based on the approximate area that could be seen from a set of survey points. Survey points were modified in the field based on accessibility and to maximize visibility around localized obstructions such as trees or boulders. Survey points were recorded by GPS and are shown on Figure 1.

Surveys were conducted in the morning (dawn to approximately 10 AM) or late in the day (approximately 5 PM to dusk), with a single biologist stationed at a fixed survey point for three continuous hours. Surveys were conducted by three to four biologists at a time, with biologists positioned at complimentary survey points, which allowed biologists to maximize viewshed coverage, communicate relevant observations and behaviors, and triangulate observation locations. These complimentary survey points are shown within the eight grouped viewsheds in Figure 1. The survey efforts were distributed evenly across the eight viewsheds, and surveyors made observations using binoculars, spotting scopes with a zoom lens, and the naked eye. Observations were made to identify raptors to the lowest taxonomic level feasible.

During fixed-point surveys, biologists recorded the start and end time of the survey, the weather, and observational data including the species, time, location, and behavior. Behaviors were recorded to help with the identification of nesting and breeding activity and included flying, soaring, perching, foraging, breeding, and nest building. Each raptor observed during a fixed-point survey was assigned a unique identifier to aid in tracking changes in behavior and location. Locations of the observed birds were mapped using a combination of triangulation and mapping with a handheld GPS unit. Special attention was paid to potential nesting locations and bird courtship or breeding behavior. Active nests were mapped using a combination of handheld GPS units and hand drawing on field maps with high resolution aerial imagery and 20-foot topographic contours, and were investigated in more detail during roving surveys, described in the following section.

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Sources: Esri Streaming - NAIP 2016, WRA | Prepared By: mrochelle, 8/31/2018

Figure 1. Fixed Point Grouped Viewsheds with Survey Stations and Property Boundary

Maha Resort and Guenoc Valley Development, Phase 1
Biological Resources Assessment
Lake County, California

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Roving Surveys

In addition to fixed-point observation periods, biologists spent several hours each day a fixed-point survey occurred conducting ground-based roving surveys in focal portions of the property. Roving locations were selected to compliment fixed survey points and included areas not well covered by the fixed-point stations and areas where biologists observed concentrated raptor activity or suspected nesting activity during fixed-point surveys. Potential nest sites identified during fixed-point surveys were investigated more closely during roving surveys to determine nesting status. When a nest site was suspected to be active, surveyors observed from as far away as feasible to avoid disturbing nesting birds. Information was gathered regarding species, nesting substrate, distance from the ground, nest structure type, and nest stage.

Roving surveys also covered "blind-spots" that were not directly visible during fixed-point surveys. Roving surveys were covered by vehicle and on foot. Raptors observed were recorded with location, species, and any associated behavior. Roving surveys were of no specified duration and were intended to supplement data collected during fixed-point surveys. Roving surveys were conducted individually and as pairs. Figure 2 shows the extent of the area covered over the course of the various roving surveys.

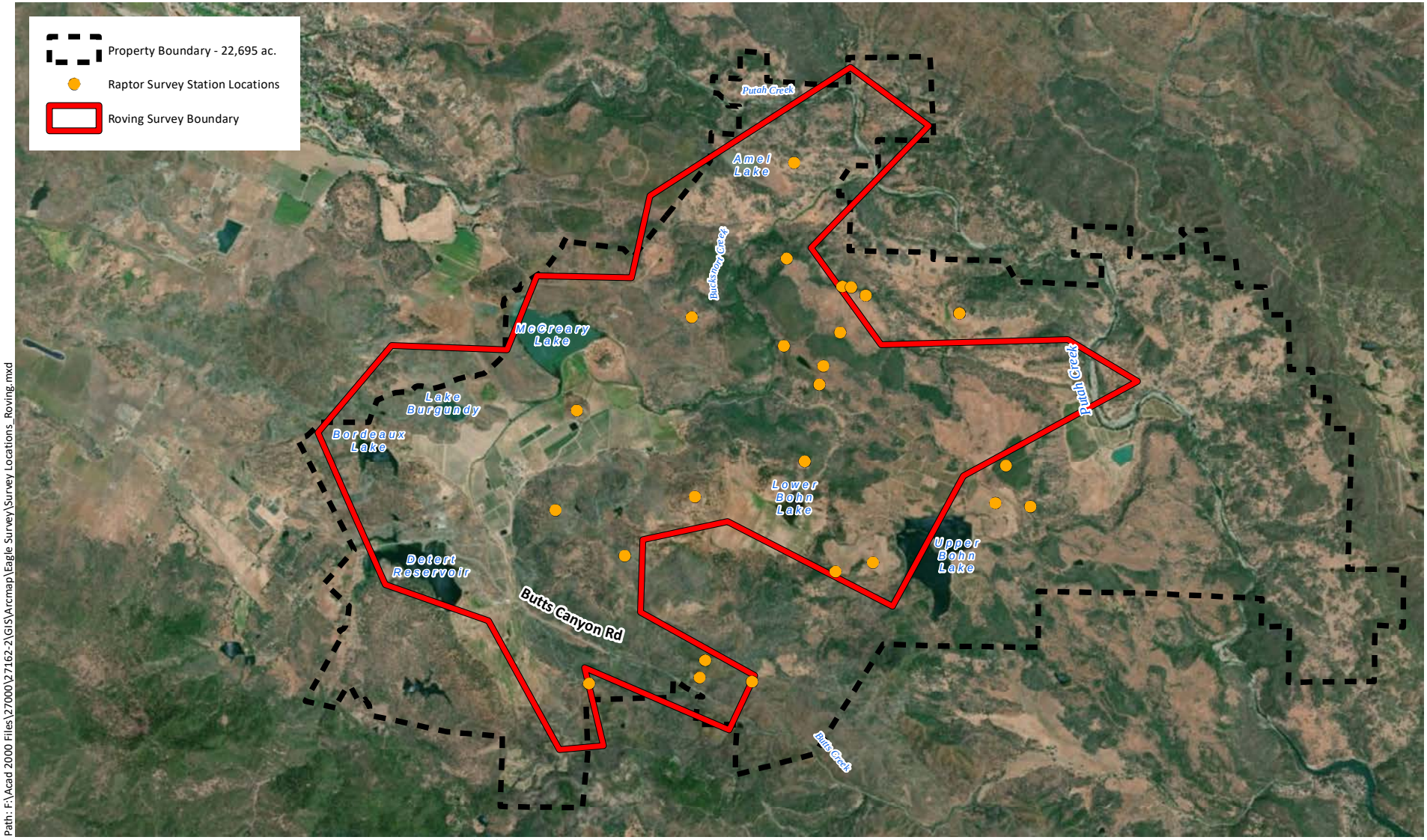
Survey Level of Effort

From April 2 to May 24, 2018, a total of four 3-day survey efforts were conducted with three to four surveyors present during each survey. A total of 50 fixed-point surveys were conducted over the course of 12 survey days. Roving surveys were quantified by the number of surveyors conducting a roving survey at any given time. Under these parameters, 27 roving surveys were conducted over the course of 12 survey days. The survey efforts are summarized in Table 1.

GIS Analysis

A GIS viewshed analysis was conducted prior to the initial fieldwork to identify potential survey locations with the greatest visual coverage of the Phase 1 Study Area and surrounding habitats. The viewshed analysis was performed using the ESRI viewshed tool and United States Geological Survey 10 meter elevation profiles for the site. The viewshed tool provides a digital representation of the area which can be viewed from a selected point. A set of eight survey points with viewsheds spanning the Phase 1 Study Area was developed as a baseline for survey point locations to be used in the field. Survey points were modified in the field based on access and localized visual obstructions such as trees or boulders.

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Sources: Esri Streaming - NAIP 2016, WRA | Prepared By: mrochelle, 8/31/2018

Figure 2. Roving Survey Boundary with Survey Stations and Property Boundary

Maha Resort and Guenoc Valley Development, Phase 1
Biological Resources Assessment
Lake County, California

0 1 2 Miles

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Table 1. Summary of Survey Effort

Survey Date	Number of Dawn Fixed-point Surveys	Number of Surveyors Conducting Roving Survey	Number of Dusk Fixed-point Surveys	Viewshed(s) Surveyed
April 2	-	3	3	1
April 3	3	3	3	2,3
April 4	3	3	-	4
April 24	-	3	3	5
April 25	3	3	3	6,7
April 26	3	3	-	8
May 8	-	3	3	1
May 9	3	3	3	2,3
May 10	3	3	-	4
May 22	-	3	4	5
May 23	4	4	3	6,7
May 24	3	3	-	8
Total	**25**	**27**	**25**	

Following the surveys, georeferenced observations of special-status raptors were analyzed by GIS to develop density heat maps. Density heat maps depict areas where more frequent observations were made and represent locations more frequently utilized by raptors. Density analysis for special-status raptor occurrences was performed by the Kernel Density geoprocessing tool within ESRI's ArcGIS environment. Kernel Density calculates the density of point occurrences within the surrounding neighborhood for each cell within the analysis extent. A search diameter of 1 mile was used as the input parameter and weighted by the number of observations recorded during the field surveys.

6.0 RESULTS

General Observations

During the survey period, a total of 78 avian species were observed, including 14 raptor species[1] (Table 2). Raptors were observed foraging, perching, flying, soaring, and nesting. All recorded raptor observations from the survey period are shown on Figure 3. The figure shows the highest concentration of observations near Lower Bohn and Upper Bohn lakes. While raptors were

[1] Cooper's hawk (*Accipiter cooperii*) was observed incidentally during a biological survey conducted on August 14, 2018, which was outside the survey period of this report. The observation was of an individual and not a nesting pair nor active nest site, and the species is not a special-status species; however, has been included as an observed raptor for this report.

observed flying and soaring throughout the property, active nests (i.e. those containing eggs or young) were only observed in undeveloped portions of the property often in association with bodies of water or edge habitats. Approximately 732 recorded raptor observations[2] were made during the survey period. Turkey vulture constituted the highest number of occurrences during the survey period with 419 observations. Turkey vulture are a common species and can be seen traveling or foraging in groups. Turkey vulture often travel by gliding or soaring on high-altitude thermals, which may account for their high detectability during fixed-point and roving surveys. Red-tailed hawk and American kestrel were also among the most frequent observed raptor species in the property. Red-tailed hawk and American kestrels are common and widespread and typically breed in semi-open habitats.

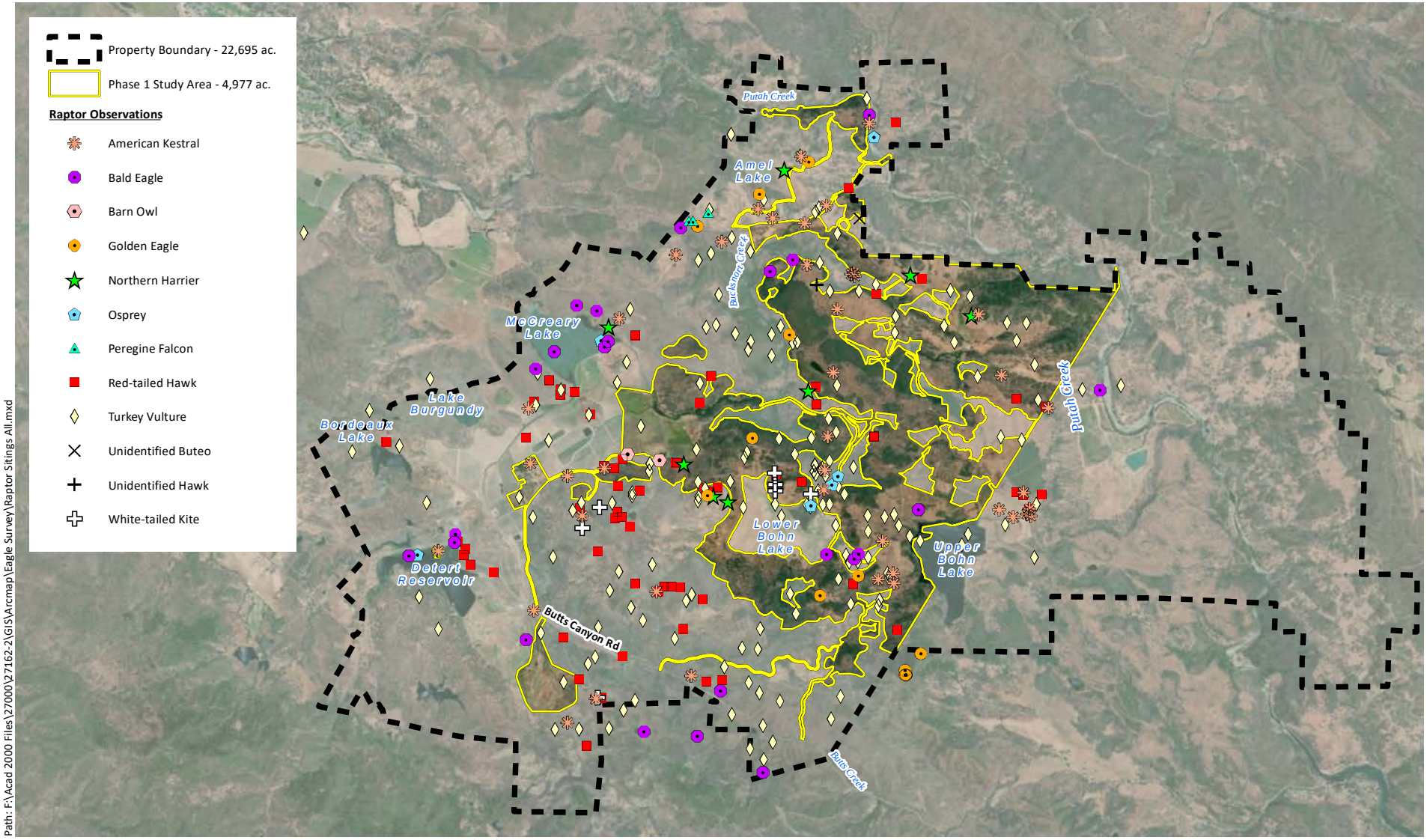
Raptors observed in the property may be protected by one or more state or federal law and designation. Table 2 outlines the laws and designations pertinent to raptor species observed in the property during the survey period.

Special-Status Species Observations

Special-status raptor species observed during the survey period are shown in bold in Table 2, and are described in more detail below. Bald eagle was the most-observed special-status species, with 30 observations throughout the survey period, followed by golden eagle, which was observed 16 times. Special-status raptor observations are summarized in Table 3. Figure 4 shows the density of special-status raptor observations across the property. The density of observations ranges from low (blue) to high (red), giving a visual representation of areas with increased activity of special-status raptors. Special-status raptors were observed in higher concentration near Lower Bohn Lake, McCreary Lake, and north of Bucksnort Creek, which are areas with a greater mix of open habitat types and heterogeneous areas (i.e. edge habitat areas). Additionally, these locations are part of habitat linkages that enable prey movement and raptor foraging that are along valley or open corridors.

Six active special-status raptor nests were observed including four bald eagle, one golden eagle, and one peregrine falcon (Figure 5). Based on the number of active nests observed, at least 12 special-status breeding raptors were supported by the property in 2018, including eight bald eagle, two golden eagle, and two peregrine falcon.

[2] A recorded raptor observation can include one or more individuals from the same species. As individual raptors were not marked or tagged, an individual may have been recorded as an observation more than once per survey and between surveys. Therefore, the recorded observations can be used to infer activity hot spot areas and relative prevalence in an area, but should not be considered a total number of individuals for a species at the site.



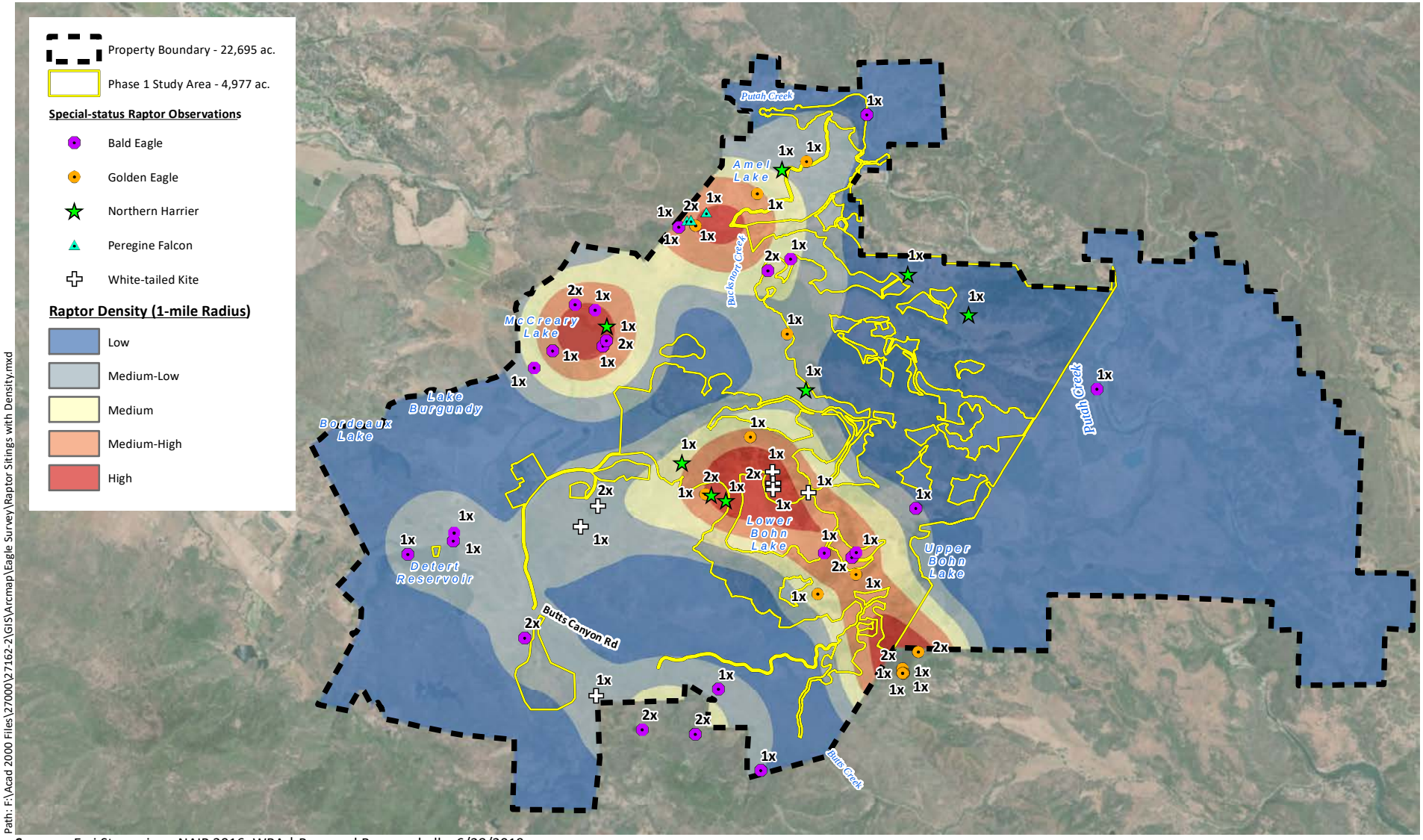
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Sources: Esri Streaming - NAIP 2016, WRA | Prepared By: mrochelle, 6/28/2019

Figure 3. All Raptor Observations with Phase 1 and Property Boundaries

Maha Resort and Guenoc Valley Development, Phase 1
Biological Resources Assessment
Lake County, California

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Sources: Esri Streaming - NAIP 2016, WRA | Prepared By: mrochelle, 6/28/2019

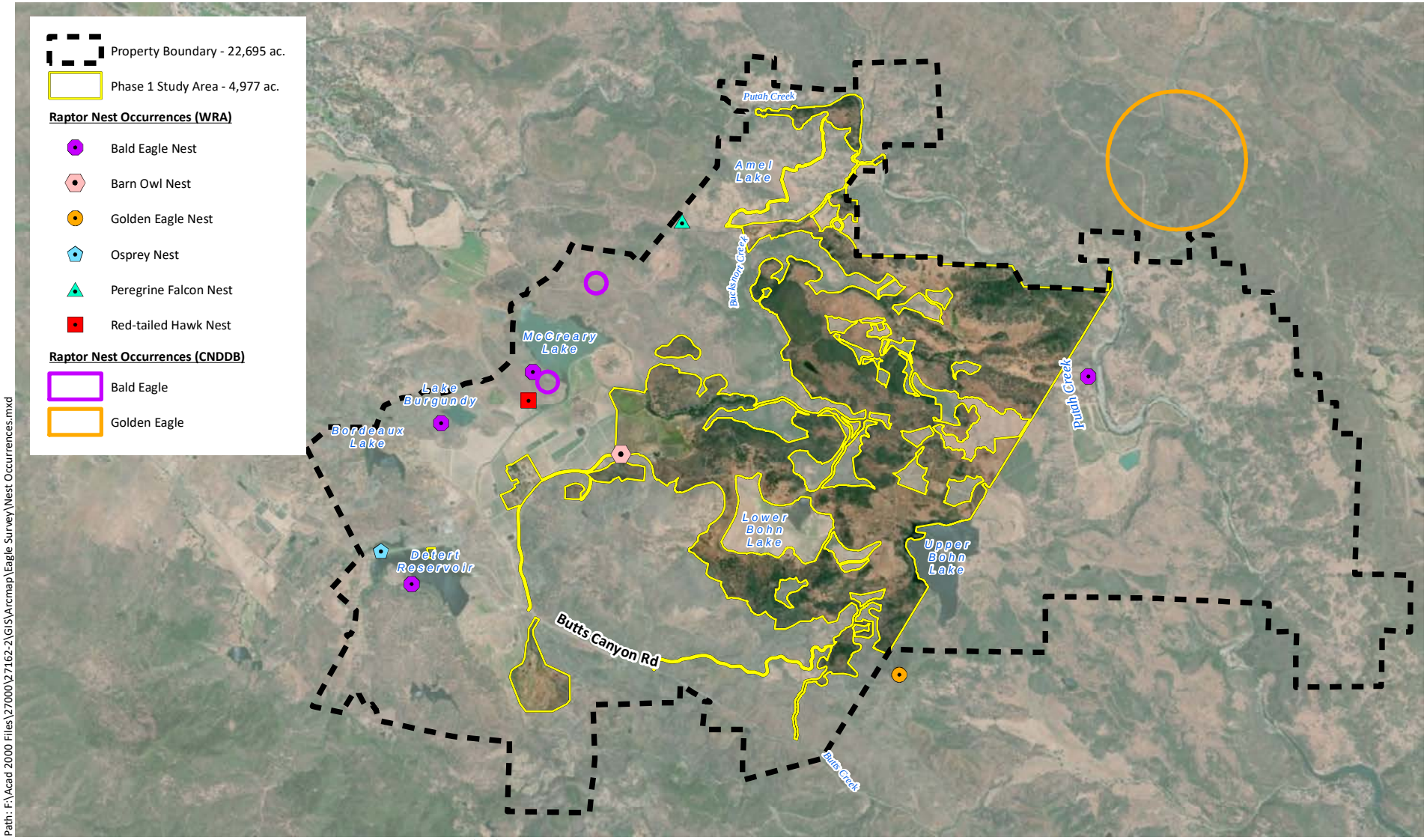
Figure 4. Special-Status Raptor Observation Density Map

Maha Resort and Guenoc Valley Development, Phase 1
Biological Resources Assessment
Lake County, California

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Sources: Esri Streaming - NAIP 2016, WRA | Prepared By: mrochelle, 6/28/2019

Figure 5. Raptor Nest Occurrences

Maha Resort and Guenoc Valley Development, Phase 1
Biological Resources Assessment
Lake County, California

0 1 2 Miles

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Table 2. Raptors Observed within the property and Status of their Regulatory Protection (species listed in bold are special-status raptors)

Scientific Name	Common Name	CESA	BGEA	BCC, SSC	CFP	MBTA, CFGC
Accipiter cooperii	Cooper's hawk	-	-	-	-	×
Aquila chrysaetos	**Golden eagle**	-	×	×	×	×
Bubo virginianus	Great-horned owl	-	-	-	-	×
Buteo jamaicensis	Red-tailed hawk	-	-	-	-	×
Buteo lineatus	Red-shouldered hawk	-	-	-	-	×
Cathartes aura	Turkey vulture	-	-	-	-	×
Circus cyaneus	**Northern harrier**	-	-	×	-	×
Elanus leucurus	**White-tailed kite**	-	-	-	×	×
Falco peregrinus	**Peregrine falcon**	-	-	×	×	×
Falco sparverius	American kestrel	-	-	-	-	×
Haliaeetus leucocephalus	**Bald eagle**	×	×	×	×	×
Megascops kennicottii	Western screech owl	-	-	-	-	×
Pandion haliaetus	Osprey	-	-	-	-	×
Tyto alba	Barn owl	-	-	-	-	×

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Table 3. Special-Status Raptor Species Observations

Species	Number of Observations	Number of Nests Located
Golden eagle	**16**	**1**
Bald eagle	**30**	**4**
White-tailed kite	**9**	**0**
Peregrine falcon	**4**	**1**
Northern harrier	**9**	**0**

The following sections provide additional information on the special-status raptors that were observed during the survey period.

Bald eagle (*Haliaeetus leucocephalus*), Federal Eagle Protection Act, State Endangered, CDFW Fully Protected Species, USFWS Bird of Conservation Concern. The bald eagle occurs primarily as a winter visitor but also as a year-round (breeding) resident throughout most of California. Habitat is somewhat variable, but the species is usually strongly associated with larger bodies of water including lakes, reservoirs, major river systems, estuaries, and the ocean. Breeding occurs primarily in forested areas near water bodies; wintering habitat is more general, though water is usually present. The species typically builds or occupies large nests that are usually built in in the upper portions of large, live trees that provide dominant views of surrounding areas (Buehler 2000). Bald eagles are highly opportunistic foragers; fishes and waterfowl are usually favored, but a variety of live prey and carrion are consumed.

Multiple observations were made during the survey period of adult and juvenile bald eagle flying and roosting adjacent to reservoirs within and adjacent to the Phase 1 Study Area. Four total active bald eagle nests were observed near the following water features: Detert Reservoir, Lake Burgundy, McCreary Lake, and Putah Creek (see Figure 5). Two juveniles were observed in the nest by Detert Reservoir. The number of young in the other three nests was undetermined due to the height and angle of the nests. The nests were determined to be active after observing the behavior of adults which included food carries and sitting (i.e. incubating) in the nest. In addition to four nests located during the 2018 survey efforts, this species has two documented nesting occurrences in the CNDDB adjacent to the Phase 1 Study Area around McCreary Reservoir (CDFW 2018; see figure 5).

American peregrine falcon (*Falco peregrinus anatum*); Federal Delisted, State Delisted, CDFW Fully Protected, USFWS Bird of Conservation Concern. This large falcon occurs as a generally uncommon resident as well as a winter visitor and migrant throughout much of California. Occupied habitat (both breeding and non-breeding) is highly variable, but this species is typically associated with open areas and/or bodies of water. Nesting typically occurs on the ledges of steep cliffs, or on man-made structures with ledges above sheer faces such as bridges and the tops of buildings (White et. al 2002). The peregrine falcon preys upon a wide variety of animals, mostly birds; on the Pacific coast, waterbirds (e.g., waterfowl, shorebirds and seabirds) are especially favored (White et. al 2002). This species forages over wide areas, even during the breeding season.

There are several reservoirs and rocky cliffs within and adjacent to the property that provide potential foraging and nesting habitat for this species. During the survey period, an active peregrine falcon nest was observed on a south-facing rocky cliff north of Bucksnort Creek (see Figure 5). Two adults were seen tending to the nest which had whitewash below the platform. The number of young in the nest could not be determined due to its height and position on the cliff. This species was only observed in close proximity to the nest site near Bucksnort Creek, in an undeveloped portion of the property.

Golden eagle (*Aquila chrysaetos*), Federal Eagle Protection Act, CDFW Fully Protected Species, USFWS Bird of Conservation Concern. The golden eagle is a large raptor that occurs in open and semi-open areas from sea level to high elevation. Typical occupied habitats include grasslands, shrublands, deserts, woodlands, and coniferous forests. Breeding activity occurs broadly from January through August, and in California is usually initiated from January to March. Egg laying and incubation can take between 44 and 50 days, with chicks fledging the nest an average of 64 days after hatching (Kochert et al. 2002). The large stick nests of this species are reused across years and may be maintained throughout the year. Nests are most often placed on the ledges of steep cliffs, but nesting also occurs in trees and on tall manmade structures (e.g., utility towers) (Kochert et al. 2002). Golden eagles forage over wide areas, feeding primarily on medium-sized mammals (e.g., ground squirrels and rabbits), large birds, and carrion.

Multiple observations were made during the survey period of adult and juvenile golden eagle flying, foraging, and perching throughout the property and Phase 1 Study Area, including over forest habitat, open grassland, and agricultural areas. The Phase 1 Study Area contains suitable nesting and foraging habitat for this species, and an active golden eagle nest was located just south of the property (see Figure 5). The nest was monitored with a spotting scope to determine the status of the nest. Adults were observed tending to the nest with two juveniles. In addition to the nest located during 2018 surveys, this species has a documented nesting occurrence north of the property (CDFW 2018; see figure 5).

Northern harrier (*Circus hudsonius [cyaneus]*). CDFW Species of Special Concern. The northern harrier occurs as a resident and winter visitor in open habitats throughout most of California, including freshwater and brackish marshes, grasslands and fields, agricultural areas, and deserts. Harriers typically nest in treeless areas within patches of dense, relatively tall, vegetation, the composition of which is highly variable; nests are placed on the ground and often located near water or within wetlands (Shuford and Gardali 2008). Harriers are birds of prey and subsist on a variety of small mammals and other vertebrates.

This species was observed foraging in marsh and grassland habitat of the Phase 1 Study Area. The species was typically observed within the vicinity of water features, including McCreary Lake, Lower Bohn Lake, and Butcherknife Creek. No nesting activity or active nests for this species were detected during the survey; however, suitable nesting habitat is present along the tall vegetated marsh and grassland areas around the reservoirs and creeks in the Phase 1 Study Area.

White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. The white-tailed kite is a resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate

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surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates.

The Phase 1 Study Area contains open foraging habitat as well as trees and shrubs suitable for nesting by this species. White-tailed kite was observed flying and foraging within the Phase 1 Study Area in open fields, areas of agricultural productions, and forest edge habitat. No nesting activity or active nests for this species were detected during the survey; however, suitable nesting habitat areas and habitat occur along the forested edges and grassland portions of the property.

Non-Status Raptor Nest Observations

Three non-status raptor nests documented during the surveys. Non-status raptor nests included an osprey nest by Detert Reservoir and a red-tailed hawk nest by McCreary Lake. Additionally, an active barn owl nest was observed within a bird box that was adjacent to a vineyard. No nesting behavior was observed directly in areas of agricultural production; however, the occurrence of barn owl and their frequency for using human structures including barns, buildings, and artificial bird boxes can make the agricultural areas potentially suitable for the species.

Many remnant nest structures of suitable size for raptors were observed throughout the property. However, because there are other avian species which may have similar nest structures, nests were not recorded and mapped as raptor nests unless a raptor was observed in direct association with the nest. Figure 5 shows the raptor nests that were confirmed as active during the survey period.

7.0 DISCUSSION AND RECOMMENDATIONS

Fourteen special-status and non-status raptor species were observed within the property exhibiting behaviors which included flying, foraging, and nesting. Nine active raptor nests were located and these nesting occurrences were confined to land that is not currently used for agricultural production. With the exception of a barn owl nest located in an actively used barn, no active raptor nests were detected within the Phase 1 Study Area during the survey period. However, construction activities within the Phase 1 development area may cause noise disturbance or direct loss of foraging habitat, resulting in impacts to nesting raptor species. In order to avoid impacts to nesting raptor species, it is recommended that vegetation removal, demolition of buildings or work on bridges, or initial ground disturbance activity occur outside of the nesting season, defined as February 1 through August 31. If initiation of project work within the nesting season cannot be avoided, then a pre-construction nesting bird survey within the work area should be completed by a biologist no more than 14 days prior to the start of work.

Areas with recurring special-status nesting observations (McCreary Lake) or meeting specific habitat requirements (cliff habitat by Bucksnort Creek) may be considered important for the conservation of special-status raptors. Construction related activities should be avoided in these areas or limited to outside of the nesting season. Additionally, the land use that could increase lighting or anthropogenic noise could reduce nesting suitability and should be minimized or avoided in these areas.

Raptor foraging areas can be large, depending on species, and include several habitat types that are present in the Phase 1 Study Area. The loss or conversation of grassland and forest habitats into buildings or vineyards may reduce prey availability for some species, such as golden eagle and white-tailed kite that may frequently forage on small mammals like lagomorphs (i.e. hares and rabbits) or ground squirrels. Conversion of these areas may have less of an impact on some

species foraging, like American kestrel or bald eagle, which are not as dependent upon those small mammals as a dominate prey base. In general, providing habitat linkages and a mix of habitat types can support a broader prey base and would be important to the conservation of raptors in the property. Additionally, supporting raptor friendly land management practices such as limiting or preventing the use of small mammal poisoning is recommended to prevent indirectly poising raptors that may prey on organisms that have ingested the poison.

While the raptor surveys indicate presence of special-status species and suitable habitat within the Phase 1 Study Area, the survey results may not represent the density of all special-status species due to survey constraints. Suitable habitat varies between raptor species. For example, northern harriers nest on the ground in open fields where bald eagles generally nest in forested areas adjacent to large bodies of water. While preferred prey and forage habitat can vary by species, foraging across all special-status raptor species was more frequently observed in and around open grassland, edge habitats such as forest and wetland/stream areas, and in association with water. Less direct foraging was observed in vineyard areas or developed sites, which may be attributed to lower levels of prey availability (i.e. small mammals, birds, reptiles, and fish) in these locations. Additionally, areas with greater habitat heterogeneity and linkages, such as a series of ponds/lakes, or interconnected grassland and forest habitats, had a greater abundance of raptors observed (Figure 4). Surveys were conducted during the 2018 breeding season and thus do not reflect winter-concentration or non-breeding season behavior.

The fixed-point surveys were generally within ¼-mile of a road with a varying degree of anthropogenic disturbance. The survey efforts were evenly distributed throughout the Phase 1 Study Area to the extent possible. However, rugged areas with minimal anthropogenic disturbance such as steep cliff-faces and dense forest may be underrepresented in the survey results due to accessibility. Additionally, there may be multiple observations of an individual raptor. Surveyors attempted to keep track of reoccurring individuals during each survey, but an individual may have been recorded more than once due to overlapping views from separate survey points. Conversely, there may be species that went under detected during a survey due to obstructions in the viewshed. Furthermore, some raptors may be less detectable during fixed-point surveys due to their behavior and preferred habitat type. For example, red-shouldered hawks generally perch in a forest canopy, whereas a bald eagle forages over open water. Bald and golden eagles were the most detected special-status raptor, as fixed-point surveys at high vantage points focus more on soaring species than species more closely associated with forested habitat. Despite these limitations, the field surveys conducted in April and May of 2018 provided baseline levels of raptor activity, presence, and nesting behavior within the property.

8.0 REFERENCES

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White, C. M., N. J. Clum, T. J. Cade, and W. G. Hunt (2002). Peregrine Falcon (*Falco peregrinus*), version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA.

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APPENDIX I

SITE PHOTOGRAPHS



Photograph 1. White alder groves along Bucksnort Creek in the northern portion of the Phase 1 Study Area (taken June 7, 2017).



Photograph 2. White alder groves along Bucksnort Creek in the northern portion of the Phase 1 Study Area (taken June 7, 2018).



Photograph 3. Foothill pine woodland within the Phase 1 Study Area (taken April 2, 2018).



Photograph 4. Foothill pine woodland within the Phase 1 Study Area (taken March 30, 2018).



Photograph 5. Blue oak woodland within the Phase 1 Study Area (taken April 18, 2018).



Photograph 6. Blue oak woodland within the Phase 1 Study Area (taken March 30, 2018).



Photograph 7. Blue oak savanna within the Phase 1 Study Area (taken June 6, 2017).



Photograph 8. Valley oak woodland along Bucksnort Creek within the Phase 1 Study Area (taken June 8, 2017).



Photograph 9. Valley oak woodland along Bucksnort Creek within the Phase 1 Study Area (taken June 8, 2017).



Photograph 10. Interior live oak woodland within the Phase 1 Study Area (taken June 6, 2017).



Photograph 11. Interior live oak woodland within the Phase 1 Study Area (taken June 6, 2017).



Photograph 12. Chamise chaparral within the Phase 1 Study Area (taken April 18, 2018).



Photograph 13. Chamise chaparral (burned) within the Phase 1 Study Area (taken April 20, 2018).



Photograph 14. Chamise chaparral within the Phase 1 Study Area (taken May 1, 2018).



Photograph 15. Whiteleaf manzanita chaparral within the Phase 1 Study Area (taken April 18, 2018).



Photograph 16. Whiteleaf manzanita chaparral within the Phase 1 Study Area (taken August 21, 2018).



Photograph 17. Musk brush chaparral within the Phase 1 Study Area (taken March 29, 2018).



Photograph 18. Musk brush chaparral within the Phase 1 Study Area (taken June 7, 2018).



Photograph 19. California yerba santa scrub within the Phase 1 Study Area (taken March 14, 2018).



Photograph 20. California yerba santa scrub within the Phase 1 Study Area (taken March 14, 2018).



Photograph 21. Scrub oak chaparral within the Phase 1 Study Area (taken April 20, 2018).



Photograph 22. Leather oak chaparral (burned) within the Phase 1 Study Area (taken May 15, 2018).



Photograph 23. Leather oak chaparral (burned) within the Phase 1 Study Area (taken April 20, 2018).



Photograph 24. Leather oak chaparral within the Phase 1 Study Area (taken May 15, 2018).



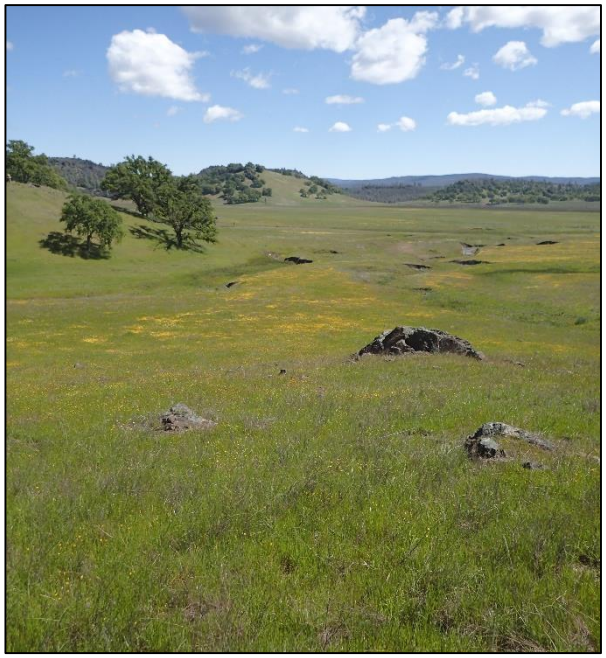
Photograph 25. Brewer willow thickets along McCain Creek (taken June 8, 2017).



Photograph 26. Brewer willow thickets along McCain Creek (taken May 18, 2018).



Photograph 27. Non-native grasslands within the Phase 1 Study Area, in spring (taken March 30, 2018).



Photograph 28. Non-native grasslands within the Phase 1 Study Area, with native wildflowers (taken March 19, 2018).



Photograph 29. Non-native grasslands within the Phase 1 Study Area, with native wildflowers (taken April 20, 2018).



Photograph 30. Non-native grasslands within the Phase 1 Study Area, in late summer (taken June 8, 2017).



Photograph 31. Non-native grasslands within the Phase 1 Study Area, with native wildflowers (taken September 6, 2018).



Photograph 32. Non-native grasslands within the Phase 1 Study Area, with native wildflowers (taken June 8, 2017).



Photograph 33. Purple needlegrass grassland within the Phase 1 Study Area (taken April 19, 2018).



Photograph 34. Emergent wetland within the Phase 1 Study Area (taken June 5, 2017).



Photograph 35. Emergent wetland within the Phase 1 Study Area (taken June 7, 2017).



Photograph 36. Emergent wetland within the Phase 1 Study Area (taken June 5, 2017).



Photograph 37. Emergent wetland within the Phase 1 Study Area (taken June 5, 2017).



Photograph 38. In-line reservoir on an unnamed stream within the Phase 1 Study Area, near Lower Bohn Lake (taken June 4, 2018).



Photograph 39. Upper Bohn Lake within the Phase 1 Study Area (taken August 21, 2018).



Photograph 40. Blacktail Lake (in-line reservoir) within the Phase 1 Study Area (taken April 18, 2018).



Photograph 41. Ephemeral stream within the Phase 1 Study Area (taken April 20, 2018).



Photograph 42. Ephemeral stream within the Phase 1 Study Area (taken April 19, 2018).



Photograph 43. Ephemeral stream within the Phase 1 Study Area (taken April 19, 2018).



Photograph 44. Intermittent stream (unnamed) within the Phase 1 Study Area (taken April 18, 2018).



Photograph 45. Intermittent stream (unnamed) within the Phase 1 Study Area (taken April 19, 2018).



Photograph 46. Intermittent stream (Butcherknife Creek) within the Phase 1 Study Area (taken June 7, 2017).



Photograph 47. Perennial stream (Putah Creek) within the Phase 1 Study Area (taken April 20, 2018).



Photograph 48. Perennial stream (Bucksnort Creek) within the Phase 1 Study Area (taken June 7, 2017).



Photograph 49. Perennial stream (Bucksnort Creek) within the Phase 1 Study Area (taken May 30, 2018).



Photograph 50. Agricultural (vineyard) portions of the Phase 1 Study Area (taken April 19, 2018).



Photograph 51. Agricultural (vineyard) portions of the Phase 1 Study Area (taken August 22, 2018).



Photograph 52. Rock outcrops within the Phase 1 Study Area (taken June 7, 2018).



Photograph 53. Rock outcrops within the Phase 1 Study Area (taken June 7, 2018).



Photograph 54. Keck's checkerbloom (*Sidalcea keckii*; FE, CNPS Rank 1B.1) within the Phase 1 Study Area (taken May 17, 2018).



Photograph 55. Keck's checkerbloom within the Phase 1 Study Area (taken May 17, 2018).



Photograph 56. Lake County western flax (*Hesperolinon didymocarpum*; SE, CNPS Rank 1B.2) within the Phase 1 Study Area (taken May 17, 2018).



Photograph 57. Lake County western flax within the Phase 1 Study Area (taken May 15, 2018).



Photograph 58. Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*; CNPS Rank 1B.2) within the Phase 1 Study Area (taken May 9, 2019).



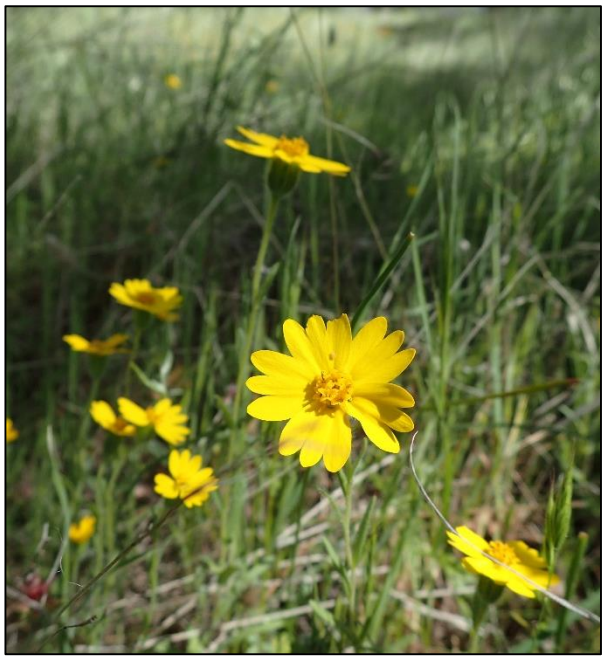
Photograph 59. Big scale balsamroot within the Phase 1 Study Area (taken April 20, 2018).



Photograph 60. Greene's narrow-leaved fleabane (*Erigeron greenei*; CNPS Rank 1B.2) within the Phase 1 Study Area (taken June 14, 2018).



Photorgraph 61. Two-carpellate western flax (*Hesperolinon bicarpellatum*; CNPS Rank 1B.2) within the Phase 1 Study Area (taken May 15, 2018).



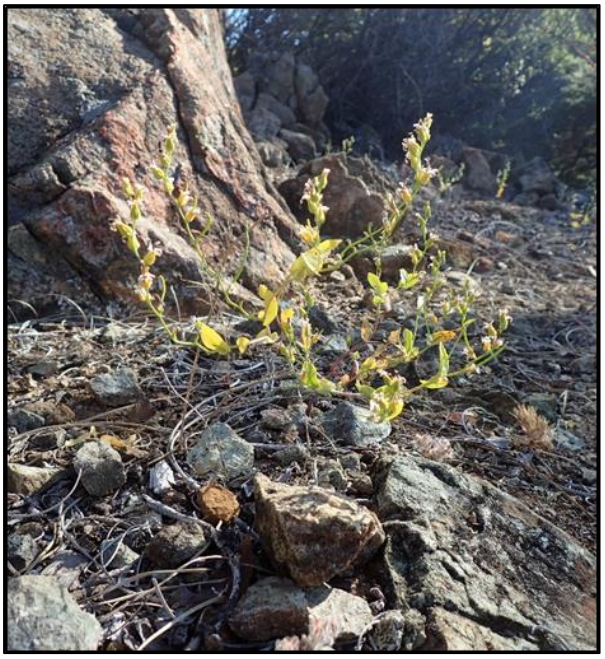
Photograph 62. Colusa layia (*Layia septentrionalis*; CNPS Rank 1B.2) within the Phase 1 Study Area (taken April 19, 2018).



Photograph 63. Colusa layia within the Phase 1 Study Area (taken April 20, 2018).



Photograph 64. Green jewelflower (*Streptanthus hesperidis*; CNPS Rank 1B.2) within the Phase 1 Study Area (taken June 8, 2018).



Photograph 65. Green jewelflower within the Phase 1 Study Area (taken June 13, 2018).



Photograph 66. Tall snapdragon (*Antirrhinum virga*; CNPS Rank 4.3) within the Phase 1 Study Area (taken June 8, 2017).



Photograph 67. Brewer's milkvetch (*Astragalus breweri*; CNPS Rank 4) within the Phase 1 Study Area (taken April 19, 2018).



Photograph 68. Cleveland's milkvetch (*Astragalus clevelandii*; CNPS Rank 4.3) within the Phase 1 Study Area (taken June 15, 2018).



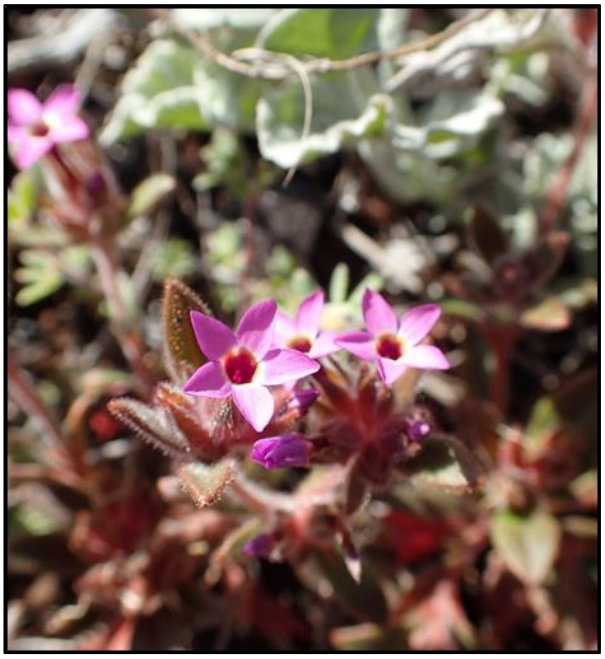
Photograph 69. Pink star-tulip (*Calochortus uniflorus*; CNPS Rank 4.2) within the Phase 1 Study Area (taken May 7, 2019).



Photograph 70. Mt. Saint Helena morning glory (*Calystegia collina* ssp. *oxyphylla*; CNPS Rank 4.2) within the Phase 1 Study Area (taken May 16, 2018).



Photograph 71. Tracy's clarkia (*Clarkia gracilis* ssp. *tracyi*; Rank 4.2) within the Phase 1 Study Area (taken June 8, 2018).



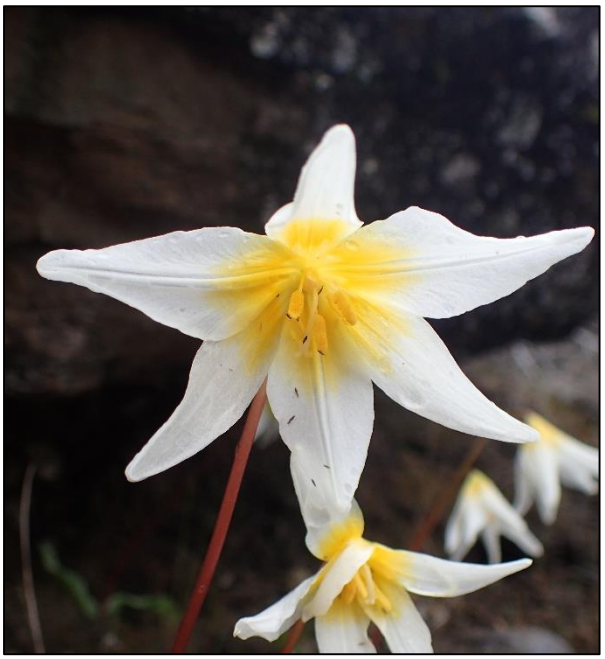
Photograph 72. Serpentine collomia (*Collomia diversifolia*; CNPS Rank 4.3) within the Phase 1 Study Area (taken April 18, 2018).



Photograph 73. Swamp larkspur (*Delphinium uliginosum*; CNPS Rank 4.2) within the Phase 1 Study Area (taken on May 15, 2018).



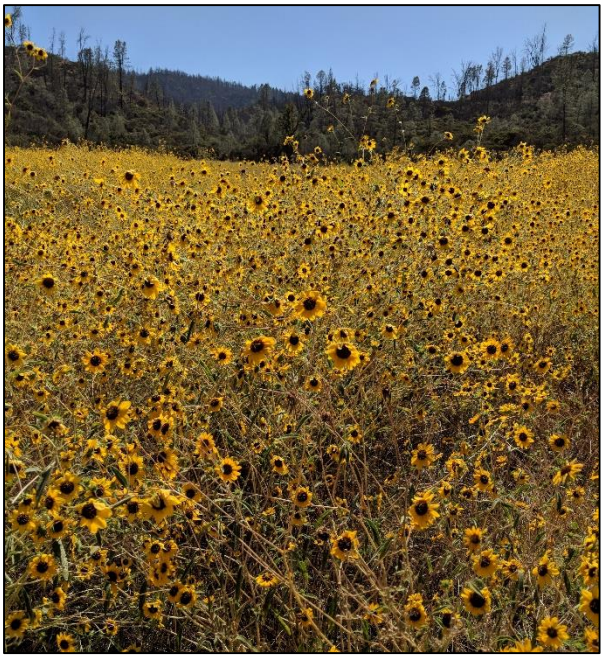
Photograph 74. Bare monkeyflower (*Erythranthe nudata*; CNPS Rank 4.3) within the Phase 1 Study Area (taken April 18, 2018).



Photograph 75. St. Helena fawn lily (*Erythronium helenae*; CNPS Rank 4.2) within the Phase 1 Study Area (taken March 14, 2018).



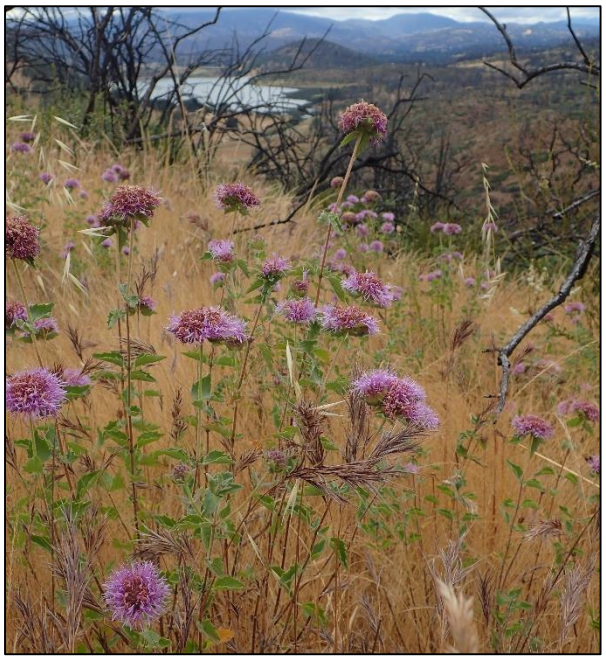
Photograph 76. Purdy's fritillary (*Fritillaria purdyi*; CNPS Rank 4.3) within the Phase 1 Study Area (taken March 14, 2018).



Photograph 77. Serpentine sunflower (*Helianthus exilis*; CNPS Rank 4.2) within the Phase 1 Study Area (taken September 6, 2018).



Photograph 78. Hoover's lomatium (*Lomatium hooveri*; CNPS Rank 4.3) within the Phase 1 Study Area (taken March 29, 2018).



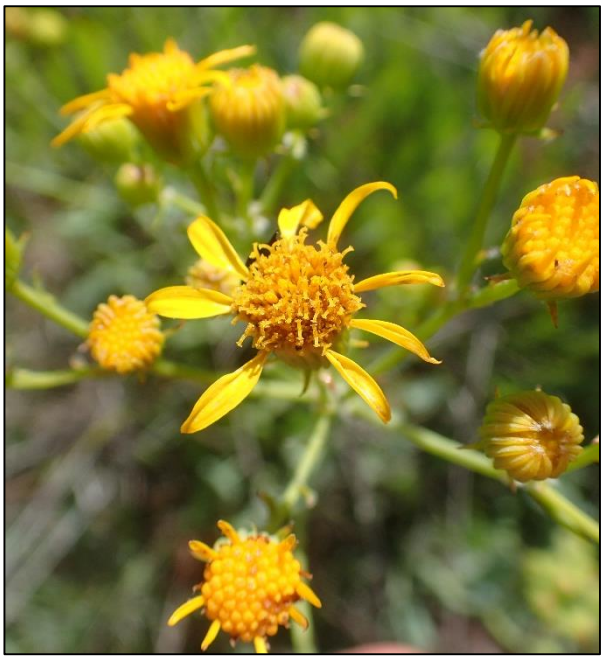
Photograph 79. Green monardella (*Monardella viridis*; CNPS Rank 4.3) within the Phase 1 Study Area (taken June 8, 2017).



Photograph 80. Cotula navarretia (*Navarretia cotulifolia*; CNPS Rank 4.2) within the Phase 1 Study Area (taken May 3, 2018).



Photograph 81. Jepson's navarretia (*Navarretia jepsonii*; CNPS Rank 4.3) within the Phase 1 Study Area (taken June 7, 2017).



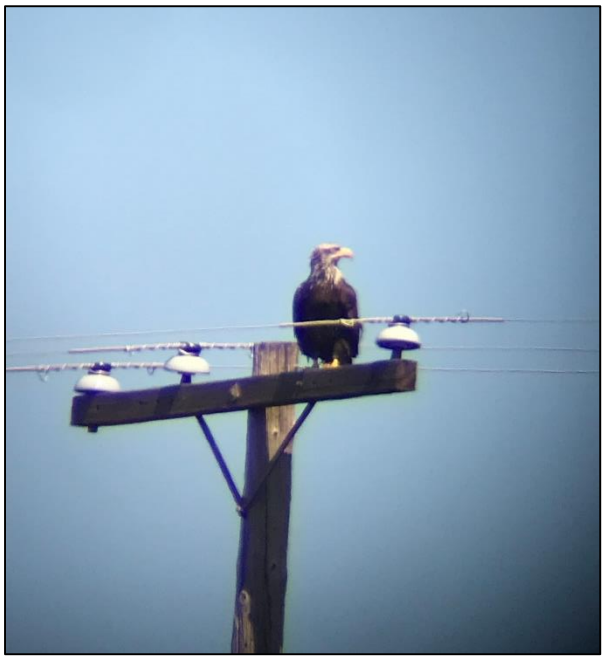
Photograph 82. Cleveland's ragwort (*Senecio clevelandii* var. *clevelandii*; CNPS Rank 4.3) within the Phase 1 Study Area (taken June 15, 2018).



Photograph 83. Marsh zigadenus (*Toxicoscordion fontanum*; CNPS Rank 4.2) within the Phase 1 Study Area (taken May 18, 2018).



Photograph 84. Golden eagle (*Aquila chrysaetos*; BGEA, CFP, BCC) within the Phase 1 Study Area (taken April 2, 2018).



Photograph 85. Bald eagle (*Haliaeetus leucocephalus*; BGEA, SE, CFP BCC) within the Phase 1 Study Area (taken April 25, 2018).



Photograph 86. Peregrine falcon (*Falco peregrinus*; CFP, BCC) nest located outside of the Phase 1 Study Area (taken April 3, 2018).



Photograph 87. Western pond turtle (*Actinemys marmorata*; SSC) within the Phase 1 Study Area (taken April 3, 2018).



Photograph 88. Western pond turtle within the Phase 1 Study Area (taken April 3, 2018).



Photograph 89. Foothill yellow-legged frog (*Rana boylii*; SC, SCC) egg masses within Butts Creek in the southern portion of the Phase 1 Study Area (taken April 4, 2018).



Photograph 90. Foothill yellow-legged frog egg masses within Butts Creek in the southern portion of the Phase 1 Study Area (taken April 4, 2018).