DRAFT PARTIALLY REVISED ENVIRONMENTAL IMPACT REPORT

Guenoc Valley Mixed Use Planned Development Project



July 2024

LEAD AGENCY:

Lake County Community Development Department
255 N. Forbes St. #330
Lakeport, CA 95453

Draft Partially Revised Environmental Impact Report

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Executive Summary

INTRODUCTION

This section provides a summary of the Guenoc Valley Mixed-Use Planned Development Project (Proposed Project) Partially Revised Environmental Impact Report (PREIR). This chapter also includes a table summarizing the impacts of the Modified Project that have been assessed within this PREIR and mitigation measures that have been identified to reduce potentially significant impacts.

PROJECT UNDER REVIEW

The Proposed Project includes the development of a master planned mixed-use resort and residential community within a portion of the Guenoc Valley Ranch property. The Project as evaluated in the 2020 EIR includes a General Plan amendment to designate the 16,000-acre Guenoc Valley Site (Project Site) as Resort Commercial and rezone it to Guenoc Valley District (GVD). These amendments would allow for the development of up to 400 hotel rooms, 450 resort residential units, 1,400 residential estates, and 500 workforce co-housing units (the "Original Project") within the zoning district. Phase 1 of the Original Project included the phased subdivision and related entitlements to allow up to 401 residential estates, 141 resort residential units, 177 hotel units, and accessory resort and commercial uses. In addition, Phase 1 includes a subdivision and rezoning of an off-site parcel (Middletown Housing Site) to accommodate 21 single family residences with optional accessory dwelling units, 29 duplex units in 15 structures, and a community clubhouse and associated infrastructure. Other off-site infrastructure improvements under Phase 1 analyzed in the 2020 EIR included a proposed water supply well on an off-site parcel (Off-Site Well Site) and pipeline located adjacent to and within Butts Canyon Road, along with intersection and electrical improvements (collectively referred to as 'Off-Site Improvements').

The Project Modifications revise the Original Project analyzed in the 2020 EIR such that 25 building sites within the Equestrian Center area and 39 building sites within the northeastern portion of the Project Site would be relocated further from the wildland/urban interface, and various connector roads and road buffers would be added. The Project Modifications include voluntary measures and some contained within a settlement agreement with the State of California, and which are intended to further reduce the wildfire risks and greenhouse gas emissions associated with the Proposed Project. The Project Modifications include the following:

- A new proposed emergency route called the Grange Road Connector will connect the Guenoc Valley Site with the County-maintained Grange Road to the north. The Grange Road Connector will be approximately 3.9 miles, with 2.2 miles occurring on the Guenoc Valley Site and 1.7 miles sited on the off-site property to the north;
- Relocating 25 residential building sites that the 2020 Project would have located on a hilltop near the proposed Equestrian Center and 39 residential building sites that the 2020 Project would have located within the northeastern portion of the Project site such that they would be located further from the wildland/urban interface;
- Reconfiguring the roadway plan so that there are no dead-end, non-looped road segments that exceed 1-mile in length;

- Improving an area of approximately 10 feet on each side of roadways with hardscape, to the extent topography permits;
- Removal of the camping area in the northern portion of the property;
- Funding and staffing commitments for the onsite Emergency Response Center; and
- Various renewable energy commitments and greenhouse gas reduction measures that will not change the development footprint.

PROJECT LOCATION

The Guenoc Valley Site (Project Site) consists of approximately 16,000 acres located in the southeast portion of incorporated Lake County (County). The site is generally bounded by Long Valley and Coyote Valley to the west, a U.S. Coast Guard LORAN station military reservation to the northwest, the Cedar Mountains to the north, and the Lake County / Napa County border to the east. The project site is located in the "Middletown," "Jericho Valley," "Detert Reservoir," and "Aetna Springs" U.S. Geological Survey (USGS) 7.5 Minute Topographic Quadrangles. The site is located north and south of an approximately five mile segment of Butts Canyon Road, approximately four miles east of the intersection of State Route (SR) 29 / Butts Canyon Road, and 1.5 miles west of the intersection of Snell Valley Road / Butts Canyon Road. The project site is approximately 3.5 miles east of the unincorporated community of Middletown, and is directly adjacent to the Napa County line.

SUMMARY TABLE

Table ES-1 presents a summary of project impacts and proposed mitigation measures that would further avoid or minimize potential impacts. These mitigation measures were either introduced in the 2020 EIR or modified within this PREIR; the full mitigation measures are included in **Section 5**. In the table, the level of significance of each environmental impact is indicated both before and after the application of the recommended mitigation measure(s). For detailed discussions of all project impacts and mitigation measures, refer to environmental analysis sections in **Section 3** and **Section 4** of this PREIR.

Acronyms used within **Table ES-0-1** to describe levels of significance are explained below:

- BI – Beneficial impact
- NI – No impact
- LTS – Less than significant
- PS – Potentially significant
- S – Significant
- SU – Significant and unavoidable

Table ES-1: Summary of Impacts and Mitigation Measures

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
	Aesthetics			
3.1-1 – 3.1-3	No changes to Aesthetics Impacts are anticipated as a result of the Project Modifications and therefore this area was not assessed further within this PREIR.		Mitigation measures listed in the 2020 EIR remain applicable to the Modified Project. See **Appendix D**.	
	Land Use and Agriculture			
3.2-1	Conflict with land use Plans, Policies, or Regulation adopted for the purpose of avoiding or mitigating an environmental effect.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.2-2	Create land use conflicts or be incompatible with existing or proposed adjacent land uses.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** LTS \ N/A	MM 3.2-1: Right-to-Farm Disclosure. No modifications necessary for Project Modifications.	PS \ LTS
3.2-3	Convert prime farmland, unique farmland, or farmland of statewide importance (important farmland), as shown on maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use.	**Guenoc Valley Site:** S \ SU **Off-Site Areas:** LTS \ N/A	MM 3.2-2: Agricultural Conservation. No modifications necessary for Project Modifications.	S \ SU
3.2-4	Conflict with existing zoning for agricultural use.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** NI \ N/A	None Required	LTS \ N/A

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
3.2-5	Result in the loss of forest land or conversion of forest land to non-forest use.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.2-6	Cumulative land use and agricultural impacts.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
	Air Quality			
3.3-1	Conflict with or obstruct implementation of the applicable air quality plan	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.3-2	Generate construction related emissions resulting in a cumulatively considerable net increase of any criteria air pollutant for which the project region is nonattainment under an applicable Federal or state ambient air quality standard.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.3-1: Measures to Reduce Short-term Construction Related Emission. No modifications necessary for Project Modifications.	PS \ LTS
3.3-3	Generate operational related emissions in a cumulatively considerable net increase of any criteria air pollutant for which the project region is nonattainment under an applicable Federal or state ambient air quality standards.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.3-2: Project Measures to Reduce Operational Emissions. No modifications necessary for Project Modifications.	PS \ LTS

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
3.3-3	Generate operational related emissions in a cumulatively considerable net increase of any criteria air pollutant for which the project region is nonattainment under an applicable Federal or state ambient air quality standards.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.3-2: Project Measures to Reduce Operational Emissions. No modifications necessary for Project Modifications.	PS \ LTS
3.3-4	Carbon monoxide emissions at local intersections could violate an air quality standard or contribute substantially to an existing or projected air quality violation.	**Guenoc Valley Site:** LTS \ LTS **Off-Site Areas:** LTS \ LTS	None Required	LTS \ LTS
3.3-5	Expose sensitive receptors to substantial pollutant concentrations.	**Guenoc Valley Site:** LTS \ LTS **Off-Site Areas:** LTS \ LTS	None Required	LTS \ LTS
3.3-6	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	**Guenoc Valley Site:** LTS \ LTS **Off-Site Areas:** LTS \ LTS	None Required	LTS \ LTS
	Biological Resources			
3.4-1	Substantial adverse effect, either directly through habitat modifications or indirectly, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.	**Guenoc Valley Site:** S \ LTS **Off-Site Areas:** S \ LTS	*Modifications to the following:* MM 3.4-2: Work Environmental Awareness Training (added Grange Road Connector); MM 3.4-8: Special-Status Birds – Nesting (added Grange Road Connector); MM 3.4-10: Northwestern Pond Turtle Impacts – Construction (updated per Federal listing status). *No modifications to the following from the 2020 EIR:*	S \ LTS

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
			MM 3.4-1: Construction Best Management Practices; MM3.4-2: Work Environmental Awareness Training; MM 3.4-3: General Special-Status Plant Mitigation; MM 3.4-4: American Badger Impacts; MM 3.4-5: Ringtail Impacts; MM 3.4-6: Bat Maternity Roosts and Special-Status Bat Impacts; MM 3.4-7: Artificial Lighting Impacts; MM 3.4-8: Special-Status Birds – Nesting; MM 3.4-9: Special-Status Birds – Burrowing Owl; MM 3.4-10: Northwestern Pond Turtle Impacts – Construction; MM 3.4-11: Foothill Yellow-Legged Frog Impacts – Construction; MM 3.4-12: Invasive Species Management – Operation; MM 3.4-13: Aquatic Habitat Public Signage; MM 3.9-1: Storm Water Pollution Prevention Plan; MM 3.9-2: Aggregate/Concrete Monitoring and Reporting Program; MM 3.4-21: Domestic Cat Predation; and MM 3.10-2: Construction Noise Reduction.	
3.4-2	Substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.	**Guenoc Valley Site:** S \ LTS **Off-Site Areas:** S \ LTS	*Modifications to the following:* MM 3.4-15: Impact to Sensitive Habitats (added newly designated serpentine rock outcrop); MM 3.4-18: Sensitive Habitat Impacts from Wildfire Clearing (added newly designated serpentine rock outcrop). *No modifications to the following from the 2020 EIR:* MM 3.4-1 Construction Best Management Practices; MM 3.9-1 Storm Water Pollution Prevention Plan; MM 3.9-2 Aggregate/Concrete Monitoring and Reporting;	S \ LTS

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
			MM 3.4-14: Future Phases Biological Review; MM 3.4-16: Oak Mitigation Plan; and MM 3.4-17: Aquatic Resources Protection and Management.	
3.4-3	Substantial adverse effect on state or Federally protected wetlands through direct removal, filling, hydrological modification, or other means.	**Guenoc Valley Site:** S \ LTS **Off-Site Areas:** LTS \ LTS	MM 3.4-1 Construction Best Management Practices; MM 3.9-1 Storm Water Pollution Prevention Plan; MM 3.9-2 Aggregate/Concrete Monitoring and Reporting; MM 3.4-17: Aquatic Resources Protection and Management. No modifications necessary for Project Modifications.	S \ LTS
3.4-4	Interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	**Guenoc Valley Site:** S \ LTS **Off-Site Areas:** LTS \ LTS	MM 3.4-7: Artificial Lighting Impacts; MM 3.4-19: Wildlife Movement – Fencing; MM 3.4-20: Wildlife Movement – Future Phases; and MM 3.4-14: Future Phases Biological Review. No modifications necessary for Project Modifications.	S \ LTS
3.4-5	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	**Guenoc Valley Site:** S \ LTS **Off-Site Areas:** S \ LTS	MM 3.4-14: Future Phases Biological Review; and M 3.4-16: Oak Mitigation Plan. No modifications necessary for Project Modifications.	S \ LTS
3.4-6	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.	**Guenoc Valley Site:** S \ LTS **Off-Site Areas:** NI \ NI	MM 3.4-14: Future Phases Biological Review; and M 3.4-16: Oak Mitigation Plan. No modifications necessary for Project Modifications.	S \ LTS
3.4-7	Cumulative impacts to biological resources.	**Guenoc Valley Site:** S \ LTS **Off-Site Areas:** LTS \ LTS	MM 3.4-1: Construction Best Management Practices; MM3.4-2: Work Environmental Awareness Training; MM 3.4-3: General Special-Status Plant Mitigation; MM 3.4-4: American Badger Impacts;	S \ LTS

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
			MM 3.4-5: Ringtail Impacts; MM 3.4-6: Bat Maternity Roosts and Special-Status Bat Impacts; MM 3.4-7: Artificial Lighting Impacts; MM 3.4-8: Special-Status Birds – Nesting; MM 3.4-9: Special-Status Birds – Burrowing Owl; MM 3.4-10: Northwestern Pond Turtle Impacts – Construction; MM 3.4-11: Foothill Yellow-Legged Frog Impacts – Construction; MM 3.4-12: Invasive Species Management – Operation; MM 3.4-13: Aquatic Habitat Public Signage; MM 3.4-15: Impact to Sensitive Habitats; MM 3.4-16: Oak Mitigation Plan; MM 3.4-17: Aquatic Resources Protection and Management; MM 3.4-18: Sensitive Habitat Impacts from Wildfire Clearing; MM 3.4-19: Wildlife Movement – Fencing; MM 3.4-20: Wildlife Movement – Future Phases; and MM 3.4-21: Domestic Cat Predation. No modifications necessary for Project Modifications.	
	Cultural Resources			
3.5-1	Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** NI \ N/A	*Modifications to the following:* MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation (updated to specifically call out two additional resources).	PS \ LTS
3.5-2	Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	*Modifications to the following:* MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation (updated to specifically call out two additional resources).	PS \ LTS

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
			MM 3.5-2: Worker Awareness Training, Construction Monitoring, and Walt Work (Unanticipated Discoveries Plan moved to new Tribal Cultural Resources mitigation). *No modifications to the following from the 2020 EIR:* MM 3.5-3: Future Phase Investigations.	
3.5-3	Disturb any human remains, including those interred outside of formal cemeteries.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	*Modifications to the following:* MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation (updated to specifically call out two additional resources). *No modifications to the following from the 2020 EIR:* MM 3.5-4: Cease Work, Contact County Coroner.	PS \ LTS
3.5-5	Cumulative impacts to cultural resources and tribal cultural resources.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	*Modifications to the following:* MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation (updated to specifically call out two additional resources); and MM 3.5-2: Worker Awareness Training, Construction Monitoring, and Walt Work (Unanticipated Discoveries Plan moved to new Tribal Cultural Resources mitigation). *No modifications to the following:* MM 3.5-3: Future Phase Investigations; and MM 3.5-4: Cease Work, Contact County Coroner.	PS \ LTS
	Geology and Soils			
3.6-1	Directly or indirectly cause potential substantial risk of loss, injury, or death due to seismic related hazards.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.6-1: Final Design-Level Geotechnical Report(s). No modifications necessary for Project Modifications.	PS \ LTS
3.6-2	Substantial soil erosion or loss of topsoil.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
3.6-3	Development on expansive soils or on unstable soils.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.6-1: Final Design-Level Geotechnical Report(s). No modifications necessary for Project Modifications.	PS \ LTS
3.6-4	Have soils inadequate to support septic or alternative wastewater systems.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** NI \ N/A	None Required	LTS \ N/A
3.6-5	Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.6-2: Worker Training, Cease Work, and Consul with Qualified Paleontologist. No modifications necessary for Project Modifications.	PS \ LTS
3.6-6	Cumulative geology and soils impact.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.6-1: Final Design-Level Geotechnical Report(s); and MM 3.6-2: Worker Training, Cease Work, and Consul with Qualified Paleontologist. No modifications necessary for Project Modifications	PS \ LTS
	Greenhouse Gas Emissions			
3.7-1	Generate greenhouse gas emissions either directly or indirectly, that may have a significant impact on the environment.	**Guenoc Valley Site:** PS \ SU **Off-Site Areas:** PS \ SU	*Modifications to the following:* MM 3.7-1: Operational GHG Emissions (additional requirements to achieve compliance with CALGreen Tier 2 and limit use of natural gas or propane at restaurants consistent with Settlement Agreement). *No modifications to the following from the 2020 EIR:* MM 3.7-2: Construction GHG Emissions; and MM 3.4-16: Oak Mitigation Plan.	PS \SU
3.7-2	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	**Guenoc Valley Site:** PS \ SU **Off-Site Areas:** PS \ SU	*Modifications to the following:* MM 3.7-1: Operational GHG Emissions (additional requirements to achieve compliance with CALGreen Tier 2 and limit use of natural gas or propane at restaurants consistent with Settlement Agreement).	PS \SU

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
	Hazards and Hazardous Materials			
3.8-1	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** LTS \ N/A	MM 3.8-1: Hazardous Materials Best Management Practices. No modifications necessary for Project Modifications.	PS \ LTS
3.8-2	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment or from being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	*Modifications to the following:* MM 3.8-5: Asbestos Dust Mitigation Plan (minor language update for consistency with current LCAQMD practices). *No modifications to the following from the 2020 EIR:* MM 3.8-2: Prepare a Hazardous Materials Contingency Plan; MM 3.8-3: Minimize Potential for Accidental Release During Construction; MM 3.8-4: Reporting Geothermal Wells	
3.8-3	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	**Guenoc Valley Site:** N/A \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.8-4	Potential for cumulative effects associated with hazards and hazardous materials.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
	Hydrology and Water Quality			
3.9-1	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.9-1: Storm Water Pollution Prevention Plan; and MM 3.9-2: Aggregate/Concrete Monitoring and Reporting Program. No modifications necessary for Project Modifications.	PS \ LTS
3.9-2	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:**	MM 3.9-3: Off-Site Groundwater Well Safe Yield Analysis and Monitoring. No modifications necessary for Project Modifications.	PS \ LTS

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
	may impede sustainable groundwater management of the basin.	PS \ LTS		
3.9-3	Substantially alter the existing drainage pattern which would: result in erosion, siltation or flooding; exceed the capacity of stormwater drainage systems; or provide substantial additional sources of polluted runoff.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.9-4	Result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.9-4: Flood Plan Analysis; MM 3.9-5: Inundation Mapping; and MM 3.9-6 Incorporation of Floodplains and Dam Inundation Zones in Site Plans. No modifications necessary for Project Modifications.	PS \ LTS
3.9-5	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.9-6	Cumulative hydrology and water quality impacts.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
	Noise			
3.10-1 – 3.10-5	No changes to Noise Impacts are anticipated as a result of the Project Modifications and therefore this area was not assessed further within this PREIR.		Mitigation measures listed in the 2020 EIR remain applicable to the Modified Project. See **Appendix D**.	
	Population and Housing			
3.11-1 – 3.11-2	No changes to Population and Housing Impacts are anticipated as a result of the Project Modifications and therefore this area was not assessed further within this PREIR.		Mitigation measures listed in the 2020 EIR remain applicable to the Modified Project. See **Appendix D**.	

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
	Public Services			
3.12-1 – 3.12-8	No changes to Public Services Impacts are anticipated as a result of the Project Modifications and therefore this area was not assessed further within this PREIR.		Mitigation measures listed in the 2020 EIR remain applicable to the Modified Project. See **Appendix D**.	
	Transportation and Traffic			
3.13-1	Conflict with program, plan, ordinance, or policy addressing roadways during construction.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.13-2	Conflict with program, plan, ordinance or policy addressing roadways during operation assuming future baseline plus project conditions.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.13-1: Implement Improvements at SR-29 and Butts Canyon Road. No modifications necessary for Project Modifications.	PS \ LTS
3.13-3	Conflict with program, plan, ordinance or policy addressing transit during operation.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.13-4	Conflict with program, plan, ordinance or policy addressing bicycle, or pedestrian facilities during operation.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.13-5	Conflict or be inconsistent with CEQA guidelines § 15064.3, subdivision (b).	**Guenoc Valley Site:** PS \ SU **Off-Site Areas:** PS \ SU	MM 3.13-4: Implement a Transportation Demand Management Program; and MM 3.13-5: Pay a Fair Share towards Pedestrian and Bicycle Improvements. No modifications necessary for Project Modifications.	PS \ SU
3.13-6	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:**	None Required	LTS \ N/A

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
	uses (e.g., farm equipment).	LTS \ N/A		
3.13-7	Result in inadequate emergency access.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.13-8	Conflict with program, plan, ordinance or policy addressing roadways during under cumulative conditions	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.13-1: Implement Improvements at SR-29 and Butts Canyon Road; MM3.13-2: Pay Fair Share towards Lake County Intersection Improvements; and MM 3.13-3: Conduct Traffic Study and Implement Mitigation for Future Phases. No modifications necessary for Project Modifications.	PS \ SU
	Tribal Cultural Resources			
3.5-4	Cause a substantial adverse change in the significance of a tribal cultural resource pursuant to §21080.3.1 and §21080.3.2.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	*New mitigation measures:* MM TCR-1: Phase 1 Avoidance Strategies; and MM TCR-2: Unanticipated Discoveries Plan and Construction Monitoring.	PS \ LTS
3.5-5	Cumulative impacts to cultural resources and tribal cultural resources.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	*New mitigation measures:* MM TCR-1: Phase 1 Avoidance Strategies; and MM TCR-2: Unanticipated Discoveries Plan and Construction Monitoring. *No modifications to:* MM 3.5-3: Future Phase Investigations; and MM 3.5-4: Cease Work, Contact County Coroner.	PS \ LTS
	Utilities			
3.14-1 – 3.14-9	No changes to Utilities Impacts are anticipated as a result of the Project Modifications and therefore this area was not assessed further within this PREIR.		Mitigation measures listed in the 2020 EIR remain applicable to the Modified Project. See **Appendix D**.	
	Energy			
3.15-1	No changes to Energy Impacts are anticipated as a result of the Project		Mitigation measures listed in the 2020 EIR remain applicable to the Modified Project. See **Appendix D**.	

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
– 3.15-4	Modifications and therefore this area was not assessed further within this PREIR.			
	Wildfire Evacuation*			
3.16-1	Substantially impair An Adopted Emergency Response Plan Or Emergency Evacuation Plan, or result in an inconsistency with A safety element that has been updated to integrate wildfire and Evacuation concerns, or recommendations developed by the California Board of Forestry regarding the safety of subdivisions.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	*New mitigation measures for Phase 1:* MM 3.16-3: Prepare South Lake County Evacuation Traffic Management Plan to Reduce Near-Term Evacuation Times, Incorporate in Updated Lake County Emergency Operations Plan (EOP), and Implement Evacuation Traffic Management Measures MM 3.16-4: Reduce Evacuation Time Impacts on SR 29 by Minimizing Project-Related Evacuation Traffic on SR-29 MM 3.16-5: Implement SR 29 Traffic Signal Evacuation Operational Enhancement Measures MM 3.16-6: Provide Dedicated Project Evacuation Shuttles for Phase 1 Hotel Uses *New mitigation measures for Future Phases:* MM 3.16-7: Updated South Lake County Evacuation Traffic Management Plan MM 3.16-8: Provide Dedicated Project Evacuation Shuttles for Full Build-out Hotel Uses	S \ LTS
3.16-5	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fire.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.16-2: Post-Wildfire Emergency Response. No modifications necessary for Project Modifications. *New mitigation measures for Phase 1:* MM 3.16-3: Prepare South Lake County Evacuation Traffic Management Plan to Reduce Near-Term Evacuation Times, Incorporate in Updated Lake County Emergency Operations Plan (EOP), and Implement Evacuation Traffic Management Measures; MM 3.16-4: Reduce Evacuation Time Impacts on SR 29 by Minimizing Project-Related Evacuation Traffic on SR-29; MM 3.16-5 Implement SR 29 Traffic Signal Evacuation	S \ LTS

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
			Operational Enhancement Measures; MM 3.16-6: Provide Dedicated Project Evacuation Shuttles for Phase 1 Hotel Uses; MM 3.16-7: Updated South Lake County Evacuation Traffic Management Plan; and MM 3.16-8: Provide Dedicated Project Evacuation Shuttles for Full Build-out Hotel Uses.	
	Wildfire Risks			
3.16-2	Exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from wildfire or the uncontrolled spread of wildfire.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A
3.16-3	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.16-1: Fire Prevention during Construction. No modifications necessary for Project Modifications.	PS \ LTS
3.16-4	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.16-2: Post-Wildfire Emergency Response. No modifications necessary for Project Modifications.	PS \ LTS
3.16-5	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fire.	**Guenoc Valley Site:** PS \ LTS **Off-Site Areas:** PS \ LTS	MM 3.16-2: Post-Wildfire Emergency Response; MM 3.16-3: Prepare South Lake County Evacuation Traffic Management Plan to Reduce Near-Term Evacuation Times, Incorporate in Updated Lake County Emergency Operations Plan (EOP), and Implement Evacuation Traffic Management Measures; MM 3.16-4: Reduce Evacuation Time Impacts on SR 29 by Minimizing Project-Related Evacuation Traffic on SR-29;	PS \ LTS

Impact Number	Environmental Impact	2020 EIR Conclusion (Original Project: Level of Significance Before Mitigation \ After Mitigation)	Mitigation Measures	PREIR Conclusion (Modified Project: Level of Significance Before Mitigation \ After Mitigation)
			MM 3.16-5 Implement SR 29 Traffic Signal Evacuation Operational Enhancement Measures; MM 3.16-6: Provide Dedicated Project Evacuation Shuttles for Phase 1 Hotel Uses; MM 3.16-7: Updated South Lake County Evacuation Traffic Management Plan; and MM 3.16-8: Provide Dedicated Project Evacuation Shuttles for Full Build-out Hotel Uses.	
3.16-6	Cumulative impacts.	**Guenoc Valley Site:** LTS \ N/A **Off-Site Areas:** LTS \ N/A	None Required	LTS \ N/A

Note: Impact 3.16-5 is analyzed in **Section 3** of this PREIR for potential impacts to wildfire evacuation per the Court, and again in **Section 4.10** for an assessment of potential impacts due to Project Modifications.

Section 1 | Introduction

1.1 BACKGROUND AND PURPOSE OF THE DRAFT PARTIALLY REVISED ENVIRONMENTAL IMPACT REPORT (PREIR)

1.1.1 Summary of Past CEQA Analyses

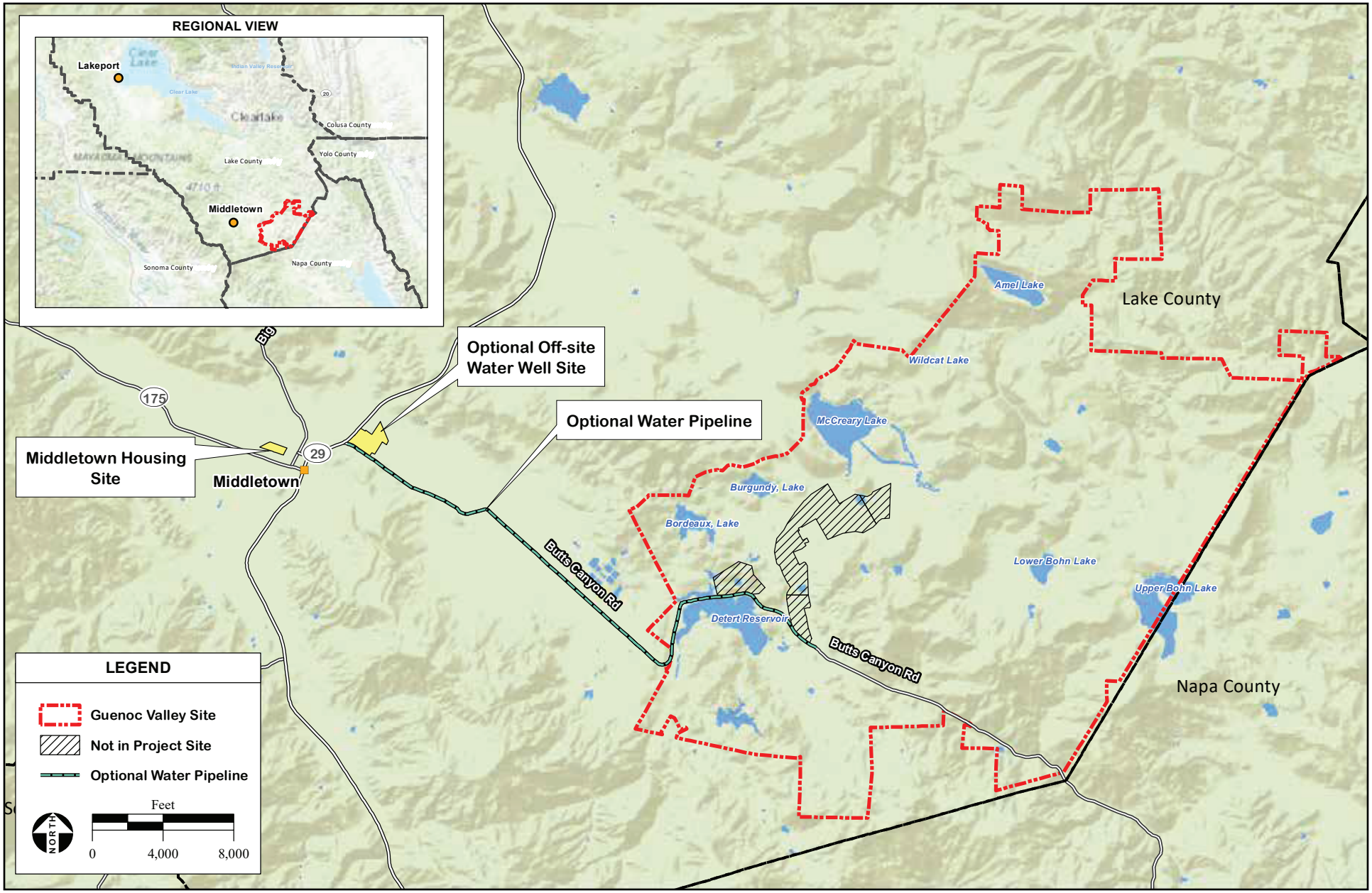
In July 2020, Lake County (County) certified the Environmental Impact Report (2020 EIR) for the Guenoc Valley Mixed-Use Planned Development Project (Project), which assessed the potential environmental impacts of implementing the Project as required by the California Environmental Quality Act (CEQA). The Project as evaluated in the 2020 EIR includes a General Plan amendment to designate the 16,000-acre Guenoc Valley Site (Project Site) as Resort Commercial and rezone it to Guenoc Valley District (GVD). These amendments would allow for the development of up to 400 hotel rooms, 450 resort residential units, 1,400 residential estates, and 500 workforce co-housing units (the "Original Project") within the zoning district.

The 2020 EIR analyzed the potential environmental effects of the proposed General Plan amendment and rezoning of the Guenoc Valley Site to GVD on a programmatic level, and conducted a project-level analysis of Phase 1 of the Original Project. Phase 1 of the Original Project included the phased subdivision and related entitlements to allow up to 401 residential estates, 141 resort residential units, 177 hotel units, and accessory resort and commercial uses. In addition, Phase 1 includes a subdivision and rezoning of an off-site parcel (Middletown Housing Site) to accommodate 21 single-family residences with optional accessory dwelling units, 29 duplex units in 15 structures, and a community clubhouse and associated infrastructure. Other off-site infrastructure improvements under Phase 1 analyzed in the 2020 EIR included a proposed back-up water supply well on an off-site parcel (Off-Site Well Site) and pipeline located adjacent to and within Butts Canyon Road, along with intersection and electrical improvements (collectively referred to as 'Off-Site Improvements'). The Guenoc Valley Site, Middletown Housing Site, and Off-Site Improvements are located entirely within unincorporated Lake County (**Figure 1-1**).

The Draft 2020 EIR (State Clearinghouse No. 2019049134) was circulated for public review and comment for a period of 45 days that began on February 21, 2020 and ended on April 6, 2020. Additionally, the County Planning Commission held a public meeting on March 12, 2020 to receive comments from government agencies and the public on the Draft EIR. During the public review period, written and oral comments were received on the Draft EIR. The County reviewed and responded to those comments, and made appropriate changes to the Final EIR dated June 2020 as part of that process. On July 15, 2020, the County published an Errata to the Final EIR to address late-filed comments received from the public and government agencies, which resulted in minor revisions and clarifications to the Final EIR. The 2020 EIR was certified and the Project was approved by the Board of Supervisors on July 21, 2020.

1.1.2 Ruling, Judgment, and Writ of Mandate

After the Original Project was approved in 2020, the Center for Biological Diversity (CBD) and California Native Plant Society (CNPS) filed petitions for writs of mandate in the Superior Court for the County of



Source: WRA Environmental, 8/2019; Lotusland Investment Holdings, Inc. 7/2019; USGS, 2019; AES, 2/12/2020

FIGURE 1-1

REGIONAL LOCATION

Lake challenging the County's approval, including the County's certification of the EIR, asserting that the EIR was inadequate under CEQA on various grounds. The petitions were consolidated for purposes of briefing and hearing under Lake County Superior Court Case Number CV 421152. The State Attorney General intervened in the pending CBD action and filed its own petition for writ of mandate (Case Number CV 421193).

On January 4, 2022, the Lake County Superior Court issued a Ruling and Order on Petitions for Writ of Mandate and issued two separate writs of mandate (Ruling; **Appendix A**). The Superior Court found that the EIR adequately complied with CEQA in all areas except for its analysis of impacts relating to community evacuations, where the Court identified two errors with the 2020 EIR analysis. The first is that the "evidence primarily addresses the issue of whether the Project's residents could safely leave the Project Site in the event of a wildfire. This evidence does not focus on the issue that is required to be addressed by CEQA; whether evacuation of the residents in the nearby area would be affected by the evacuation of the Project's residents during a wildfire. Second, this evidence cannot be considered substantial evidence. Substantial evidence includes 'expert opinion supported by facts.' (14 CCR §15384(b).) Unsubstantiated opinion does not constitute substantial evidence. (14 CCR §15384(a).) The conclusion reached by the County as it relates to emergency evacuation plans is based on unsubstantiated expert opinions" (**Appendix A**).

On February 25, 2022, the Lake County Superior Court entered two separate judgments requiring the County to set aside its certification of the EIR; vacate its findings relating to impacts to community evacuation or an adopted emergency evacuation plan; set aside and vacate all approvals in connection with the County's approval of the Project and certification of the EIR, including amendments to the Lake County General Plan, zoning ordinance text, and zoning maps; and take specific actions necessary to bring its EIR and findings as they relate to the issue of community emergency evacuation routes into compliance with the Court's Ruling and Order and CEQA (**Appendix B**).

1.1.3 Settlement Agreement

On July 5, 2022, the State filed a notice of appeal of the Superior Court's decision. Subsequently, the Applicant voluntarily entered into a Settlement Agreement with the State to resolve the State's petition and appeal which was thereafter dismissed (**Appendix C**). The Settlement Agreement included several project modifications that the Applicant has agreed to incorporate into the Project design pertaining to wildfire prevention and protection, greenhouse gas (GHG) emissions, and land use, as discussed in more detail in **Section 2.2** below.

1.1.4 Statutory Background

CEQA is a legislatively created statute set forth in Public Resources Code (PRC) Sections 21000-21189.91. The CEQA Guidelines, which have been prepared by the State Office of Planning and Research (OPR) and the California Natural Resources Agency as a means to interpret and provide guidance on implementation of CEQA, are included in the California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, Sections 15000-15387 (CEQA Guidelines).

Where a court finds that CEQA violations have occurred, judicial remedies must only include the mandates needed to comply with CEQA. (PRC Section 21168.9(b); *see also* CEQA Guidelines Section 15234.) To that end, CEQA Guidelines Section 15234 provides that an agency revising its environmental document per a court's order "need not expand the scope of analysis on remand beyond that specified by the court." (CEQA Guidelines Section 15234(d).)

The CEQA Guidelines further acknowledge that "additional environmental review shall only be required by the court consistent with principles of res judicata." (CEQA Guidelines Section 15234(d).) Res judicata is the legal concept that "prevents relitigation of the same cause of action in a second suit between the same parties or parties in privity with them" (California Supreme Court in *Mycogen v. Monsanto Company* (2002) 28 Cal.4th 888, 896; see also *Ione Valley Land, Air, & Water Defense Alliance, LLC v. County of Amador* (2019) 33 Cal.App.5th 165, 170-173). Once an agency has taken steps to correct the deficiencies in an EIR identified in a writ of mandate, further challenges to the EIR based on issues that were raised or could have been raised in the prior litigation are barred by res judicata. *Ione Valley* (2019) 33 Cal.App.5th 165, 172. As the Court of Appeal explained in *Sierra Club v. County of Fresno* (2020) 57 Cal.App.5th 979 (*Friant Ranch II*), "[b]ased on the principle set forth in *Ione Valley*, new challenges to the parts of the EIR that have been upheld are not allowed in proceedings on remand." (57 Cal.App.5th at p. 990.)

Currently, under the CEQA Guidelines provision and case law described above regarding the principle of res judicata, new challenges to parts of the 2020 FEIR that were not raised at the trial court level by the petitioners are not allowed to be brought to the trial court in a second suit or upon remand. CBD and CNPS have appealed the trial court's judgments upholding portions of the 2020 FEIR other than the analysis of community evacuation impacts. The parties have fully briefed the appellate court, but a hearing on the matter has not yet been scheduled. If the Court of Appeal affirms the ruling of the trial court, and that ruling is not reviewed by the California Supreme Court, then no new challenges to the 2020 FEIR will be permissible.

1.2 DOCUMENT ORGANIZATION

The County has prepared this PREIR to address the CEQA adequacy issues identified by the Superior Court with regard to the 2020 EIR's analysis of community evacuation in the event of wildfire. In addition, some changes to the Project have occurred since the County's certification of the 2020 EIR, namely those changes voluntarily agreed to by the Applicant as set forth in the Settlement Agreement, updates to address revised State codes, and the provision of an additional, third emergency evacuation route. These changes are referred to throughout this PREIR as the "Project Modifications" and are described in detail in **Section 2.0**. The Project Modifications do not increase the overall amount of development that would be allowed. The Project Modifications include:

- Increasing the density of lots within some neighborhoods and decreasing the average lot size (described more fully in **Section 2.2.1**, subsection Wildfire-Related Project Modifications);
- Decreasing the total length of internal Project roadways proposed while increasing roadway connectivity for better circulation in emergencies (as described in **Section 2.2.1**, subsection Wildfire-Related Project Modifications);
- New energy efficiency and renewable energy commitments (as described in **Section 2.2.1**, subsection Greenhouse Gas Emissions Reduction Measures);
- Updates to the Wildfire Prevention Plan (described in **Section 2.2.3**); and
- Addition of a third emergency evacuation route called the 'Grange Road Connector' (described in **Section 2.2.2**).

In addition to addressing the issues identified in the Court's Ruling, this PREIR assesses whether or not the Project Modifications would result in new or more substantially significant environmental effects, consistent with criteria outlined in CEQA Guidelines Section 15162. Impacts that were found by the Court to be adequately addressed, and/or that would not change as a result of the Project Modifications, are not re-assessed. For example, Section 4.2, "Air Quality", only assesses the potential incremental increase

in air pollutant emissions resulting from the Project Modifications to determine if a new or substantially more severe impact would occur beyond those effects described in the 2020 EIR, because the Court did not vacate the analyses of air quality impacts of the 2020 EIR. Consistent with the 2020 EIR, this PREIR provides a project-level analysis for Phase 1; the program-level analysis of future phases has not changed from the 2020 EIR with the exception of the Wildfire Evacuation Analysis, as required by the Superior Court's Ruling. The analysis provides sufficient detail and clarity such that the revised analysis is disclosed to the public, and decision makers can make an informed decision regarding the adequacy of the PREIR analysis.

As discussed further below, the County will consider comments received on the contents of this PREIR within the public comment period and will prepare written responses as required by CEQA. Pursuant to Section 15088.5(f)(2) of the CEQA Guidelines, reviewers are directed to limit their comments to the information contained in this PREIR that was revised and recirculated. Specifically, comments should be limited to the revised discussion of the Project's potential impacts related to wildfire evacuation and the assessment of whether or not the Project Modifications would result in new or more substantially significant environmental effects. Based on CEQA and legal requirements, including *res judicata*, the County need not address comments on issues that were covered in the 2020 EIR (included as **Appendix D**) that were not overturned by the Superior Court.

This document is organized into the following sections. Note that section numbering differs from the 2020 EIR organization.

Section 1, Introduction. This chapter describes the purpose and organization of the PREIR, as well as the background of the various agreements and Superior Court's Ruling that have occurred since certification of the 2020 EIR.

Section 2, Project Modifications. This chapter summarizes the Original Project components that have not changed since the 2020 EIR and describes the Project Modifications that have occurred.

Section 3, Wildfire. This chapter analyzes the potential wildfire impacts, specifically community evacuation impacts, as required by the Court Ruling.

Section 4, Assessment of Environmental Impacts from Project Modifications. This chapter analyzes the potential impacts of the Project Modifications on the relevant resource areas and discusses the incremental change as compared to the 2020 EIR.

Section 5, Revised Mitigation Monitoring and Reporting Program. A revised Mitigation Monitoring and Reporting Program (MMRP) is included as Section 5. The revised MMRP includes all Project Modifications from the Settlement Agreement, new mitigation measures that arise from the analysis contained within this PREIR, and reiterates previously-adopted mitigation measures from the 2020 EIR.

Section 6, Report Preparation. This section lists the preparers of this PREIR and those individuals, organizations, or agencies consulted in its preparation.

Section 7, References. This section lists all references utilized during the preparation of this PREIR.

Section 8, Acronyms. This section lists and defines all acronyms contained within this PREIR.

1.3 LIMITED CIRCULATION OF THE PREIR

Consistent with the requirements of Sections 15087 and 15088.5(d) of the CEQA Guidelines, this Draft PREIR is being circulated for public review and comment for a period of 45 days. During this period, the public, organizations, and agencies can submit comments to the Lead Agency on the PREIR. Release of the Draft PREIR marks the beginning of a 45-day public review period pursuant to CEQA Guidelines Section 15105. The public can review the Draft PREIR at the County's website at:

https://lakecountyca.gov/1762

Or at the following addresses during normal business hours:

County of Lake, Community Development Department
255 N. Forbes Street
Lakeport, CA 95453

Middletown Library
21256 Washington Street
Middletown, CA 95461

All comments regarding the PREIR should be mailed or emailed to:

Name: Laura Hall
Title: Senior Planner
255 N. Forbes Street
Lakeport, CA 95453
guenocvalleycomments@lakecountyca.gov

Pursuant to Section 15088.5(f)(2) of the CEQA Guidelines, reviewers are directed to limit their comments to the information contained in the PREIR that was revised and recirculated. Specifically, comments should be limited to the revised discussion of the Project's potential impacts related to wildfire evacuation and the assessment of whether or not the Project Modifications would result in new or substantially more significant environmental effects.

After the close of the comment period, the County will consider all comments received on this Draft PREIR within the comment period and prepare written responses to comments raising significant environmental issues, as required by CEQA (CEQA Guidelines Section 15088). The Final EIR will consist of the 2020 EIR (including the Draft EIR, Final EIR, and Final EIR Errata), Draft PREIR, comments and written responses to comments on the Draft PREIR, and any resulting text changes to the PREIR. The County will then consider whether to certify the EIR, as revised by the PREIR, and whether to reapprove the Project.

1.4 TERMINOLOGY

Throughout this PREIR, the following terminology is utilized:

- **2020 EIR:** refers to the Draft EIR, Final EIR, and Final EIR Errata, as certified by the County Board of Supervisors in July 2020 and included as **Appendix D**
- **Guenoc Valley Site:** the entire 16,000-acre Guenoc Valley Ranch property or the 'Project Site'

- **Project Site:** this term also refers to the entire 16,000-acre Guenoc Valley Ranch property or the 'Guenoc Valley Site'
- **Middletown Housing Site:** the 12.75-acre off-site workforce housing property
- **Project Modifications:** this refers specifically to those portions of the Project that have been altered since the 2020 EIR, as summarized above and described fully in **Section 2.0**
- **Proposed Project:** the Project as analyzed in the 2020 EIR along with the Project Modifications described in **Section 2.0** of this PREIR. Also referred to as 'Modified Project'
- **Modified Project:** the Proposed Project with Modifications described in **Section 2.0**
- **Original Project:** the Project as analyzed in the 2020 EIR
- **Area of Potential Effects (APE)[1]:** this refers to the maximum surface area that may be directly impacted by Phase 1 of the Proposed Project. This includes the road network, development footprint of the proposed resorts, as well as the entire parcel acreage of each residential parcel. The entire APE will not be disturbed, rather it represents the outer perimeter within which impacts may occur. Note in the 2020 EIR the Phase 1 APE was 2,958 acres, but with the Project Modifications, it will be reduced by 505 acres to 2,453 acres because some of the lot sizes have been reduced and consolidated, fewer linear miles of roadways are proposed, and the camping area was eliminated. While the APE has decreased in size, approximately 333 acres of the current APE is proposed within areas that are located outside of the Phase 1 APE as previously defined in the 2020 Final EIR. The terms 2020 APE and Modified APE are used throughout this PREIR.
- **Development Area:** this is the maximum area of disturbance that will result from implementation of the Proposed Project. Under the new proposed zoning, the maximum development footprint on each residential parcel is 1.5 acres (inclusive of the house, landscaping, driveways, etc.), but each house has not been designed on each parcel and therefore the 1.5 acre of disturbance on each residential lot has not been defined. Note in the 2020 EIR the Phase 1 Development Area was 1,415 acres, but with the Project Modifications, it will be reduced by 213 acres to 1,202 acres because fewer linear miles of roadways are proposed and the camping area has been eliminated.

[1] While the term APE is used to describe the physical footprint of the proposed development, it should be noted that the EIR assessment of impacts to certain resources, such as air quality and water resources, does not strictly limit review to the spacial extent of the APE. For example, evaluation of impacts to air quality considers the overall impacts to the air basin, and evaluation of impacts to groundwater considers impacts to the larger groundwater basin and associated users.

Section 2 | Project Modifications

Throughout this PREIR, the term 'Modified Project' refers to the Original Project proposed and analyzed in the 2020 EIR (**Appendix D**), summarized in **Section 2.1** below, as amended by the Project Modifications described in **Section 2.2**.

2.1 ORIGINAL PROJECT SUMMARY

As described in detail in Section 2.0 of the 2020 EIR, the Original Project consists of the development of a master planned mixed-use resort and residential community within a portion of the 16,000-acre Guenoc Valley Ranch property (Guenoc Valley Site) in southeast Lake County, off-site workforce housing (Workforce Housing) located on an 12.75-acre site in central Middletown (Middletown Housing Site), and off-site water supply well and pipeline located adjacent to and within Butts Canyon Road. Minimal changes to the project description have occurred which are further described in **Section 2.2** below. The full project description is provided in the 2020 EIR, which is included as **Appendix D** of this document. The Original Project includes:

- General Plan & Zoning Ordinance Amendment that would introduce a new zoning district and rezone the entire Guenoc Valley Site to GVD, which would permit the development of up to a total of 850 hotel and resort residential units, 1,400 residential estates, workforce housing, resort amenities, and accessory uses within the Guenoc Valley Site. The zoning ordinance amendment would also include an Agricultural Preserve Combining District and an Open Space Combining District.
- Approval of entitlements for the first phase of development (Phase 1), including a Use Permit for the General Plan of Development (GPD) and Specific Plan of Development (SPD; UP 18-01) and Phased Tentative Subdivision Maps that would allow for the development of four separate subdivisions with approximately 401 residential estate villas, 141 resort residential units, 177 hotel rooms, 20 camp sites, and 100 on-site co-housing workforce bedroom units (equivalent to 35 housing units), and associated infrastructure.
- Approval of entitlements for the proposed Workforce Housing in Middletown, including a rezone of 3.5 acres from Single Family Residential to Two-Family Residential, a tentative subdivision map for 38 lots, and a use permit (UP 24-08) for a community center. This would result in 21 Single Family Homes on 21 lots, 29 Duplex units on 15 lots, one lot for the community center, and one green space lot for a total of 50 housing units within the site.
- Conceptual Grading Permit to allow for development of off-site water supply well and pipeline along Butts Canyon Road to the Detert Reservoir within the Guenoc Valley Site.

As described in the 2020 EIR, the Original Project components would be developed over multiple phases. The first phase (Phase 1) will be constructed in the near-term (approximately the next ten years) and future phases will be built out based on market demands.

2.2 PROJECT MODIFICATIONS

Table 2-1 from the 2020 EIR (**Appendix D**) details all previously proposed land uses and densities; the Project Modifications would result in the same or reduced number of residential units and hotel rooms

and would consolidate certain previously proposed remote lots into a smaller area, resulting in a greater density of units within certain neighborhoods. As a result of these consolidations of lot configuration and size, the Project Modifications will reduce the overall Phase 1 APE and Development Area from that previously studied in the 2020 EIR, and result in four tentative subdivision maps instead of the original five. While the proposed land uses and site plans for Phase 1 are defined in detail within the proposed updated SPD (**Appendix E**), Phased Tentative Subdivision Maps, and associated studies, land use plans have not been developed for the future uses that would be allowable under the proposed GVD zoning designation for the Guenoc Valley Site. Consistent with the 2020 EIR, this PREIR provides a project-level analysis for Phase 1; the program-level analysis of future phases has not changed from the 2020 EIR. **Figure 2-1** illustrates the Proposed Project Site Plan with Project Modifications, **Figure 2-2** illustrates the parcel configuration analyzed in the 2020 EIR and the areas removed from the proposed parcel configuration, and **Tables 2.2-1** and **2.2-2** summarize the proposed land uses and how they have changed from the 2020 EIR as a result of the Project Modifications. The existing combining districts under current County zoning have not changed since the 2020 EIR and are not proposed to change, and therefore do not constitute a Project component. The Floodway Fringe (113 acre), Scenic (584 acre), Waterway (981 acre), and Wetlands (107 acre) combining districts are existing zoning overlays on the property and would remain under the Proposed Project. These combining districts overlap with each other and overlap with the proposed zoning and proposed new combining districts.

Table 2.2-1: Phase 1 Land Use Area Summary, Modified Project Compared to Original Project

Proposed Land Use	Acreage (Total Area of Lot)			Acreage (Total Potential Development Area)		
	2020 EIR	Modified Project	Change (acres/miles)	2020 EIR [1]	Modified Project	Change (acres)
Commercial Resort Parcels	604	373	-231 (-38%)	244	190	-54 (-22%)
Resort Residential Parcels	98	203	+105 (107%)	48	66	+18 (38%)
Residential Estate Parcels	2,048	1,361	-687 (-33%)	602	560	-42 (-7%)
Golf Course Parcels	441	474	33 (7%)	90 [2]	90	0 (0%)
Accessory Uses Parcels	371	324	-47 (-13%)	172	131	-41 (-24)
Road Parcels (area)	259	134	-125 (-48%)	259	165	-94 (-36%)
Sub-Total	**3,821**	**2,869**	**-952 (-25%)**	**1,415**	**1,202**	**-213 (-15%)**
Proposed Designated Open Space Combining District	2,765	2,765	0	-	-	N/A
Proposed Agricultural Preserve Combining District	1,743 [3]	1,653	-90 (-5%)	-	-	N/A
Other Undeveloped Land	7,626	8,668	952 (12%)	-	-	N/A
Sub-Total	12,134	13,086	-	-	-	-
Total	15,955	15,955	1,415			

1. Based on limits of grading for commercial and infrastructure areas, and the maximum 1.5 acres of development allowable within the residential parcels.
2. Includes grading for fairways, greens, and golf cart paths.
3. Does not include areas that overlap with parcels and roads, which resulted in decreases due to Modifications.
4. This table presents the total area of future lots (not APE). The total lot size in the 2020 EIR was 3,821 acres and within this the 2020 APE was 2,958 acres. The total lot size under the Modified Project is 2,869 acres and within this the Modified APE is 2,453 acres.

Source: SWA Group, 2024 and 2020 EIR (**Appendix D**)

GUENOC VALLEY PROJECT | 2024 UPDATED PLAN

PARCELS & AREAS

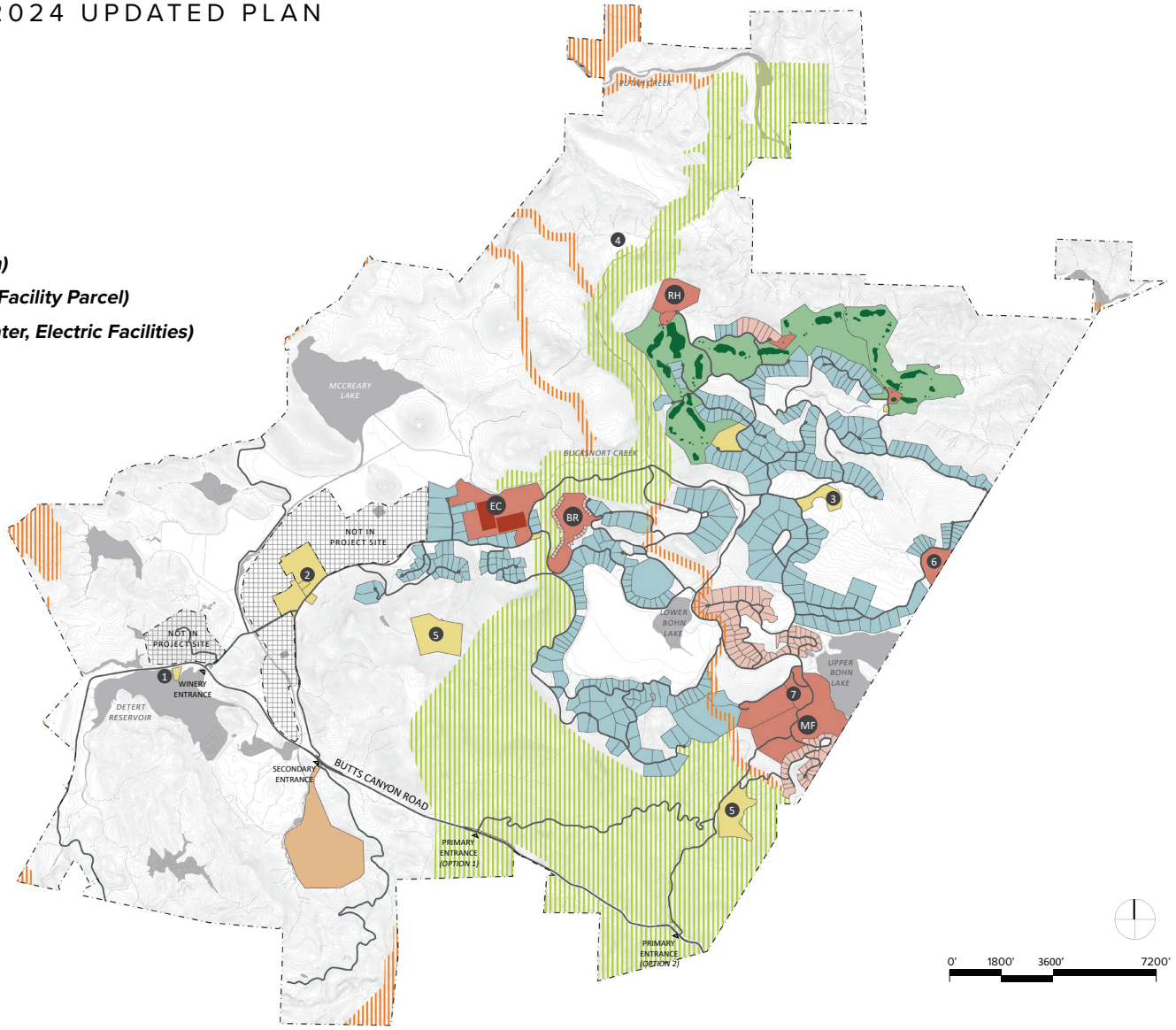
- **Resort Parcels**
  - ***Equestrian Fields (approximate location)***
- **Resort Residential Parcels**
- **Residential Estate Parcels**
- **Golf Course Parcel**
  - ***Golf Course Greens (approximate location)***
- **On-Site Workforce Housing Parcel *(Supporting Facility Parcel)***
- **Supporting Facilities *(Including Water, Wastewater, Electric Facilities)***
- **Designated Open Space**
- **Habitat Connectivity Easements**

MAIN RESORTS

- BR Bohn Ridge Resort
- EC Equestrian Center & Lodge
- MF Maha Farm
- RH Red Hill Resort
- TF Resort at Trout Flat

FEATURES

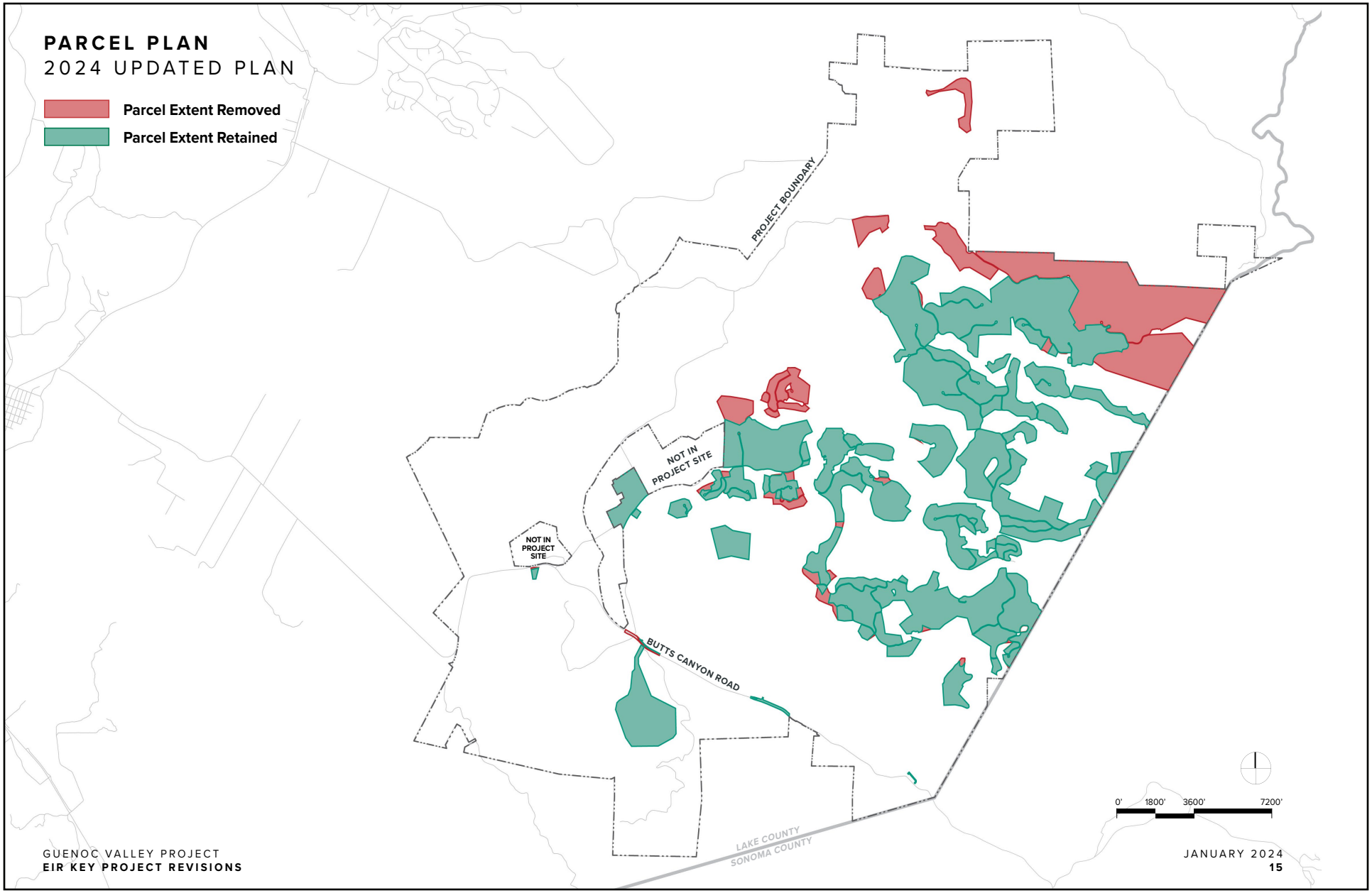
1. Aerial Site Access
2. Central Back-of-House
3. Operations Emergency Response
4. Center Hennessy Barn Public
5. Ranch Potential Solar Fields
6. Wineries



Source: SWA Group, 2024

FIGURE 2-1

PROPOSED PROJECT SITE PLAN WITH MODIFICATIONS



Source: SWA Group, 2024

FIGURE 2-2

PROPOSED PROJECT MODIFIED PARCEL CONFIGURATION

Table 2.2-2: Phase 1 Unit Counts, Modified Project Compared to Original Project

	Hotel and Camping Units		Resort Residential Units		Residential Estate Units		Workforce Co-Housing	
	2020	**2024**	**2020**	**2024**	**2020**	**2024**	**2020**	**2024**
Maha Farms & Sales Center	48	48	45	104	145	73	0	0
Bohn Ridge Resort	31	31	30	30	39	112	0	0
Resort at Trout Flat	12	0	13	0	29	0	0	0
Spa and Wellness	0	0	0	0	11	0	0	0
Denniston Golf Estates	30	30	40	7	89	133	0	0
Equestrian Center and Lodge	6	38	13	0	88	67	0	0
Camping Area	20	0	0	0	0	0	0	0
Entourage Hotel	50	0	0	0	0	0	0	0
Workforce Co-Housing[1]	0	0	0	0	0	0	100	100
Total[2]	**197**	**147**	**141**	**141**	**401**	**385**	**100**	**100**

Notes:
1: The 100 Workforce Co-Housing Units are a 400 square foot bedroom and bathroom unit with a common cooking and resting area, the same as the 2020 EIR.
2: Although there has been a slight reduction of 50 hotel units and 16 residential estates, this PREIR assumes the same number of hotel and residential units to present a more conservative analysis.
Source: SWA Group, 2024

As shown in **Table 2.2-1**, the total area of all lots proposed under the Original Project was 3,821 acres, of which the Phase 1 APE was 2,958 acres. The Project Modifications result in a Phase 1 Modified APE that is 2,453 acres, approximately 505 acres less than the APE of the Original Project as depicted in Figure 2-6 of the 2020 EIR, and a Development Area that is 1,202 acres, approximately 213 acres less than the Development Area of the Original Project. As described in **Section 1.4**, the Phase 1 Development Area includes the proposed limits of grading for the commercial/resort lots, roadways, and infrastructure, and a 1.5-acre area for each residential lot based on the lot development restrictions in the proposed Design Guidelines (reference Appendix DG of the 2020 EIR). The Development Area also includes a minimum of 50 feet of width on either side of roadways to encompass the potential fuel reduction zone as described in **Appendix F**. Similar to the analysis within the 2020 EIR, the APE encompasses this potential development footprint area, but has been expanded to include the entirety of the residential parcels since the 1.5-acre development areas have not been defined.

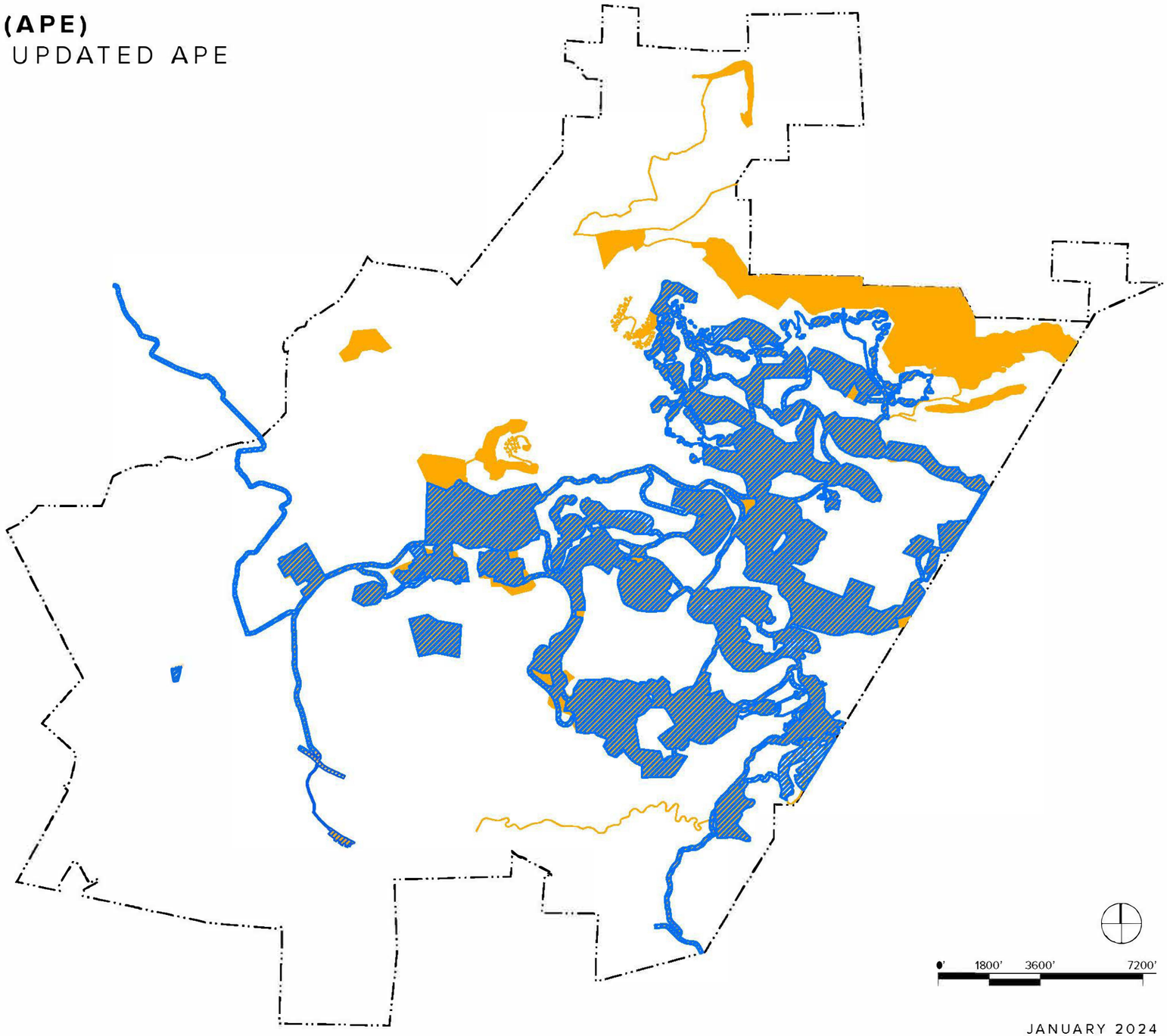
With the exception of Grange Road and the connector roadways (discussed further in **Sections 2.2.1** and **2.2.2** below), all modified components of the Proposed Project have been intentionally sited within the same parcel alignment as the 2020 EIR to the maximum extent feasible. However, while the APE has decreased in size, approximately 333 acres of the Modified APE is proposed within areas that are located outside of the Phase 1 APE as previously depicted in the 2020 Final EIR. These new APE areas encompass the Grange Road Connector APE, new connector roadway segments, a higher concentration of resort residential parcels in the Maha Farms community, and higher concentrations of residential estates in the Bohn Ridge and Denniston Golf Estates (formerly Red Hill Resort) communities. **Figure 2-3a** illustrates the boundaries of the 2020 APE as compared to the Modified APE, and **Figure 2-3b** provides a side by side comparison of the Development Area of the Original Project compared to the Development Area with the

AREA OF POTENTIAL EFFECT (APE)

2020 ORIGINAL APE VS. 2024 UPDATED APE

2024 Updated APE

2020 Original APE



GUENOC VALLEY PROJECT

EIR KEY PROJECT REVISIONS

JANUARY 2024

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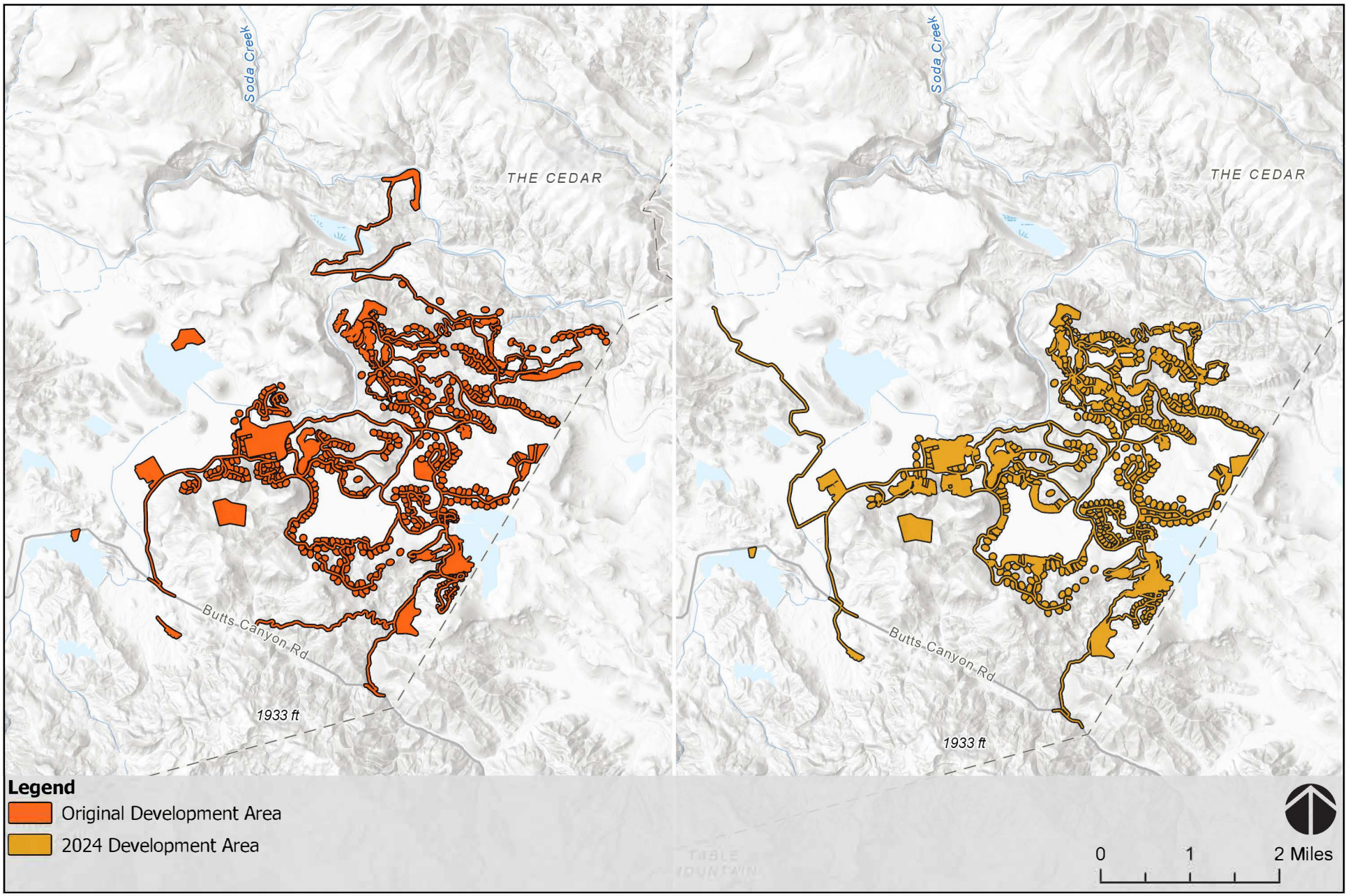
Source: SWA Group, 2024

FIGURE 2-3A

AREA OF POTENTIAL EFFECTS: ORIGINAL VS. MODIFIED PROJECT



Source: Lake County Community Development and General Plan; County of Napa, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS,

FIGURE 2-3B

DEVELOPMENT AREA: ORIGINAL VS MODIFIED PROJECT

Project Modifications. The following APE additions are addressed throughout this PREIR:

- Grange Road: The Grange Road Connector APE is approximately 3.9 miles, of which 1.7 miles are located on the off-site Comstock Ranch property and the remaining 2.2 miles are located on the Guenoc Valley Site. Approximately 75 percent of the off-site portion is located on existing dirt roads, some of which were at least partially covered with sand or gravel. The portion of the Grange Road Connector on the Guenoc Valley Site is located almost entirely along existing vineyard and ranch roads.
- Connector Roads: the Project Modifications include 4.8 miles of 'Connector Roadways' within the Guenoc Valley Site to ensure there are no dead-end or non-looped roads greater than one mile. The APE for the new Connector Roadways is approximately 30 feet wide to reflect average topographic conditions and the feasibility of the 10-foot hardscape shoulder near steep slopes. The Connector Roads were sited within the APE previously analyzed in the 2020 EIR to the maximum extent feasible, although some stretches of roadway are outside of the APE analyzed in the 2020 EIR.
- Parcel Reconfiguration: While the 2020 APE encompassed the entire boundary of most residential parcels, design level details were utilized where available for certain resort residential parcels. Because the density of resort residential parcels has increased in certain areas to offset the elimination of more remote parcels, these design level plans will need to be revised. To provide a conservative review, the entire extent of the resort residential parcels has been included in the Modified APE, resulting in a shift in the APE boundaries, but mostly within previously studied or surveyed areas.

The majority of the Original Project components remain the same; e.g. construction equipment and construction duration, water and energy demand, landscaping and lighting. If a project component is not directly addressed in **Section 2.0** of this PREIR, it is the same as the Original Project and a complete description is available in the 2020 EIR (**Appendix D**).

2.2.1 Settlement Agreement Project Commitments

Pursuant to the Settlement Agreement (**Appendix C**), the Applicant agreed to incorporate several Project Modifications and mitigation measures to lessen the degree of potential impacts of the Project. Pursuant to subsection (4) of the Settlement Agreement, all Project Modifications and requirements have been included in the project design or mitigation identified in this PREIR, and are incorporated into the Modified Project's Revised MMRP found in **Section 5** of this PREIR. The Project Modifications arising from the Settlement Agreement are grouped into two categories, 1) wildfire-related modifications and 2) GHG emission reduction measures.

Wildfire-Related Project Modifications

Camping Area. Due to the remote location, the Project Modifications include the removal of the camping area previously located in the northern portion of the property from Phase 1 (**Figure 2-2**). The 20 units from this area have been redistributed to the Equestrian Center and Lodge and are now accounted for in the revised hotel unit counts (see **Table 2.2-2**). While tent camping is allowable under the proposed zoning, no camping district is proposed under Phase 1 of the Modified Project. Camping is still allowed under the Settlement Agreement with open fires to be strictly prohibited. If a camping area is proposed under future phases, it would be subject to environmental review in compliance with CEQA.

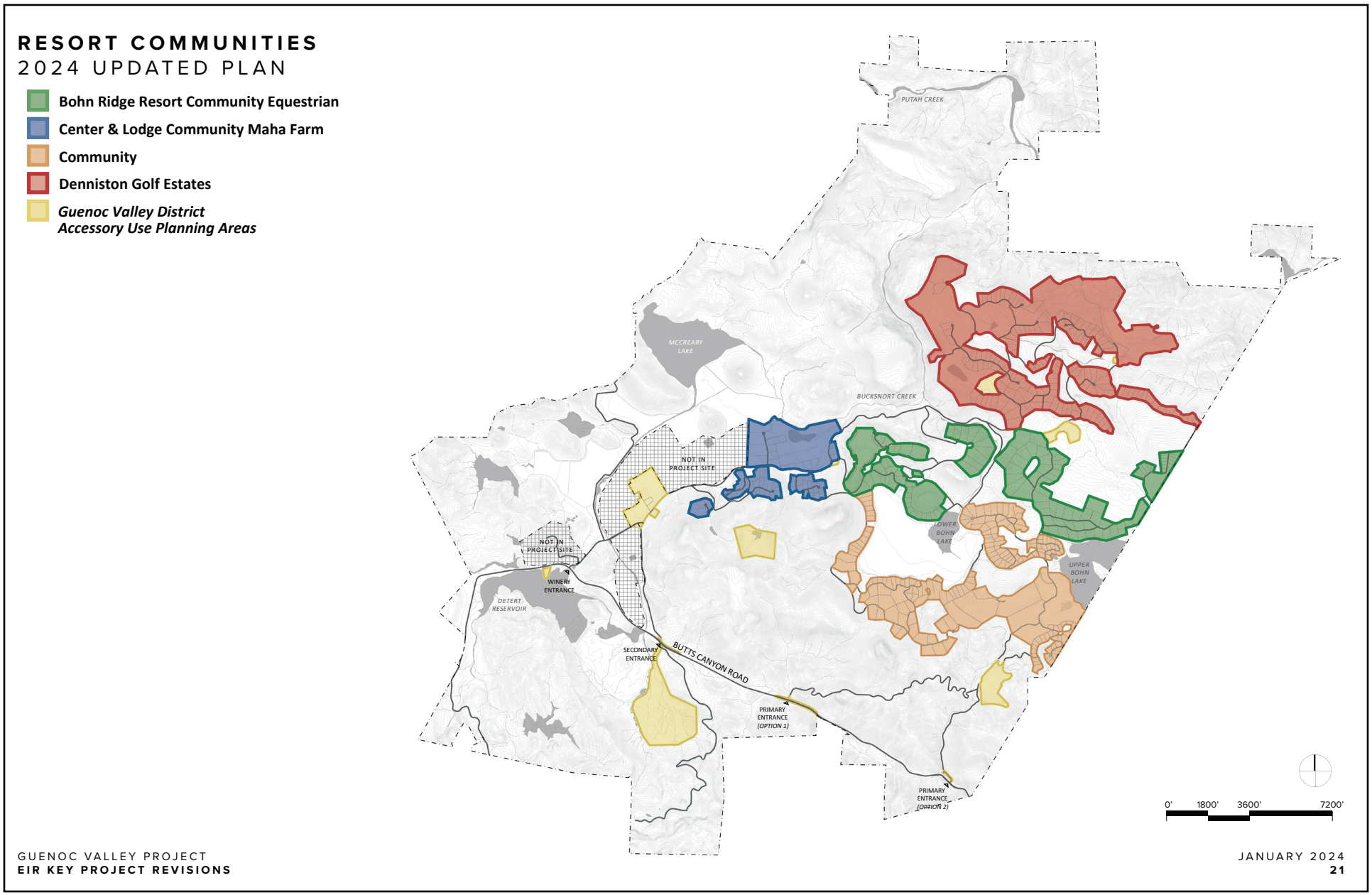
Equestrian Center Community. In the Equestrian Center & Lodge area, Project Modifications include the removal of 25 of the lots that were previously located on a knoll overlooking the Equestrian Center Community (**Figure 2-2**). This subdivision will include hotel units (38), resort residential units (7), and residential estates (67), but the remaining residential lot sizes will be smaller. With the removal of the lots previously planned at the top of the knoll, all of the lots at the Equestrian Center Community will be entirely located in the lower areas, allowing for more defensible space and lesser evacuation times in the event of an emergency.

Denniston Golf Estates Community (formerly the Resort at Trout Flat and Red Hill Resort Communities). The Project Modifications include the removal of the Resort at Trout Flat Community previously located in the northeastern portion of the Guenoc Valley Site, and the reallocation of 12 hotel units, 13 resort residential units, and 29 residential estates from this community into other communities. Additionally, the overall size of the Denniston Golf Estates Community is reduced under the Project Modifications to relocate the more remote parcels near the urban-wildland interface towards the central portion of the Denniston Golf Estates Community. As a result, there are more residential estates located within this community but the average lot size has decreased (**Figure 2-4**).

Across the entire Guenoc Valley Site, the Project Modifications will shift the proposed hotel and residential units between communities and increase the density, and would reduce the average lot size across the Project by approximately 1.0 acre (**Figure 2-4**). As shown in **Table 2.2-2**, there is a decrease of 50 hotel units, no change to the total number of resort residential units, and a decrease of 16 residential estates compared to what was analyzed in the 2020 EIR. Although there may be a slight reduction in proposed water demand, wastewater generation, and electricity demand, the same demand for these utilities is assumed in this PREIR to provide a more conservative assessment. However, as a result of the updates to the parcel configuration to remove some of the more remote parcels and land uses, some proposed infrastructure is no longer required. As an example, the same total electrical demand is assumed to be required but the proposed residences will be located closer together and therefore fewer miles of electrical distribution line will be required. This will similarly occur with potable water and wastewater treatment, where the total demand or production is assumed to remain the same under the Modified Project, but less linear feet or miles of pipeline will be required.

Roads. Under the Modified Project, all project components including roads have been designed to meet the 2023 State Minimum Fire Safe Regulations and the most updated Road and Street Standards. No dead-end roads or non-looped road segments greater than one mile in length are proposed. The Original Project included 48.5 miles of road which has decreased to 45.4 miles with the Project Modifications (approximately 3 miles less). As shown in **Figure 2-5**, the Project Modifications include several new lengths of 'Connector Roadways' (4.8 miles) to ensure there are no dead-end or non-looped roads greater than one mile. As a result of the consolidation of some of the more remote parcels and removal of the camping area, numerous roadways are no longer required and therefore the Project Modifications include the removal of 12.5 miles of previously proposed roadways. To the maximum extent feasible, the new Connector Roadways were sited within the APE studied in the 2020 EIR, however several short stretches are located outside of the previously studied APE. The On-Site/Off-Site Emergency Roadway Connector (Grange Road Connector) is discussed in **Section 2.2.2**.

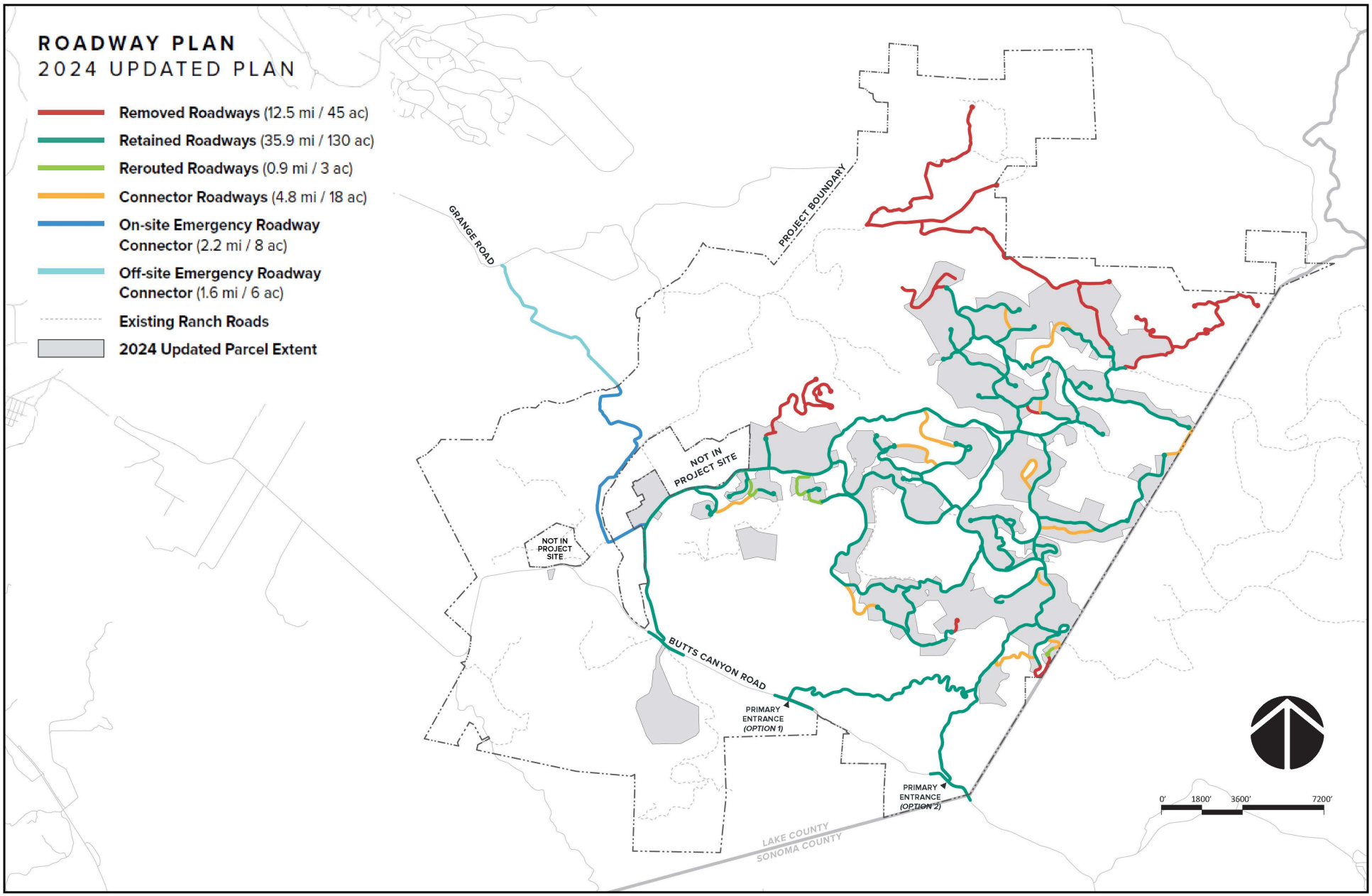
In addition to removing unnecessary roads and connecting stretches of roadway that were previously dead-ends, in accordance with the Settlement Agreement, Project Modifications also include adding approximately 10 feet of hardscape on each side of the roadway for further wildfire protection, which is



Source: SWA Group, 2024

FIGURE 2-4

RESORT COMMUNITIES



Source: SWA Group, 2024

FIGURE 2-5

UPDATED ROADWAY PLAN

discussed further in **Section 2.2.3** along with additional Settlement Agreement terms relating to wildfire prevention.

Greenhouse Gas Emissions Reduction Measures

The Applicant will implement numerous GHG emission reduction measures as summarized herein, the full text of which can be found in the Settlement Agreement (**Appendix C**). The Settlement Agreement reiterated certain energy efficiency measures that were already included in the Project as described in the 2020 EIR (refer to Section 2.5.2.7 of the 2020 EIR, **Appendix D**); while all Settlement Agreement terms pertaining to GHG reduction measures are described below, only those that constitute Project Modifications are analyzed in **Section 4**.

Residential Land Uses. The Settlement Agreement specified that photovoltaic (PV) systems and batteries will be installed on all residential land use structures and ground-mounted community solar systems as on-site conditions allow; these systems were included in the Original Project. The 2020 EIR did not specify the capacity of the proposed PV systems; per the Settlement Agreement, the minimum capacity of the PV systems shall be equal to or greater than the minimum projected energy needs of all residential land uses on the Guenoc Valley Site. The Settlement Agreement also specified that the Applicant shall be responsible for the repair and maintenance of these systems via requirements in the residential Homeowners Association (HOA) bylaws that covers the Resort Community. Additionally, each residential structure will have at least one Level 2 or higher capacity Electric Vehicle Supply Equipment (EVSE), which is a Project Modification. As an additional Project Modification, no natural gas or propane will be installed in any of the on-site residential structures and any preexisting natural gas infrastructure on the property will be capped and removed; previously, natural gas/propane was proposed in the 2020 EIR.

In summary, the GHG related Project Modifications for residential land uses include:

- The capacity of residential PV systems shall be equal to or greater than the minimum projected needs of the residential land uses;
- Repair and maintenance of PV systems will be the responsibility of the Applicant enforced through the HOA bylaws;
- Each residence will have Level 2 or higher EVSE; and
- No natural gas infrastructure, including propane tanks or propane distribution pipelines will be allowed for residential structures.

Non-Residential Land Uses. Similar to residential land uses, the Settlement Agreement requires on-site generation of renewable energy to power all non-residential land uses. In the 2020 EIR, all commercial properties were proposed to be constructed "Solar Ready" pursuant to California Energy Code and would be connected to the same grid options that included the production of on-site renewable solar energy. Through Mitigation Measure 3.7-1, the energy demands of the commercial structures were required to be entirely renewable, via either on-site production or purchase of renewable energy, and therefore the full production of solar energy on-site is considered a Project Modification. Similar to residential land uses, this can be accomplished through rooftop, ground-mounted community solar systems, or carport panels as appropriate. The Settlement Agreement stipulates that the solar farms must be sited in areas served by existing roads to the maximum extent feasible, have been intentionally sited to minimize harm to biological resources and wildfire risk, and will produce no less than 5,500,000 kWh per year. Approximately 47 acres of solar farms with a capacity to generate 28 MW per year were proposed and analyzed in the 2020 EIR (shown in Figure 2-15 of the 2020 EIR), and therefore this is not considered a

Project Modification. The Settlement Agreement requires that at least 300 publicly accessible Level 2 or higher capacity Electric Vehicle Charging Stations (EVCS) with two ports per charger and 20 publicly accessible Level 3 EVCS/Fast Chargers will be installed in preferential parking locations; note that 384 public-area EV chargers (unspecified Level) were included in the Original Project and therefore this is not considered a Project Modification. The Applicant shall be responsible for the repair and maintenance of these systems via the Covenants, Conditions, and Restrictions (CC&Rs) of the resort. No natural gas will be allowed in the non-residential structures with the exception of natural gas or propane in restaurants that is allowed only for cooktops or for fire pits in the outdoor patio areas; previously propane was proposed in the 2020 EIR. Furthermore, the Applicant will purchase annually for 30 years voluntary market GHG Offset Credits with a registry approved by the California Air Resources Board (CARB) in an amount currently estimated to be 14,865 credits. Similar to the use of PV systems, the purchase of GHG Offset Credits was included in Mitigation Measure 3.7-1 of the Final EIR Errata but this was a one-time GHG Offset Credit purchase, and therefore the annual purchase of credits (currently estimated at 14,865) is considered a Project Modification.[2] Furthermore, the Project Modifications include a new set of performance standards associated with the purchase of these offset credits, including that the location prioritizes (1) offsets within the County; (2) offsets within the State of California, only if in-county offsets are unavailable; (3) offsets within the United States, only if in-state offsets are unavailable; and (4) international offsets only if in-nation offsets are unavailable. As an additional Project Modification, specific "Monitoring, Reporting, and Recordkeeping" commitments mandate that the Applicant retain an independent, third-party expert on GHG mitigation and offsets. This third-party expert cannot be a former or current employee or agent of Lotusland and is subject to approval by the Office of Administrative Hearings (OAH). The third-party expert will compile and analyze the requisite data, and prepare and provide annual reports to the County and State regarding whether the Applicant has complied with the GHG emissions reduction measures within the Settlement Agreement.

In summary, the GHG-related Project Modifications for commercial land uses include:

- Repair and maintenance of PV systems will be the responsibility of the Applicant enforced through the CC&Rs of each resort;
- No natural gas tanks or distribution pipelines will be allowed for residential or non-residential structures, with the exception of natural gas-fueled or propane cooktops in restaurants and natural gas-fueled or propane fire pits in outdoor patio areas of restaurants;
- Annual purchase of offset credits in an amount to offset each year's actual GHG emissions, currently estimated at 14,865 credits;
- Performance standards associated with the purchase of GHG Offset Credits prioritizing local credits; and
- An independent, third-party expert on GHG mitigation and offsets will be retained to ensure the Applicant has complied with the GHG emission reduction measures.

[2] Future events or developments may affect the availability and utility of the GHG Offset Credits, and the Project's actual GHG emissions. These factors may support an adjustment to the amount of GHG Offset Credits that the Applicant is required to purchase under the Settlement Agreement. The Applicant may seek the State's consent in the future to an adjustment of this requirement, and the State will consider such request in good faith. Any adjustment to the amount of GHG Offset Credits to be purchased by the Applicant is required to be consistent with CEQA.

2.2.2 Grange Road Connector

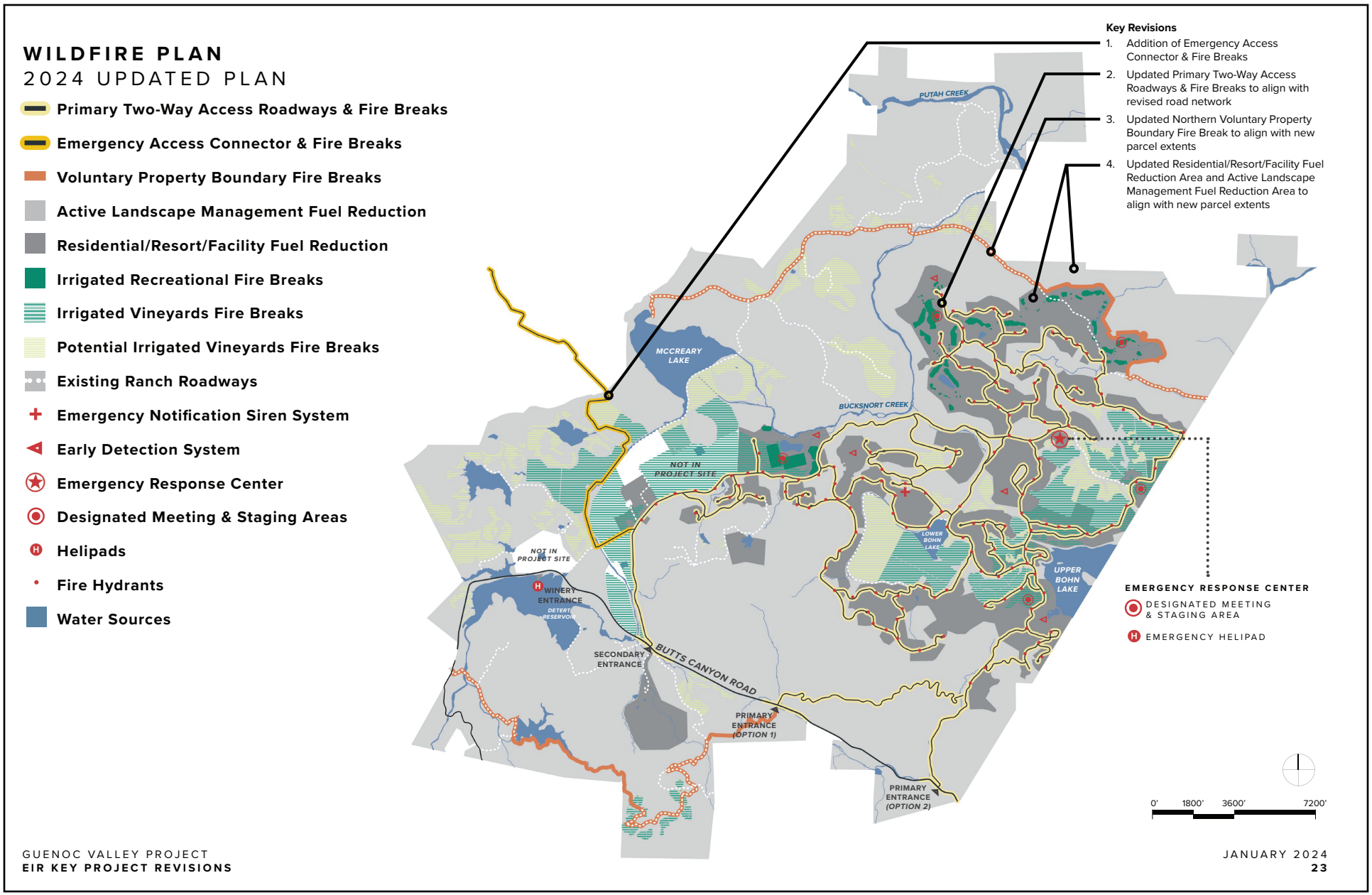
Grange Road is a looped, two-lane public road that begins at SR-29 and travels south-southeast for approximately 2 miles before turning north-northeast and looping back on itself. In order to provide an additional emergency ingress/egress to the Guenoc Valley Site, Project Modifications include a new road to connect the property to SR-29 via Grange Road through an off-site property. As shown in **Figure 2-5**, under the Project Modifications, Grange Road is proposed to be extended to connect to the existing on-site road network, and would only be used for emergency ingress and egress. This proposed roadway improvement is referred to as the "Grange Road Connector" and has been designed in compliance with PRC 4290, the State's Minimum Fire Safe Regulations. Approximately 1.6 miles (6 acres of disturbance) is located off the Guenoc Valley Site on a property known as 'Comstock Ranch' [Assessor's Parcel Number (APN) 014-300-04] and easements will be obtained as necessary. The remainder, approximately 2.2 miles (8 acres of disturbance), is located on the Guenoc Valley Site. The new 14-acre development area assumes a 30-foot-wide road base, including the additional 10 feet of firebreak edge as agreed to under the Settlement Agreement. This area was not previously proposed to be disturbed and was not included in the Original APE analyzed in the 2020 EIR. However, several stretches of the proposed Grange Road Connector are along existing farm or ranch roads that have been previously disturbed (either dirt or gravel roads) and will be improved to meet current Road and Street Standards. The Grange Road Connector will join with the existing on-site road network near the central back of house operations facility.

Construction of the Grange Road Connector shall be completed prior to the first initial occupancy of the Project. Approximately 25,000 cubic yards of cut and 23,250 cubic yards of fill are estimated to be generated. If any excess cut is generated by construction of the Grange Road Connector it will be temporarily stockpiled within the Development Area and utilized on-site as structural fill.

2.2.3 Updated Wildfire Prevention Plan

The Mahá Guenoc Valley Wildfire Prevention Plan (WPP) for Phase 1 has been updated to reflect the Ruling, Settlement Agreement, and Project Modifications, as shown in **Figure 2-6** (**Appendix F**). The WPP is intended to present an integrated approach to wildfire management through approaches that can be grouped into the following categories: general wildfire prevention, construction wildfire prevention, utility wildfire prevention, landscape wildfire prevention, building wildfire prevention, wildfire prevention preparedness, and wildfire emergency response. The vast majority of the WPP and the wildfire prevention techniques remain identical to those described in the 2020 EIR; modifications to WPP since the 2020 EIR are presented in redline/~~strikeout~~ in **Appendix F**. The WPP has been updated to include the modified site plan and the removal of the more remote parcels and land uses, the modified roadway network that now complies with the State's Minimum Fire Safe Regulations, the Grange Road Connector, and voluntary property boundary fire breaks that match the updated parcel extents. In addition, as shown in **Figure 2-7** the Updated WPP now includes a 10-foot wide aggregate or hardscape surface on each shoulder of all roads where feasible. The total firebreak along the road network will remain 125 feet consistent with the 2020 EIR, which includes a 25-foot wide roadway, plus 50-foot wide fuel reduction zones on either side; however under the Project Modifications, the 50-foot-wide fuel reduction zone will include 10 feet of hardscape. This hardscape area can be used as shoulder, pedestrian walkways, or bicycle lanes as the topography and site constraints allow.

The Original Project included an on-site Fire Station and Emergency Response Center with a proposed helipad immediately adjacent, with the fire station intended to ultimately become the South Lake County Fire Protection District (SLCFPD) Fire Station #61. There are no proposed physical changes to the Fire



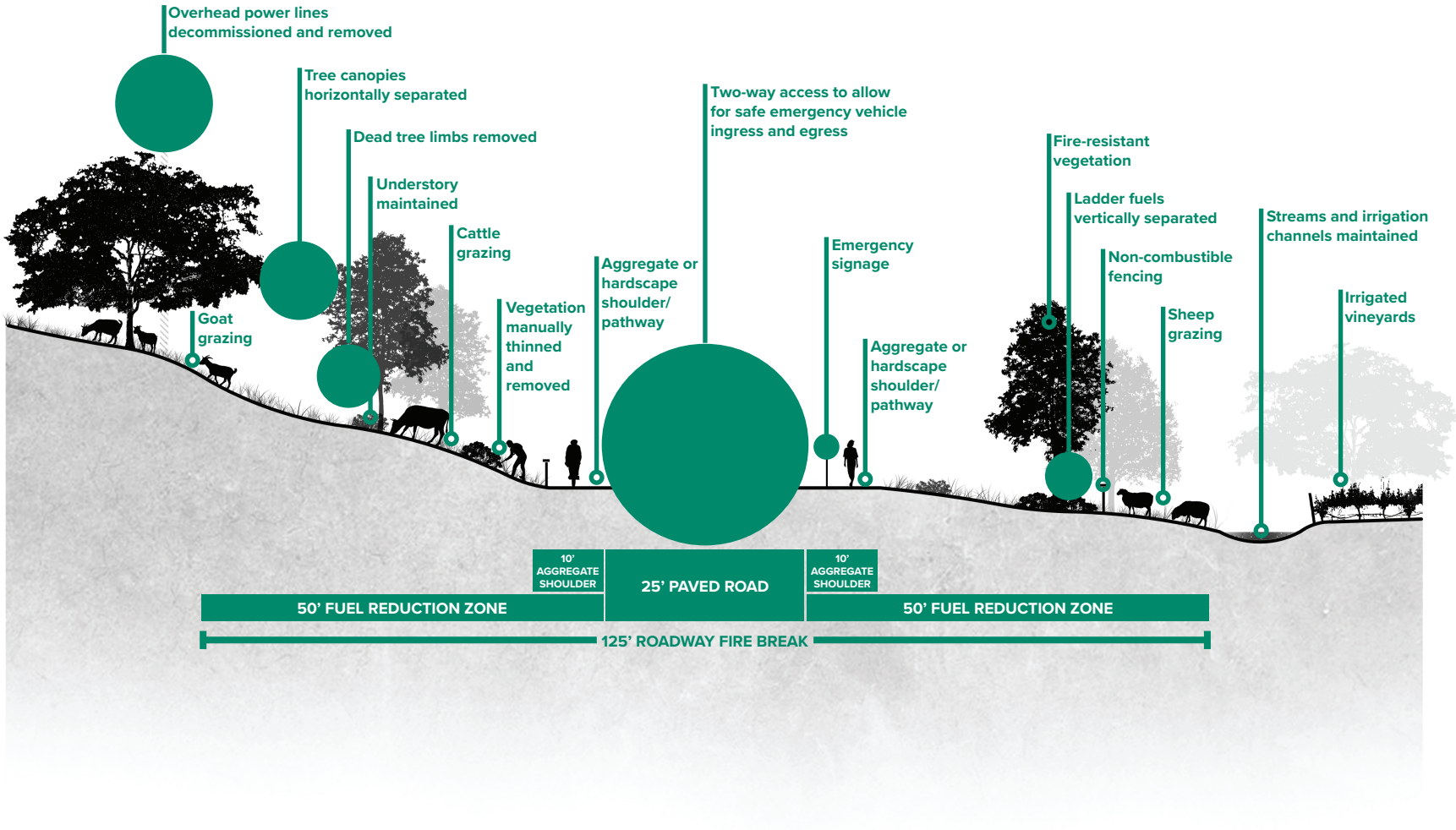
Source: SWA Group, 2024

FIGURE 2-6

UPDATED WILDFIRE PREVENTION PLAN

WILDFIRE MANAGEMENT PLAN
2023 UPDATED STRATEGY
TYPICAL ROADWAY FIRE BREAKS

Key Revision: Addition of a 10 foot wide aggregate or hardscape surface on shoulder where feasible



Source: SWA Group, 2024

FIGURE 2-7

MODIFIED ROADWAY FIRE BREAK STRATEGY

Station and Emergency Response Center compared to what was analyzed in the 2020 EIR and it remains in the same location on the property. As described in the 2020 EIR (Section 3.12, Public Services):

> "The fire center will include a structure to house firefighting equipment, as well as a headquarters space and storage for minor medical supplies. SLCFPD would provide fire protection and fire suppression services to the Guenoc Valley Site and the Middletown Housing Site and would staff the on-site emergency response and fire center at the Guenoc Valley Site which would ultimately become SLCFPD Station #61. Multiple on-site water sources are available for fire suppression and will be supplemented with fire hydrants for first responders. The addition of on-site emergency response resources and fire management facilities would ensure that, in the event of an emergency, adequate response times would be met. Additionally, response personnel would be sourced from onsite, lessening the burden of emergency response teams from surrounding areas, including Napa County. Specifically, two or three years post-development, the Developer will begin to budget approximately 200,000 dollars per year, which will roll over annually to build funds to purchase and replace emergency response equipment as needed. Prior to staffing Station #61, emergency fire response to the project site will be generated from nearby SLCFPD facilities. Approximately four years post-development, Station #61 will be staffed at all times. Approximately five years post-development, Station #61 will be staffed by SLCFPD and reported to ISO for documentation (SLCFPD, 2019c). In the event that demand for fire protection services in the district is greater than SLCFPD can provide, fire protection services would be supplemented through mutual aid from other local agencies, pursuant to the CFAA.

The Project Modifications associated with the Fire Station and Emergency Response Center in the Updated WPP are primarily funding and staffing commitments. The Applicant shall pay the SLCFPD annually the amount determined by SLCFPD to be necessary in order to staff and equip the Emergency Response Center for fire services, including wildfire response. Through its CC&Rs, the HOA will be required to contract with a wildfire expert for the duration of the Project, with costs paid by the HOA. The HOA shall consult with the wildfire expert in its implementation of wildfire prevention measures, including those identified in the WPP. Furthermore, the Project's Emergency Response Center will have on-site at least one individual with wildfire expertise related to evacuation and emergency access, the cost of which will be paid by the Guenoc Valley Project HOA.

The following fire management activities are excerpted from Section 2.5.2.3 of the 2020 EIR; although these project components remain unchanged from the analysis presented in the 2020 EIR, they are important to the understanding and analysis of the currently Proposed Project:

> Proposed fire management facilities are shown in **[Figure 2-6]**, and include extensive fuel breaks along roadways and drainages, five designated temporary refuge areas (emergency gathering and protection sites), vegetation management areas, and the construction of an on-site emergency response and fire center and helipad for emergency access/transportation. The fire center will include a structure to house firefighting equipment, as well as a headquarters space and will also house minor medical supplies. Approximately 500 square feet of the emergency response and fire center would be dedicated to the Lake County Sheriff's Office (LCSO) for law enforcement services. The South Lake County Fire Protection District (SLCFPD) would provide fire protection and fire suppression services to the Guenoc Valley Site and would staff the on-site emergency fire center. Cal Fire would provide fire protection and suppression services in the event of a wildland fire since the Guenoc Valley Site is within Cal Fire's state responsibility area (Wink, 2019). Multiple on-site water sources are available for fire suppression and will be supplemented with fire

hydrants for first responders. Additionally, a communication system such as Nixle and early fire detection system high-definition cameras and an emergency notification siren system would be installed throughout the site.

Fire wise landscaping techniques such as reducing fire prone vegetation within fifty feet from both edges of each proposed roadway will be managed by the HOA. This will include cutting down dead trees and removing all flammable shrubs. The understory below trees will be maintained by mowing, grazing, and manual vegetation removal; in addition, shrubs will be removed below trees. Within this zone, individual trees or tree clusters will be adequately spaced to prevent fires from quickly spreading. In addition, landscape within 300 feet of proposed commercial buildings and within 50 feet of residential buildings will be primarily native and low fuel vegetation to reduce vegetated fire risk, and exterior fire sprinkler systems will be installed on residential buildings on dead-end drives over 0.25 miles. It is anticipated that each resort community would have at least 180,000 gallons of stored fire water.

In summary, the only Project Modifications that have resulted from the Updated WPP are:

- Figures within the Updated WPP now depict the following:
  - The new site plan that includes the removal of the more remote parcels and land uses,
  - The modified roadway network that now complies with the State's Minimum Fire Safe Regulations,
  - The Grange Road Connector, and
  - Voluntary property boundary fire breaks that match the updated parcel extents;
- A 10-foot wide aggregate or hardscape surface will be included on each shoulder of all roads where feasible;
- The Applicant shall pay the SLCFPD annually to staff and equip the Emergency Response Center;
- The HOA will be required to contract with and pay for a wildfire expert; and
- The Emergency Response Center will have on-site at least one individual with wildfire expertise related to evacuation and emergency access, the cost of which will be paid by the Guenoc Valley Project HOA.

2.2.4 Water Supply and Drought Preparation

Lake County Ordinance 3106 was passed by the Board of Supervisors on July 27, 2021 and requires that all projects that require a CEQA analysis of water use include a Drought Management Plan (DMP) describing how the project will reduce water use during a declared drought emergency. Because Ordinance 3106 was enacted after the 2020 EIR, a DMP was not required or included within the 2020 EIR. Ordinance 3106 also requires a Hydrology Report addressing water usage, water supply, and cumulative impacts to surrounding areas. Water usage was studied extensively in the 2020 EIR and a Water Demand Analysis was prepared by Sherwood Design Engineers (Appendix WATER to the 2020 EIR) and a Water Supply Assessment (WSA) was prepared by Luhdorff & Scalmanini Consulting Engineers (Appendix WSA to the 2020 EIR). Therefore, although no additional WSA is required to comply with Ordinance 3106, additional clarifying information has been prepared to address additional information related to water supply that has been made available since the 2020 EIR (**Appendix G-1**) and a DMP has been prepared for the Modified Project (**Appendix G-2**).

Water Supply System

The Proposed Project will require both potable water and non-potable water which is proposed to be met by various water sources. Note that the 2020 EIR, WSA, and other supporting technical documents prepared at the time of the Original Project review used the term 'domestic' and 'potable' water well interchangeably. Consistent with the 2020 EIR, potable water will be supplied by groundwater wells, while non-potable water will be supplied by groundwater wells, recycled water produced onsite by the proposed treatment plants, and surface water for areas within the Place of Use (POU) of existing water rights. As fully described in Appendix WATER to the 2020 EIR, Phase 1 of the Proposed Project would require 249 acre-feet per year (afy) and future phases would require 685 afy of potable water. Non-potable water demands for areas outside the POU (e.g., areas that would not be able to utilize surface water) are 482 afy for Phase 1 and 760 afy for future phases. As shown in **Table 2.2-2**, with the Project Modifications there is a decrease of 50 hotel units, no change to the total number of resort residential units, and a decrease of 16 residential estates compared to what was analyzed in the 2020 EIR. Although this will lead to a slight decrease in water demand, this PREIR assumes the full potable and non-potable water demand for Phase 1 remains the same as what was analyzed in the 2020 EIR to present a more conservative analysis.

A WSA was prepared to analyze the available water supplies for both Phase 1 and future phases and demonstrate adequate sources of supply for normal and dry years, consistent with the requirements of California Senate Bill (SB) 610 (Appendix WSA to the 2020 EIR). At the time of preparation of the WSA and 2020 EIR, two groundwater wells had been constructed to serve the project and three were pending construction or testing (see Table 2-3 of the WSA). Therefore, the WSA recommended that new supply wells for the planned water system continue to be constructed and tested, consistent with State and County regulations, to demonstrate the available capacity of the proposed potable system (see Section 7.2 of the WSA). This construction and testing program has been underway since the 2020 EIR, and supplemental well construction and testing information for the project wells has been provided in **Appendix G-1** of this PREIR.

There are currently five potable wells on the Guenoc Valley Site that will serve the Proposed Project:

- Bohn Ridge 3
- Camping Area (CA PW-1), now renamed Wilderness Area
- Farmstead 1 (FS PW-1)
- Red Hills 1 (RH PW-1)
- Tephra 4

The total potable water supply capacity for these five wells is 645.5 gallons per minute (gpm), which is equal to 1,042 afy. This total capacity was determined in accordance with CCR Title 22, Section 64554, "New and Existing Source Capacity", where the capacity of each well is equal to 50 percent of the flow maintained during a 10-day pump test to allow for the wells to "rest" consistent with the 2020 EIR. There is also one non-potable well called the Crossroads Well, which had been drilled at the time of the 2020 EIR and WSA. This Crossroads well is capable of producing 264 gpm, which is equal to 426 afy. Please refer to **Appendix G-1** for additional discussion of the existing potable and non-potable wells and testing results.

No changes are proposed to the Off-Site Well under the Modified Project. As discussed in Section 2.5.2.5 of the 2020 EIR, this proposed Off-Site Well may be developed during Phase 1 to provide supplemental non-potable water for agricultural irrigation, fire protection, and to cover evapotranspiration losses from

recreational water features and ponds. The proposed well is expected to yield flows over 1,000 gpm. The Off-Site Well is located on a parcel near the intersection of SR 29 and Butts Canyon Road within the Collayomi Valley Groundwater Basin. It remains proposed as a backup supply only, consistent with the analysis contained within the 2020 EIR.

Drought Management Plan (DMP)

The DMP will allow water system users and managers to act promptly in the event of a drought to better protect the water supply, as further described in **Appendix G-2**. The DMP contains three drought management sub-plans, one for each of the three different water user types associated with the Proposed Project: potable water, golf course water, and equestrian center water. The potable water users include residential and commercial customers, while the golf course and equestrian center users are specific to those areas within the Guenoc Valley Site. Under the potable water DMP, when there is a potential threat to the water supply system Stage 1 of the DMP will be enacted to alert the community and begin voluntary conservation measures, as well as compliance with any and all State regulations that may be issued regarding conservation. The system capacity and consumption will be monitored carefully during Stage 1, and if the drought conditions are not alleviated or worsen, Stage 2 will be implemented which will introduce 'phased' mandatory conservation measures and fee surcharges for violators. Robust monitoring will be occurring throughout the operation of the water system which will allow the water system operators to develop triggers for when Stage 3 or Stage 4 need to be implemented. Stage 3 of the DMP includes additional mandatory conservation measures, revised rate structures to increase fees, as well as the ability to install mandatory flow restrictors on users that violate the urgency ordinance more than twice. At Stage 4, a maximum water allocation is set for each user to ensure minimum essential health and safety are met, as well as prohibiting new connections. Throughout each of the DMP stages, public information and outreach is a large component to ensure that all users are fully informed of the ongoing water shortages and status of the DMP stages.

The golf course DMP is similar to the potable water DMP in that each stage becomes progressively more restrictive as to water use. As drought conditions worsen and the site progresses into the next DMP stage, timing of irrigation is limited until ultimately grass may be removed and drought-tolerant vegetation may be required in its place. The equestrian center DMP similarly will start by limiting the number of times per week horses may be washed, then limiting timing of watering, before finally limiting or eliminating pasture watering and requiring supplemental feed. As a last resort, horses may be shipped to non-drought areas, but at no such time will drinking water for horses be curtailed.

Section 3 | Wildfire Evacuation

3.1 INTRODUCTION

This section of the PREIR provides the additional, revised community wildfire evacuation analysis for the Proposed Project as required by the Court's Ruling in Lake County Superior Court Case Number CV 421193 (**Appendix A**). See **Section 1** of this PREIR for further information on the Ruling and its relationship to this PREIR.

Chapter 3.16 of the 2020 EIR analyzed the potential wildfire risks in the vicinity of the Project Site and described the changes to those conditions that would result from implementation of the Original Project. All technical data and calculations to support the 2020 EIR analysis were included as Appendix FIRE of the 2020 EIR, which is herein incorporated by reference.

Project evacuation routes are those routes that residents or visitors to the Project Site would utilize in an emergency to leave the site and first responders would use to access the area in an emergency. Community evacuation routes are area-wide routes that provide emergency ingress and egress to non-Project residents in the surrounding vicinity. The Ruling found that "analysis of the Project's evacuation routes are a "reverse CEQA" issue and need not be addressed in the EIR. The Project's impacts to community evacuation routes, however, must be analyzed in the EIR." As further stated on pages 7 through 8 of the Ruling:

> Real Party is correct that analysis of community evacuation is not required unless the project might exacerbate existing environmental hazards. (Real Party in Interest Lotusland Investment Holding, lnc.'s Supplemental Brief Re: Evacuation filed November 19, 2021, (Real Party's Supplemental Brief), p. 7:7-9.). Here, unlike the case in *Newton, supra,* [sic; Newtown] there is evidence that the Project might exacerbate existing environmental hazards. As pointed out by Petitioners Center for Biological Diversity (CBD) and California Native Plant Society (CNPS), a significant number of wildfire related deaths in California occur during attempts to evacuate. (Petitioners' Opening Brief filed June 15, 2021, pp, 19:26-20:4.) The hazards of a wildfire are certainly exacerbated if community residents are unable to evacuate safely due to congested evacuation routes. It is estimated that the Project will bring 4,070 residents to the area. (AR 6612.) This is a significant population increase when considering the Project is located in Lake County Census Tracts 12 and 13 which had an estimated combined population of 10,163 in 2017. (AR 6608.) If a wildfire occurs, the Project's residents will need to evacuate. These people will likely compete with residents in the surrounding area for safe evacuation routes. The additional people competing for the same limited routes can cause congestion and delay in evacuation, resulting in increased wildfire related deaths. This is undoubtedly a situation where the Project, by bringing a significant number of people into the area, may significantly exacerbate existing environmental hazards; specifically, wildfires and their associated risks. Therefore, this is an issue that is required to be addressed under CEQA.
>
> The County concluded the impacts to existing emergency evacuation plans would be less than significant. (AR 6746.) The evidence supporting this conclusion are comprised primarily of opinions from traffic engineers and fire and law enforcement personnel. (Real Party's

> Supplemental Brief, p. 8:2-8; AR 42594-42595; 53739-53740.) Those opinions were not based on any identifiable facts.
>
> There are two problems with this evidence. First, this evidence primarily addresses the issue of whether the Project's residents could safely leave the Project in the event of a wildfire. This evidence does not focus on the issue that is required to be addressed by CEQA; whether evacuation of the residents in the nearby area would be affected by the evacuation of the Project's residents during a wildfire.
>
> Second, this evidence cannot be considered substantial evidence. Substantial evidence includes "expert opinion supported by facts." (14 CCR §15384(b).) Unsubstantiated opinion does not constitute substantial evidence. (14 CCR §15384(a).) The conclusion reached by the County as it relates to emergency evacuation plans is based on unsubstantiated expert opinions. This evidence is legally insufficient to qualify as substantial evidence under CEQA.
>
> Because the County's findings regarding community emergency evacuation routes are not supported by substantial evidence, the EIR does not comply with CEQA.

As indicated in the above excerpt, the Ruling called for additional analysis of the Project's impacts to community evacuation during a wildfire and that the analysis must be based on substantial evidence.[3] This PREIR section retains the same organization as the 2020 EIR and the same impact numbering to simplify comparisons across the two documents, but this section only addresses the issues necessary to rectify any inadequacies identified in the Ruling. Therefore, **Section 3.4** "Impacts" only includes a discussion of impacts relating to community evacuation, namely Impact 3.16-1 "would the Project substantially impact an adopted emergency response plan or emergency evacuation plan" and Impact 3.16-5 "would the Project expose people or structures… to a significant risk of loss, injury or death involving wildland fires." The Ruling did not find deficiencies in the other impacts analyzed in the 2020 EIR, including Impact 3.16-2 ("would the Project exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from wildfire or the uncontrolled spread of wildfire?"); Impact 3.16-3 ("would the Project require the installation or maintenance of associated infrastructure… that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?"); or Impact 3.16-4 ("would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?"). However, the potential for the Project Modifications to have new or substantially more severe impacts in these areas is fully analyzed in **Section 4.12**.

Where the 2020 EIR included environmental setting information related to the fire risk, fire severity, and vegetation and climate characteristics relevant to fire conditions, that information is not repeated in its entirety in **Section 3.2** here. Similarly, **Section 3.3** "Regulatory Setting" in this PREIR generally only provides information that has changed since the 2020 EIR and is relevant to the discussion of community

[3] "(a) 'Substantial evidence' as used in these guidelines means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency. Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate, or evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment does not constitute substantial evidence. (b) Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." (CEQA Guidelines Section 15384)

evacuation impacts (Impacts 3.16-1 and 3.16-5). As an example, the Lake County General Plan (2008) was in effect at the time of the publication of the 2020 EIR and a description of such is provided in Section 3.16.3 "Regulatory Context" of the 2020 EIR; while this plan is still relevant to the analysis of the Modified Project included herein, the regulatory background is not repeated in **Section 3.3.3** of this PREIR. The full discussion of the environmental setting and regulatory setting are available in the 2020 EIR (**Appendix D**).

Information and analysis in this chapter has been largely summarized from the updated "Mahá Guenoc Valley Wildfire Prevention Plan" (Updated WPP) (**Appendix F**) and "Guenoc Valley Mixed Use Planned Development Project: Wildfire Risk and Evacuation Assessment, January 2024" prepared by the Community Wildfire Planning Center and Fehr & Peers (Evacuation Assessment) (**Appendix H**). The Evacuation Assessment was prepared to address the Ruling, subsequent CEQA guidance released by the Attorney General, and compliance with CAL FIRE regulations related to wildfire evacuation and emergency access. In accordance with the Settlement Agreement, the California State Attorney General's Office was provided an opportunity to review and provide input on the Evacuation Assessment.

3.2 ENVIRONMENTAL SETTING

3.2.1 Wildfire Terminology

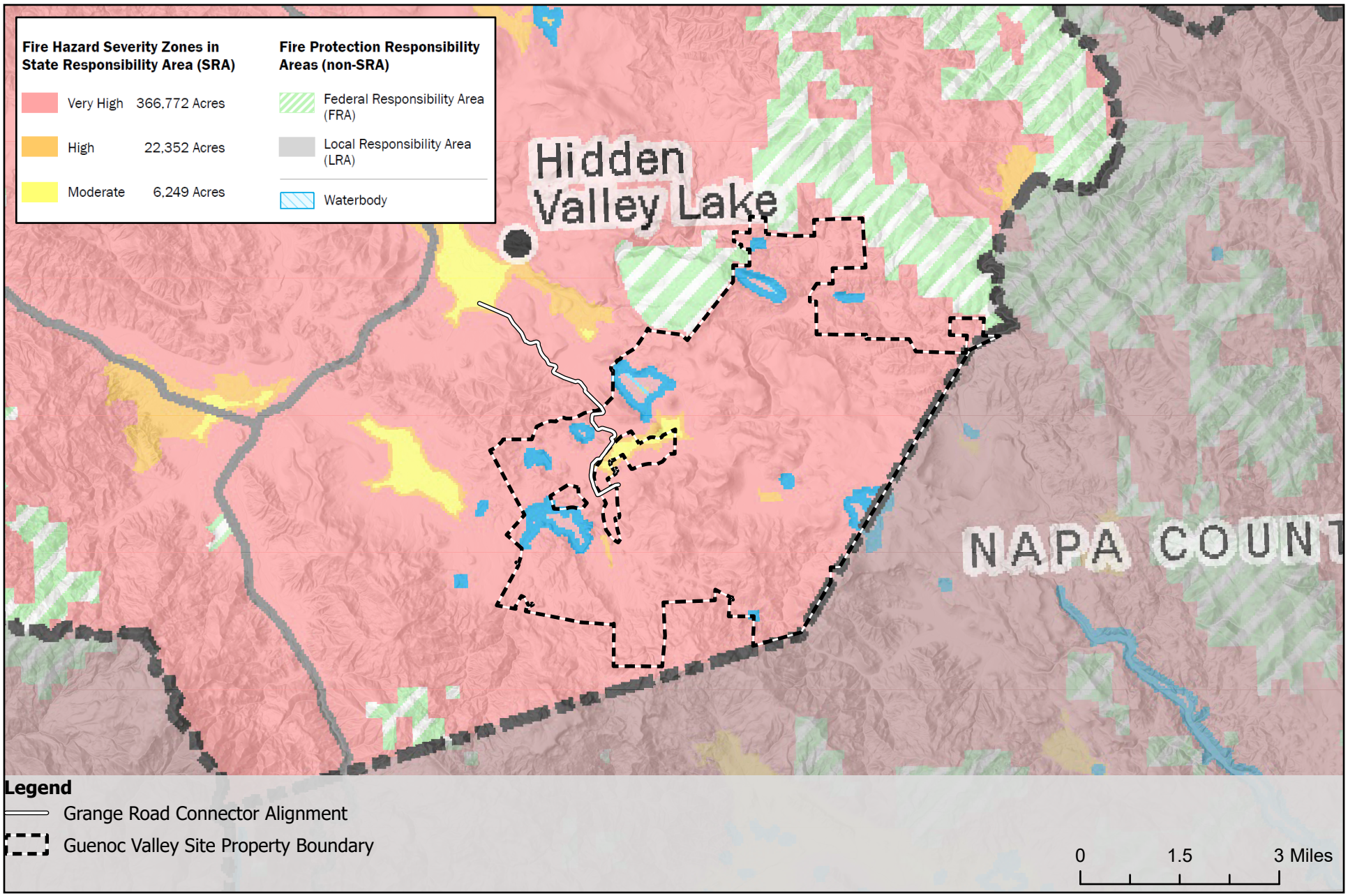
The terms wildfire hazard and wildfire risk are often used incorrectly and interchangeably, or even combined to create the term "wildfire hazard risk." Throughout this analysis, the terms "wildfire hazard" and "wildfire risk" will be used deliberately and it is important to understand the differences.

State Responsibility Areas (SRAs) are recognized by the California State Board of Forestry as areas where the California Department of Forestry and Fire Protection (CAL FIRE) is the primary emergency response agency responsible for fire suppression and prevention. PRC Section 4202 requires the State Fire Marshal to classify lands within SRAs into fire hazard severity zones (FHSZs). The FHSZs that are published by CAL FIRE describe the ***wildfire hazard***, which is the likelihood of a wildland fire occurring at a location and the potential intensity at which it will occur (see **Figure 3-1** for the FHSZ of the Project Site).

The term ***wildfire risk*** describes the wildfire hazard along with the factors that contribute to the susceptibility of an area to wildfire damage, or the impact wildfire may have on what are considered highly valued resources and assets. The wildfire risk combines the likelihood of ignitions and intensity of a fire (the components that make up the hazard) and factors in the susceptibility of the built environment. As an example, an extremely remote forest with many dead trees but no roads or homes may have a high wildfire hazard, but in the absence of structures the overall wildfire risk in the area may be lower than a similar forest with numerous scattered homes.

3.2.2 Fire Characteristics and History in the Region

The Guenoc Valley is within a fire prone region of California; the wildfire hazard is highest during late summer and throughout fall, which is known as the fire season. During the fire season, hot and dry weather dries out vegetation and increases potential for wildfire ignition, particularly during windy days. The topography of the Project Site and surrounding area is characterized by rolling terrain resulting in valley drainages and subtle ridgelines. The natural vegetation cover is dominated by oak savannah fuel types consisting of oak trees, grass, and dispersed shrubs, which are interrupted by vineyards, reservoirs, creeks, and other scattered rural development. The oak savannah fuel complex typically supports low intensity, fast moving fires, although the long grazing history across the Guenoc Valley Site has



Source: The State of California and the Department of Forestry and Fire Protection CAL FIRE State Responsibility Areas (SRA22_2) CAL FIRE Fire Hazard Severity Zones (FHSZSRA_23_2)

FIGURE 3-1

FIRE HAZARD SEVERITY ZONES

significantly lowered the fire intensity and spread potential within the Project Site (**Appendix F**).

The entire Guenoc Valley Site is located within a SRA and, as such, the Proposed Project must comply with State requirements for wildfire protection and safety, as reviewed and approved by CAL FIRE. As further described in the 2020 EIR, many factors such as vegetation, slope aspect, climate, and wind patterns influence wildfire risk and are included in Cal Fire's Fire Hazard Severity Zone rating system. Subsequent to the 2020 EIR, CAL FIRE released updated draft FHSZ maps in November 2022 which were adopted in June 2023 (**Figure 3-1**). As shown in **Figure 3-1**, the majority of the Guenoc Valley Site is now mapped as Very High FHSZ. Previously in the 2020 EIR, approximately half of the Guenoc Valley Site in the central and southeast was mapped as Very High FHSZ, while the northeastern area was High FHSZ and the western portion was mapped as Moderate FHSZ.

Several significant fires have occurred in the vicinity of the Guenoc Valley Site since 2013, as depicted in **Figure 3-2** and described in **Table 3.2-1**. During two recent fires, the 2020 LNU Lightning Complex and the 2015 Valley Fire, there were no known ignitions within the Project Site and once the fire entered the property it exhibited very low growth, which has been attributed by local fire authorities to the active grazing program and presence of vineyards (**Appendix H**). Previous to 2015, the next most recent fire that burned onto the property was a 100-acre fire in 1996. Historically, there were a number of fires that have burned on the property; however, ongoing grazing and regular prescribed fire use by the ranch employees through the 1950s, 60s and 70s reduced fire behavior and growth.

Table 3.2-1: South Lake County Fires

Fire Name	Fire Characteristics	Evacuation Area
Butts Fire	▪ Ignited 7/1/13 off Butts Canyon Road ▪ Two residences and seven outbuildings destroyed ▪ 4,300 acres burned	▪ Evacuation orders along Butts Canyon Road from James Creek to Snell Valley Road, Berryessa Estates in both Lake and Napa Counties ▪ Evacuation advisories included areas in Lake County on Butts Canyon Road from county line to Langtry Estates
Clayton Fire	▪ Ignited 8/13/16 off Highway 29 and Clayton Creek Road south of Lower Lake ▪ Contained 8/26/16 ▪ 300 structures destroyed, 189 homes, 28 structures damaged ▪ 3,929 acres burned	▪ 5,000 – 6,000 people evacuated from Lower Lake and Clearlake, including St. Helena Hospital ▪ Evacuation center opened at Highlands Senior Services Center in Clearlake
Jerusalem Fire	▪ Ignited 8/9/15 in Lake County within Jerusalem Valley ▪ Fire moved northeast and merged with Rocky Fire	▪ Mandatory evacuations for Jerusalem Valley areas and Hidden Valley Lake ▪ Evacuation center opened at Middletown High School
Rocky Fire	▪ Ignited 7/29/15 near Morgan Valley Road and Rocky Creek Road east of Clear Lake ▪ Contained 8/14/15 ▪ 96 structures destroyed, 8 structures damaged ▪ 69,438 acres burned	▪ Mandatory evacuations for Jerusalem Valley Area ▪ Numerous evacuation centers opened in region, including for animals

Fire Name	Fire Characteristics	Evacuation Area
LNU Lightning Complex (includes numerous individual fires that merged)	▪ Ignited on 8/17/20 by lightning ▪ Active for 47 days ▪ Affected Napa, Sonoma, Lake, Yolo, and Solano Counties ▪ 1,490 structures destroyed, 232 structures damaged ▪ 5 injuries and 6 deaths	▪ Mandatory evacuations in vicinity of Project Site included Hidden Valley Lake, Jerusalem Valley areas, Lower Lake ▪ Evacuation warnings for areas north of Lower Lake to Highway 20 (excluding Clearlake) and Middletown area ▪ Southbound Highway 29 was closed to allow both lanes of the highway to be used for northbound evacuation traffic
Valley Fire	▪ Ignited 9/12/15 near Cobb Mountain ▪ Contained on 10/15/15 ▪ 1,955 structures destroyed, 1,280 home ▪ 76,067 acres burned ▪ 4 homeowner deaths and 4 firefighter mortalities	▪ Communities of Cobb, Loch Lomond, Anderson Springs, Middletown, and Hidden Valley were affected ▪ Mandatory evacuations for Cobb Mountain

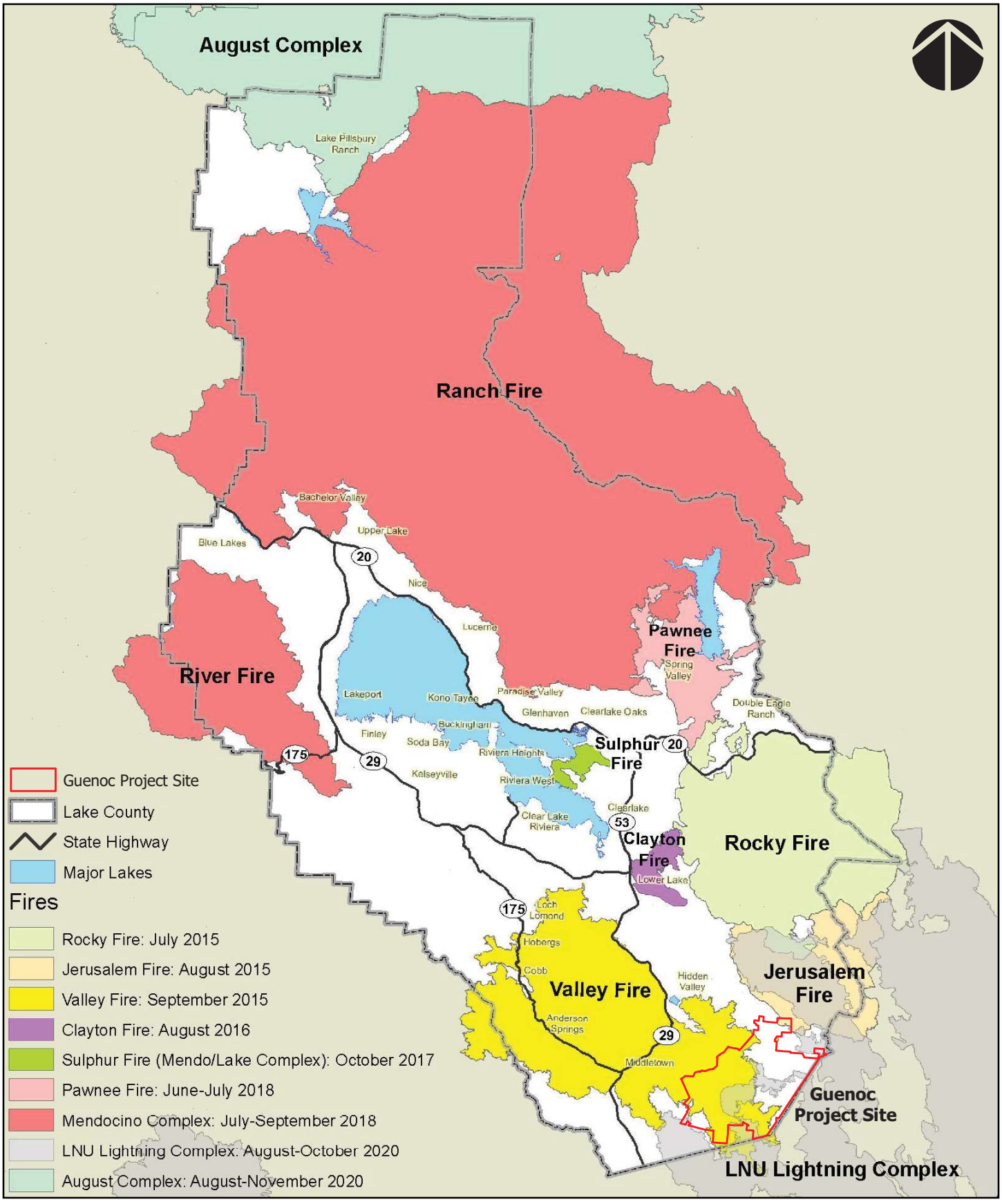
Source: **Appendix H-1**

3.2.3 Fire Protection and Emergency Response

The SLCFPD, one of six county fire protection districts, is responsible for serving communities in South Lake County. Four fire stations are located throughout the district in Middletown, Hidden Valley Lake, Cobb, and Loch Lomond. SLCFPD Station 60 in Middletown is the nearest SLCFPD fire station, located approximately 4 miles west of the Project Site. CAL FIRE has four stations within Lake County including Middletown Station 31 located in Middletown, also approximately 4 miles west of the Project Site. CAL FIRE and SLCFPD provide emergency wildfire response to the region, including the Project Site.

The Lake County Sheriff's Office of Emergency Services (OES) is the lead agency for local emergency management efforts for the County of Lake. Emergency notifications are provided via the Everbridge/Nixle platform, Genasys Protect (previously known as the Zonehaven platform), Wireless Emergency Alerts, LakeCoAlerts, and door-to-door notifications during evacuation orders.

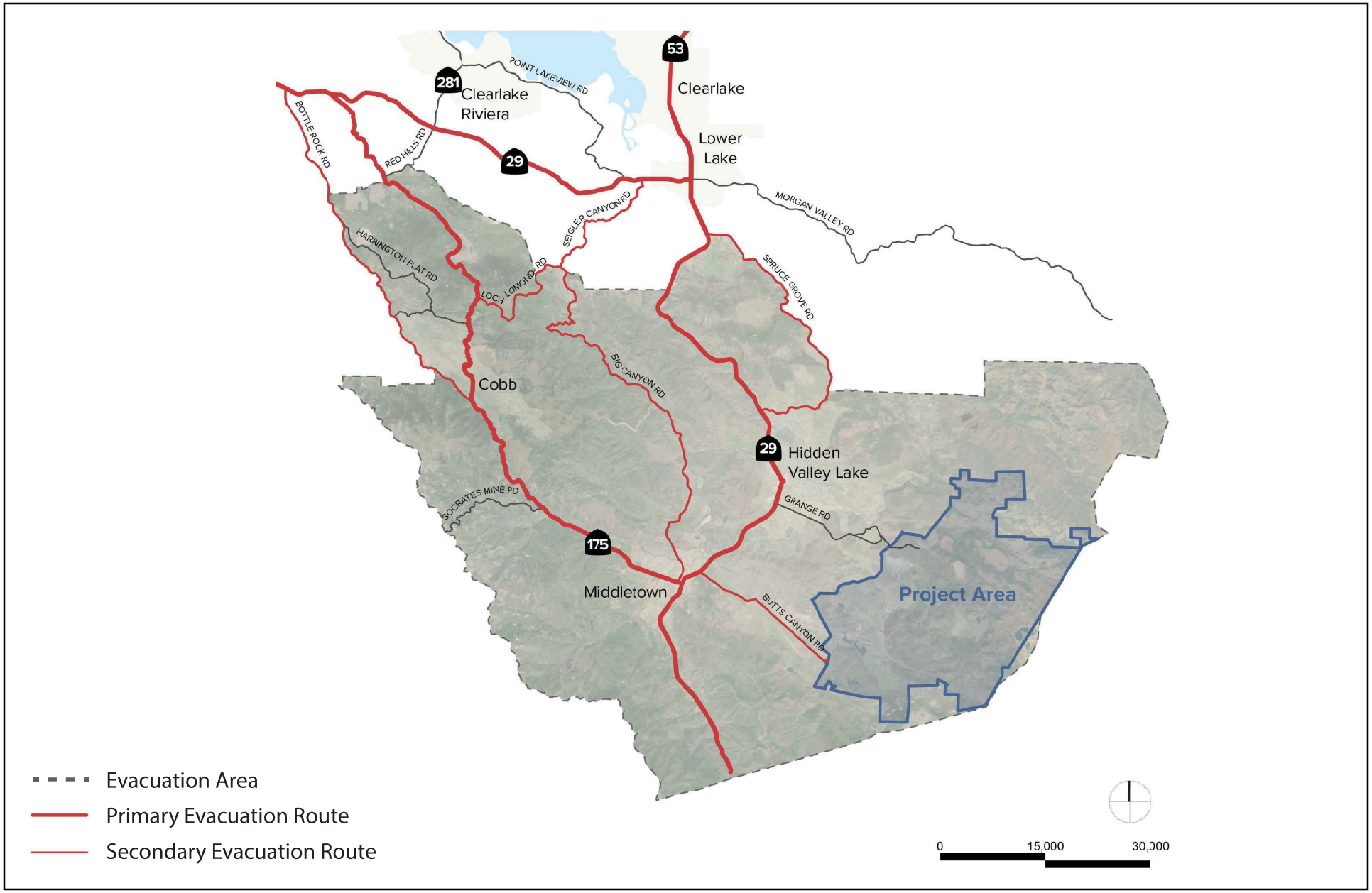
In Lake County, SR-29 provides north-south access through the central portion of the County from the southernmost boundary with Napa County, through Middletown and then northeast through Hidden Valley Lake to Lower Lake, where it turns west south of Clear Lake. At Middletown, SR 175 begins at the intersection with SR 29 and travels west-northwest past the communities of Cobb and Loch Lomond, eventually merging with SR 29 approximately 20 miles northwest. As shown in **Figure 3-3**, SRs 29 and 175 are the primary community evacuation routes in South Lake County. Secondary community evacuation routes are generally County roads that provide regional or through access. In the vicinity of the Guenoc Valley Site, these include: Butts Canyon Road that connects from the Napa County line to SR 29 in Middletown; Big Canyon Road that connects Middletown to Loch Lomond Road and Seigler Canyon Road in the north; Spruce Grove Road that provides an alternate route around SR 29 north of Hidden Valley Lake in the eastern portion of the County; and Bottle Rock Road that connects SR 175 to SR 29 in the western portion of the County.



Source: Lake County CWPP

FIGURE 3-2

SOUTH LAKE COUNTY FIRE HISTORY



Source: Fehr & Peers, 2024

FIGURE 3-3

COMMUNITY EVACUATION ROUTES

The regional roadway network is managed predominantly by Lake County and Caltrans, with CAL FIRE and other partner wildfire agencies (e.g. fire districts or local Firewise councils) providing vegetation and fuel management along roadways. The Clear Lake Environmental Research Center (CLERC) is a local non-profit organization that is currently partnering with CAL FIRE to reduce forest fuels around Lake County, which includes roadways. The Lake County Wildfire Risk Reduction Project – Phase 1 will implement priority actions in the Updated Lake County Community Wildfire Protection Plan (CWPP) (2023) including about 45 miles of additional roadside clearance (Lake County, 2023a). Significant collaboration efforts have been underway between these agencies to improve the state highway system and local roadways in the area, which will ultimately improve regional access for all residents and visitors to South Lake County, including those associated with the Proposed Project. As described further on page 79 of the Wildfire Risk and Evacuation Assessment in **Appendix H-1**, "for the state highway system, efforts include the State Route 29 South Corridor Engineered Feasibility Study (2014 joint study by Caltrans District 1 and Lake County/City Area Planning Council) and implementation of the SR 29 Konocti Corridor project." The SR 29 Konocti Corridor Project is a cooperative effort of Caltrans, the Lake County Local Area Planning Council (LAPC), and the Federal Highway Administration (FHWA). In total, the project will widen an 8-mile section of SR 29 from a two-lane divided highway to a four-lane expressway. "Segment 2C of the SR 29 Konocti Corridor Project (widening of the westernmost 3.1 mile segment of the project) was completed in June 2023. The Caltrans Milestone Report for Lake County (August 10, 2023) indicates that construction of the remaining Segments 2A and 2B is scheduled for completion in December 2030" (**Appendix H-1**).

3.3 REGULATORY SETTING

3.3.1 Federal

National Fire Protection Association

The National Fire Protection Association (NFPA) is an international nonprofit organization that has established the NFPA 1710 industry standards as well as codes, training, and education for eliminating death, injury, and other damages related to fire, electric, and associated hazards. The NFPA recommends that 90 percent of incident calls receive responses within 6 minutes of the requested assistance in order to intervene and prevent the fire from spreading past the room of origin. Fire departments are advised to allow 1 minute for receiving and dispatching the call, 1 minute for response preparation, and 4 minutes for arriving to the scene. The Firewise USA program was created by NFPA for communities to apply to be Firewise USA Sites. The communities must obtain a wildfire risk assessment from their state forestry agency or fire department and develop a plan of action. These sites must invest the equivalent of minimum one volunteer hour per housing unit annually.

3.3.2 State

New State Minimum Firesafe Regulations

On January 31, 2023, after certification of the 2020 EIR, the Board of Forestry adopted new State Minimum Fire Safe Regulations (14 CCR, Division 1.5, Chapter 7 Subchapter 2, Articles 1-5). These regulations establish minimum wildfire protection standards applicable to building within the SRA and the Very High FHSZ. The regulations mandate that future design and construction of structures, subdivisions and other developments within the SRA and the Very High FHSZ shall provide for basic emergency access and perimeter protection measures. The regulations also provide standards for access, signage and building numbering, private water supplies for emergency use, and vegetation management (including vegetation

modification, fuel breaks, and greenbelts). The Minimum Fire Safe Regulations provide for minimum turning radii, road or driveway widths, and dead-end or non-looped road lengths, and other standards that will allow safe ingress and egress for first responders and evacuees in an emergency. The proposed amendments promote compliance with the revisions to PRC 4290 within SB 901 (Chapter 626, 2018), and improve clarity of certain administrative processes within Article 1 of the existing regulations, specifically to:

- Establish standards for fuel breaks and greenbelts near communities;
- Establish measures for the preservation of undeveloped ridgelines;
- Improve clarity regarding the inspection and enforcement agencies;
- Promote local jurisdiction compliance with the Fire Safe Regulations and to clarify the process by which that occurs;
- Increase the flexibility offered to local jurisdictions in implementing the minimum standards provided in these regulations.

PRC Section 4291 requires the maintenance of defensible space around a structure located within or adjacent to a mountainous, forested, or shrub-covered area, and specifies an ember-resistant (e.g., hardscape) zone 5 feet from the building, more intense fuel reductions between 5 and 30 feet from the structure, and more moderate fuel vegetation management in the zone between 30 and 100 feet from the structure.

Senate Bill (SB) 99

SB 99 (2020) requires review and updating of each local city and county general plan's safety element to include information to identify residential developments in hazard areas that do not have at least two emergency evacuation routes.

Assembly Bill (AB) 747

AB 747 (2019) added Government Code Section 65302.15, which requires that, upon the next revision of a Local Hazard Mitigation Plan (LHMP) on or after January 1, 2022, or beginning on or before January 1, 2022, if a local jurisdiction has not adopted a LHMP, the safety element must be reviewed and updated as necessary to identify evacuation routes and their capacity, safety, and viability under a range of emergency scenarios. If a LHMP, emergency operations plan, or other document fulfills commensurate goals and objectives, a local agency may use that information in the safety element to comply with this requirement by summarizing and incorporating by reference such a plan or other document into the safety element. These new requirements apply to all types of hazards in the safety element and are not unique to fire.

AB 1409

AB 1409 (2021) amended Government Code Section 65302.15, which requires general plan safety elements to be reviewed and updated as necessary to identify evacuation locations under various emergency scenarios, and the capacity, safety, and viability of evacuation routes. The safety element must be reviewed and revised no less than once every eight years with new information regarding flood and fire hazards, as well as climate adaptation and resiliency strategies applicable to the county.

Attorney General's Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects

On October 10, 2022, after certification of the 2020 EIR, the Office of the Attorney General (OAG) published *Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act* (AG Guidance; OAG, 2022). The AG Guidance is designed to help lead agencies comply with CEQA when considering whether to approve projects in wildfire-prone areas. The AG Guidance provides "suggestions for how best to comply with CEQA when analyzing and mitigating a proposed project's impacts on wildfire ignition risk, emergency access, and evacuation."

The AG Guidance describes CEQA's requirements in the following two analysis categories.

- Analyzing Impact on Wildfire Risk
- Analyzing Impact on Evacuation & Emergency Access

The addition of new development into high wildfire risk or adjacent areas may impact the evacuation of project residents, as well as the existing population (e.g., residents, workers, students, visitors, and possibly livestock) in the area and the ability of emergency responders to simultaneously access the area to fight wildfire. This can, in turn, impact the risk and extent of large-scale fire spread and community safety within and around the new development. Section IV.B of the AG Guidance outlines variables that should be considered in the analysis of impact on wildfire risk related to the following project characteristics: Project Density, Project Location in the Landscape, and Water Supply and Infrastructure. Section IV.C of the AG Guidance contains further recommendations regarding evacuation and emergency access, including specific methodology (discussed further in **Section 4.12**).

3.3.3 Local or Regional Regulations

Lake County Community Wildfire Protection Plan (CWPP)

Lake County had an adopted 2009 CWPP that was in place at the time of the 2020 EIR. In 2023, an updated CWPP ('2023 CWPP') was released and adopted following public workshopping of the 2022 Draft CWPP. The 2023 CWPP updates and streamlines the 2009 version, provides fire safety information to residents and homeowners, and identifies fuel reduction projects and fire safety resources throughout the County. As noted in the 2023 CWPP, communities at a higher level of wildfire risk include Cobb, Hidden Valley Lake, Loch Lomond, and Middletown in South Lake County near the Project Site.

South Lake County Wildland Fire Preparation and Emergency Plan (2016)

The South Lake County Wildland Fire Preparation and Emergency Plan (2016) compiles information for the public on how to best prepare for emergencies and what to do during an evacuation. The plan was written by the South Lake County Fire and South Lake Fire Safe Council and identifies primary evacuation routes for the South Lake County communities, which include SR 29 and SR 175, and secondary evacuation routes, Butts Canyon Road, Big Canyon Road, Spruce Grove Road, Loch Lomond Road, Bottle Rock Road, and Seigler Canyon Road. The plan establishes temporary assembly zones on the emergency evacuation map (South Lake Fire Safe Council, 2016). Middletown High School (20932 Big Canyon Road) and Coyote Valley Elementary School (18950 Coyote Valley Road) are the two assembly zones closest to the Project site.

Lake County Emergency Operations Plan (2020)

The Lake County Emergency Operations Plan (EOP) was updated in 2020 after publication of the 2020 EIR. The 2020 EOP provides a structure for coordinating interagency support for a local response to an incident through hazard-specific annexes, such as the Wildfire Urban Interface (WUI) Annex, which was updated in 2021. The WUI Annex establishes priorities, responsibilities, and assigns tasks to the various response agencies who respond during wildfires. Wildland fire suppression, structure protection, and incident management are provided by CAL FIRE on State Responsibility Areas, Lake County Fire Districts within Local Responsibility Areas, and the U.S. Forest Service and Bureau of Land Management within federal lands. Because wildfires do not follow jurisdictional boundaries, the WUI Annex provides a clear framework for how the agencies will interact and establish coordinators for firefighting efforts, in addition to strategies and guiding principles for fire fighters on the ground.

Other Relevant Lake County Plans and Studies

The following plans and studies are not specific emergency plans or wildfire-related studies, but contain information and policies relevant to emergency response and evacuation. As such, these studies were considered as appropriate in the Evacuation Assessment (**Appendix H-1**):

- Lake County Regional Transportation Plan / Active Transportation Plan (2022) – refer to **Section 4.10.3** for a discussion;
- Lake County Local Hazard Mitigation Plan (2018) – refer to Section 3.8.3 of **Appendix D**;
- Lake Transit Development Plan & Marketing Plan (2015);
- Valley Fire Post Fire Watershed Emergency Response Team Report (2015);
- Middletown Community Action Plan (2014);
- SR 29 South Corridor Engineered Feasibility Study (2014); and
- Lake County General Plan (2008) – refer to Section 3.16.3 of **Appendix D**.

3.4 IMPACTS

3.4.1 Methods of Analysis

The analysis of wildfire impacts is based upon a review of the Updated WPP (**Appendix F**), project plans, maps, CAL FIRE data, and other available documents, consideration of federal, State, and local regulations and guidelines, input from the Attorney General's Office, and consultation with the Lake County Sheriff's Office. The Community Wildfire Planning Center and Fehr & Peers prepared a Wildfire Risk and Evacuation Assessment (2023; **Appendix H-1**) to specifically address the Ruling and the AG Guidance (2022). Per the AG Guidance, for "projects located in high wildfire risk areas that present an increased risk of ignition and/or evacuation impacts, evacuation modeling and planning should be considered and developed at the time of project review and approval." Specifically, evacuation modeling and analysis should include the following per the AG Guidance:

- Evaluation of the capacity of roadways to accommodate project and community evacuation and simultaneous emergency access.
- Assessment of the timing for evacuation.
- Identification of alternative plans for evacuation depending upon the location and dynamics of the emergency.
- Evaluation of the project's impacts on existing evacuation plans.

- Consideration of the adequacy of emergency access, including the project's proximity to existing fire services and the capacity of existing services.
- Traffic modeling to quantify evacuation time estimates under various likely scenarios.

Wildfire Evacuation Research

Significant research has been conducted on California wildfires, evacuations that have occurred, and wildfire risk reduction measures. A *Review of California Wildfire Evacuations from 2017 to 2019* (Wong et al., 2020) reviewed evacuations conducted across 11 major wildfires where approximately 1.1 million people were ordered to evacuate. This study included local data from fires in Sonoma County (the Kincade Fire with 200,000 evacuees), Butte County (the Camp Fire with 52,000 evacuees), and Lake, Mendocino, Glenna, and Colusa counties (the Mendocino Fire Complex with 17,000 evacuees). This study yielded information on number of evacuants per household, rate of non-compliance with a mandatory evacuation order, and other key factors as summarized in **Table 3.4-1**.

Additionally, surveys were conducted of Santa Rosa residents who evacuated from the 2017 Tubbs Fire in Sonoma County, which was one of the only studies in the last five years to quantify the number of vehicles evacuated per residential household. Based on this data from a nearby jurisdiction, 1.75 vehicles were evacuated per household (**Appendix H-1**).

Table 3.4-1: Evacuation Statistics

Evacuation Factor	Statistics
Vehicles per household during evacuation	1.89 (weighted average)
Non-compliance rate [1]	Between 3% and 11%
Shadow evacuation rate [2]	Between 29% and 75%
Percentage evacuating in one vehicle	Between 34% to 45%
Percentage evacuating in two or more vehicles	Between 49% to 62%

[1] Non-compliance rate is the number of individuals who received a mandatory evacuation order but did not evacuate.
[2] Shadow evacuation rate refers to the individuals who did not receive a mandatory evacuation order but chose to evacuate.
Source: Wong et al., 2020 and **Appendix H**

Traffic Simulation Model

A region's evacuation system can be assessed in different ways, from identifying a theoretical hourly capacity of the available roadways and comparing it to an expected traffic volume to a full simulation of the roadway network to assesses how traffic will redistribute to alternative routes during an evacuation and identification of congested locations in the event of an evacuation. As described in **Appendix H-1**, evacuation time estimates were prepared using the Lake County Area-Wide Microsimulation Model (LAMM) that spans most of Lake County and was originally prepared for the Lake County/City Area Planning Council. LAMM is a 450-square-mile microscopic traffic simulation model spanning most of Lake County. The model study area includes 720 road miles, 120 of which are on SRs 20, 29, and 53, as well as road network detail in local communities.

The LAMM was designed to interface with the Wine Country Interregional Partnership (WCIRP) travel demand model. The LAMM and WCIRP travel demand models are built on shared geographic information system platform. The LAMM includes nearly every street in Lake County and was calibrated and validated based on criteria published by the FHWA and Caltrans. LAMM was used for the traffic operations assessment for the SR 29 South Corridor Engineered Feasibility Study. The LAMM relies on a series of

zones consistent with the WCIRP travel demand model, trip tables that identify trips between land uses in the origin zones and destination gateways, and the existing road network. The LAMM estimates traffic and levels of congestion on 15-minute intervals and, as link congestion builds (i.e., roads fill with cars), it dynamically reassigns traffic to less congested routes if available.

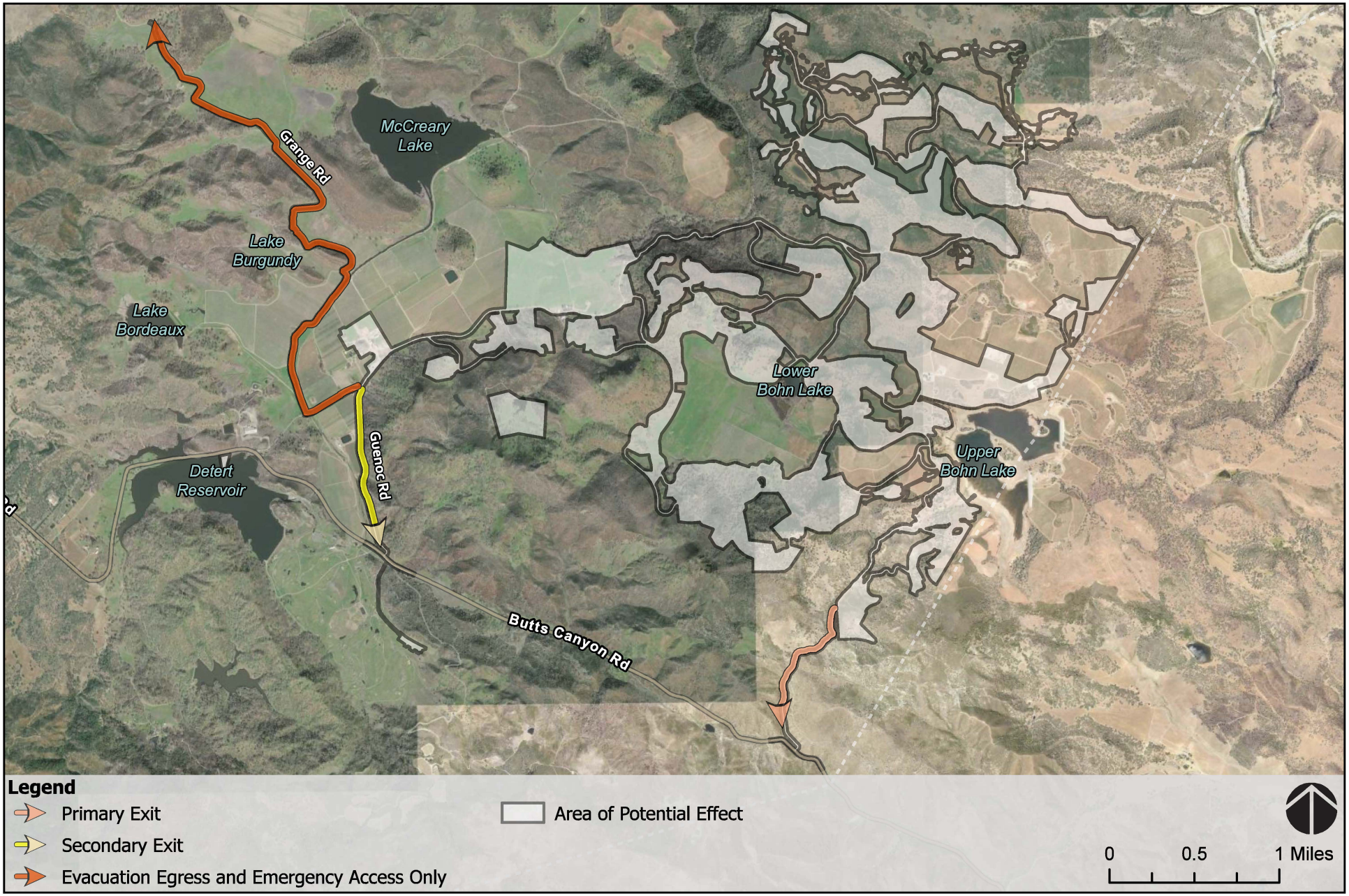
The road network within the LAMM model was updated to include the roundabout at SR 29 and Hartmann Road that was installed in 2019 based on the SR 29 South Corridor Engineered Feasibility Study (2014), and traffic signal phasing/timing data was updated as necessary (**Appendix H-1**). Total population in Lake County grew between 2011, when the LAMM model was originally developed, and 2022 from 64,300 to 68,200 for a total growth of 6.1 percent. This indicates there was not a substantial change in population in Lake County over the period of time since the LAMM model was originally developed and that it may be applied based on the original model development. To support this conclusion, turn movement counts collected at 14 intersections on Friday, August 19, 2022 were compared to the updated LAMM model predictions; these counts confirmed that the new model is accurately representing observed field conditions (**Appendix H-1**). One modification to the regional transportation network was made in the LAMM for the cumulative (2040) analysis to include Segment 2C of the Konocti Corridor (formerly Lake 29 Improvement) project, discussed further in **Section 3.2.4** (**Appendix H-1**).

Evacuation Assessment

The Evacuation Assessment identifies scenarios of evacuation events, defines the potential evacuation area, defines evacuation routes, estimates trip demand for various evacuation scenarios, assigns trips along evacuation routes during those scenarios, and estimates total evacuation times (**Appendix H-1**). The Evacuation Area encompasses the communities of Middletown, Hidden Valley, Cobb, Loch Lomond, and surrounding areas within southern Lake County. Primary and secondary community evacuation routes are those that provide the most direct path to exit the Evacuation Area with the least exposure to risk, and were identified in the South Lake County Wildland Fire Preparation and Emergency Plan (2016) and are depicted in **Figure 3-3**:

- Primary Community Evacuation Routes:
  - SR 29
  - SR 175
- Secondary Community Evacuation Routes:
  - Butts Canyon Road
  - Big Canyon Road
  - Spruce Grove Road
  - Loch Lomond Road
  - Bottle Rock Road
  - Seigler Canyon Road

Within the Guenoc Valley Site, the Modified Project now includes three evacuation routes for vehicles leaving the Project Site (**Figure 3-4**). The 2020 EIR included the proposed Primary Access Road at McCain Canyon that would connect directly to Butts Canyon Road and a Secondary Access Road that would connect to Butts Canyon Road via an existing intersection approximately halfway between the existing Langtry Winery Entrance and the new Primary Access Road. The third emergency access road is the proposed Grange Road Connector that would provide emergency access and evacuation egress only, from the interior of the Project Site to SR 29 via Grange Road.



Source: Lake County Community Development and General Plan; County of Napa, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS,

FIGURE 3-4

PROJECT EVACUATION ZONES

- Project Evacuation Routes:
    - Primary Access Road to Butts Canyon Road
    - Secondary Access Road to Butts Canyon Road
    - Grange Road Connector (evacuation egress and emergency access only) to SR 29

In order to analyze potential impacts to community evacuation routes, evacuation scenarios were defined. The following excerpt from **Appendix H-1** defines these two Wildfire Scenarios:

- "**Wildfire Scenario A** (wildfire from north to south) is based on a wildfire that starts in Boggs Mountain Demonstration State Forest in the northwest portion of the Evacuation Area and moves to the southeast, similar to the 2015 Valley Fire that was a significant wind-driven weather event that traveled from northwest to southeast from Cobb Mountain into the valleys and communities of Middletown and Hidden Valley Lake.
- **Wildfire Scenario B** (wildfire from south to north) is based on a wildfire that starts on Mt. St. Helena in the southernmost portion of the Evacuation Area and moves to the north. This is somewhat similar to the LNU Lightning Complex fire that affected the southern portion of the Evacuation Area."

Each of these Wildfire Scenarios was analyzed in the following years: Baseline (2022), Baseline (2022) plus Guenoc Valley Project Phase 1, Cumulative (2040), and Cumulative (2040) plus Guenoc Valley Project Full Build-Out. As a result, eight scenarios were modeled encompassing two wildfire scenarios under baseline and future conditions, both with and without the Project. Various adjustments were made to the LAMM model as fully described in **Appendix H-1**. For the Cumulative (2040) transportation network, improvements to SR 29 were assumed to have been fully implemented as part of the Konocti Corridor project (Segment 2C). To be conservative, improvement measures to local roadways or intersections were not included in the 2040 model if the funding or design efforts are not finalized. For the Baseline (2022) plus Project Phase 1 Scenario and the Cumulative (2040) plus Project Full Build-Out scenario, a roundabout was added to the LAMM model at SR 29 and Butts Canyon Road to indicate that **Mitigation Measure 3.13-1** was implemented. Furthermore, to account for the unknown nature of future emergencies that may trigger evacuation, a reduced capacity of approximately 40 percent below the standard roadway operating capacity was included to account for potential changes in driver behavior during the emergency, presence of wildfire smoke that may affect visibility, debris on the roadway, or other hazards that could occur throughout the evacuation period. Little research on changes in driver behavior during wildfire and the resulting effect on vehicle throughput on evacuation routes is available locally, but research conducted in China supports a 40 percent reduction in driver speeds in low-visibility conditions analogous to wildfire smoke (**Appendix H-1**).

The Evacuation Analysis included the following key parameters:

- Evacuation order issued at 4:00 pm on a Friday afternoon in August, which was chosen because this is the timeframe with the highest traffic volume.
- All homes are occupied for both community population groups and Proposed Project population groups.
- The analysis assumed that 100 percent of residents for both community population groups and Project population groups in the Evacuation Area evacuate (recall that a 3 to 13 percent non-compliance rate was identified by Wong et al., 2020, so this is an extremely conservative assumption).

- 80 percent of employees for community population groups and 100 percent of employees for Project population groups are at their place of employment, which is likely high at 4:00 p.m. on a Friday.
- 85 percent hotel occupancy for community population groups and 100 percent hotel occupancy for Project population groups, which is likely a high occupancy rate as the 2020 EIR Traffic Impact Analysis assumed a 71% occupancy rate based on recent local trends.
- For employees who work and live inside the Evacuation Area, the analysis assumed that they would make a trip from their workplace to their home, and then be part of subsequent evacuation numbers out of the area. Employees who live outside the Evacuation Area were assumed to evacuate immediately and not travel inside the Evacuation Area. For employees who work outside of the Evacuation Area but live inside the Evacuation Area, the analysis conservatively assumed that they would enter the Evacuation Area to access their home, then join the subsequent evacuation numbers out of the area.
- For the cumulative analysis (2040), a forecasted growth rate of 1.6 percent was applied, which is conservative as it is more than double the 0.6 percent growth rate experienced in Lake County between 2011 and 2022.

The number of potential trips estimated to originate from the community population, Project Phase 1, and Project at Full Build-Out are summarized in **Table 3.4-2**. In addition, there will be background traffic on the local roadways, which are trips on the designated evacuation routes that do not have an origin or destination in the Evacuation Area.

The background traffic was estimated by daily and peak hour traffic counts collected on SR 29 in 2022 (**Appendix H-1**). Not all community- and Project-generated evacuation trips will begin at the same time. As explained further in **Appendix H-1**, "evacuation departure time for trips leaving the Evacuation Area varies by many factors including, but not limited to, the time of day, type of hazardous event, perceptions of risk, and relative preparedness of evacuees. For situations where ample notice is given or the family unit is already together, less time is needed to prepare for the evacuation. On the other hand, where there is minimal notice given or when the family unit is not together, the time required to prepare for an evacuation is typically longer as residents need to pack belongings, collect their animals, and conduct other coordination activities before beginning their evacuation trip." Using research conducted in 2021, the Evacuation Assessment quantified when different groups would be more likely to begin their evacuation during the two wildfire scenarios and modeled the trips in 15-minute intervals starting at 4:00 PM. Some of the key parameters for the model included assumptions such as employees and tourists in the community population group would have the quickest departure curve as they do not need to pack items or coordinate evacuations with others. Full-time residents that do not have a worker employed outside the household would be able to evacuate quicker than residents with a worker employed outside the household, as many of those households would wait for the person to return home from work before evacuating. Finally, Guenoc Valley Project employees would have a delayed departure curve compared to other employees in the Evacuation Area because most of the Project-employees would be trained to assist in the evacuation of Project residents and guests and would be required to delay their own evacuation. Finally, the model accounts for four primary directions that evacuation trips will follow to get outside of the Evacuation Area in the event of an emergency.

Table 3.4-2: Evacuation Trips for Community and Project Phases

Group	Unit Type	Quantity	Trips Generated
Community Population			
Primary Households	Dwelling Units	4,455	7,735
Secondary Homes	Dwelling Units	1,214	1,457
Hotels	Hotel Rooms	123	105
Employees at Work (live and work inside Evacuation Area)	Persons	1,591	1,591
Employees at Work (work inside but live outside Evacuation Area)	Persons	1,240	1,240
Employees at Work (live inside but work outside Evacuation Area)	Persons	1,414	1,414
	Sub-Total	**10,037**	**13,542**
Project Phase 1			
Residential Estate Units	Dwelling Units	385*	659*
Resort Residential Units	Dwelling Units	141	141
Hotels	Hotel Rooms	147*	103*
Employees**	Persons	610	610
Visitors	Persons	100	83
	Sub-Total	**1,383***	**1,569***
Project Full Build-Out (including Phase 1)			
Residential Estate Units	Dwelling Units	1,400	2,394
Resort Residential Units	Dwelling Units	450	450
Hotels	Hotel Rooms	400	280
Employees	Persons	1,220	1,220
Visitors	Persons	200	167
	Sub-Total	**3,670**	**4,511**

Notes:
*The Wildfire Evacuation Assessment analyzed 401 residential estate units (16 more than the 385 estates that are proposed) and 127 hotel rooms (20 less than what is proposed). The Supplemental Memorandum (February 9, 2024, **Appendix H-2**) corrected the residential estate and hotel rooms.
**Workforce Co-Housing is included with Employees.
Source: Fehr & Peers (**Appendix H-1** and **Appendix H-2**)

After determining the evacuation trip demands and associated transportation network, a dynamic traffic assignment was performed to reflect congestion, departure times, and model the Evacuation Time Estimate (ETE). The ETE represents the time required for the last evacuee to safely leave the Evacuation Area.

3.4.2 Thresholds of Significance

The following thresholds of significance from Appendix G of the State CEQA Guidelines are applied in the context of the wildfire hazards and evacuation time estimate assessments provided in **Appendix H**. For purposes of this PREIR, a significant impact would occur if implementation of the Proposed Project would:

- Substantially impair an adopted emergency response plan or emergency evacuation plan

- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires

The analysis and mitigation of impacts is also based on guidance provided by the California Attorney General in *Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects under the California Environmental Quality Act* released on October 10, 2022. This document provides guidance on factors that should be considered in analyzing a project's impacts related to wildfire risk, analyzing a project's impacts related to evacuation and emergency access, and identifying mitigation measures for wildfire risk and evacuation, and emergency access impacts. This includes considering whether the Proposed Project creates an inconsistency with:

- An adopted emergency operations or evacuation plan;
- A safety element that has been updated per the requirements in Government Code sections 65302(g)(5) and 65302.15 to integrate wildfire and evacuation concerns; or
- Recommendations developed by the California Board of Forestry and Fire Protection regarding the safety of subdivisions pursuant to Public Resources Code section 4290.5.

3.4.3 Impacts

IMPACT 3.16-1:*	**SUBSTANTIALLY IMPAIR AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN, OR RESULT IN AN INCONSISTENCY WITH A SAFETY ELEMENT THAT HAS BEEN UPDATED TO INTEGRATE WILDFIRE AND EVACUATION CONCERNS, OR RECOMMENDATIONS DEVELOPED BY THE CALIFORNIA BOARD OF FORESTRY REGARDING THE SAFETY OF SUBDIVISIONS**			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Significant	Significant	Significant	No Impact
Mitigation Measures	MM 3.16-3, 3.16-4, 3.16-5, 3.16-6	MM 3.16-7 and 3.16-8	MM 3.16-3, 3.16-4, 3.16-5, 3.16-6	None Required
Significance After Mitigation	Less Than Significant	Less Than Significant	Less Than Significant	N/A

*Impact numbering retained from the 2020 EIR. Note that in the 2020 EIR, separate analysis columns were provided for the Guenoc Valley Site, the Off-Site Workforce Housing, and the Off-Site Infrastructure. The Evacuation Assessment (**Appendix H-1**) analyzed the Off-Site Workforce Housing inclusive with the employees on the Guenoc Valley Site.

The adopted emergency response plans and emergency evacuation plans that are in effect and applicable to the Guenoc Valley Site are the Lake County Community Wildfire Protection Plan (2023), the Lake County Emergency Operations Plan (2020), and the South Lake County Wildland Fire Preparation and Emergency Plan (2016) (collectively referred to as 'Adopted Emergency Plans'). In addition, Section 7.7 of the Lake County General Plan Health & Safety Element addresses Urban and Wildland Fire Hazards. A significant impact would occur if the Proposed Project would substantially impact or interfere with these adopted plans or the recommendations developed by the California Board of Forestry and Fire Protection regarding

the safety of subdivisions pursuant to Public Resources Code section 4290.5. To assess this impact, the following analysis has been divided into three areas, the first focusing on whether the Proposed Project is consistent with the overarching goals of those Adopted Emergency Plans that contain policies that can be applied on a project-level basis. The second section analyzes the proposed emergency access to the Guenoc Valley Site, while the third section most directly addresses the Court Ruling regarding potential community-wide evacuation impacts.

Consistency with Adopted Emergency Response Plans, Emergency Evacuation Plans, and Safety Element

General Plan Health and Safety Element Consistency

Section 7.7 of the Lake County General Plan Health & Safety Element addresses Urban and Wildland Fire Hazards, and Policy HS-7.4 (Wildland Fire Management Plans) requires development of wildland fire management plans for projects adjoining significant areas of open space that may have high fuel loads, such as the Guenoc Valley Site. The Project as analyzed in the 2020 EIR included an assessment of the Wildfire Prevention Plan (WPP; Appendix FIRE to 2020 EIR) which has been updated as described in **Section 2.2.3** to reflect the Ruling, Settlement Agreement, and Project Modifications and is included as **Appendix F** to this PREIR. The General Plan Health & Safety Element includes policies related to new development that call for consultation with fire service districts, encouraging cluster development, requiring development of wildland fire management plans, establishing fuel breaks around structures, implementing wildfire risk reduction measures (i.e., cluster development, providing ongoing fire prevention maintenance activities, and providing an adequate private water supply), and using fire resistant building materials. The preparation, adoption, and adherence to the Updated WPP ensures consistency with the Health & Safety Element and related General Plan policies.

The Updated WPP presents numerous targeted wildfire abatement practices specific to the Guenoc Valley Site that can be grouped into the following general categories: general wildfire prevention, construction wildfire prevention, utility wildfire prevention, landscape wildfire prevention, building wildfire prevention, wildfire prevention preparedness, and wildfire emergency response. In addition to the Updated WPP, the Modified Project includes components designed to facilitate future emergency response by SLCFPD and CAL FIRE, should a wildfire occur. The proposed Fire Station and Emergency Response Center, which would be located in the central portion of the site between the Bohn Ridge Resort Community and the Denniston Golf Estates Community, would ultimately become SLCFPD Fire Station #61. There are numerous designated meeting spaces throughout the Guenoc Valley Site, with the proposed Fire Station and Emergency Response Center providing the centralized area for first responders to gather and coordinate efforts. It will include essential fire-fighting equipment, minor medical supplies, and a helipad. The Project Modifications associated with the Fire Station and Emergency Response Center in the Updated WPP are primarily funding and staffing commitments. The Applicant shall pay the SLCFPD annually the amount determined by SLCFPD to be necessary in order to staff and equip the Emergency Response Center for fire services, including wildfire response. Through its CC&Rs, the HOA will be required to contract with a wildfire expert for the duration of the Project, with costs paid by the HOA. The HOA shall consult with the wildfire expert in its implementation of wildfire prevention measures, including those identified in the WPP. Furthermore, the Project's Emergency Response Center will have on-site at least one individual with wildfire expertise related to evacuation and emergency access, the cost of which will be paid by the Guenoc Valley Project HOA.

2023 CWPP Consistency

The 2023 CWPP is a community-wide plan that provides fire safety information to residents and homeowners, identifies fuel reduction projects throughout the County, and promotes "comprehensive and community-based adaptation to living in a fire adapted ecosystem." As such, the 2023 CWPP contains overarching goals and policies for the entire County and does not necessarily provide project-specific checklists or individual project metrics for consistency, and many of the larger County-wide coordination or funding items may not be applicable to a single project. However, Appendix A of the 2023 CWPP includes 145 individual fuel-reduction and prevention priorities specific to the needs and conditions in various communities across the County, which include best practices such as controlled burns, ongoing fuel break maintenance, animal grazing, fire prevention and education, seeking funding for wildfire hazard and risk mapping and abatement, and vegetation management along roadways. The site-specific measures within the Updated WPP are consistent with the best practice priorities listed in Appendix A of the 2023 CWPP. Appendix B of the 2023 CWPP includes a detailed Action Plan with 70 unique actions listed under seven main categories:

- Advancing Defensible Space
- Reducing Fuels
- Reducing Structural Ignitability
- Enhancing Fire Protection
- Evacuation Planning and Emergency Preparedness
- Promoting Fire Safe Education
- Facilitating Long-Term Fire Safety

The Modified Project and the Updated WPP are consistent with the 2023 CWPP Action Plan, in that they include numerous risk reduction measures that are consistent with the community-wide actions in each of these seven identified Action Plan categories. Specifically, the Modified Project and Updated WPP include:

- Increased Project density: removal of 64 remote lots at the Urban-Wildland Interface and the remote camping area will consolidate people and structures in valley/commercial core areas where firefighting access and evacuations are easier (consistent with CWPP Action Plan #2).
- Creation and maintenance of firebreaks along property boundaries and roadways, which now include a 10-foot hardscape shoulder where topographically feasible, in addition to irrigated green belts (consistent with CWPP Action Plan #7, 16).
- Active vegetation management through grazing, manual thinning and chipping of vegetation, and mastication of vegetation (consistent with CWPP Action Plan #16, 17, 18).
- Creation of a third emergency evacuation route and ingress route for first responders, to be used only in the event of an emergency (consistent with CWPP Action Plan #17, 39).
- Fire-safe building design and material decisions guided by the California Building Code (CBC) and Wildland-Urban Interface standards, as well as defensible space for all structures (consistent with CWPP Action Plan #5, 23, 25, 32).
- Firewise infrastructure planning, such as high-volume water supply, municipal-type fire hydrant systems, and underground electric utilities (consistent with CWPP Action Plan #38).
- Construction and ongoing staffing of the Fire Station and Emergency Response Center (consistent with CWPP Action Plan #68).
- Safety zones and temporary refuge areas have been designated throughout the Guenoc Valley Site for evacuation staging, meeting places, and sheltering in place when recommended (consistent with CWPP Action Plan #56).

- Construction safety practices that include limiting the timing of certain activities more likely to cause sparks (consistent with CWPP Action Plan #64).
- Creation and maintenance of an on-site early detection system for fires, emergency notification systems, and specific funding mechanisms through the various HOAs to guarantee the effectiveness of the Updated WPP in perpetuity (consistent with CWPP Action Plan #2, 44, 45, 66).

County EOP and South Lake County Wildland Fire Preparation and Emergency Plan Consistency

The County's EOP (OES, 2020) outlines the response procedures of the OES and coordination with other relevant agencies in the event of an emergency. A separate WUI Annex is provided to more specifically address the OES response to wildfire (OES, 2021). The WUI Annex establishes priorities, responsibilities, and assigns tasks to coordinate response operations during wildfires, written by the Lake County Fire Chief's Association to facilitate future coordination with CAL FIRE and other local firefighting organizations. The South Lake County Wildland Fire Preparation and Emergency Plan (2016) is a resource document for homeowners that discusses defensible space, where to locate emergency evacuation routes, and what to pack in the event of an evacuation.

The Modified Project would enhance firefighting capabilities in South Lake County by constructing an Emergency Response Center that will ultimately become Fire Station #61, and the Project Modifications guarantee funding for additional firefighting staff on an annual basis. The Project would be constructed in accordance with federal, State, regional, and local requirements, which are intended to ensure the safety of County residents and structures to the extent feasible. Compliance with these standard regulations would be consistent with the County's EOP (2020) and WUI Annex (2021). The Updated WPP contains measures consistent with the guidance for homeowners contained within the South Lake County Wildland Fire Preparation and Emergency Plan (2016).

Summary

The new funding commitments ensure that the operation of the Modified Project will occur consistent with the Adopted Emergency Plans while guaranteeing that financial resources are not diverted away from other County and State programs or offices for emergency and first response that could impair the ability of these groups to provide wildfire or other emergency response. The Modified Project is consistent with the Adopted Emergency Plans and policies contained therein; an assessment of the potential for the Modified Project to impair implementation of these plans is provided below.

Assessment of Emergency Access to the Guenoc Valley Site

The Proposed Project includes an Emergency Response Center that will ultimately become Fire Station #61, and the Project Modifications ensure that the facility will be staffed at all times with at least one individual with expertise related to wildfire and evacuation. The Emergency Response Center constructed on the Project Site is located within three miles of all new buildings and would be able to respond to an on-site fire within about six minutes or less, consistent with NFPA 1710 industry standards. The California BOF, pursuant to PRCS Section 4290.5, recommends for the safety of subdivisions that a secondary access to the neighborhood be created, improvements to existing access roads, and other fire safety measures. The Modified Project meets and exceeds state minimum requirements for wildfire safety by incorporating a comprehensive set of measures promulgated in the Updated WPP, including but not limited to, providing three access and egress routes, maintaining a 50-foot-wide fuel treatment buffer on each side of Project roadways that exceeds minimum Fire Safe Regulations, building a 25-foot-wide all-weather surface on all roadways, and providing two emergency helipads that will provide aerial support site access

points. Project Modifications also include new internal connector roadways to ensure there are no dead-end, non-looped road segments that exceed one mile in length.

Although a staffed Fire Station will exist on the Guenoc Valley Site and the internal circulation network exceeds the minimum Fire Safe Regulations to ensure that first responders can safely navigate within the Project Site, it is imperative that additional wildfire first responders can access the property from off-site in the event of an emergency. For emergency access purposes, the Guenoc Valley Site would have a total of three evacuation and emergency access routes that connect to Butts Canyon Road and SR 29 (via Grange Road). Two evacuation routes would provide access to Butts Canyon Road: a new Primary Access Road that would be located at McCain Canyon, approximately 2.6 miles south of the existing Langtry Winery Entrance, and a second access at the existing intersection located approximately halfway between the Langtry Winery entrance and the Primary Access Road entrance. The third evacuation route would be via a newly improved road, for evacuation and emergency ingress and egress only, that would connect from the interior of the Project Site through an adjacent property to SR 29 via Grange Road.

County-wide ongoing roadside fuel reduction activities along SR 29, Highway 175 and Butts Canyon Road in the vicinity of the Project Site as guided by the 2023 CWPP will reduce flame intensity along primary emergency vehicle access routes and facilitate access to wildfires or emergency locations. Once emergency vehicles enter the Guenoc Valley Site, the Updated WPP roadside clearing meets or exceeds the minimum California Fire Safe Regulations with a 50-foot-wide fuel reduction zone on each side, and a 10-foot hardscape on each side of the roadway. In addition to fuel reduction or vegetation maintenance projects, the County and Caltrans are undertaking large-scale projects to expand SR 29, a primary evacuation route in the region. As discussed further in **Section 3.2.4**, the SR 29 Konocti Corridor Project will widen an 8-mile section of SR 29 from a two-lane divided highway to a four-lane expressway that will further ease traffic and improve the ability of emergency vehicles to access wildfires or other incidents in the area. First responders and evacuees usually travel in opposite directions and thus use opposing travel lanes, and first responders will typically arrive at the scene of an emergency or wildfire before evacuation orders are issued and congestion levels build on local roadways.

For all of these reasons, impacts related to emergency vehicles accessing the Guenoc Valley Site are less than significant.

Assessment of Community Evacuation Impacts

The South Lake County Wildland Fire Preparation and Emergency Plan has designated primary and secondary evacuation routes for the communities in South Lake County, which align with those primary and secondary routes analyzed in **Appendix H-1**. The Modified Project has two evacuation routes that would connect directly with Butts Canyon Road (a secondary community evacuation route) and would provide access to SR 29 (a primary community evacuation route) via the proposed Grange Road Connector.

As discussed further in **Section 3.4.1**, the Evacuation Assessment identifies scenarios of evacuation events, defines the potential evacuation area, defines evacuation routes, estimates trip demand for various evacuation scenarios, assigns trips along evacuation routes during those scenarios, and estimates total evacuation times (**Appendix H-1**). The Evacuation Area encompasses the communities of Middletown, Hidden Valley, Cobb, Loch Lomond, and surrounding areas within southern Lake County. Primary and secondary community evacuation routes are those that provide the most direct path to exit the Evacuation Area with the least exposure to risk, and were identified in the South Lake County Wildland

Fire Preparation and Emergency Plan (2016), while Project Evacuation Routes are those that would be utilized by residents, visitors, and employees at the Guenoc Valley Site (see **Figure 3.3-3**). Two Wildfire Scenarios (Scenario A – Fire North to South and Scenario B – Fire South to North) were defined and analyzed under baseline (2022) and future (2040) conditions, both with and without the Project.

After determining the evacuation trip demands and associated transportation network, a dynamic traffic assignment was performed to reflect congestion, departure times, and model the ETE. The ETE represents the time required for the last evacuee to safely leave the Evacuation Area. The results of the eight modeled scenarios are summarized in **Table 3.4-3**. The ETE analysis is conservative in that it was conducted for 4:00 PM on a summer Friday afternoon when background traffic is highest, it assumes that all of the Project residences and hotel rooms are fully occupied, it assumes that 100 percent of people evacuate and nobody voluntarily remains behind, roadway functions at 40% capacity, and that no police resources are available to manage evacuation traffic.

Table 3.4-3: Evacuation Time Estimates by Wildfire Scenario

Criteria	Scenario							
	1	2	3	4	5	6	7	8
Hazard Type	Wildfire Scenario A (Wildfire from North to South)				Wildfire Scenario B (Wildfire from South To North)			
Study Year	Baseline (2022)		Cumulative (2040)		Baseline (2022)		Cumulative (2040)	
Project Conditions	No Project	Project Phase 1	No Project	Project Full Build-Out	No Project	Project Phase 1	No Project	Project Full Build-Out
Evacuation Time Estimate (hours) – 90% Evacuated	3.5 hours	4 hours	4 hours	5.5 hours	3.5 hours	4 hours	4 hours	5 hours
Evacuation Time Estimate (hours) – 100% Evacuated	4.5 hours	5 hours (+0.5 hours)	5 hours	7.5 hours (+2.5 hours)	4.5 hours	5 hours (+0.5 hours)	5 hours	7 hours (+2 hours)

Source: Fehr & Peers (**Appendix H-1**)

The following observations were noted from the ETE analysis:

Wildfire Scenario A (wildfire from north to south):

- All scenarios result in traffic congestion forming along primary and secondary evacuation routes.
- The segment of SR 29 from Middletown southward is the most used evacuation route and therefore has the most traffic congestion. The intersection of SR 29 with the Hidden Valley Lake community is the most significant bottleneck in both the with-Project and no-Project scenarios.
- The new roundabout at SR 29/Butts Canyon Road (**Mitigation Measure 3.13-1**) is heavily congested with evacuation-related vehicle trips generated by full buildout of the Project in the cumulative condition.
- The Phase 1 Project evacuation vehicle trips, when added to the existing community evacuation trips, increases the total evacuation time by approximately 30 minutes.

- The Project Full Buildout evacuation vehicle trips, when added to the community evacuation trips modeled in the cumulative buildout year (2040), increases the total evacuation time by approximately 2 hours and 30 minutes.

Wildfire Scenario B (wildfire from south to north):

- All scenarios result in traffic congestion forming along primary and secondary evacuation routes.
- The segment of SR 29 south of Lower Lake is the most used evacuation route and therefore has the most traffic congestion. The same bottleneck at the access of the Hidden Valley Lake community with SR 29 described in Scenario A is the most significant bottleneck in Scenario B.
- Similar to Scenario A, the new roundabout at SR 29/Butts Canyon Road is significantly congested.
- The Phase 1 Project evacuation vehicle trips, when added to the existing community evacuation trips, increases the total evacuation time by approximately 30 minutes.
- The Project Full Buildout evacuation vehicle trips, when added to the community evacuation trips modeled in the cumulative buildout year (2040), increases the total evacuation time by approximately 2 hours.

Wildland fire suppression, structure protection, and incident management are the responsibility of CAL FIRE in SRAs, Lake County Fire Districts in Local Responsibility Areas, and the U.S. Forest Service and the Bureau of Land Management in designated Federal Lands. The Adopted Emergency Plans include actions such as notifying emergency response departments of anticipated emergencies, testing the County's emergency alert systems, pre-establishing human and animal evacuation shelters, and pre-fire preparedness, however they do not provide evacuation traffic management strategies to address the new population that would be added by the Proposed Project. As such, the Proposed Project may substantially impair an adopted emergency response plan by requiring development and documentation of new evacuation strategies.

Phase 1 Analysis

The Evacuation Assessment conservatively assumed that approximately 2,300 persons would be on the Guenoc Valley Site on a summer Friday afternoon, which assumes 100 percent occupancy of all hotels, residences, and employees, while the existing population of the surrounding South Lake County communities is estimated at approximately 14,800 persons (**Appendix H-1**). Under baseline conditions without the added Project evacuation trips, estimated total evacuation times for 100 percent evacuation of the South Lake County communities total about 4.5 hours for Wildfire Scenarios A and B. In both Wildfire Scenarios A and B, the Phase 1 Project evacuation trips are estimated to add approximately 30 minutes in evacuation time for 100 percent evacuation of South Lake County when combined with evacuation trips from the surrounding communities (from about 4.5 hours to about 5 hours). SR 29 would be the most heavily congested evacuation route during a full evacuation of South Lake County with bottlenecks occurring at the Hidden Valley Lake community egress roads, at the signalized intersection with SR 52 in Lower Lake, and at the signalized intersection with SR 175 in Middletown. The added evacuation trips generated by the Proposed Project would increase the amount of time required for community members surrounding the Project Site to evacuate, and would require updates to the current evacuation plans and additional management of evacuation routes by community and Project-related evacuation trips. Thus, implementation of Phase 1 of the Proposed Project would impair an emergency response or emergency evacuation plan by requiring development and implementation of new evacuation strategies. This is a significant impact.

In order to reduce the Project-related increase in time it would take for the community to evacuate, **Mitigation Measures 3.16-3** through **3.16-6**[4] include a series of strategies that would reduce traffic on the evacuation routes in the event of an emergency. These measures are presented in full in **Section 3.4.4** and summarized as follows:

- **Mitigation Measure 3.16-3** requires that the Project applicant shall fund the costs to prepare a South Lake County Evacuation Traffic Management Plan, which shall be adopted by Lake County Office of Emergency Services (OES) prior to occupancy of Phase 1, and will reduce the major bottlenecks in the evacuation network to ultimately achieve a 15-minute reduction in the community plus Project evacuation time. The South Lake County Evacuation Traffic Management Plan shall include measures employed during the 2015 Valley Fire by Lake County Sheriff and California Highway Patrol (CHP) officers, including stopping northbound and southbound SR 29 traffic at the edges of the evacuation area (to be determined by the Incident Commander and County Sheriff, CHP, or other police enforcement personnel, as appropriate) to minimize new traffic entering the area and open the roadways for evacuees leaving, as well as managing traffic at key intersection bottlenecks on SR-29 at Hidden Valley Lake, which is the most populous area of South Lake County. These measures were implemented approximately five hours after the 2015 Valley Fire was originally reported, and proved effective at managing evacuating traffic; however they were not assumed to be in place in the evacuation time estimate forecasts in the Evacuation Assessment. The Traffic Management Plan shall be subject to the approval of the Lake County OES, the Lake County Sheriff, the South Lake County Fire Protection District, Caltrans, and CHP.
- **Mitigation Measure 3.16-4** requires that the applicant install variable message signs at the outbound lanes of the three Project egress routes that are connected to the on-site Emergency Response Center so that the fire personnel managing a future evacuation can provide real-time messaging to evacuees in an emergency. Unless precluded by wildfire, all evacuating Project traffic shall be directed to the planned Project egress intersections on Butts Canyon Road and then to the south on Butts Canyon Road. Traveling to the south on Butts Canyon Road would be the most direct route for evacuating trips from the proposed Project residential units and hotel uses whose primary destination would be to the south where residents or guests would return to homes in the Bay Area or to access airports or hotels. This mitigation measure would minimize the addition of Project evacuation trips on SR 29, which is the major evacuation route for existing South Lake County communities. Additionally, a southbound bypass lane will be installed in the roundabout that will be constructed by the Project applicant at the SR 29/Butts Canyon Road intersection to increase intersection capacity.
- **Mitigation Measure 3.16-5** requires that the applicant shall design, obtain permits for, and install improvements to the signalized intersection of SR 29/SR 53 intersection in Lower Lake and the two signalized intersections on SR 29 in Middletown (SR 175 and Wardlaw Street). These improvements shall include variable message signs and traffic signal controllers that are connected to Caltrans and Lake County traffic operations staff so they can be managed remotely during an evacuation to redistribute signal green time to the evacuating direction of traffic, as well as extending pocket lanes for turning to further minimize known bottlenecks. A benefit is that the evacuation signal timing plans could be activated by Public Works staff as a quick response measure at the beginning of evacuations when police resources are not available to manage traffic at the signalized intersections.

[4] The mitigation numbering follows the 2020 EIR.

- **Mitigation Measure 3.16-6** shall ensure that shuttle buses are stored on-site, available at all times, and that drivers (hotel staff) are fully trained to evacuate those hotel guests who may not be able to evacuate in their own vehicles, estimated at 132 guests based on number of hotel rooms and the estimation of number of guests arriving via shuttle or means other than a personal vehicle.

The implementation of **Mitigation Measures 3.16-3 through 3.16-6** will result in the preparation of the South Lake County Evacuation Traffic Management Plan, reduce the number of vehicles entering the evacuation zone during a future emergency, enhance the ability of first responders to communicate with evacuees, direct Project-related evacuees to alternate routes other than SR 29, improve the physical conditions at intersections along evacuation routes with known bottleneck issues, and provide sufficient shared shuttle evacuation capacity for Project guests. After mitigation, Phase 1 would have a less than significant impact on emergency response and emergency evacuation plans.

Future Phases Analysis – Full Buildout in Cumulative Year 2040

Using the same conservative assumptions, the Evacuation Assessment assumed that approximately 6,500 persons would be on the Guenoc Valley Site under full buildout of future phases of the Project, while the existing population of the surrounding South Lake County communities is estimated at approximately 18,900 persons (**Appendix H-1**). Under future 2040 cumulative conditions without the added Project evacuation trips, estimated total evacuation times for 100 percent evacuation of the South Lake County communities total about 5 hours for Wildfire Scenarios A and B. Under future cumulative conditions in 2040 with full buildout of the Proposed Project, the Project evacuation trips are estimated to add approximately 2.5 hours (Scenario A) and 2 hours (Scenario B) for 100 percent evacuation of South Lake County when combined with evacuation trips from the surrounding communities. The added evacuation time due to Project evacuation trips for a 90 percent evacuation level, which is more representative of the number of residents who have chosen to evacuate in past wildfires, is 1.5 hours for Scenario A and 1 hour for Scenario B (**Appendix H-1**).

Similar to the modeled Phase 1 evacuation conditions, SR 29 would be the most heavily congested evacuation route, with bottlenecks occurring at the Hidden Valley Lake community egress roads, at the signalized intersection with SR 52 in Lower Lake, and at the signalized intersection with SR 175 in Middletown. In addition, the total number of evacuation trips generated by future phases of the Project would exceed the capacity of Butts Canyon Road as a two-lane facility under Scenario A. Thus, implementation of future phases of the Proposed Project would impair an emergency response or emergency evacuation plan by requiring development and implementation of new evacuation strategies, and impacts would be significant.

A subsequent project-level CEQA assessment of full build-out evacuation impacts will be required prior to implementation of development beyond the Phase 1 land use program. **Mitigation Measures 3.16-7** and **3.16-8** are identified in this program-level analysis; the measures are programmatic in nature and may be refined following additional project-level CEQA analysis based on more specific details regarding future Project phases that will be included in application submittals for such phases, evolving evacuation analysis methods, any future changes to roadway infrastructure and/or capacity, and/or new or enhanced evacuation mitigation strategies. Because these mitigation measures are program-level they require performance standards of reducing forecasted evacuation levels such that: 1) full buildout of future phases of the Project shall not result in evacuation times that exceed one hour beyond the total cumulative no project ETEs for a full evacuation of the Evacuation Area, and 2) the estimated number of added future phases evacuation trips on Butts Canyon Road shall not exceed its evacuation capacity. If

the future project-level CEQA document cannot identify demand, supply, and communication strategies to achieve this performance measure, a reduction in the number of housing units shall be implemented. Reducing the number of housing units that can be added beyond Phase 1 would reduce the number of Project-related evacuation trips and the associated total evacuation time with the Project.

The future phases programmatic mitigation measures would reduce impacts associated with impairing the current Lake County EOP by developing additional evacuation time reduction strategies to reduce forecast evacuation levels in the Evacuation Area, which the Project will be required to develop as part of future CEQA analyses for buildout of future phases. **Mitigation Measures 3.16-7** and **3.16-8** will reduce total evacuation times and accommodate evacuees from the Proposed Project, thereby reducing this impact to less-than-significant.

IMPACT 3.16-5*	**EXPOSE PEOPLE OR STRUCTURES, EITHER DIRECTLY OR INDIRECTLY, TO A SIGNIFICANT RISK OF LOSS, INJURY OR DEATH INVOLVING WILDLAND FIRE**	
	Guenoc Valley Site & Other Phase 1 Areas	**Off-Site Non-Project (Community) Areas**
	Phase 1 and Future Phases	
Significance Before Mitigation	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.16-2: Post Wildfire Emergency Response	MM 3.16-3, 3.16-4, 3.16-5, 3.16-6, 3.16-7, and 3.16-8
Significance After Mitigation	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR

As described above and consistent with the 2020 EIR, the Guenoc Valley Site contains Moderate to Very High FHSZs, and the Proposed Project would introduce new residential uses and commercial resort uses within this area, thereby potentially exposing people and structures to a significant risk of loss involving wildland fires. The analysis of potential impacts of wildland fires on the future residents and visitors to the Guenoc Valley Site as a result of the Proposed Project was not found by the Court to be insufficient; please refer to **Appendix D** for a complete analysis of the potential for the Proposed Project to expose people or structures to a significant risk of loss, injury, or death involving wildland fire. This impact was identified as potentially significant, and with implementation of **Mitigation Measure 3.16-2** would be reduced to less-than-significant levels.

This PREIR focuses on the potential for the Modified Project to indirectly expose people within the community (off the Project Site) to a significant risk of loss, injury, or death involving wildland fire as a result of community evacuation. The potential for the Original Project to increase or exacerbate wildfire risk was analyzed in Impacts 3.16-2, 3.16-3, 3.16-4, and 3.16-5, and additional analysis of the Project Modifications on these impacts is provided in **Appendix H-1** and **Section 4.12** of this PREIR. The potential for the Modified Project to indirectly impact the safety of evacuating community residents would be significant if the Modified Project were to prevent or significantly delay community evacuation. **Appendix H-1** provides a complete analysis of ETE in two Wildfire Scenarios (Scenario A – Fire North to South and Scenario B – Fire South to North) across four years: Baseline (2022), Baseline (2022) plus Guenoc Valley Project Phase 1, Cumulative (2040), and Cumulative (2040) plus Guenoc Valley Project Full Build-Out.

Phase 1

As discussed further in Impact 3.16-1 above, development of Phase 1 would increase community evacuation times by up to 30 minutes, which could indirectly expose people to a significant risk of loss, injury or death. This is a significant impact. **Mitigation Measures 3.16-3** through **3.16-6** include a series of strategies that shall reduce the impacts by reducing traffic on the evacuation routes in the event of an emergency and would reduce the potential increase in community evacuation time by a minimum of 15 minutes.

Recent and ongoing roadside fuel reduction activities along SR 29, Highway 175 and Butts Canyon Road, in combination with the fact that all on-site roadways within the Guenoc Valley Site will exceed the minimum California Fire Safe Regulations with a 50-foot-wide fuel treatment on each side, will significantly reduce flame intensity along primary community and Project evacuation routes. Wildfire evacuations occurred in South Lake County communities surrounding the Guenoc Valley Site during the 2020 LNU Lightning Complex Fire, the 2015 Valley Fire, and the 2015 Jerusalem Fire. Interviews with first responders, combined with reviews of fire and media reports, indicate that no one died in a vehicle attempting to evacuate in Lake County during these fires (**Appendix H-1**).

The implementation of **Mitigation Measures 3.16-3** through **3.16-6** will result in the preparation of the South Lake County Evacuation Traffic Management Plan, reduce the number of vehicles entering the evacuation zone during a future emergency, enhance the ability of first responders to communicate with evacuees, direct Project-related evacuees to alternate routes other than SR 29, improve the physical conditions at intersections along evacuation routes with known bottleneck issues, and provide sufficient shared shuttle evacuation capacity for Project guests. After mitigation, Phase 1 would not expose the community to a significant risk of loss, injury or death involving wildland fires as a result of inadequate community evacuation conditions. Refer to further discussion above under Impact 3.16-1. This impact is less than significant with mitigation.

Future Phases

Full buildout of future phases of the Project in the cumulative year 2040 could result in increases in community evacuation times by up to 2 hours or 2.5 hours without mitigation, which is a potentially significant impact. **Mitigation Measures 3.16-7** requires performance standards of reducing forecasted evacuation levels such that: 1) full buildout of future phases of the Project shall not result in evacuation times that exceed one hour beyond the total cumulative no project ETEs for a full evacuation of the Evacuation Area, and 2) the estimated number of added future phases evacuation trips on Butts Canyon Road shall not exceed its evacuation capacity. **Mitigation Measure 3.16-8** requires the Applicant obtain additional shuttle buses to meet the additional Project buildout capacity for shared evacuation of Project guests. If the future project-level CEQA document prepared for the future phases of the Project cannot identify mitigation to achieve this performance measure, a reduction in the number of housing units shall be implemented. **Mitigation Measures 3.16-7** and **3.16-8** will reduce total evacuation times for the community members, thereby reducing the potential impact to less-than-significant levels.

3.4.4 Mitigation Measures

Mitigation Measures 3.16-1 and **3.16-2** remain unchanged from the 2020 EIR (**Appendix D**). Refer to **Table 5-1** in **Section 5** for the MMRP. **Mitigation Measures 3.16-3** through **3.16-8** below are new since circulation of the 2020 EIR.

Phase 1 Mitigation Measures

MM 3.16-3 Prepare South Lake County Evacuation Traffic Management Plan to Reduce Near-Term Evacuation Times, Incorporate in Updated Lake County Emergency Operations Plan (EOP), and Implement Evacuation Traffic Management Measures

The applicant shall fund the administrative costs for preparation and adoption of a South Lake County Evacuation Traffic Management Plan, which shall be adopted prior to the issuance of the first certificate of occupancy for Phase 1. Lake County Office of Emergency Services (OES) shall be the Lead Agency for adoption of the plan and implementation of the traffic management measures, working in collaboration with other responsible agencies as noted below. The Evacuation Traffic Management Plan strategies, in combination with other mitigation measures described below, shall achieve a 15-minute reduction in total evacuation times for a full evacuation of South Lake County, thereby reducing the 30 minutes in added overall evacuation time due to Phase 1 Project evacuation trips. The Evacuation Traffic Management Plan shall be subject to the approval of the Lake County OES, the Lake County Sheriff, the South Lake County Fire Protection District, Caltrans, and the California Highway Patrol (CHP). The approved version of the South Lake County Evacuation Traffic Management Plan shall be incorporated into an updated version of the Lake County Emergency Operations Plan (Lake County Office of Emergency Services) and the Lake County Community Wildfire Protection Plan (CWPP), with evacuation management strategies and improvement measures to address major bottlenecks in the South Lake County evacuation network. These measures shall include but will not be limited to the following:

- SR 29 Evacuation Traffic Reduction Measure – at the time of an evacuation order for a full South Lake County evacuation and as determined by the Incident Commander and County Sheriff, CHP and/or other police enforcement personnel shall implement measures to stop through traffic on SR 29 through the evacuation area such as stopping northbound SR 29 traffic at Tubbs Lane in Napa County and southbound SR 29 traffic at SR 53 in Lower Lake, thus reducing traffic levels on SR 29 during an evacuation. This measure would prevent inbound traffic on SR 29 from accessing the South Lake County evacuation network but would allow outbound evacuating vehicles to exit via SR 29.
- Hidden Valley Lake Evacuation Traffic Management Measure – at the time of an evacuation order for a full South Lake County evacuation and as determined by the Incident Commander and County Sheriff, Lake County Sheriff and/or other police enforcement personnel shall implement traffic management for the Hidden Valley Lake community that addresses bottlenecks at the intersections of SR 29 and Hidden Valley Lake community egress roads. The officers would direct Hidden Valley Lake evacuating traffic away from the direction of the wildfire and in a coordinated direction to reduce or avoid conflicting movements at the intersections.
- Guenoc Valley Project SR 29 Evacuation Traffic Reduction Measure – at the time of an evacuation order for a full South Lake County evacuation, evacuating Project traffic shall be directed to alternate routes to SR 29. Unless precluded by wildfire, evacuating project traffic shall be directed to the planned Project egress intersections on Butts Canyon Road and to the south on Butts Canyon Road. This

measure would not apply if Butts Canyon Road were closed due to wildfire. In that event (such as under Scenario B), evacuating Project trips would be directed to travel north on Butts Canyon Road (or via Grange Road as needed), south on SR 29 to Middletown, and then north on SR 175 (presuming that SR 29 to the south over Mt. St. Helena was also closed). Additional details are described for this measure in **Mitigation Measure 3.16-4**.

- SR 29 Traffic Signal Evacuation Operational Enhancement Measures – a description of the traffic signal evacuation operational enhancement measures described in **Mitigation Measure 3.16-5** shall be included in the Updated Lake County EOP.

MM 3.16-4 Reduce Evacuation Time Impacts on SR 29 by Minimizing Project-Related Evacuation Traffic on SR-29

- Prior to occupancy of any Project uses, the applicant shall install variable message signs at the outbound lanes of the three Project egress roads that connect to Butts Canyon Road and Grange Road. Lake County shall be the Lead Agency to oversee installation of the variable message signs within the Project Site. The variable message signs shall be connected to the on-site Emergency Response Center so that evacuation-related messages can be controlled by fire personnel managing the evacuation. At the time of an evacuation order for a full South Lake County evacuation, evacuating Project traffic shall be directed to alternate routes to SR 29. Unless precluded by wildfire, evacuating Project traffic shall be directed to the planned egress intersections on Butts Canyon Road and to the south on Butts Canyon Road.
- The roundabout that will be constructed by the Project applicant at the SR 29/Butts Canyon Road intersection shall include a southbound bypass lane to increase intersection capacity.

Explanation of Purpose/Effectiveness

Butts Canyon is a lightly traveled and populated rural road that would provide access to Napa and Solano counties. Traveling to the south on Butts Canyon Road would be the most direct route for evacuating trips from the proposed Project residential units and hotel uses whose primary destination would be to the south. This measure would be implemented by staff in the on-site Emergency Response Center.

A large share of the evacuating trips from the proposed Project residential units and hotel uses would be destined to the south where residents or guests would return to homes in the Bay Area or access airports or hotels. The evacuation time estimates presented earlier in this assessment are based on an equal distribution between SR 29 and Butts Canyon Road of project evacuation trips destined to the south.

Under this measure, all traffic evacuating from the proposed Project via Butts Canyon Road would turn left and travel to the south unless precluded by wildfire. Directing all Project evacuation trips exiting onto Butts Canyon Road to turn left, which is the most immediate evacuation route to the south, would reduce congestion levels on SR 29 south of Butts Canyon Road through Middletown that otherwise would be exacerbated by Project-generated evacuation trips. With implementation of this mitigation measure, the

only Project evacuation trips that would use SR 29 would be those with destinations to the north (e.g., Lower Lake, Clear Lake, Kelseyville, etc.), which would be directed to use the Grange Road evacuation route to access SR 29. The total number of Phase 1 Project evacuation trips that would be assigned to Butts Canyon Road with this mitigation measure, under Scenario A (which has the higher share of evacuation trips assigned to the south), would be approximately 1,330 vehicle trips over a four-hour window as shown in Figure 4-3 of ***Appendix H****. This measure would not apply if Butts Canyon Road were closed due to wildfire. For this condition that could occur under Scenario B, evacuating Project trips would be directed to travel north on Butts Canyon Road (or via Grange Road as needed), south on SR 29 to Middletown, and then north on SR 175 (presuming that SR 29 to the south over Mt. St. Helena was also closed). To facilitate an evacuation under a condition when Butts Canyon Road to the south of the Project is closed due to wildfire and Project traffic must evacuate to the north on Butts Canyon Road, the roundabout that will be constructed by the Project applicant at the SR 29/Butts Canyon Road intersection shall include a southbound bypass lane to increase intersection capacity.*

MM 3.16-5 Implement SR 29 Traffic Signal Evacuation Operational Enhancement Measures

- Prior to issuance of the first certificate of occupancy for any Project uses, the applicant shall design, obtain permits for, and install improvements to the signalized intersection of SR 29/SR 53 intersection in Lower Lake and the two signalized intersections on SR 29 in Middletown (SR 175 and Wardlaw Street). The improvements would be funded by the Project applicant who shall obtain any necessary permits from Caltrans and/or Lake County. The variable message signs and traffic signal controllers shall be connected to Caltrans and Lake County traffic operations staff so they can be managed remotely during an evacuation. Improvements at the SR 29/SR 53 intersection in Lower Lake shall include extending the length of the northbound left turn pocket by 175 feet to a length of approximately 400 feet which could be accomplished by restriping the existing striped median, installing variable message signs on three approaches (i.e., eastbound, southbound, and westbound), and developing and installing wildfire signal timing plans that can be implemented by County staff during a wildfire that significantly extend maximum green times on the northbound approach. Improvements at the two intersections on SR 29 in Middletown include developing and installing wildfire signal timing plans that can be implemented by County staff during a wildfire that significantly extend maximum green times on the northbound and/or southbound approaches depending on conditions.

Explanation of Purpose/Effectiveness

The traffic signals located on SR 29 in Lower Lake at SR 53 and in Middletown at SR 175 and Wardlaw Street are bottlenecks during a wildfire event in South Lake County. These bottlenecks existed in prior wildfire evacuations and would be exacerbated by added Project evacuation trips. This measure would involve preparing and implementing traffic signal timing plans for wildfire events. The traffic signal timing plans for wildfire events would be designed for different scenarios and would significantly extend green times on key approaches. For example, a signal timing plan for a wildfire in South Lake County would significantly extend green time for northbound traffic at the SR 29/SR 53/Main

Street intersection in Lower Lake until police resources could arrive at the intersection to manage traffic congestion. This measure would also require extending the length of the northbound left turn pocket (which currently has a storage length of approximately 225 feet) and installing variable message signs on the approaches to the SR 29/SR 53/Main Street intersection in Lower Lake. The variable message signs would be installed on the eastbound, southbound, and westbound approaches to notify drivers that an evacuation notice has been issued for South Lake County and that traveling to southbound SR 29 is prohibited.

The above improvements would be funded by the applicant and implemented by Lake County in collaboration with Caltrans. The implementation of improvements within the Caltrans right-of-way is subject to independent Caltrans authorization and may result in additional permit requirements.

MM 3.16-6 Provide Dedicated Project Evacuation Shuttles for Phase 1 Hotel Uses

- Prior to the issuance of the first certificate of occupancy for any Project hotel uses, the applicant shall acquire and provide storage for dedicated evacuation shuttle buses that can serve 45 percent of all guests (i.e., seven 20-person buses at full occupancy of all Phase 1 hotel uses). Applicant shall identify and provide signage for bus stop evacuation pick-up zones at all hotels, and identify evacuation routes and shelter locations. Applicant shall designate shuttle drivers and provide ongoing training for staff and drivers for the shuttle buses.
- The Project shall obtain, maintain, and store dedicated evacuation shuttles for hotel guests, as individual hotel projects are completed, at a rate of 0.9 shuttle bus seats per room. If shuttle buses with a 20-person capacity are acquired, a total of seven dedicated evacuation shuttle buses for hotel guests would be provided for the 147 hotel units when all Phase 1 hotels are completed. The Project shall train employees to operate the shuttles and be aware of alternative routes to designated shelter locations.

Explanation of Purpose / Effectiveness

The transportation analysis conducted for the Final EIR indicates that 45 percent of hotel guests will arrive by shuttle. These hotel guests would not be able to evacuate from the resort in their own vehicles during an evacuation event and would require transportation assistance from the Project. Phase 1 of the Project would provide 147 hotel rooms. At full occupancy with two guests per room, approximately 132 guests would have traveled to the resort via shuttle. This equates to 0.9 guests arriving via shuttle per room. This measure would provide a fleet of dedicated evacuation shuttles for use in evacuating hotel guests that initially travel to the site via shuttle, taxi, or other shared ride vehicles.

Future Phases Mitigation Measures

MM 3.16-7 Updated South Lake County Evacuation Traffic Management Plan

As part of the future project-level CEQA evacuation assessment of full build-out of the Project and prior to issuance of the first certificate of occupancy for any uses beyond

those included in Phase 1, the Project shall develop evacuation time reduction strategies to reduce forecast evacuation levels in the Evacuation Area, which the Project will be required to implement after occupancy of such uses. The measures would include any combination of demand, supply, and/or communication strategies as described below such that (1) the added evacuation time estimates (ETEs) (i.e., time until the last evacuee leaves the Evacuation Area) due to Project full build-out evacuation trips shall not exceed one hour beyond the total cumulative no project ETEs for a full evacuation of the Evacuation Area under either Scenario A or B, and (2) the estimated number of added Project full build-out evacuation trips on Butts Canyon Road shall not exceed its evacuation capacity.

Prior to issuance of the first certificate of occupancy for any use beyond those included in Phase 1, the applicant shall fund the administrative costs for preparation and adoption of a South Lake County Evacuation Plan (Evacuation Plan) that includes strategies to reduce overall cumulative ETEs for the Evacuation Area as described above, and the Evacuation Plan shall have been approved by the Lake County Office of Emergency Services (OES), the Lake County Sheriff, the South Lake County Fire Protection District, and the California Highway Patrol (CHP). Prior to the approval of the Evacuation Plan, a project-level CEQA analysis shall be conducted that analyzes the impacts of any proposed use beyond those included in Phase 1 on evacuation routes, and confirms that the strategies included in the Evacuation Plan meet the performance standards described above related to added ETEs and the evacuation capacity of Butts Canyon Road. The approved version of the South Lake County Evacuation Plan shall be incorporated into an updated version of the Lake County EOP (Lake County Office of Emergency Services).

- Demand Strategies – demand-side strategies that may reduce evacuation time estimates (ETEs) and evacuation trips include vehicle reduction and phased evacuation measures. A vehicle reduction strategy may include a combination of land use program reductions and/or measures to increase vehicle occupancy (i.e., additional shuttles). A community-wide policy encouraging households to limit the number of evacuating vehicles to one per household is another demand reduction strategy that could help reduce overall evacuation times. Reduction of the number of housing units shall be implemented as a strategy only if implementation of all other feasible demand-side, supply-side, and communication strategies would not reduce ETEs or exceedance of the capacity of Butts Canyon Road sufficiently to meet the performance standards described above.
- Supply Strategies – supply-side strategies that may reduce ETEs include road lane widening, shoulder widening to provide an additional egress lane, contraflow lane reversal operations (i.e., allowing two lanes of outbound traffic, if needed), and intersection traffic control measures.
- Communication Strategies – communication strategies that may reduce ETEs include early warning systems, enhanced communication systems, and dynamic route guidance and monitoring.

The above strategies are programmatic in nature and may be refined following the additional project-level CEQA analysis described above based on more specific details regarding future Project phases that will be included in application submittals for such

phases, evolving evacuation analysis methods, any future changes to roadway infrastructure and/or capacity, and/or new or enhanced evacuation mitigation strategies.

Explanation of Purpose / Effectiveness

The following provides a description of evolving wildfire evacuation strategies and an illustrative combination of strategies to accomplish the stated performance standard. The illustrative combination is described in the chronological order of an evacuation beginning with wildfire detection.

- *Early Detection and Enhanced Communication Systems:*

  New wildfire early detection systems technology including wildfire cameras, smoke sensors, gas sensors, and drones is being developed and employed to provide more time for evacuation notification. Systems have been developed to analyze data collected from detection devices using artificial intelligence and cloud-based tools. Wildfire early detection systems technology is relatively new and data to quantify the effectiveness of the systems on reducing evacuation times based on actual applications is pending.

  Enhanced communications systems can take the form of hardened communication systems to maintain power for communications infrastructure like cell towers during wildfire, improved notification systems for evacuation orders, and/or traffic monitoring and wayfinding (i.e., variable message signs) that can be used to provide dynamic traffic guidance to respond to evacuation route bottlenecks and changing conditions. Communications systems have the potential to allow evacuees to begin their evacuation sooner and/or better manage evacuations in progress, but may have varying effects on the amount of added evacuation time from the time of the evacuation order.

  An alternative evacuation approach that would be supported by enhanced communication systems is a managed and phased evacuation declaration for South Lake County communities rather than a single mass evacuation as analyzed. Evacuating in phases, based on vulnerability, location, or other factors, could enable subsequent traffic surges on major evacuation routes to be reduced and managed over a longer time frame and could be planned to result in traffic levels that flow more efficiently than when mass evacuations include large areas evacuating simultaneously. Law enforcement personnel and Office of Emergency Services staff would be responsible for ensuring that evacuations are phased appropriately, taking into consideration the vulnerability of communities when making decisions. A phased evacuation approach was applied for the 2015 Valley Fire.

  In the event of an evacuation declaration, law enforcement and the on-site Emergency Response Center staff would have the option to conduct a phased evacuation of Guenoc Valley Project evacuees, relocate evacuees within the Project, and/or instruct evacuees to shelter at temporary refuge areas such as the maintained polo field, golf course, grazed areas, and vineyards.

- *Supply Strategies*

  Intersection traffic control measures such as installation of traffic signals for emergency traffic management along Butts Canyon Road at Snell Valley Road and at Howell Mountain Road in Pope Valley is a supply strategy that would enhance management of traffic at the two primary cross-streets in the approximately 10-mile section of Butts Canyon Road south of the Project.

  A supply strategy in South Lake County that would benefit the most congested corridor is the widening of shoulders on SR 29 sufficient to provide shoulder evacuation lanes, perhaps initially in the northbound direction from Hidden Valley Lake to Lower Lake. The State Route 29 South Corridor Engineered Feasibility Study (2014) prepared for Caltrans District 1 and Lake County/City Area Planning Council (Lake APC) called for shoulder widening along segments of SR 29 between Middletown and Lower Lake.

The above early detection, communication, and supply strategies could be applied in combination to reduce overall ETEs, but it is possible that they might not accomplish the ETE reduction performance standard. If those strategies do not achieve the performance standard, the remaining ETE reduction would need to come from demand-side strategies that would include additional shuttles for hotel guests but would primarily involve reducing the number of Project evacuation trips by reducing the amount of development that would occur between Phase 1 and full build-out of the Project. This would involve reduction of the 1,400 estate units and estimated 1,220 employees that would generate up to 80 percent of all Project evacuation trips at full build-out.

MM 3.16-8 Provide Dedicated Project Evacuation Shuttles for Full Build-out Hotel Uses

Consistent with **Mitigation Measure 3.16-6**, prior to the issuance of the first certificate of occupancy for any new hotel uses beyond those included in Phase 1, the applicant shall acquire and provide storage for dedicated evacuation shuttle buses that can serve 45 percent of all guests. Applicant shall identify and provide signage for bus stop evacuation pick-up zones at all hotels and identify evacuation routes and shelter locations. Applicant shall designate shuttle drivers and provide ongoing training for staff and drivers for the shuttle buses, including information on alternative evacuation routes and shelter locations. If shuttle buses with a 20-person capacity are acquired, a total of up to eighteen dedicated evacuation shuttle buses for hotel guests would be provided for up to 400 hotel units when all hotels are completed.

Section 4 | Assessment of Environmental Impacts from Project Modifications

4.1 INTRODUCTION AND SCOPE OF ANALYSIS

This section addresses the potential for new significant environmental effects or a substantial increase in the severity of environmental impacts beyond those described in the 2020 EIR as a result of the Project Modifications summarized in **Section 2**. CEQA *Guidelines* Section 15234(d) specifies that for "those portions of an environmental document that a court finds to comply with CEQA, additional environmental review shall only be required as required by the court consistent with principles of res judicata [explained further in **Section 1.1.4**]. In general, the agency need not expand the scope of analysis on remand beyond that specified by the court." The Ruling found that the 2020 EIR adequately complied with CEQA in all areas except for its analysis of impacts relating to community evacuations, which have been addressed in **Section 3** of this PREIR. Due to the minor Project Modifications resulting from the Settlement Agreement, the addition of the Grange Road Connector, and compliance with new regulations that have been adopted since the 2020 EIR, additional analysis is included in this **Section 4** to assess whether the Project Modifications would result in new or substantially more severe significant impacts beyond those described in the 2020 EIR, and whether or not new or modified mitigation measures are required. The Proposed Project would continue to have potential impacts in all of the environmental resource areas listed below and a full description of those impacts and analyses as required by CEQA is included in the 2020 EIR (**Appendix D**). Consistent with CEQA *Guidelines* Section 15234(d), **Section 4** of the PREIR includes an analysis of only those environmental issue areas for which the Project Modifications may result in new or increased impacts.

Some Project Modifications do not involve physical changes to the environment or would not change the Phase 1 Development Area or APE compared to what was analyzed in the 2020 EIR. Throughout this PREIR, the analysis of Project Modifications will be grouped, when appropriate, into the categories shown in **Table 4.1-1**.

The Project Modifications result in a Phase 1 Modified APE that is 2,453 acres, approximately 505 acres less than the 2020 Project APE, and a Phase 1 Development Area that is 1,202 acres, approximately 213 acres less than the 2020 EIR Development Area. While the Phase 1 Modified APE has decreased in size, approximately 333 acres of the current APE is proposed within areas that are located outside of the Phase 1 APE as previously depicted in the 2020 Final EIR. These new APE areas encompass the Grange Road Connector APE, new connector roadway segments, a higher concentration of resort residential parcels in the Maha Farms community, and a higher concentration of residential estates in the Bohn Ridge and Denniston Golf Estates communities. **Figure 2-2** illustrates the boundaries of the 2020 APE as compared to the Modified APE. The following APE additions are addressed throughout this section (refer to **Section 2.2** for a complete description):

- Grange Road: The Grange Road Connector APE is approximately 3.8 miles, of which 1.6 miles are located on the off-site Comstock Ranch property and the remaining 2.2 miles are located on the Guenoc Valley Site.
- Connector Roads: the Project Modifications include 4.8 miles of 'Connector Roadways' within the Guenoc Valley Site to ensure there are no dead-end or non-looped roads greater than one mile.
- Parcel Reconfiguration: While the 2020 APE encompassed the entire boundary of most residential parcels, design level details were utilized where available. Because the density of resort residential parcels has increased in certain areas, these design level plans will need to be revised and the entire extent of the resort residential parcels has been included in the Modified APE.

Table 4.1-1: Project Modification Summary

Project Modification	Does Project Modification result in physical changes to the environment beyond the boundaries of the Phase 1 APE or changes to the Development Area in 2020 EIR? (or Original Project)	Categories of Environmental Effects Where Changes Could Occur Beyond 2020 EIR Analysis
Parcel Reconfiguration		
Elimination of Camping Area	No. Overall size of APE and Development Area is reduced.	None. Impacts are reduced.
Elimination of remote residential parcels within the Equestrian Center, Red Hill Estates and Trout Flat Communities, and consolidation of those parcels within the boundaries of the prior APE.	Yes. Overall size of APE is reduced and no changes to the boundary of the APE. However, while the overall *size* of Development Area for residential parcels is the same, the location of the Development Area has shifted to provide a greater density of residential parcels within the previously studied APE. A greater density of residential parcels within certain areas of the APE could have altered impacts depending on the resources in those areas.	▪ Agricultural Resources ▪ Biological Resources ▪ Cultural Resources ▪ Tribal Cultural Resources
Elimination of 12.5 miles of previously proposed roadways and associated utility corridors from consolidation of remote parcels and removal of the camping area.	No. Overall size of APE and Development Area is reduced.	None. Impacts are reduced.
New 'Connector Roadways' (4.8 miles) to ensure there are no dead-end or non-looped roads greater than one mile.	Yes. To the maximum extent feasible, the new Connector Roadways were sited within the APE studied in the 2020 EIR, however several short stretches are located outside of the previously studied APE. This Development Area increase is more than offset by the elimination of 12.5 miles of previously-proposed roads (see previous line).	▪ Agricultural Resources ▪ Biological Resources ▪ Cultural Resources ▪ Tribal Cultural Resources ▪ Hydrology
Grange Road Connector		
Addition of a proposed emergency ingress and egress road called the "Grange Road Connector" that will connect the Guenoc Valley Site with the County-maintained Grange Road.	Yes. The on-site portion of the Grange Road Connector was previously studied in surveys conducted for the 2020 EIR, but was not previously contemplated for development and thus was not included in the defined APE or	▪ Agricultural Resources ▪ Biological Resources ▪ Cultural Resources

Project Modification	Does Project Modification result in physical changes to the environment beyond the boundaries of the Phase 1 APE or changes to the Development Area in 2020 EIR? (or Original Project)	Categories of Environmental Effects Where Changes Could Occur Beyond 2020 EIR Analysis
The Grange Road Connector will be 3.8 miles (14 acres of impact), with 2.2 miles occurring on the Guenoc Valley Site and 1.6 miles on the off-site Comstock Ranch.	Development Area. The off-site portion of the Grange Road Connector was not studied or analyzed in the 2020 EIR. To the maximum extent feasible, the Grange Road Connector utilizes existing ranch roads and vineyard avenues, but some open land areas would be disturbed.	▪ Tribal Cultural Resources ▪ Hydrology ▪ Transportation and Traffic ▪ Wildfire
GHG Emission Reduction Measures		
Residential land use measures, including: ▪ The capacity of residential PV systems shall be equal to or greater than the minimum projected needs of the residential land uses; ▪ Repair and maintenance of PV systems will be the responsibility of the Applicant enforced through the HOA bylaws; ▪ Each residence will have Level 2 or higher EVSE; and ▪ No natural gas infrastructure, including propane tanks or propane distribution pipelines will be allowed for residential structures.	No. The residential PV system capacity can be accommodated in the APE and previously studied Development Area for the solar farms analyzed in the 2020 EIR or within each parcel's specific Development Footprint as allowed by the Design Guidelines. There would be no change in ground disturbance, APE, or Development Area associated with the residential GHG reduction measures. The measures specifying future repair and maintenance of the PV systems involve no ground disturbance.	None. Impacts are reduced.
Commercial land use measures, including: ▪ Repair and maintenance of PV systems will be the responsibility of the Applicant enforced through the CC&Rs of each resort; ▪ No natural gas infrastructure, including propane tanks or propane distribution pipelines, will be allowed for non-residential structures with the exception of natural gas or propane-fueled cooktops in restaurant kitchens and natural gas fueled or propane fire pits in the outdoor patio areas of restaurants; ▪ Performance standards associated with the purchase of GHG Offset Credits prioritizing local credits; and	No. Forty-seven acres of proposed on-site solar farms were included in the APE and Development Area analyzed in the 2020 EIR; these previously studied facilities will have sufficient capacity to accommodate commercial land use energy needs. The measures specifying future repair and maintenance of the PV systems, as well as measures requiring the purchase and performance standards associated with GHG Offset Credits, involve no ground disturbance.	None. Impacts are reduced.

Project Modification	Does Project Modification result in physical changes to the environment beyond the boundaries of the Phase 1 APE or changes to the Development Area in 2020 EIR? (or Original Project)	Categories of Environmental Effects Where Changes Could Occur Beyond 2020 EIR Analysis
▪ An independent, third-party expert on GHG mitigation and offsets will be retained to ensure the Applicant has complied with the GHG emission reduction measures.		
Updated Wildfire Prevention Plan (WPP)		
Addition of 10 feet of hardscape on either side of Project roadways for additional wildfire protection.	No. No changes to the APE or Development Area. The 2020 EIR APE and Development Area included a minimum of 50 feet of width on either side of roadways to encompass the potential fuel reduction zone. The additional 10 feet of hardscape would occur within the previously studied 50-foot fuel reduction zone.	▪ Minor visual change ▪ Hydrology (increase run-off)
Funding and staffing for the on-site Emergency Response Center, including: ▪ Payment to the SLCFPD to staff and equip the Center; ▪ The HOA will be required to contract with and pay for a wildfire expert; and ▪ The Emergency Response Center will have on-site at least one individual with wildfire expertise related to evacuation and emergency access, the cost of which will be paid by the Guenoc Valley Project HOA.	No. The Emergency Response Center was proposed and analyzed in the 2020 EIR and no physical changes will occur to the proposed structure as a result of the Project Modifications. The Project Modifications resulting in changes to staffing and funding sources will involve no ground disturbance that was not analyzed in the 2020 EIR.	None. Impacts are reduced.
Drought Management Plan		
The DMP will guide how the water system operators operate the system during a declared drought and how water users of various types will be expected to modify their water consumption.	No. The Drought Management Plan will not involve ground disturbance.	▪ Hydrology

4.1.1 Environmental Categories with No Changes in Impacts

Aesthetics

Section 3.1 of the 2020 EIR (**Appendix D**) analyzed whether the Original Project would substantially degrade a scenic vista or the existing visual character or quality of public views of the site and its surroundings, or introduce a new source of light or glare. As illustrated in **Table 4.1-1**, the categories of Project Modifications that involve physical changes to the environment include the Parcel

Reconfiguration, Grange Road Connector, and Connector Roadways, as well as the additional 10-foot aggregate shoulder along roadways in the Updated WPP category. These Project Modifications will not have a substantial change on aesthetic resources or sources of light or glare compared to what was analyzed in the 2020 EIR. The Parcel Reconfiguration would increase the density of proposed residential estates in areas where residential estates were already proposed and analyzed, and would leave a larger undeveloped wildland-urban interface that would provide a visual buffer from off-site vantage points. The additional 10-foot aggregate shoulder along roadways would function as additional fire protection and pedestrian walkways, and would be consistent with the previously analyzed aesthetic impacts of the proposed road network. The Grange Road Connector would be primarily located on existing ranch roads and would not be visible from public vantage points, and would not degrade the visual character of the area or result in new sources of light or glare beyond those described in the 2020 EIR, as street lighting is not proposed. Project Modifications that do not involve physical changes to the environment, such as the GHG Reduction Measures, the rest of the Updated WPP measures, and the DMP, would have no potential to impact aesthetic resources beyond that described in the 2020 EIR. Therefore, the Project Modifications have no potential to result in new or substantially more severe impacts related to aesthetic resources and these effects are not discussed further in this PREIR.

Noise

Section 3.10 of the 2020 EIR (**Appendix D**) analyzed the potential for the Original Project to result in impacts related to noise, including construction activities generating substantial temporary increases in ambient noise level. The Grange Road Connector alignment would be no closer to off-site sensitive receptors than the project components analyzed in the 2020 EIR and therefore would not result in new or more significant noise impacts, and **Mitigation Measures 3.10-1** and **3.10-2** would continue to apply to the Modified Project to reduce potential impacts to less-than-significant levels. Therefore, the construction of those categories of Project Modifications that involve physical changes to the environment (the Parcel Reconfiguration, Grange Road Connector, Connector Roadways, and the additional 10-foot aggregate shoulder) would have similar construction noise impacts compared to what was analyzed in the 2020 EIR and the same mitigation measures would continue to apply to reduce impacts to less-than-significant levels. The potential for operational activities to generate substantial increases in ambient noise was found to be less than significant for Phase 1 and the Project Modifications would not result in new or more significant operational noise. The potential for increased traffic noise on the local roadway network was found to be a significant and unavoidable impact; the Project Modifications would not change the number of expected vehicle trips and therefore would not change the conclusions of the 2020 EIR with respect to traffic noise. The 2020 EIR also analyzed the potential for the Original Project to expose people to excessive noise levels due to a private airstrip, but the Project Modifications would not result in changes to the use, location, or operation of the helipads that would affect this impact analysis. Project Modifications that do not involve physical changes to the environment (GHG Reduction Measures, the rest of the Updated WPP measures, and the DMP) would have no potential to result in new or substantially more severe impacts related to noise. Therefore, the Project Modifications would not have new or substantially more severe impacts related to noise, and these effects are not discussed further in this PREIR.

Population and Housing

Section 3.11 of the 2020 EIR (**Appendix D**) analyzed the potential for the Original Project to induce substantial unplanned population growth. The Project Modifications do not include more residential lots or commercial development, and therefore will not have a substantial change to population and housing

compared to what was analyzed in the 2020 EIR. The Grange Road Connector would be used for emergency ingress and egress only and would not indirectly induce population growth or allow access to an area that was previously unavailable. Therefore, the Project Modifications have no potential to result in new or substantially more severe impacts related to population and housing, and these effects are not discussed further in this PREIR.

Public Services

Section 3.12 of the 2020 EIR (**Appendix D**) analyzed the potential for the Original Project to result in impacts related to public services including law enforcement, fire protection, schools, and parks and recreation. The Project Modifications do not include more residential lots or commercial development, and therefore will not have a substantial change to law enforcement, schools, or parks and recreation compared to what was analyzed in the 2020 EIR. The Updated WPP and Settlement Agreement Project Modifications include changes to the funding for the proposed emergency center and guarantee on-site staffing and funding to the SLCFPD, which will eliminate the potential for impacts to Fire Protection Public Services. Therefore, the Project Modifications have no potential to result in new or substantially more severe impacts related to public services beyond what was analyzed in the 2020 EIR, and these effects are not discussed further in this PREIR.

Utilities

Section 3.14 of the 2020 EIR (**Appendix D**) analyzed the potential for the Original Project to result in impacts related to utilities including: water supply, wastewater services, and stormwater collection and treatment; solid waste; and electrical, gas, and telecommunication. Project Modifications that involve physical changes to the environment (the Parcel Reconfiguration, Grange Road Connector, Connector Roadways, and the additional 10-foot aggregate shoulder) will not result in a substantial change to demand for utilities compared to what was analyzed in the 2020 EIR because the same total number of hotel and residential units are proposed. Although the total utility demand will remain unchanged, as a result of the Parcel Reconfiguration increasing the density of residential lots, the amount of improvements associated with the utility distribution network will be decreased. Fewer miles of pipeline and electrical conduit will be required, and therefore the potential impacts of the utility improvements will be reduced under the Project Modifications. The Original Project's Stormwater Design Report and the Grading and Drainage Plan (see Appendices SW and SPOD of the 2020 EIR, **Appendix D**) would apply to the Project Modifications, including the relocated residential parcels and the Grange Road Connector. The GHG Reduction Measures that require the electrical demand to be met entirely by on-site renewable energy would reduce or eliminate the potential impact to electrical providers, and the removal of natural gas/propane (except for restaurant cooktops and fire pits in outdoor patio areas of restaurants) will reduce or eliminate the potential impact to gas utilities. Therefore, the Project Modifications would not result in new or substantially more severe impacts related to utilities, and these effects are not discussed further in this PREIR.

Energy

Section 3.15 of the 2020 EIR (**Appendix D**) analyzed whether the Original Project would result in wasteful, inefficient, or unnecessary consumption of energy during construction and operation, or conflict with a State or local plan for renewable energy or energy efficiency. Potential impacts due to construction and operation were potentially significant, and mitigation measures addressing air quality, GHG emissions, and traffic management would reduce the impacts to less-than-significant levels. Those categories of

Project Modifications that involve physical changes to the environment (the Parcel Reconfiguration, Grange Road Connector, Connector Roadways, and the additional 10-foot aggregate shoulder) would have similar energy impacts compared to what was analyzed in the 2020 EIR and the same mitigation measures would continue to apply to reduce impacts to less-than-significant levels.

The Project Modifications that do not involve physical change to the environment (GHG Reduction Measures, the rest of the Updated WPP measures, and the DMP) will not have a substantial change to the construction or operational energy expenditure and therefore will not result in a new or substantially more severe impact related to energy use. Project Modifications that increase renewable energy commitments will better align the Proposed Project with State and local plans for renewable energy use and overall energy efficiency, and therefore these Project Modifications would have a beneficial impact in this area. Accordingly, the Project Modifications would not result in a new or substantially more severe impact related to energy use, and these effects are not discussed further in this PREIR.

Indirect Effects

Section 4.1 of the 2020 EIR (**Appendix D**) assessed whether the Original Project would cause indirect effects, which are defined by the CEQA Guidelines Section 15385(a)(2) as those impacts which are "caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems." Project Modifications that do not involve physical change to the environment (GHG Reduction Measures, the Updated WPP measures, and the DMP) would have no potential to cause indirect effects. The Parcel Reconfiguration, Connector Roadways, and additional 10-foot aggregate shoulder will not result in new indirect effects. The Grange Road Connector would be used for emergency ingress and egress only and would not indirectly induce population growth or allow access to an area that was previously unavailable. Therefore, the Project Modifications would not result in new or substantially more severe indirect effects, and such effects are not discussed further in this PREIR.

Significant and Irreversible Environmental Effects

Section 4.4 of the 2020 EIR (**Appendix D**) assessed the potential for the Original Project to cause significant and irreversible environmental effects in accordance with Section 15126.2 (c) of the CEQA Guidelines. As analyzed in the 2020 EIR, implementation of the Original Project would result in the long-term commitment of Project Site resources to urban land use. The Proposed Project would result in or contribute to the conversion of undeveloped land to urban uses, and irreversible consumption of energy and natural resources associated with the future uses on the Guenoc Valley Site. Project Modifications that do not involve physical change to the environment (GHG Reduction Measures, the Updated WPP measures, and the DMP) would have no potential to increase the severity of the conversion of undeveloped land to urban uses, and the Project Modifications that change the Development Area (Parcel Reconfiguration, Grange Road Connector, and Connector Roadways) result in overall fewer acres of undeveloped land being converted. Project Modifications that increase renewable energy commitments will better align the Proposed Project with State and local plans for renewable energy use and overall energy efficiency, and therefore these Project Modifications would have a beneficial impact as it relates to the irreversible consumption of energy. Therefore, the Project Modifications would not result in new or substantially more severe significant and irreversible environmental effects, and such effects are not discussed further in this PREIR.

4.1.2 Explanation of Checklist Evaluation Categories

The purpose of the analysis below is to determine if the Project Modifications would result in new or substantially more severe environmental impacts beyond those described in the 2020 EIR and the need for new or altered mitigation. Any new information pertaining to the environmental setting or regulatory setting for each issue area is included in each relevant section, with the full description of the regulatory setting and environmental setting for the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure contained in the 2020 EIR (**Appendix D**).

The columns "2020 EIR Conclusions" follow the same format as the 2020 EIR and summarize the results of the separate analyses conducted for the Guenoc Valley Site (for both Phase 1 and future phases), as well as the Off-Site Areas (the Middletown Housing Site and Off-Site Infrastructure). The significance of each issue area from the 2020 EIR, mitigation measures that were recommended (if required), and the level of significance after mitigation is summarized in these columns. The entire analysis for each impact area is contained in **Appendix D**.

In the column "Do Project Modifications Result in New or Substantially More Severe Significant Impacts?", a "no" answer does not necessarily mean that there are no potential impacts in the environmental category, but that there is no relevant change in the condition or status of the impact compared to the analysis contained within the 2020 EIR. A 'yes' answer in this column indicates that the Project Modifications may result in a new impact or a substantial increase in the severity of an impact that has not already been evaluated and mitigated by the previous EIR. If a 'yes' answer is given, additional mitigation measures may be specified, or modifications may be made to existing mitigation measures, and additional analysis is provided to conclude whether or not the Project Modifications result in new or substantially more severe impacts after mitigation.

4.2 LAND USE AND AGRICULTURE

4.2.1 Introduction

The 2020 EIR, Volume II, Section 3.2.2 includes a detailed description of the environmental setting related to the land use and agricultural resources of the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Areas that is not repeated in its entirety within this PREIR. **Section 4.2.2** of this PREIR includes a description of the environmental setting that has changed since the 2020 EIR. There have been no substantial changes to the land use and agricultural "Regulatory Setting" since preparation of the 2020 EIR. The full discussion of the environmental and regulatory settings is provided in the 2020 EIR (**Appendix D**). **Section 4.2.3** of this PREIR provides a discussion on whether Project Modifications would result in new significant effects or a substantial increase in the severity of previously identified effects, and mitigation is discussed in **Section 4.2.4**.

4.2.2 Environmental Setting

Agricultural Resources

The Farmland Mapping and Monitoring Program (FMMP) applies one of six farmland designations to land: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, and Other; the definitions can be found in Section 3.2.2 of the 2020 EIR, Volume II. These classifications combine the actual farming use of the land with the technical soil ratings that determine a

land area's suitability for farming. The California Department of Conservation strives to update these maps every two years on even calendar years, to ensure the maps reflect the continuous improvements in mapping technology and allows each cycle to be more accurate (Department of Conservation, 2023). At the time of the publication of the 2020 EIR, the 2016 FMMP mapping data was available, but in May 2024 updated 2020 mapping was published for Lake County (Department of Conservation, 2024). The 2016 FMMP mapping for the entire Guenoc Valley Site is depicted in Figure 3.2-1 of the 2020 EIR, and the updated 2020 FMMP mapping for the Guenoc Valley Site and Grange Road Connector APE is shown in **Figure 4-1a**. The Grange Road Connector is mapped primarily as Grazing Land with small areas of Prime Farmland and Farmland of Local Importance, as shown in **Figure 4-1b**. Throughout the Guenoc Valley Site, additional vineyards have been mapped as Unique Farmland and some areas previously mapped as Farmland of Local Importance were remapped in the 2020 FMMP as Unique Farmland, particularly in and around the Upper Bohn Lake area. At the time of the 2020 EIR, the Guenoc Valley Site contained approximately 398 acres of Unique Farmland as mapped by the FMMP, and now there are over 913 acres of mapped Unique Farmland (Department of Conservation, 2024).

Under the Williamson Act, landowners may enter into contracts with local governments by which, in exchange for agreeing to keep land in agricultural use for ten or more years, the landowners gain a preferential assessment for tax purposes. In Lake County, parcels zoned as Agricultural Preserve Zones may be enrolled in Williamson Act contracts. The Comstock Ranch property immediately north of the Project Site is zoned as Rural Lands (RL) and therefore is not under a Williamson Act Contract (Lake County, 2023b). As stated in the 2020 EIR, none of the Guenoc Valley Site parcels are enrolled in a Williamson Act Contract.

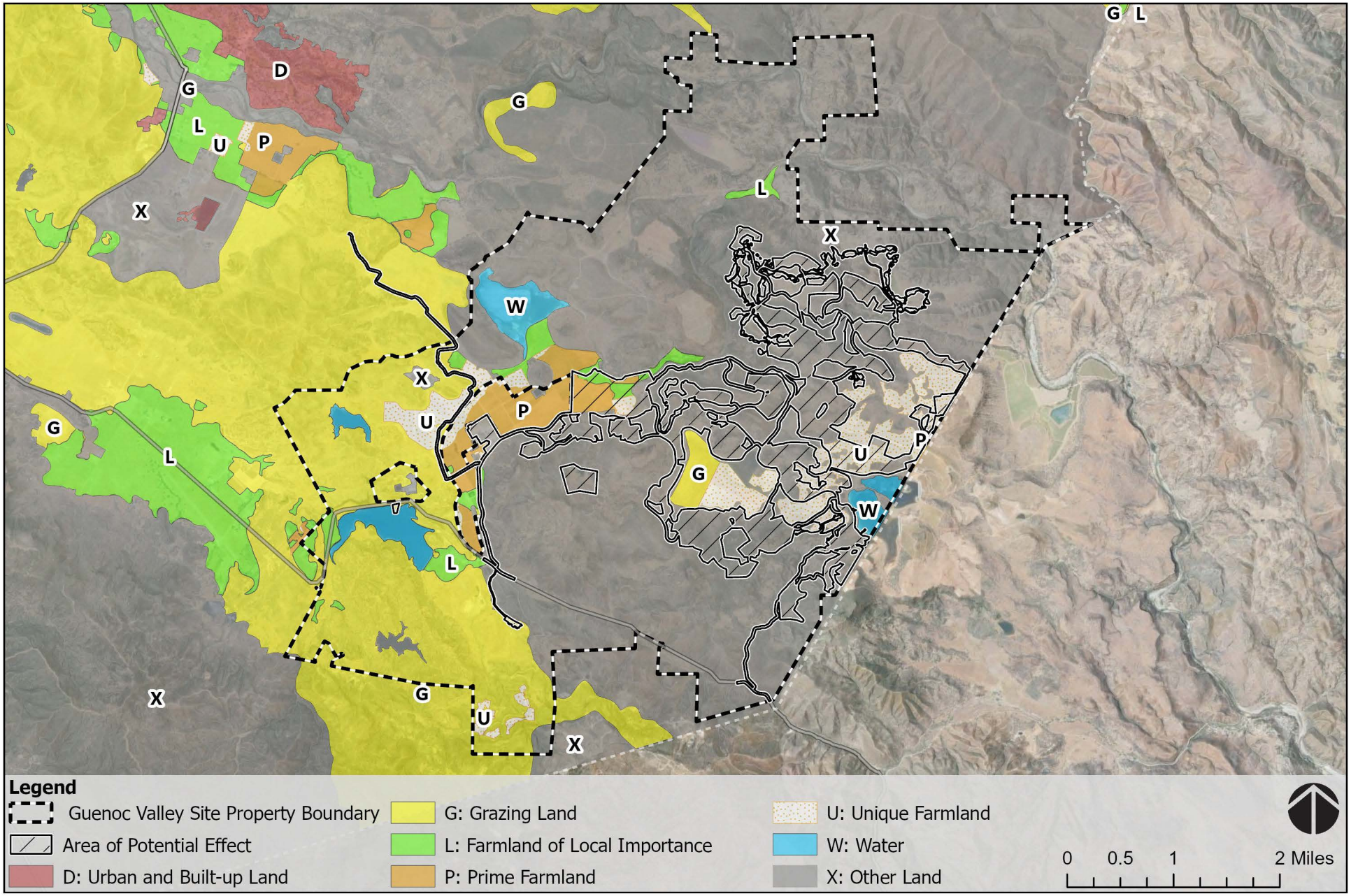
Forestry Resources

Forest land is defined in PRC Section 12220(g) as land that can "support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." Timberland is defined in PRC Section 4526 as "land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees." Timberland Production Zone is an area zoned to be devoted to growing and harvesting timber or for growing and harvesting timber and compatible uses, as defined in the Government Code 51104. As discussed further in **Section 4.4,** the terrestrial habitats within the Grange Road Connector are largely agriculture, developed lands, and non-native annual grasslands, with smaller amounts of rock outcrop, leather oak chaparral, and blue oak woodland. None of these habitats are considered timber or forest land; impacts to oak woodlands are discussed in **Section 4.4**.

Land Use and Zoning

The Lake County General Plan 2008 designates the Grange Road Connector as Rural Lands and Agriculture (off-site portion) and Resource Conservation, Agriculture, and Rural Residential (on-site portion) (**Figure 4-2**; Lake County, 2008). Brief descriptions of these land use designations are provided below, and the complete descriptions are found in the 2020 EIR, Volume II, Section 3.2.2 (**Appendix D**):

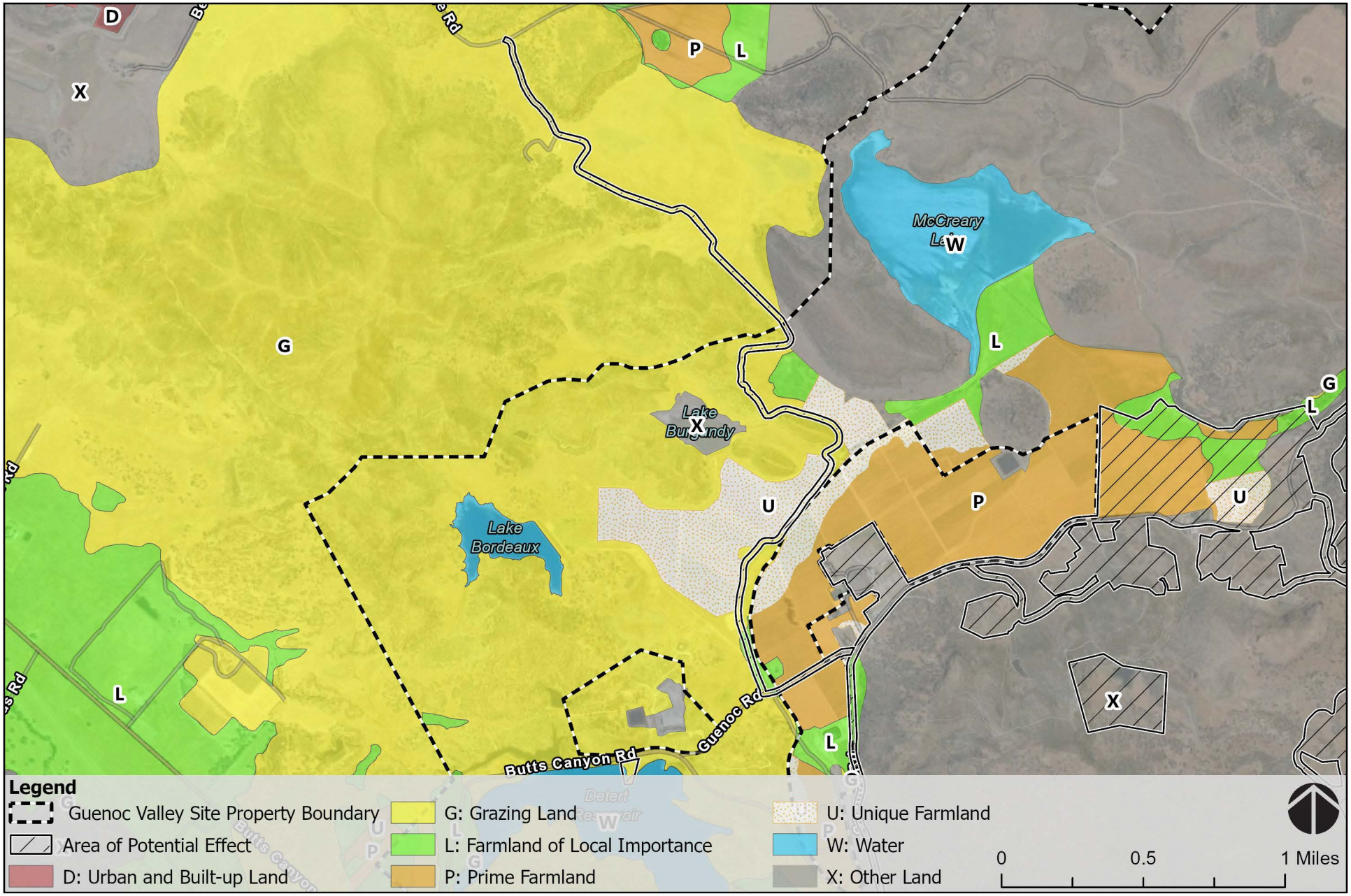
- **Agriculture:** This land use category includes areas with prime farmland, vineyard soils and grazing lands, along with areas characterized by steep slopes and limited services. One purpose of this



Source: California Important Farmland, Farmland, California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, FMMP, California Farmland; County of Napa, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of

FIGURE 4-1a

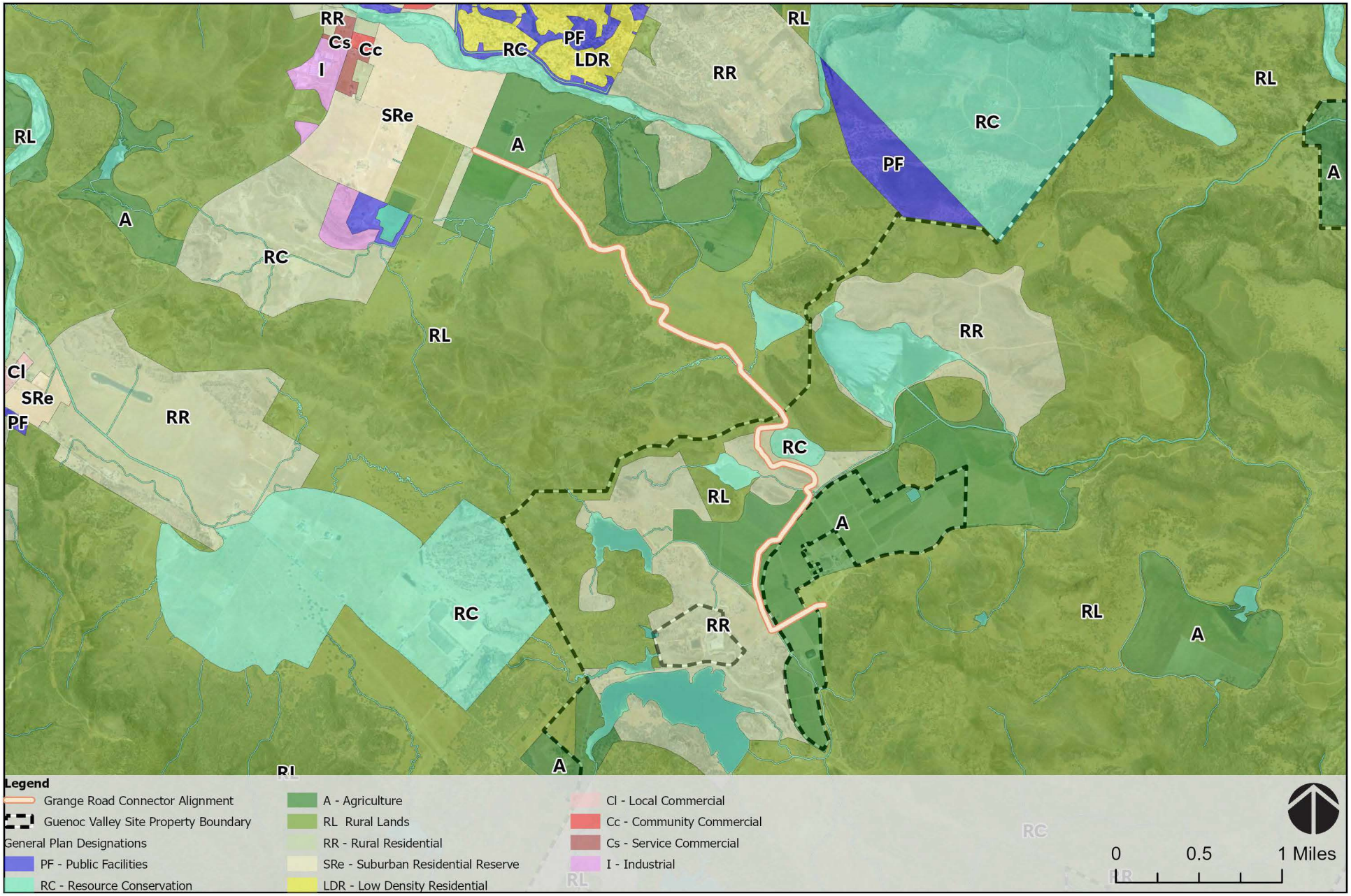
FARMLAND MAP



Source: California Important Farmland, Farmland, California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, FMMP, California Farmland; Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community, County of Napa,

FIGURE 4-1b

GRANGE ROAD FARMLAND MAP



Source: Lake County Community Development and General Plan;
Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community, Esri,

FIGURE 4-2

EXISTING LAKE COUNTY GENERAL PLAN LAND USE DESIGNATIONS

land use category is to protect the County's valuable agricultural resources and to prevent development that would preclude its future use in agriculture.

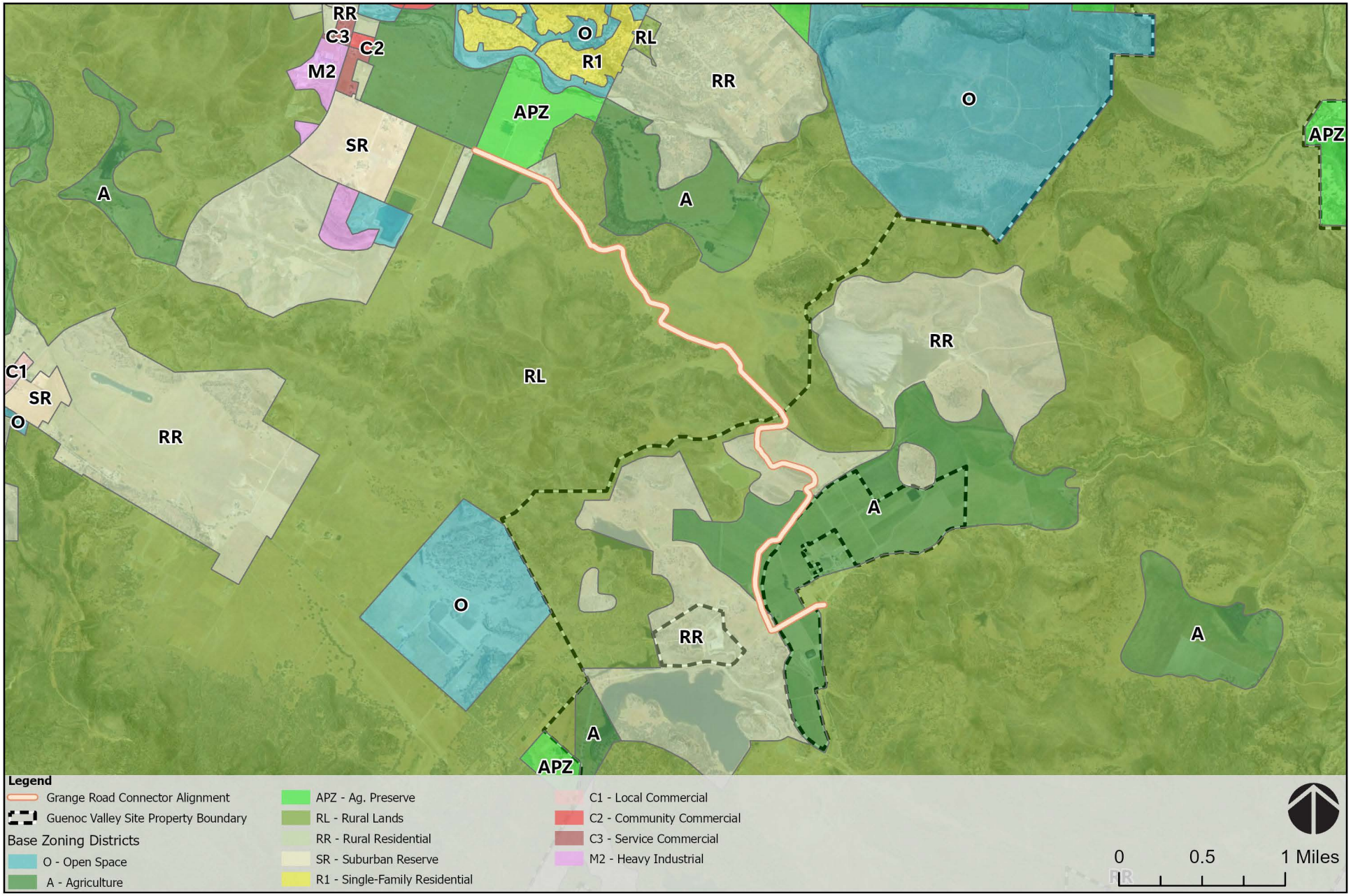
- **Rural Lands:** The purpose of this land use category is to allow rural development in areas that are primarily in their natural state, although some agricultural production, especially vineyards, can occur. The category is appropriate for areas that are remote, or characterized by steep topography, fire hazards, and limited access. Typical uses permitted by right include, but are not limited to, animal raising, crop production, single family residences, game preserves and fisheries.
- **Rural Residential:** This land use category is designed to provide single-family residential development in a semi-rural setting. Large lot residential development with small-scale agricultural activities is appropriate. These areas are intended to act as a buffer area between the urban residential development and the agricultural areas of the County.
- **Resource Conservation:** The purpose of this land use category is to assure the maintenance or sustained generation of natural resources within the County. The highest priority for these lands is to provide for the management of the County's natural infrastructure. This management should include, but is not limited to, functioning as watershed lands which collect precipitation and provide for the important filtering of water to improve water quality.

The Lake County Zoning Ordinance designations for the Grange Road Connector are Agriculture (A), Rural Lands (RL), and Rural Residential (RR) (both on- and off-site portions), as shown on **Figure 4-3**. The purpose of each designation is:

- **Agriculture (A):** To protect the County's agricultural soils, provide areas suitable for agriculture, and prevent development that would preclude their future use in agriculture.
- **Rural Lands (RL):** To provide for resource related and residential uses of the County's undeveloped lands that are remote and often characterized by steep topography, fire hazards, and limited access.
- **Rural Residential (RR):** To provide for single-family residential development in a semi-rural setting along with limited agriculture.

4.2.3 Impacts

The land use and agricultural resource impacts of the Original Project were determined by analyzing changes to the existing conditions that would occur as a result of the proposed land uses within the area. This analysis of the Project Modifications follows the same methodology outlined in Section 3.2.4 of the 2020 EIR, focusing on whether the Project Modifications would have new or substantially more severe significant effects than those described in the 2020 EIR. Refer to Section 3.2.4 of the 2020 EIR (**Appendix D**) for a complete description of the methodology and significance criteria relating to land use and agricultural impacts.



Source: Lake County Community Development and Zoning;
Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community, Esri,

FIGURE 4-3

EXISTING LAKE COUNTY ZONING DESIGNATIONS

IMPACT 3.2-1	CONFLICT WITH LAND USE PLANS, POLICIES, OR REGULATION ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING AN ENVIRONMENTAL EFFECT		
	2020 EIR Conclusions		Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Less than Significant	Less than Significant (Workforce Housing) and No Impact (Infrastructure)	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

The Original Project included the following amendments or updates to existing land use plans which were analyzed in the 2020 EIR: an amendment to the Special Study Area map of the Middletown Area Plan; an amendment to the Lake County General Plan land use map designations to Resort Commercial; and a Zoning Ordinance Amendment to introduce the new "GVD" zoning district. The Project Modifications would result in smaller average residential parcel size and denser neighborhoods as shown in **Figures 2-3** and **2-4**, but would not otherwise change the land use designations being sought by the Original Project or the conclusions within the 2020 EIR. The inclusion of the Grange Road Connector would not fundamentally change the surrounding land uses of the off-site Comstock Ranch property or the affected portion of the Guenoc Valley Site. Although widening and paving of the existing ranch roads and new road construction would permanently replace a small quantity of rural and agricultural lands, the vast majority of adjacent land uses would not change. The GHG-related Project Modifications would ensure that the proposed development is more consistent with local, State, and federal policies related to climate change and minimizing GHG emissions. The Modified Project would not result in any new significant environmental effects or an increase in the severity of previously identified effects associated with conflicts to land use plans, policies, or regulations as compared to the 2020 EIR.

IMPACT 3.2-2	CREATE LAND USE CONFLICTS OR BE INCOMPATIBLE WITH EXISTING OR PROPOSED ADJACENT LAND USES		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Less than Significant	No
Mitigation Measures	MM 3.2-1: Right to Farm Disclosure	None Required	No Modifications Necessary
Significance After Mitigation	Less than Significant	N/A	Less than Significant

*Impact numbering retained from the 2020 EIR.

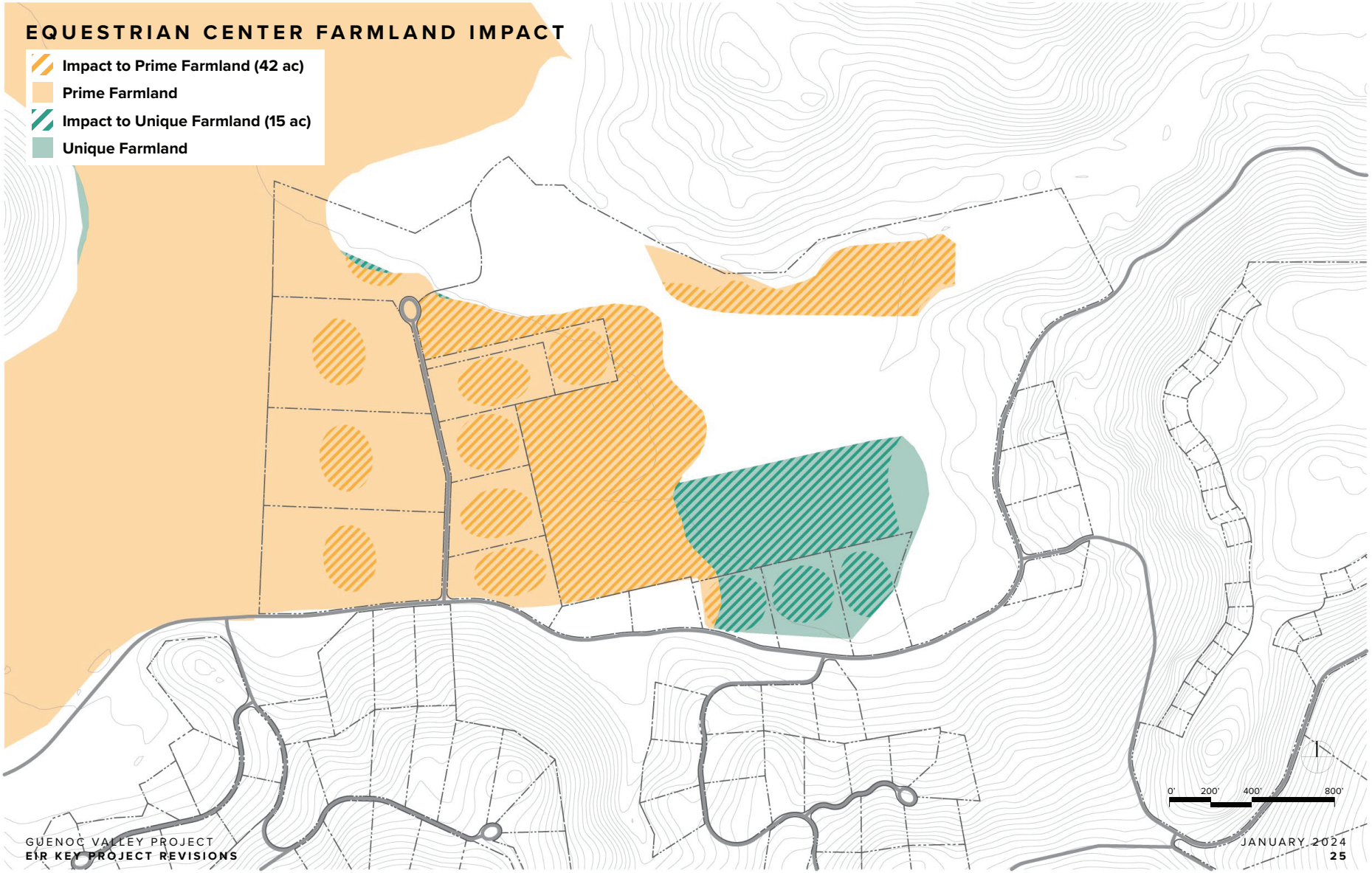
As analyzed in the 2020 EIR, development of the Proposed Project would change the character of the Guenoc Valley Site and replace rural and agricultural lands with residential and commercial uses, supporting infrastructure, and other utilities. The 2020 EIR found that the proposed development would not result in compatibility conflicts with surrounding residences, but there could be potentially significant impacts related to the incompatibility of the Proposed Project with ongoing agricultural operations. **Mitigation Measure 3.2-1** ensures compliance with the County's Right-to-Farm Ordinance and requires a description of adjacent agricultural operations to ensure potential buyers are fully informed on potential noise, odor, and dust associated with active agriculture. The Project Modifications would not change the number of proposed residential lots or introduce more development that would increase the severity of impacts to active agricultural operations. The Grange Road Connector would not result in new or substantially more significant conflicts with agricultural operations, as the road would only be used in the event of an emergency and would not introduce daily traffic to the Comstock Ranch property or through the northern portion of the Project Site that would conflict with the existing grazing and vineyard land uses. **Mitigation Measure 3.2-1** would continue to apply and would reduce impacts to less than significant for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with land use conflicts as compared to the 2020 EIR.

IMPACT 3.2-3	CONVERT PRIME FARMLAND, UNIQUE FARMLAND, OR FARMLAND OF STATEWIDE IMPORTANCE (IMPORTANT FARMLAND), AS SHOWN ON MAPS PREPARED PURSUANT TO THE FMMP OF THE CALIFORNIA RESOURCES AGENCY, TO NON-AGRICULTURAL USE		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Significant (Phase 1) and Potentially Significant (Future Phases)	Less than Significant (Workforce Housing) and No Impact (Infrastructure)	No
Mitigation Measures	MM 3.2-2: Agricultural Conservation	None Required	No Modifications Necessary
Significance After Mitigation	Significant and Unavoidable	N/A	No (Impact remains Significant and Unavoidable)

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, agricultural resources on the Guenoc Valley Site include Prime Farmland and Unique Farmland (collectively referred to as 'Important Farmland'). The 2020 EIR determined that the Proposed Project has the potential to impact farmland through development at the Equestrian Center Community, Maha Farm Community, and Back of House area, which is a significant impact. **Mitigation Measure 3.2-2** requires acre for acre long-term permanent protection of farmland of equivalent quality, so every acre of Prime and Unique Farmland converted would result in the same number of acres of Important Farmland preserved elsewhere on the property or in the vicinity. While **Mitigation Measure 3.2-2** would reduce the level of impact, there would still be a net loss of Important Farmland as a result of Phase 1 of the Proposed Project, and the impact was identified as significant and unavoidable in the 2020 EIR.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would have the potential to impact additional Important Farmland. The remote parcels that were relocated were on areas mapped as 'Other Land' and some of them, particularly within the Equestrian Center Community, were relocated to areas of Prime Farmland, Unique Farmland, and Farmland of Local Importance (**Figure 4-4**). While the same 1.5-acre development envelope is associated with each residential estate lot, the Parcel Reconfiguration has resulted in increased density of lots within mapped Important Farmland. In addition to the Parcel Reconfiguration changing where on the Guenoc Valley Site the impacts will occur, the underlying FMMP mapping of Important Farmland has undergone two revisions in 2018 and in 2020 since the 2016 data that was available for use in the 2020 EIR. The



Source: SWA Group, 2024

FIGURE 4-4

EQUESTRIAN CENTER FARMLAND IMPACT WITH MODIFICATIONS

updated 2020 FMMP data has vastly expanded the area designated as Unique Farmland across the Guenoc Valley Site, particularly near the Upper Bohn Lake area, and there are now approximately 515 additional acres of mapped Unique Farmland on the Guenoc Valley Site, as shown in **Figure 4-5a**.

To further illustrate the expanded FMMP mapping, **Figure 4-5b** depicts aerial photographs from 2016 and 2022 near the Upper Bohn Lake area where the most extensive mapping change occurred. **Figure 4-5b** shows the 2016 aerial photograph with the 2016 Important Farmland data overlaid on the left side (which was available at the time of the 2020 EIR), while the right side shows a 2022 aerial photograph with the most recent 2020 Important Farmland data overlaid. As demonstrated therein, the extent of planted vineyard or farmland has not changed, nor has the Modified APE in this area (refer to **Figure 2-3a**), but the mapped Important Farmland increased to more accurately reflect the planted vineyard. The increase in mapped Important Farmland is due primarily to refinements in mapping technologies conducted by the Department of Conservation, and not due to changes in the underlying resources or soil characteristics. Because the amount of Important Farmland impacts analyzed in the 2020 EIR was based on 2016 FMMP data that has been superseded, the Original Project APE was recalculated against the current (2020) FMMP data. **Figure 4-5c** shows the 2020 APE (left) and the Modified APE (right) on the current FMMP data and the impacts are presented in **Table 4.2-1**.

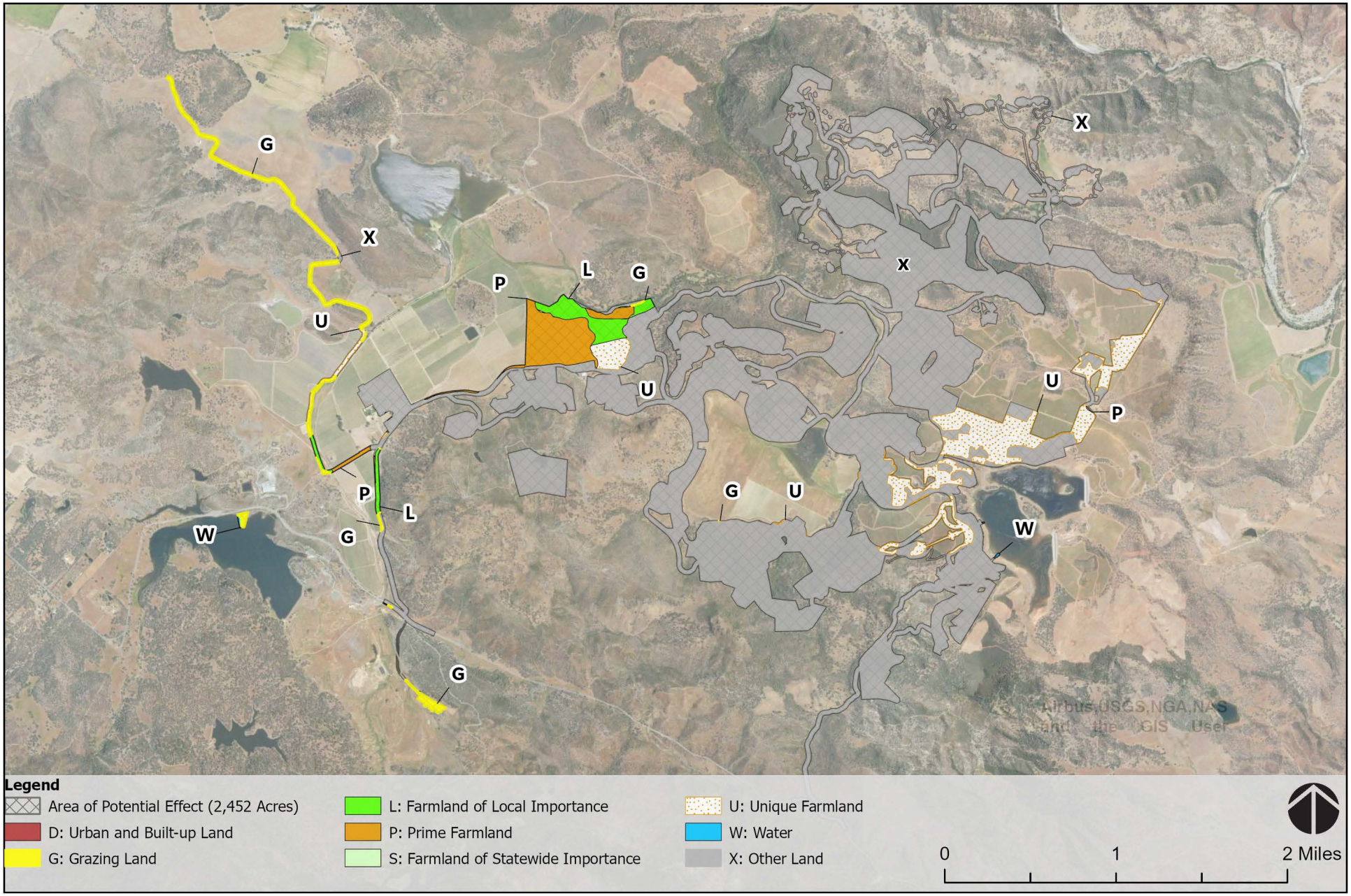
Table 4.2-1: 2020 FMMP Farmland Impacts

2020 FMMP Data: Farmland Type	2020 APE Impacts	Modified APE Impacts	Change
Prime Farmland	110.0	86.7	-23.3
Unique Farmland	168.1	193.6	+25.5
Farmland of Local Importance	47.3	45.2	-2.1
Total	**325.4**	**325.5**	**+0.1**

Source: Department of Conservation, 2024

The amount of unique farmland that will be impacted by the Modified APE increased, although there were significant decreases in the amount of Prime Farmland and a small decrease in the amount of Farmland of Local Importance that will be impacted by the Modified APE when compared to the original 2020 APE. Overall, the impacts to Important Farmland of the Modified APE remain relatively consistent (+0.1 acre) with the impacts of the 2020 APE when compared to the current FMMP data.

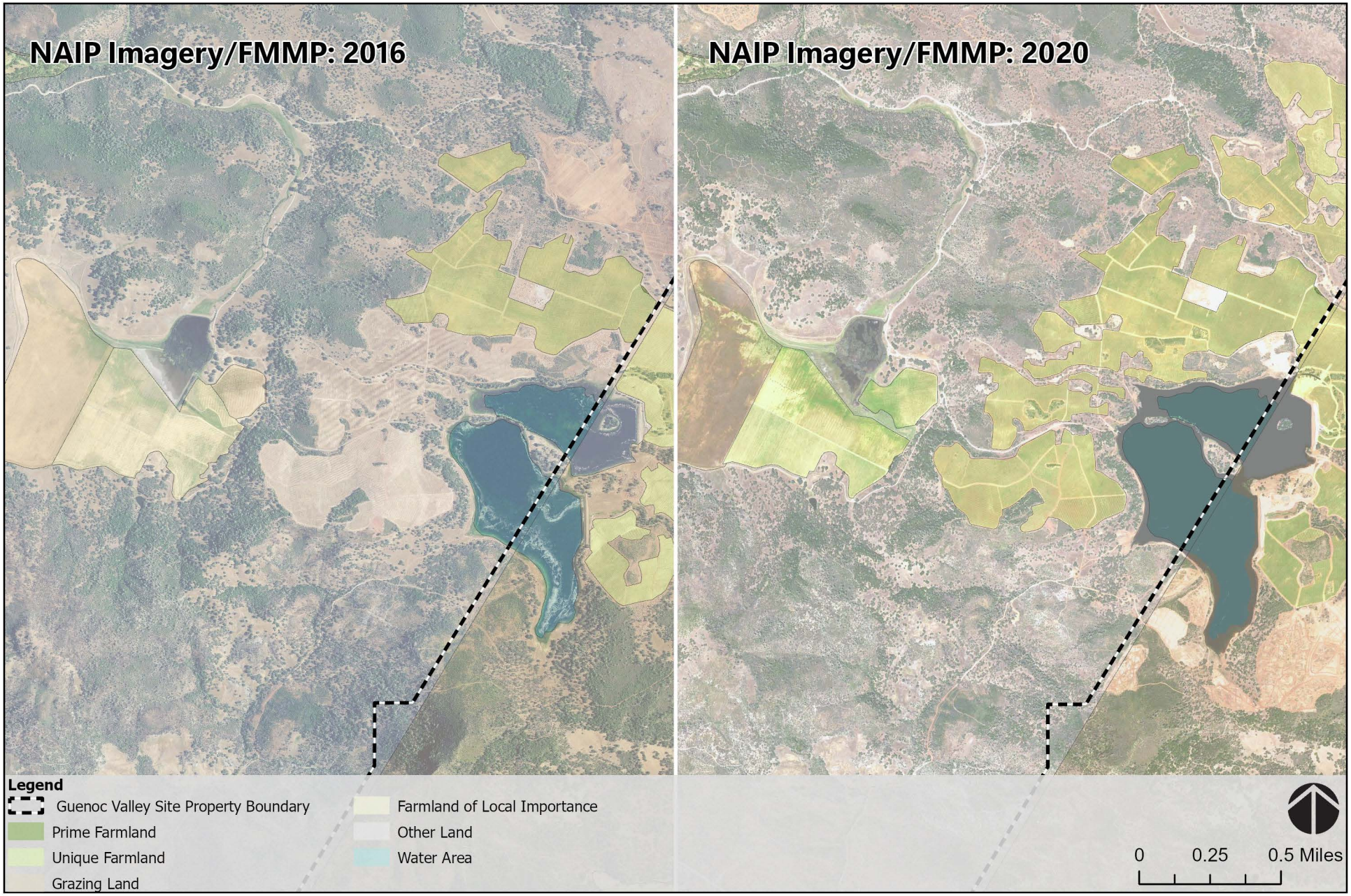
Therefore, the physical impacts of the Project Modifications remain fairly consistent when compared to the 2020 EIR, and **Mitigation Measure 3.2-2** will continue to require acre-for-acre permanent preservation of impacts to mapped farmland. **Mitigation Measure 3.2-2** will still apply to the Modified Project, but will not result in a reduction to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or an increase in the severity of previously identified effects associated with farmland, and the impact will remain significant and unavoidable for the same reasons described in the 2020 EIR.



Source: Williamson Act enrollment within the participating jurisdiction, Division of Land Resource Protection; Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community, Esri, USDA FSA

FIGURE 4-5a

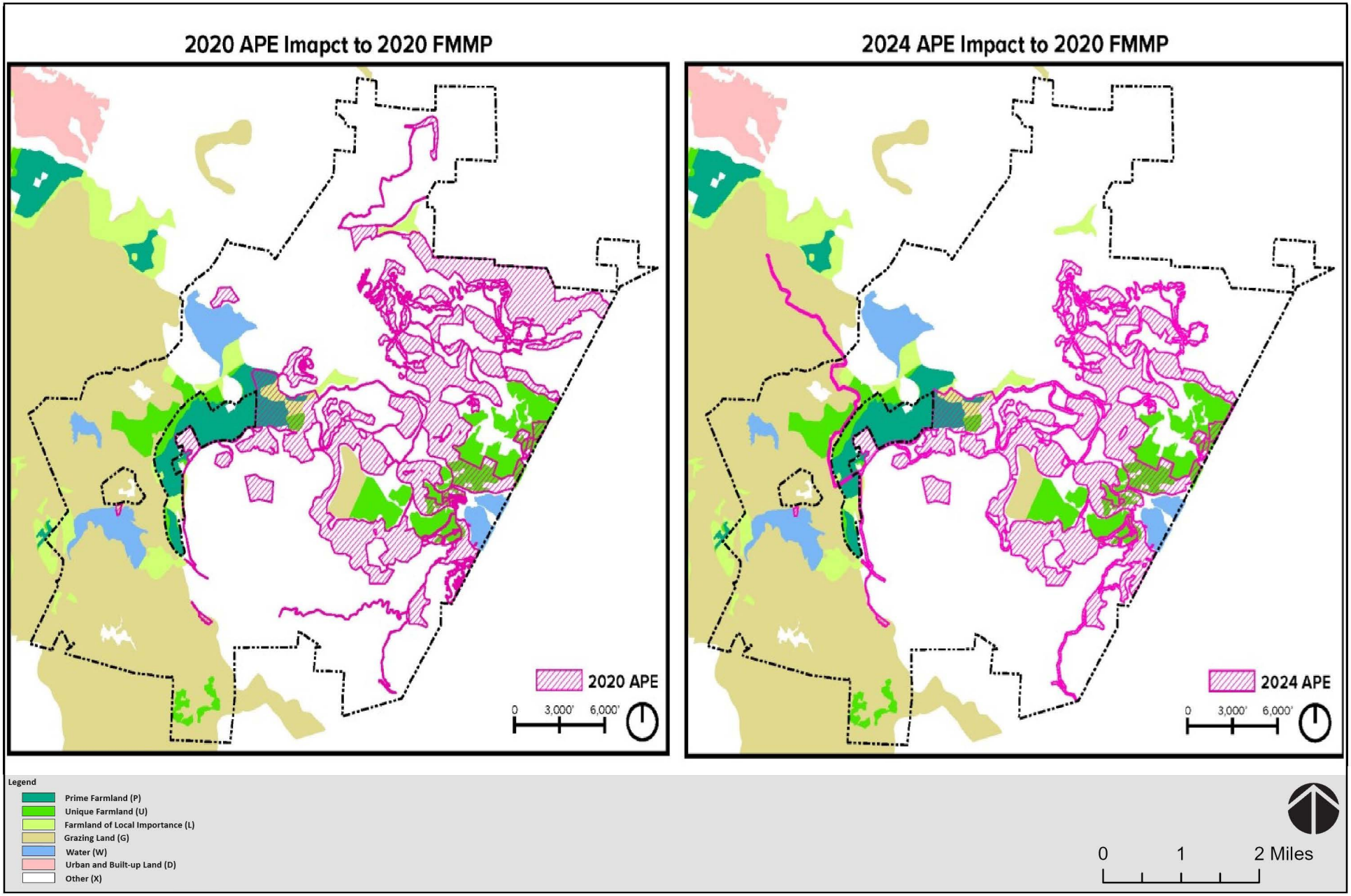
FARMLAND WITHIN MODIFIED PHASE 1 APE



Source: Lake County Community Development and General Plan; Farmland Mapping and Monitoring Program, Division of Land Resource Protection, California Department of Conservation

FIGURE 4-5b

PLANTED VINEYARDS NEAR UPPER BOHN



Source: Lake County Community Development and General Plan; Farmland Mapping and Monitoring Program, Division of Land Resource Protection, California Department of Conservation

FIGURE 4-5C

FMMP 2016 vs 2020

IMPACT 3.2-4	CONFLICT WITH EXISTING ZONING FOR AGRICULTURAL USE		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Less than Significant	No Impact	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

As analyzed in the 2020 EIR, approximately 1,097 acres of land on the Guenoc Valley Site currently zoned for agriculture would be amended to the new GVD zoning district under the Proposed Project. The Guenoc Valley Zoning District would include an Agricultural Preserve Combining District, approximately 1,743 acres in size, which would have certain restrictions on development to preserve agricultural lands on the site. As a result, the 2020 EIR determined that the potential for the Proposed Project to result in conflicts with existing agricultural zoning would be less than significant.

The Project Modifications would not change the proposed GVD zoning district, but the Agricultural Preserve Combining District would be reduced by approximately 90 acres to accommodate the Parcel Reconfiguration. Nevertheless, the overall size of the Agricultural Preserve Combining District would be 1,653 acres under the Project Modifications, which is roughly 556 acres more than the area of currently zoned agricultural land within the overall Guenoc Valley Site. The Project Modifications do not propose new land uses that would result in conflicts with existing agricultural zoning. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with conflicts with agricultural zoning as compared to the 2020 EIR.

IMPACT 3.2-5	RESULT IN THE LOSS OF FOREST LAND OR CONVERSION OF FOREST LAND TO NON-FOREST USE		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	No Impact (Phase 1) and Less than Significant (Future Phases)	Less than Significant (Workforce Housing) and No Impact (Infrastructure)	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

As analyzed in the 2020 EIR, neither the Guenoc Valley Site nor adjacent properties are zoned for timberland, forest land, or timberland production. Approximately 61 acres of Douglas fir forest concentrated in the southernmost portion of the site is considered the only commercially harvestable forest land within the Guenoc Valley Site, but as analyzed in the 2020 EIR, no Phase 1 development is proposed for this area and therefore there was no impact.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications would add the Grange Road Connector and Connector Roadways to the area that will be graded and disturbed and the Parcel Reconfiguration would increase the density of development in the central portion of the site, however none of these Project Modifications would impact the Douglas fir forest in the southern portion of the property. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with forest land as compared to the 2020 EIR.

IMPACT 3.2-6	CUMULATIVE LAND USE AND AGRICULTURAL IMPACTS		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Less than Significant	Less than Significant	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

As explained further in the 2020 EIR and **Section 4.13** of this PREIR, the context for evaluation of potential cumulative impacts for land use and agriculture varies depending on the specific impact being evaluated. For land use consistency and compatibility, the cumulative context is the immediate vicinity of the Guenoc Valley Site where potential incompatibilities could occur at the interface of the property boundary, while the cumulative context for agricultural resources is Lake, Napa, and Sonoma counties which contain a wide variety of agricultural uses and similar soils that are found in these adjacent areas (see **Appendix D**). Planned cumulative projects in the region are described in **Table 4.13-1**, and while some changes have occurred to the cumulative projects since the 2020 EIR, the main projects that will bring new people into the region (i.e., buildout of the Hidden Valley Community, Valley Oaks Community, and the Guenoc Valley Water Rights Modification Project) and the types of projects proposed (i.e., residential development, commercial, and agricultural development) remain consistent from the 2020 EIR.

As the cumulative setting area continues to develop, land use conflicts could occur as residential development is located adjacent to existing rural uses and as any urban development is located adjacent to active agriculture. However, land use conflicts are site-specific and generally do not result in cumulative, community-wide impacts. The Original Project's contribution to significant impacts related to land use compatibility were found to be less than significant, and the Project Modifications would not result in new significant environmental effects or an increase in the severity of previously identified significant effects. No additional mitigation for cumulative development relating to land use compatibility would be required.

Planned cumulative projects in the region are described in **Table 4.13-1**, and there has been a slight increase in agricultural projects (primarily cannabis development applications) since the preparation of the 2020 EIR. Within south Lake County, a majority of agricultural land has been designated Important Farmland, including portions of the Guenoc Valley Site. Loss of farmland is occurring throughout California, including in Lake County, and the 2020 EIR determined that the loss of Important Farmland would be cumulatively significant. The Project Modifications in combination with a change in the FMMP mapping designations within the site result in an increase the amount of Important Farmland that would be converted, but the same mitigation measure requiring the off-set through on-site mitigation would apply to the Modified Project, resulting in a larger area of preserved farmland. The 2020 EIR determined

that **Mitigation Measure 3.2-3** would reduce the Original Project's contribution to the cumulative effects to less than significant levels, and this mitigation measure would reduce the impacts of the Modified Project for the same reasons explained in the 2020 EIR. No additional mitigation for cumulative impacts would be required.

4.2.4 Mitigation Measures

No changes to the mitigation measures are warranted as a result of the Project Modifications. A full list of the mitigation measures is included in the MMRP in **Section 5**.

4.3 AIR QUALITY

4.3.1 Introduction

Section 3.3.2 of the 2020 EIR includes complete air quality setting information (e.g., topography, climate, meteorology, pollutants, etc.) related to the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Areas that is not repeated in its entirety here. **Section 4.3.2** of this PREIR includes a description of the environmental setting that has changed since the 2020 EIR and **Section 4.3.3** describes regulations that are new or updated since preparation of the 2020 EIR. The full discussion of the environmental setting and regulatory setting are available in the 2020 EIR (**Appendix D**). **Section 4.3.4** of this PREIR describes the methods of and thresholds of significance, and provides a discussion on whether the Project Modifications would result in new significant effects or a substantial increase in the severity of previously identified effects. Mitigation for impacts to air quality is discussed in **Section 4.3.5**.

4.3.2 Environmental Setting

The Grange Road Connector APE is located in the Lake County Air Basin (LCAB) within the jurisdictional boundaries of the Lake County Air Quality Management District (LCAQMD), similar to the Guenoc Valley Site. Ambient concentrations of air pollutants are determined by the amount of emissions released by pollutant sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution of air pollutants include terrain, wind, atmospheric stability, and the presence of sunlight. The LCAB is bounded on all sides by mountains that create a bowl-like air basin that minimizes the influence of outside meteorology. These factors affect air quality on a regional scale throughout the LCAB, and are similar for the off-site portion of the Grange Road Connector as well as the Guenoc Valley Site itself.

Pollutants of Concern

Air pollutants emitted by stationary and mobile sources are regulated by federal and state law. Certain regulated pollutants are known as "criteria air pollutants" or "CAPs" and are emitted as primary and secondary pollutants. The CAPs are ground-level ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_X), sulfur dioxide (SO_2), particulate matter (PM), and lead (Pb). Refer to Section 3.3.2 of the 2020 EIR (**Appendix D**) for a complete description of these CAPs. The U.S. Environmental Protection Agency (USEPA) has developed National Ambient Air Quality Standards (NAAQS) for the CAPs. Primary standards are designed to protect the public health and secondary standards are intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. At the state level, CARB has developed California Ambient Air Quality Standards (CAAQS). The federal and State ambient standards were developed independently, with differing purposes and methods. As a result, the

federal and State standards differ in some cases. In general, the CAAQS are more stringent, particularly for ozone and particulate matter (PM_{10} and $PM_{2.5}$), than the federal standards. **Table 4.3-1** shows the current attainment status of the LCAB with the NAAQS and CAAQS, which demonstrates that the LCAB is in attainment or unclassified for all CAPs, consistent with conditions when the 2020 EIR was published.

Table 4.3-1: LCAB CAAQS and NAAQS Attainment Status

Criteria Air Pollutant	Averaging Time	CAAQS Status	NAAQS Status
Ozone	1-Hour	Attainment	N/A
	8-Hour	Unclassified/Attainment	Unclassified/Attainment
CO	1-Hour	Attainment	Unclassified/Attainment
	8-Hour	Unclassified/Attainment	Unclassified/Attainment
NO_2	1-Hour	Attainment	Unclassified/Attainment
	Annual	Unclassified/Attainment	Unclassified/Attainment
SO_2	1-Hour	Attainment	Unclassified/Attainment
	Annual	Unclassified/Attainment	Unclassified/Attainment
PM_{10}	24-Hour	Attainment	Unclassified
	Annual	Attainment	N/A
$PM_{2.5}$	24-Hour	Attainment	Unclassified/Attainment
	Annual	Attainment	Unclassified/Attainment
Lead	30-Day/3-Month	Attainment	Unclassified/Attainment
Sulfates	24-Hour	Attainment	N/A
Hydrogen Sulfides	1-Hour	Attainment	N/A
Visibility Reducing Particles	8-Hour	Attainment	N/A

Source: CARB, 2022a

Sensitive Receptors

Consistent with the 2020 EIR, sensitive receptors include schools, hospitals, and convalescent homes because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality related health problems. In addition, residential areas and recreational areas are also considered to be sensitive receptors. The 2020 EIR lists four sensitive receptors (either residences or residential neighborhoods); the Project Modifications are no closer to any of the listed sensitive receptors compared to the Original Project (**Appendix D**). The nearest sensitive receptors to the Grange Road Connector are the same rural residential homes located approximately 3,000 feet northwest of McCreary Lake and 4,000 feet from the previously proposed potential solar field location; these homes are approximately 4,500 feet northeast of the Grange Road Connector.

Community Air Protection Program AB 617 Communities

AB 617 established the Community Air Protection Program, which identifies communities that may be affected by a high cumulative exposure burden for toxic air contaminants (TACs) and criteria air pollutants (CAPs) (Bay Area Air Quality Management District [BAAQMD], 2022). There are no AB 617 communities located in the vicinity of the Guenoc Valley Site, and the nearest is the City of Richmond located over 50 miles south (CARB, 2024).

4.3.3 Regulatory Setting

Federal

The EPA implements national air quality programs, described in their entirety in Section 3.3.3 of the 2020 EIR, including establishing NAAQS to define levels of air quality that protect the public health and welfare from the known adverse effects of air pollutants. On January 27, 2023, the EPA issued for public comment a proposed rule considering lowering the NAAQS for primary annual particulate matter 2.5 microns in size ($PM_{2.5}$) from its current level of 12.0 µg/m^3 to within the range of 9.0 to 10.0 µg/m (USEPA, 2023a). However, that rule has not yet been adopted as the date of the publication of this PREIR, and therefore the NAAQS analyzed in the 2020 EIR remain in effect.

Local

The LCAQMD maintains the air quality conditions in Lake County through a robust program of plans, regulations, enforcement, and technical innovations that are described in depth in Section 3.3.3 of the 2020 EIR (**Appendix D**). Due to the good air quality in the LCAB, the LCAQMD has not adopted CEQA thresholds relating to air quality, and therefore the BAAQMD thresholds were considered in the 2020 EIR.

Bay Area Air Quality Management District 2022 CEQA Air Quality Guidelines

On April 20, 2022, the BAAQMD adopted updated *CEQA Air Quality Guidelines* that supersede the previous 2017 CEQA guidance relied upon in the 2020 EIR. The 2022 *CEQA Air Quality Guidelines* are designed to provide recommended procedures to evaluate potential air quality and climate impacts during the environmental review process for land use projects, consistent with CEQA requirements. The 2022 Guidelines contain instructions and examples for how a lead agency can evaluate, measure, and mitigate air quality and climate impacts generated from land use construction and operational activities. They focus on generated emissions of CAPs and precursors, odors, toxic air contaminants, and GHGs from local plans and projects. The Guidelines provide two methods for lead agencies to assess a project's potential impacts: screening criteria and thresholds of significance.

4.3.4 Impacts

Method of Analysis

For the 2020 EIR, the air quality impacts of the Original Project were determined by modeling the potential air pollutant emissions during the construction and operation phases of the development using the California Emissions Estimator Model, Version 2016.3.2 (CalEEMod), a CARB-recommended air quality model. Details of the modeling methodology and assumptions are provided in Section 3.3.4 of the 2020 EIR and the model output files are included as Appendix AIR of the 2020 EIR (**Appendix D**). The CalEEMod estimated the amount of CAP emissions that could occur during construction, specifically PM_{10} and $PM_{2.5}$ during site grading and ROG, NOx, and CO from diesel-fired construction equipment. Construction was estimated to occur in phases: Phase 1A, consisting of the primary resort facilities as well as supporting infrastructure such as roads, utilities, and support services, and on and off-site workforce housing was modeled to occur between April 2020 and December 2023; Phases 1B and 1C were assumed to occur between December 2023 and November 2030, and would include the buildout of residential lots based on market conditions. Construction of future phases of the Proposed Project was assumed to occur after the completion of Phase 1, and for modeling purposes, was assumed to occur between November 2030 and December 2040.

The CalEEMod inputs for the Original Project include the timing of construction sub-phases such as demolition, grading, construction, paving, etc. (see **Table 4.3-2**), as well as the anticipated number and types of construction equipment and their assumed operational usage (hours per day). These inputs were based on the number of hotels, resort residential parcels, and residential estates, as well as the lot sizes and grading area for the Original Project (**Appendix D**). The Project Modifications result in a Development Area that is 1,202 acres, approximately 213 acres less than the Original Project. As a result, the number of hours that equipment is required to prepare and grade the site would decrease because there are 213 fewer acres requiring site preparation. The number of hotels units, resort residential parcels, and residential estates remains the same or slightly reduced, so equipment usage for building construction and architectural coating would be roughly the same or reduced. Finally, there is a decrease of 3 miles of roads requiring paving (see **Table 4.3-2**). The number of construction workers commuting to the Project Site and materials deliveries were also factored into the CalEEMod to quantify potential emissions due to those vehicle trips; although slightly fewer workers or materials may be needed as a result of the Project Modification including parcel reconfiguration, this PREIR conservatively assumes those vehicular trips would remain the same as the 2020 EIR.

Table 4.3-2: Project Modifications by Construction Sub-Phase

Construction Sub-Phase	Project Modifications Compared to Original Project
Demolition	No Change
Site Preparation	213 fewer acres requiring preparation
Grading	213 fewer acres requiring grading
Building Construction	No Change
Paving	3 fewer miles of road requiring paving
Architectural Coating	No Change

Operational CAP emissions could include ozone precursors (reactive organic gasses [ROGs] and NOx), CO, PM_{10}, $PM_{2.5}$, and sulfur oxide (SO_x). The 2020 EIR estimated that the operational phase would begin in 2022. The operational emissions were calculated based the type of land use, for example commercial shopping centers, single family houses, or hotels, as well as the vehicular trips of the users. As discussed further in **Section 4.10** below, the number of operational trips associated with the Proposed Project would likely be unchanged as a result of the Project Modifications.

The 2020 EIR included a CO Hot Spot Analysis to assess intersections that may have a potential significant impact due to carbon monoxide from increased vehicular idling. The CO Protocol outlines a screening process for determining which intersections may have a potentially significant impact. Based on the CO Protocol, a combination of screening and quantitative analysis was conducted for the Original Project. Finally, TACs and hazardous air pollutants (HAPs) were analyzed in the 2020 EIR consistent with guidance from USEPA and CARB.

In April 2022, the California Air Pollution Control Officers Association (CAPCOA) released a newer version of the CalEEMod, Version 2022.1. Version 2022.1 has an updated user interface, more land use categories, updated emissions factors to reflect more types of equipment and more energy-efficient technologies that have been developed, and additional inputs to better reflect regulatory requirements such as CCR Title 24, known as the California Building Standards Code, which contains energy conservation standards applicable to all new or altered residential and non-residential buildings throughout California. Both

versions of CalEEMod include emissions factors that decrease over time as appropriate to account for assumed energy efficiencies, incorporation of renewable energy sources, and technological advancements (CAPCOA, 2016; CAPCOA, 2022). Therefore, although the 2020 EIR modeled a construction phase that would end in December 2023 and operation beginning as early as 2022, predating this PREIR, assuming construction and operation occurs earlier in time will yield a more conservative assessment of potential CAP emissions.

The Modified Project has approximately 213 fewer acres of development impact area and fewer miles of roads, and construction and operation will occur at a later date than what was modeled in the 2020 EIR. Therefore, the reliance upon the emissions modeling conducted for the 2020 EIR (Appendix AIR) results in a more conservative assessment of the emissions resulting from the Modified Project. This PREIR qualitatively assesses the potential for air quality impacts using the modeling provided in Appendix AIR of the 2020 EIR (**Appendix D**). This analysis addresses whether the Project Modifications would have new or substantially more severe significant effects than those described in the 2020 EIR. Refer to Section 3.3.4 of the 2020 EIR (**Appendix D**) for a complete description of the methodology relating to air quality impacts.

Thresholds of Significance

The LCAB is in attainment or unclassified for all CAPs, and therefore the LCAQMD has not adopted CEQA thresholds relating to air quality. Similar to the 2020 EIR, because the LCAQMD does not have standards for thresholds of significance for CAPs for project-level analyses, the BAAQMD thresholds were reviewed to determine if mitigation should be implemented. "BAAQMD's thresholds are based on the air quality within the San Francisco Bay Area Air Basin (SFBAAB). Air quality within the SFBAAB is worse than air quality within the LCAQMD. The SFBAAB is nonattainment for several state and federal ambient air quality standards whereas the LCAQMD is in attainment for all state and federal standards. Consequently, using BAAQMD's significance thresholds to determine if mitigation is warranted is an extremely conservative approach. This is a similar approach, however, that is used by the Northern Sonoma County Air Pollution Control District, which also has not adopted its own air quality standards" (refer to Section 3.3.4 of the 2020 EIR; **Appendix D**).

In 2022, BAAQMD updated its CEQA thresholds for climate impacts, however the numerical thresholds for CAPs remain the same as the 2017 thresholds utilized in the 2020 EIR (BAAQMD, 2022). The 2022 BAAQMD Guidelines also include Best Practices for Centering Environmental Justice, Health, and Equity, to provide guidance on analyzing potential impacts to overburdened or disadvantaged communities. Refer to Section 3.3.4 of the 2020 EIR (**Appendix D**) for a complete description of the significance criteria relating to air quality impacts.

Impacts

IMPACT 3.3-1	CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Less than Significant	Less than Significant	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

The LCAB is currently in attainment for all state and federal air quality standards, similar to 2020. Consequently, there are no air quality plans for the LCAB. Thus, there are no applicable air quality plans and this impact remains less than significant with the Project Modifications.

IMPACT 3.3-2	GENERATE CONSTRUCTION RELATED EMISSIONS RESULTING IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA AIR POLLUTANT FOR WHICH THE PROJECT REGION IS NONATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.3-1	MM 3.3-1	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, development of the Original Project has the potential to result in the emission of CAPs from site preparation (e.g., excavation, grading, and clearing), off-road equipment,

material transport, rock crushing activities, generators, worker vehicles, vehicle travel on unpaved roads, paving, and application of architectural coatings. As determined in the 2020 EIR, construction of the Proposed Project could exceed the BAAQMD thresholds, and as a result **Mitigation Measure 3.3-1** requires that dust and construction control measures be implemented to minimize emissions from construction activities. With inclusion of this mitigation measure, the modeled emissions from construction activities were determined in the 2020 EIR to be less than the BAAQMD significance thresholds, and this impact would be less than significant.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact, as they would not change the amount of time that construction equipment is running or the types of equipment that are required. The Project Modifications would add the Grange Road Connector and Connector Roadways to the area that will be graded and disturbed, however, the overall Development Area and associated grading activities associated with the Modified Project will be reduced as a result of the Parcel Reconfiguration, including elimination of the camping area, and overall reduction in the linear miles of roadways and utilities previously required for connection to remote parcels. This overall decrease in the size of the Development Area (213 acres) will ultimately result in fewer CAP emissions due to construction activities as compared to the Original Project analyzed in the 2020 EIR. **Mitigation Measure 3.3-1** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with construction emissions as compared to the 2020 EIR.

IMPACT 3.3-3	**GENERATE OPERATIONAL RELATED EMISSIONS IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA AIR POLLUTANT FOR WHICH THE PROJECT REGION IS NONATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARDS**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.3-2	MM 3.3-2	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, operation of the Original Project would result in the generation of CAP emissions from sources that can be grouped into the following categories:

- Area Emissions (e.g., cooktops, water heaters, heating units, consumer products, painting, and landscape equipment operation)
- Energy Emissions (e.g., indirect emissions from the generation of electricity utilized within the site)
- Mobile Emissions (e.g., vehicle emissions during operation)
- Waste Emissions (e.g., emissions resulting from processing waste produced by the Project)
- Water Emissions (e.g., emissions from treating and transporting water)

The 2020 EIR determined that the operational emissions of the Original Project would exceed the BAAQMD thresholds, resulting in a potentially significant impact. **Mitigation Measure 3.3-2** requires a range of actions to reduce emissions, including solar energy commitments, use of low VOC paints, energy-efficient lighting, low-flow appliances, recycled water irrigation systems, and drought tolerant vegetation. With inclusion of this mitigation measure, the 2020 EIR concluded that this impact would be reduced to less than significant.

While the Project Modifications involving GHG Reduction measures (refer to full description in **Section 2.2.1**) would be mostly effective at reducing climate change emissions, CAPs emissions would also be reduced as a result of the elimination of natural gas/propane usage in residential and non-residential uses (with the exception of cooktops and outdoor patio fire pits in restaurants), as well as the commitment to utilizing solar energy to meet 100 percent of the Project needs, versus other types of renewable energy. The 2020 EIR analyzed the potential CAP emissions of the Original Project due to the combustion of propane in boilers, stoves, heating units, and other equipment on the Guenoc Valley Site; the Project Modifications disallow the future use of natural gas or propane within the Guenoc Valley Site, with the only exception being the use of natural gas or propane for cooktops and outdoor fire pits in restaurants. As such, the 2020 EIR overstates the potential CAP emissions resulting from the Modified Project as it does not account for the reduction in emissions from area sources and indirect energy sources with inclusion of the Project Modifications. Other Project Modifications such as the Updated WPP, DMP, Grange Road Connector, and Connector Roadways would not increase operational emissions, as the same number of employee and patron trips, waste generation, and water usage is anticipated. With the increase in density of residential lots and removal of the remote lots, there will be slight decreases in the distances that residents travel to their homes and therefore a slight decrease in mobile emissions, but this difference is likely negligible. Because area emissions may be reduced due to the removal of natural gas/propane, energy emissions may be reduced through the commitment to 100 percent solar energy, and mobile emissions may be less due to the increased density of residential lots, reliance upon the modeled emissions in the 2020 EIR presents a more conservative analysis. **Mitigation Measure 3.3-2** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with operational emissions as compared to the 2020 EIR.

IMPACT 3.3-4	CARBON MONOXIDE EMISSIONS AT LOCAL INTERSECTIONS COULD VIOLATE AN AIR QUALITY STANDARD OR CONTRIBUTE SUBSTANTIALLY TO AN EXISTING OR PROJECTED AIR QUALITY VIOLATION		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Less than Significant	Less than Significant	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	Less than Significant	Less than Significant	N/A

*Impact numbering retained from the 2020 EIR.

CO is a localized pollutant of concern, and CO concentration levels are highest near intersections with slow or idling traffic, typically where the level of service (LOS) is E or F. As described in the 2020 EIR, operation of the Proposed Project has the potential to cause increased concentrations of CO from mobile sources if it were to exacerbate congestion at intersections in the area. The CO hotspot analysis conducted in the 2020 EIR found that although the Original Project would increase vehicle trips and delay at certain intersections, Project-generated CO emissions would not result in or substantially contribute to concentrations that exceed the 1-hour or 8-hour ambient air quality standards for CO, and as a result this impact would be less than significant.

As further discussed in **Section 4.10**, the Project Modifications do not result in a change in the number of trips associated with the Modified Project as the same number of hotel units and residences are proposed. Therefore, there is no change in anticipated traffic or LOS impacts to area roadways and impacts due to CO would remain less than significant. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with CO as compared to the 2020 EIR.

IMPACT 3.3-5	EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Less than Significant	Less than Significant	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	Less than Significant	Less than Significant	N/A

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, the Proposed Project has the potential to expose sensitive receptors to concentrations of TACs in two ways: 1) expose off-site sensitive receptors to construction activities, which result in the emission of particulate matter from diesel-fueled engines, and 2) locating residences in proximity to sources of TACs. The 2020 EIR found that the Original Project would not significantly expose off-site sensitive receptors to TACs. Since the preparation of the 2020 EIR, the BAAQMD has provided additional best practices guidance for reviewing potential environmental justice impacts to overburdened communities and/or AB 617 communities. There are no AB 617 communities within 50 miles of the Guenoc Valley Site, and therefore no additional analysis is warranted as a result of the updated BAAQMD Guidelines. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact, as they would not change the location of where construction is occurring. The Project Modifications would add the Grange Road Connector and Connector Roadways to the area that will be graded and disturbed, however these Project components are no closer to sensitive receptors compared to what was analyzed in the 2020 EIR. The potential for the future on-site uses to be impacted by TACs emitted from off-site sources was analyzed in the 2020 EIR. There are no industrial uses located in the vicinity of the Guenoc Valley Site or off-site areas; the primary source of potential TACs would be high-volume roadways. However, this impact was found to be less-than-significant due to the distance between the Proposed Project and off-site highways. The relocation of remote residential parcels away from the urban-wildland interface will increase residential density in the central portion of the Guenoc Valley Site, and locate residences further from potential sources of TACs. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with TACs as compared to the 2020 EIR.

IMPACT 3.3-6	RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE		
	2020 EIR Conclusions		Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Less than Significant	Less than Significant	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	Less than Significant	Less than Significant	N/A

*Impact numbering retained from the 2020 EIR.

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. As described in the 2020 EIR, odor impacts could occur during construction from diesel exhaust emissions from on-site construction equipment, or during the operation phase from the proposed on-site wastewater treatment and recycling systems. The 2020 EIR determined that potential impacts due to construction activities would be less-than-significant due to the distance to off-site sensitive receptors, and noted that diesel reduction measures in **Mitigation Measure 3.3-1** would further reduce DPM. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact, as they would not change the location of where construction is occurring. The Project Modifications would add the Grange Road Connector and Connector Roadways to the area that will be graded and disturbed, however these Project components are no closer to sensitive receptors compared to what was analyzed in the 2020 EIR.

As further described in Section 2 of the 2020 EIR, seven small water reclamation plants (WRPs) are planned for Phase 1 and would employ either a natural wastewater treatment system or a small biological package styled treatment system. All of the wastewater systems will include advance filtration and disinfection systems to reduce odors and comply with the State of California's Recycled Water Laws. Additionally, the nearest sensitive receptor would be located over 3,200 feet from the nearest WRP, and therefore this impact would be less than significant. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact, and the Grange Road Connector and Connector Roadways would similarly not result in the relocation of any WRPs closer to sensitive receptors. The relocation of remote residential parcels away from the urban-wildland interface will increase residential density in the central portion of the Guenoc Valley Site, further from the edges of the property boundary. No relocation of the WRPs is anticipated to accommodate the relocated parcels. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with odors as compared to the 2020 EIR.

4.3.5 Mitigation Measures

No changes to the mitigation measures are warranted as a result of the Project Modifications. A full list of the mitigation measures is included in the MMRP in **Section 5**.

4.4 BIOLOGICAL RESOURCES

4.4.1 Introduction

The 2020 EIR, Volume II, Section 3.4.2 includes a detailed description of the environmental setting related to biological resources on the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Improvement Areas that is not repeated in its entirety within this PREIR. **Section 4.4.2** of this PREIR includes a description of only the environmental setting related to biological resources that has changed since the 2020 EIR. **Section 4.4.3** of this PREIR includes a description of relevant laws and ordinances that have been passed or amended since preparation of the 2020 EIR. The full discussion of the environmental and regulatory settings is available in the 2020 EIR (**Appendix D**). **Section 4.4.4** of this PREIR describes methods of analysis and provides a discussion on whether Project Modifications would result in new significant effects or a substantial increase in the severity of previously identified effects. Mitigation for impacts to biological resources is discussed in **Section 4.4.5**.

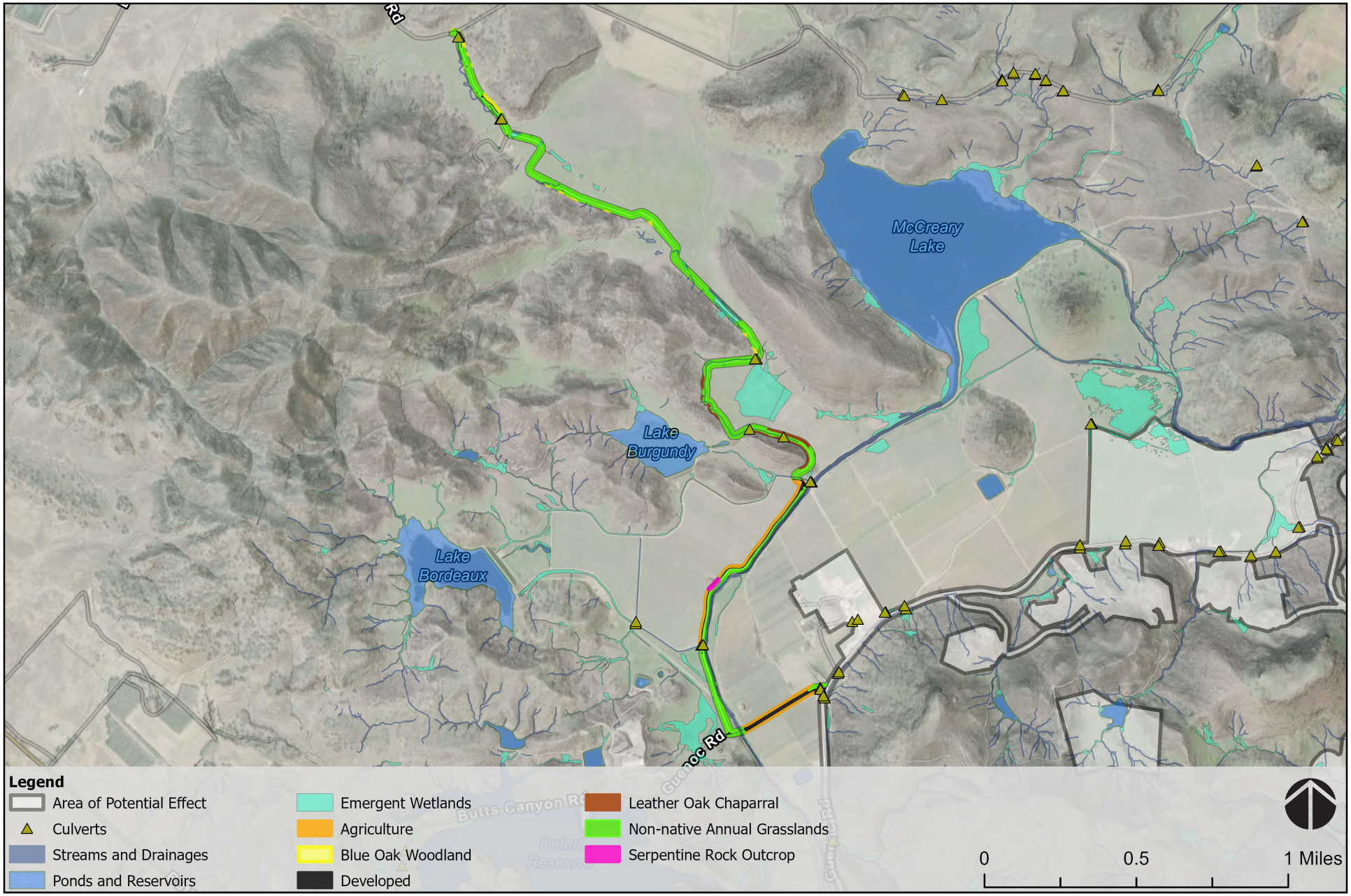
4.4.2 Environmental Setting

The 2020 EIR, Volume II, Section 3.4.2 provided information on the biological resources setting, including habitat types, wetlands and waters, wildlife movement corridors, and designated critical habitat that occurs within or near the Guenoc Valley Site. The 2020 EIR additionally described the special-status plants and wildlife with the potential to occur within the Guenoc Valley Site. These topics are discussed in detail below, focusing on changes or updates that have occurred since the 2020 EIR.

Habitat Types

There were 22 terrestrial habitat types and 3 aquatic habitat types observed within the Guenoc Valley Site, each described in detail in the 2020 EIR (**Appendix D**). While the Project Modifications would result in an overall reduction of the APE and Development Area, changes to the Connector Roadway alignments and Parcel Reconfiguration would result in impacts in areas not previously assessed in the 2020 EIR at the project level, and the addition of the Grange Road Connector would result in impacts in an area adjacent to the Guenoc Valley Site that was not assessed at the project or programmatic level in the 2020 EIR. Therefore, an updated Biological Resources Assessment (BRA) was prepared for the Project Modifications that includes: 1) the areas of potential impacts outside of the Guenoc Valley Site associated with the off-site portion of the Grange Road Connector that were not previously assessed; 2) the on-site portions of the Grange Road Connector that were described at a programmatic level in the 2020 EIR; and 3) all other areas within the Guenoc Valley Site that, due to the Project Modifications, are within the Modified APE but outside of the 2020 APE and were therefore only described at the programmatic level in the 2020 EIR (**Appendix I-1**).

Table 4.4-1 provides a breakdown of habitat type acreages within the totality of the Guenoc Valley Site that considers the updated BRA included in **Appendix I-1**. Additionally, the habitat types mapped within the portion of the Grange Road Connector that falls outside of the Guenoc Valley Site are identified in the table below and depicted in **Figure 4-6**.



Source: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community, County of Napa, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc,

FIGURE 4-6

BIOLOGICAL COMMUNITIES WITHIN GRANGE ROAD CONNECTOR

Table 4.4-1: Habitat Types

Habitat Type	Acres on the Guenoc Valley Site from 2020 EIR	Updated Acres on Guenoc Valley Site Plus Grange Road Connector
Terrestrial		
Developed	218.2	213.3
Agriculture (currently developed)	1,001.6	1,279.6
Rock outcrop	37.9	13.8
Serpentine rock outcrop	N/A	18.9
Non-native annual grassland	2,259.4	2,284.1
Purple needlegrass grassland	11.7	12.1
Leather oak chaparral	2,573.2	2,529.8
Scrub oak chaparral	49.8	50.1
Chamise chaparral	987.2	978.1
Whiteleaf manzanita chaparral	150.4	150.5
Musk brush chaparral	33.1	31.8
California Yerba Santa scrub	37.9	38.2
Deer weed scrub	19.7	19.7
White alter grove	10.9	10.9
Brewer willow thicket	3.6	4.5
Douglas fir forest	61.5	58.6
Sargent cypress woodland	10.7	10.7
Foothill pine woodland	1,400.7	1,379.0
Interior live oak woodland	756.5	749.7
Valley oak woodland	49.3	48.7
Blue oak woodland	3,472.4	3,454.5
Blue oak savanna	1,238.7	1,215.2
Mixed oak woodland	174.9	172.6
Aquatic		
Streams and drainages	199.3 (1,079,758 linear feet)	191.7
Ponds and reservoirs	658.1	661.2
Emergent wetlands	429.7	407.4
Totals*	**15,846.4**	**15,984.7**

*The total updated acreage exceeds the acreage presented in the 2020 EIR for the Guenoc Valley Site due to the inclusion of the portion of the Grange Road Connector that is outside of the Guenoc Valley Site. Additionally, a portion of land internal to the Guenoc Valley Site identified as "Not in Project Site" in the 2020 EIR (See Figure 2-1 of the 2020 EIR) is now partially within the Modified APE. Impacts within this area are limited to road alignments along existing farm roads in an area that will be leased out for maintenance of existing vineyard.

Precise boundaries of habitat types can shift in their distribution over time due to ecological succession or natural occurrences (e.g., wildfire). The Guenoc Valley Site experienced the Valley Fire in August 2020 after the Final EIR was prepared, and ongoing vineyard development as allowed by the Guenoc Water Rights Modification Project has occurred, which resulted in some variation in habitat acreages as compared to the 2020 EIR. Approximately 276 acres of additional vineyard has been developed on the property, which has resulted in the conversion of other habitat types. These changes in habitat distribution, either due to previously-authorized agricultural conversion or due to natural occurrences, are not evaluated herein as the 2020 EIR (Volume II Section 2.5.2.10) already considered an extended timeframe for development commencing in mid-2020 and continuing over the course of approximately 8-10 years. Section 3.4.4 of Volume II of the EIR considered the potential for habitats and vegetative communities to shift over time and presented an analysis and mitigation based on the assumption that

construction would not commence for several years following publication of the 2020 EIR and would continue for approximately 8-10 years. Therefore, natural shifts in vegetation and previously-authorized agricultural conversions were accounted for in the 2020 EIR analysis. Only those 333 acres within the Modified APE that were previously reviewed at a programmatic level have been subject to additional surveys, mapping, and analysis included in a supplemental BRA to ensure a project-level assessment of potential impacts (**Appendix I-1**).

No substantial changes to the condition or quality of terrestrial habitats were observed, therefore full habitat descriptions are not repeated herein. Complete descriptions of each of the habitat types are provided in Volume II, Section 3.4.2 of the 2020 EIR (**Appendix D**).

One new terrestrial habitat type was observed as a result of the supplemental BRA: serpentine rock outcrop. This habitat type was previously identified as rock outcrop, however, since publication of the 2020 EIR, the California Department of Fish and Wildlife (CDFW) has provided further descriptors of rock outcrop habitats to include specific subtypes of rock outcrops that are considered sensitive. Therefore, updated mapping of this habitat type is not a reflection of changed conditions within the Guenoc Valley Site, but rather a reflection of updated habitat classification systems. This habitat is described below.

Serpentine Rock Outcrop

This natural community occurs on rocky serpentine slopes, ridges, and outcrops in the California Coast Range, Klamath Mountains, Sierra Nevada Range and foothills, and southern Cascades (**Appendix I**). Vegetative cover is sparse. Where vegetation is present, plant species are characterized by serpentine indicator species (**Appendix I**). Within the totality of the Guenoc Valley Site and Grange Road connector, 18.9 acres of this habitat occurs. Plant species present include sickle leaf onion (*Allium falcifolium*), golden buckwheat (*Eriogonum luteolum* var. *luteolum*), western flax (*Hesperolinon* spp.), and Sonoma lessingia (*Lessingia ramulosa*).

Wetlands and Waters

Aquatic habitats within the Guenoc Valley Site and the footprint of the Grange Road Connector have the potential to be jurisdictional wetlands or waters of the U.S. under the CWA. An Aquatic Resources Delineation Report was prepared in support of the 2020 EIR for the 2020 APE. This report conservatively assumes that all aquatic features within the Modified APE are potentially jurisdictional. No new aquatic habitat types were observed on the Guenoc Valley Site or the off-site portion of the Grange Road Connector as a result of the supplemental BRA (**Appendix I**). **Appendix I**, similar to the 2020 EIR, identified streams and drainages, ponds and reservoirs, and emergent wetlands. Specifically, these areas include the following:

- Streams and Drainages: perennial streams, intermittent streams, ephemeral streams, and ephemeral ditches
- Ponds and Reservoirs: Open waters
- Emergent wetlands: seasonal wetland depressions, seasonal wetland ditches, seasonal wetland pond fringes, seasonal wetland seeps/swales, seasonal wetland wet meadow, stream fringe/in-stream wetlands, and riparian woodland

Complete descriptions of the aquatic habitat types are provided in Volume II Section 3.4.2 of the 2020 EIR and includes streams and drainages, ponds and reservoirs, and emergent wetlands.

Wildlife Movement

The Guenoc Valley Site and surrounding area continues to remain a mixture of low-density residential and agricultural development and open space, consistent with what was presented in the 2020 EIR, Volume II, Section 3.4.2. The 2020 EIR reviewed the California Essential Habitat Connectivity Project and the Building Landscape Connectivity for Climate Adaptations: Mayacamas to Berryessa Connectivity Network (M2B) Final Report. Per the California Essential Habitat Connectivity Project, the Guenoc Valley Site is not within an Essential Connectivity Area. However, the M2B study identified high levels of riparian permeability within the Guenoc Valley Site as well as multiple potential wildlife movement corridors and four least-cost pathways. There are no changes to the general setting as it relates to wildlife movement in the region, and no changes to the California Essential Habitat Connectivity Project and M2B study have occurred (Spencer, 2010; Pepperwood Preserve, 2018). Therefore, there are no changes to the wildlife movement setting as presented in the 2020 EIR. A complete description of the wildlife movement setting is provided in the 2020 EIR, Volume II, Section 3.4.2.

Critical Habitat

As stated within the 2020 EIR Volume II Section 3.4.2, no Critical Habitat, Essential Fish Habitat, or other habitat designated by federal, State, or local conservation plans occur on the Guenoc Valley Site. An updated review of the U.S. Fish and Wildlife Service (USFWS) mapper of Critical Habitat and the National Oceanic and Atmospheric Administration mapper of Essential Fish Habitat confirmed that Critical Habitat and Essential Fish Habitat remain absent from the Guenoc Valley Site and immediately adjacent land, including the portion of the Grange Road Connector outside of the Guenoc Valley Site (USFWS, 2024; National Oceanic and Atmospheric Administration [NOAA], 2024).

Special-Status Wildlife

A BRA was prepared to assess the footprint of the Grange Road Connector and the portion of the Guenoc Valley Site that was assessed at a programmatic level in the 2020 EIR but which now falls within the Modified APE. Section 5.2 of the BRA (**Appendix I**) assessed the potential for these areas to support special-status species based on surveys completed following publication of the 2020 EIR, as well as updated database searches from the USFWS, CDFW, and CNPS. There are 24 special-status wildlife species that have the potential to occur within the Modified APE, as summarized in **Table 4.4-2**.

Table 4.4-2: Special-Status Wildlife with Potential to Occur within the Modified APE

Species	Status	Potential to Occur	Change Since 2020 EIR
Mammals			
Pallid bat (*Antrozous pallidus)*	SSC	Observed onsite (foraging)	No change
Ring-tailed cat (Ringtail) *(Bassariscus astutus)*	CFP	Moderate	No change
Townsend's big-eared bat *(Corynorhinus townsendii)*	SSC	High	No change
Western red bat *(Lasiurus blossevillii)*	SSC	Moderate	No change
American badger *(Taxidea taxus)*	SSC	Moderate	No change
Birds			
Tricolored blackbird *(Agelaius tricolor)*	ST, SSC	High	No change

Species	Status	Potential to Occur	Change Since 2020 EIR
Grasshopper sparrow *(Ammodramus savannarum)*	SSC	High	No change
Golden eagle *(Aquila chrysaetos)*	CFP	Observed onsite (nesting and foraging)	No change
Long-eared owl *(Asio otus)*	SSC	Moderate	No change
Burrowing owl *(Athene cunicularia)*	SSC	Moderate	No change
Northern harrier *(Circus hudsonius)*	SSC	Observed onsite (foraging)	No change
Olive-sided flycatcher *(Contopus cooperi)*	SSC	Moderate	No change
White-tailed kite *(Elanus leucurus)*	CFP	Observed onsite (foraging)	No change
American peregrine falcon *(Falco peregrinus anatum)*	CFP	Observed onsite (nesting)	No change
Bald eagle *(Haliaeetus leucocephalus)*	SE, CFP	Observed onsite (nesting and foraging)	No change
Yellow-breasted chat (*Icteria virens)*	SSC	Moderate	No change
Least bittern *(Ixobrychus exilis)*	SSC	Moderate	No change
Loggerhead shrike *(Lanius ludovicianus)*	SSC	High	No change
Purple martin *(Progne subis)*	SSC	High	No change
Yellow warbler *(Setophaga* [*Dendroica*] *petechia brewsteri)*	SSC	Observed onsite (foraging)	No change
Yellow-headed blackbird (*Xanthocephalus xanthocephalus)*	SSC	Observed onsite (nesting)	No change
Insects			
Monarch Butterfly (Danaus plexippus)	FC	Moderate	Newly considered under Federal Endangered Species Act
Reptiles			
Northwestern pond turtle *(Actinemys marmorata)*	SSC	Observed onsite (multiple locations)	No change
Amphibians			
Foothill yellow-legged frog *(Rana boylii)*	SSC	Observed onsite (multiple locations)	No change

Notes:
CFP – California Fully Protected Species
SC – California State Listed Candidate Species
SE – State Endangered
SSC – California Species of Special Concern
ST – California State Listed Threatened Species
FC – Federal Candidate

There is one new species identified in **Table 4.4-2** that was not assessed in the 2020 EIR: Monarch butterfly. The Monarch butterfly was identified as a "Candidate" species for listing on December 17, 2020, and therefore was not considered in the 2020 EIR as it was not designated as a Candidate species at that time. An account of this species and its potential to occur within the Modified APE is presented below.

Additionally, western pond turtle has been re-classified as northwestern pond turtle and is described within this PREIR as northwestern pond turtle. The northwestern pond turtle was proposed for federal Threatened status on October 3, 2023 (88 FR Vol 190, 68370) with a rule under section 4(d) of the Federal Endangered Species Act (FESA). Critical Habitat for northwestern pond turtle has not been designated,

nor has a Recovery Plan been completed (**Appendix I**). No other changes to the species description for the northwestern pond turtle have occurred, and more details about this species can be found in the 2020 EIR under 'western pond turtle'.

Finally, at the time of the 2020 EIR, foothill yellow-legged frog was considered a State species of special concern and was a State candidate for listing under the California Endangered Species Act (CESA). However, it was determined that formal listing was not warranted. Therefore, this species is only considered now as a species of special concern. No other changes to the species description for the foothill yellow-legged frog have occurred, and more details can be found in the 2020 EIR (**Appendix D**).

There are no other newly considered special-status species not considered in the 2020 EIR. Potential for species to occur remains the same, and no new special-status animals have been observed since the 2020 EIR.

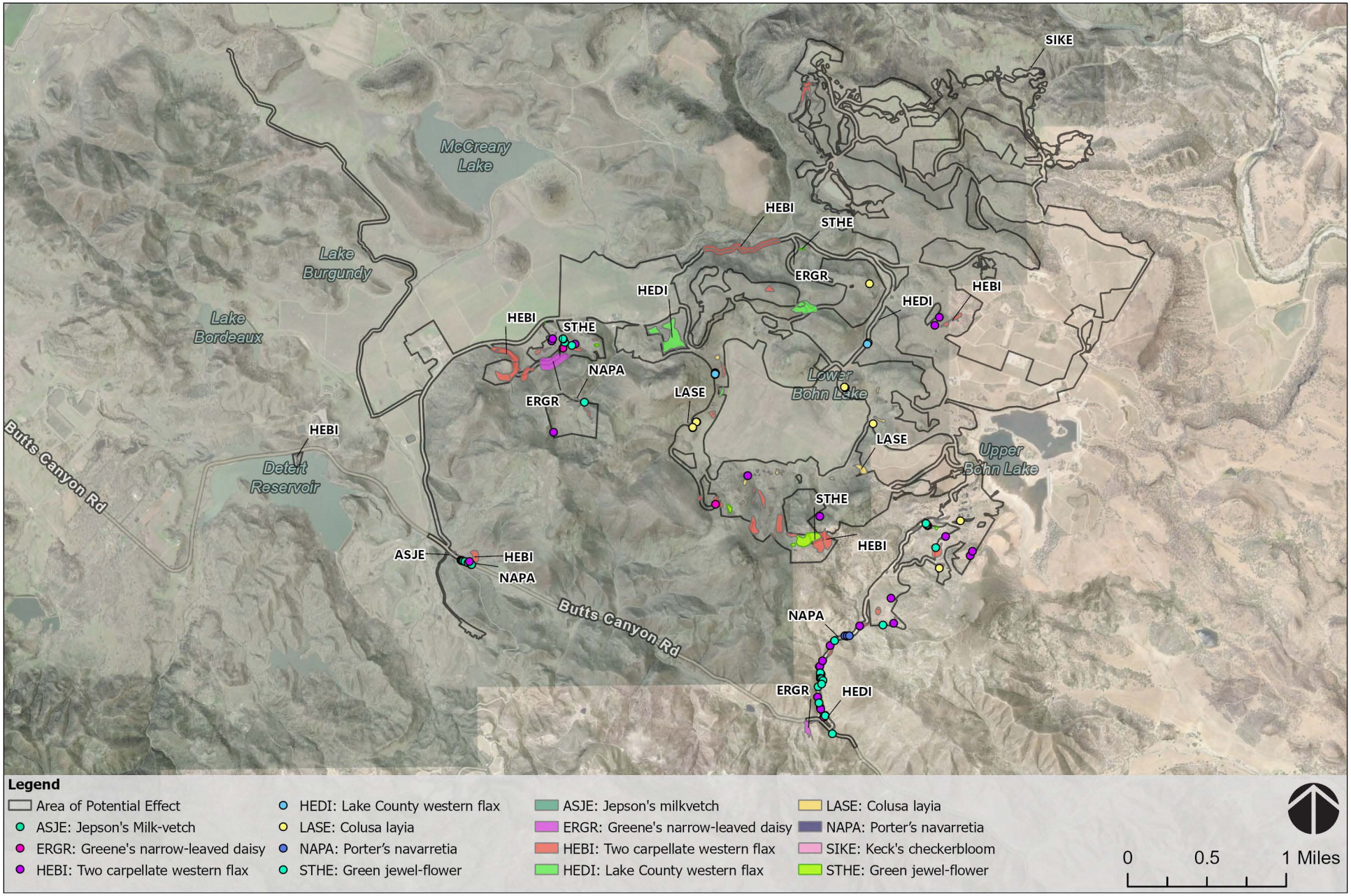
Monarch Butterfly

A description of Monarch butterfly is provided in Section 5.2.2 of **Appendix I**. As stated within **Appendix I**, Monarch butterfly is found throughout the United States, southern Canada, and Central America. It also occurs in parts of South America and other continents. In North America, this species spends the spring and summer months breeding and foraging across much of its range. The monarch butterfly generally uses milkweed (*Asclepias spp*.) for both breeding and as a nectar source, although nectar may also be obtained from a variety of additional plant species. From August to October, monarchs will migrate to winter roost sites along the California coast and central Mexico. At roost sites, monarchs will congregate in thousands or millions on a tree or group of trees. Monarchs prefer overwintering habitat comprised of a relatively dense grove of trees with some understory, located near water and nectar sources and protected from the wind by topographic landforms or trees. Winter roost sites are often on south, southwest, or west facing slopes which may provide more favorable temperature regimes and wind protection. Monarch butterflies typically arrive in mid-October to overwintering sites along the California coast and remain until late February or March.

Monarchs roost along the coast, which is outside the Modified APE; therefore, there is no potential for roosting. This species may be seen migrating across the Modified APE, but the Project Modifications will not remove roost sites. Host (milkweed) and nectar plants are present in the Modified APE, and monarchs may breed in the Modified APE in spring/early summer.

Special-Status Plants

In addition to the special-status wildlife identified above, **Appendix I** identified 51 special-status plant species with the potential to occur within the Modified APE. **Table 4.4-3** summarizes those special-status plant species that have the potential to occur within the Modified APE based on **Appendix I** and the data collected in support of the 2020 EIR. These plant populations are depicted in **Figure 4-7**.



Source: Lake County Community Development and General Plan; County of Napa, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS,

FIGURE 4-7

SPECIAL STATUS PLANTS WITHIN PHASE 1 APE

Table 4.4-3: Special-Status Plants with Potential to Occur within the Modified APE

Species	Status	Potential to Occur	Change Since 2020 EIR
Napa false indigo (*Amorpha californica var. napensis*)	1B.2	Moderate	No change
Bent-flowered fiddleneck (*Amsinckia lunaris*)	1B.2	Moderate	No change
Konocti manzanita (*Arctostaphylos manzanita ssp. elegans*)	1B.3	Observed onsite outside 2020 APE	No change, observations outside of Modified APE
Clara Hunt's milk-vetch (*Astragalus claranus*)	FE, ST, 1B.1	Moderate	No change
Jepson's milk-vetch (*Astragalus rattanii var. jepsonianus*)	1B.2	Observed onsite within 2020 APE	No change, observations are within Modified APE
Big-scale balsamroot (*Balsamorhiza macrolepis*)	1B.2	Observed onsite within 2020 APE	Observed onsite, observations outside of Modified APE
Watershield *(Brasenia schreberi)*	2B.3	Moderate	No change
Narrow-anthered brodiaea (*Brodiaea leptandra*)	1B.2	Observed onsite outside 2020 APE	No change, observations outside of Modified APE
Pink creamsacs (*Castilleja rubicundula var. rubicundula*)	1B.2	Moderate	No change
Rincon Ridge ceanothus (*Ceanothus confuses*)	1B.1	Moderate	No change
Calistoga ceanothus (*Ceanothus divergens*)	1B.2	Moderate	No change
Holly-leaved ceanothus (*Ceanothus purpureus*)	1B.2	Moderate	No change
Sonoma ceanothus (*Ceanothus sonomensis*)	1B.2	Moderate	No change
Dwarf soaproot (*Chlorogalum pomeridianum var. minus*)	1B.2	Moderate	No change
Serpentine cryptantha (*Cryptantha dissita*)	1B.2	Moderate	No change
Deep-scarred cryptantha (*Cryptantha excavate*)	1B.1	Moderate	No change
Cascade downingia (*Downingia willamettensis*)	2B.2	Moderate	No change
Brandegee's eriastrum (*Eriastrum brandegeeae*)	1B.1	Moderate	No change
Greene's narrow-leaved daisy (*Erigeron greenei*)	1B.2	Observed onsite within 2020 APE	No change, observations are within Modified APE
Snow Mountain buckwheat (*Eriogonum nervulosum*)	1B.2	Moderate	No change
Loch Lomond button-celery (*Eryngium constancei*)	FE, SE, 1B.1	Moderate	No change
Jepson's coyote thistle (*Eryngium jepsonii*)	1B.2	Moderate	No change
Adobe-lily (*Fritillaria pluriflora*)	1B.2	Moderate	No change
Boggs Lake hedge-hyssop (*Gratiola heterosepala*)	SE, 1B.2	Moderate	No change
Hall's harmonia (*Harmonia hallii*)	1B.2	Moderate	No change
Congested-headed hayfield tarplant (*Hemizonia congesta ssp. congesta*)	1B.2	Moderate	No change
Glandular western flax (*Hesperolinon adenophyllum*)	1B.2	Moderate	No change

Species	Status	Potential to Occur	Change Since 2020 EIR
Two-carpellate western flax (*Hesperolinon bicarpellatum*)	1B.2	Observed onsite within 2020 APE	No change, observations are within Modified APE
Lake County western flax (*Hesperolinon didymocarpum*)	SE, 1B.2	Observed onsite within 2020 APE	No change, observations are within Modified APE
Drymaria-like western flax (*Hesperolinon drymarioides*)	1B.2	Moderate	No change
Sharsmith's western flax (*Hesperolinon sharsmithiae*)	1B.2	Moderate	No change
Bolander's horkelia (*Horkelia bolanderi*)	1B.2	Moderate	No change
Santa Lucia dwarf rush (*Juncus luciensis*)	1B.2	Moderate	No change
Burke's goldfields (*Lasthenia burkei*)	FE, SE, 1B.1	Moderate	No change
Colusa layia (*Layia septentrionalis*)	1B.2	Observed onsite within 2020 APE	No change, observations are within Modified APE
Legenere (*Legenere limosa*)	1B.1	Moderate	No change
Jepson's leptosiphon (*Leptosiphon jepsonii*)	1B.2	Moderate	No change
Sebastopol meadowfoam (*Limnanthes vinculans*)	FE, SE, 1B.1	Moderate	No change
Cobb Mountain lupine (*Lupinus sericatus*)	1B.2	Moderate	No change
Marsh microseris (*Microseris paludosa*)	1B.2	Moderate	No change
Baker's navarretia (*Navarretia leucocephala ssp. bakeri*)	1B.1	Moderate	No change
Small pincushion navarretia (*Navarretia myersii ssp. deminuta*)	1B.1	Moderate	No change
Porter's navarretia (*Navarretia paradoxinota*)	1B.3	Moderate	Observed onsite, within Modified APE
Marin County navarretia (*Navarretia rosulata*)	1B.2	Moderate	No change
Slender Orcutt grass (*Orcuttia tenuis*)	FT, SE, 1B.1	Moderate	No change
Sonoma beardtongue (*Penstemon newberryi var. sonomensis*)	1B.3	Moderate	No change
Bearded popcornflower (*Plagiobothrys hystriculus*)	1B.1	Moderate	No change
Eel-grass pondweed (*Potamogeton zosteriformis*)	2B.2	Moderate	No change
Lake County stonecrop (*Sedella leiocarpa*)	FE, SE, 1B.1	Moderate	No change
Napa checkerbloom (*Sidalcea hickmanii ssp. napensis*)	1B.1	Moderate	No change
Keck's checkerbloom (*Sidalcea keckii*)	FE, 1B.1	Observed onsite within 2020 APE	No change, observations are within Modified APE
Marsh checkerbloom (*Sidalcea oregana ssp. hydrophila*)	1B.2	Moderate	No change
Socrates Mine jewelflower (*Streptanthus brachiatus ssp. brachiatus*)	1B.2	Moderate	No change
Freed's jewelflower (*Streptanthus brachiatus ssp. hoffmanii*)	1B.2	Moderate	No change
Green jewelflower (*Streptanthus hesperidis*)	1B.2	Observed onsite within 2020 APE	No change, observations are within Modified APE

Species	Status	Potential to Occur	Change Since 2020 EIR
Three Peaks jewelflower (*Streptanthus morrisonii ssp. elatus*)	1B.2	Observed onsite outside 2020 APE	No change, observations outside of Modified APE
Kruckeberg's jewelflower (*Streptanthus morrisonii ssp. kruckebergii*)	1B.2	Moderate	No change
Early jewelflower (*Streptanthus vernalis*)	1B.2	Moderate	No change
Slender-leaved pondweed (*Stuckenia filiformis ssp. alpine*)	2B.2	Moderate	No change
Napa bluecurls (*Trichostema ruygtii*)	1B.2	Moderate	No change
Oval-leaved viburnum (*Viburnum ellipticum*)	2B.3	Moderate	No change

Notes:
FE – Federally Listed Endangered Species
FT – Federally Listed Threatened Species
SE – California State Listed Endangered Species
ST – California State Listed Threatened Species
CNPS Rank 1B – Plants Rare, Threatened, or Endangered in California and Elsewhere
CNPS Rank 2B – Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
Threat Rank 0.1 – Seriously Threatened in California
Threat Rank 0.2 – Fairly Threatened in California
Threat Rank 0.3 – Not Very Threatened in California

Since publication of the 2020 EIR there are no new special-status plant species with the potential to occur within the Modified APE. No changes to the status of plants considered in the 2020 EIR have occurred. Porter's navarretia was previously determined to have a moderate potential to occur and has since been observed on the Guenoc Valley Site within the Modified APE. Big-scale balsamroot was previously within the 2020 APE, however, with Project Modifications all populations of this species have been avoided and it is not within the Modified APE. Potential to occur within the Modified APE is still considered high.

4.4.3 Regulatory Setting

Clean Water Act

2015 Clean Water Rule

In 2015, the U.S. Army Corp of Engineers (USACE) and USEPA published the "Clean Water Rule" clarifying the scope of coverage of the CWA. Upon issuance however, numerous lawsuits were filed and consolidated in the Sixth Circuit, immediately putting a "stay" on its implementation. In January 2018, the U.S. Supreme Court dissolved the stay. The 2015 Clean Water Rule remained in effect in 22 states, including California, the District of Columbia, and the U.S. territories until December 23, 2019.

Repeal of 2015 Clean Water Rule

On October 22, 2019, the EPA and the USACE published a final rule to repeal the 2015 Clean Water Rule and restore the regulatory methodology that existed prior to the 2015 Rule. Under this rule, which became effective on December 23, 2019, jurisdictional waters of the U.S. were defined by the 1986/1988 regulatory definition of waters of the U.S. under CWA regulations 40 CFR 230.3(s). This corresponds to the CWA described in the 2020 EIR (**Appendix D**).

Navigable Waters Protection Rule

On January 23, 2020, the USEPA and the USACE finalized the Navigable Waters Protection Rule (NWPR) to define waters of the U.S. On April 21, 2020, the USEPA and the USACE published the NWPR in the Federal Register. On June 22, 2020, 60 days after publication in the Federal Register, the NWPR became effective across the nation including the State of California. The NWPR eliminated the case specific application of the significant nexus test articulated in the Rapanos decision.

Remand and Vacatur of the Navigable Waters Protection Rule

On August 30, 2021, the NWPR was remanded and immediately vacated by the United States District Court for the District of Arizona in the case of *Pascua Yaqui Tribe v. U.S. Environmental Protection Agency*. In light of this order, the USEPA and the USACE halted implementation of the NWPR nationwide and reinstated the pre-2015 definition of waters of the U.S. Under the pre-2015 definition, the USACE and USEPA require the case specific application of the significant nexus test, as articulated in the Rapanos decision, to determine jurisdictionality.

Final Rule to Amend the January 2023 Rule

In January 2023, a revised definition of waters of the U.S. was promulgated (January 2023 Rule). However, on May 25, 2023, the Supreme Court decided *Sackett v. Environmental Protection Agency*. Although this case was not specific in challenging the amended definition of waters of the U.S., the Court considered the jurisdictional standards set forth within the January 2023 Rule. After several revisions, the USEPA on August 29, 2023 issued the final rule to amend the January 2023 rule, thus conforming the January 2023 rule to the *Sackett v. Environmental Protection Agency* decision. Due to ongoing litigation in numerous states, the operational definition of waters of the U.S. varies from state to state. California currently operates under the January 2023 Rule, as amended under the final rule to amend the January 2023 rule. Under this definition, waters of the U.S. are “relatively permanent, standing or continuously flowing bodies of water” and includes wetlands when such wetlands have “continuous surface connection to bodies that are “waters of the United States” in their own right”.

4.4.4 Impacts

Method of Analysis

Impacts to biological resources were determined utilizing information gathered during preparation of the 2020 EIR in addition to information collected since publication of the EIR. Updated background research cited herein and included in **Appendix I** was also utilized. This analysis conservatively presents a worst-case scenario and assumes the maximum potential impacts to sensitive biological resources. For example, similar to the 2020 EIR, the Design Guidelines would limit the developable space within residential lots. However, as the precise building locations within these lots are unknown at this time, this analysis conservatively assesses for total loss of habitat within the lot or maximum allowable impacts in the case of oak-dominated habitats. This is consistent with the methodology for impacts to biological resources contained within Volume II, Section 3.4.4 of the 2020 EIR (**Appendix D**).

Table 4.4-4 provides a breakdown of the impact acreages by habitat type of the 2020 APE and the Modified APE. For simplicity, the totality of the Grange Road Connector is represented in **Table 4.4-4** even though a portion of the Grange Road Connector lies outside of the Guenoc Valley Site.

Table 4.4-4: Habitat Types Within the 2020 APE and Modified APE

Habitat Type	Updated Acres on Guenoc Valley Site and Grange Road Connector	Acres Within Modified APE	Acres within 2020 APE	Impact Change from 2020 EIR	Habitat Sensitivity
Terrestrial					
Developed	213.3	70.0	81.0	-11.0	Non-sensitive
Agriculture (currently developed)	1,279.6	309.7	291.8	+17.9	Non-sensitive
Rock outcrop	13.8	2.0	8.0	-6.0	Non-sensitive
Serpentine rock outcrop	18.9	3.9	N/A	N/A	Sensitive
Non-native annual grasslands	2,284.1	438.3	554.1	-115.8	Non-sensitive
Purple needlegrass grassland	12.1	5.7	8.0	-2.3	Sensitive
Leather oak chaparral	2,529.8	170.0	197.9	-27.9	Non-sensitive
Scrub oak chaparral	50.1	31.3	29.3	+2	Non-sensitive
Chamise chaparral	978.1	242.5	351.7	-109.2	Non-sensitive
Whiteleaf manzanita chaparral	150.5	61.3	57.3	+4.0	Non-sensitive
Musk brush chaparral	31.8	2.8	19.5	-16.7	Sensitive
California yerba santa scrub	38.2	6.0	6.9	-0.9	Non-sensitive
Deer weed scrub	19.7	0.0	0.9	-0.9	Non-sensitive
White alder grove	10.9	0.0	0.1	-0.1	Sensitive
Brewer willow thicket	4.5	1.1	0.04	+1.06	Sensitive
Douglas fir forest	58.6	0.0	0.0	0.0	Non-sensitive
Sargent cypress woodland	10.7	0.0	0.0	0.0	Sensitive
Foothill pine woodland	1,379.0	126.1	206.1	-80.0	Non-sensitive
Interior live oak woodland	749.7	58.0	189.0	-131.0	Sensitive
Valley oak woodland	48.7	1.0	13.1	-12.1	Sensitive
Blue oak woodland	3,454.5	153.0	599.4	-446.4	Sensitive
Blue oak savanna	1,215.2	96.0	269.4	-173.4	Sensitive
Mixed oak woodland	172.6	0.0	0.0	0.0	Sensitive
Total	**14,724.4**	**2,408.4**	**2,877.6**	**-469.2**	**--**
Aquatic					
Streams and drainages	191.7	13.1	13.1	0.0	Sensitive
Ponds and reservoirs	658.1	9.3	7.4	+1.9	Sensitive
Emergent wetlands	429.7	22.4	49.6	-27.2	Sensitive
Total	**1,279.5**	**44.8**	**69.9**	**-25.1**	--

Source: 2020 EIR, **Appendix I** and **Appendix J**

Impacts

This analysis of the Project Modifications follows the same methodology outlined in Section 3.4.4 of the 2020 EIR, focusing on whether the Project Modifications would have new or substantially more severe significant effects than those described in the 2020 EIR. Refer to Section 3.4.4 of the 2020 EIR (**Appendix D**) for a complete description of the methodology and significance criteria relating to biological resources impacts.

IMPACT 3.4-1	**SUBSTANTIAL ADVERSE EFFECT, EITHER DIRECTLY THROUGH HABITAT MODIFICATIONS OR INDIRECTLY, ON ANY SPECIES IDENTIFIED AS A CANDIDATE, SENSITIVE, OR SPECIAL-STATUS SPECIES IN LOCAL OR REGIONAL PLANS, POLICIES, OR REGULATIONS, OR BY CDFW OR USFWS**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Significant	Significant	No
Mitigation Measures	MM 3.4-1 through MM 3.4-13; MM 3.9-1, 3.9-2; MM 3.4-21; MM 3.10-2 (Phase I) MM 3.4-1 through MM 3.4-14; MM 3.4-21; MM 3.9-1, 3.9-2; MM 3.10-2 (Future Phases)	MM 3.4-1 through 3.4-2, 3.4-6 through 3.4-8; 3.4-10, 3.4-11, 3.4-13; MM 3.9-1, 3.9-2; MM 3.10-2 (Workforce Housing) MM3.4-8 and 3.4-9 (Infrastructure)	Modifications to MM 3.4-2, 3.4-8, and 3.4-10; all other mitigation measures applicable as originally written
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, an impact to special-status species may be considered significant if a project has the potential to result in direct or indirect harm to a special-status species or individuals of that species. **Mitigation Measures 3.4-1** through **3.4-13**, **3.4-21**, and **3.10-2** will ensure that general construction impacts and impacts to specific species are reduced to less-than-significant levels. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that would result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would have the potential to result in displacement of special-status species and conversion or degradation of habitat they rely on, and therefore the impact discussions below focus on this subset of Project Modifications. **Mitigation Measures 3.4-1** through **3.4-13**, **3.4-21**, and **3.10-2** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in

the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with special-status species as compared to the 2020 EIR, as explained in more depth by species below.

Construction

As there is no Critical Habitat or Essential Fish Habitat within or adjacent to the Guenoc Valley Site or Modified APE, impacts to these resources would not occur. As noted under Impact 3.4-1 of the 2020 EIR, construction in general has the potential to displace special-status species and convert or degrade habitat they rely on, which would be a potentially significant impact. The Project Modifications result in an overall decrease in the size of the Development Area (213 acres), which will ultimately result in a slightly lesser impact to special status species due to construction activities as compared to the Original Project analyzed in the 2020 EIR. **Mitigation Measures 3.4-1** and **3.4-2** include construction best management practices (BMPs) to reduce the likelihood that this would occur, and these measures would continue to apply to the Modified Project. **Section 4.4.5** of this PREIR contains a minor modification to **Mitigation Measure 3.4-2** to clarify that this mitigation measure also applies to the Grange Road Connector, as this mitigation measure specified the necessary content of worker environmental awareness training by construction location. **Mitigation Measures 3.4-1** and **3.4-2** (as updated) would continue to reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR.

Special-Status Plants

Several special-status plants have been observed within the Modified APE, and there are several other special-status plants that have the potential to occur within the Modified APE. Since publication of the 2020 EIR there are no new special-status plant species with the potential to occur within the Modified APE and no changes have occurred to the status of plants considered in the 2020 EIR. The 2020 EIR determined that Porter's navarretia had a moderate potential to occur, and it has since been observed within the Modified APE (**Appendix I-1**). This plant is not listed under the FESA or CESA and is considered herein solely for its CNPS Rank (1B.3). Although this additional plant has been observed within the Modified APE, the 2020 EIR already assumed those plants with a moderate to high potential to occur may establish within an impact area due to the long timeframe for development and therefore put forth mitigation for special-status plants that have been observed and those that may establish over time. Surveys conducted across the remainder of the Modified APE did not identify any other new special status plants that were not included in the 2020 EIR. **Mitigation Measure 3.4-3** includes a preconstruction survey for special-status plants within a reasonable timeframe prior to development and includes avoidance measures where possible and options for transplanting and/or compensatory planting when plants cannot be avoided, which reduces this impact to less-than-significant levels. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that change the APE or Development Area (Parcel Reconfiguration, Grange Road Connector, and Connector Roadways) result in an overall decrease in the size of the Development Area (213 acres), which will ultimately result in more undeveloped land available to serve as transplanting or compensatory planting locations, and a significant portion of the Guenoc Valley Site would be conserved as open space. **Mitigation Measure 3.4-3** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with special-status plants as compared to the 2020 EIR.

American Badger

American badger has not been observed within the Modified APE. As discussed within the 2020 EIR, American badger has the potential to utilize grassland habitat for foraging, denning, and raising of young. The 2020 EIR determined that potential impacts could occur to American badger due to habitat conversion or from direct mortality of denning badgers caused by construction activities. The 2020 EIR found that impacts due to conversion of American badger habitat were less than significant. As shown in **Table 4.4-4**, the 2020 APE would impact up to 562.1 acres of grasslands, while the Modified APE would result in impacts to up to 444.0 acres of grasslands. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that change the APE or Development Area (Parcel Reconfiguration, Grange Road Connector, and Connector Roadways) would reduce potential impacts to American badger habitat by 118.1 acres and this impact would remain less than significant.

The 2020 EIR also analyzed the potential for active badger dens to be impacted by construction activities, which would be a potentially significant impact, and included **Mitigation Measure 3.4-4** to reduce this impact to less than significant. **Mitigation Measure 3.4-4** would require preconstruction surveys before construction within open grasslands to ensure that active dens are identified and impacts to American badgers avoided through consultation with CDFW in the event an active den is identified and use of passive measures such as den exclusion. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications would include the same construction activities and therefore this would remain a significant impact without mitigation. However, there are no new project components that would increase this impact compared to what was analyzed in the 2020 EIR, and likelihood of encountering an active American badger den is reduced compared to the 2020 EIR given the reduced impacts to suitable habitat as a result of the Parcel Reconfiguration. **Mitigation Measure 3.4-4** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with American badger as compared to the 2020 EIR.

Ringtail

Ringtail has not been observed within the Modified APE. As discussed within the 2020 EIR, ringtail has the potential to occur within oak woodland, rock outcrops, chaparral, and similar habitats. The 2020 EIR determined that potential impacts could occur to ringtail due to habitat conversion or to direct mortality caused by destruction of birthing dens that could result from construction activities. The 2020 EIR determined that impacts due to conversion of ringtail habitat were less than significant. As shown in **Table 4.4-4**, the 2020 EIR assessed impacts of up to a collective 1,726.6 acres to oak woodland, rock outcrops, and chaparral, while the Modified APE would result in impacts of up to 725.8 acres of these habitats. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that change the APE or Development Area (Parcel Reconfiguration, Grange Road Connector, and Connector Roadways) would result in a reduction in the magnitude of impacts to ringtail habitat of 1,000.8 acres and this impact would remain less than significant.

The 2020 EIR analyzed the potential for active ringtail birthing dens to be impacted by construction activities, and included **Mitigation Measure 3.4-5** to reduce this impact to less than significant. **Mitigation Measure 3.4-5** would require preconstruction surveys before construction within suitable denning habitat

to ensure that active birthing dens are identified and impacts to ringtails avoided through avoidance of active dens until a qualified biologist determines the den is no longer active. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications would include the same construction activities and therefore this would be a significant impact without mitigation. However, there are no new project components that would increase this impact compared to what was analyzed in the 2020 EIR, and the likelihood of encountering an active ringtail den is reduced compared to the 2020 EIR given the reduced impacts to suitable habitat due to the Parcel Reconfiguration. **Mitigation Measure 3.4-5** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with ringtail as compared to the 2020 EIR.

Special-Status Bats

Pallid bat, western red bat, and Townsend's big-eared bat have the potential to roost and forage on the Guenoc Valley Site and Grange Road Connector, especially in areas oak habitat, rock outcrops, and riparian areas. The 2020 EIR analyzed potential impacts due to habitat conversion, direct mortality caused by construction activities, and disturbance that would result should construction activities occur during nighttime hours. The 2020 EIR determined that impacts due to conversion of bat habitat were less than significant. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that change the APE or Development Area (Parcel Reconfiguration, Grange Road Connector, and Connector Roadways) result in an overall decrease in the size of the Development Area (213 acres), which will ultimately result in more undeveloped land being retained as bat habitat. Therefore, this impact will remain less than significant.

The 2020 EIR determined that destruction of an active special-status bat roost or direct injury or mortality caused by construction activities would be a significant impact, and that **Mitigation Measure 3.4-6** would reduce this to less-than-significant levels. **Mitigation Measure 3.4-6** includes a preconstruction survey to identify trees with suitable roost features. Trees with suitable roost features would be assumed active and removed over a two-day process using hand tools, timed as possible during the bat active season and outside the maternity season as possible. Construction methodologies are unchanged from the 2020 EIR, thus this impact would remain significant without mitigation. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. There are no new project components that would increase this impact, and the likelihood of encountering an active bat roost would be reduced due to the decrease in construction activities within forested or woodland habitat. **Mitigation Measure 3.4-6** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with special-status bat roosts as compared to the 2020 EIR.

As noted above, the 2020 EIR assessed the potential for nighttime construction activities to impact special-status bats. The Project Modifications do not alter the time of day that construction activities are proposed. Although construction is anticipated to occur primarily during daylight hours, any nighttime construction noise would have the potential to disrupt nighttime foraging of bats and may result in displacement of bats. As discussed in the 2020 EIR, construction of Phase 1 would occur in phases over a long period of time such that significant areas of habitat would not be disturbed at any one time.

Additionally, under **Mitigation Measure 3.10-2** as presented in the 2020 EIR, overall construction noise would be reduced. **Mitigation Measures 3.4-6** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with nighttime construction activities as compared to the 2020 EIR.

Special-Status, Nesting, and Migratory Birds

Special-status and migratory birds have the potential to nest throughout the Guenoc Valley Site and Grange Road Connector. The 2020 EIR assessed potential impacts to special-status, nesting, and migratory birds resulting from habitat conversion, nest disturbance from construction activities, and sensory disturbance from use of artificial lighting.

The 2020 EIR determined that impacts due to habitat conversion would be less than significant due to the amount of undeveloped land remaining after implementation of the Original Project. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications, specifically the Parcel Reconfiguration, Grange Road Connector, and Connector Roadways, result in an overall decrease in the size of the Development Area (213 acres), which will ultimately result in more undeveloped land being retained as potential bird habitat. Therefore, this impact will remain less than significant.

As discussed in the 2020 EIR, construction activities have the potential to result in sensory disturbance to nesting birds, should construction activities commence during the active nesting season (February 1 through August 31). Nest destruction, abandonment, or failure due to Project activities is a significant impact, and **Mitigation Measure 3.4-8** will reduce this impact to less-than-significant levels. **Mitigation Measure 3.4-8** requires a preconstruction nesting bird survey for construction commencing or re-commencing during the general nesting season and, if an active nest is identified, a disturbance-free buffer will be demarcated until the nest is no longer active. As further described in **Mitigation Measure 3.4-8**, guiding documents such as recovery plans shall be reviewed during construction to ensure that active nests present at the inception of disturbance are afforded an appropriate buffer such that species-specific noise thresholds are not exceeded. The 2020 EIR also determined that **Mitigation Measures 3.10-1** and **3.10-2** would further reduce this impact by reducing construction-related noise. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. Construction of the Modified Project would utilize the same methodologies as the Original Project and would therefore have the same potential to result in disturbance of nesting birds, though it is noted that the reduction in the APE would reduce the geographical extent of this impact. **Mitigation Measures 3.4-8**, **3.10-1**, and **3.10-2** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with nesting birds as compared to the 2020 EIR. **Section 4.4.5** of this PREIR contains a minor modification to this mitigation measure to clarify that **Mitigation Measure 3.4-8** also applies to the Grange Road Connector, as this mitigation measure specified survey areas.

The 2020 EIR also assessed potential impacts resulting from increased use of artificial light as artificial lighting has the potential to impact birds. While the Design Guidelines would restrict allowable lighting features, including light type, intensity, shielding, and timing and would avoid much of this impact, this impact was still deemed potentially significant. **Mitigation Measure 3.4-7** was included to reduce artificial

lighting impacts to a less-than-significant level by reducing the use of potentially attractive lighting and minimizing spillage of lighting, especially into areas of sensitive habitat. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications would result in a similar use artificial lighting, though it is noted that the reduction in the APE due to the Parcel Reconfiguration would reduce the geographical scale of this impact. **Mitigation Measure 3.4-7** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with artificial lighting as compared to the 2020 EIR.

Burrowing Owl

Burrowing owl has not been observed within the Modified APE during surveys completed in support of the 2020 EIR and this PREIR. However, there are known historical occurrences of this species within the Guenoc Valley Site. Burrowing owl has the potential to utilize grassland and agricultural habitat for foraging and may utilize small mammal burrows within grasslands for burrowing, and potential impacts could occur due to habitat conversion or direct injury and mortality in the event that an active burrow is destroyed during construction activities. The 2020 EIR determined that impacts resulting from habitat conversion would be less than significant due to the amount of suitable burrowing and foraging habitat that would be left undeveloped. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. As shown in **Table 4.4-4**, the 2020 APE included impacts of up to 562.1 acres to grasslands and 291.8 acres of agricultural habitat, while the Modified APE would result in impacts to up to 444.0 acres of grasslands and 309.7 acres of agricultural areas. Therefore, the Modified Project would be a reduction in impacts of 118.1 acres of potential burrow habitat and 100.2 acres of foraging habitat, which includes the Parcel Reconfiguration, Grange Road Connector, and Connector Roadways. As impacts to suitable habitat is reduced under the Modified Project, this impact would remain less than significant.

The 2020 EIR also addressed the potential for active burrowing owl burrows to be impacted by construction activities. Destruction of an active burrowing owl was considered a significant impact, and **Mitigation Measure 3.4-9** was included to reduce this impact to a less-than-significant level. **Mitigation Measure 3.4-9** would require preconstruction surveys consistent with CDFW protocol guidelines. Active burrows would be afforded a disturbance-free buffer until a qualified biologist determines the burrow is no longer active. Exclusion would only occur outside of the nesting season and only using passive methods. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications would include the same construction methodologies and therefore this would remain a significant impact without mitigation. However, there are no new project components that would increase this impact compared to what was analyzed in the 2020 EIR, and likelihood of encountering an active burrowing owl burrow is reduced compared to the 2020 EIR given the reduced impacts to suitable habitat. **Mitigation Measure 3.4-9** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with burrowing owl as compared to the 2020 EIR.

Northwestern Pond Turtle

Northwestern pond turtle has been observed within Bucksnort Creek, Putah Creek, and along the banks of an unnamed reservoir within the Guenoc Valley Site and has the potential to occur within other aquatic features that contain basking sites. The 2020 EIR determined that impacts could occur to northwestern pond turtle though habitat conversion, direct injury or mortality to individuals during construction within suitable habitat, and habitat degradation through impaired runoff. The 2020 EIR determined that impacts resulting from habitat conversion would be less than significant due to the amount of suitable remaining habitat. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. Even with the addition of the Grange Road Connector and the Connector Roadways, the Modified Project would result in a maximum potential impact to aquatic habitats of 25.1 fewer acres than the Original Project (**Table 4.4-4**) due to the Parcel Reconfiguration, and this impact would remain less than significant.

The 2020 EIR determined that a significant impact could occur if construction within suitable northwestern pond turtle habitat caused displacement, direct injury or mortality, or disruption of nesting, foraging, and other behaviors, and **Mitigation Measure 3.4-10** would reduce this impact to a less-than-significant level. **Mitigation Measure 3.4-10** would time ground disturbance on and within 300 feet of northwestern pond turtle habitat between July 1 and October 31 to avoid the peak nesting season and winter inactivity periods for northwestern pond turtle. Where infeasible, a qualified biologist will identify suitable nesting/overwintering areas to be disturbed and will either place a disturbance free buffer, or coordinate relocation with CDFW. All work on and within 300 feet of suitable northwestern pond turtle habitat would only occur under the supervision of a qualified biologist, or after installation of northwestern pond turtle exclusionary fencing deemed acceptable by a qualified biologist. The Project Modifications would include the same construction methodologies and therefore this would remain a significant impact without mitigation. While the Grange Road Connector would result in construction adjacent to Bucksnort Creek, a waterbody where northwestern pond turtle has been previously identified, the stretch of the road alignment adjacent to the stream is an existing vineyard road that receives regular vineyard-related traffic including tractors and worker vehicles. The 2020 EIR assumed that northwestern pond turtle is potentially present in areas of suitable habitat, which includes Bucksnort Creek, and therefore construction of the Project Modifications (including upgrades to the existing vineyard road that will become the Grange Road Connector), will not cause a new significant impact or increase the severity of the impact as previously assessed. **Mitigation Measure 3.4-10** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with direct impacts to northwestern pond turtle as compared to the 2020 EIR. While the potential level of impacts remains unchanged, it is noted that **Mitigation Measures 3.4-10** has been revised to account for the nomenclature update to northwestern pond turtle and to include USFWS as a cooperating agency due to the reclassification of this species and updated jurisdictional status with USFWS and associated protections.

The 2020 EIR further assessed the potential degradation of aquatic habitats that may support northwestern pond turtle should impaired runoff enter aquatic habitats, which would be a significant impact. **Mitigation Measure 3.9-1** and **3.9-2** would reduce this impact to a less-than-significant level through permitting under the Construction General Permit, which includes a requirement for a Stormwater Pollution Prevention Plan (SWPPP) with construction BMPs and inspections throughout construction to avoid production of impaired runoff. **Mitigation Measure 3.9-2** requires that on-site aggregate and concrete production be conducted in accordance with requirements of the Central Valley

Regional Water Quality Control Board (RWQCB). Adherence to these standards would prevent the exceedance of water quality standards. The Modified Project would not introduce new construction methodologies that would increase this impact compared to what was evaluated in the 2020 EIR and it would similarly be required to be permitted under the Construction General Permit. **Mitigation Measures 3.9-1** and **3.9-2** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with indirect impacts to northwestern pond turtle as compared to the 2020 EIR.

Foothill Yellow-Legged Frog

Foothill yellow-legged frog has been observed along Bucksnort Creek near McCain Creek within the Guenoc Valley Site and has the potential to occur within other aquatic features that have suitable habitat, such as wetted streams and associated riparian habitat. The 2020 EIR determined that impacts could occur to foothill yellow-legged frog though habitat conversion, direct injury or mortality to individuals during construction within suitable habitat, and habitat degradation through impaired runoff. The 2020 EIR determined that impacts resulting from habitat conversion would be less than significant due to the amount of suitable remaining habitat. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. Even with the addition of the Grange Road Connector and the Connector Roadways, the Modified Project would result in a maximum potential impact to aquatic habitats of 25.1 fewer acres than the Original Project (**Table 4.4-4**) with inclusion of the Parcel Reconfiguration, and this impact would remain less than significant.

The 2020 EIR determined that a significant impact could occur if construction within suitable foothill yellow-legged frog habitat caused displacement, direct injury or mortality, or disruption of natural behaviors, and **Mitigation Measure 3.4-11** would reduce this impact to a less-than-significant level. This measure would time ground disturbance on and within 100 feet of habitat known to support foothill yellow-legged frog during the dry months and outside of the breeding season if possible. Where infeasible, work would only occur under the supervision of a qualified biologist, or after installation of foothill yellow-legged frog exclusionary fencing deemed acceptable by a qualified biologist. Preconstruction surveys will be completed for all impacts to suitable foothill yellow-frog habitat, and avoidance or relocation methods are outlined in **Mitigation Measure 3.4-11** based on the timing and location of the observation. The Project Modifications would include the same construction methodologies and therefore this would remain a significant impact without mitigation. While the Grange Road Connector would result in construction adjacent to Bucksnort Creek, a waterbody where foothill yellow-legged frog has previously been identified, the stretch of the road alignment adjacent to the stream is an existing vineyard road that is regularly disturbed. The 2020 EIR assumed that foothill yellow-legged frog is potentially present in areas of suitable habitat, which includes Bucksnort Creek, and therefore construction of the Project Modifications (including upgrades to the existing vineyard road that will become the Grange Road Connector), will not cause a new significant impact or increase the severity of the impact as previously assessed. **Mitigation Measure 3.4-11** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with direct impacts to foothill yellow-legged frog as compared to the 2020 EIR.

The 2020 EIR further assessed the potential degradation of aquatic habitats that may support foothill yellow-legged frog should impaired runoff enter aquatic habitats, which would be a significant impact. **Mitigation Measure 3.9-1** and **3.9-2** would reduce this impact to a less-than-significant level through

permitting under the Construction General Permit, which includes the same SWPPP requirements and Central Valley RWQCB oversight discussed above. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Modified Project would not introduce new construction methodologies that would increase this impact compared to what was evaluated in the 2020 EIR and it would similarly be required to be permitted under the Construction General Permit. **Mitigation Measures 3.9-1** and **3.9-2** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with indirect impacts to foothill yellow-legged frog as compared to the 2020 EIR.

Monarch Butterfly

As Monarch butterfly was not considered a special-status species at the time of circulation of the 2020 EIR, there is no assessment of potential impacts to Monarch butterfly presented within the 2020 EIR (**Appendix D**). Section 7.2.2 of the supplemental BRA (**Appendix I-1**) analyzes potential impacts to Monarch butterfly resulting from the Modified Project. Although Monarch butterfly has no formal protection as it is currently a Candidate for listing, this PREIR assesses the level of potential impacts to this species. As stated in **Appendix I-1**, the Guenoc Valley Site and Grange Road Connector are outside of the wintering roost range of this species, and therefore roosts would not be impacted. Foraging and breeding habitat does occur throughout the Guenoc Valley Site where nectar sources occur and where larval host plants (milkweed) occur. Of the nearly 16,000 acres that comprises the Guenoc Valley Site and Grange Road Connector, approximately 84.7 percent would not be developed under Phase 1. The Project Modifications result in an overall decrease in the size of the Development Area (213 acres) and an associated increase in the amount of undeveloped space compared to the Original Project. Therefore, the majority of potential habitat would remain in its current state and useable for Monarch butterfly during the spring and summer months when it may be present. This would be a less-than-significant impact.

Invasive Species

The 2020 EIR determined that creation of palustrine habitats has the potential to increase the presence of invasive species, specifically bullfrogs, which is a significant impact, and included **Mitigation Measure 3.4-12** to reduce this impact to a less-than-significant level. **Mitigation Measure 3.4-12** includes creation of a bullfrog management plan to address the potential increase in bullfrogs resulting from creation of palustrine habitat. The Project Modifications would not result in creation of bullfrog habitat or changes to the palustrine habitat proposed for creation under the 2020 EIR. Therefore, there would be no new impact beyond those areas already identified in the 2020 EIR, and no new or more significant impact would occur. **Mitigation Measure 3.4-12** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with indirect impacts due to the presence of invasive species as compared to the 2020 EIR.

Operation

Special-Status Plants

As discussed within the 2020 EIR, potential operational impacts to special-status plants would include loss incidental to wildfire prevention activities, which would be a less-than-significant impact. The Project Modifications including the Grange Road Connector, GHG Emissions Reduction Measures, and DMP would have no potential to change the severity of this impact as they do not include alterations to operational activities. The Updated WPP (**Appendix F**) which has been modified to reflect the Parcel Reconfiguration

includes alterations to where landscape management activities would occur to align the new parcel and road alignments, but the methodology for fuel load management is unchanged from what was analyzed in the 2020 EIR. Figure 17 of **Appendix F** reallocates "Residential/Resort/Facility Grazing Areas" to "Active Landscape Management Areas" to reflect where relocated Residential/Resort/Facility areas are now proposed to remain as undeveloped open space. The Updated WPP does not result in changes to future operational activities that would increase the potential for impact to special-status plants. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with special-status plants as compared to the 2020 EIR.

Special-Status Wildlife

As noted in the 2020 EIR, the majority of potential impacts to special-status wildlife species would occur during the construction phase. High levels of noise during operation could impact special-status wildlife, particularly near the proposed float dock and helicopter landing pads, but the 2020 EIR determined that a less-than-significant impact to special-status wildlife would occur with inclusion of **Mitigation Measures 3.10-1** through **3.10-4** to reduce noise impacts. **Mitigation Measure 3.10-4** limits aircraft and non-emergency helicopter flight times, which would protect biological resources as assessed in Impact 3.4-1 of the 2020 EIR (**Appendix D**). The Project Modifications do not include characteristics that would increase operational noise production beyond what was considered in the 2020 EIR. None of the Project Modifications would change the noise output of the proposed development. The Parcel Reconfiguration would increase the amount of undeveloped space compared to the Original Project, which would further reduce the potential for operational noise impacts to sensitive species. For example, the removal of the camping area would wholly remove any potential increase in ambient noise in the immediate vicinity of that area. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with noise impacts to special-status wildlife as compared to the 2020 EIR.

The 2020 EIR additionally assessed whether increased recreational uses and human activity within undeveloped areas, specifically around aquatic habitats, would result in significant impacts to special-status wildlife. Increased human activity could result in degradation of aquatic habitat that foothill yellow-legged frog and northwestern pond turtle may utilize, which is a potentially significant impact. **Mitigation Measure 3.4-13** would reduce this impact to a less-than-significant level. **Mitigation Measure 3.4-13** would provide public education on the value of these habitats and action items for visitors to adhere to in order to prevent habitat degradation. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. Although the Project Modifications result in a smaller Modified APE compared to the Original Project, the level of human activity in these areas is likely similar to what was evaluated in the 2020 EIR and therefore, the potential for foothill yellow-legged frog and northwestern pond turtle to be impacted by increased human activity during operation remains a potentially significant impact. **Mitigation Measure 3.4-13** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with operational impacts to wildlife within aquatic habitats as compared to the 2020 EIR.

Finally, the 2020 EIR considered the potential impacts to special-status birds resulting from the likely increase in domestic cats within the Guenoc Valley Site, which could lead to a significant impact. **Mitigation Measure 3.4-21** would reduce this impact to a less-than-significant level. **Mitigation Measure**

3.4-21 includes education of residents on action items to reduce or prevent domestic cat predation of wildlife. Project Modifications such as the GHG Reduction Measures, Updated WPP, Grange Road Connector, Connector Roadways, and DMP, would have no potential to increase the severity of this impact. The Parcel Reconfiguration will increase the density of proposed developments and may reduce the geographical area that domestic cats are likely to wander, this PREIR conservatively assumes that the level of impact would remain the same as the 2020 EIR. Therefore, **Mitigation Measure 3.4-21** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with domestic cat predation as compared to the 2020 EIR.

IMPACT 3.4-2	**SUBSTANTIAL ADVERSE EFFECT ON ANY RIPARIAN HABITAT OR OTHER SENSITIVE NATURAL COMMUNITY IDENTIFIED IN LOCAL OR REGIONAL PLANS, POLICIES, REGULATIONS, OR BY CDFW OR USFWS**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Significant	Significant (Workforce Housing) No Impact (Infrastructure)	No
Mitigation Measures	MM 3.4-1, 3.4-15 through 3.4-18; MM 3.9-1, 3.9-2 (Phase I) MM 3.4-1, 3.4-14 through 3.4-18; MM 3.9-1, 3.9-2 (Future Phases)	MM 3.4-1, 3.4-15, 3.4-16; MM 3.9-1 (Workforce Housing) None Required (Infrastructure)	Modifications to Mitigation Measures 3.4-15 and 3.4-18; all other mitigation measures applicable as originally written
Significance After Mitigation	Less than Significant	Less than Significant (Workforce Housing) No Impact (Infrastructure)	Less than Significant

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, potentially significant impacts would occur to sensitive natural communities if sensitive habitat types are directly converted, disturbed through the process of construction and maintenance of a project, or indirectly disturbed by construction or ongoing activity associated with a project. Indirect impacts may occur due to narrow buffers from development, connectivity of resources such as groundwater, non-discrete impacts such as pollution, and other project-related impacts. As with the 2020 EIR, sensitive habitats include purple needlegrass grassland, musk-brush chaparral, white alder grove, brewer willow thicket, Sargent cypress woodland, oak habitat, and aquatic habitats. Sargent cypress woodland was not within the 2020 APE and is not within the Modified APE and is therefore not

discussed further (**Figure 4-8**). Serpentine rock outcrop is a newly defined sensitive habitat and is discussed herein. **Mitigation Measures 3.4-1**, **3.4-15** through **3.4-18**, **3.9-1** and **3.9-2** will ensure that impacts to sensitive habitats are reduced to less-than-significant levels.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that would result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would have the potential to change the level of impact compared to what was analyzed in the 2020 EIR, and therefore the impact discussions below focus on this subset of Project Modifications. **Mitigation Measures 3.4-1**, **3.4-15** through **3.4-18**, **3.9-1** and **3.9-2** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with sensitive habitats as compared to the 2020 EIR, as explained in more depth by habitat type below.

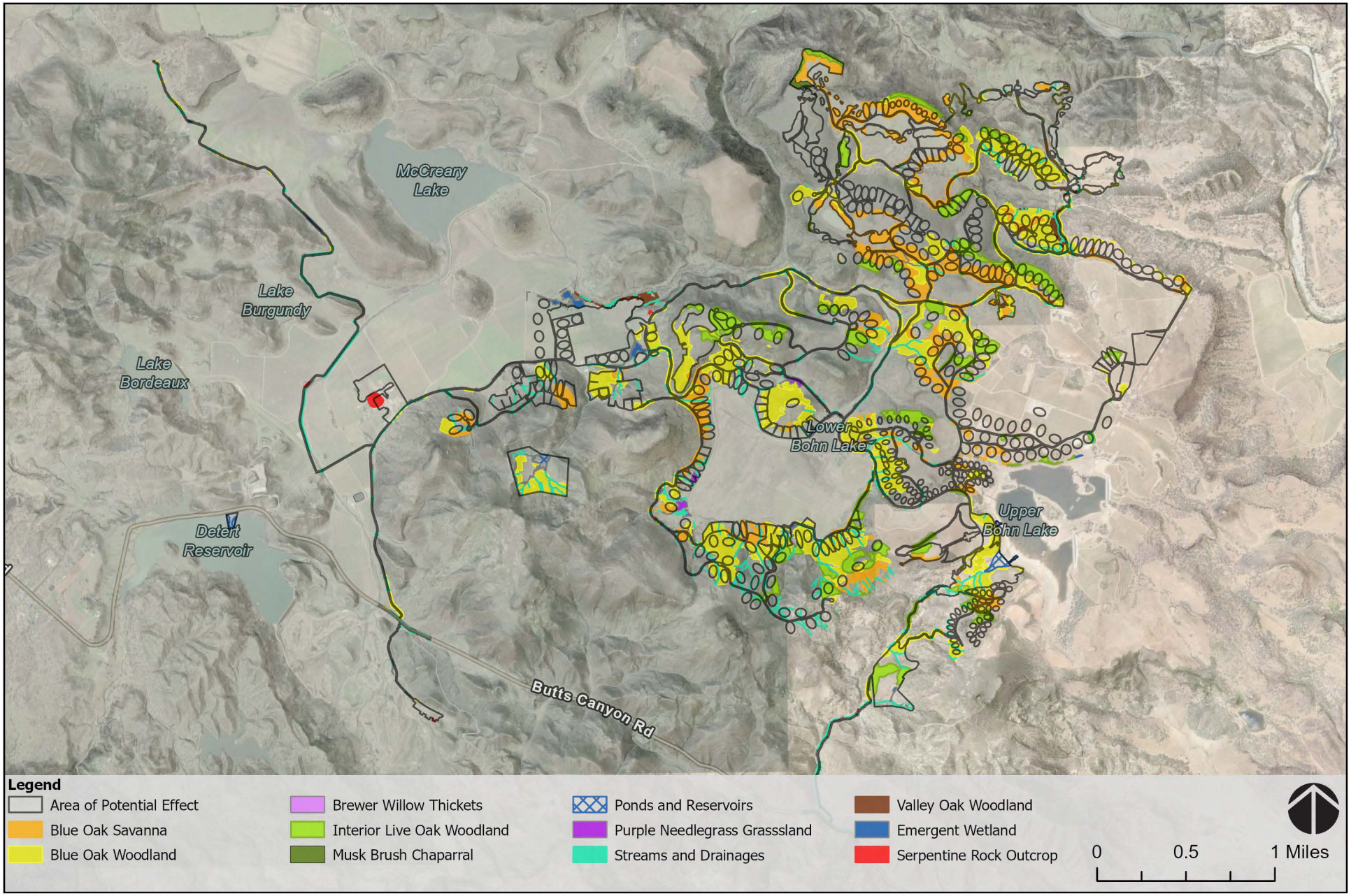
Construction

Purple Needlegrass

The 2020 EIR assessed impacts of up to 8.0 acres of purple needlegrass due to the Original Project, which is a significant impact. In order to reduce this impact to less than significant, **Mitigation Measure 3.4-15** requires that this habitat type be avoided as possible and includes options for mitigating impacts to habitat that cannot be avoided, through preservation, creation, restoration, or enhancement at a 2:1 ratio. The Project Modifications would result in up to 5.7 acres of impacts to purple needlegrass (up to 47.1 percent converted of the total 12.1 acres across the Guenoc Valley Site and Grange Road Connector). Therefore, the Project Modifications will reduce impacts to purple needlegrass by approximately 2.3 acres (21.3 percent). The quality and condition of purple needlegrass is unchanged since the 2020 EIR, but because purple needlegrass is a sensitive habitat type this would still be a potentially significant impact. **Mitigation Measure 3.4-15** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with purple needlegrass as compared to the 2020 EIR.

Musk-brush Chaparral

The 2020 EIR identified impacts of up to 19.5 acres of musk-brush chaparral due to the Original Project, which is a significant impact. In order to reduce this impact to less than significant, **Mitigation Measure 3.4-15** requires that this habitat type be avoided as possible and includes options for mitigating habitat that cannot be avoided through preservation, creation, restoration, or enhancement at a 2:1 ratio. The Project Modifications would result in up to 2.8 acres of impacts to musk-brush chaparral (8.8 percent of the total habitat). The Project Modifications will reduce impacts to this sensitive habitat type by 16.7 acres. The quality and condition of musk-brush chaparral is unchanged since the 2020 EIR, however as musk-brush chaparral is a sensitive habitat type, impacts to up to 2.8 acres of musk-brush chaparral would still be a potentially significant impact. **Mitigation Measure 3.4-15** would continue to apply and would reduce this impact to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with musk-brush chaparral as compared to the 2020 EIR.



Source: Lake County Community Development and General Plan; County of Napa, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS,

FIGURE 4-8

SENSITIVE HABITATS WITHIN MODIFIED PHASE 1 APE

White Alder Grove

The 2020 EIR identified impacts to 0.1 acres of white alder grove, which was a potentially significant impact. The Project Modifications, specifically the Parcel Reconfiguration, would result in complete avoidance of white alder grove and no impacts to this sensitive habitat would occur. Therefore, no mitigation is necessary and **Mitigation Measure 3.4-15**, which was recommended in the 2020 EIR for impacts to white alder grove, would not apply to Phase 1 as it relates to white alder grove.

Brewer Willow Thicket

The 2020 EIR identified impacts of up to 0.04 acres of brewer willow thicket, which is a significant impact. In order to reduce this impact to less than significant, **Mitigation Measure 3.4-15** requires that this habitat type be avoided as possible and includes options for mitigating impacts to habitat that cannot be avoided through preservation, creation, restoration, or enhancement at a 2:1 ratio. The Project Modifications would result in 1.1 acres of impacts to brewer willow thicket (a conversion rate of 24.4 percent). The Project Modifications will result in an increase in impacts to this habitat, but the majority of brewer willow thicket would be preserved (minimum of 75.6 percent). **Mitigation Measure 3.4-15** would continue to apply and would decrease impacts to brewer willow thicket by prioritizing avoidance of this habitat type followed by mitigating impacts at a 2:1 ratio, which will continue to reduce impacts to brewer willow thicket to a less-than-significant level. Even with the increase in impacted acreage, sufficient unimpacted brewer willow thicket would remain to fulfill mitigation through preservation, even if the full 1.1 acres within the Modified APE is impacted, and sufficient undeveloped open space remains should mitigation be completed through creation, enhancement, or restoration. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with brewer willow thicket as compared to the 2020 EIR.

Serpentine Rock Outcrop

As discussed in **Section 4.4.2**, serpentine rock outcrop is a newly classified sensitive habitat type pursuant to updated CDFW habitat classification systems, and conversion of this habitat would be a significant impact. The onsite rock outcrops were previously classified in the 2020 EIR as non-sensitive, and 18.9 acres within the Project Site meet the standard of serpentine rock outcrop, which is considered a sensitive habitat type. Up to 3.9 acres of this habitat type falls within the Modified APE, resulting in a conversion rate of 20.6 percent. As this habitat type was not described at the time of publication of the 2020 EIR, no analysis of the level of impacts to this habitat type was presented. In order to reduce potential impacts to less-than-significant levels, serpentine rock outcrops have been added to the sensitive habitat mitigation included as **Mitigation Measure 3.4-15**. **Mitigation Measure 3.4-15** provides compensatory mitigation in the form of habitat preservation, restoration, creation, and/or enhancement of in-kind habitat at a 2:1 ratio. As creation of serpentine rock outcrops is not a feasible method of mitigation, mitigation for rock outcrops as outlined in **Mitigation Measure 3.4-15** would be limited to preservation, restoration, or enhancement. As up to 3.9 acres of serpentine rock outcrop would be impacted by the Modified Project, up to 7.8 acres of serpentine rock outcrop would be needed to satisfy mitigation through preservation. A total of 15.0 acres of serpentine rock outcrop occurs throughout the Guenoc Valley Site and outside of the Modified APE and would be sufficient to mitigate for the Proposed Project based on preservation alone. In addition to preservation, the option to restore or enhance serpentine rock outcrops would be available as high levels of invasive vegetation was observed in areas where vegetative cover was present. With inclusion of **Mitigation Measure 3.4-15**, impacts to serpentine rock outcrop would be less-than-significant.

Oak Woodland and Savanna

The 2020 EIR identified impacts to oak habitat up to the following:

- 257 acres of blue oak woodland
- 146 acres of blue oak savanna
- 72 acres of interior live oak woodland
- 2 acres of valley oak woodland

The 2020 EIR determined that conversion of oak woodland and oak savanna was a potentially significant impact that was reduced to less-than-significant levels through inclusion of **Mitigation Measure 3.4-16**. **Mitigation Measure 3.4-16** includes adherence to an oak mitigation plan that would offset impacts through preservation and compensatory plantings. Even with the addition of the Grange Road Connector and the Connector Roadways, the Parcel Reconfiguration results in an overall decrease in the APE and Development Area (213 acres). With consideration of the Project Modifications, the following maximum potential impacts to oaks were identified:

- 153 acres of blue oak woodland
- 96 acres of blue oak savanna
- 58 acres of interior live oak woodland
- 1 acre of valley oak woodland

Although this impact has decreased for every type of oak habitat, conversion of oak habitat would still be considered a significant impact. Therefore, **Mitigation Measure 3.4-16** as presented in the 2020 EIR would apply to the Modified Project. The Oak Mitigation Plan included as Appendix OAK to Volume III of the 2020 EIR has been revised to reflect the updated impact acreages and is included herein as **Appendix J**. The methodology and standards set forth in the Oak Mitigation Plan are unchanged, and revisions are limited to acreage accounts. **Mitigation Measure 3.4-16** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with oak woodlands and oak savannah as compared to the 2020 EIR.

Aquatic Habitats

The direct impact of aquatic resources through loss, modification, or degradation would be a significant impact. **Mitigation Measure 3.4-17** would reduce impacts to less-than-significant levels by prioritizing avoidance as possible, followed by preservation, restoration and/or habitat creation at a minimum 1:1 ratio and consistent with agency permitting requirements. Even with the addition of the Grange Road Connector and the Connector Roadways, the Modified Project would result in a maximum potential impact to aquatic habitats of 25.1 fewer acres than the Original Project (**Table 4.4-4**) due to the Parcel Reconfiguration. Although impacts of the Modified Project would be less, direct conversion of aquatic habitat would still be a significant impact without mitigation. **Mitigation Measure 3.4-17** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with aquatic habitats as compared to the 2020 EIR.

In addition to direct conversion of habitat, indirect impacts resulting in degradation of aquatic habitat would be significant if runoff produced during the construction phase result in impaired water quality. Although the Modified APE is generally smaller than what was evaluated in the 2020 EIR, construction of project components still poses a significant risk to waters due to impaired runoff. **Mitigation Measures 3.9-1** and **3.9-2** would reduce this impact to a less-than-significant level through permitting under the

Construction General Permit, which includes a requirement for a SWPPP that includes construction BMPs and inspections throughout construction. **Mitigation Measure 3.9-2** would further reduce this impact by ensuring that on-site aggregate and concrete production be conducted in accordance with requirements of the Central Valley RWQCB. The Modified Project would not introduce new construction methodologies that would increase this impact compared to what was evaluated in the 2020 EIR and it would similarly be required to be permitted under the Construction General Permit. **Mitigation Measures 3.9-1** and **3.9-2** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with indirect impacts to aquatic habitats as compared to the 2020 EIR.

Operation

The 2020 EIR determined that significant operation impacts to sensitive habitats following construction would be limited to ongoing wildfire management activities and **Mitigation Measure 3.4-18** would reduce this impact to a less-than-significant level. **Mitigation Measure 3.4-18** would reduce impacts by avoiding sensitive habitats with a limited distribution and by restricting what types of wildfire management actions and tools are allowable within other sensitive habitats. The Project Modifications including the Grange Road Connector, GHG Emissions Reduction Measures, and DMP would have no potential to change the severity of this impact as they do not include alterations to operational activities. The Updated WPP (**Appendix F**) which has been modified to reflect the Parcel Reconfiguration includes alterations to where landscape management activities would occur to align with the new parcel and road alignments, but the methodology of wildfire management as it relates to fuel load management is unchanged. Figure 17 of **Appendix F** reallocates "Residential/Resort/Facility Grazing Areas" to "Active Landscape Management Areas" to reflect where relocated Residential/Resort/Facility areas are now proposed to remain as undeveloped open space. The Updated WPP does not result in changes to future operational activities that would increase the potential for impact to sensitive habitats. As discussed above, serpentine rock outcrop has been newly identified as a sensitive habitat and therefore, **Mitigation Measure 3.4-18** has been revised to discuss serpentine rock outcrop. As this habitat definitionally has minimal vegetation cover (less than 10 percent), it would not require wildfire management activities. Therefore, its addition to **Mitigation Measure 3.4-18** is simply to ensure that staging activities would not occur in these areas, thus ensuring impacts to serpentine rock outcrop would not occur as a result of wildfire management activities. **Mitigation Measure 3.4-18** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with sensitive habitats as compared to the 2020 EIR.

IMPACT 3.4-3	SUBSTANTIAL ADVERSE EFFECT ON STATE OR FEDERALLY PROTECTED WETLANDS THROUGH DIRECT REMOVAL, FILLING, HYDROLOGICAL MODIFICATION, OR OTHER MEANS		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Significant	Less than Significant	No
Mitigation Measures	MM 3.4-1, 3.4-17; MM 3.9-1, 3.9-2 (Phase I) MM 3.4-1, 3.4-17; MM 3.9-1, 3.9-2 (Future Phases)	None Required	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, potentially significant impacts would occur to state or federally protected wetlands or waters if a project resulted in the direct conversion of wetlands, resulted in runoff and erosion that degrades habitat quality, or altered a watercourse or supporting adjacent habitat, such as a riparian community. **Mitigation Measures 3.4-1**, **3.4-17**, **3.9-1**, and **3.9-2** will ensure that impacts to jurisdictional wetlands and waters are reduced to less-than-significant levels. Consistent with the 2020 EIR, this PREIR conservatively assumes that all surface water resources are potentially jurisdictional. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that would result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would have the potential to change the level of impact compared to what was analyzed in the 2020 EIR, and therefore the impact discussions below focus on this subset of Project Modifications. **Mitigation Measures 3.4-1**, **3.4-17**, **3.9-1**, and **3.9-2** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with jurisdictional wetlands and waters as compared to the 2020 EIR, as explained in more depth by habitat type below.

Construction

The 2020 EIR determined that impacts to surface waters that have the potential to be considered jurisdictional wetlands or waters would constitute a significant impact and included **Mitigation Measure 3.4-17** to reduce impacts to a less-than-significant level. **Mitigation Measure 3.4-17** would require consultation with the RWQCB, USACE, and CDFW to identify jurisdictional habitats, to obtain necessary permits prior to impacts to jurisdictional features, and adhere to all permit terms and conditions.

Mitigation Measure 3.4-17 sets minimum mitigation actions for impacts to aquatic habitats that cannot be avoided, including preservation, restoration and/or habitat creation at a minimum 1:1 ratio and consistent with agency permitting requirements. Project Modifications would not alter the type of impacts to potentially jurisdictional surface waters and would include direct conversion for urban uses, roadway crossings, and similar impacts as already assessed in the 2020 EIR. As shown in **Table 4.4-4**, the Project Modifications would result in maximum potential impacts to aquatic habitats that are 25.1 acres less than what was evaluated in the 2020 EIR. Although the Project Modifications decrease this impact, direct conversion of aquatic habitat with the potential to be jurisdictional would still be a significant impact. **Mitigation Measure 3.4-17** would continue to apply and would reduce this impact to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with jurisdictional wetlands and waters as compared to the 2020 EIR.

Operation

Operation of Phase 1 would not result in the removal, fill, or modification of wetlands or waters beyond that occurring for construction. There would be no impact. None of the Project Modifications would result in operational impacts to jurisdictional waters or wetlands. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with jurisdictional waters and wetlands during the operational phase as compared to the 2020 EIR.

IMPACT 3.4-4	**INTERFERE SUBSTANTIALLY WITH THE MOVEMENT OF ANY NATIVE RESIDENT OR MIGRATORY WILDLIFE SPECIES OR WITH ESTABLISHED NATIVE RESIDENT OR MIGRATORY WILDLIFE CORRIDORS, OR IMPEDE THE USE OF NATIVE WILDLIFE NURSERY SITES**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Significant	Less than Significant (Workforce Housing) No Impact (Infrastructure)	No
Mitigation Measures	MM 3.4-7, 3.4-19 (Phase I) MM 3.4-7, 3.4-14, 3.4-19, 3.4-20 (Future Phases)	None Required	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant (Workforce Housing) No Impact (Infrastructure)	Less than Significant

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, potential impacts to wildlife movement or nursery sites would be considered significant if a project resulted in the significant restriction of wildlife movement, alteration of a known wildlife corridor, or any adverse impact to known nursery sites. The Original Project would result in a potentially significant impact relating to wildlife movement, primarily due to proposed fences and proposed lighting on the Project Site. **Mitigation Measures 3.4-7** and **3.4-19** will ensure that impacts to wildlife movement and use are reduced to less-than-significant levels. Appendix WILDLIFE to the 2020 EIR identified where least cost wildlife movement pathways were preserved within designated open space and provided an additional approximately 400 acres of Habitat Connectivity Easements to preserve least cost pathways in and near development lots to ensure a minimum 300-foot width of the corridor preserved. With consideration of Appendix WILDLIFE and project design, the 2020 EIR determined impacts to wildlife movement corridors were less than significant. Project Modifications would not impact additional M2B pathways beyond what was already identified in the 2020 EIR. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that would result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would have the potential to change the level of impact compared to what was analyzed in the 2020 EIR, and therefore the impact discussions below focus on this subset of Project Modifications. **Mitigation Measures 3.4-7** and **3.4-19** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with wildlife movement or nursery sites as compared to the 2020 EIR, as explained in more depth by habitat type below.

Fencing

The 2020 EIR determined that fencing has the potential to result in wildlife entrapment or exclusion and can restrict wildlife access and movement to and through areas of otherwise suitable habitat. This impact was determined to be significant, and **Mitigation Measure 3.4-19** was presented to reduce this impact to a less-than-significant impact. **Mitigation Measure 3.4-19** further defines and limits allowable fencing location and design beyond the restrictions already identified in the Design Guidelines. This includes prohibitions against bottom rails that would preclude small animal dispersal and setting of top rails higher than six feet. Since the 2020 EIR, there have been no changes to the Design Guidelines and the allowable height, type, and amount of fencing allowed is unchanged since the 2020 EIR. The Parcel Reconfiguration would result in placement of fencing associated with resort and residential uses within a smaller, denser area with no fencing in areas previously assumed to have some level of fencing. Although the extent of fencing would be reduced under the Project Modifications, there is still the potential to significantly limit wildlife movement even when considering the Design Guidelines. **Mitigation Measure 3.4-19** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with fencing as compared to the 2020 EIR.

Lighting

The 2020 EIR considered potential impacts to wildlife movement due to an increase in artificial lighting on the Guenoc Valley Site which could lead to stranding, disorienting, attracting, or otherwise disrupting the natural dispersal and migratory behaviors of wildlife. Per the Design Guidelines, the Proposed Project would adhere to the Dark Sky Initiative standards that include use of color balanced light that is matte,

shielded from spillage, and set on a timer to avoid unnecessary use. However, this impact was still determined to be significant, and **Mitigation Measure 3.4-7** was presented to reduce this impact to a less-than-significant impact by further limiting the type and use of artificial lighting. The Parcel Reconfiguration would increase the density of proposed lots and minimize the more remote lots adjacent to the urban-wildland interface, which would reduce the potential for the spread of artificial lighting compared to the Original Project. Although the spread of artificial lighting would be less than what was evaluated in the 2020 EIR, this would still constitute a potentially significant impact, as discussed under Impact 3.4-1 for Special-Status, Nesting, and Migratory Birds. **Mitigation Measure 3.4-7** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with lighting as compared to the 2020 EIR.

Open Space

The 2020 EIR identified 2,765 contiguous acres of open space within the Guenoc Valley Site to demonstrate that sufficient open space remained available to meet open space mitigation requirements of the 2008 Langtry Farms Water Rights Modification Project Open Space Preservation Plan (2008 OSPP). The Project Modifications would not infringe on this designated open space area (see **Figure 2-1**) and sufficient open space would remain to meet existing mitigation requirements of the 2009 Water Rights EIR.

The 2020 EIR determined that impacts to wildlife movement would be minimized considering the amount of open space remaining, preservation of known corridors, clustering of development, and restrictions on fencing and lighting within the Design Guidelines. This impact was deemed less than significant with consideration of **Mitigation Measure 3.4-7** and **3.4-19** as discussed above. The Project Modifications would result in a smaller APE and would maintain the OSPP area, corridors, and Habitat Connectivity Easement areas. **Mitigation Measure 3.4-7** and **3.4-19** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with open space as compared to the 2020 EIR.

IMPACT 3.4-5	CONFLICT WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PRESERVATION POLICY OR ORDINANCE		
	2020 EIR Conclusions		Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Significant	Significant (Workforce Housing) No Impact (Infrastructure)	No
Mitigation Measures	MM 3.4-16 (Phase I) MM 3.4-14, 3.4-16 (Future Phases)	MM 3.4-16 (Workforce Housing) None Required (Infrastructure)	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant (Workforce Housing) No Impact (Infrastructure)	Less than Significant

*Impact numbering retained from the 2020 EIR.

As discussed in the 2020 EIR, potential conflicts with existing local policies and ordinances may be considered significant if a project resulted in construction or use of land contrary to the overall goals of existing local regulations, or if a project conflicts with specific allowable uses or compensatory requirements. This was identified as a potentially significant impact, and **Mitigation Measures 3.4-16** will reduce impacts related to conflict with existing local policies and ordinances to less-than-significant levels. The primary potential conflict between the Original Project and local policies or ordinances would be conflict with Lake County Code § 30-21, which protects oak woodland. **Mitigation Measure 3.4-16** requires adherence to the Oak Mitigation Plan, which was prepared consistent with local policies and ordinances and was included as Appendix OAK in Volume III of the 2020 EIR.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. As discussed under Impact 3.4-1 above, the Modified Project (specifically the Parcel Reconfiguration, Grange Road Connector, and Connector Roadways) would result in the following changes to the maximum potential oak impacts in comparison to the Original Project:

- A decrease of 446.4 acres of blue oak woodland maximum impacts
- A decrease of 173.4 acres of blue oak savanna maximum impacts
- A decrease of 131.0 acres of interior live oak woodland maximum impacts
- A decrease of 12.1 acres of valley oak woodland maximum impacts

Although overall impacts to oaks would decrease, this would still constitute a potential conflict with Lake County Code § 30-21. The Oak Mitigation Plan described in **Mitigation Measure 3.4-16** has been revised to reflect the Project Modifications and is included as **Appendix J**. The methodology, performance standards, and other metrics of the Oak Mitigation Plan are unchanged. Revisions are limited to updates to the project description and updated mapping demonstrating locations of oak impacts and potential mitigation areas. **Mitigation Measure 3.4-16** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with conflict with local plans or policies as compared to the 2020 EIR.

IMPACT 3.4-6	**CONFLICT WITH THE PROVISIONS OF AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Significant	No Impact	No
Mitigation Measures	MM 3.4-16 (Phase I) MM 3.4-14, 3.4-16 (Future Phases)	None Required	No Modifications Necessary
Significance After Mitigation	Less than Significant	No Impact	Less than Significant

*Impact numbering retained from the 2020 EIR.

As analyzed in the 2020 EIR, conflicts with existing conservation plans may be considered significant if a project resulted in construction or use of land contrary to the overall goals of an existing conservation plan. This was identified as a potentially significant impact, and **Mitigation Measures 3.4-16** will reduce this impact to less-than-significant levels. Existing habitat plans that cover the Guenoc Valley Site include the 2008 OSPP and the 2008 Oak Tree Replacement Plan that were both developed as mitigation for the 2009 Water Rights EIR. As the Proposed Project introduces new areas of development that would impact open space and oak trees, there is the potential for either of these plans to be impacted by the Proposed Project, which would be a significant impact. Each of these plans is therefore discussed below.

Open Space Preservation Plan

During preparation of the 2020 EIR, the 2008 OSPP was revised to ensure that sufficient open space remained to satisfy mitigation of the 2009 Water Rights EIR. The updated OSPP as presented within Appendix OSPP of Volume III of the 2020 EIR identified sufficient open space to be set aside as the Open Space Combining District. This area is unchanged by the Project Modifications, as shown in **Figure 2-1**. Therefore, Appendix OSPP of the 2020 EIR does not require revisions, and the Modified Project remains consistent with the OSPP. The Project Modifications would not result in any new significant effects or a

substantial increase in the severity of previously identified significant impacts associated with conflict with the OSPP as compared to the 2020 EIR.

Oak Tree Replacement Plan

In addition to impacts to oaks and oak woodlands, the Proposed Project could result in conflicts with the 2008 Oak Tree Replacement Plan if it impacted oaks such that sufficient oak mitigation areas are not available to mitigate the 2009 Water Rights EIR and the Proposed Project. During preparation of the 2020 EIR, the 2008 Oak Tree Replacement Plan was revised to ensure that sufficient mitigation areas remained to satisfy mitigation of the 2009 Water Rights EIR in addition to the Original Project. A revised Oak Mitigation Plan was prepared pursuant to **Mitigation Measure 3.4-16** to review oak mitigation areas and confirm that the combined mitigation of the 2009 Water Rights EIR and the Proposed Project remain feasible. As discussed above, overall impacts to oaks would be reduced under the Project Modifications, and sufficient mitigation areas are available to satisfy combined mitigation of the 2009 Water Rights EIR and the Modified Project (**Appendix J**). **Mitigation Measure 3.4-16** would ensure compliance with the Oak Tree Replacement Plan by identifying oak woodland preservation areas necessary to satisfy the 2009 Water Rights EIR prior to construction of the Modified Project. Therefore, the Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with conflict with the 2008 Oak Tree Replacement Plan as compared to the 2020 EIR.

IMPACT 3.4-7	**CUMULATIVE IMPACTS TO BIOLOGICAL RESOURCES**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Significant	Less than Significant	No
Mitigation Measures	MM 3.4-1 through MM 3.4-13; 3.4-15 through 3.4-21 (Phase I) MM 3.4-11 through MM 3.4-21 (Future Phases)	None Required	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As explained further in the 2020 EIR and **Section 4.13** of this PREIR, a significant cumulative impact to biological resources would occur if the Proposed Project, in addition to recent, ongoing, and foreseeable development, caused a cumulatively significant impact to biological resources. Planned cumulative projects in the region are described in **Table 4.13-1**, and while some changes have occurred to the cumulative projects since the 2020 EIR, the main projects in the region remain consistent (i.e., buildout of

the Hidden Valley Community, Valley Oaks Community, and the Guenoc Valley Water Rights Modification Project). All projects have the potential to impact biological resources during construction and operation, but compliance with Federal, State, and County land use and environmental regulations would reduce impacts. The 2020 EIR determined that significant cumulative impacts to biological resources would not occur with consideration of **Mitigation Measures 3.4-1** through **3.4-13**, and **3.4-15** through **3.4-21**. These same measures would ensure the Project Modifications would not result in new significant environmental effects or an increase in the severity of previously identified significant effects. No additional mitigation for cumulative development would be required.

4.4.5 Mitigation Measures

This PREIR has identified modifications to several biological resources mitigation measures to ensure the potential impacts of the Project Modifications are reduced to less-than-significant levels. Each mitigation measure with revisions is discussed below, and a presentation of changes in underline ~~strikeout~~ is provided in **Section 5**.

Mitigation Measure 3.4-2 outlines the worker environmental awareness training program and includes a table that identifies which species shall be included within training materials based upon which construction location personnel are assigned to. The phrase 'Grange Road Connector' has been added to this measure to clarify that the environmental training would apply to the totality of the Grange Road Connector, even that portion outside of the Guenoc Valley Site.

Similarly, **Mitigation Measure 3.4-8** requires preconstruction nesting bird surveys for work completed on the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Improvement Areas. The Grange Road Connector has been added to this measure to clarify that the preconstruction surveys would apply to the totality of the Grange Road Connector, even that portion outside of the Guenoc Valley Site.

Mitigation Measure 3.4-10 has also been revised as western pond turtle has been re-classified to northwestern pond turtle since publication of the 2020 EIR. Additionally, northwestern pond turtle was proposed for federal Threatened status on October 3, 2023 (88 FR Vol 190, 68370) with a rule under section 4(d) of the Endangered Species Act. Therefore, Mitigation Measure 3.4-10 has been revised to account for USFWS's jurisdiction over northwestern pond turtle and associated implications of listing under FESA.

Both **Mitigation Measures 3.4-15** and **3.4-18** relate to sensitive habitat mitigation. As serpentine rock outcrop has been recently described and classified as sensitive, it has been added to these mitigation measures. The mechanisms of mitigation remain unchanged.

No other changes to the mitigation measures are warranted as a result of the Project Modifications. A full list of the mitigation measures is included in the MMRP in **Section 5**.

4.5 CULTURAL RESOURCES

4.5.1 Introduction

The 2020 EIR, Volume II, Section 3.5.2 includes a detailed description of the environmental setting related to cultural resources on the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Areas that is not repeated in its entirety within this PREIR. **Section 4.5.2** of this PREIR includes a description

of the environmental setting that has changed since the 2020 EIR, including a discussion of the setting within the Modified APE areas. There have been no substantial changes to the cultural resources "Regulatory Setting" since preparation of the 2020 EIR. The full discussion of the environmental and regulatory settings is available in the 2020 EIR (**Appendix D**). **Section 4.5.3** of this PREIR describes methods of analysis and provides a discussion on whether Project Modifications would result in new significant effects or a substantial increase in the severity of previously identified effects. Mitigation for impacts to cultural resources is discussed in **Section 4.5.4**.

Since publication of the 2020 EIR, tribal cultural resources are analyzed separately, and therefore Impact 3.5-4 regarding tribal cultural resources (formerly contained within the Cultural Resources section of the 2020 EIR) has been moved to **Section 4.11** of this PREIR.

4.5.2 Environmental Setting

The same prehistoric, ethnographic, and historic settings that are discussed in the 2020 EIR with respect to the Guenoc Valley Site are applicable to the Modified APE, including the Grange Road Connector APE and the Connector Roadways. The prehistoric patterns applicable to the Modified APE are as follows:

- Post Pattern (11,000 B.C. to 8,000 B.C.);
- Borax Lake Pattern (8,000 B.C. to 6,500 B.C.);
- Early Berkeley Pattern (6,500 B.C. to 2,500 B.C.);
- Mendocino Pattern (3,000 B.C. to A.D. 500);
- Berkeley Pattern (1,200 B.C. to A.D. 800); and
- Augustine Pattern (post A.D. 500).

Please refer to the 2020 EIR, Volume II, Section 3.5.2 for a complete description of the prehistoric patterns that are applicable to the on- and off-site APE. The ethnographic setting for the Grange Road Connector and Connector Roadways remains the same as that described in the 2020 EIR. At the time of European settlement, the Project region was included in the territory controlled by the Lake Miwok, bounded by the territories of Patwin and Wappo. The Lake Miwok controlled the western and middle portions of the Guenoc Ranch, while the Patwin controlled the eastern part of the ranch (**Appendix D**). Similarly, the historic setting and description of Spanish occupation in the region remains the same as that described in the 2020 EIR (**Appendix D**).

4.5.3 Impacts

Methods of Analysis

Numerous cultural resources investigations have been conducted on at the Guenoc Valley Site since the 1950s, and Section 3.5.4 of the 2020 EIR includes detailed methodology of the numerous focused pedestrian surveys across the property. In 2000, over 6,847 acres were surveyed in support of a pending water rights application and vineyard development project (Origer and Schroder, 2000). Between 2018 and 2019, an additional approximately 4,800 acres were surveyed (Alshuth and Origer, 2018; Alshuth and Origer, 2019a; Alshuth and Origer, 2019b). Additional studies conducted in 2019 included a 200-foot buffer around the 2020 APE (AES, 2019). As a result of these studies, 42 cultural resources were identified in the record search on the Guenoc Valley Site, although only 40 could be relocated in the 2018 – 2019 surveys, and 14 new resources were identified (Alshuth and Origer, 2018; Alshuth and Origer, 2019a; Alshuth and Origer, 2019b). Of these resources, 37 are located within the 2020 APE as detailed in Table 3.5-1 of the 2020 EIR (**Appendix D**), and 18 resources are located within the 200-foot buffer around the

2020 APE (AES, 2019). As further described in the 2020 EIR, many of these resources are not eligible for inclusion on the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR).

Two Cultural Resources Investigations were prepared for the Project Modifications. These include an investigation focused on the Grange Road Connector APE that involved a record search request completed by the Northwest Information Center (NWIC) (NWIC File No.: 22-0980) followed by intensive pedestrian surveys (**Appendix K-1**). No resources have been recorded within the Guenoc Road Connector APE or a 0.25-mile radius surrounding the Guenoc Road Connector APE, as reported by the NWIC. Five previous archaeological surveys of the Grage Road Connector APE have been completed that include some or all of the Grange Road area, and a sixth survey has been completed within the 0.25-mile radius as shown in **Table 4.5-1**. Following the NWIC Record Search, field surveys were conducted of the Grange Road Connector APE by Montrose archeologists on March 20, April 19, and November 6, 2023. Two isolates, an historic bottle base and an obsidian biface, were observed in the off-site portion of the Grange Road Connector APE, but isolates by definition are not eligible for inclusion on the CRHR.

Table 4.5-1: Cultural Resources Studies Conducted in Vicinity of Grange Connector APE

Report No.	Author	Title	Date
S-012159	None listed	Cultural Resource Assessment of Site 2, Hidden Valley Lake Wastewater Treatment System, Lake County, California	1990
S-020737	Patti J. Johnson and Ann S. Peak	Survey of Cultural Resources, Guenoc Ranch, Lake and Napa Counties, California	1974
S-023131	Thomas Origer and Sue-Ann Schroder	A Cultural Resources Survey of Selected Portions of Guenoc Ranch, Lake and Napa Counties, California	2000
S-047190	J. Charles Whatford	Valley Fire Cultural Resources Narrative	2015
S-047663	Michael Darcangelo and Jennifer Thomas	Cultural Resources Monitoring for the Valley Fire in Lake, Napa, and Sonoma Counties, California	2016
S-049335	None listed	Cultural Resources Inventory Report, Emergency Hazardous Tree Removal Project, Lake County, California, FEMA-4240-DR-CA PW 33-A	2017

Source: **Appendix K**

A second investigation by Origer & Associates focused on other on-site areas of the Modified APE not previously subject to pedestrian surveys (approximately 110 acres) that were analyzed at a programmatic level in the 2020 EIR (**Appendix K-2**). A NWIC Record Search (NWICE File No.: 23-1320) was conducted by Origer & Associates to support this investigation, which revealed 14 additional surveys within their area of study and 9 within a 0.25-mile radius, including several of the same studies listed in **Table 4.5-1**. The NWIC record search identified 53 cultural resources within a 0.25-mile radius of the Modified APE. Following the NWIC Record Search, field surveys were conducted the week of April 2, 2024 of the remaining Modified APE by archeologists from Tom Origer & Associates accompanied by Tribal representatives from the Middletown Rancheria and Mishewal-Wappo Tribe of Alexander Valley. These surveys were conducted to determine if resources that were previously identified near the edges of the Modified APE will be impacted by the shifted layout, or if resources are present in areas not previously surveyed (e.g., Connector Roadways).As a result of these surveys, five isolated prehistoric specimens and two new archaeological sites were located. The isolates, which are not eligible for CRHR inclusion, include two obsidian flakes, one obsidian biface fragment, a chert flake, and an obsidian chunk. The two additional archeological sites are the Creek Overlook Site and the Sunshine Midden Site. The Creek Overlook Site is

approximately 80 meters by 50 meters, centered outside but partially overlapping the Modified APE, and contains midden soils and obsidian, chert, and basalt flakes. The Sunshine Midden Site is approximately 70 meters by 75 meters, mostly outside of the Modified APE, and contains midden soils, possible house pits, obsidian biface, Napa Valley obsidian, basalt flakes, and a possible basalt chopper and groundstone fragments (**Appendix K-2**).

Impacts

This analysis of the Project Modifications follows the same methodology outlined in Section 3.5.4 of the 2020 EIR, focusing on whether the Project Modifications would have new or substantially more severe significant effects than those described in the 2020 EIR. Refer to Section 3.5.4 of the 2020 EIR (**Appendix D**) for a complete description of the methodology and significance criteria relating to cultural resources impacts.

IMPACT 3.5-1	**CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE AS DEFINED IN § 15064.5**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	No Impact	Potentially Significant
Mitigation Measures	MM 3.5-1	None Required	Modifications to MM 3.5-1
Significance After Mitigation	Less than Significant	N/A	Less than Significant

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, historic-era sites within the Guenoc Valley Site include mine adits, corrals associated with the Ink Ranch, cabins, foundations, and debris scatters, and the Langtry house complex, as well as historic foundations or rock walls at P-17-399, -406, -412, -425, -1996, -2043, and -2952 and the Bohn Hills historic debris scatter. The 2020 EIR determined that the Original Project has the potential to impact historic resources, which is a potentially significant impact. **Mitigation Measure 3.5-1** requires that the sites be avoided during construction to the extent feasible and, in the event that the sites cannot be avoided, the measure requires further archaeological investigation including additional research, recordation, and/or analysis be conducted to assess NRHP and CRHR eligibility. With inclusion of this mitigation measure, the 2020 EIR concluded that this impact would be reduced to less-than-significant levels. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and

Grange Road Connector, would have the potential to impact these same previously identified resources but to-date no new historic-era resources have been identified or would be impacted that would increase the severity of this impact (Appendix CUL in the 2020 EIR and **Appendix K**). At least one resource (P17-000412) is no longer near the APE after removal of the more remote parcels. **Mitigation Measure 3.5-1** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant environmental effects or an increase in the severity of previously identified significant effects associated with historical resources as compared to the 2020 EIR.

IMPACT 3.5-2	**CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE PURSUANT TO § 15064.5**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.5-1, 3.5-2 (Phase I) MM 3.5-1, 3.5-2, 3.5-3 (Future Phases)	MM 3.5-2	Modifications to MM 3.5-1 and MM 3.5-2 (Phase I) MM 3.5-1, 3.5-2, 3.5-3 (Future Phases)
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

Numerous prehistoric resources have been located on the Guenoc Valley Site (refer to Table 3.5-1 of the 2020 EIR), including prehistoric sites that include lithic scatters, occupation sites, rock walls, bedrock mortars, and midden sites. The 2020 EIR determined that development of the Original Project could have a significant impact on these resources. **Mitigation Measure 3.5-1** requires that the sites be avoided during construction to the extent feasible and, in the event that the sites cannot be avoided, the measure requires further archaeological investigation including additional research, recordation, and/or archeological testing be conducted to assess NRHP and CRHR eligibility. **Mitigation Measure 3.5-2** includes worker awareness training, development of an Unanticipated Discoveries Plan in the event that unknown resources are identified during earthmoving activities, construction monitoring to ensure protection of known resources, and coordination with the Middletown Rancheria on development of a Treatment Plan. The 2020 EIR concluded that, together, these mitigation measures would reduce the potential impact of Phase 1 to less than significant. **Mitigation Measure 3.5-3** requires that appropriate cultural resources studies are conducted prior to initiation of future phases of the Project, which in combination with **Mitigation Measures 3.5-1** and **3.5-2**, was determined to reduce impacts of the future phases to less than significant.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would have the potential to impact these same previously identified resources and the two newly identified resources that partially overlap with the fringes of residential parcels within the Modified APE (Appendix CUL in the 2020 EIR and **Appendix K**). A small portion of each of these resources extends into the edges of two residential estate parcels near the Denniston Golf Estates community. As discussed in **Section 2.2**, the exact building footprint for these residential estates has not been designed and therefore it is feasible to site the building development footprints in these areas to avoid the resources in compliance with **Mitigation Measure 3.5-1**. Direct impacts to these resources can be avoided. **Mitigation Measure 3.5-1** has been updated to specifically identify that these resources will be avoided by the project design. Furthermore, several cultural resources will no longer be near or within the Modified APE after removal of the more remote parcels and roads leading to them, as shown in **Table 4.5-2**. Therefore, the Project Modifications will have a lesser impact to prehistoric or archeological resources as compared to the Project analyzed in the 2020 EIR. **Mitigation Measures 3.5-1** through **3.5-3** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant environmental effects or an increase in the severity of previously identified significant effects associated with archaeological resources as compared to the 2020 EIR.

Table 4.5-2: Cultural Resources Avoided by Project Modifications

Primary No.	Trinomial No.	Description	Date Recorded	Location
P-17-000256	CA-LAK-235	Prehistoric occupation site	1957, 1974	Road
P-17-000414	CA-LAK-402	Prehistoric occupation site	1974, 2018	Road, camping area
P-17-000419	CA-LAK-407	Prehistoric occupation site	1974, 2000, 2018	Road, barn
P-17-000424	CA-LAK-412	Prehistoric occupation site	1974, 2000, 2018	Road, barn
P-17-002023	CA-LAK-1924H	Cabin foundation, rock wall, debris	2000	Road
P-17-002024	CA-LAK-1925	Lithic scatter	1997, 2018	Road
P-17-002956	-	Rock wall	2018	Camping area
P-17-002957	-	Rock wall	2018	Residential parcel

Sources: Table 3.5-1 of 2020 EIR (**Appendix D**), AES, 2019, **Appendix K-1**, and **Appendix K-2**

IMPACT 3.5-3	DISTURB ANY HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.5-1; MM 3.5-4	MM 3.5-4	Modifications to MM 3.5-1; No Modifications for MM 3.5-4
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, Native American remains have been identified at P-17-000256 and there is the potential for human remains to be uncovered at other prehistoric village or occupation sites, including: P-17-000116, -000252, -000256, -000405, -000411, -000414, -000416, -000420, -002019, and -002121 (**Appendix D**). In addition, construction and earthmoving activities could also result in damage to as-yet-unknown Native American grave sites. The 2020 EIR concluded that this would be a significant impact. **Mitigation Measure 3.5-1** requires that these specific locations should be avoided through Project planning and buffer zones established around each location that contains known or suspected human remains to assist in avoidance. **Mitigation Measure 3.5-4** requires that all work cease within 100 feet of a find and outlines the procedures established in the California Health and Safety Code for human remains. Together, these mitigation measures reduce this impact to less-than-significant levels.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would have the potential to impact these same previously identified resources but to-date, no new resources would be impacted that would increase the severity of this impact (Appendix CUL in the 2020 EIR and **Appendix K**). As discussed above, two additional resources have been identified that partially overlap with residential estate parcels in the Modified APE; however these resources can be avoided by the project design and existing mitigation measures are sufficient to avoid impacts. Furthermore, as shown in **Table 4.5-2** above, the Project Modifications have removed the development components in the vicinity of P-17-00256 and P-17-000414 that have a known Native American remains or an elevated potential for remains to occur. Therefore, the Project Modifications may have a slightly lesser impact to human remains as compared to the Project analyzed in the 2020 EIR. **Mitigation Measures 3.5-1** and **3.5-4** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons

stated in the 2020 EIR. The Project Modifications would not result in any new significant environmental effects or an increase in the severity of previously identified significant effects associated with disturbance of human remains as compared to the 2020 EIR.

IMPACT 3.5-5	CUMULATIVE IMPACTS TO CULTURAL RESOURCES		
	2020 EIR Conclusions		Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.5-1, 3.5-2; MM 3.5-4 (Phase 1) MM 3.5-1, 3.5-2, 3.5-3, 3.5-4 (Future Phases)	MM 3.5-2; MM 3.5-4	Modifications to MM 3.5-1 and 3.5-2; No modifications to 3.5-3 and 3.5-4
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As explained further in the 2020 EIR and **Section 4.13** of this PREIR, the context for evaluation of potential cumulative impacts on cultural resources and tribal cultural resources (TCRs) is based on development in the region, including projected build out under the Middletown Area Plan and approved or potential projects in the County. Cumulative projects in the southeastern Lake County region described in **Section 4.13** could have a potentially significant cumulative effect to cultural resources and TCRs. There are numerous federal, State, and local laws, regulations, and ordinances that seek to protect cultural resources, in addition to policies that require resource inventory and consultation with the Middletown Rancheria. The Original Project's contribution to significant cumulative impacts related to the area's cultural resources and TCRs were found to be less than significant with mitigation, and the Project Modifications would not result in new significant environmental effects or an increase in the severity of previously identified significant effects. No additional mitigation for cumulative development would be required.

4.5.4 Mitigation Measures

This PREIR has identified modifications to two cultural resources mitigation measure to ensure the potential impacts of the Project Modifications are reduced to less-than-significant levels. The mitigation measures with revisions are discussed below, and a presentation of changes in underline ~~strikeout~~ is provided in **Section 5**.

Mitigation Measure 3.5-1 has been updated to add specific reference to the Creek Overlook Site and the Sunshine Midden Site in the list of resources that shall be avoided. Note that although some resources listed in **Mitigation Measure 3.5-1** are no longer within the Modified APE, no resources have been deleted

to provide a more conservative and enforceable measure for protection of these resources in future phases.

Mitigation Measure 3.5-2 has been updated to move the Tribal Cultural Adviser and Unanticipated Discoveries Plan to the new Tribal Cultural Resources (**Section 4.11**) analysis. Provisions to halt work in the event of an inadvertent discovery have been reiterated in this measure.

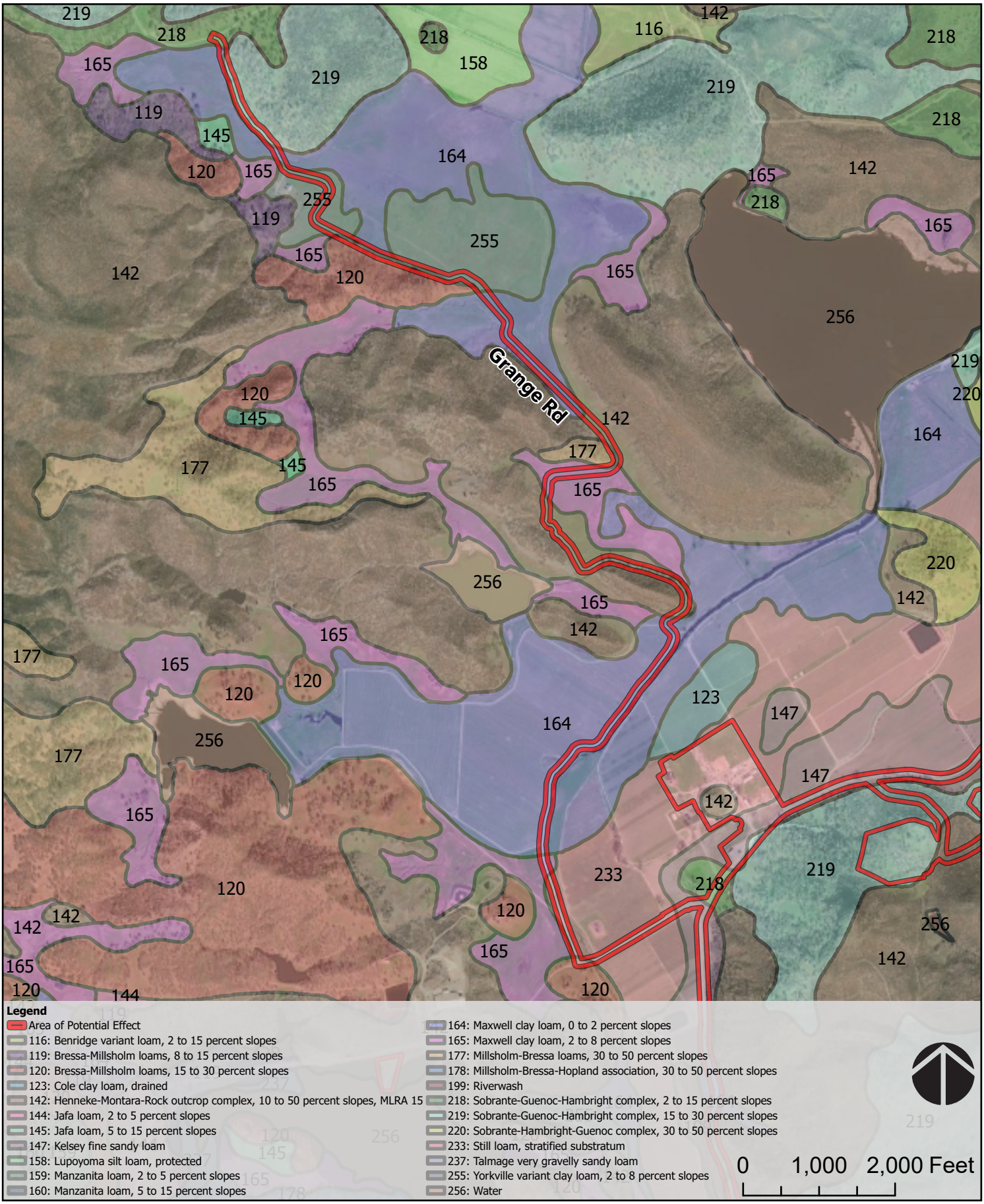
4.6 GEOLOGY AND SOILS

4.6.1 Introduction

The 2020 EIR, Volume II, Section 3.6.2 includes a detailed description of the environmental setting related to geology and soils on the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Areas that is not repeated in its entirety within this PREIR. **Section 4.6.2** of this PREIR includes a description of the environmental setting that has changed since the 2020 EIR. There have been no substantial changes to the geology and soils "Regulatory Setting" since preparation of the 2020 EIR. The full discussion of the environmental and regulatory settings is available in the 2020 EIR (**Appendix D**). **Section 4.6.3** of this PREIR provides a discussion on whether Project Modifications would result in new significant effects or a substantial increase in the severity of previously identified effects, while mitigation for impacts to geology and soil resources is discussed in **Section 4.6.4**.

4.6.2 Environmental Setting

The Grange Road Connector APE is approximately 3.8 miles, of which 1.6 miles are located on the off-site Comstock Ranch property and the remaining 2.2 miles are located on the Guenoc Valley Site. The topography, geologic conditions, soils, and seismicity of the on-site portion are discussed in the 2020 EIR. The off-site portion of the Grange Road Connector APE is underlain by Mesozoic aged plutonic rocks and Quaternary aged rocks of the Sonoma Volcanics, similar to the rest of the Guenoc Valley Site (California Department of Conservation [CDC], 2010). The same regional faults and seismic conditions that are discussed in the 2020 EIR with respect to the Guenoc Valley Site are applicable to the off-site portion of the Grange Road Connector APE and there are no faults or fault zones in the immediate vicinity (refer to Figure 3.6-1 in the 2020 EIR). The potential for strong seismic ground shaking is similar for the on- and off-site portion of the Grange Road Connector APE. The topography of the off-site portion is gently sloping with elevations ranging from 950 to 1,000 feet above mean sea level (amsl). Soils underlying the Grange Road Connector have varying characteristics. The Natural Resources Conservation Service (NRCS) Web Soil Survey Application provides information about soil characteristics on a broad scale. Web Soil Survey maps out soil types by "map unit." Soils mapped on the off-site portion of the Grange Road Connector APE are shown in **Table 4.6-1** and **Figure 4-9**. The dominant soil texture is loam, which typically consist of 20-25% clay, 35-40% silt, and 40-45% sand. NRCS also rates erosion hazards based on slope, soil erodibility, and index of rainfall erosivity. The erosion potential of the off-site Grange Road Connector ranges from slight to moderate. The risk of soil corrosion refers to soil-induced electrochemical or chemical action that may corrode or weaken concrete or steel. The rate of corrosion of concrete is largely based on the sulfate and sodium content, texture, moisture content, and acidity of the soil. The rate of corrosion of uncoated steel is related to factors such as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. About half of the area has a moderate to high risk of corroding steel while very little of the soils have a risk of concrete corrosion (NRCS, 2023). Physical soil constraints include shrink-swell potential, slope, and depth to bedrock. Soils with shrink-swell potential are also known as expansive soils. These soils expand when wet and shrink when dry, potentially causing damage to building structures. Shrink-



Source: Lake County Community Development and General Plan; Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community, Pictometry International, The County of Napa, Maxar

FIGURE 4-9

SOILS WITHIN GRANGE ROAD CONNECTOR

swell potential is often measured as linear extensibility, which is the percent volume change between an unconfined clod in a moist and a dry state. The linear extensibility ranges from low (1.5 percent) to moderate (7.5 percent).

Table 4.6-1: Grange Road Connector Soil Map Units

Map Unit Symbol	Map Unit Name	Erosion Hazard Per Lake County Municipal Code Chapter 30
119	Bressa-Millsholm loams, 8 to 15 percent slopes	Moderate
120	Bressa-Millsholm loams, 15 to 30 percent slopes	Severe
142	Henneke-Montara-Rock outcrop complex, 10 to 50 percent slopes, MLRA 15	Severe
145	Jafa loam, 5 to 15 percent slopes	Moderate
164	Maxwell clay loam, 0 to 2 percent slopes	Slight
165	Maxwell clay loam, 2 to 8 percent slopes	Moderate
177	Millsholm-Bressa loams, 30 to 50 percent slopes	Severe
218	Sobrante-Guenoc-Hambright complex, 2 to 15 percent slopes	Moderate
219	Sobrante-Guenoc-Hambright complex, 15 to 30 percent slopes	Moderate
255	Yorkville variant clay loam, 2 to 8 percent slopes	Moderate

Source: NRCS, 2023 and Lake County Municipal Code Chapter 30 (Ord. No. 2830, § 1, 7-17-2007)

A search of the University of California Museum of Paleontology database for Lake County (University of California Museum of Paleontology [UCMP], 2023) indicates that at least 462 fossil specimens have been recorded in Lake County. These specimens include bivalves and gastropods, as well as fossil horse, raccoon, and deer. Many of the finds have come from the McLeod Creek area north of Clear Lake, Herndon Creek to the southeast of Clear Lake, and from Little Indian Valley to the east of Clear Lake. None of the specimen locations described are near the Grange Road Connector or Guenoc Valley Site.

In addition to the Grange Road Connector APE, the Project Modifications include 4.8 miles of 'Connector Roadways' within the Guenoc Valley Site to ensure there are no dead-end or non-looped roads greater than one mile. The APE for the new Connector Roadways was sited within the APE previously analyzed in the 2020 EIR to the maximum extent feasible, although some stretches of roadway are outside of the APE analyzed in the 2020 EIR. The 2020 EIR identifies and depicts the soils mapped across the entire 16,000-acre Guenoc Valley Site, including those soils that underlay the Connector Roadways APE. Refer to Table 3.6-2 and Figure 3.6-2 within the 2020 EIR for a complete description of these soils (**Appendix D**).

4.6.3 Impacts

The geological and soil impacts of the Original Project were determined by analyzing changes to the existing conditions that would occur as a result of the proposed land uses within the area. This analysis of the Project Modifications follows the same methodology outlined in Section 3.6.4 of the 2020 EIR, focusing on whether the Project Modifications would result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects than those described in the 2020 EIR. Refer to Section 3.6.4 of the 2020 EIR (**Appendix D**) for a complete description of the methodology and significance criteria relating to geology and soil impacts.

IMPACT 3.6-1	DIRECTLY OR INDIRECTLY CAUSE POTENTIAL SUBSTANTIAL RISK OF LOSS, INJURY, OR DEATH DUE TO SEISMIC RELATED HAZARDS		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant (Workforce Housing) and Less than Significant (Infrastructure)	No
Mitigation Measures	MM 3.6-1: Final Design-Level Geotechnical Report(s)	MM 3.6-1: Final Design-Level Geotechnical Report(s)	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As analyzed in the 2020 EIR, development of the Proposed Project would occur in an area that has the potential to experience strong seismic shaking, and the potential for liquefaction or seismically-induced landslides as a result of ground shaking. **Mitigation Measure 3.6-1** will ensure that a design-level geotechnical report is prepared and recommendations are incorporated into any Project plans. With inclusion of this mitigation measure, as well as compliance with the California Building Code, County General Plan Policy HS-2.11, and the County's building permit process, this impact would be less than significant. The Project Modifications would not change the number of proposed residential lots or the number of people who may be exposed to ground shaking as a result of the Project; the relocation of some of the proposed residential parcels would still be subject to the same mitigation and regulatory requirements that reduce potential impacts. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would not be located in areas that are more prone to seismic shaking, liquefaction or seismically-induced landslides as a result of ground shaking (NRCS, 2023). **Mitigation Measure 3.6-1** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with seismic-related hazards as compared to the 2020 EIR.

IMPACT 3.6-2	SUBSTANTIAL SOIL EROSION OR LOSS OF TOPSOIL		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Less than Significant	Less than Significant	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

Development of the Proposed Project has the potential to result in soil erosion or loss of topsoil through grading activities, vegetation removal, and other construction activities. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications would add the Grange Road Connector and Connector Roadways to the area that will be graded and disturbed, however, the overall grading area associated with the Modified Project will be reduced as a result of the Parcel Reconfiguration, including elimination of the camping area and roadways and utilities to relatively remote parcels. The Modified Project would still be required to obtain coverage under the NPDES Construction General Permit, which includes implementation of a SWPPP during construction activities. The Construction General Permit conditions require that the SWPPP include adequate control measures to prevent erosion during construction and operation to reduce the discharge of sediment and other pollutants to surface waters. Construction activities would be required to be routinely inspected by a Qualified SWPPP Practitioner (QSP). Additionally, the Lake County Grading Ordinance includes measures to reduce erosion such as diverting runoff from steep, bare slopes, and minimizing the amount of soil exposed at any one time, and no winter grading can occur on soils with an erosion hazard rating of 'severe'. The Modified Project will obtain a grading permit from the County prior starting any earthwork. The Project Modifications would result in an overall reduction in grading, and therefore will not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with soil erosion and loss of topsoil as compared to the 2020 EIR.

IMPACT 3.6-3	DEVELOPMENT ON EXPANSIVE SOILS OR ON UNSTABLE SOILS		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant (Workforce Housing) and Less than Significant (Infrastructure)	No
Mitigation Measures	MM 3.6-1: Final Design-Level Geotechnical Report(s)	MM 3.6-1: Final Design-Level Geotechnical Report(s)	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

Development of the Proposed Project would occur in an area that has soils ranging from low to moderate shrink-swell capacity, which is an indicator of expansive soils. **Mitigation Measure 3.6-1** will ensure that a design-level geotechnical report is prepared and recommendations are incorporated into any Project plans. With inclusion of this mitigation measure, as well as compliance with the California Building Code, County General Plan Policy HS-2.11, and the County's building permit process, this impact would be less than significant.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would not be located on any new or unique soils types that differ from those within the original APE. **Mitigation Measure 3.6-1** would continue to apply and would reduce impacts to less than significant. The Project Modifications would not result in any new or substantially more severe significant impacts associated with expansive or unstable soils as compared to the 2020 EIR.

IMPACT 3.6-4	HAVE SOILS INADEQUATE TO SUPPORT SEPTIC OR ALTERNATIVE WASTEWATER SYSTEMS		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Less than Significant	No Impact	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

The proposed wastewater infrastructure plan is described in Appendix WW of the 2020 EIR. Three different types of residential wastewater systems were analyzed in the 2020 EIR (see Appendix WW) that will be chosen on an individual basis based on site considerations, including soil suitability. While the majority of the proposed development would be served by sewer collection, wastewater treatment and reuse systems, some development areas, including the more remote residential estates, may utilize septic systems. Each septic system must comply with the Sanitation Permit process through Lake County's Environmental Health Department. Adherence to these regulatory requirements would ensure a less-than-significant impact.

With one exception, the Project Modifications, including the Grange Road Connector, Collector Roadways, GHG Reduction Measures, Updated WPP, and DMP, do not involve the production of wastewater and would therefore have no new or substantially more severe significant impacts relating to soils that cannot support wastewater systems. However, the Parcel Reconfiguration would result in the removal of larger and more remote lots which cannot be readily served by the centralized wastewater collection and treatment systems, and the relocation of those lots to centralized areas that will be served by the proposed wastewater treatment plants. As a result, the Parcel Reconfiguration would likely reduce the number of on-site septic systems by increasing the density of residential units within the various communities, making it more feasible to connect these units to the proposed on-site wastewater treatment system. The Project Modifications would not result in any new significant environmental effects or an increase in the severity of previously identified significant effects associated with soils that cannot support wastewater systems as compared to the 2020 EIR.

IMPACT 3.6-5	DIRECTLY OR INDIRECTLY DESTROY A UNIQUE PALEONTOLOGICAL RESOURCE OR SITE OR UNIQUE GEOLOGIC FEATURE		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.6-2: Worker Training, Cease Work, Consult with Qualified Paleontologist	MM 3.6-2: Worker Training, Cease Work, Consult with Qualified Paleontologist	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

While no specific unique paleontological or geological resources have been identified on the Guenoc Valley Site, paleontological specimens may exist in areas with sedimentary or metamorphic deposits, and therefore the Proposed Project could result in a significant impact to paleontological resources. **Mitigation Measure 3.6-2** requires that a qualified paleontologist provide worker awareness training and if a resource is identified, work shall cease in the area until a qualified paleontologist can assess the discovery. With the implementation of this mitigation measure, impacts would be reduced to less-than-significant levels. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would not be located on any areas containing unique paleontological or geological resources. A large portion of the off-site Grange Road Connector alignment is underlain by Sonoma Volcanics, which are not likely to contain fossil resources. However, there is the possibility that unknown resources could be exposed, and **Mitigation Measure 3.6-2** would continue to apply to the Project Modifications and would reduce impacts to less than significant. The Project Modifications would not result in any new significant environmental effects or an increase in the severity of previously identified significant effects associated with paleontological or geological resources as compared to the 2020 EIR.

IMPACT 3.6-6	CUMULATIVE GEOLOGY AND SOILS IMPACTS		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.6-1 and MM 3.6-2	MM 3.6-1 and MM 3.6-2	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As explained further in the 2020 EIR and **Section 4.13** of this PREIR, the context for evaluation of potential cumulative impacts on geology, soils, and seismicity is based on development in the region, including projected build out under the Middletown Area Plan and approved or potential projects in the County. However, the geologic analysis of cumulative impacts is generally site-specific, rather than cumulative in nature. For example, seismic events may damage or destroy a building, but the construction of a development project on one site will not cause any adjacent parcels to become more susceptible to seismic events, nor can a project affect local geology in such a manner as to increase risks regionally. The Original Project's contribution to significant impacts related to the area's geology were found to be less than significant, and the Project Modifications would not result in new significant environmental effects or an increase in the severity of previously identified significant effects. No additional mitigation for cumulative development would be required.

4.6.4 Mitigation Measures

No changes to the mitigation measures are warranted as a result of the Project Modifications. A full list of the mitigation measures is included in the MMRP in **Section 5**.

4.7 GREENHOUSE GAS EMISSIONS

4.7.1 Introduction

Section 3.7.2 of the 2020 EIR includes complete environmental setting information related to GHG emissions and climate change that is not repeated in its entirety here. **Section 4.7.2** of this PREIR includes a description of the environmental setting that has changed since the 2020 EIR and **Section 4.7.3** describes any relevant regulations that are new or updated since preparation of the 2020 EIR. The full discussion of the environmental setting and regulatory setting are available in the 2020 EIR (**Appendix D**). **Section 4.7.4** of this PREIR describes methods of analysis and thresholds of significance, and provides a discussion on whether the Project Modifications would result in new significant effects or a substantial increase in the

severity of previously identified effects. Mitigation for impacts to GHG emissions is discussed in **Section 4.4.5**.

4.7.2 Environmental Setting

Existing Climate Setting

Since the publication of the 2020 EIR, the general trend of global climate change has continued. The primary focus of efforts to mitigate climate change is on lowering the concentration of GHGs in the atmosphere. Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) are the principal GHGs. When concentrations of these gases exceed historical concentrations in the atmosphere, the greenhouse effect is intensified. CO_2, CH_4, and N_2O occur naturally and are also generated through human activity. Anthropogenic emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing, natural gas leaks from pipelines and industrial processes and incomplete combustion associated with agricultural practices, landfills, energy providers and other industrial facilities.

In emissions inventories, GHG emissions are typically reported as metric tons (MT) of CO_2 equivalents (CO_2e). CO_2e is calculated as the product of the mass emitted of a given GHG and its specific global warming potential (GWP). While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in higher quantities and it accounts for the majority of GHG emissions in CO_2e, both from commercial developments and human activity in general.

GHG Emissions Estimates

The existing climate setting discussion of the 2020 EIR (Volume II, Section 3.7.2) is primarily based on data from 2017. More recent data is presented here to update the existing climate setting. In 2021, the United States emitted approximately 6.34 billion tons of CO_2e, a decrease from the estimated 6.46 billion tons of CO_2e emitted in 2017 as reported by the USEPA (USEPA, 2023b). Similar to GHG emissions presented in the 2020 EIR, of the five main sectors – residential and commercial, industrial, agriculture, transportation, and electricity generation – the transportation sector accounts for the highest portion of GHG emissions in 2021 (28.5 percent, down from 29 percent in 2017), followed closely by electricity production (25 percent, down from 28 percent in 2017) (USEPA, 2023b).

California emitted approximately 381.3 million MT of CO_2e in 2021, a substantial decrease compared to the 424 million MT of CO_2e emitted in 2017 (CARB, 2023). However, there have been several major events that have caused shorter-term changes in emissions, including the COVID-19 pandemic and the 2020-2022 drought. Of particular note, the transportation sector showed the largest increase in emissions (7.4 percent) compared to 2020, likely due to passenger vehicles whose emissions rebounded after COVID-19 shelter-in-place orders were lifted. The overall transportation sector emissions in 2021 remained 10.2 percent below pre-pandemic (2019) levels. The electricity sector emissions also increased 4.8 percent between 2020 and 2021, likely due to a substantial decrease in hydropower generation during the then ongoing drought (CARB, 2023). Per capita GHG emissions in California have continued to drop and were 9.7 MT per person in 2021, a 30 percent decrease from the 2001 peak and a decrease of about 1.0 MT per person compared to 2017 (CARB, 2023).

4.7.3 Regulatory Setting

Federal

Inflation Reduction Act

The Inflation Reduction Act was signed into law by President Biden in August 2022. The bill includes specific investment in energy and climate reform and is projected to reduce GHG emissions within the U.S. by 40 percent as compared to 2005 levels by 2030. The bill allocates funds to boost renewable energy infrastructure (e.g., solar panels and wind turbines), includes tax credits for the purchase of electric vehicles, and includes measures that will make homes more energy efficient.

State

Assembly Bill 1279: California Climate Crisis Act

California Climate Crisis Act (AB 1279) requires the State to achieve net zero GHG emissions as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. The bill also requires California to reduce statewide anthropogenic GHG emissions by 85 percent below 1990 levels, and directs CARB to work with relevant state agencies to achieve these goals.

2022 Scoping Plan for Achieving Carbon Neutrality

On December 15, 2022, CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan), which builds on the 2017 Scoping Plan that was in effect at the time of the 2020 EIR, as well as the requirements set forth by AB 1279, which directs the State to become carbon neutral no later than 2045. To achieve this statutory objective, the 2022 Scoping Plan lays out how California can reduce GHG emissions by 85% below 1990 levels and achieve carbon neutrality by 2045. The 2022 Scoping Plan creates a sector-by-sector roadmap for California that deploys "a broad portfolio of existing and emerging fossil fuel alternatives and clean technologies, and align with statutes, Executive Orders, Board direction, and direction from the governor" (CARB, 2022b).

Senate Bill 1020: Clean Electricity

SB 1020 codifies into law a state policy that eligible renewable energy resources and zero-carbon resources supply: 1) 90% of all retail sales of electricity to California end-use customers by December 31, 2035, 95% by December 31, 2040, and 100% by December 31, 2045; and 2) 100% of electricity procured to serve all State agencies by December 31, 2035. To achieve these objectives, SB 1020 requires that CARB and the California Energy Commission (CEC) use unspecified programs authorized under existing statutes and employ measures to ensure that implementation of the policy does not cause increases in GHG emissions elsewhere, a concept also known as leakage.

Building Energy Standards

The **2022 Title 24 Standards** improve upon the 2019 standards for new construction, additions, and alterations to residential and nonresidential buildings. The CEC adopted the 2022 Title 24 Energy Code in August 2021 and the California Building Standards Commission approved incorporating the updated code into the California Building Standards Code (CALGreen) in December 2021. The 2022 Energy Code went into effect on January 1, 2023. The 2022 Energy Code focuses on four key areas in newly constructed homes and businesses: 1) Encouraging electric heat pump technology for space and water heating, which consumes less energy and produces fewer emissions than gas-powered units. 2) Establishing electric-

ready requirements for single-family homes to position owners to use cleaner electric heating, cooking, and electric vehicle (EV) charging options whenever they choose to adopt those technologies. 3) Expanding PV system and battery storage standards to make clean energy available on-site and complement the state's progress toward a 100% clean electricity grid. 4) Strengthening ventilation standards to improve indoor air quality.

Title 24, Part 11. In 2008, the California Building Standards Commission adopted the nation's first green building standards; the CALGreen Code (CALGreen; Part 11 of Title 24) establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CEC updates the Title 24 Energy Code every 3 years, and the 2022 Title 24 Energy Code was adopted in August 2021 and went into effect on January 1, 2023. When compared to the 2019 Title 24 Standards, the 2022 amendments include measures that will further reduce energy use in single family, multifamily, and nonresidential buildings, through the following strategies:

- New standards for electric heat pumps for space conditioning and water heating, as appropriate for the various climate zones in California,
- Require PV and battery storage systems for newly constructed multifamily and selected nonresidential buildings,
- Updated efficiency measures for lighting, building envelope, heating, ventilation, and air conditioning (HVAC), and
- Improvements to reduce the energy loads of certain equipment covered by (i.e., subject to the requirements of) the Energy Code that perform a commercial process that is not related to the occupant needs in the building (such as refrigeration equipment in refrigerated warehouses, or air conditioning for computer equipment in data processing centers).

Local

The LCAQMD maintains the air quality conditions in Lake County through a robust program of plans, regulations, enforcement, and technical innovations that are described in depth in Section 3.3.3 of the 2020 EIR (**Appendix D**). Because the LCAQMD has not adopted CEQA thresholds relating to GHGs, the BAAQMD thresholds were utilized for the 2020 EIR.

Bay Area Air Quality Management District 2022 CEQA Air Quality Guidelines

On April 20, 2022, the BAAQMD adopted updated *CEQA Air Quality Guidelines* that supersede the previous 2017 CEQA guidance relied upon in the 2020 EIR. The 2022 *CEQA Air Quality Guidelines* are designed to provide recommended procedures to evaluate potential air quality and climate impacts during the environmental review process for land use projects, consistent with CEQA requirements. The 2022 Guidelines contain instructions and examples for how a lead agency can evaluate, measure, and mitigate air quality and climate impacts generated from land use construction and operational activities. They focus on generated emissions of CAPs and precursors, odors, toxic air contaminants, and GHGs from local plans and projects. The Guidelines provide two methods for lead agencies to assess a project's potential impacts: screening criteria and thresholds of significance.

For GHG emissions, the 2022 BAAQMD CEQA Guidelines removes the quantitative (e.g., numerical or 'bright-line') thresholds and instead recommends evaluating the climate impacts of land use projects based on the extent to which a project's design elements would provide a "fair share" reduction in GHG emissions. The BAAQMD CEQA Guidelines provides two possible approaches to assess this. Under

Approach A, projects that incorporate certain minimum design elements are considered to have less-than-significant climate impacts. There are four minimum design elements outlined in Approach A of the BAAQMD CEQA Guidelines, which are summarized below.

- The project will not include natural gas appliances or natural gas plumbing.
- The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
- The project will achieve a reduction in project-generated vehicle miles traveled (VMT) 15% below the existing VMT per capita.
- The project will achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

Alternatively, under Approach B, the BAAQMD states that a project will have a less-than-significant impact relating to GHG emissions if it is consistent with a local GHG reduction strategy that meets CEQA Guidelines Section 15183.5(b) requirements.

4.7.4 Impacts

Method of Analysis

For the 2020 EIR, construction and operational GHG emissions were estimated using the CalEEMod, Version 2016.3.2 model. Details of the modeling methodology and assumptions are provided in Section 3.7.4 of the 2020 EIR and the model output files are included as Appendix AIR of the 2020 EIR (**Appendix D**). The 2020 EIR estimated the amount of GHG emissions that could occur during construction from on- and off-road vehicles, stationary equipment such as air compressors and generators, as well as other sources including transportation, electricity use, natural gas use, and solid waste disposal. The calculation of the one-time loss of sequestered carbon was calculated using CalEEMod default values and methodology. Construction was estimated to occur in phases: Phase 1A, consisting of the primary resort facilities as well as supporting infrastructure such as roads, utilities, and support services, and on and off-site workforce housing was modeled to occur between April 2020 and December 2023; Phases 1B and 1C were assumed to occur between December 2023 and November 2030, and would include the buildout of residential lots based on market conditions. Construction of future phases of the Proposed Project was assumed to occur after the completion of Phase 1, and for modeling purposes, was assumed to occur between November 2030 and December 2040.

Operational GHG emissions from build-out of the Original Project were estimated using CalEEMod and included direct mobile sources, including residential and commercial vehicle trips, as well as indirect GHG emissions sources from electricity use, solid waste disposal, and water and wastewater systems. Operational GHG emissions for Phase 1 of the Original Project were modeled for operational year 2022, as well as year 2030 for comparison with full buildout of future phases of the Proposed Project. Although the future phases of the Proposed Project would be built out in multiple phases between 2030 and 2040 (or after), the modeling conservatively assumes an operational year of 2030 due to the consideration that operational emission factors improve over time and some components of the future phases of the Proposed Project may become operational before the year 2040.

Similar to the analysis of air quality impacts provided in **Section 4.3.4** of this PREIR, the estimated GHG emissions presented in the 2020 EIR are likely overstated as they do not consider the various new GHG Reduction Measures incorporated into the Modified Project, described more fully in **Section 2.2.1**.

Further, the Project Modifications result in a Development Area that is 1,202 acres, approximately 213 acres less than the Original Project. As a result, the number of hours that equipment is required to prepare and grade the site would decrease because there are 213 fewer acres requiring site preparation and grading. The operational emissions are estimated from the amount of commercial space, number of homes and hotel units, and the expected vehicle trips associated with these land uses. As discussed further in **Section 4.10** below, the overall amount of development proposed is the same or reduced, and the number of operational trips associated with the Modified Project is unchanged as a result of the Project Modifications.

Another reason the estimated GHG emissions presented in the 2020 EIR are likely overstated is because, as stated above, construction was assumed to begin in 2020. Because construction and operation of the Modified Project will happen later, emissions would be lower than previously estimated because newer motor vehicles and construction equipment must meet more stringent emission standards. Within CalEEMod, later years of construction and operation assumes a fleet mix of more recent vehicles and equipment with lower emission rates. As a result, construction and operation emissions are expected to be lower than estimated in the 2020 EIR because they will occur at a later date than what was modeled.

The Modified Project has approximately 213 fewer acres of development impact area and fewer miles of roads, and construction and operation will occur at a later date than what was modeled in the 2020 EIR. Therefore, the reliance upon the emissions modeling conducted for the 2020 EIR (Appendix AIR) results in a more conservative assessment of the emissions resulting from Modified Project. This PREIR qualitatively assesses the potential for GHG impacts based on the modeling provided in Appendix AIR of the 2020 EIR (**Appendix D**). This analysis addresses whether the Project Modifications would have new or substantially more severe significant effects than those described in the 2020 EIR. Refer to Section 3.7.4 of the 2020 EIR (**Appendix D**) for a complete description of the methodology relating to GHG impacts.

Thresholds of Significance

As stated in the 2020 EIR, criteria for determining the significance of impacts due to GHG emissions are based on Appendix G of the CEQA Guidelines and relevant agency thresholds. Impacts due to GHG emissions would be considered significant if the Proposed Project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The LCAQMD has not adopted CEQA significance thresholds for impacts relating to GHG emissions. Similar to the 2020 EIR, because the LCAQMD does not have standards for thresholds of significance for GHGs for project-level analyses, the BAAQMD thresholds were reviewed to determine if mitigation should be implemented. In 2022, the BAAQMD updated its CEQA thresholds and removed the following quantitative thresholds previously considered in the 2020 EIR:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy; or
- 1,100 MT of CO_2e per year; or
- 4.6 MT of CO_2e per service population (employees plus residents) per year (for 2020) or
- 2.6 MT CO_2e per service population (for 2030).

Now, per the 2022 BAAQMD CEQA Air Quality Guidelines, a project's GHG emissions would be cumulatively considerable if it did not contribute its "fair share" towards minimizing GHG emissions. "If a project would contribute its "fair share" of what is needed to achieve the State's long-term GHG reduction goals, then the lead agency can find that the project is adequately contributing to solving the problem of global climate change and that project's impact is not significant." BAAQMD further determined the necessary design elements required for new land use projects to incorporate that will achieve carbon neutrality by 2045:

1. Buildings:
    a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
    b. The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

2. Transportation:
    a. The project will achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target that reflects the recommendations provided in the Governor's Office of Planning and Research's *Technical Advisory: Evaluating Transportation Impacts in CEQA*:
        i. Residential projects: 15 percent below the existing VMT per capita
        ii. Office projects: 15 percent below the existing VMT per employee
        iii. Retail projects: no net increase in existing VMT
    b. The project will achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

Alternatively, projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Impacts

IMPACT 3.7-1	GENERATE GREENHOUSE GAS EMISSIONS EITHER DIRECTLY OR INDIRECTLY, THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.7-1; MM 3.7-2; MM 3.4-16	MM 3.7-1; MM 3.7-2; MM 3.4-16	Modifications to MM 3.7-1; all other mitigation measures applicable as originally written
Significance After Mitigation	Significant and Unavoidable	Significant and Unavoidable	No (Impact remains Significant and Unavoidable)

*Impact numbering retained from the 2020 EIR.

The 2020 EIR analyzed the potential GHG emissions from the following Project-related activities:

- Construction Emissions;
- Land Use Change and loss of Carbon Sequestration; and
- Operational Activities.

Construction of the Proposed Project would emit GHGs through fossil fuel combustion by vehicles and equipment. Because the BAAQMD adopted significance threshold at the time was 1,100 MT CO_2e for operational activities but no construction threshold was adopted, the 2020 EIR amortized construction emissions over 30 years and added them to operational emissions. The calculation of the one-time loss of sequestered carbon is the product of the converted acreage value and the carbon content value for each land use type (vegetation community). The 2020 EIR notes that the loss of carbon sequestration capacity could contribute to global change, but the loss of carbon sequestration capacity does not represent Project-generated GHG emissions. As discussed above, operational emissions were calculated in the 2020 EIR through the CalEEMod for both the unmitigated Project and the mitigated Project that included **Mitigation Measure 3.7-1**. **Mitigation Measure 3.7-1** requires a host of emission reduction measures that can be grouped into the following categories: TDM measures, Project-wide measures, residential measures, resort/commercial measures, and purchase of GHG credits (14,865 MT CO_2e). The 2020 EIR conservatively did not quantify the reduction in GHG effects from the implementation of other required mitigation measures that may further reduce GHG emissions, such as **Mitigation Measure 3.4-16** to protect oak woodlands and partially offset the loss of carbon sequestration. While inclusion of **Mitigation Measure 3.7-1** was estimated to reduce GHG emissions by 7,189 MT CO_2e and 13,316 MT CO_2e for Phase

1 and All Phases, respectively, the estimated emissions of the Original Project were above the BAAQMD significance thresholds and this impact was identified as significant and unavoidable in the 2020 EIR.

Table 4.7-1 summarizes the analysis assumptions in the 2020 EIR emission estimates for the Original Project and provides a comparison with the Project Modifications and current regulatory framework.

Table 4.7-1: Original Project Compared to Project Modification and Current Conditions

Original Project	Comparison to Project Modifications or Current Conditions
State Regulations	
2016 Title 24 Energy Efficiency Standards	2022 Title 24 Energy Efficiency Standards have been adopted with more stringent requirements that would further reduce the potential for GHG emissions. The Modified Project must follow these updated regulations.
Green Building Code Standards	2022 Green Building Code Standards have been adopted with more stringent requirements that would further reduce the potential for GHG emissions. The Modified Project must follow these updated regulations.
CalRecycle Waste Diversion and Recycling Mandate (75%)	No Change
Project Design Features	
Phase 1 Development Area of 1,415 acres	Phase 1 Development Area of 1,202 acres. Reduction of 213 acres in development footprint would reduce construction activities and associated GHG emissions.
Renewable energy for residential and non-residential demand. Some sources of renewable energy, such as hydropower, have associated CO_2e emissions.	Project Modifications require on-site generation of solar power to meet 100% demand for residential and non-residential uses. Solar energy production does not emit CO_2e, resulting in a reduction in GHG emissions in comparison to the Original Project.
No woodburning or gas hearths in residential uses	No Change
Use of natural gas or propane in residential and commercial uses for cooktops, water heaters, and heating units	No natural gas infrastructure, including propane tanks or propane distribution pipelines will be allowed for residential and non-residential structures with the exception of restaurant cooktops and fire pits in outdoor patio areas of restaurants. Any existing natural gas lines within the site are to be capped and removed. This will result in a reduction in GHG emissions in comparison to the Original Project.
Recycling and reuse of wastewater	No Change
Providing workforce housing and shuttles to minimize VMT	No Change
Drought tolerant native vegetation in landscaping	No Change
Passive site design and planning measures to minimize HVAC	No Change

Original Project	Comparison to Project Modifications or Current Conditions
Site design and lot layout to minimize conversion of oak woodlands	No Change
Electric fleet for the resort commercial uses (no less than 75%)	No Change
Installation of 300 EV charging stations	No Change
Providing on-site refuse collection for recyclable, compostable, and standard waste	No Change
Site-wide lighting design to preserve nighttime dark skies minimizes use of outdoor lights, requires energy-efficient lamps and motion sensing light systems.	No Change

Project Modifications such as the Updated WPP, DMP, Parcel Reconfiguration, Grange Road Connector, and Connector Roadways would not increase the severity of GHG emissions, as the same number of employee and patron trips, waste generation, and water usage is anticipated, and the overall linear miles of roadways is reduced as a result of the Parcel Reconfiguration. With the increase in density of residential lots and removal of the remote lots, there will be slight decreases in the distances that residents travel to their homes and therefore a slight decrease in mobile emissions, but this difference is likely negligible. The Project Modifications involving GHG Reduction Measures would result in a decrease in GHG emissions compared to what was analyzed in the 2020 EIR. Specifically, the GHG Reduction Measures will ensure the capacity of the residential PV systems will be equal to or greater than the minimum projected needs of residential land uses, while also mandating Level 2 or higher EVSE for each residence, and eliminating natural gas/propane use for all residences and most non-residential uses, with the exception of restaurant cooktops and fire pits in the outdoor patio areas of restaurants. In the 2020 EIR, all commercial properties were proposed to be constructed "Solar Ready" pursuant to California Energy Code and would be connected to the same grid options that included the production of on-site renewable solar energy, however the GHG Reduction Measures now require on-site production of solar energy for all commercial uses. Additionally, while **Mitigation Measure 3.7-1** required the one-time purchase of 14,865 offset credits, the GHG Reduction Measures now require the annual purchase of 14,865 offset credits with performance standards prioritizing local credits and an independent, third-party expert to ensure compliance with the GHG emission reduction measures. Further, the Parcel Reconfiguration results in similar impacts to oak woodlands and forested areas (refer to PREIR **Section 4.4**), and therefore carbon sequestration impacts would not change as a result of the Project Modifications.

As discussed above, since the issuance of the 2020 EIR, the BAAQMD adopted new significance thresholds for the consideration of GHG impacts. **Table 4.7-2** provides a discussion of the consistency of the Modified Project with the recently adopted 2022 BAAQMD CEQA Air Quality Guidelines GHG significant thresholds.

Table 4.7-2: Consistency with 2022 BAAQMD CEQA Air Quality Guidelines GHG Significant Thresholds

Design Elements Required for New Land Use Projects to Incorporate that will Achieve Carbon Neutrality by 2045	Is the Project Consistent?
1. Buildings	
a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).	Not Consistent. No natural gas infrastructure or use, including propane tanks or propane distribution pipelines, will be allowed for residential and non-residential structures with the exception of restaurant cooktops and fire pits in outdoor patio areas of restaurants. Any existing natural gas lines within the site are to be capped and removed. However, the use of natural gas or propane fueled restaurant cooktops and outdoor patio fire pits is not consistent with this objective. Mitigation Measure 3.7-1 has been revised to require that the use of natural gas or propane at restaurants be minimized and replaced with alternative equipment to the extent consistent with the restaurants' commercial needs or requirements.
b. The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.	Consistent with implementation of previously identified Mitigation. As described in **Section 4.1.1** of this PREIR, Section 3.15 of the 2020 EIR (**Appendix D**) analyzed whether the Original Project would result in wasteful, inefficient, or unnecessary consumption of energy during construction and operation, or conflict with a State or local plan for renewable energy or energy efficiency. Potential impacts due to construction and operation were identified to be potentially significant, and mitigation measures addressing air quality, GHG emissions, and traffic management would reduce the impacts to less-than-significant levels. These include Mitigation Measure 3.3-1: Measures to Reduce Short-term Construction Related Emissions, Mitigation Measure 3.7-1: Operational GHG Emissions, and Mitigation Measure 3.13-4: Implement a Transportation Demand Management (TDM) Program. The categories of Project Modifications that involve physical changes to the environment (the Parcel Reconfiguration, Grange Road Connector, Connector Roadways, and the additional 10-foot aggregate shoulder) would have similar energy impacts compared to what was analyzed in the 2020 EIR and the same mitigation measures would continue to apply to reduce impacts to less-than-significant levels. The Project Modifications that do not involve physical change to the environment (GHG Reduction Measures, the rest of the Updated WPP measures, and the DMP) will not have a substantial change to the construction or operational energy expenditure and therefore will not result in new or substantially more significant severe impact related to energy use. Project Modifications that increase renewable energy commitments will better align the Modified Project with State and local plans for renewable energy use and overall energy efficiency, and therefore these Project Modifications would have a beneficial impact in this area. No

Design Elements Required for New Land Use Projects to Incorporate that will Achieve Carbon Neutrality by 2045	Is the Project Consistent?
	new mitigation measures beyond those identified in the 2020 EIR are required.
2. Transportation	
a. The project will achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target that reflects the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory: Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below the existing VMT per capita ii. Office projects: 15 percent below the existing VMT per employee iii. Retail projects: no net increase in existing VMT	Not consistent. As described in **Section 4.10** of this PREIR, Section 3.13 of 2020 EIR included an assessment of the Original Project's consistency with the threshold of a 15 percent reduction in per capita VMT over existing conditions. Due to the rural nature of the Project setting and associated longer distances required for travel to work, schools, shopping centers, etc., the 2020 EIR determined that the Original Project has a higher VMT per capita than the Lake County or Bay Area regional averages, which is a significant impact. Mitigation Measure 3.13-4, which was also identified in the 2020 EIR as a mitigation measure to reduced GHG impacts, requires that the applicant implement a Transportation Demand Management (TDM) Plan that has a stated objective of reducing VMT by 15 percent. A draft of the TDM Plan was included as Appendix TDM to the 2020 EIR and a revised version was Attachment B to the Final EIR Errata. Measures included within the Revised TDM Plan include: private shuttle service for employees where public transit lines are unavailable; on-call Dial-a-Ride service to connect the Guenoc Valley Site to Middletown; carpool and ride-matching assistance program; preferential on-site parking for carpoolers; dedicated parking for car share services; on-site sales of transit passes; a TDM Coordinator to facilitate and publicize activities conducted under the TDM Plan; transportation and commute information kiosks in common gathering areas, among others. The 2020 EIR conclusion that the Original Project would have a significant and unavoidable impact to VMT and may not meet a 15 percent per capita VMT reduction is mainly an acknowledgement that the extensive set of TDM measures cannot be conclusively proven to be sufficient to achieve the desired reduction, although it should be noted that the TDM Plan will have significant reductions in VMT. With the increase in density of residential lots and removal of the remote lots as part of the Parcel Reconfiguration, there will be slight decreases in the distances that residents travel to their homes once they reach the Guenoc Valley Site, but this slight decrease in on-site VMT is likely negligible. The Project Modifications do not result in a change in the number of proposed visitors to the site as the same (or fewer) number of hotel units and residences are proposed. Therefore, the Project Modifications will not increase the severity of this impact. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with VMT as compared to the 2020 EIR,

Design Elements Required for New Land Use Projects to Incorporate that will Achieve Carbon Neutrality by 2045	Is the Project Consistent?
	however the Project would not be consistent with this design measures and this impact would remain significant and unavoidable.
b. The project will achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.	Consistent with revised Mitigation Measure 3.7-1. The CALGreen voluntary Tier 2 requirements related to the installation of off-street electric vehicle infrastructure would require that that: 1) for each dwelling unit, a dedicated Level 2 EVSE shall be installed; 2) forty (40) percent of the total number of parking spaces in the resort residential and hotel uses shall be equipped with low power Level 2 EV charging receptacles, and 15 percent of those parking spaces must be provided with Level 2 EVSE chargers; and 3) forty-five (45) percent of the total number of parking spaces in the non-residential uses shall be equipped with low power Level 2 EV charging receptacles, and 33 percent of those parking spaces must be provided with Level 2 EVSE chargers. The Project Modification GHG Reduction Measures require the installation of one fully operable Level 2 or higher capacity in an appropriate location at each residential land use structure, and at least 300 fully-operable, publicly-accessible Level 2 or higher-capacity EVCS of at least 240 volts with at least two ports per charger and 20 fully operable publicly-accessible Level 3 EVCS/Fast Chargers. While these measures are generally consistent with this design measure, depending on the number of parking spaces actually developed, the Modified Project may not fully comply with the most recently adopted version of the CALGreen voluntary Tier 2 measure to provide 45 percent of the total number of parking spaces in the non-residential uses with low power Level 2 EV charging receptacles, and 33 percent of those parking spaces with Level 2 EVSE chargers. **Mitigation Measure 3.7-1** has been revised to require that the Project achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2. With incorporation of this mitigation measure, the Proposed Project would be consistent with this design measure.

The GHG Reduction Project Modifications will result in significant decreases in the climate impacts associated with the Modified Project. The Project Modifications better align the proposed development with the BAAQMD's recommended design elements for new land use projects to achieve carbon neutrality by 2045, including the elimination of most natural gas/propane use (with the exception of restaurant cooktops and fire pits in outdoor patio areas of restaurants), the installation of EV charging stations at residential and non-residential lands uses, and the numerous energy efficiency measures incorporated into the design. However, as shown in **Table 4.7-2** above, even with these measures the Modified Project does not fully incorporate the design elements for new land use projects identified in the new BAAQMD CEQA Guidelines that will achieve carbon neutrality by 2045. As concluded in the 2020 EIR, this is a significant impact. As discussed further in the 2020 EIR (**Appendix D**) and **Section 4.10**, while the TDM

Plan required by **Mitigation Measure 3.13-4** has a goal of a 15 percent reduction in VMT, due to the hospitality focus and rural setting, the measures would not reduce Project-related VMT to 15 percent below the regional average. As such, the GHG emissions resulting from the increase in VMT are significant and unavoidable. Further, the Project does not fully eliminate the use of natural gas. Even with the implementation of mitigation, the Modified Project cannot demonstrate compliance with the 2022 BAAQMD significance thresholds. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with GHG emissions as compared to the 2020 EIR, however this impact would remain significant and unavoidable.

IMPACT 3.7-2	**CONFLICT WITH AN APPLICABLE PLAN, POLICY OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GREENHOUSE GASES**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.7-1	MM 3.7-1	No Modifications Necessary**
Significance After Mitigation	Significant and Unavoidable	Significant and Unavoidable	No (Impact remains Significant and Unavoidable)

*Impact numbering retained from the 2020 EIR.

**No modifications were necessary to this measure due to the analysis of Project Modifications pursuant to Impact 3.7-2, but modifications were made to this measure as a result of the analysis contained in Impact 3.7-1, above.

To date, Lake County has not adopted any specific GHG reduction strategies or Climate Action Plans. The BAAQMD service population thresholds were considered in the 2020 EIR, and while **Mitigation Measure 3.7-1** would reduce the level of GHG emissions, the impact was determined to be significant and unavoidable. Since the publication of the 2020 EIR, the BAAQMD has adopted new guidance relating to climate change. As discussed in **Impact 3.7-2** above, the Project Modifications (namely the GHG Reduction Measures) minimize the GHG emissions and better align the Modified Project with the State's overall climate goals. The Project Modifications would not result in any new significant effects or a substantial Increase in the severity of previously identified significant impacts associated with GHG emissions as compared to the 2020 EIR. However, because the Modified Project cannot demonstrate compliance with the 2022 BAAQMD significance thresholds, this impact would remain significant and unavoidable.

4.7.5 Mitigation Measures

The Project Modifications include Greenhouse Emission Reduction Measures (summarized above and described in detail in **Section 2.2.1**). These measures have been identified to reduce the GHG emissions of the Original Project and in some cases exceed GHG reductions stipulated in the 2020 EIR. The Greenhouse Emission Reduction Measures are additional and do not require changes to the mitigation

measures identified in the 2020 EIR. **Mitigation Measure 3.7-1** has been revised to require that the Project achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2, and that the use of natural gas or propane at restaurants be minimized and replaced with alternative equipment to the extent consistent with restaurants' commercial needs or requirements. No other changes to the mitigation measures are warranted as a result of the Project Modifications. A full list of the mitigation measures, including revised **Mitigation Measure 3.7-1**, is included in the MMRP in **Section 5**.

4.8 HAZARDS AND HAZARDOUS MATERIALS

4.8.1 Introduction

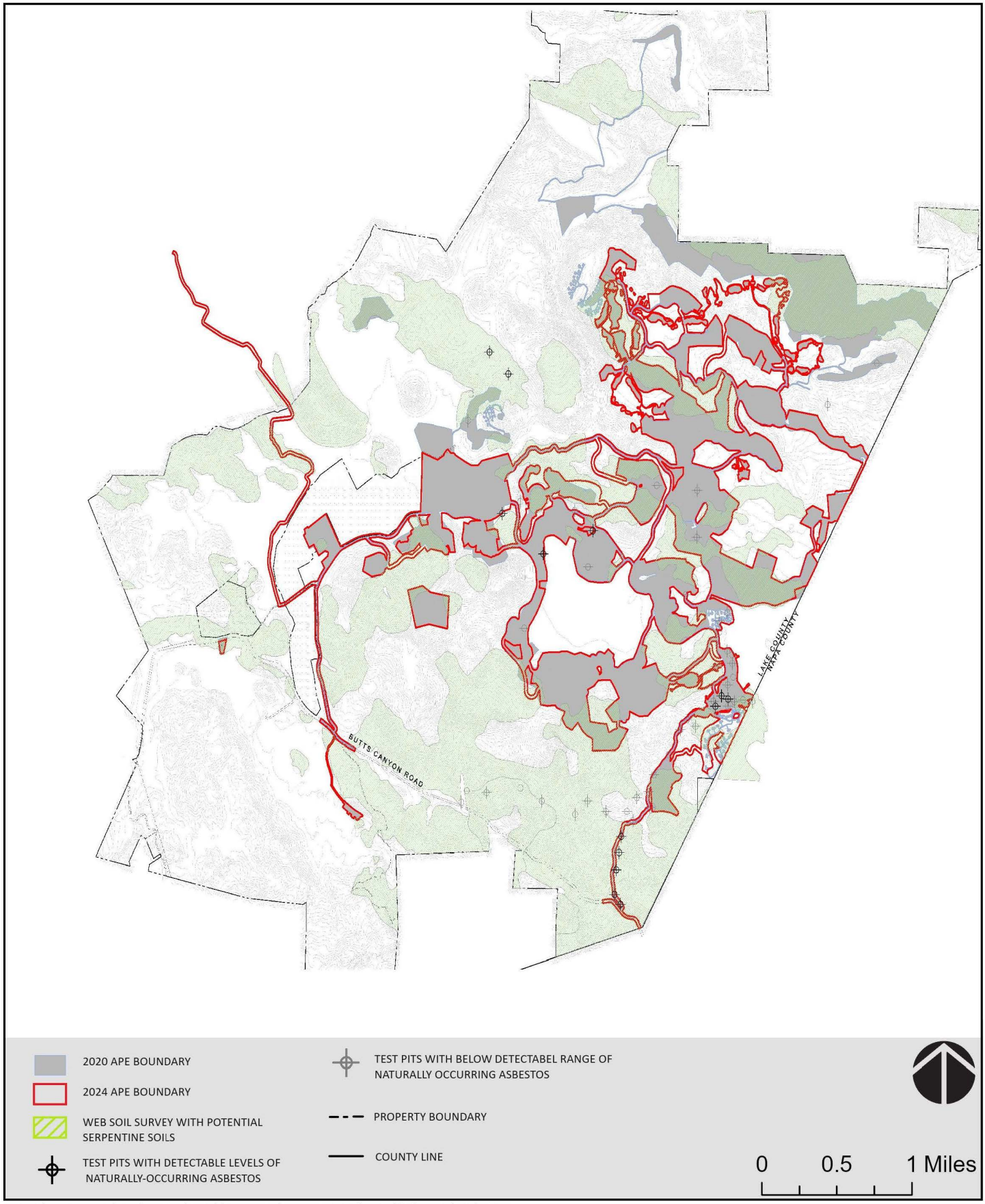
The 2020 EIR, Volume II, Section 3.8.2 includes a detailed description of the environmental setting related to hazards and hazardous materials on the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Areas that is not repeated in its entirety within this PREIR. **Section 4.8.2** of this PREIR includes a description of the environmental setting that has changed since the 2020 EIR. There have been no substantial changes to the hazards and hazardous materials "Regulatory Setting" since preparation of the 2020 EIR. The full discussion of the environmental and regulatory settings is provided in the 2020 EIR (**Appendix D**). **Section 4.8.3** of this PREIR provides a discussion on whether Project Modifications would result in new significant effects or a substantial increase in the severity of previously identified effects, and mitigation is discussed in **Section 4.8.4**.

4.8.2 Environmental Setting

Ultramafic, ultrabasic, and serpentine soils occur within the Guenoc Valley Site, which can contain naturally occurring asbestos (NOA), as explained further in the 2020 EIR. The soils underlying the Grange Road Connector APE are listed in **Table 4.6-1**. **Figure 4-10** shows the serpentine soils on the Guenoc Valley Site and the off-site portion of the Grange Road Connector. An updated review of the State Water Resources Control Board's (SWRCB) GeoTracker database was conducted to determine if there are any known hazardous materials sites within 1 mile of the off-site portion of the Grange Road Connector; no known hazardous sites exist within the Grange Road Connector alignment or the 1-mile radius search (SWRCB, 2024a).

4.8.3 Impacts

The hazards and hazardous materials impacts of the Original Project were determined by analyzing changes to the existing conditions that would occur as a result of the proposed land uses within the area. This analysis of the Project Modifications follows the same methodology outlined in Section 3.8.4 of the 2020 EIR, focusing on whether the Project Modifications would result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects than those described in the 2020 EIR. Refer to Section 3.8.4 of the 2020 EIR (**Appendix D**) for a complete description of the methodology and significance criteria relating to hazards and hazardous materials impacts.



Source: Lake County Community Development and General Plan; Source: Esri, USDA FSA, County of Napa, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community

FIGURE 4-10

SERPENTINE SOILS WITHIN MODIFIED PHASE 1 APE

IMPACT 3.8-1	CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIALS		
	2020 EIR Conclusions		Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Less than Significant	No
Mitigation Measures	MM 3.8-1	None Required	No Modifications Necessary
Significance After Mitigation	Less than Significant	N/A	Less than Significant

As analyzed in the 2020 EIR, development of the Proposed Project would include the routine use of hazardous materials common to construction activities, including but not limited to gasoline, diesel fuel, hydraulic fluid, solvents, oils, and paints. **Mitigation Measure 3.8-1** ensures that all contractors working on the Project Site prepare hazardous materials business plans that must be approved by Lake County's Division of Environmental Health. With inclusion of this mitigation measure, in addition to compliance with OSHA, Cal OSHA, and DTSC requirements, this impact would be less than significant. There are no Project Modifications that would change the amounts or types of chemicals and potentially hazardous materials that would be required for construction, and therefore there would be no potential for the Project Modifications to increase the severity of this impact. **Mitigation Measure 3.8-1** would continue to apply and would reduce construction-related impacts to less-than-significant levels for the same reasons stated in the 2020 EIR.

Operation of the Proposed Project would include the use of hazardous materials typical to residential and commercial land uses, as well as those associated with the proposed wastewater treatment plants. As further analyzed in the 2020 EIR, the use, storage, and transport of these chemicals would occur in accordance with manufacturer's guidelines and all applicable federal, State, and local regulations, and this impact is less than significant. Similar to construction, the Project Modifications would not include any changes to the amounts or types of chemicals needed during the operational phase of the Proposed Project and there would be no potential to increase the severity of this impact.

The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with the routine transport, use, or disposal of hazardous materials as compared to the 2020 EIR.

IMPACT 3.8-2	CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH REASONABLY FORESEEABLE UPSET AND ACCIDENT CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT OR FROM BEING LOCATED ON A SITE WHICH IS INCLUDED ON A LIST OF HAZARDOUS MATERIALS SITES COMPILED PURSUANT TO GOVERNMENT CODE §65962.5		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.8-2; MM 3.8-3; MM 3.8-4; MM 3.8-5	MM 3.8-2; MM 3.8-5; MM 3.8-6	Modifications to MM 3.8-5 and 3.4-18; all other mitigation measures applicable as originally written
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

As analyzed in the 2020 EIR, there are numerous project components that could result in a potentially significant impact to the public or the environment through the release of hazardous materials. The 2020 EIR discussed these impacts generally under the subheadings “Contaminated Soil and/or Groundwater”, “Demolition of Structures”, “Abandoned Geothermal Wells”, and “Naturally Occurring Asbestos.” **Mitigation Measures 3.8-2** through **3.8-5** would ensure that appropriate measures are taken to reduce this impact to less-than-significant levels. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. Regarding contaminated soils and/or groundwater, none of the Project Modifications would result in development within the existing hazardous materials sites identified on the property, nor have new hazardous materials sites been located within the off-site Grange Road Connector APE. There is the same potential for undocumented hazards to exist within the Modified APE, and **Mitigation Measure 3.8-2** would continue to reduce this impact to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications do not change the demolition of existing structures analyzed in the 2020 EIR, and therefore **Mitigation Measure 3.8-3** will continue to apply and reduce the impact to less than significant for the same reasons stated in the 2020 EIR. No new geothermal wells have been located on the Project Site since circulation of the 2020 EIR. The Parcel Reconfiguration would remove some potential residential lots from areas that contained known geothermal wells, however the Modified APE still includes geothermal wells and this remains a significant impact. **Mitigation Measure 3.8-4** would continue to apply and reduce this impact to less than significant for the same reasons stated in the 2020 EIR.

NOA occurs on the Project Site and construction activities occurring on ultramafic rock and serpentine soils pose a potentially significant hazard when NOA becomes airborne from soil-disrupting activities. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that would result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, could result in changes to the amount of development occurring on soils or substrate potentially containing NOA. As shown in **Figure 4-10**, the Original Project had approximately 1,000 acres overlaying soils that have the potential to contain NOA. The Modified APE contains only 669 acres of soils that may contain NOA. In addition and as discussed further in **Section 4.4**, serpentine rock outcrops have been designated by CDFW as sensitive habitat types since circulation of the 2020 EIR. **Mitigation Measure 3.4-18** was revised to add serpentine rock outcrops as a sensitive habitat type and limit the types of wildfire clearing that can occur in these areas during operation of the Modified Project. Therefore, the rock outcrops most likely to contain NOA will be avoided to the extent feasible and will no longer be subject to equipment use during wildfire clearing activities that could mobilize NOA and impact onsite workers and residents.

While the severity of this impact has decreased, it remains significant and **Mitigation Measure 3.8-5** would apply to the Proposed Project to protect onsite workers and residents from NOA. Since circulation of the 2020 EIR, the LCAQMD has more stringent requirements and reporting procedures to implement its existing Rule 4.467 "Asbestos Emissions Control Measure." **Section 4.8.5** of this PREIR contains a minor modification to **Mitigation Measure 3.8-5** to clarify that a Site-Specific Health and Safety Plan is a required component of the Asbestos Dust Mitigation Plan in accordance with the most up-to-date LCAQMD policies. **Mitigation Measure 3.8-5** (as updated) would continue to reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR.

IMPACT 3.8-3	**EMIT HAZARDOUS EMISSIONS OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE WITHIN 0.25 MILE OF AN EXISTING OR PROPOSED SCHOOL**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Not Applicable	Less than Significant	Not Applicable
Mitigation Measures	Not Applicable	None Required	Not Applicable
Significance After Mitigation	Not Applicable	N/A	Not Applicable

The Guenoc Valley Site is not located within 0.25 mile of an existing or proposed school, so Impact 3.8-3 of the 2020 EIR analyzed only the potential for the Middletown Housing Site and the Off-Site Infrastructure to have the potential to emit hazardous materials within 0.25 mile of a school. The on-site Project

Modifications would not be within 0.25 mile of a school and there are no Project Modifications affecting the Middletown Housing Site or the Off-Site Infrastructure. The off-site portion of the Grange Road Connector is approximately 4.5 miles from the nearest school. Therefore, the Project Modifications would have no potential to release hazardous materials within 0.25 mile of a school. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with the release of hazardous materials near a school as compared to the 2020 EIR.

IMPACT 3.8-4	**POTENTIAL FOR CUMULATIVE EFFECTS ASSOCIATED WITH HAZARDS AND HAZARDOUS MATERIALS**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Less than Significant	Less than Significant	Less than Significant
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

As explained further in the 2020 EIR and **Section 4.13** of this PREIR, the context for evaluation of potential cumulative impacts on hazards and hazardous materials is based on development in the region, including projected build out under the Middletown Area Plan and approved or potential projects in the County. However, the analysis of cumulative hazardous materials impacts is generally site-specific, rather than cumulative in nature. For example, the use of common hazardous chemicals during construction could impact the health or safety of onsite workers but is unlikely to impact the safety of offsite residents in the surrounding community, and therefore the geographic scope is limited to the Project Site and immediate vicinity. The Original Project's contribution to significant impacts related to hazards and hazardous materials were found to be less than significant, and the Project Modifications would not result in new significant environmental effects or an increase in the severity of previously identified significant effects. No additional mitigation for cumulative development would be required.

4.8.4 Mitigation Measures

This PREIR has identified modifications to one hazardous materials mitigation measure to ensure the potential impacts of the Project Modifications are reduced to less-than-significant levels. As discussed in **Section 4.4.5**, several mitigation measures in the biological resources section have also been updated to minimize operational wildfire-related activities in serpentine soils. The mitigation measure with revisions is discussed below, and a presentation of changes in underline ~~strikeout~~ is provided in **Section 5**.

Mitigation Measure 3.8-5 outlines the specific components of the Asbestos Dust Mitigation Plan that is required to minimize impacts to onsite workers and residents due to the presence of naturally occurring

asbestos. A Site-Specific Health and Safety Plan has been added to this measure to better comply with the current requirements of the LCAQMD.

4.9 HYDROLOGY AND WATER QUALITY

4.9.1 Introduction

The 2020 EIR, Volume II, Section 3.9.2 includes a detailed description of the environmental setting related to hydrology and water quality on the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Areas that is not repeated in its entirety within this PREIR. **Section 4.9.2** of this PREIR includes a description of the environmental setting that has changed since the 2020 EIR and **Section 4.9.3** describes any relevant regulations that are new or updated. The full discussion of the environmental and regulatory settings is available in the 2020 EIR (**Appendix D**). **Section 4.9.4** of this PREIR provides a discussion on whether Project Modifications would result in new significant effects or a substantial increase in the severity of previously identified effects, and **Section 4.9.5** describes mitigation for impacts to hydrology and water quality.

4.9.2 Environmental Setting

Watersheds and Drainage

The Grange Road Connector APE is approximately 3.8 miles, of which 1.6 miles are located on the off-site Comstock Ranch property and the remaining 2.2 miles are located on the Guenoc Valley Site. The watershed, hydrologic conditions, and water quality of the on-site portion are discussed in the 2020 EIR. The off-site portion of the Grange Road Connector APE is located in the Upper Putah Creek watershed, within the Westside Subregion of the Sacramento River Basin (Basin), the same watershed as the Guenoc Valley Site. At the local watershed level, the off-site portion of the Grange Road Connector APE is located in the Crazy Creek-Putah Creek subwatershed (HUC 180201620307), and transitions to the Bucksnort Creek subwatershed (HUC 180201620305) when it enters the Guenoc Valley Site (USGS, 2018).

As further explained in the 2020 EIR, Bucksnort Creek is the primary drainage within the Guenoc Valley Site and most subwatersheds on the site drain to this creek. Bucksnort Creek flows north from the southwest side of the site through Detert Reservoir on to McCreary Lake, eventually discharging into Putah Creek. The Grange Road Connector APE is adjacent to Bucksnort Creek once the roadway enters the Guenoc Valley Site, following an existing vineyard access road that is adjacent to the stream. The Grange Road Connector then turns and crosses Bucksnort Creek over an existing bridge (see **Figure 4-6**).

Flooding

The Federal Emergency Management Agency (FEMA) oversees the delineation of flood hazard zones as it relates to the National Flood Insurance Program (NFIP) and the provision of federal disaster assistance. FEMA manages the NFIP and publishes the Flood Insurance Rate Maps (FIRMs), which show the expected frequency and severity of flooding by area, typically for the existing land use and type of drainage/flood control facilities present. Flood zones are determined by the probability of flooding within a certain time period, typically the 1% annual chance flood (100-year flood) or 0.2% annual chance flood (500-year flood). Floodplains are divided into flood hazard zones, designated by the potential for flooding of an area during a flood event. Flood zones B, C, and X may include those areas that are located within the 100-year flood plain but are adequately protected by levee systems or other flood protection, while Zone A is

designated as areas inundated by a 100-year storm event. The Grange Road Connector is covered by FEMA FIRM Nos. 06033C0869D and 06033C0960D, both effective since September 30, 2005 (FEMA, 2005). Figure 3.9-2 of the 2020 EIR depicts the FEMA Flood Zones on- and off-site and includes the area of the proposed Grange Road Connector; as shown therein, the majority of the Grange Road Connector APE is located in areas of Zone X (0.2% annual chance flood) but the portion along Bucksnort Creek is mapped as Zone A (1% annual chance). This portion of Bucksnort Creek has been analyzed by FEMA and the extent of the 100-year floodplain is depicted on the FIRM. While FEMA maps the floodplain extents the County Building Division ensures compliance with 44 CFR 60.3(a)(3) to ensure construction in flood zones is "Reasonably Safe" from flooding.

Surface Water Quality

Section 303(d) of the federal Clean Water Act requires states to monitor water pollution and report to the USEPA every two years. Waters that do not meet water quality standards are labeled impaired and are placed on a State list known as the 303(d) list. To improve water quality conditions, states often develop Total Maximum Daily Load (TMDL) cleanup plans. The 303(d) list was updated in 2022 and approved by the State Water Board on January 19, 2022 and the EPA on May 11, 2022 (SWRCB, 2024b). While the list of impaired waterbodies was updated, the status of the waters in and around the Guenoc Valley Site remains unchanged. There are no listed impaired waters on the Guenoc Valley Site or associated TMDL cleanup plans, although, as described in the 2020 EIR, the lower potion of Putah Creek (approximately 30 miles downstream) is impaired for mercury under Section 303(d) (SWRCB, 2022).

Groundwater

The Grange Road Connector APE is partially located within the Coyote Valley basin (DWR, 2021). In 2021, California's Groundwater Update 2020 (Bulletin 118) was released, the first comprehensive update since 2003. California's reliance on groundwater has increased by between 10 to 20 percent since 2003 (DWR, 2021). The Coyote Valley (Basin 5-018) and Collayomi Valley (Basin 5-019) are both designated as Very Low Priority basins and therefore no Groundwater Sustainability Plans have been required for these basins yet (DWR, 2020). Groundwater conditions in these basins remain relatively unchanged from the 2020 EIR.

4.9.3 Regulatory Setting

State

General Permit for Construction Storm Water Discharges

On September 8, 2022, the SWRCB adopted updated SWRCB Order 2022-0057-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit), which superseded the previous Order 2009-0009-DWQ. The updated Order 2022-0057-DWQ went into effect on September 1, 2023 and establishes requirements for potential storm water discharges from construction activities to federal jurisdictional waters, and applies to site disturbances greater than one acre, as described below.

Similar to the previous General Permit, any construction activity affecting one or more acres of land, or any activity that is part of a common plan of development or sale that disturbs one acre or more, as well as construction activities for linear overhead/underground utility projects that result in disturbance of one acre or more and have the potential to discharge to federal jurisdictional waters, must obtain a General Construction Activity Stormwater Permit Waste Discharge Identification Number. The permitting process

requires the development and implementation of an effective SWPPP. The Project applicant must submit a Notice of Intent to the SWRCB to be covered by the General Permit and prepare the SWPPP prior to the beginning of construction. The SWPPP must include, among other things, BMPs to reduce pollutants and any more stringent controls necessary to meet water quality standards. Dischargers must also comply with water quality objectives as defined in the Central Valley Basin Plan. If Basin Plan objectives are exceeded, corrective measures would be required.

Local

Lake County Ordinance 3106

Lake County Ordinance 3106 was passed by the Board of Supervisors on July 27, 2021 and requires that all projects that require a CEQA analysis of water use also provide a DMP describing how the project will reduce water use during a declared drought emergency. Ordinance 3106 also requires a Hydrology Report addressing the approximate amount of water available for the project's identified water source, the approximate recharge rate of the identified water source, and cumulative impacts to surrounding areas.

4.9.4 Impacts

In the 2020 EIR, the hydrology and water quality impacts of the Proposed Project were determined by analyzing changes to the existing conditions that would occur as a result of the proposed land uses within the area. This analysis of the Project Modifications follows the same methodology outlined in Section 3.9.4 of the 2020 EIR, focusing on whether the Project Modifications would result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects than those described in the 2020 EIR. Refer to Section 3.9.4 of the 2020 EIR (**Appendix D**) for a complete description of the methodology and significance criteria relating to hydrology and water quality impacts.

IMPACT 3.9-1	**VIOLATE ANY WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS OR OTHERWISE SUBSTANTIALLY DEGRADE SURFACE OR GROUND WATER QUALITY**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.9-1, 3.9-2 (Phase 1) MM 3.9-1 (Future Phases)	MM 3.9-1	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

Construction

As analyzed in the 2020 EIR, construction of the Proposed Project would result in the removal of vegetation and grading throughout the Development Area, the movement of approximately 10 million cubic yards of fill within the Project Site, and require numerous stream and drainage crossings for proposed roads. Grading, excavation, and other construction-related activities associated with Phase 1 could cause soil erosion or release spills associated with construction equipment, which could have adverse effects on receiving water quality at the Project Site and downstream, including Bucksnort Creek, Putah Creek and Lake Berryessa. As described in the 2020 EIR, the Proposed Project must prepare and adhere to a SWPPP in compliance with the SWRCB NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities ("General Permit"), and **Mitigation Measure 3.9-1** requires numerous Project-specific BMPs that shall be included in the SWPPP. As further described in the 2020 EIR, approximately 10 million cubic yards of cut and fill will be required for development of Phase 1, and a proposed rock crushing facility and portable concrete batch plant covering approximately 20 acres will be located on the site to facilitate the reuse of fill materials on the site. **Mitigation Measure 3.9-2** requires that the facility receive permit coverage from the Central Valley RWQCB and adhere to specific BMPs that will protect surface water resources. Together, the 2020 EIR concluded that **Mitigation Measures 3.9-1** and **3.9-2** would reduce this impact to less-than-significant levels.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications would add the Grange Road Connector and Connector Roadways to the area that will be graded and disturbed, however, the overall grading area associated with the Modified Project will be reduced as a result of the Parcel Reconfiguration, including elimination of the camping area and overall reduction in the linear miles of roadways and utilities previously required for connection to relatively remote parcels. The construction of the Grange Road Connector is estimated to generate approximately 25,000 cubic yards of cut and require 23,250 cubic yards of fill, a negligible amount (0.25 percent) compared to the total cut and fill that will be processed for Phase 1 of the Project; furthermore, the amount of cut and fill required for the Modified Project will likely decrease as 3 fewer miles of road will be required and the overall Development Area has been reduced by 213 acres. The Proposed Project would still be required to obtain coverage under the NPDES Construction General Permit, which includes implementation of the SWPPP, and the proposed aggregate and concrete facility would comply with the permitting requirements of the Central Valley RWQCB. **Mitigation Measures 3.9-1** and **3.9-2** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would result in an overall reduction in grading, and therefore will not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with surface or groundwater quality as compared to the 2020 EIR.

Operation

The proposed wastewater infrastructure plan is described in Appendix WW of the 2020 EIR. As described in the 2020 EIR, the Proposed Project would include wastewater service areas to collect and treat wastewater from commercial uses, supporting uses, and some residential areas. These areas would be serviced by sanitary sewer systems and centralized WRPs that would produce recycled water available for reuse on the site. The WRPs would be permitted under the General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems (Order WQ 2014-0153-DWQ), which is still in effect. The recycled water systems would be permitted separately from the treatment plants under the State's Water Reclamation Requirements for Recycled Water Use (Order WQ 2016-0068-DDW), which is still in effect. The recycled water systems as planned would be consistent with the regulations and standards covered

under the State's recycled regulations and associated standards contained in Title 22 Public Health rules. The 2020 EIR concluded that adherence to these regulatory requirements would ensure a less-than-significant impact.

With one exception, the Project Modifications including the Grange Road Connector, Connector Roadways, GHG Reduction Measures, Updated WPP, and DMP, do not involve the production of wastewater and would therefore have no new or substantially more severe significant impacts relating to operational water quality. However, the Parcel Reconfiguration, would result in the removal of larger and more remote lots which cannot be readily served by the centralized wastewater collection and treatment systems, and the relocation of those lots to centralized areas that will be served by the proposed wastewater treatment plants; these plants will be designed to a sufficient capacity to accommodate the increased density, and therefore this is not anticipated to increase any operational impacts. The removal of the camping area, which had a proposed WRP, means at least one WRP would not be required in the northern portion of the Guenoc Valley Site. The Project Modifications would not result in any new significant environmental effects or an increase in the severity of previously identified significant effects associated with surface or groundwater quality as compared to the 2020 EIR.

IMPACT 3.9-2	**SUBSTANTIALLY DECREASE GROUNDWATER SUPPLIES OR INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE SUCH THAT THE PROJECT MAY IMPEDE SUSTAINABLE GROUNDWATER MANAGEMENT OF THE BASIN**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant (Phase 1) Less than Significant (Future Phases)	Less than Significant (Workforce Housing) Potentially Significant (Infrastructure)	No
Mitigation Measures	MM 3.9-3 (Phase 1) None Required (Future Phases)	None Required (Workforce Housing) MM 3.9-3 (Infrastructure)	No Modifications Necessary
Significance After Mitigation	Less than Significant (Phase 1) N/A (Future Phases)	N/A (Workforce Housing) Less than Significant (Infrastructure)	Less than Significant

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, the Proposed Project has the potential to impact groundwater supplies through increasing groundwater extraction or decreasing the amount of groundwater recharge. As analyzed in the 2020 EIR, a potable water system would be developed to supply drinking, interior, and recreation water demands and a second non-potable water system would be installed for all non-drinking

water and most exterior water demands, such as irrigation, non-recreational water (i.e., fountains), fire protection, and construction water demands. Groundwater supply wells would serve the potable water system; a combination of surface water (if within the allowable POU for the surface water rights), recycled water, and groundwater would support the non-potable water system. A Water Supply Assessment (Appendix WSA to the 2020 EIR) provides a detailed analysis of the water demand for each of the water systems. The 2020 EIR found that the use of the proposed Off-Site Groundwater Well was a potentially significant impact to groundwater resources, and **Mitigation Measure 3.9-3**, which requires establishing a safe yield, limiting pumping to that safe yield, and ongoing monitoring, would reduce this impact to less-than-significant levels.

Groundwater Recharge

The Original Project analyzed in the 2020 EIR would have a less-than-significant effect as it relates to groundwater recharge due to the proposed drainage and stormwater detention areas providing opportunities for groundwater percolation. Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures and DMP, would have no potential to increase the severity of this impact. The Project Modifications that would alter the Development Area (Grange Road Connector, Connector Roadways, and Parcel Reconfiguration) could change the amount of impervious surface and therefore groundwater recharge compared to what was analyzed. However, the overall Development Area associated with the Modified Project will be reduced as a result of the Parcel Reconfiguration, including elimination of the camping area, and overall reduction in the linear miles of roadways and utilities previously required for connection to remote parcels. This overall decrease in the size of the Development Area (213 acres) equates to less impervious surfaces that could change groundwater recharge. Therefore, there are no new significant environmental effects or an increase in the severity of previously identified significant effects associated with groundwater recharge as compared to the 2020 EIR.

Groundwater Availability

The 2020 EIR and WSA included additional analyses of water supply sufficiency in normal, dry and multiple dry years in accordance with SB 610 using the Basin Characterization Model (BCM) of California developed by the USGS. As discussed in Appendix WSA to the 2020 EIR (**Appendix D**) and **Appendix G-1**, the BCM simulates watershed hydrologic processes based on recorded precipitation, potential evapotranspiration, soil data, and geologic conditions. Recognizing that climate change presents the potential to alter water availability in the future, the WSA analysis further incorporated a range of possible groundwater availabilities to account for potential variation due to climate change. The BCM outputs provided by the USGS include projected future runoff and recharge at the model cell level developed by running the BCM with inputs for future meteorological conditions, including precipitation and air temperature, provided by global climate models.

The WSA projected short-term (years 2020 – 2029) groundwater availability on the Guenoc Valley Site in a dry year to be 6,570 afy and in a very dry year to be 4,800 afy. Future years (2030 – 2040) groundwater availability was projected to be 4,950 afy in a dry year and 3,740 afy in a very dry year (accounting for climate change). These groundwater availability projections reflect what is available below the property and do not differentiate between potable or non-potable, which is a factor of well construction and not overall availability. The total future phases demand of 1,927 afy is less than the available groundwater supplies of 3,740 afy in a very dry year, indicating that sufficient water is available in the aquifer even in a very dry year. At the time of preparation of the WSA in 2020, the BCM included water years 1900 to 2016; currently the BCM has been updated to include water years 1896 to 2020. A total of eight water years

have been added to the dataset that provides the foundation for this model, which is a relatively insignificant addition when over 116 years of precipitation data were utilized in the WSA. Historical precipitation records for the state of California are available from the California Office of Environmental Health Hazard Assessment (OEHHA) for 1896 to 2021. Using this dataset, the average precipitation from water years 1900 – 2016 (corresponding to the years available in the BCM dataset at the time of the WSA) was 23.53 inches. Years 1896, 1897, 2017, and 2019 were all wetter than normal years (OEHHA, 2023). Therefore, when the average precipitation is calculated for water years 1896 – 2020 (the dataset currently available in the updated BCM), the average precipitation increases slightly to 23.56 inches. This change is a negligible increase of 0.03 inches of precipitation and indicates that utilizing the very dry year modeling scenario from the WSA is a more conservative assessment of groundwater availability on the Guenoc Valley site.

Water Supply Infrastructure

While the Project Modifications result in a slight decrease of 50 hotel units and 16 residential estates, this PREIR assumes no change to the potable- or non-potable water demand to present a more conservative analysis. Therefore, the Project Modifications will not increase the severity of this impact due to increasing the amount of groundwater proposed to be extracted. As discussed in **Section 2.2.4**, since preparation of the 2020 EIR new groundwater wells have been drilled and tested on the Guenoc Valley Site consistent with the WSA and 2020 EIR recommendations. **Appendix G-1** presents the results of the well drilling and testing that was completed for these groundwater wells, and the demand and existing well capacity is summarized in **Table 4.9-1**. The non-potable water demand focuses on areas outside of the surface water POU where groundwater and recycled water will serve the non-potable water demand. Potable water can also serve to meet the non-potable water demand.

Table 4.9-1: Water Demands and Existing Well Capacity for Areas Not Using Surface Water

	Phase 1 Demand (afy)	Future Phases Demand (afy)*	Groundwater Supply Available from Existing Production Wells (afy)	Recycled Water (afy)	Existing Well Capacity – Phase 1 Demand Balance (afy)	Existing Well Capacity – Future Phases Demand Balance (afy)
Potable Water	249	685	1,042	N/A	793	357
Non-Potable Water	482	1,242	426	163 – 326**	107	-490
Total					**900**	**-133**

*The water demand for Full Build-Out of the Project will include the water demand of Phase 1 and additional water demand of future phases. The future phases water demand in **Appendix G-1** shows only the incremental increase of Future Phases, which has been added to Phase 1 to present the Full Buildout water demand for the Proposed Project.
**Phase 1 will produce 163 afy of recycled water. At full buildout of the Proposed Project, additional wastewater treatment plants will be constructed that will increase the recycled water generation to 326 afy.
Source: **Appendix G-1**

The existing wells on the Guenoc Valley Site are capable of producing 1,042 afy of potable water and 426 afy of non-potable water. In addition, the proposed wastewater treatment plants will generate 326 afy of recycled water that can be used for non-potable supply. The potable well capacity currently available on the Guenoc Valley Site exceeds the Phase 1 potable demand by 793 afy and the non-potable water available exceeds the Phase 1 non-potable demand by 107 afy. For future phases, the available potable supplies that can be produced by existing wells exceed demand by 357 afy. However, to meet the non-potable demands of future phases, an additional well(s) will need to be drilled to supply 133 afy. This volume can be met with one additional well with a capacity of 82 gpm, although one to two new wells

may be drilled depending on localized conditions (**Appendix G-1**). Based on existing data about the wells on the site and test drilling that has been conducted since the 2020 EIR, this size well is feasible and the non-potable water demands of future phases can likely be accommodated with one to two new wells drilled on-site, depending on localized conditions at the exact location of future drilling (**Appendix G-1**). The installation of one to two new on-site non-potable wells would not be required until commencement of development of future phases of the Project, which shall be subject to additional environmental review in compliance with CEQA. Therefore, existing groundwater infrastructure on the Project Site is sufficient to meet the Phase 1 water demands and only one or two new wells would be required to be drilled to meet future phases demand. The drilling and testing of new wells were completed in accordance with the WSA, and the results indicate sufficient groundwater is available on the Guenoc Valley Site consistent with the analysis in the 2020 EIR. While the existing water supply infrastructure would need to be augmented with one or two new wells prior to construction of future phases, there is sufficient groundwater available below the property (see '**Groundwater Availability'** subsection above) and the well drilling program indicates it is feasible to drill one new non-potable well with a capacity of 82 gpm on the site. The Project Modification requiring the DMP does not increase the amount of groundwater that will be extracted, but does provide a framework for water use reduction, monitoring, and management in the event of a drought, which will allow the Modified Project to meet local or State objectives for water reduction measures in the event of a declared drought (**Appendix G-2**).

Mitigation Measure 3.9-3 relating to the Off-Site Well would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. This mitigation measure requires that a safe yield must be determined that meets the performance criteria of avoiding drawdown of groundwater beyond 300 feet of the well, prior to the issuance of an encroachment permit or grading permit for installation of off-site water line along Butts Canyon Road for the use of the Off-Site Well. The Project Modifications do not involve any alterations to the Off-Site Well construction or operation as compared to the 2020 EIR. Therefore, there are no new significant environmental effects or an increase in the severity of previously identified significant effects associated with the Off-Site Well as compared to the 2020 EIR. The Project Modifications would not result in any new significant environmental effects or an increase in the severity of previously identified significant effects associated with groundwater supplies or groundwater recharge as compared to the 2020 EIR.

IMPACT 3.9-3	SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN WHICH WOULD: RESULT IN EROSION, SILTATION OR FLOODING; EXCEED THE CAPACITY OF STORMWATER DRAINAGE SYSTEMS; OR PROVIDE SUBSTANTIAL ADDITIONAL SOURCES OF POLLUTED RUNOFF		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Less than Significant	Less than Significant	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

As analyzed in the 2020 EIR, the proposed roadways, buildings, parking lots, infrastructure, lakes, and landscaping would alter existing landform and could alter existing drainage patterns, and the increase in impervious surfaces could increase the rate and amount of stormwater runoff. As described in the 2020 EIR, the Proposed Project stormwater facilities are designed according to the Bay Area Stormwater Management Agencies Association (BASMAA) Post-Construction Manual, and include stormwater drainage areas that would be routed through self-retaining areas, bio-retention areas, or self-treating areas so there would be no net increase of stormwater leaving the site for the 2-year 24-hour storm. The 2020 EIR provided individual analyses for three main types of development proposed under the Project: roadways, residential estate parcels, and commercial areas. The 2020 EIR concluded that the incorporation of Low Impact Design (LID) measures and BASMAA recommendations resulted in a less-than-significant impact to drainage patterns and runoff across all three types of development.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures and DMP, would have no potential to increase the severity of this impact. The Project Modifications that would alter the Development Area (Grange Road Connector, Connector Roadways, and Parcel Reconfiguration) could change the stormwater runoff patterns compared to what was analyzed. The addition of the 10-foot aggregate or other hardscape shoulder to area roadways as part of the Updated WPP could also have an impact on stormwater runoff patterns. The Development Area includes the built components proposed for resort, residential, and roadway uses. The 1,202-acre Development Area encompasses and slightly overstates the proposed impervious surfaces, as in addition to paved roadways, buildings, and other impervious materials, it also includes landscaping around buildings which is typically considered permeable. The additional 10 feet of hardscape is included in the 1,202-acre Development Area. Because the overall development area associated with the Modified Project would decrease by 213 acres compared to the Original Project, the total impervious area associated with the project will be less than what was analyzed in the 2020 EIR even with inclusion of the 10 feet of hardscape along roadways. Furthermore, each of these Project Modifications will be subject to the same stringent design standards that will minimize potential impacts to drainage patterns and stormwater runoff

(**Appendix L**). The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with drainage patterns or stormwater runoff as compared to the 2020 EIR.

IMPACT 3.9-4	**RESULT IN FLOOD HAZARD, TSUNAMI, OR SEICHE ZONES, RISK RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Less than Significant (Workforce Housing) Potentially Significant (Infrastructure)	No
Mitigation Measures	MM 3.9-4, 3.9-5, 3.9-6	None Required (Workforce Housing) MM 3.9-6 (Infrastructure)	No Modifications Necessary
Significance After Mitigation	Less than Significant	N/A (Workforce Housing) Less than Significant (Infrastructure)	Less than Significant

*Impact numbering retained from the 2020 EIR.

As shown in Figure 3.9-2 of the 2020 EIR, FEMA has delineated a 100-year floodplain for a portion of Bucksnort Creek between Detert Reservoir and McCreary Lake, however the majority of the potential floodplains on the Guenoc Valley Site have not yet been delineated. Additionally, the failure of a reservoir dam could result in flooding hazards downstream. The 2020 EIR determined that the potential flooding hazard, whether due to development within a floodplain or failure of a reservoir dam, would be potentially significant. The 2020 EIR concluded that **Mitigation Measures 3.9-4** through **3.9-6**, which require mapping of floodplains and inundation zones and incorporation of these hazards into site plans, would reduce this impact to less-than-significant levels.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that would alter the Development Area (Grange Road Connector, Connector Roadways, and Parcel Reconfiguration) could change the flooding hazard risk compared to what was analyzed. The Grange Road Connector and Connector Roadways would not introduce new people or structures and therefore would not significantly increase this risk, and the Parcel Reconfiguration will remove the camping area and associated WRP from an area near Putah Creek where the flood hazard was not analyzed by FEMA. **Mitigation Measures 3.9-4** through **3.9-6** will continue to apply and will reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the

severity of previously identified significant impacts associated with flooding hazard as compared to the 2020 EIR.

IMPACT 3.9-5	CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF A WATER QUALITY CONTROL PLAN OR SUSTAINABLE GROUNDWATER MANAGEMENT PLAN?		
	2020 EIR Conclusions		Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Less than Significant	Less than Significant	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

The Guenoc Valley Site and the off-site portion of the Grange Road Connector are located within the Sacramento River Basin which is covered by the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin (Basin Plan). As described in the 2020 EIR, the Project Site lies partly within the Coyote Valley and Collayomi Valley Groundwater Basins, which have been identified under SGMA to be very low priority. SGMA does not require very low priority basins to be managed under a GSP and one has not been prepared for the Coyote Valley and Collayomi Valley Groundwater Basins. The 2020 EIR concluded that the Original Project has the potential to conflict with the Basin Plan, but because construction and operation of the Original Project would be required to comply with State policies and waste discharge requirements that have been designed by the RWQCB to protect the water quality objectives and beneficial uses identified in the Basin Plan, the impact would be less than significant. Furthermore, **Mitigation Measures 3.9-1** through **3.9-6** were identified to reduce the potential surface water quality impacts identified by Impacts 3.9-1 through 3.9-4, which would further minimize potential impacts to water quality.

As analyzed in Impacts 3.9-1 through 3.9-4 above, the Project Modifications would have no potential to increase the water demands of the Project and severity of these impacts, and although this impact is less than significant, the same mitigation measures would apply to further reduce potential impacts for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with water quality control plans or groundwater plans as compared to the 2020 EIR.

IMPACT 3.9-6	CUMULATIVE HYDROLOGY AND WATER QUALITY IMPACTS		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Less than Significant	Less than Significant	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

As explained further in the 2020 EIR and **Section 4.13** of this PREIR, the context for evaluation of potential cumulative impacts for hydrology and water quality is regional development in or near Middletown. Planned cumulative projects in the region are described in **Table 4.13-1**, and while some changes have occurred to the cumulative projects since the 2020 EIR, the main projects that will bring new people into the region (i.e., buildout of the Hidden Valley Community, Valley Oaks Community, and the Guenoc Valley Water Rights Modification Project) and the types of projects proposed (i.e., residential development, commercial, and agricultural development) remain consistent from the 2020 EIR. There have been no substantive changes to the existing or planned developments in the vicinity of the Off-Site Well parcel. All projects have the potential to impact hydrology and water quality during construction and operation, but compliance with Federal, State, and County land use and environmental regulations would reduce impacts. The analysis of cumulative hydrology impacts within the 2020 EIR assessed all project components, including development of Phase 1 and future phases on the Guenoc Valley Site, the Middletown Housing Site, and the Offsite Infrastructure Improvements. As further explained in the 2020 EIR, with mitigation all project components (including the Off-Site Well) would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Proposed Project would impede sustainable groundwater management of the basin. Mitigation Measure 3.9-3 inherently addresses the potential cumulative impact of the Off-Site Well in that the safe yield must prevent drawdown beyond 300 feet of the well to protect the groundwater basin and groundwater users in the cumulative geographic area. The Original Project's contribution to significant impacts related to the area's hydrology and water quality conditions were found to be less than significant with inclusion of Project design features, compliance with Federal, State and County land use and environmental regulations, or mitigation measures identified in this section. These same measures, including **Mitigation Measures 3.9-1** through **3.9-6**, would ensure the Project Modifications would not result in new significant environmental effects or an increase in the severity of previously identified significant effects. No additional mitigation for cumulative development would be required.

4.9.5 Mitigation Measures

No changes to the mitigation measures are warranted as a result of the Project Modifications. A full list of the mitigation measures is included in the MMRP in **Section 5**.

4.10 TRANSPORTATION AND TRAFFIC

4.10.1 Introduction

The 2020 EIR, Volume II, Section 3.13.2 includes a detailed description of the environmental setting related to transportation and traffic in the vicinity of the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Areas that is not repeated in its entirety within this PREIR. **Section 4.10.2** of this PREIR includes a description of the environmental setting that has changed since the 2020 EIR and **Section 4.10.3** describes any relevant regulations that are new or updated. The full discussion of the environmental and regulatory settings is available in the 2020 EIR (**Appendix D**). **Section 4.10.4** of this PREIR describes methods of analysis and provides a discussion on whether Project Modifications would result in new significant effects or a substantial increase in the severity of previously identified effects. Mitigation for impacts to traffic is discussed in **Section 4.10.5**.

4.10.2 Environmental Setting

The regional roadway network is managed predominantly by Lake County and Caltrans, with CAL FIRE and other partner wildfire agencies (e.g. fire districts or local Firewise councils) providing vegetation and fuel management along roadways. The state highway system includes SR 29 and SR 175 in the vicinity of the Guenoc Valley Site. Recent improvements to these highways include the SR 29 South Corridor Engineered Feasibility Study (2014 joint study by Caltrans District 1 and Lake County/City Area Planning Council) and implementation of the SR 29 Konocti Corridor project. The SR 29 Konocti Corridor Project is a cooperative effort of Caltrans, LAPC, and FHWA. In total, the project will widen an 8-mile section of SR 29 from a two-lane divided highway to a four-lane expressway. Segment 2C of the SR 29 Konocti Corridor Project (widening of the westernmost 3.1 mile segment of the project) was completed in June 2023 (Caltrans, 2023). “The Caltrans Milestone Report for Lake County (August 10, 2023) indicates that construction of the remaining Segments 2A and 2B is scheduled for completion in December 2030” (**Appendix H-1**). Additionally, in January 2023 the California Transportation Commission (CTC) allocated approximately $20.9 million in federal funding toward roadway, guardrail, and other improvements along SR 20 near Mid Lake Road, and $3.1 million in funding toward the removal of hazardous trees along various locations, including SR 175 (Lake County News, 2023).

4.10.3 Regulatory Setting

Caltrans Regional Growth Factors

Caltrans projects future traffic volumes on roadways within its jurisdiction to facilitate long-range planning and ensure facilities are designed with the appropriate capacity. Historically, growth factors were based on both projected travel trends and historical growth from two data sources—the “California Motor Vehicle Stock Travel and Fuel Forecast” (CMVSTAFF) and historical Average Vehicle Mile Traveled (AVMT) comparisons from “Traffic Volumes on the California State Highway System.” On February 12, 2024, Caltrans released updated growth factors for District 1, which covers Lake County. The 2024 Growth Factor update was prepared after an extensive analysis of historical volumes on District 1 routes, review of the California Statewide Travel Demand Model, and Department of Finance population statistics for all counties within District 1.

Lake County Regional Transportation Plan/Active Transportation Plan (2022)

In 2022, the LAPC adopted the Regional Transportation Plan (RTP)/Active Transportation Plan, a long-range planning document intended to update the RTP to reflect recent laws and policies that have been adopted in relation to the management and improvement of the transportation system throughout Lake County (LAPC, 2022). This document identifies overarching goals, objectives, and specific policies intended to guide transportation development projects. Many of these policies apply to County-led transportation projects and not to individual land development projects, but those that may be relevant to the County's consideration of Proposed Project are provided below:

Policy OI-1: Coordinate, support and encourage multi-modal regional planning activities in Lake County across jurisdictional boundaries.

Policy OI-1.2: Coordinate with local and State agencies on health, security and emergency response planning efforts. Work cooperatively with local, regional and State agencies to ensure effective emergency response efforts are well coordinated during natural disasters such as wildfire or flood events.

Policy OI-1.4: Evaluate individual projects with an eye for potential regionwide impacts when formulating, designing and constructing transportation projects of various modes and at all levels.

Policy OI-1.5: Work with local jurisdictions to further housing goals of the region and to update and implement Regional Housing Needs Allocations (RHNA).

Objective OI-3: Reduce Greenhouse Gas emissions by promoting and facilitating transit use and increasing active transportation alternatives.

Policy OI-3.4: Support and facilitate the installation of electric vehicle charging stations for public use. Explore options for affordable, clean energy technology and programs.

Goal SHS: State Highway System (SHS): Provide a safe, well-maintained and efficient State highway network that addresses regional and statewide mobility needs for people, goods and services.

Objective SHS-1: Improve mobility on the State highway system throughout Lake County.

Objective LSR-1: Local Streets and Roads (LSR): Maintain, rehabilitate and construct local streets and roads consistent with local and regional needs, city and County area plans, and policies and Complete Streets policies.

Policy LSR-2.2: Support establishment of traffic impact fees to construct new transportation facilities associated with new development.

Policy LSR-3.2: Coordinate with local agencies on security and emergency response planning efforts, including the identification of key evacuation and emergency access routes.

Objective AT-1: Facilitate and promote walking, bicycling and other active modes of transportation.

Objective AT-2: Reduce Greenhouse Gas emissions and Vehicle Miles Traveled (VMT).

Policy AT-2.4: Encourage VMT reducing mitigation measures for discretionary development projects at the local and State level.

Objective PT-3: Provide a safe and accessible transit system.

Policy PT-3.3: Consider the impacts of new development (residential and commercial) on the transit system and identify appropriate mitigation measures to be incorporated into the proposed development.

Policy PT-3.6: Improve connectivity between transit facilities, pedestrian facilities and bicycle facilities.

Policy AV-3.1: Develop plans and support projects that are consistent with the County Office of Emergency Services (OES) response and recovery plans.

The Active Transportation Plan identifies Butts Canyon Road as a future Class III Bicycle Facility, noting that Class III bike lanes are less likely to be funded as they do not promote increased use by bicyclists of all abilities. Class III facilities are perceived by cyclists to have an unacceptable level of risk due to limited road widths, close proximity to traffic, and potential hazards at the edge of pavement such as steep drainage ditches and fixed objects. Class III facilities are typically most appropriate for low volume, low speed roads where bicycles can safely travel in the main vehicular travel lane.

4.10.4 Impacts

Method of Analysis

In the 2020 EIR, the transportation and traffic impacts of the Proposed Project were determined by evaluating the existing and proposed operational conditions at twenty-one (21) study intersections (shown in Figure 3.13-1 of the 2020 EIR), as required by the Lake County General Plan. Analysis of traffic operations was conducted using the 6th Edition of the *Highway Capacity Manual* (HCM) LOS methodology, which is fully described in the Traffic Impact Assessment (TIA; Appendix TIA of the 2020 EIR) and Section 3.13.4 of the 2020 EIR (**Appendix D**). Existing traffic volumes at each of the Project study intersections were determined by traffic counts conducted in May, June, and July 2019 to capture a range of traffic conditions, and were translated into LOS designations for each intersection. These 2019 traffic counts were then utilized to estimate traffic volumes in the Baseline year of 2022, which is when the Original Project was assumed to be completed. The Baseline (2022) conditions include additional traffic from reasonably foreseeable projects in the area, including additional homes to be constructed in the Hidden Valley Community and the Valley Oaks Development, combined with an average traffic growth rate of 1 percent per year.

The study intersections were then evaluated for seven scenarios:

- Existing Conditions – LOS based on existing peak hour volumes and existing intersection configurations;
- Existing Plus Project Phase 1 – existing traffic plus trips from Phase 1 of the Original Project;
- Baseline (No Project) Conditions – baseline was defined as the existing condition plus traffic attributable to predicted growth in the upcoming three years, assuming Project opening in 2022;

- Baseline Plus Project Phase 1 – the baseline traffic plus trips from Phase 1 of the Original Project;
- Cumulative Conditions – the forecasted year 2040 cumulative traffic volumes based on planned and approved projects;
- Cumulative Plus Project Phase 1 – the cumulative year 2040 traffic plus trips from Phase 1 of the Original Project; and
- Cumulative Plus Project Future Phases – the cumulative year 2040 traffic plus trips from Phase 1 and planned future phases of the Original Project.

Traffic counts were conducted at 14 intersections on August 19, 2022 in support of the Wildfire Evacuation Assessment (**Appendix H**). **Table 4.10-1** depicts the intersections from the Wildfire Evacuation Assessment that align with the study intersections from the TIA, the traffic counts from each study, and how the 2022 Baseline calculated in the 2020 TIA compares to the measured traffic counts conducted in 2022.

Table 4.10-1: Traffic Count Comparison (PM Peak Hour)

#*	Intersection**	2019 Count for 2020 TIA	2022 Baseline Estimated in 2020 TIA	2022 Count for 2024 Wildfire Assessment	Difference Between 2022 Count and 2022 Estimate	Percent Change (2022 Count Compared to Estimate)
1	SR 53/CR 140/SR 29/Main St	1,832	2,176	2,570	394	15%
2	SR 29/CR 122/Spruce Grove Rd S	990	1,318	1,215	-103	-8%
3	SR 29/CR 122/Spruce Grove Rd N	1,111	1,456	1,153	-303	-26%
4	SR 29/CR 105/Hidden Valley Rd/Spruce Rd Ext	1,077	1,434	1,180	-254	-22%
5	SR 29/Hartmann Rd	1,417	1,773	1,606	-167	-10%
6	SR 29/Grange Rd	1,219	1,568	1,403	-165	-12%
7	SR 29/CR 101/Butts Canyon Rd	1,260	1,499	1,451	-48	-3%
10	SR 29/Calistoga Rd/Wardlaw St	1,373	1,557	1,517	-40	-3%
12	SR 29/Calistoga Rd/CR 117C/Main St	1,298	1,492	1,598	106	7%

Source: Abrams Associates, 2020 (Appendix TIA of **Appendix D**), National Data and Surveying Services, 2022, and Fehr & Peers, 2024 (**Appendix H-1**)
*Original intersection numbering from the 2020 TIA
**Intersection name used in the 2024 Wildfire Assessment

As shown in **Table 4.10-1**, the traffic counts at several area intersections have increased, but overall the measured 2022 traffic is an average of 7 percent lower compared to the estimated 2022 Baseline in the 2020 TIA. The only two intersections where actual traffic was higher than the estimated Baseline were Intersection #1 (SR 53/SR 29/Main St.) near Clearlake which was 15 percent higher, and Intersection #12 (SR 29/Calistoga Rd./Main St.) in Middletown which was 7 percent higher. Although difficult to quantify, some increase in traffic during the peak tourist season (August 2022) is to be expected and could explain that the two intersections with increases are along two of the major traveling corridors to access regional recreational amenities like Clear Lake, while the other intersections studied did not show increases. More

importantly, the two intersections where increases were identified were both forecast to operate well within the established LOS standards under the baseline plus project scenario. There is no expectation that further analysis of these intersections would yield any additional useful information about the project's potential for impacts. These intersections were also both forecast to have acceptable operations under the cumulative buildout plus project (Phase 2) scenario and no additional mitigations would be required. The intersection with the greatest percent increase (#1 – SR 53/CR 140/SR 29/Main St) will be improved during a subsequent phase of the planned Konocti Corridor project, the first phase of which was completed in June 2023, after the 2022 traffic counts. This project improves an 8-mile section of SR 29 from a two-lane divided highway to a four-lane expressway, which will further alleviate known congestion in the area and construction-related congestion during summer peak travel season may account for the inflated baseline trips at Intersection #1.

Construction of the Modified Project has approximately 213 fewer acres of Development Area and therefore may result in a slight decrease in the overall worker trips required for the construction phase. Utilizing the TIA prepared for the 2020 EIR will therefore result in a conservative assessment of potential impacts due to Project construction activities. The Modified Project results in no increase to the number of resort units or residences and therefore the trip generation rate associated with the Modified Project will not change. The same number of employee, resident, and patron visits are expected during Project operations, and therefore the analysis of Project impacts presented in the 2020 TIA remains valid.

Caltrans provided updated growth factors in February 2024 for the entire District 1 that could potentially affect the background traffic assumed for the cumulative conditions, and therefore these growth factors were compared to the site-specific 20-year growth projected in the 2020 TIA. This comparison revealed the 2020 TIA utilized growth factors that were substantially higher than the 2024 Caltrans growth factors in all but two locations: (1) the intersection of SR 52, and (2) SR 29 and SR 29 south of SR 175. In both locations, the 2020 TIA was within 1 percent of the updated growth factors and adjusting the model by 1 percent would not affect the conclusions or mitigation presented in the 2020 TIA or 2020 EIR. Therefore, the assumed growth analyzed in the 2020 TIA ensures the Cumulative Condition, Cumulative plus Project, and Cumulative Plus Project Future Phases analyses remain valid.

This PREIR will qualitatively assess the potential for traffic impacts using the modeling provided in Appendix TIA of the 2020 EIR (**Appendix D**). This analysis will focus on whether the Project Modifications would have new or substantially more severe significant effects than those described in the 2020 EIR.

Impacts

IMPACT 3.13-1	**CONFLICT WITH PROGRAM, PLAN, ORDINANCE, OR POLICY ADDRESSING ROADWAYS DURING CONSTRUCTION**	
2020 EIR Conclusions		**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Off-Site Areas**	
Significance Before Mitigation	Less than Significant	No
Mitigation Measures	None Required	None Required
Significance After Mitigation	N/A	N/A

*Impact numbering retained from the 2020 EIR.

As analyzed in the 2020 EIR, construction of the Original Project would increase traffic as a result of demolition and construction activities, and the EIR assumed a worst-case scenario of a single-phase construction period of 36 months. Construction traffic would include the delivery of heavy equipment and materials to the Guenoc Valley Site, removal of debris, and daily vehicle trips for workers. A Traffic Control Plan is required to be approved by the County Engineer prior to issuance of grading and building permits, which will ensure that truck drivers utilize the most direct routes, site ingress and egress is limited to appropriate entrances and signage or traffic signals may be required, warning signs will be installed, and street cleaning may be implemented if debris or mud become an issue. The County Engineer will also have the ability to limit the hours that importation and exportation of materials may occur if traffic becomes a nuisance. For these reasons, the 2020 EIR concluded that impacts due to construction traffic are less than significant.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications would add the Grange Road Connector and Connector Roadways to the area that will be graded and disturbed, however, the overall grading area associated with the Modified Project will be reduced as a result of the Parcel Reconfiguration, and therefore no additional workers or equipment are anticipated for construction. The Project Modifications will not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with construction traffic as compared to the 2020 EIR.

IMPACT 3.13-2	**CONFLICT WITH PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING ROADWAYS DURING OPERATION ASSUMING FUTURE BASELINE PLUS PROJECT CONDITIONS**	
2020 EIR Conclusions		**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Off-Site Areas**	
Significance Before Mitigation	Potentially Significant	No
Mitigation Measures	MM 3.13-1	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

In the 2020 EIR, the baseline plus Original Project (Phase 1) traffic conditions were developed by adding projected traffic from Phase 1 to the baseline traffic volumes and assessing the traffic volumes at the study intersections to determine the potential for Project-related delays in LOS. As shown in Table 3.13-6 of the 2020 EIR, all of the study intersections would continue to operate at acceptable conditions, with the exception of Intersection #7 (SR 29 at Butts Canyon Road), Intersection #20 (SR 29 at Tubbs Lane in Napa County), and Intersection #21 (SR 128 at Tubbs Lane in Napa County). The 2020 EIR concluded that **Mitigation Measure 3.13-1**, which requires the installation of a three-way traffic signal with crosswalks at Intersection #7, will reduce traffic impacts to less-than-significant levels. The Modified Project does not result in a change in the number of trips in comparison to the Original Project as a similar or reduced number of hotel units and residences are proposed. Therefore, the Project Modifications will not increase the severity of this impact, and **Mitigation Measure 3.13-1** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant effects associated with Phase 1 traffic as compared to the 2020 EIR.

IMPACT 3.13-3	CONFLICT WITH PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING TRANSIT DURING OPERATION	
2020 EIR Conclusions		Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Off-Site Areas	
Significance Before Mitigation	Less than Significant	No
Mitigation Measures	None Required	None Required
Significance After Mitigation	N/A	N/A

*Impact numbering retained from the 2020 EIR

As analyzed in the 2020 EIR, the Proposed Project would not result in a significant degradation of LOS on any roadway segments utilized for bus transit in the area, and would not conflict with any transit plans or goals of the County or Lake Transit. The Modified Project does not result in a change in the number of trips in comparison to the Original Project because the same or fewer hotel units and residences are proposed. Therefore, the Project Modifications will not increase the severity of this impact. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with public transit as compared to the 2020 EIR.

IMPACT 3.13-4	CONFLICT WITH PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING BICYCLE, OR PEDESTRIAN FACILITIES DURING OPERATION	
2020 EIR Conclusions		Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Off-Site Areas	
Significance Before Mitigation	Less than Significant	No
Mitigation Measures	None Required	None Required
Significance After Mitigation	N/A	N/A

*Impact numbering retained from the 2020 EIR.

The County does not have LOS standards for pedestrian or bicycle facilities, and the 2020 EIR found that the Proposed Project would not overcrowd existing facilities or result in decreases in performance or safety. While this impact was identified as less than significant, the Original Project would contribute to additional pedestrian and bicycle improvement measures in the vicinity of the Guenoc Valley Site in compliance with County and General Plan policies. Furthermore, although this impact is not significant, the 2020 EIR acknowledged that **Mitigation Measure 3.13-5** would require fair-share contributions towards pedestrian and bicycle infrastructure improvements relating to the Original Project's VMT impacts, which would further minimize any impacts to pedestrian or bicycle facilities. The Project Modifications do not result in a change in the number of proposed visitors to the site as the same or fewer number of hotel units and residences are proposed. Therefore, the Project Modifications will not increase the severity of this impact. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with pedestrian and bicycle facilities as compared to the 2020 EIR.

IMPACT 3.13-5	CONFLICT OR BE INCONSISTENT WITH CEQA GUIDELINES § 15064.3, SUBDIVISION (B)	
2020 EIR Conclusions		Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Off-Site Areas	
Significance Before Mitigation	Potentially Significant	No
Mitigation Measures	MM 3.13-4, 3.13-5	No Modifications Necessary
Significance After Mitigation	Significant and Unavoidable	Significant and Unavoidable

*Impact numbering retained from the 2020 EIR.

The County does not have adopted CEQA thresholds for VMT analysis, and therefore the 2020 EIR utilized the OPR threshold of a 15 percent reduction in per capita VMT over existing conditions. Due to the rural nature of the Project setting and associated longer distances required for travel to work, schools, shopping centers, etc., the 2020 EIR determined that the Original Project has a higher VMT per capita than the Lake County or Bay Area regional averages, which is a significant impact. **Mitigation Measure 3.13-4** requires that the applicant implement a TDM Plan that has a stated objective of reducing VMT by 15 percent. A draft of the TDM Plan was included as Appendix TDM to the 2020 EIR and a revised version was Attachment B to the Final EIR Errata. Measures included within the Revised TDM Plan include: private shuttle service for employees where public transit lines are unavailable; on-call Dial-a-Ride service to connect the Guenoc Valley Site to Middletown; carpool and ride-matching assistance program; preferential on-site parking for carpoolers; dedicated parking for car share services; on-site sales of transit passes; a TDM Coordinator to facilitate and publicize activities conducted under the TDM Plan; transportation and commute information kiosks in common gathering areas, among others. The 2020 EIR conclusion that the Original Project would have a significant and unavoidable impact to VMT and may not meet a 15 percent per capita VMT reduction is mainly an acknowledgement that the extensive set of TDM measures cannot be conclusively proven to be sufficient to achieve the desired reduction, although it should be noted that the TDM Plan will have significant reductions in VMT. As described in the revised TDM Plan, implementation of **Mitigation Measure 3.13-4** is expected to reduce vehicle trips and VMT from the Original Project by up to 20 percent.

Under the Project Modifications, with the increase in density of residential lots and removal of the remote lots as part of the Parcel Reconfiguration, there will be slight decreases in the distances that residents travel to their homes once they reach the Guenoc Valley Site, but this slight decrease in on-site VMT is likely negligible. The Project Modifications do not result in a change in the number of proposed visitors to the site as the same number of hotel units and residences are proposed. Therefore, the Project Modifications will not increase the severity of this impact in comparison to the Original Project. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with VMT as compared to the 2020 EIR, however this impact would remain significant and unavoidable.

IMPACT 3.13-6	SUBSTANTIALLY INCREASE HAZARDS DUE TO A GEOMETRIC DESIGN FEATURE (E.G., SHARP CURVES OR DANGEROUS INTERSECTIONS) OR INCOMPATIBLE USES (E.G., FARM EQUIPMENT)	
2020 EIR Conclusions		**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Off-Site Areas**	
Significance Before Mitigation	Less than Significant	No
Mitigation Measures	None Required	None Required
Significance After Mitigation	N/A	N/A

*Impact numbering retained from the 2020 EIR.

As analyzed in the 2020 EIR, the Original Project would not cause or substantially increase any safety hazards due to design features or the introduction of incompatible uses to the area. Although the Proposed Project would increase pedestrian and vehicular traffic in the area, the 2020 EIR concluded that it is not expected to significantly impact or change the design of any transportation facilities or create any new safety problems.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. Project Modifications that include the Connector Roadways and Grange Road Connector would result in an overall increase in circulation safety in comparison to the Original Project, as there would be additional emergency ingress and egress from the site and there would be no dead-end or non-looped roads greater than one mile. The Project Modifications will not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with hazardous features or incompatible uses as compared to the 2020 EIR.

IMPACT 3.13-7	RESULT IN INADEQUATE EMERGENCY ACCESS	
2020 EIR Conclusions		**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Off-Site Areas**	
Significance Before Mitigation	Less than Significant	No
Mitigation Measures	None Required	None Required
Significance After Mitigation	N/A	N/A

*Impact numbering retained from the 2020 EIR.

As analyzed in the 2020 EIR, sufficient emergency access is determined by factors such as number of access points, roadway width, and proximity to fire stations. The 2020 EIR assessed the potential for Project traffic to result in impacts to emergency vehicle response times in the area, as well as whether emergency vehicles can adequately access the Project Site. With mitigation, the addition of Project traffic to area roadways would not result in any significant changes to LOS and therefore no significant impacts to emergency vehicle response times.

As discussed further above, the Project Modifications will not substantially increase the amount of Project-related traffic to area roadways compared with what was anticipated in the 2020 EIR, and therefore the Project Modifications would not result in an increase in this impact. Regarding the ability for emergency vehicles to access proposed uses within the Guenoc Valley Site, the Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures and DMP, would have no potential to increase the severity of this impact. Project Modifications that include the Connector Roadways and Grange Road Connector would result in an overall increase in circulation safety in comparison to the Original Project, as there would be additional emergency ingress and egress from the site and there would be no dead-end or non-looped roads greater than one mile. The Updated WPP is designed to increase emergency access and wildfire preparedness on the site. Refer to further discussion in **Section 3** of this PREIR. Therefore, the Project Modifications would have a beneficial impact as it relates to emergency access within the Guenoc Valley Site. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with emergency access as compared to the 2020 EIR.

IMPACT 3.13-8	**CONFLICT WITH PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING ROADWAYS DURING UNDER CUMULATIVE CONDITIONS**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Off-Site Areas**	**Future Phases**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.13-1, 3.13-2	MM 3.13-1, 3.13-2, 3.13-3	No Modifications Necessary
Significance After Mitigation	Less than Significant	Significant and Unavoidable	Less than Significant (Phase 1) Significant and Unavoidable (Future Phases)

*Impact numbering retained from the 2020 EIR.

In the 2020 EIR, the Cumulative plus Proposed Project (Phase 1) traffic conditions were developed by adding projected traffic from Phase 1 to the projected 2040 traffic volumes and assessing the traffic volumes at the study intersections to determine the potential for Project-related delays in LOS (see Table 3.13-8 of the 2020 EIR). The Cumulative plus Future Phases traffic conditions followed the same methodology, but analyzed both Phase 1 and Full Buildout of the Guenoc Valley Site (see Table 3.13-9 of the 2020 EIR).

Project-Level Analysis of Phase 1

As shown in Table 3.13-8 of the 2020 EIR, all of the study intersections would continue to operate at acceptable conditions, with the exception of Intersection #3 (SR 29 at Spruce Grove Road South), Intersection #4 (SR 29 at Hidden Valley Road), Intersection #5 (SR 29 at Hartmann Road), Intersection #7

(SR 29 at Butts Canyon Road), Intersection #20 (SR 29 at Tubbs Lane) and Intersection #21 (SR 128 at Tubbs Lane) which would all exceed their established thresholds. The 2020 EIR determined that the Original Project would not increase the traffic on the side street approaches by more than 10 percent at Intersections #20 and #21 in Napa County, and therefore the Project's contribution to congestion at these intersections would be considered less than significant. The 2020 EIR concluded that **Mitigation Measure 3.13-1**, which requires improvements to Intersection #7, and **Mitigation Measure 3.13-2**, which requires payment to Caltrans for a proportionate cost for the identified improvements to return the LOS operations at these intersections to an acceptable level, would reduce impacts to less than significant.

The Modified Project does not result in a change in the number of trips in comparison to the Original Project because a similar or reduced number of hotel units and residences are proposed. Therefore, the Project Modifications will not increase the severity of this impact, and **Mitigation Measures 3.13-1** and **3.13-2** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant effects associated with Phase 1 traffic in the Cumulative scenario as compared to the 2020 EIR.

Programmatic Analysis for Future Phases

As shown in Table 3.13-9 of the 2020 EIR, all of the study intersections would continue to operate at acceptable conditions, with the exception of Intersection #3 (SR 29 at Spruce Grove Road South), Intersection #4 (SR 29 at Hidden Valley Road), Intersection #5 (SR 29 at Hartmann Road), Intersection #7 (SR 29 at Butts Canyon Road), Intersection #20 (SR 29 at Tubbs Lane) and Intersection #21 (SR 128 at Tubbs Lane) which would all exceed their established thresholds. The 2020 EIR determined that the addition of traffic from future phases in the cumulative scenario would increase the side street approaches by more than 10 percent at Intersections #20 and #21 in Napa County which would be considered a significant impact. The 2020 EIR concluded that **Mitigation Measure 3.13-2** would reduce impacts to Intersections #3, #4, and #5 to less-than-significant levels, however **Mitigation Measure 3.13-1** would not reduce impacts to Intersection #7 to less-than-significant levels in the Cumulative plus Future Phases scenario. Therefore, the 2020 EIR included **Mitigation Measure 3.13-3**, which requires that traffic impact studies be prepared prior to approval of future phases and mitigation measures be developed as appropriate to address any conflicts with circulation policies resulting from future proposed development. The future traffic impact studies required by **Mitigation Measure 3.-13-3** will address Intersections #7, #20, and #21, among others. However, because certain improvements, such as those required to Intersections #20 and #21 in Napa County, may not be within the control of the County, future phases of the Proposed Project could cause conflicts with applicable plans, programs, plans, ordinances or policies addressing the circulation system. The 2020 EIR determined that this impact is significant and unavoidable.

The Modified Project does not result in a change in the number of trips in comparison to the Original Project as a similar or reduced number of hotel units and residences are proposed. Therefore, the Project Modifications will not increase the severity of this impact. **Mitigation Measures 3.13-1** through **3.13-3** would continue to apply but would not reduce impacts to less-than-significant levels. The Project Modifications would not result in any new significant effects or a substantial increase in the severity of previously identified significant impacts associated with Full Buildout traffic in the cumulative setting as compared to the 2020 EIR, however this impact would remain significant and unavoidable.

4.10.5 Mitigation Measures

No changes to the mitigation measures are warranted as a result of the Project Modifications. A full list of the mitigation measures is included in the MMRP in **Section 5**.

4.11 TRIBAL CULTURAL RESOURCES

4.11.1 Introduction

The 2020 EIR, Volume II, Section 3.5 included information and analysis pertaining to both cultural resources and tribal cultural resources. Since publication of the 2020 EIR, tribal cultural resources are now analyzed separately; therefore this PREIR separates the discussion of cultural and tribal cultural resources. The 2020 EIR, Volume II, Section 3.5.2 includes a detailed description of the environmental setting related to tribal cultural resources in the vicinity of the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Areas that is not repeated in its entirety within this PREIR. **Section 4.11.2** of this PREIR includes a description of the environmental setting that has changed since the 2020 EIR. There have been no substantial changes to the tribal cultural resource "Regulatory Setting" since preparation of the 2020 EIR. The full discussion of the environmental and regulatory settings is available in the 2020 EIR (**Appendix D**). **Section 4.11.3** of this PREIR describes methods of analysis and provides a discussion on whether Project Modifications would result in new significant effects or a substantial increase in the severity of previously identified effects. Mitigation for impacts to tribal cultural resources is discussed in **Section 4.11.4**.

4.11.2 Environmental Setting

Tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the CRHR or included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. A cultural landscape that meets these criteria is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be tribal cultural resources if they meet these criteria.

Please refer to the 2020 EIR, Volume II, Section 3.5.2 for a complete description of the prehistoric patterns that are applicable to the on- and off-site APE. The ethnographic setting for the Grange Road Connector and Connector Roadways remains the same as that described in the 2020 EIR. At the time of European settlement, the Project region was included in the territory controlled by the Lake Miwok, bounded by the territories of Patwin and Wappo. The Lake Miwok controlled the western and middle portions of the Guenoc Ranch, while the Patwin controlled the eastern part of the ranch (**Appendix D**).

4.11.3 Impacts

Methodology

Two Cultural Resources Investigations were prepared for the Project Modifications; please refer to the Methodology discussion in **Section 4.5.3** for a complete description of the two additional Cultural Resources Investigations conducted for this PREIR, which included an evaluation of cultural and tribal

cultural resources. These Cultural Resources Investigations included field surveys conducted on March 20, April 19, and November 6, 2023 as well as additional surveys the week of April 2, 2024.

AB 52 and SB 18 notification letters were sent to tribes on March 28, 2024. A response requesting consultation was received by Middletown Rancheria on March 29, 2024 and the County of Lake is currently in consultation with the Tribe.

Impacts

This analysis of the Project Modifications follows the same methodology outlined in Section 3.5.4 of the 2020 EIR, focusing on whether the Project Modifications would have new or substantially more severe significant effects than those described in the 2020 EIR. Refer to Section 3.5.4 of the 2020 EIR (**Appendix D**) for a complete description of the methodology and significance criteria relating to tribal cultural resources impacts.

IMPACT 3.5-4	**CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE PURSUANT TO §21080.3.1 AND §21080.3.2**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.5-1, 3.5-2 (Phase 1) MM 3.5-1, 3.5-2, 3.5-3 (Future Phases)	MM 3.5-2	New measures TCR-1 and TCR-2 and modifications to MM 3.5-1; all other mitigation measures applicable as originally written
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, California Native American prehistoric, historic, archaeological, cultural, and sacred places are essential elements in tribal cultural traditions, heritages, and identities. TCRs can only be identified by members of the Native American community, thus requiring consultation under CEQA. Additionally, Section 106 of the NHPA is integral to the protection of historic properties including cultural and sacred resources and traditional cultural properties (TCPs) of significance to the Tribe. Refer to Section 3.5 of the 2020 EIR (**Appendix D**) for a discussion of the consultation that has occurred with the Middletown Rancheria regarding the Proposed Project. As described in the 2020 EIR, the Middletown Rancheria identified that the Proposed Project could impact TCRs, which would be a potentially significant impact. **Mitigation Measures 3.5-1** through **3.5-3** require establishment of buffer zones and fencing to protect TCRs, implementation of minimization measures in consultation with the Tribe, and direct consultation with the Middletown Rancheria if any previously unknown finds are made during

construction. The 2020 EIR concluded that these mitigation measures would reduce impacts to TCRs to a less-than-significant level.

Project Modifications that would result in no changes to the APE or Development Area, including the GHG Reduction Measures, Updated WPP, and DMP, would have no potential to increase the severity of this impact. The Project Modifications that result in changes to the APE and previously studied Development Area (see **Table 4.1-1**), including the Parcel Reconfiguration, Connector Roadways, and Grange Road Connector, would have the potential to impact these same previously identified resources. As discussed in **Section 4.5** above, two new resources have been identified but both can be avoided in compliance with **Mitigation Measure 3.5-1** and therefore the severity of this impact has not increased (Appendix CUL in the 2020 EIR and **Appendix K**). Tribal representatives from Middletown Rancheria and Mishewal-Wappo Tribe of Alexander Valley were present during the surveys conducted in support of this PREIR. Furthermore, as shown in **Table 4.5-2** above, the Project Modifications have removed some development components in the vicinity of known TCRs. Therefore, the Project Modifications may have a slightly lesser impact to TCRs as compared to the Project analyzed in the 2020 EIR. New mitigation measures have been added that align with the separate Cultural Resources (**Section 4.5**) and Tribal Cultural Resources (**Section 4.11**) analyses in this PREIR. Specifically, **Mitigation Measure TCR-1** implements **Mitigation Measure 3.5-1** requiring avoidance and the establishment of buffers around resources, further clarifying that these requirements apply to TCRs. The Unanticipated Discoveries Plan was moved to a new **Mitigation Measure TCR-2**, although no changes were made to the requirements of the Unanticipated Discoveries Plan. Construction monitoring and qualifications for TCR monitoring were added to **Mitigation Measure TCR-2**. Additionally, **Mitigation Measures 3.5-1** through **3.5-3** would continue to apply and would reduce impacts to less-than-significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new significant environmental effects or an increase in the severity of previously identified significant effects associated with TCRs as compared to the 2020 EIR.

IMPACT 3.5-5	**CUMULATIVE IMPACTS TO TRIBAL CULTURAL RESOURCES**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.5-1, 3.5-2; MM 3.5-4 (Phase 1) MM 3.5-1, 3.5-2, 3.5-3, 3.5-4 (Future Phases)	MM 3.5-2; MM 3.5-4	New measures TCR-1 and TCR-2 and modifications to MM 3.5-1; all other mitigation measures applicable as originally written
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As explained further in the 2020 EIR and **Section 4.13** of this PREIR, the context for evaluation of potential cumulative impacts on cultural resources and TCRs is based on development in the region, including projected build out under the Middletown Area Plan and approved or potential projects in the County. Cumulative projects in the southeastern Lake County region described in **Section 4.13** could have a potentially significant cumulative effect to cultural resources and TCRs. There are numerous federal, State, and local laws, regulations, and ordinances that seek to protect cultural resources, in addition to policies that require resource inventory and consultation with the Middletown Rancheria. The Original Project's contribution to significant cumulative impacts related to the area's cultural resources and TCRs were found to be less than significant with mitigation, and the Project Modifications would not result in new significant environmental effects or an increase in the severity of previously identified significant effects. No additional mitigation for cumulative development would be required.

4.11.4 Mitigation Measures

This PREIR has identified the need to separate TCR mitigation measures from cultural mitigation measures to ensure the potential impacts of the Project Modifications are reduced to less-than-significant levels. The mitigation measures with revisions is discussed below, and a presentation of changes in underline ~~strikeout~~ is provided in **Section 5**.

Mitigation Measure 3.5-1 has been updated to add specific reference to the Creek Overlook Site and the Sunshine Midden Site in the list of resources that shall be avoided.

Mitigation Measure TCR-1 has been added to implement **Mitigation Measure 3.5-1**, which requires avoidance and the establishment of buffers around resources, and further clarifies that these requirements apply to TCRs.

The Unanticipated Discoveries Plan was moved to a new **Mitigation Measure TCR-2**, although no changes were made to the requirements of the Unanticipated Discoveries Plan. Construction monitoring and qualifications for TCR monitoring were added to **Mitigation Measure TCR-2**.

4.12 WILDFIRE RISKS

4.12.1 Introduction

Section 3 and **Appendix H** of this PREIR include a detailed assessment of the Proposed Project's potential effects related to community evacuation during a wildfire event in compliance with the Ruling (**Appendix A**). This chapter addresses the potential for the Project Modifications to result in greater effects associated with other wildfire related impacts described in the 2020 EIR that the Court found were sufficiently addressed, specifically: Impact 3.16-2 ("would the Project exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from wildfire or the uncontrolled spread of wildfire?"); Impact 3.16-3 ("would the Project require the installation or maintenance of associated infrastructure… that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?"); Impact 3.16-4 ("would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?"); and Impact 3.16-5 ("would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fire").

The 2020 EIR, Volume II, Section 3.16.2 includes a detailed description of the environmental setting related to wildfire risks that is not repeated in its entirety here. **Section 4.12.2** includes a description of the environmental setting that has changed since the 2020 EIR. **Section 4.12.4** analyzes the potential for the Project Modifications to have new or substantially more severe impacts to Impacts 3.16-2 through 3.16-4. Mitigation for impacts to wildfire risk is discussed in **Section 4.12.5**.

Information and analysis in this chapter has been largely summarized from the updated "Mahá Guenoc Valley Wildfire Prevention Plan" (Updated WPP) (**Appendix F**) and "Guenoc Valley Mixed Use Planned Development Project: Wildfire Risk and Evacuation Assessment, January 2024" prepared by the Community Wildfire Planning Center and Fehr & Peers (Wildfire Risk Assessment) (**Appendix H**).

4.12.2 Environmental Setting

Please refer to **Section 3.2.2** of this PREIR for a detailed description of the environmental setting related to wildfire, including wildfire characteristics and history in the vicinity of the Guenoc Valley Site. Additional discussion of the environmental setting is provided in **Appendix F** (Updated WPP) and **Appendix H** (Wildfire Risk Assessment). As stated therein, the Guenoc Valley Site contains wildfire risk factors, including chaparral and grassland vegetation, steep slopes, summers with low precipitation, and moderate wind speeds. The entire Guenoc Valley Site is located within a SRA and the majority of the Guenoc Valley Site is now mapped as Very High FHSZ (**Figure 3-1**).

SLCFPD, one of six county fire protection districts, is responsible for serving communities in South Lake County. Four fire stations are located throughout the district in Middletown, Hidden Valley Lake, Cobb, and Loch Lomond. SLCFPD Station 60 in Middletown is the nearest SLCFPD fire station, located approximately 4 miles west of the Project Site. CAL FIRE has four stations within Lake County including Middletown Station 31 located in Middletown, also approximately 4 miles west of the Project Site. CAL FIRE and SLCFPD provide emergency wildfire response to the region, including the Project Site.

4.12.3 Regulatory Setting

Please refer to **Section 3.2.3** of this PREIR for a detailed description of the regulatory setting related to wildfire.

4.12.4 Impacts

The impacts of the Proposed Project as they related to wildfire risks were determined by analyzing changes to the existing conditions that would occur as a result of the proposed land uses and their potential to exacerbate wildfire risk. As discussed above, **Section 3** presents the analysis of wildfire risks related to community evacuation, while this section addresses whether the Project Modifications have the potential to exacerbate impacts associated with other categories of wildfire risk as required by the CEQA Guidelines.

This analysis of the Project Modifications follows a similar methodology as outlined in Section 3.16.4 of the 2020 EIR, and an updated Wildfire Risk Assessment is presented in **Appendix H-1** to reflect guidance in the October 2022 *Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act* issued by the California Attorney General's office (AG Guidance), described further in **Section 3.3.2** of this PREIR. The discussion below focuses on whether the Project Modifications would result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects than those described in the 2020 EIR.

Refer to Section 3.16.4 of the 2020 EIR (**Appendix D**) and **Appendix H** for a complete description of the methodology and significance criteria relating to wildfire risk impacts.

IMPACT 3.16-2	**EXACERBATE WILDFIRE RISKS AND THEREBY EXPOSE PROJECT OCCUPANTS TO POLLUTANT CONCENTRATIONS FROM WILDFIRE OR THE UNCONTROLLED SPREAD OF WILDFIRE**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Less than Significant	Less than Significant (Workforce Housing) No Impact (Infrastructure)	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

As described in the 2020 EIR, development of the Proposed Project has the potential to increase wildfire risk through introduction of more human activity on a site that is designated predominantly as Very High FHSZ. The 2020 EIR found that with inclusion of the numerous Project design commitments and the Wildfire Prevention Plan, this impact would be less than significant.

Certain Project Modifications, such as DMP, would have no potential to exacerbate fire risk, as they pertain only to operational or management decisions that would be made in the event of a drought. The GHG Reduction Measures may have some potential to reduce the risk of wildfire ignition, as they prevent natural gas/propane from being utilized on the Project Site (except for restaurant cooktops and fire pits in outdoor patio areas of restaurants), which is also addressed in the Updated WPP (**Appendix F**). The Project Modifications that will have the largest potential to change the severity of this impact are the Updated WPP, the Parcel Reconfiguration, Connector Roadways, and the Grange Road Connector; all of these Project Modifications will reduce the potential to exacerbate wildfire risk as compared to the Original Project and therefore will further reduce this impact. The revisions to the Updated WPP are all intended to further reduce the potential for wildfire ignition as a result of the Proposed Project, and include the addition of 10 feet of hardscape on either side of Project roadways to further their effectiveness as fuel breaks, a "Zone Zero" that has been added to the building defensible guidelines to provide for an ember-resistant zone immediately adjacent to structures, and additional funding and staffing commitments for the on-site Emergency Response Center so that there will always be a professional available on the property to address an emergency (wildfire or other) if it were to occur. The Parcel Reconfiguration eliminates the remote camping area and the more remote parcels at the urban-wildland interface, providing additional buffer between Project-related uses and the off-site lands that are not actively managed. Finally, the Connector Roadways and Grange Road Connector provide additional internal circulation for emergency responders as well as Project residents, visitors, and

employees, while the Grange Road Connector will provide a new route for emergency ingress and egress during evacuations. All of these Project Modifications are designed to lessen the potential for the Proposed Project to increase wildfire risk and thereby expose persons to pollutant concentrations from wildfire or the uncontrolled spread of wildfire.

All proposed development projects in the SRA, including the Proposed Project, must comply with a set of minimum wildfire safety requirements that are set forth in California's Code of Regulations and Public Resources Code. These include the California Building Code, Fire Code, Minimum Fire Safe Regulations, and defensible space inspections. The AG Guidance provides additional considerations for projects to comprehensively address wildfire risk.

An updated wildfire risk assessment was prepared to comply with the 2022 AG Guidance and is presented in **Appendix H**.-1 **Appendix H-1** reviewed the Modified Project, including the updated WPP (**Appendix F**), for compliance with minimum fire safety standards (as required by the State) and analyzed wildfire risk reduction across seven categories based on the 2022 AG Guidance:

1. project density;
2. project location in the landscape;
3. water supply and infrastructure;
4. emergency access and egress;
5. safety zones and temporary refuge areas;
6. initial construction suppression resources;
7. communication, management, and maintenance.

Based on the review and analysis, the Wildfire Risk Assessment concluded that the Proposed Project meets and exceeds state minimum requirements for wildfire safety by incorporating a comprehensive set of measures, including but not limited to:

- addressing wildfire risk across multiple scales by identifying strategies that reduce risk at the building/lot site level, commercial and residential development nodes, and landscape scale;
- incorporating appropriate land uses to reduce fire behavior and provide for potential firefighter safety zones and temporary areas of refuge for the public, such as strategic placement of the golf course and polo field;
- expansion of vegetation management along roadways and incorporation of a third access route for emergency evacuation;
- implementation of communication and maintenance measures that occur from Project inception and throughout the duration of the Project.

The Project Modifications would not result in any new significant environmental effects or an increase in the severity of previously identified effects associated with wildfire risk and exposure to pollutant concentrations as compared to the 2020 EIR.

IMPACT 3.16-3	REQUIRE THE INSTALLATION OR MAINTENANCE OF ASSOCIATED INFRASTRUCTURE (SUCH AS ROADS, FUEL BREAKS, EMERGENCY WATER SOURCES, POWER LINES OR OTHER UTILITIES) THAT MAY EXACERBATE FIRE RISK OR THAT MAY RESULT IN TEMPORARY OR ONGOING IMPACTS TO THE ENVIRONMENT		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.16-1	MM 3.16-1	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

As analyzed in the 2020 EIR, the use of construction equipment for development of the Proposed Project could increase fire risk, which would be a significant impact. **Mitigation Measure 3.16-1** would reduce the probability of equipment accidentally igniting a fire by requiring fully functioning spark arresters on equipment, clearing vegetation prior to utilizing spark-inducing equipment, as well as the provision of fire extinguishers, timing of mowing, and other BMPs. With inclusion of the mitigation measure, as well as adherence to the Updated WPP, the 2020 EIR concluded this impact would be less than significant. Additionally, the 2020 EIR described that future operation and maintenance of Project-related infrastructure would have low impacts to the environment in terms of fire risk, because they would not be combustible or induce sparks. As discussed in the 2020 EIR, powerlines would be located underground, avoiding the potential for starting a fire.

The Project Modifications would further reduce the potential for infrastructure to increase fire risks by prohibiting the use of natural gas and propane with the Guenoc Valley Site, with the exception of restaurant cooktops and fire pits in outdoor patio areas of restaurants. The Original Project included a natural gas/propane storage and distribution network throughout the site for use in residential and non-residential cooktops, water heaters and heating units, which would be eliminated with the Project Modifications. Further, the Project Modifications require that any pre-existing natural gas infrastructure within the site be capped and removed. Project Modifications that do not result in changes to construction, including the GHG Reduction Measures, Updated WPP, and DMP, would have potential to increase the severity of this impact, as they would not change the amount of time or location that construction equipment is running. The Project Modifications would add the Grange Road Connector and Connector Roadways to the area that will be graded and disturbed, however, the overall grading area associated with the Proposed Project will be reduced as a result of the Parcel Reconfiguration, including elimination of the camping area and roadways and utilities to relatively remote parcels. **Mitigation Measure 3.16-1** would continue to apply and would reduce impacts to less than significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new or

substantially more severe significant impacts associated with infrastructure construction or maintenance as compared to the 2020 EIR.

IMPACT 3.16-4	**EXPOSE PEOPLE OR STRUCTURES TO SIGNIFICANT RISKS, INCLUDING DOWNSLOPE OR DOWNSTREAM FLOODING OR LANDSLIDES, AS A RESULT OF RUNOFF, POST-FIRE SLOPE INSTABILITY, OR DRAINAGE CHANGES**		
2020 EIR Conclusions			**Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?**
Project Component	**Guenoc Valley Site Phase 1 and Future Phases**	**Other Phase 1 (Off-Site) Areas**	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.16-2	MM 3.16-2	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR.

Wildfire inherently alters the environment, and the removal of vegetation cover that absorbs rainfall and holds soil in place can lead to flash flooding and erosion after fire. As analyzed in the 2020 EIR, some of the Phase 1 resort communities are located downslope from areas that may pose a greater risk of landslide or flooding after wildfire, and future phases may include the development of structures near steep slopes. **Mitigation Measure 3.16-2** requires that soil stabilization measures be implemented after a wildfire, and be included in a post-wildfire emergency response plan approved by the SLCFPD. With inclusion of this mitigation measure, the 2020 EIR concluded this impact is reduced to less-than-significant levels. Project Modifications that do not result in changes to the location of structures, including the GHG Reduction Measures, Updated WPP, DMP, Connector Roadways, and Grange Road Connector, would have no potential to increase the severity of this impact, as they would not change where structures are located on the site. The Parcel Reconfiguration would remove many of the most remote parcels located in steeper areas and increase the density of residential units in the central portion of the Guenoc Valley Site that contains gentler slopes, which would further reduce the future exposure of structures to landslides or flooding after wildfire. **Mitigation Measure 3.16-2** would continue to apply and would reduce impacts to less than significant levels for the same reasons stated in the 2020 EIR. The Project Modifications would not result in any new or substantially more severe significant impacts associated with post-wildfire flooding or landslides as compared to the 2020 EIR.

IMPACT 3.16-5	EXPOSE PEOPLE OR STRUCTURES, EITHER DIRECTLY OR INDIRECTLY, TO A SIGNIFICANT RISK OF LOSS, INJURY OR DEATH INVOLVING WILDLAND FIRE		
	2020 EIR Conclusions		Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Potentially Significant	Potentially Significant	No
Mitigation Measures	MM 3.16-2	MM 3.16-3, 3.16-4, 3.16-5, 3.16-6, 3.16-7, and 3.16-8	No Modifications Necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

*Impact numbering retained from the 2020 EIR

Section 3.0 contains a discussion of the potential for the Modified Project to expose people to a risk of loss involving wildfire as a result of inadequate emergency community evacuation. This discussion focuses on the potential for the Project Modifications to expose people or structures to risk of loss as a result of an increased potential for wildfire ignition or as a result of establishing new residents and structures in a wildfire prone area.

The 2020 EIR described that the Guenoc Valley Site contains Moderate to Very High FHSZs, and the Proposed Project would introduce new residential uses and commercial resort uses within this area, thereby potential exposing people and structures to a significant risk of loss involving wildland fires. This impact was identified in the 2020 EIR as potentially significant, and with implementation of **Mitigation Measure 3.16-2** would be reduced to less-than-significant levels.

Certain Project Modifications, such as DMP, would have no potential to exacerbate fire risk, as they pertain only to operational or management decisions that would be made in the event of a drought. The GHG Reduction Measures may have some potential to reduce the risk of wildfire ignition, as they prevent natural gas/propane from being utilized on the Project Site (except for restaurant cooktops and fire pits in outdoor patio areas of restaurants), which is also addressed in the Updated WPP (**Appendix F**). Further, the Project Modifications would not increase the number of residential and non-residential structures as compared to the Original Project.

The Project Modifications that will have the largest potential to change the severity of this impact are the Updated WPP (**Appendix F**), the Parcel Reconfiguration, Connector Roadways, and the Grange Road Connector; all of these Project Modifications will reduce the potential to exacerbate wildfire risk as compared to the Original Project and therefore will further reduce this impact. The revisions to the Updated WPP are all intended to further reduce the potential for wildfire ignition as a result of the Proposed Project, and include the addition of 10 feet of hardscape on either side of Project roadways to further their effectiveness as fuel breaks, a “Zone Zero” that has been added to the building defensible

guidelines to provide for an ember-resistant zone immediately adjacent to structures, and additional funding and staffing commitments for the on-site Emergency Response Center so that there will always be a professional available on the property to address an emergency (wildfire or other) if it were to occur. The Parcel Reconfiguration eliminates the remote camping area and the more remote parcels at the urban-wildland interface, providing additional buffer between Project-related uses and the off-site lands that are not actively managed. Finally, the Connector Roadways eliminate dead-end roads of 1 mile or longer to provide additional internal circulation for emergency responders as well as Project residents, visitors, and employees, while the Grange Road Connector will provide a new route for emergency ingress and egress during evacuations. All of these Project Modifications are designed to lessen the potential for the Proposed Project to increase wildfire risk and thereby expose persons to pollutant concentrations from wildfire or the uncontrolled spread of wildfire.

All proposed development projects in the SRA, including the Proposed Project, must comply with a set of minimum wildfire safety requirements that are set forth in California's Code of Regulations and Public Resources Code. These include the California Building Code, Fire Code, Minimum Fire Safe Regulations, and defensible space inspections. The AG Guidance provides additional considerations for projects to comprehensively address wildfire risk.

An updated wildfire risk assessment was prepared to comply with the Court's Ruling and the 2022 AG Guidance and is presented in **Appendix H**. **Appendix H** reviewed the Modified Project, including the updated WPP (**Appendix F**), for compliance with minimum fire safety standards (as required by the State) and analyzed wildfire risk reduction across seven categories based on the 2022 AG Guidance:

1. project density;
2. project location in the landscape;
3. water supply and infrastructure;
4. emergency access and egress;
5. safety zones and temporary refuge areas;
6. initial construction suppression resources;
7. communication, management, and maintenance.

Based on the review and analysis, the Wildfire Risk Assessment concluded that the Proposed Project meets and exceeds state minimum requirements for wildfire safety by incorporating a comprehensive set of measures, including but not limited to:

- addressing wildfire risk across multiple scales by identifying strategies that reduce risk at the building/lot site level, commercial and residential development nodes, and landscape scale;
- incorporating appropriate land uses to reduce fire behavior and provide for potential firefighter safety zones and temporary areas of refuge for the public, such as strategic placement of the golf course and polo field;
- expansion of vegetation management along roadways and incorporation of a third access route for emergency evacuation; and
- implementation of communication and maintenance measures that occur from Project inception and throughout the duration of the Project.

The Project Modifications would not result in any new significant environmental effects or an increase in the severity of previously identified significant effects associated with wildfire risk and exposure to pollutant concentrations as compared to the 2020 EIR.

IMPACT 3.16-6	CUMULATIVE IMPACTS		
2020 EIR Conclusions			Do Project Modifications Result in New Significant Effects or a Substantial Increase in the Severity of Previously Identified Effects?
Project Component	Guenoc Valley Site Phase 1 and Future Phases	Other Phase 1 (Off-Site) Areas	
Significance Before Mitigation	Less than Significant	Less than Significant	No
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

*Impact numbering retained from the 2020 EIR.

As explained further in the 2020 EIR and **Section 4.13** of this PREIR, the context for evaluation of potential cumulative impacts for wildfire is the immediate vicinity of the Guenoc Valley Site and the Middletown Housing Site, because wildfires could spread from the borders of these areas. Planned cumulative projects in the region are described in **Table 4.13-1**, and while some changes have occurred to the cumulative projects since the 2020 EIR, the main projects that will bring new people into the region remain consistent (i.e., buildout of the Hidden Valley Community, Valley Oaks Community, and the Guenoc Valley Water Rights Modification Project). Increased people and infrastructure in the area could potentially increase the opportunities for igniting fires and making emergency response operations more complex. The Proposed Project's contribution to cumulative impacts related to the area's wildfire risk were found in the 2020 EIR to be less than significant with inclusion of the WPP and **Mitigation Measures 3.16-1** and **3.16-2.** As discussed above and in **Appendix H**, the Project Modifications would not result in new significant environmental effects or an increase in the severity of previously identified significant effects. No additional mitigation for cumulative development would be required.

4.12.5 Mitigation Measures

No changes to the mitigation measures are warranted as a result of the Project Modifications. A full list of the mitigation measures is included in the MMRP in **Section 5**.

4.13 OTHER CEQA CONSIDERATIONS

4.13.1 Cumulative Impact Analysis

Organization

Section 4.2 of the 2020 EIR provides a background of the cumulative impact assessment methodology and a summary of each of the specific environmental resource areas analyzed previously. However, the analysis of potential cumulative impacts in each environmental issue area is discussed within that topical section in Section 3 of the 2020 EIR. As an example, the potential cumulative aesthetic impacts are

assessed in Impact 3.1-3 in Section 3.1 "Aesthetics" and summarized in Section 4.2. Following a similar structure, the cumulative impacts of the Proposed Project are discussed in each relevant topical section above and summarized in the '**Cumulatively Considerable Impacts**' section below.

Cumulative Context

As explained in Section 4.2 of the 2020 EIR, the "context for the cumulative impact analysis within [the 2020] EIR includes all past, present, and probable future development as identified in CEQA Guidelines §15130(a)(3)(b), and is based on long-term development levels projected in the Lake County General Plan (2008) as well as reasonably foreseeable development projects in the vicinity of the Guenoc Valley Site and Middletown Housing Site." The same context remains applicable to the PREIR, although reasonably foreseeable projects have been updated to reflect current conditions. Some projects previously proposed have been withdrawn and new development applications have been initiated. **Table 4.13-1** lists the current reasonably foreseeable projects that form the basis of the cumulative impact analysis in this PREIR.

Table 4.13-1: Reasonably Foreseeable Projects

Project Name	Type / Description	Status
Valley Oaks Subdivision	Unchanged from 2020 EIR	Unchanged from 2020 EIR
Hidden Valley Lake Subdivision	Unchanged from 2020 EIR	Unchanged from 2020 EIR
Middletown Multi-Use Path	Unchanged from 2020 EIR	Unchanged from 2020 EIR
Gardiner Horse Facility	Unchanged from 2020 EIR	Approved and Active
AT&T Pope Valley Telecommunication Facility	Unchanged from 2020 EIR	Approved and Active
Guenoc Valley Water Rights Modification Project	Vineyard and Surface Water Use and Development	Approved, construction in progress
Major Use Permit UP 18-25	Cannabis	Approved and Active
Major Use Permit UP 18-20	Cannabis	Approved and Active
Major Use Permit UP 18-22	Cannabis	Approved and Active
Redwood Credit Union – Lower Lake	Commercial	Complete
Wild Diamond Vineyard	Vineyard	Complete
Nikki Island Resort DR 21-01	Small resort (9 lodging units) and amenities	In process
Chrisp Law Office	New 6,200 sf office	Approved
KCA Kelseyville Christian Academy School UP 21-52	New private school, grades pre-Kindergarten through 9th	In process
Putah Storage UP 22-12	Public storage and private manufacturing facility	In process
Getaway Campground UP 22-28	Campground (59 cabins) and Manager residence	Approved

Project Name	Type / Description	Status
Minor Modification to Red Hills Energy Project MMU 23-02	Minor modification to approved biomass energy project	Approved
Use Permits, Various	Cannabis; Lake County is processing 58 cannabis permits throughout the County.	In process

Source: CEQANet, 2024; Lake County, 2024

The following projects were considered reasonably foreseeable in the 2020 EIR but have since been withdrawn or abandoned, and are no longer part of the cumulative context for the PREIR:

- UP 18-12 – Withdrawn 08/19/2020
- UP 18-26 – Absorbed by Use Permit UP 18-25
- Dollar General Retail Store

Cumulatively Considerable Impacts

A discussion of the potential for cumulative impacts resulting from the Project Modifications in light of the changes to the cumulative setting described above is provided within the individual environmental topic sub-chapters of Section 4 of this PREIR. As described throughout this chapter, the Project Modifications would not result in new cumulative impacts or a substantial increase in the severity of a cumulative impact that has not already been evaluated and for which mitigation measures have not been identified in the 2020 EIR. As such, the Project Modifications would not result in new or substantially more severe cumulative impacts as compared to the analysis contained within the 2020 EIR. As described in the 2020 EIR, the Proposed Project with Modifications would make a significant and unavoidable cumulatively considerable contribution to cumulative impacts related to traffic noise levels, GHGs, and transportation and traffic. The Proposed Project with Modifications would contribute to cumulative impacts related to land use and agriculture, air quality, biological resources, cultural resources, and geology and soils, but the Proposed Project's contribution to the impacts would be reduced to less than cumulatively considerable by the mitigation measures presented in **Section 4.0**.

4.13.2 Significant and Unavoidable Impacts

As analyzed in this PREIR, the Project Modifications would not result in new significant and unavoidable impacts or a substantial increase in the severity of the significant and unavoidable impacts identified in the 2020 EIR. Refer to the 2020 EIR, Volume II, Section 4.3, for the full list of the significant and unavoidable impacts associated with the Proposed Project.

Section 5 | Updated Mitigation Monitoring and Reporting Program

5.1 INTRODUCTION

CEQA requires that a Lead Agency establish a program to report on and monitor measures adopted as part of the environmental review process to mitigate or avoid significant effects on the environment. This MMRP is designed to ensure that the mitigation measures identified in the EIR for the Guenoc Valley Mixed Use Planned Development Project (Proposed Project) are fully implemented. The MMRP, as presented in **Table 5-1**, describes the implementation and timing of mitigation responsibilities and standards, and verification of compliance for the mitigation measures identified in the PREIR.

Table 5-1 presents all applicable requirements of the recommended mitigation measures and is organized in the same order as the contents of the 2020 EIR, by topic. Monitoring responsibilities have been distributed between the County and the Applicant under this MMRP. All monitoring actions, once completed, would be reported (in writing) to Lake County staff, which would maintain mitigation monitoring records for the Proposed Project.

Any text revisions to the mitigation measure language compared to what was previously considered in the 2020 EIR are shown in ~~strikethrough~~ (to indicate deletions) or underline (to indicate additions). Some text has been moved from cultural mitigation measures to new tribal cultural mitigation measures; this moved text is shown with ~~double-strikethrough~~ and double-underline.

The components of the MMRP table are described below.

- **Mitigation Measure:** The mitigation measures are taken verbatim from the 2020 EIR. Mitigation measures are assigned the same number as in the EIR.
- **Implementation and Timing:** Identifies the timing for the implementation of each action.
- **Responsibility for Implementation:** Identifies the authority responsible for implementing the mitigation measure.
- **Responsibility for Monitoring:** Identifies the authority responsible for monitoring implementation of the mitigation measure.

5.2 PROJECT COMMITMENTS

In addition to mitigation responsibilities listed in **Table 5-1**, the Applicant has committed to certain actions that would reduce the environmental effects of the Project, including effects related to wildfire prevention and response. A number of project commitments are outlined in **Table 5-2**, along with the timing, responsible party for implementation, and responsible party of monitoring. It should be noted that **Table 5-2** is not inclusive of all of the project's environmental commitments. Other measures may be described in the 2020 Final EIR, Volume II, Section 2.0 Project Description, and the appendices cited

therein, including but not limited to the Design Guidelines (Appendix DG) and zoning ordinance requirements (Appendix GVD).

5.3 SETTLEMENT AGREEMENT MEASURES

In addition to mitigation responsibilities listed in **Table 5-1** and project commitments in **Table 5-2**, the Applicant voluntarily entered into a Settlement Agreement with the State to resolve the State's petition and appeal (**Appendix C**). The Settlement Agreement stipulated several Project Modifications that the Applicant has agreed to incorporate into the Project pertaining to wildfire prevention and protection, GHG emissions, and land use, which are listed in **Table 5-3**. The timing, responsible party for implementation, and responsible party of monitoring, are also listed in **Table 5-3**.

Table 5-1: Mitigation Monitoring and Reporting Plan

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
3.1	**Aesthetics**			
3.1-1	**Off-Site Workforce Housing Lighting Design** All exterior lighting shall be required to be of the fully-cut off and fully-shielded style to direct light downward (and not up or away) from the light source. The applicant shall coordinate with the County to ensure the lighting plan is consistent with the International Dark Sky Association Model Lighting Ordinance.	Lighting plans consistent with these requirements shall be submitted to **County prior to approval of building permit**. (Use Permit COA)	Applicant	County
3.2	**Land Use and Agriculture**			
3.2-1	**Right-to-Farm Disclosure** In accordance with the Lake County Code, the Applicant and/or HOA will inform prospective buyers of property, future owners, and current occupants of the project site of the County's Right-to-Farm Ordinance. This notification requirement will be included in the conditions, covenants, and restrictions (CC&Rs) for the Proposed Project. Additionally, buyers shall sign an acknowledgement of the disclosure statements once informed of the Right-to-Farm Ordinance, which shall be kept on file by an authorized agent of the Applicant and/or HOA. The notification shall include a description of adjacent agricultural operations so that buyers within the Proposed Project are aware of operational aspects of agricultural uses (e.g. noise, odors, and dust). The disclosure shall also state that operations from the agricultural equipment may routinely exceed the Lake County Noise Ordinance standards.	Applicant to put note on Final Maps. County to **require note to be recorded with Final Maps**.	Applicant/County	County
3.2-2	**Agricultural Conservation** For every acre of prime farmland and unique farmland identified by the Farmland Mapping and Monitoring Program that is converted to non-agricultural uses, the Applicant shall place an agricultural conservation easement, deed restriction, or other form of long-term permanent protection on farmland of equivalent quality to the farmland that would be converted. This farmland shall be permanently protected and located within 100 miles of the Guenoc Valley Site. This farmland shall also have access to necessary infrastructure for farmland operations, such as roads. There shall be at least a 100 foot buffer between the easement and residential development (a smaller buffer may be utilized if determined acceptable by the agricultural commissioner).	Applicant to record agricultural conservation easement, deed restriction, or other form of long- term permanent protection on farmland as required by County **prior to submittal of Final Maps, and provide proof recordation with submittal of Final Maps**.	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	For Phase 1, this will require that approximately 28.4 acres of Prime Farmland, and approximately 22.1 acres of Unique Farmland are permanently preserved in accordance with this mitigation measure. The acreage requirements for future phases will be based on the specific development proposals and associated area of impacted farmland. The County shall verify the precise size of impact and therefore the relative size of land to be conserved prior to approval of the associated final phased tentative maps.			
3.3	**Air Quality**			
3.3-1	**Measures to Reduce Short-term Construction Related Emissions** The following measures will be implemented by the Proposed Project to reduce emissions of criteria pollutants and DPM from construction. a) Prior to approval of Grading or Improvement Plans- (whichever occurs first) the Applicant shall submit to LCAQMD a Construction Emission/Dust Control Plan within 30 days prior to groundbreaking. The following shall be listed on the improvement plans as standard notes: ▪ During construction, emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area, shall be controlled so that dust does not remain visible in the atmosphere beyond the boundary line of the emission source. ▪ When wind speeds result in dust emissions crossing property lines, and despite the application of dust control measures, grading and earthmoving operations shall be suspended and inactive disturbed surface areas shall be stabilized. ▪ Fugitive dust generated by active operations, open storage piles, or from a disturbed surface area shall not result in such opacity as to obscure an observer's view to a degree equal to or greater than does smoke as dark or darker in shade as that designated as No. 2 on the Ringlemann Chart (or 40 percent opacity). ▪ All exposed soils be watered as needed to prevent dust density as described above and in order to prevent dust from visibly exiting the property. ▪ Any visible tracked out dirt on a paved road where vehicles enter and exit the work area must be removed at the end of the workday or at least one time per day. Removal shall be accomplished by using wet sweeping or a HEPA	Applicant submit to LCAQMD a Construction Emission/Dust Control Plan and other information conforming to this Mitigation Measure within 30 days prior to groundbreaking. County to review prior to issuing Grading or Improvement Plans- (whichever occurs first). (Use Permit COA)	Applicant	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
filter equipped vacuum device. Dirt from vehicles exiting the site shall be removed through the use of a gravel pad, a tire shaker, a wheel wash system, or a pavement extending for not less than 50 feet from the intersection with the paved public road. ▪ All haul trucks transporting soil, sand, or other loose material offsite shall be covered. ▪ All vehicle speeds on unpaved roads shall be limited to 25 mph. ▪ During construction the contractor shall, where feasible, utilize existing power sources (e.g., power poles) or clean fuel (i.e. gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators. ▪ Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. Signs shall be posted in the designated queuing areas of the construction site to remind off-road equipment operators that idling time is limited to a maximum of 5 minutes. b) In conjunction with the submittal of the Construction Emission/Dust Control Plan, the prime contractor shall submit to the District a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used in aggregate of 40 or more hours for the construction project. If any new equipment is added after submission of the inventory, the prime contractor shall contact the LCAQMD prior to the new equipment being utilized. Except in the event of emergency work, when no notice shall be required, the project representative shall provide the District, at least one business day prior to the use of subject heavy-duty off road equipment with the anticipated construction timeline including start date, name and phone number of the property owner, project manager and on-site foreman. The equipment inventory shall meet the minimum requirements as specified in MM 3.3-1c, including the use of Tier 4 engines or better to the maximum extent feasible, and Level 3 Diesel Filters during all phases of development. c) To the maximum extent feasible, the contractors shall utilize Tier 4 engines or better, and Level 3 Diesel Filters during all phases of development. Compliance must be demonstrated with submittal of the equipment inventory, prior to			

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	approval of dust control plans.			
3.3-2	**Project Measures to Reduce Operational Emissions** Prior to the issuance of the first certificate of occupancy for the relevant portion of the project (i.e., residential or commercial), as appropriate, the Applicant shall provide documentation to the County that the following measures have been achieved. It should be noted that these measures do not apply to on-going uses within the property that are not a component of the Proposed Project, including agricultural operations conducted under third party leases. *Transportation Demand Management Measures* Implement MM 3.13-4 to develop and implement a Transportation Demand Management (TDM) Program to achieve a reduction in vehicle miles traveled (VMT) as a result of the Proposed Project. At a minimum these measures will include: ▪ Dedicated on-site parking for shared vehicles (vanpools/carpools); ▪ Adequate, safe, convenient, and secure on-site bicycle parking and storage in the commercial portion of the project; and ▪ Use of an electric fleet for internal transport vehicles (excluding trucks and other ranch vehicles for on-going agricultural and grazing activities) to the extent feasible (no less than 75%), including the golf course. *Project Wide Measures* ▪ Use energy-efficient lighting that will reduce indirect criteria pollutants and greenhouse gas (GHG) emissions. Using energy-efficient lighting will reduce energy usage and, thus, reduce the indirect GHG emissions from the Proposed Project. Energy-efficient lighting includes adaptive lighting systems or systems that achieve energy savings beyond those required by Title 24 lighting requirements to the maximum extent feasible. ▪ Utilize low-flow appliances and fixtures; Use of state-of-the-art irrigation systems that reduce water consumption including graywater systems and rainwater catchment. ▪ Use of drought-tolerant and native vegetation. ▪ Low volatile organic compound paint shall be utilized for parking areas and the interiors and exteriors of the both residential and non-residential	Applicant to prepare TDM Program compliant with this Mitigation Measure and submit to County. County to review and approve prior to issuance of the first certificate of occupancy. (Use Permit COA) Lighting plans consistent with these requirements shall be submitted to County prior to approval of building permit. (Use Permit COA) Improvement Plans consistent with these requirements shall be submitted to County prior to approval of Final Maps. (TM COA)	Applicant	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
buildings. *Residential Measures* ▪ Facilitate achievement of zero net energy buildings through installation of solar photovoltaic systems consistent with the 2019 Building Energy Efficiency Standards, CCR Title 24 Part 6. Compliance with this requirement must be demonstrated prior to issuance of occupancy permits for residential uses. ▪ Provide electrical outlets on the outside of the homes or outlets within the garages to encourage the use of electrical landscaping equipment. ▪ Use water efficient landscapes and native/drought-tolerant vegetation. ▪ Install smart meters and programmable thermostats. ▪ Use energy-efficient appliances in the residences where available. These include appliances that meet U.S. Environmental Protection Agency (USEPA) Energy Star Criteria. *Resort/Commercial Measures* ▪ Facilitate achievement of zero net energy buildings through the construction standards required under the 2019 Building Energy Efficiency Standards, CCR Title 24 Part 6 and the use of rooftop or on-site photovoltaic systems, with or without storage, or the acquisition of renewable energy or energy credits from another source, or generation onsite. Zero Net Energy shall mean that on a community-wide basis, the actual annual consumed energy will be less than or equal to the renewable generated energy utilized. It is the Project's goal to obtain enough renewable electrical energy for the Project's needs and to distribute it throughout the Guenoc Valley Site. Therefore, renewable energy supplies shall be secured and/or systems installed for each commercial structure prior to issuance of its final certificate of occupancy. ▪ Install on-site charging units for electric vehicles consistent with parking requirements in California Green Building Standards Code Section 5.106.5.2. ▪ Install electric water heating instead of gas water heating for some or all of the project's hot water needs, to the extent such technology is readily available and commercially practicable.			

<table>
<tr><th colspan="2">Mitigation Measure</th><th>Implementation and Timing</th><th>Responsible for Implementing</th><th>Responsibility for Monitoring</th></tr>
<tr><td>3.4</td><td>Biological Resources</td><td></td><td></td><td></td></tr>
<tr><td>3.4-1</td><td>Construction Best Management Practices (BMP)
A) Construction and staging areas shall not be larger than necessary and to the degree feasible shall be within areas otherwise scheduled for development. These areas shall be visibly demarcated prior to construction activities to prevent unnecessary impacts. Equipment shall not be kept outside established areas.
B) Construction areas shall be kept serviceably clean. Sufficient closed bins shall be provided for trash and debris. Washout, track out, and dust control BMPs shall be implemented as necessary. Construction vehicles and equipment shall be clean and free of mud or vegetation that could introduce plant pathogens or propagules of non native plants. This includes equipment hauled onto the site.
C) Pets shall not be allowed within construction areas.
D) Construction activities shall be carried out such that sensitive habitats are avoided. Materials shall not be placed where they may enter sensitive habitat, receiving waters, or a storm drain, or be subject to wind or runoff erosion and dispersion.
E) Equipment use shall be limited to the hours from 7:00 a.m. to 7:00 p.m. to the extent possible. Exceptions may be made if approved by the County for situations where a longer construction schedule would alleviate the potential for adverse environmental effects</td><td>The applicant shall include these requirements in construction contracts. (Use Permit COA)</td><td>Applicant</td><td>County</td></tr>
<tr><td>3.4-2</td><td>Work Environmental Awareness Training
Construction personnel working on the Proposed Project shall be provided with an Environmental Awareness Training tailored to the location they will be working on prior to the commencement of construction work by that personnel. This training shall include materials that describe the sensitive habitats and special status wildlife species with the potential to occur. Table 3.4-9 in Final EIR, Volume II, Section 3.4 dictates species for which environmental awareness training shall occur, based on location.
<table>
<tr><th>Species</th><th>Guenoc Valley Site (All Phases) and Grange Road Connector</th><th>Middletown Housing Site</th></tr>
<tr><td>Pallid bat (Antrozous pallidus)</td><td>X</td><td>X</td></tr>
<tr><td>Ring-tailed cat (Bassariscus astutus)</td><td>X</td><td></td></tr>
</table>
</td><td>The applicant shall include these requirements in construction contracts. (Use Permit COA)</td><td>Applicant</td><td>County</td></tr>
</table>

Mitigation Measure			Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
Townsend's big-eared bat *(Corynorhinus townsendii)*	X				
Western red bat *(Lasiurus blossevillii)*	X	X			
American badger *(Taxidea taxus)*	X				
Tricolored blackbird *(Agelaius tricolor)*	X				
Grasshopper sparrow *(Ammodramus savannarum)*	X				
Golden eagle *(Aquila chrysaetos)*	X				
Long-eared owl *(Asio otus)*	x	X			
Burrowing owl *(Athene cunicularia)*	X				
Northern harrier *(Circus cyaneus)*	X				
Olive-sided flycatcher *(Contopus cooperi)*	X	X			
White-tailed kite *(Elanus leucurus)*	X	X			
American peregrine falcon *(Falco peregrinus anatum)*	X				
Bald eagle *(Haliaeetus leucocephalus)*	X				
Yellow-breasted chat (*Icteria virens)*	X	X			
Least bittern *(Ixobrychus exilis)*	X				
Loggerhead shrike *(Lanius ludovicianus)*	X	X			
Purple martin *(Progne subis)*	X	x			
Yellow warbler *(Setophaga* [*Dendroica*] *petechia brewsteri)*	X	X			
Yellow-headed blackbird (*Xanthocephalus xanthocephalus)*	X				
Northwestern pond turtle *(Actinemys marmorata)*	X	X			
Foothill yellow-legged frog *(Rana boylii)*	X	X			

Topics covered shall include relevant biological information on these species, and the appropriate actions that shall be taken in the event of an occurrence. Training shall also include a description of construction best management practices and the importance of environmentally conscious construction. Training materials shall be prepared by a qualified biologist who shall train a member of the contractor's crew to provide follow-up trainings to newly hired employees during the construction period. The qualified biologist shall attend the Environmental Awareness Training quarterly,

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	at a minimum, to ensure that the training sufficiently covers the necessary materials. These materials may be updated as new information is available. Construction personnel shall sign a training log stating that they have received this training. Copies of this training log shall be maintained on the Guenoc Valley Site and shall be made available to inquiring agencies upon request. Construction personnel will also be trained to identify nesting bird behavior that indicates construction activities are causing a significant disturbance to nesting birds. This behavior includes vocalizing, making defensive flights at intruders, getting up from a brooding position, or flying off the nest. Should these behaviors be identified, construction workers will be trained to halt work in the vicinity of the nest until a qualified biologist determines a suitable nest buffer. Should a special-status species be observed by construction personnel, the qualified biologist will verify the observation and report the observation to CNDDB. The qualified biologist shall also report observations of special-status species identified during preconstruction surveys, if any.			
3.4-3	**General Special-Status Plant Mitigation** A) Pre-construction botanical surveys of herb-dominated habitats (i.e. grasslands, wetlands) with the potential to support special-status plants shall be conducted within those areas scheduled for groundbreaking during one of the two appropriate identification seasons prior to ground breaking. It should be noted that surveys conducted in 2018 and 2019 for Phase 1 would meet the requirements of this measure for construction activities occurring in 2020 and through a portion of 2021, depending on the exact timeframe of construction and the potential species impacted. Pre-construction surveys of shrub or woodland dominated habitats with the potential to support special-status plants shall be surveyed within one of the four appropriate identification seasons prior to groundbreaking for each specific component of the Proposed Project. 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. Results of the pre-construction survey shall be maintained on the Guenoc Valley Site and available to agencies upon request. B) In the event that the results of the pre-construction special-status plant surveys	The applicant shall perform pre-construction surveys prior to groundbreaking as described in Mitigation Measure 3.4-3, and implement mitigation for identified species within one year of identification and prior to occupancy. The County shall verify implementation of mitigation prior to issuance of certificates of occupancy (Use Permit COA)	Applicant	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
identify the presence of individual special-status plants within areas identified for ground disturbance activities, one of the following measures shall be conducted. 1) Individual occurrences of special-status plants shall be avoided by a minimum of 20 feet when possible. This buffer shall be demarcated by a qualified biologist with high-visibility fencing. Where ground disturbance would 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 shall be installed between the work area and the 20-foot setback and shall not be removed until the disturbed areas have been revegetated or otherwise stabilized. OR 2) When avoidance of a special-status plant is not feasible, mitigation shall occur through transplanting or compensatory planting of in-kind species. Mitigation for special-status plants shall follow the general outline below. i. For compensatory plantings, in-kind species shall be planted at a minimum ratio of 2:1. Monitoring of mitigation activities shall be performed by a qualified biologist for a minimum of three years. The qualified biologist shall prepare an annual report on the progress of mitigation with recommended management actions. Mitigation shall be deemed complete once the qualified biologist has determined that the mitigation has achieved or exceeded 80 percent success following the minimum three years of monitoring. Additional years of monitoring and management shall occur should mitigation fail to meet success criteria. ii. Should transplanting of individual plants be considered, the transplanting shall be overseen by a qualified biologist. Plants shall be relocated to suitable habitats and shall be within designated open space as possible. A quantified biologist shall monitor all transplanted individuals for a minimum of three years to ensure successful establishment. The qualified biologist shall prepare an annual report on the success of transplanted plants. Should transplanting fail, compensatory actions shall occur as outlined			

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	under (i). iii. Consultation with CDFW or USFWS shall occur as necessary, based on regulatory jurisdiction, should a special-status plant that does not have a history of successful transplantation and was not previously identified within the Phase 1 Area of Potential Effects be observed during preconstruction botanical surveys. For species with a demonstrated history of successful transplantation, then mitigation shall follow steps (i) and (ii) above.			
3.4-4	**American Badger Impacts** No more than 14 days before the start of ground disturbance activities on or within 200 feet of open grassland, a qualified biologist shall conduct pre-construction surveys to determine if American badger dens are present. If no dens are observed, no further mitigation is necessary. If American badger dens are determined to be present, the biologist shall monitor for activity to determine whether the den is active. If the den is determined to be occupied by a female with young, a 50-foot buffer shall be demarcated with high-visibility flagging until the qualified biologist has determined that young have matured and dispersed. No construction activities shall occur within the buffer while the den is actively supporting dependent young. If the den is determined to be active, but a female with young is not present, CDFW shall be contacted to determine if burrow exclusion using passive measures such as one way doors or equivalent may be utilized. Exclusion activities shall 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, dens shall be excavated by hand to prevent them from being re occupied during construction.	The applicant shall perform pre-construction surveys the start of ground disturbance activities on or within 200 feet of open grassland as described in Mitigation Measure 3.4-4, and implement avoidance measures if required as described in Mitigation Measure 3.4-4. The applicant shall include these requirements in construction contracts. (Use Permit COA)	Applicant	County
3.4-5	**Ringtail Impacts** No more than 14 days before the start of ground disturbance activities within open grassland, oak woodland, or riparian forest habitat, a qualified biologist shall conduct pre construction surveys to determine if ringtail dens are present. If no active ringtail dens are observed, no further mitigation shall be recommended. If ringtail dens with young are determined to be present within the work area, the biologist shall establish a clearly marked exclusionary buffer of no less than 50 feet with high-visibility flagging. No ground disturbance shall take place within the buffer until the biologist determines the den no longer supports dependent young.	The applicant shall perform pre-construction surveys as described in Mitigation Measure 3.4-5 no more than 14 days before the start of ground disturbance activities within open grassland, oak woodland, or riparian forest habitat, and implement avoidance	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
		measures if required. The applicant shall include these requirements in construction contracts. (Use Permit COA)		
3.4-6	**Bat Maternity Roosts and Special-Status Bat Impacts** Pre-construction survey(s) for bat roosts shall be conducted no more than 14 days prior to the start of construction in locations suitable for roosts or tree removal. Surveys of potential bat roost habitat shall concentrate on large trees (DBH >12 inches) specifically looking for relevant bat use features such as loose bark or cavities, broadleaf trees in riparian woodland habitat, buildings, bridges, and cliffs/rocky outcroppings on or within 100 feet of any planned work areas. Prior to construction on the Middletown Housing Site, foliage suitable for western red bat roosting shall also be surveyed. If no potential bat roosts are observed, no further mitigation shall be necessary. For trees proposed for removal that have been identified as potentially suitable habitat for special-status bat species, the following shall apply. Trees proposed for removal that have been identified as potentially suitable special-status bat habitat shall be removed using the two-day phased removal method described below: On day 1, branches and small limbs not containing potential bat roost habitat (cavities, crevices, exfoliating bark, etc.) shall be removed using chainsaws only. The remainder of the tree shall be removed on day 2. Removal shall occur during seasonal periods of bat activity. Removal shall occur as possible outside of maternity season. The maternity roosting season for bats is approximately February 1 through September 1 (but varies due to rainfall and temperature). The best time for removal of structures that may support maternity roosting is between February 1 and April 15. If an active maternity roost is detected, the tree(s) or structures shall be retained until after the young bats are no longer dependent on their parents for care as determined by a qualified biologist. If a special-status bat roost is observed during preconstruction	The applicant shall perform pre-construction surveys as described in Mitigation Measure 3.4-6 no more than 14 days prior to the start of construction in locations suitable for roosts or tree removal, and implement avoidance measures as described in Mitigation Measure 3.4-6 if required. The applicant shall include these requirements in construction contracts. (Use Permit COA)	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	surveys, appropriate avoidance or exclusion measures shall be developed in consultation with CDFW.			
3.4-7	**Artificial Lighting Impacts** Lighting fixtures associated with the construction and operation of the Proposed Project shall be designed to ensure maximum efficiency, eliminate direct upward light, and reduce spill consistent with Design Guidelines and shall follow the general principles below: ▪ Site-wide lighting shall promote dark sky policies; ▪ Lighting along roadways, pathways, and within parking areas shall only be used to the extent necessary to guide nighttime navigation and ensure safety and security; ▪ Lighting shall not be placed or illuminate higher than necessary to provide efficient lighting for its intended purpose; ▪ Lighting shall be deliberately directed downward and away from sensitive habitat types; ▪ Nighttime lighting shall also be reduced to the maximum extent feasible by turning off lights from the hours of 11 p.m. to 7 a.m., unless they are essential for safety or security purposes and are properly designed and installed to reduce light spillage. Lights that must be used during these designated nighttime hours shall be dimmed in order to reduce the intensity of light projected by the Proposed Project as possible and shall be minimized as appropriate through motion-sensitive lighting, lower intensity lights, and appropriately programmed timed lights. Appropriate lighting consistent with these measures and the Proposed Project's Design Guidelines shall be adhered to for all phases of construction at project-related sites.	Lighting plans consistent with these requirements shall be submitted to County prior to approval of building permits. (Use Permit COA)	Applicant	County
3.4-8	**Special-Status Birds – Nesting** Should any groundbreaking or construction-related work begin within the general Should any groundbreaking or construction-related work begin within the general nesting season (February 1 through August 31), a pre-construction nesting bird survey on and within 200 feet of ground-disturbing activities shall be completed by a qualified biologist no more than five days prior to the start of work. If no active nests are observed, no further mitigation shall be recommended.	Should any groundbreaking or construction-related work begin within the general nesting season (February 1 through August 31), the applicant shall perform a pre- construction	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	If active nests are observed during the pre-construction survey, a qualified biologist shall demarcate a protective, high-visibility buffer around the nest. Buffer size shall be determined by the biologist based on species, nest location, planned disturbance footprint, and presence of any visual or auditory buffers. The qualified biologist shall also consider any species-specific plans related to acceptable nest-avoidance measures compared to anticipated disturbance levels of construction. The exclusionary buffer shall remain in place until the chicks have fledged, are feeding independently and are no longer dependent on the nest as determined by a qualified biologist. Due to the known presence of several nesting raptor species, including eagles, on the overall Guenoc Valley Site primarily outside of the APE, targeted surveys for active raptor nests shall be conducted. For construction activities planned on the Guenoc Valley Site, Grange Road Connector, Middletown Housing Site, or the Off-Site Infrastructure Improvement Areas within 0.5 miles of a documented eagle or protected falcon species nest, pre- construction surveys shall be conducted in accordance with the most current guidance available from USFWS and CDFW. If a special-status raptor nest is determined to be present on or within 0.5 miles of the work area, consultation with the USFWS and/or CDFW, based on regulatory jurisdiction, shall occur and any measures recommended or required by those agencies shall be incorporated into the project design.	nesting bird survey on and within 200 feet of ground-disturbing activities as described in Mitigation Measure 3.4-8 no more than 5 days prior to the start of work, and implement avoidance measures as described in Mitigation Measure 3.4-8 if required. The applicant shall include these requirements in construction contracts. (Use Permit COA)		
3.4-9	**Special-Status Birds – Burrowing Owl** A pre-construction survey shall be performed by a qualified biologist prior to the start of ground disturbing activities where suitable burrowing owl burrows (such as ground squirrel complexes) are present. The survey shall be performed according to the standards set forth by the Staff Report for Burrowing Owl Mitigation (CDFW, 2012). Pre- construction surveys shall occur no more than 14 days prior to ground disturbance. Should a burrow be observed in use by a burrowing owl, or if a burrow shows signs of use (pellets, whitewash, feathers), project activities shall be excluded within a 250-foot high-visibility buffer until the qualified biologist determines the owls are no longer present. For active burrows within an area of impact, passive exclusion techniques, such as	The applicant shall perform a pre- construction survey as described in Mitigation Measure 3.4-9 no more than 14 days prior to ground disturbance, and implement avoidance measures as described in Mitigation Measure 3.4-9 if required. The applicant shall include these requirements in construction contracts. (Use Permit COA)	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	one way doors, may be used to exclude burrowing owls from occupied burrows outside the nesting season or if the qualified biologist determines the burrow does not support an active nest. Once exclusion is completed and the biologist determines that the burrow is not occupied, the burrows shall be collapsed.			
3.4-10	**Northwestern Pond Turtle Impacts – Construction** To the extent possible, initial ground disturbance, vegetation clearing, and associated project activities within 300 feet of ponds, reservoirs, or wetted streams where northwestern pond turtle has been documented or may potentially occupy, as determined by a USFWS-approved qualified biologist, shall occur between July 1 and October 31 to avoid the peak nesting season and winter inactivity periods for northwestern pond turtle. If work must occur within 300 feet of occupied or potentially occupied aquatic habitat between November 1 and June 31, a qualified biologist will conduct a preconstruction survey and identify areas with potential to support nesting or occupation by overwintering turtles, as applicable, depending on the season. These specific areas will be avoided if feasible. If these areas cannot be avoided, a qualified biologist will conduct a pre-construction survey within 48 hours of the start of construction in these identified areas to survey for turtle nests. Any active nests will be flagged and avoided. If nests cannot be avoided, the USFWS-approved qualified biologist will contact the USFWS to determine next steps. Any measures prescribed by USFWS to avoid take of nesting northwestern pond turtle shall be adhered to. ~~If these areas cannot be avoided, a qualified biologist will monitor their initial disturbance and relocate any pond turtles or turtle eggs that are uncovered or install an exclusion fence around the area, whichever is determined to be the best option to ensure survival of the turtle via discretion of the qualified biologist. If relocation is deemed appropriate, the qualified biologist will coordinate with CDFW to develop the relocation strategy.~~ During the active period and outside of peak nesting (July 1 to October 31), a preconstruction survey for northwestern pond turtle shall be completed by a qualified biologist 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 northwestern pond turtle. If the species is observed, the biologist shall provide measures to avoid direct impacts based on the planned work. Such measures may include a protective no-work buffer,	The applicant shall schedule initial ground disturbance per in Mitigation Measure 3.4-10. If such a schedule is not possible, the applicant shall perform a pre-construction survey as described in Mitigation Measure 3.4-10 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 northwestern pond turtle, and implement avoidance measures as described in Mitigation Measure 3.4-10 if required. The applicant shall include these requirements in construction contracts. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	exclusion fencing, monitoring, or coordination with CDFW and USFWS if relocation is required. These measures shall be implemented in the following manner: ▪ If a no-work buffer of 300 feet is feasible, it shall be applied and no work shall occur within it. ▪ If a no-work buffer of 300 feet is not feasible, work may occur with an on-site biological monitor, or after the installation of an exclusion fence facilitated by the qualified biologist that encircles areas with potential to support pond turtles or otherwise prevents pond turtles from entering the impact area. Exclusionary fence shall be constructed of silt fence no lower than 24 inches in height and the bottom edge will be buried or otherwise secured to the ground to prevent turtles from crossing go under it. A qualified biologist will inspect the exclusion fence after its installation. ▪ If a pond turtle would be reasonably expected to incur injury from project work, a qualified biologist may relocate a pond turtle after coordinating with CDFW and USFWS.			
3.4-11	**Foothill Yellow-Legged Frog Impacts – Construction** Work within 100 feet of any wetted stream feature or associated riparian area where foothill yellow-legged frog (FYLF) has been documented shall 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. If work must occur between October 31 and June 30, a monitor shall be present, or FYLF shall be excluded from active work areas by an exclusionary fence that is at least 24 inches tall and has a no-climb barrier installed along the top. Prior to commencement of work, a qualified biologist will inspect the fence and work area to ensure proper installation and clearance of FYLF. Pre-construction surveys for FYLF within any wetted stream feature near a work area shall be conducted by a qualified biologist within 5 days of the onset of construction activities. Surveys shall cover between left and right bankfull at least 500 feet upstream and 500 feet downstream of the work area for presence of all life stages. Surveys shall extend up to 30 feet above bankfull within 100 feet of work areas when suitable, accessible habitat is present. Surveys shall 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 shall be implemented. Such measures may include, but are not	The applicant shall schedule work within 100 feet of any wetted stream feature or associated riparian area where foothill yellow-legged frog (FYLF) has been documented per in Mitigation Measure 3.4-11. If such a schedule is not possible, the applicant shall perform a pre- construction survey as described in Mitigation Measure 3.4-11 no at least 14 days prior to the onset of construction activities, and implement avoidance measures as described in Mitigation Measure 3.4-10 if required. The applicant shall include	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	limited to, a protective no-work buffer, exclusion fencing, monitoring, and/or coordination with CDFW. These measures shall be implemented in the following manner: ▪ If a work area is within 100 feet of a perennial or intermittent stream with potential to support FYLF and work must occur between November 1 and March 1, a monitor will be present during work and will ensure that no FYLF are harmed by project work. If FYLF are located during preconstruction surveys within 500 feet of a work area that is within 30 feet of a wetted stream between March 1 and July 1, a monitor will be present during work. If FYLF are located within 100 feet of a work area that is located within 30 feet of a stream between July 1 and November 1, a monitor will be present. Any FYLF detected will be avoided by construction activities by at least 50 feet unless the monitor is positioned between the FYLF and the construction activity. ▪ Work areas can optionally be enclosed with exclusion fence as described above and no monitoring would be required. ▪ If a FYLF is found to be in a work area and cannot be avoided, the qualified biologist will coordinate with CDFW to develop an acceptable relocation strategy.	these requirements in construction contracts. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)		
3.4-12	**Invasive Species Management – Operation** Non-native wildlife shall not be intentionally released onto the Project site, with the exception of approved stocking of fish within isolated waterbodies. In order to address the creation of bullfrog habitat as a result of the Proposed Project, a Bullfrog Management Plan shall be created. The Bullfrog Management Plan shall include the following provisions: ▪ Goals of the Bullfrog Management Plan; ▪ Identification of target areas for bullfrog management; ▪ Appropriate management actions designed to remove invasive bullfrogs such that an environmental benefit is achieved; ▪ A suitable method of monitoring, adaptive management, and reporting throughout the duration of management.	The applicant shall prepare a Bullfrog Management Plan that meets the requirements of Mitigation Measure 3.4-12 and submit to the County for review prior to issuance of the first grading plans. (Use Permit COA) The applicant shall ensure that implementation of the Bullfrog Management Plan and restrictions on the release of non-wildlife are included in the CC&Rs and is the responsibility of the HOA. (TM COA)	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
3.4-13	**Aquatic Habitat Public Signage** Signage at primary public access locations in proximity to western pond turtle or foothill yellow-legged frog habitat shall be posted that describes the sensitive nature of these habitat types and their importance within the Guenoc Valley Site ecosystem. Signage shall also include action items for visiting public to encourage protection of these valuable resources. This may include, but is not limited to: ▪ Proper collection and disposal of trash; ▪ Leashing of pets to prevent harassment of wildlife; ▪ Passive activities to enjoy wildlife without disturbing natural behavior; ▪ Discouragement of removal of plants or other biological resources; and ▪ Restrictions on allowable transportation (vehicles, bicycles, horses, etc.) near sensitive habitat. Infrastructure shall also include waste receptacles sufficient in number and size to service public use of the Guenoc Valley Site with regular service to prevent over spilling. Removal of litter shall occur during servicing of waste receptacles.	Signage shall be installed prior to issuance of the first occupancy permit. (Use Permit COA) Maintenance of signage shall be the responsibility of the HOA, and this shall be included in the CC&Rs. (TM COA)	Applicant	County
3.4-14	**Future Phases Biological Review** Following the development of sufficient information related to future phases of development and prior to any on the ground impacts, a qualified biologist shall perform an updated and detailed analysis on impacts to biological resources within the future phases Area of Potential Effect. A report detailing any necessary survey methods, results, and analysis of potential future phases impacts shall be prepared to determine the application of Mitigation Measures 3.4-1 through 3.4 13, 3.4-15 through 3.4-21, 3.9- 1, 3.9-2, and 3.10-2 to future phases, and the need for additional mitigation measures beyond those measures to reduce impacts of future phases to a less than significant level. The analysis shall be to the level of detail presented within this EIR. Additional mitigation shall be presented for those impacts determined to be significant or potentially significant following the inclusion of Mitigation Measures 3.4-1 through 3.4 13, 3.4-15 through 3.4-21, 3.9-1, 3.9-2, and 3.10-2. Additional mitigation shall be designed such that impacts to biological resources are reduced to less-than-significant levels and include avoidance, compensation, and monitoring similar to mitigation identified for Phase 1.	Applicant shall include in application for SPD for future phases. County will ensure that this mitigation is implemented prior to approval of SPDs for future phases.	Applicant/County	County
3.4-15	**Impact to Sensitive Habitats** Sensitive habitats shall be avoided to the maximum extent feasible. In areas where full avoidance of sensitive habitat types is not possible, mitigation shall occur as	The applicant shall ensure that sensitive habitats are avoided as described in	Applicant/County	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
described below. This mitigation shall be applicable to impacts for purple needlegrass, musk- brush chaparral, white alder grove, Brewer willow thicket, Sargent cypress forest, serpentine rock outcrops, and native grasslands: ▪ Preservation of in-kind habitat shall occur at a minimum ratio of 2 acre:1 acre. ▪ Areas designated for preservation shall be maximized within identified protection areas, such as sensitive habitats within Habitat Connectivity Easement Areas. Sensitive habitats within the Open Space Combining District that are not required to mitigate for impacts to POU resulting from vineyard development approved in the 2009 FEIR may be used for the purpose of this mitigation. ▪ Preservation of in-kind habitat that occurs within residential lots shall occur only within open space prohibited from development (including landscaping and agricultural uses) by the Design Guidelines, or through the establishment of habitat easements within the residential lots. Preservation of sensitive habitat for the purposes of mitigation that occurs within deed-restricted open space shall be identified within the deed restriction and shall prohibit the development of that area identified for preservation. Preservation within deed-restrictions shall be preserved in perpetuity as a condition of the deed. ▪ Areas that area preserved for in-kind habitat that occur outside of residential lots, Habitat Connectivity Easement Areas, and the Open Space Combining District shall be avoided during future phases of development. Should unavoidable impacts to in-kind habitat preservation areas occur during future phases of construction, those impacts shall be subject to additional compensatory actions set forth in this mitigation. Should insufficient habitat occur to offset future impacts, a compensatory habitat restoration, enhancement, and/or creation mitigation measure shall be prepared and approved by the County prior to on the ground impacts of future development phases. ▪ Those areas selected for preservation shall be provided on a map to the County and approved by the County. Preservation of in-kind habitat shall be the preferred method of mitigation when possible. The Applicant may additionally satisfy the 2:1 mitigation ratio through restoration, creation, and/ or enhancement of in-kind habitat. “In-kind” requires that habitats meet the classification criteria of their respective vegetative community as defined during the appropriate biological surveys. Mitigation performed through restoration, creation, or enhancement shall be monitored for a minimum of five years	Mitigation Measure 3.4-15, and where avoidance is not feasible, implement mitigation described in Mitigation Measure 3.4-15. (Use Permit and TM COAs) The County shall review and approve mitigations prior to on the ground impacts of future development phases.		

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	by a qualified biologist. The biologist shall prepare an annual report on the status of mitigation activities along with adaptive management recommendations as necessary. These reports shall be maintained by the Applicant and available to agencies upon request. Success criteria shall be as follows and shall require additional years of monitoring and management should mitigation fail to meet success criteria: ▪ Purple needlegrass and native grasslands shall achieve a percent native plant cover that meets or exceeds that of the habitat impacted. Non-sensitive grasslands and herb-dominated habitat types are suitable for restoration and creation activities. ▪ Musk-brush chaparral shall be restored in non-sensitive suitable habitat. Mitigation shall occur at a 2:1 acre ratio and shall achieve a 75 percent acreage establishment. The monitoring biologist shall consider percent cover, species composition, overall health of plantings, and other indicators when determining success of establishment. ▪ White alder grove and Brewer willow thicket may be restored along riparian corridors where invasive species or bank stabilization issues have occurred. Mitigation shall occur at a 2:1 acre ratio and shall achieve a 75 percent acreage enhancement. The monitoring biologist shall consider percent cover, species composition, bank stability, overall health of plantings, and other indicators when determining success of establishment. ▪ Sargent cypress forest shall be enhanced through the removal of competing foothill pines at an acreage ratio of 2:1 once annually for a total of five years and/or Sargent cypress trees shall be replanted at a 2:1 ratio and monitored for a total of five years. Replanting shall achieve a 75 percent success rate. ▪ <u>Serpentine rock outcrop shall be enhanced through the removal of invasive species at an acreage ratio of 2:1 in similar habitat that has a dominant invasive species relative cover to achieve a percent native plant cover that meet or exceeds that of the habitat impacted.</u>			
3.4-16	**Oak Mitigation Plan** All project activities shall be subject to compliance with the Oak Mitigation Plan, dated June 2020, included as Appendix OAK to this Final EIR. Prior to approval of final maps, the Applicant shall demonstrate compliance within the Oak Mitigation Plan	Prior to approval of final maps, the Applicant shall demonstrate compliance within the Oak Mitigation	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	related to impacts to oaks and oak woodland canopy. Prior to issuance of grading and building permits, the Applicant or applicants for grading and building permits shall demonstrate compliance with the Oak Mitigation Plan related to impacts to oaks, mitigation compliance, building envelope and deed restrictions. The Oak Mitigation Plan for this project addresses impacts to oaks as a result of the Proposed Project. The Oak Mitigation Plan was prepared in accordance with the Lake County General Plan. The Oak Mitigation Plan includes the following: ▪ Goals of the mitigation plan; ▪ Method of impact identification appropriate for all phases of construction; ▪ Discussion on compliance with the Lake County General Plan and 2008 Oak Tree Replacement Plan per the 2009 FEIR; ▪ Proposed compensatory action suitable to meet mitigation goals; ▪ Compensatory planting ratios of 2:1 for smaller trees and 5:1 for larger trees; ▪ Success criteria for mitigation such that compensatory plantings for impacts to individual trees achieve a minimum of 80 percent success rate; ▪ Preservation for impacts to valley oak woodland, when applied, shall be no less than 3:1 of in-kind habitat type acreage, and 2:1 for all other types of oak woodland; ▪ A requirement of at least 7 years of monitoring, adaptive management, and reporting throughout the mitigation process; and ▪ Limitation of the total impact to oak woodlands to 1 acre on residential lots consistent with the design guidelines. The Oak Mitigation Plan shall be subject to Lake County review and approval prior to ground disturbance. Oaks present on the Middletown Housing Site shall be avoided. If full avoidance of oaks is not feasible, the measures in the Oak Mitigation Plan prepared for the Guenoc Valley Site shall apply. Replanting for oaks removed on the Middletown Housing Site may occur on the Middletown Housing Site or the Guenoc Valley Site.	Plan related to impacts to oaks and oak woodland canopy. (TM COA) Prior to issuance of grading and building permits, the Applicant or applicants for grading and building permits shall demonstrate compliance with the Oak Mitigation Plan related to impacts to individual oaks, mitigation compliance, building envelope and deed restrictions. (Use Permit COA)		
3.4-17	**Aquatic Resources Protection and Management** Consistent with governing regulations and policies, the following setbacks shall be incorporated into the project design: ▪ 30 feet from the top of bank of perennial streams;	Setbacks are incorporated into the Design Guidelines and shall be administered by the HOA. The County will review compliance prior to	Applicant	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
▪ 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 ephemeral streams or other bodies of water (including reservoirs and lakes); or ▪ To the outer extent of a riparian corridor. No setback is required or recommended for man-made stormwater or irrigation ditches. Should additional analysis of these features performed by a qualified biologist that determines larger setbacks are needed to ensure full protection of habitat based on factors such as slope, setbacks up to fifty feet may be required as possible and dictated by the conditions observed and analyzed. The setback distances identified above shall be delineated by a qualified biologist with high-visibility fencing or flagging prior to any construction activities occurring within 200 feet of the aquatic habitat features. No construction work or equipment staging shall occur within the setbacks unless a variance or permit is authorized to allow it. Prior to impacts, consultation shall occur with USACE and the RWQCB to determine the extent of federal and state jurisdictional wetlands and waters. A CWA Section 404 permit shall be obtained from USACE for impacts to any identified wetlands and waters subject to CWA jurisdiction, along with RWQCB state water quality certification for such permit under CWA Section 401, as necessary. An LSAA with CDFW shall be entered for those impacts to any identified streams subject to Fish and Game Code Section 1600 jurisdiction. Any necessary permits and approvals shall be obtained prior to the respective impacts for which they are required, and conditions of permits and approvals acquired for the Proposed Project shall be met. Mitigation shall occur consistent with the necessary permits and approval conditions required for the Proposed Project. Mitigation for direct impacts to aquatic habitats shall occur through a combination of habitat preservation, creation, or restoration/enhancement and shall, at a minimum, include the following: ▪ Should mitigation for aquatic resources occur through preservation, preservation shall occur at a minimum ratio of 2:1. Areas designated for preservation shall be maximized within the Open Space Combining District or within Habitat	issuance of building permits. Flagging shall be installed as described in Mitigation Measure 3.4-17. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)		

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
Connectivity Easement Areas, and may only occur within residential lots if preservation in perpetuity as a condition of the deed-restricted open space for the lot. Those areas selected for preservation shall be approved by the County and be subject to the compensatory actions set forth in this mitigation and necessary permit or approval conditions should future impacts to preserved habitats be identified. ▪ When mitigation occurs through the restoration or enhancement of habitat, mitigation shall occur at a minimum ratio of 2:1. Restoration and/or enhancement of habitat shall occur within the Open Space Combining District or within Habitat Connectivity Easement Areas as possible. Monitoring of mitigation activities shall be performed by a qualified biologist for a minimum of three years consistent with the terms of necessary permits. The qualified biologist shall prepare an annual report on the progress of mitigation with recommended management actions. Mitigation shall be deemed complete once the qualified biologist has determined that the success of restoration or habitat enhancement activities meets or exceeds 80 percent (measured either in acres or linear feet). Enhancement and restoration activities may include, but are not limited to, planting of native riparian or wetland vegetation, stabilization of banks, creating a natural channel along areas of manmade drainages, addition of habitat enhancement features that provide refugia or other important features for wildlife that may utilize the habitat, or removal of non-native vegetation. ▪ When mitigation occurs through the creation of habitat, creation shall occur at a minimum ratio of 1:1. A qualified biologist shall monitor habitat creation activities on an annual basis for a minimum of five years, and shall provide an annual report of these monitoring activities along with recommendations in order to ensure success of habitat creation. Following completion of habitat creation activities, a qualified biologist shall prepare an annual report on the progress of mitigation with recommended management actions. Mitigation shall not be deemed complete until the full 1:1 creation ratio has been met. ▪ In cases of conflict between permit terms and measures presented herein, those permit terms and conditions shall supersede those presented within this EIR. Alternative forms of mitigation not detailed above may serve to satisfy mitigating requirements to jurisdictional wetlands and waters as dictated by the appropriate permit(s). Alternative forms of mitigation include purchase of habitat credits from an approved mitigation bank at a ratio not less than 2:1, or payment of in-lieu fees as set by the appropriate agency.			

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
3.4-18	**Sensitive Habitat Impacts from Wildfire Clearing** Sensitive habitats included below shall be avoided during removal of dead vegetation and fire fuel load reduction necessary for safety purposes in managing wildfire risk to the degree feasible. The following sensitive habitats shall be addressed in the following manner as it relates to fire management fire breaks, lop and scatter, and masticating outside of development areas: ▪ Purple needlegrass grasslands – This habitat does not require wildfire risk fuel reduction activities. This habitat shall be avoided to the degree feasible. Equipment and vehicles shall not be used or staged within this habitat type. ▪ Musk brush chaparral – This habitat does not require wildfire risk fuel reduction activities. This habitat shall be avoided to the degree feasible. Equipment and vehicles shall not be used or staged within this habitat type. ▪ White alder grove – Due to limited distribution and association with natural riparian fire breaks, this habitat type should not require ongoing wildfire risk fuel reduction activities and shall be avoided as possible. Equipment and vehicles shall not be used or staged within this habitat type. If determined necessary by safety personnel, hand-clearing of dead vegetation may occur. ▪ Brewer willow thicket - Due to the limited distribution and association with natural riparian fire breaks, this habitat type does not require wildfire risk fuel reduction activities. This habitat shall be avoided to the degree feasible. Equipment and vehicles shall not be used or staged within this habitat type. ▪ Sargent cypress forest – This habitat may require occasional management for wildfire risk. Due to the sensitive nature of this habitat type, hand tools shall be the only acceptable use of vegetation management. No live Sargent cypress trees shall be felled. Equipment and vehicles shall not be used or staged within this habitat type. ▪ <u>Serpentine rock outcrop - Due to the limited distribution and low vegetation cover, this habitat type does not require wildfire risk fuel reduction activities. This habitat shall be avoided to the degree feasible. Equipment and vehicles shall not be used or staged within this habitat type.</u> ▪ Oak woodland - This habitat may require occasional management for wildfire risk. Due to the sensitive nature of this habitat type, hand tools or grazing shall be the only acceptable use of vegetation management. Should impacts to any living oak trees occur, they shall be mitigated for as outlined within the Oak Mitigation Plan. Equipment and vehicles shall not be used or staged	The applicant shall ensure compliance with Mitigation Measure 3.4-18. Applicant to incorporate these measures into the Wildfire Prevention Plan and obtain County approval of revised Wildfire Prevention Plan prior to approval of Grading or Improvement Plans- (whichever occurs first). The applicant shall include these requirements in construction contracts. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	within this habitat type. ▪ Oak savanna – Cover for this habitat type is dominated by non-native annual grasses and would not likely require management for wildfire risk except limited grazing or mowing immediately adjacent to high risk fire areas such as within 50 feet of roads. Equipment use and staging may occur within areas of non- native annual grassland provided that the driplines of oaks are not impacted. Should impacts to any living oak trees occur, mitigation shall occur as outlined within the Oak Mitigation Plan.			
3.4-19	**Wildlife Movement – Fencing** Use of fencing shall be minimized throughout the Guenoc Valley Site and shall adhere to those restrictions set forth in the Design Guidelines for all phases of development. Fencing shall not be installed for the purpose of wildlife exclusion except in the case of safety or protection of agricultural resources or residential development areas, and shall be designed to allow for continued movement of non-target species as possible. Unless approved by the Home Owner's Association or for ongoing protection of agricultural resources or property, fencing exceeding six feet in height shall not be used. Fencing materials designed for the purpose of wildlife entrapment or injury shall not be used. Full perimeter fencing for residential lots exceeding two acres in size shall be prohibited unless consistent with the following wildlife-friendly fencing measures: ▪ Fencing shall be reasonably visible to travelling wildlife to prevent collision with fencing, ▪ Fencing shall not include low rails or wires that would prevent smaller dispersing animals from passing, ▪ Fencing shall not present a top rail clearance exceeding six feet, and shall not exceed four feet when possible. Clearance height shall consider the ground slop approaching the fence such that the height of a jump required to clear the fence from the downslope side does not exceed six feet, and ▪ Materials that entangle or otherwise entrap wildlife, such as loose wire, top or bottom barbed wires, shall be prohibited.	Fencing requirements are incorporated into the Design Guidelines and shall be administered by the HOA. The County will review compliance prior to issuance of building permits. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)		
3.4-20	**Wildlife Movement – Future Phases** Future phases of development shall retain the clustered development design and restriction on maximum allowable residential lot development standards set forth within the Design Guidelines. Residential lots shall be restricted to an allowable	Applicant shall include in application for SP~~O~~D for future phases. County will ensure that this mitigation	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	development area of 1.5 acres unless further restricted by the Design Guidelines, for example, in areas of oak woodlands. Development of future phases shall avoid riparian corridors that commonly serve as wildlife passageways with development setbacks to the degree feasible, as identified in Mitigation Measure 3.4-17. Setbacks and sensitive habitat avoidance shall also be maximized. Prior to implementation of future phases, additional analysis on the overall impacts to wildlife movement of proposed future phases development shall be performed by a qualified biologist to the level of detail presented within this EIR, and determine the extent to which implementation of Mitigation Measure 3.4-19 will reduce the impacts of proposed future phases development on wildlife movement. Should implementation of Mitigation Measure 3.4-19 not reduce the impacts of proposed future phases development on wildlife movement to a less than significant level, additional mitigation shall be determined by a qualified biologist such that impacts to wildlife movement are reduced to less-than-significant levels. Such mitigation may include use of Habitat Corridor Easements or other forms of designating open space.	is implemented prior to approval of SP~~O~~Ds for future phases.		
3.4-21	**Domestic Cat Predation** The Home Owner's Association shall distribute to new residents informational resources on domestic cat predation on wildlife and methods to prevent such predation. These recommendations may include, but are not limited to: ▪ Encouraging cat owners to keep cats indoor as possible; ▪ Encouraging all residents to remove domestic cat attractants such as outdoor food bowls and uncovered trash; ▪ Affixing bells to collars; ▪ Having cats spayed or neutered to prevent establishment of feral colonies; and ▪ Ensuring backyard bird feeders are not accessible to cats.	HOA shall prepare educational materials to provide to future homeowners prior to occupancy. Ongoing implementation of this mitigation shall be handled by the HOA.	Applicant	County
3.5	**Cultural Resources**			
3.5-1	**Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation** *Phase 1 and Future Phase General Provisions* All of the identified cultural resource sites shall be avoided during project construction, development, and operation activities. A shapefile database shall be transmitted to the Applicant and included in the final contract with the construction contractor to ensure that cultural resource locations are avoided. Each site shall be added to subdivision maps, and any residential properties that include cultural resources shall be deed restricted to avoid construction on or immediately adjacent	The applicant shall implement surveys, avoidance and monitoring as described in Mitigation Measure 3.5-1. The applicant shall include all of these requirements in construction contracts. (Use	Applicant	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
to the resource. This shall be accomplished by establishing a buffer of 50 feet around the perimeter of the site and erecting a semi-permanent fence that will remain in place throughout construction. The fence shall be installed with a qualified archaeologist and tribal monitor in attendance, and shall determine the established buffer for the location. The buffer can be reduced or modified to accommodate sensitive environmental conditions, based on the assessment of the qualified archaeologist and tribal monitor or cultural advisor (see Mitigation Measure TCR-2 ~~3.5-2~~). If construction will encroach closer than 50 feet, a qualified archaeological and tribal monitor shall be retained to monitor those activities. Should cultural resources be uncovered within the buffer, all construction in the in the immediate area shall halt until the find can be assessed for NRHP/CRHR eligibility in accordance with current professional standards using minimization measures and the provisions of the Unanticipated Discoveries Plan developed in compliance with Mitigation Measure TCR-2 ~~3.5-2~~. *Phase 1 Site-Specific Avoidance Strategies* Site P-17-425 shall be incorporated into proposed buffer zones for wetlands or oak woodlands. Should ground-disturbing work be required within 50 feet of either site, a qualified professional archaeologist shall be retained to monitor construction activities. If site elements are discovered during monitoring, the archaeologist, in consultation with Middletown Rancheria, then the archeologist shall design an appropriate mitigation plan in consultation with Middletown Rancheria. The sites designated as lithic scatters (P-17-399, 400, 401, -404, -1363, -1470, -1957, -1958, -1959, -1960, -1961, -1962, -1963, and -2027, the Back of House vineyard lithic scatter site, ~~and~~ the Hilltop Site, the Creek Overlook Site, and the Sunshine Midden Site) have not been evaluated for the NRHP or CRHR. They shall be avoided and/or incorporated into open space or wetland or vegetation buffers wherever possible. If ground-disturbing work is required within 50 feet of any of these sites, they shall be examined under the CARIDAP unless different and/or additional mitigation measures are identified through consultation with the Middletown Rancheria (Tribe). Analyses shall be competed in the field to the extent possible. Four other sites (P-17-417, -2035, -2038, and -2041) include lithic scatters and	Permit COA) The applicant will delineate areas as described in Mitigation Measure 3.5-1 for deed restrictions on all final maps. (TM COA)		

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
bedrock mortars; these sites cannot be evaluated under the CARIDAP protocol. These sites should similarly be incorporated into open space or other natural resource buffers where feasible. Should construction impacts be unavoidable, each affected site shall be investigated by a qualified archaeologist in collaboration with the Tribe accordance with current professional standards in order to assess eligibility to the NRHP or CRHR unless different and/or additional mitigation measures are identified through consultation with the Tribe. For resources that cannot be avoided, site-specific minimization and mitigation measures will be developed in consultation between the archaeologist and Tribal monitor. Occupation sites have an elevated potential to contain data and other values which would make them eligible for listing on the NRHP or CRHR. These sites (P-17-116, -256, -405, -411, -414, -416, -420, -421, and -2039), therefore, shall be accorded an extra degree of protection. Each of these sites shall be avoided, incorporated into open space or wetland or vegetation buffers wherever possible. The sites are presumed eligible for listing on the NRHP/CRHR and therefore shall be protected by semi- permanent construction fencing, to be maintained until construction in the vicinity has finished. Should avoidance be infeasible, these sites shall be subject to intensive Phase II evaluation in accordance with an individual Treatment Plan designed for each specific site subject to consultation with Middletown Rancheria. The primary method of mitigation will be through minimization and avoidance measures. Only in cases where minimization or avoidance is infeasible, or there are no other means of mitigation, may a program of archaeological Data Recovery be implemented in accordance with current professional standards. Construction in the vicinity of the site shall not resume until minimization measures or Data Recovery has been completed. Historic sites within Phase 1 impact areas, including P-17-406, -412, -1996, -2042, -2043, -2952, -2956, the Bohn Hill debris scatter, and the Ink Ranch corrals, shall be incorporated into open space or wetland or vegetation buffers wherever possible and avoided with a 15-foot fenced buffer; the fence shall remain in place until all ground-disturbing work within 50 feet of the resource has been completed. Should construction impacts to historic sites be unavoidable, the individual site shall be visited, compared to existing resource records, re-documented through resource update forms, and evaluated for the NRHP/CRHR. If eligible, appropriate treatment methods shall be included in a Treatment Plan designed in consultation with the			

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	Tribe, which shall be implemented prior to site disturbance. The Back of House vineyard site is located within an active vineyard and consequently has been disturbed; further disturbance will occur when the vineyard is removed prior to Back of House construction. This site has not been evaluated for NRHP/CRHR eligibility and will be more fully disturbed during construction of the Proposed Project. A CARIDAP testing and evaluation program shall be implemented prior to any new ground-disturbing activities at this location unless different and/or additional mitigation measures are identified through consultation with the Tribe. If the site is found or presumed eligible for listing on the NRHP/CRHR, a qualified professional archaeologist shall design an appropriate Treatment Plan in consultation with Middletown Rancheria; the Treatment Plan shall include the number and size of excavation units to be completed, laboratory or in-field analyses to be performed, documentation of results, and criteria to make a final recommendation to the NRHP/CRHR, all in accordance with Mitigation Measure 3.5-1. Construction activities in the vicinity of the site shall not resume until mitigation has been completed. Sites that may occur within Phase 1 development areas but which could not be relocated include: P-17-404, and -409. Accordingly, all ground disturbance proposed in areas where these sites have been previously plotted shall be monitored by a qualified archaeologist and Tribal monitor. In the event that site indicators are encountered, project-related activities shall cease and shall not resume within 50 feet of the find and the site shall be evaluated for NRHP/CRHR eligibility in accordance with the provisions of the Unanticipated Discoveries Plan unless different and/or additional mitigation measures are identified through consultation with the Tribe.			
3.5-2	**Worker Awareness Training, ~~Unanticipated Discoveries Plan,~~ Construction Monitoring, and Halt Work** [MOVED] ~~1) Tribal Cultural Advisor: Prior to initial ground disturbance, the Applicant shall retain a project Tribal Cultural Advisor designated by the Tribe, to direct all mitigation measures related to tribal cultural resources as defined by Public Resources Code 21074(a).~~ 1) Worker Awareness and Sensitivity Training: Prior to the beginning of grading (including ground-clearing) or any construction (including structure relocation), a qualified professional archaeologist shall administer a cultural resources awareness and sensitivity training program to all construction workers who will be performing grading or construction work. Either a tribal representative should	The applicant shall implement monitoring and other actions as described in Mitigation Measure 3.5-2. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	Applicant	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
assist with administering the training, or the training materials should be approved by the Tribal Cultural Advisor. The program shall include a review of the types of finds that could occur, regulatory requirements, and a list of contacts (with telephone numbers) in case of accidental discoveries. The training program shall be repeated periodically as new construction workers are added to the project. 2) Construction Monitoring: The Applicant shall retain a team of professional archaeologists and tribal monitors to implement a monitoring program to observe initial ground disturbing activities from the surface to sub-soil (including testing, concrete pilings, debris removal, rescrapes, punchlists, pot-holing or auguring, boring, grading, trenching, foundation work and other excavations or other ground disturbance involving the moving of dirt or rocks with heavy equipment or hand tools within the Project area), ensure that buffer areas are marked, and halt construction in the case of new discoveries. The tribal monitoring shall be supervised by the project Tribal Cultural Advisor. The duration and timing of the archaeological monitoring activities shall be determined by the lead archaeologist in consultation with the Tribal Cultural Advisor. The duration and timing of tribal monitoring will be determined by a cultural resources monitoring agreement between the parties. The Tribal Cultural Advisor will coordinate with the construction field supervisor to confirm where ground disturbing activities will occur and determine the location its tribal monitor would survey, monitor, spot-check or remain stationary. Where feasible, the archaeological and tribal monitors will work together at the same locations. If the Tribal Cultural Advisor determines that full-time monitoring is no longer warranted, he or she may recommend that tribal monitoring be reduced to periodic spot-checking or cease entirely. Tribal monitoring would be reinstated in the event of any new or unforeseen ground disturbances. Depending on the scope and schedule of ground disturbance activities of the Project (e.g., discoveries of cultural resources or simultaneous activities in multiple locations that requires multiple tribal monitors, etc.) additional tribal monitors may be required on-site. If additional tribal monitors are needed, the Tribe shall be provided with a minimum of three (3) business days advance notice unless otherwise agreed upon between the Tribe and applicant. The on-site tribal monitoring shall end when the ground disturbance activities are completed, or			

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
when the project Tribal Cultural Advisor has indicated that the site has a low potential for tribal cultural resources. 3) Halt Work: Should any archaeological, paleontological, or cultural materials be discovered during site development, all activity shall be halted within 100 feet of the find(s). A professional archaeologist certified by the Registry of Professional Archeologists (RPA) shall be notified and shall evaluate the find(s) and recommend mitigation procedures, if necessary. The findings and mitigation measures shall be reviewed and approved by the Lake County Community Development Director prior to commencing work. [MOVED] ~~3) Tribal Unanticipated Discoveries Plan: Prior to project construction, a qualified professional archaeologist shall be retained to prepare an Unanticipated Discoveries Plan in consultation with Middletown Rancheria, or to update an existing Unanticipated Discoveries Plan supplied by the Tribe. At a minimum, the Unanticipated Discoveries Plan shall include:~~ ~~▪ Minimization of impact strategies to be agreed upon by the archaeological monitor and tribal monitor or tribal cultural advisor. Minimization measures mean:~~ ~~○ Avoidance. Priority shall first be given to leaving cultural resources in place and avoidance of any further unnecessary disturbance. The highest priority is to avoid disturbance to cultural resources. All cultural resources shall be left in situ, that is, in place, in the same position in which they were discovered and shall not be removed from the discovery site until arrangements are made for reburial or transfer in accordance with the below. If leaving the resources in situ is not possible, temporary housing at a secured storage location at the discovery site mutually agreed upon by the archaeological and tribal monitor may be considered.~~ ~~○ Reburial. In situations where avoidance is not feasible, priority shall next be given to immediately reburying the cultural resources in the same location as found, only deeper. In the event that the cultural resources cannot be re- buried in the same location, only deeper, then priority shall next be given to immediately re- burying the cultural resources in an appropriate location within 100 feet of their original discovery in an area that shall not be subject to future~~			

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
~~subsurface disturbances. If for any reason immediate reburial in place, only deeper, or in an appropriate location within 100 feet of the original discovery is not feasible, then cultural resources may be re-buried in an appropriate location as determined by the Tribal Cultural Advisor in an area that shall not be subject to future subsurface disturbances.~~ ~~○ Transfer. In the event that avoidance and reburial above described is not feasible, cultural resources may be removed and transferred to a location designated by the Middletown Rancheria.~~ ~~○ Laboratory studies, scientific analysis, curation, or video recording shall only be permitted if required to assess CRHR eligibility, or if such strategies are the only means available to mitigate impacts to CRHR eligible resources. Prior to conducting any such studies, the tribal cultural advisor must be consulted. The archaeologist may draw the cultural resources for mapping purposes; however, no electronic means of recording the cultural resources shall be permitted without prior consultation with the Middletown Rancheria.~~ ~~• Description of field or laboratory methods to be used to investigate Unanticipated Discoveries (also applicable to known resources that will be impacted by project construction), to include types of excavation units, screening methods, and sample collection, as appropriate;~~ ~~• A list of permitted in-field analyses or laboratories to be used for specific analyses, as appropriate;~~ ~~• Provisions for reburial or transfer of recovered materials, developed in consultation with Middletown Rancheria.~~ ~~• Measures for documentation of results, including forwarding results to the NWIC as appropriate;~~ ~~• A Burial Treatment plan, provided by the Tribe, shall be followed if Native American remains are discovered during construction;~~ ~~• Maps (provided in pdf and shapefiles to the construction contractor, Applicant, and County) of areas that have not been included in a previous archaeological survey;~~ ~~• Maps of known resource locations (provided in pdf and shapefiles) shall be included in any construction documents that include identification of archaeological monitoring areas, identification of sites where pre-~~			

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	~~construction archaeological testing or archaeological and tribal monitoring during construction is required, identification of appropriate buffer zones for individual site protection during construction, cease work requirements, unanticipated finds reporting requirements;~~ ~~• Assessment criteria to determine NRHP/CRHR eligibility; and~~ ~~• A no-collections policy will be instituted for the Proposed Project, except where a site-specific treatment plan or the Unanticipated Discoveries Plan developed in consultation with the Tribe, calls for collection of a sample of artifacts or materials and analysis.~~ ~~Should any cultural resources, such as wells, foundations, or debris, or unusual amounts of bone, stone or shell, artifacts, burned or baked soils, or charcoal be encountered during ground-disturbing activities, work shall cease within 100 feet of the discovery and the Construction Contractor, Applicant, and Middletown Rancheria shall be notified immediately. The Applicant shall retain a qualified professional archaeologist to assess the find in consultation with the Tribal Cultural Advisor. The Tribe must have an opportunity to inspect and determine the nature of the resource and the best course of action for avoidance, protection and/or treatment of tribal cultural resources to the extent permitted by law, should the find consist of prehistoric or historic-era materials related to Native American occupation or use of the vicinity. If the find appears to be eligible for listing on the NRHP or CRHR, or is determined to be a tribal cultural resource by the Middletown Rancheria, then the provisions of the Unanticipated Discoveries Plan shall be adhered to, which will include consultation with Middletown Rancheria for tribal cultural resources. If the find consists of historic-era materials unrelated to the Native American community, the archaeologist shall determine its significance in compliance with NHPA and CEQA criteria. If adverse effects to a cultural resource cannot be avoided, the Minimization Measures described under the requirements for the Unanticipated Discovery Plan shall be implemented to the extent feasible.~~			
3.5-3	**Future Phase Investigations** Because Future Phases of work will affect areas not yet included in an archaeological study, prior to undertaking construction in any Future Phase area, the Applicant shall retain a qualified professional archaeologist to complete a cultural resources study in coordination with Middletown Rancheria. The study shall determine whether any previous archaeological studies or cultural resources have been identified within the Future Phase development area. If no studies have been completed, or if previous study results are more than 15 years old, new studies shall be prepared including the	Applicant shall include in application for SP~~O~~D for future phases. County will ensure that this mitigation is implemented prior to approval of SP~~O~~Ds for future phases.	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	results of background research, field surveys, identification and evaluation of resources, documentation of results, and submission of the report to Lake County and the NWIC upon completion. New surveys shall include both professional archaeologists and the Tribal Cultural Advisor (or his/her designee). These efforts shall be completed prior to ground-disturbing activities. If significant historic-era resources or significant archaeological sites are present, the development proposal shall designate the area surrounding the site as open space and the site shall be completely avoided. If avoidance is not feasible, a qualified professional archeologist shall be retained to evaluate NRHP/CRHR eligibility of the site, and, if eligible, shall design an appropriate Treatment Plan in consultation with Middletown Rancheria. The minimization measures outlined in the Unanticipated Discoveries Plan described under Mitigation Measure TCR-2 ~~3.5-2~~ shall be adhered to as feasible. Construction activities in the vicinity of the site shall not occur until mitigation has been completed, and the construction monitoring provisions of Mitigation Measure TCR-2 ~~3.5-2~~ have been implemented. Any newly identified resources uncovered during Future Phases shall be treated in accordance with Mitigation Measure TCR-2 ~~3.5-2~~ requirements.			
3.5-4	**Cease Work, Contact County Coroner** California law recognizes the need to protect interred human remains, particularly Native American burials and items of cultural patrimony, from vandalism and inadvertent destruction. If human remains are uncovered during project construction, construction shall halt immediately within 100 feet of the find and the Lake County Coroner, County, and the Applicant shall be notified. The procedures for the treatment of discovered human remains are contained in California Health and Safety Code §7050.5 and §7052 and California PRC §5097. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The County shall contact the Most Likely Descendent (MLD), as determined by the NAHC, regarding the remains. The MLD, in cooperation with the County and a qualified professional archaeologist, shall develop a plan of action to avoid or minimize significant effects to the human remains prior to resumption of ground-disturbing activities.	The applicant shall implement monitoring and other actions as described in Mitigation Measure 3.5-4. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
3.6	**Geology and Soils**			
3.6-1	**Final Design-Level Geotechnical Report(s)** The Applicant shall submit final design-level geotechnical report(s) produced by a California Registered Civil Engineer or Geotechnical Engineer for County review and approval. The report(s) shall address and make recommendations on the following: 1. Road, pavement, and parking area design; 2. Structural foundations, including retaining wall design (if applicable); 3. Grading practices; 4. Erosion/winterization; 5. Special problems discovered onsite, (e.g., groundwater, compressive/expansive/unstable soils/liquefaction potential); and 6. Slope stability (landslides). It is the responsibility of the Applicant to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report. If the geotechnical report indicates the presence of critically expansive soils or other issues that could lead to structural defects, a certification of completion of the requirements of the geotechnical report shall be submitted to the County Community Development Department prior to issuance of building permits. This certification may be completed on a lot-by-lot basis or on a tract basis. This shall be so noted on the Improvement Plans, in the CC&Rs, and on the Informational Sheet filed with the Final Subdivision Map(s). The preliminary geotechnical engineering report performed by RGH Consultants, dated May 29, 2019 and revised December 6, 2019, indicated the presence of potentially expansive soils and landslides, which must be addressed in a design-level geotechnical report. At a minimum, the following recommendations of the preliminary geotechnical engineering report shall be adhered to: 1. In general, cut and fill slopes should be designed and constructed at slope gradients of 2:1 (horizontal to vertical) or flatter, unless otherwise approved by the geotechnical engineer in specified areas. In expansive soil areas and serpentinite or highly weathered mélange bedrock, cut and fill slopes should be no steeper than 3:1. Where steeper slopes are required, retaining walls should be	The applicant shall prepare reports and take actions as described in Mitigation Measure 3.6-1. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	used unless approved by the project geotechnical engineer. Fill slopes steeper than 2:1 will require the use of geogrid to increase stability. If the owner is willing to accept ongoing maintenance, steeper slopes may be constructed within roadway cutslopes on a case-by-case basis. Cutslopes up to 1:1 may be allowable in certain areas with certain remedial measures. In general, slopes within serpentinite-derived soils and Franciscan mélange or serpentinite bedrock are highly weathered and are less stable than slopes on younger and/or harder bedrock types. In addition, some of the younger volcanic bedrock formations are rubbly to agglomeritic in nature and may be prone to rockfalls or debris flows as the clayey matrix becomes saturated on steep slopes. The geotechnical engineer should review preliminary site-specific grading plans and profiles for potential slope stability concerns. and/or 2. The proposed building envelopes must be located outside unstable areas and steep slopes in order to reduce the risks associated with slope instability. Initially, a structural setback of approximately 50 feet from unstable areas and breaks in slope of 2:1 or steeper should be established. A site-specific study by the project geotechnical engineer should finalize recommended structural setbacks.			
3.6-2	**Worker Training, Cease Work, and Consult with Qualified Paleontologist** A qualified professional paleontologist (as defined by the Society of Vertebrate Paleontology, 2010) provide awareness training, in written or multi-media form for construction personnel involved in earth-moving activities. Construction personnel to be involved with earth-moving activities shall be informed that fossils could be discovered during excavation that these fossils are protected by laws, on the appearance of common fossils, and on proper notification procedures should fossils be discovered. In the unlikely event that paleontological resources are encountered, work shall cease within 50 feet of the discovery, and the County shall be notified immediately. The Applicant shall retain a qualified professional paleontologist (as defined by the Society of Vertebrate Paleontology, 2010) to assess the significance of the find and recommend appropriate treatment measures. Recommendations shall include, but are not limited to, salvage and treatment as described by the Society of Vertebrate Paleontology (2010); this treatment shall include preparation, identification,	The applicant shall implement monitoring and other actions as described in Mitigation Measure 3.6-2. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	determination of significance, and curation into a public museum. Any recommended mitigation shall be completed before construction resumes in the vicinity of the find.			
3.7	**Greenhouse Gases and Climate Change**			
3.7-1	**Operational GHG Emissions** Prior to the issuance of the first certificate of occupancy for the relevant portion of the project (i.e., residential or commercial), as appropriate, the Applicant shall provide documentation to the County that the following measures have been achieved. It should be noted that these measures do not apply to on-going uses within the property that are not a component of the Proposed Project, including agricultural operations conducted under third party leases. *Transportation Demand Management Measures* Implement MM 3.13-4 to develop and implement a TDM Program to achieve a reduction in VMT as a result of the Proposed Project. At a minimum these measures will include: ▪ Dedicated on-site parking for shared vehicles (vanpools/carpools); ▪ Provide adequate, safe, convenient, and secure on-site bicycle parking and storage in the commercial portion of the project; and ▪ Use of an electric fleet for internal transport vehicles (excluding trucks and other ranch vehicles for on-going agricultural and grazing activities) to the extent feasible (no less than 75 percent), including the golf course. *Project Wide Measures* ▪ Use energy-efficient lighting that will reduce indirect criteria pollutants and GHG emissions. Using energy-efficient lighting will reduce energy usage and, thus, reduce the indirect GHG emissions from the project. Energy-efficient lighting includes adaptive lighting systems or systems that achieve energy savings beyond those required by Title 24 lighting requirements to the maximum extent feasible. ▪ Utilize low-flow appliances and fixtures; ▪ Use of state-of-the-art irrigation systems that reduce water consumption including graywater systems and rainwater catchment; ~~and~~ ▪ Use of drought-tolerant and native vegetation; and ▪ Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.	Applicant to prepare TDM Program compliant with this Mitigation Measure and submit to County. County to review and approve prior to issuance of the first certificate of occupancy. (Use Permit COA) Lighting plans consistent with these requirements shall be submitted to County prior to approval of building permit. (Use Permit COA) Improvement Plans consistent with these requirements shall be submitted to County prior to approval of Final Maps. (TM COA)	Applicant/County	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
Residential Measures ▪ Facilitate achievement of zero net energy buildings through installation of solar photovoltaic systems consistent with the 2019 Building Energy Efficiency Standards, CCR Title 24 Part 6. Compliance with this requirement must be demonstrated prior to issuance of occupancy permits for residential uses. ▪ Provide electrical outlets on the outside of the homes or outlets within the garages to encourage the use of electrical landscaping equipment. ▪ Use water efficient landscapes and native/drought-tolerant vegetation. ▪ Install smart meters and programmable thermostats. ▪ Use energy-efficient appliances in the residences where available. These include appliances that meet USEPAs Energy Star Criteria. *Resort/Commercial Measures* ▪ Facilitate achievement of zero net energy buildings through the construction standards required under the 2019 Building Energy Efficiency Standards, CCR Title 24 Part 6 and the use of rooftop or on-site photovoltaic systems, with or without storage, or the acquisition of renewable energy or energy credits from another source, or generation onsite. Zero Net Energy shall mean that on a community-wide basis, the actual annual consumed energy will be less than or equal to the renewable generated energy utilized. It is the Project's goal to obtain enough renewable electrical energy for the Project's needs and to distribute it throughout the Guenoc Valley Site. Therefore, renewable energy supplies shall be secured and/or systems installed for each commercial structure prior to issuance of its final certificate of occupancy. ▪ Install on-site charging units for electric vehicles consistent with parking requirements in California Green Building Standards Code Section 5.106.5.2. ▪ Install electric water heating instead of gas water heating for some or all of the project's hot water needs, to the extent such technology is readily available and commercially practicable. ▪ <u>Minimize the use of propane gas at restaurants and replace with alternative equipment to the maximum extent feasible.</u> *Purchase GHG Credits* Prior to the issuance of building permits, the Applicant shall purchase GHG emission credits from a CARB approved registry source or project to offset the difference between the mitigated project emissions and the recognized 2030 service population			

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring

thresholds. The credits must be established using CARB-consistent protocols and permanently retired. The table below converts the service population thresholds to metric tons per year based on the service population of the Proposed Project. Additionally, the table illustrates the difference between the total project emissions and the thresholds.

Therefore, prior the issuance of building permits for Phase 1, the Applicant shall purchase 14,865 carbon offset credits.

OPERATIONAL GHG EMISSIONS - MITIGATED

Category	Year 2030		
	Phase 1	Future Phases	Total All Phases
	MT CO_2e per year		
Total Project Emissions	18,973	11,873	30,846
Service Population (Residents + Employees[1])	*1,580*	*2,990*	*4,570*
Service Population Project Emissions	*12.0*	*4.0*	*6.7*
BAAQMD Threshold (MT CO_2e/SP)[2]	2.6	2.6	2.6
BAAQMD Service Pop Threshold Converted to total MT CO_2e[3] per year	4,108	7,774	11,882
Total Annual Project Emissions Above Threshold	**14,865**	**4,099**	**18,964**

Notes:

1. Service population for Phase 1 includes both the project population increase from Phase 1 residential units and workforce housing, plus the 300 employment positions that would be generated. Service population for Future Phases includes the estimated population increase from future phases residential units and workforce housing, plus an estimated 200 employment positions.
2. 2030 service population threshold adjusted to account for 2017

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	Scoping Plan Update 40% Reduction Goal by 2030. 3. Calculated by multiplying the service population threshold by the service population of the project.			
3.7-2	**Construction GHG Emissions** Implement Mitigation Measure 3.3-1 to reduce GHG emissions from construction of the Proposed Project. a) To the maximum extent feasible, the contractors shall utilize Tier 4 engines or better, and Level 3 Diesel Filters during all phases of development. Compliance must be demonstrated with submittal of the equipment inventory, prior to approval of dust control plans.	Applicant submit to LCAQMD a Construction Emission/Dust Control Plan and other information conforming to this Mitigation Measure within 30 days prior to groundbreaking. County to review prior to issuing Grading or Improvement Plans- (whichever occurs first). (Use Permit COA)	Applicant	County
3.8	**Hazardous Materials**			
3.8-1	**Hazardous Materials Best Management Practices** The following mitigation measures shall be implemented prior to the issuance of grading permits: 1) Ensure through contractual obligations that all contractors prepare hazardous materials business plans and that they transport, store, and handle construction and remediation-related hazardous materials in a manner consistent with applicable regulations and guidelines. Components of the plan include, but are not limited to, transporting and storing materials in appropriate and approved containers, maintaining required clearances, and handling materials in accordance with the applicable federal, State, and/or local regulatory agency protocols. The hazardous materials business plans shall be submitted to the Lake County Division of Environmental Health for review and approval. 2) In compliance with the CWA, a Stormwater Pollution Prevention Plan (SWPPP) shall be prepared for construction activities. Hazardous materials control measures identified in the SWPPP shall include, but not be limited to, the	The Applicant shall implement monitoring and other actions, and obtain permits as described in Mitigation Measure 3.8-1 prior is issuance of grading permits and during construction. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	following: a. A spill prevention and countermeasure plan shall be developed, which identifies proper storage, collection, and disposal measures for potential pollutants (such as fuel, fertilizers, pesticides, etc.) used onsite. b. Petroleum products shall be stored, handled, used, and disposed of properly in accordance with provisions of the CWA (33 USC § 1251 to 1387). c. During the wet season, construction materials, including topsoil and chemicals, and quarried materials shall be stored, covered, and isolated to prevent runoff losses and contamination of surface and groundwater. d. Fuel and vehicle maintenance areas shall be established away from all drainage courses and designed to control runoff. e. Sanitary facilities shall be provided for construction workers. f. Disposal facilities shall be provided for soil wastes, including excess asphalt during construction and demolition. g. Require that at all times a supervisor or other responsible employee trained in the proper handling, use, cleanup, and disposal of all chemical materials used during construction activities shall be present onsite and provide appropriate facilities to store and isolate contaminants. h. Encountered groundwater shall be removed from trenches and excavations in such a manner as to reduce potential contact with construction materials, construction personnel, surface waters, and, to the extent required by regulation or requirements, shall be disposed of at an appropriately permitted facility such as a wastewater treatment plant in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) permit.			
3.8-2	**Prepare a Hazardous Materials Contingency Plan** Prior to issuance of the grading permits, the Applicant shall provide to Lake County Division of Environmental Health a site-specific hazardous materials contingency plan. The plan will describe the necessary actions that would be taken if evidence of contaminated soil or groundwater is encountered during construction. The contingency plan shall identify conditions that could indicate potential hazardous materials contamination, including soil discoloration, petroleum or chemical odors, presence of underground storage tanks, or buried building material. Compliance with the plan will be included as a requirement within all construction bid specifications. If at any time during the course of constructing the Proposed Project evidence of soil and/or groundwater contamination with hazardous material is encountered,	The applicant shall prepare a site- specific hazardous materials contingency plan, implement monitoring and other actions, and obtain permits as described in Mitigation Measure 3.8-2 prior is issuance of grading permits and during construction. The applicant shall include all of these	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	construction shall immediately cease and the Lake County Division of Environmental Health shall be contacted. Construction in the area affected by the contamination shall remain stopped until there is resolution of the contamination problem (through such mechanisms as soil or groundwater sampling and remediation if potentially hazardous materials are detected above threshold levels) to the satisfaction of Lake County Division of Environmental Health and Central Valley Regional Water Quality Control Board (CVRWQCB); construction on areas not affected by the contamination may continue during the remediation process. The plan, and obligations to abide by and implement the plan, shall be incorporated into the construction contract specifications of the project.	requirements in construction contracts. (Use Permit COA)		
3.8-3	**Minimize Potential for Accidental Release of Hazardous Materials during Demolition** a) Prior to demolition of existing structures, the Applicant shall: 1) Identify locations that could contain hazardous residues; 2) Remove plumbing fixtures known to contain, or potentially containing, hazardous materials; 3) Determine the waste classification of the debris; 4) Package contaminated items and wastes; and 5) Identify disposal site(s) permitted to accept such wastes. These activities will be conducted in compliance with all applicable federal, state, and local laws. b) Prior to demolition of existing structures, the Applicant shall provide written documentation to the County that asbestos testing and abatement, as appropriate, has occurred in compliance with applicable federal, State, and local laws. c) Prior to demolition of existing structures, the Applicant shall provide written documentation to the County that lead-based paint testing and abatement, as appropriate, has been completed in accordance with applicable State and local laws and regulations. Abatement shall include the removal of lead-contaminated soil (considered soil with lead concentrations greater than 400 parts per million in areas where children are likely to be present). If lead-contaminated soil is to be removed, the Applicant shall submit a soil management plan to Lake County Division of Environmental Health.	The applicant shall implement Mitigation Measure 3.8-3 prior is issuance of grading permits and during construction. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	County	County
3.8-4	**Reporting Geothermal Wells** As recommended by the Division of Oil, Gas, and Geothermal Resources (Division) within the Department of Conversion and according to the County General Plan, the following shall be performed concerning geothermal well sites for the Guenoc Valley	The applicant shall implement Mitigation Measure 3.8-4 prior is issuance of grading permits	County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	Site and the Off-Site Infrastructure Improvement Areas: 1) The location of any known geothermal wells on the property shall be clearly identified on the project construction plans and communicated to the appropriate County recorder for inclusion in the title information of the subject real property. 2) If any unknown geothermal well(s) is/are discovered during development, the County and the Division shall be notified immediately so that the newly discovered well(s) can be incorporated into the records and investigated in order to determine proper disposal, if required. Any previously unidentified wells found during project exploration and construction work shall be communicated to the appropriate County recorder for inclusion in the title information of the subject real property. This is to ensure that present and future property owners are aware of the wells located on the property, and the potentially significant issues associated with any improvements near geothermal wells. 3) Before work on a low or high temperature gradient well is performed, written approval from the Division in the form of an appropriate permit shall be obtained. This includes, but is not limited to, mitigating leaking fluids or gas from abandoned wells, modifications to well casings, and/or any other re-abandonment work. If any well needs to be lowered or raised (i.e., casing cut down or casing riser added) to meet the grade regulation standard of 6 feet below ground, a permit from the Division is required before work can start.	and during construction. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)		
3.8-5	**Asbestos Dust Mitigation Plan** Prior to construction activities, an Asbestos Dust Mitigation Plan shall be prepared and submitted to the LCAQMD for review and approval ~~Lake County APCD~~. The Plan shall include the following components in order to reduce asbestos dust generation and meet the requirements of an asbestos dust mitigation plan as specified in Asbestos Airborne Toxic Control Measures (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations: 1) Track-out prevention and control measures: a) Removal of any visible track-out from a paved public road at any location where vehicles exit the construction site via wet sweeping or a HEPA filter equipped vacuum device at the end of the work day or at least once per day. b) Installation of one or more of the following track-out prevention measures: i. A gravel pad designed using good engineering practices to clean the tires of exiting vehicles; ii. A tire shaker;	The applicant shall prepare and implement an Asbestos Dust Mitigation Plan as ~~is~~ described in Mitigation Measure 3.8-5. The Plan must be approved by LCAQMD prior to ~~is~~ issuance of grading permits. ~~and~~ The Plan shall be implemented during construction. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	Applicant	LCAQMD / County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
iii. A wheel wash system; iv. Pavement extending for not less than 50 consecutive feet from the intersection with the paved public road; or v. Other measure that is deemed by the LCAQMD ~~Lake County APCD~~ as effective as the measures listed above. 2) Active storage piles will be adequately wetted or covered with tarps. 3) Control for disturbed surface areas and storage piles that will remain inactive for more than seven (7) days shall have one or more of the following done: a) Keep the surface adequately wetted; b) Establishment and maintenance of surface crusting that is sufficient to satisfy the test in subsection (h)(6) of the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations; c) Application of chemical dust suppressants or chemical stabilizers according to the manufacturers' recommendations; d) Covering with tarp(s) or vegetative cover; e) Installation of wind barriers of 50 percent porosity around three sides of a storage pile; f) Installation of wind barriers across open areas; or g) Other measure that is deemed by the LCAQMD ~~Lake County APCD~~ as effective as the measures listed above. 4) Control for traffic on on-site unpaved roads, parking lots, and staging areas shall include the following: 1) A maximum vehicle speed limit of 15 mph or less; and 2) One or more of the following: i. Watering every two hours of active operations or sufficiently often to keep the area adequately wetted; ii. Applying chemical dust suppressants consistent with manufacturer's directions; iii. Maintaining a gravel cover with a silt content that is less than 5 percent and asbestos content that is less than 0.25 percent, as determined using an approved asbestos bulk test method, to a depth of 3 inches on the surface being used for travel; or iv. Other measure that is deemed by the LCAQMD ~~Lake County APCD~~ as effective as the measures listed above. 5) Control for earthmoving activities shall include one or more of the following: a) Pre-wetting the ground to the depth of anticipated cuts;			

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	b) Suspending grading operations when wind speeds are high enough to result in dust emissions crossing the project boundary despite the application of dust mitigation measures; c) Application of water prior to any land clearing; or d) Other measure that is deemed by the LCAQMD ~~Lake County APCD~~ as effective as the measures listed above. 6) No trucks shall be allowed to transport excavated material offsite until the following are performed: a) Trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments; and b) Loads are adequately wetted and either: i. Covered with tarps; or ii. Loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than 6 inches from the top and that no point of the load extends above the top of the cargo compartment. 7) Upon completion of the Proposed Project, disturbed surfaces shall be stabilized using one or more of the following methods: a) Establishment of a vegetative cover; b) Placement of at least 3 inches of non-asbestos-containing material; c) Paving; d) Any other measure sufficient to prevent wind speeds of 10 mph or greater from causing visible dust emissions. 8) If deemed applicable by LCAQMD ~~Lake County APCD~~, an air quality testing component shall be developed and contain the following: a) Type of air sampling device(s); b) Siting of air sampling device(s); c) Sampling duration and frequency; and d) Analytical method. 9) A Site-Specific Health and Safety Plan shall be a component of the overall Asbestos Dust Mitigation Plan. The Health and Safety Plan shall include measures to protect all onsite workers and residents throughout all phases of the project.			
3.8-6	**Conduct Shallow Groundwater Characterization Plan for Construction of Off-Site Water Pipeline** Prior to obtaining a dewatering permit associated with trenching activities for the off-site water pipeline in Butts Canyon Road, a Shallow Groundwater Characterization	Prior to obtaining a dewatering permit associated with trenching activities for the off-site	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	Plan will be developed in consultation with the CVRWQCB. The Shallow Groundwater Characterization Plan will outline the appropriate number of shallow groundwater samples to be collected and the analytes to be assessed in order to determine appropriate dewatering methods during pipeline construction. The results of the Shallow Groundwater Characterization Plan shall be provided to the Lake County Division of Environmental Health and CVRWQCB. Should the results indicate the presence of contaminated groundwater, an individual dewatering permit shall be obtained from the CVRWQCB, and all conditions adhered to Methods for disposal of contaminated groundwater may include but are not limited to transporting the water to an approved facility for treatment and discharge in accordance with NPDES permit requirements.	water pipeline in Butts Canyon Road, the applicant shall prepare and implement a Shallow Groundwater Characterization Plan will be developed in consultation with the CVRWQCB is described in Mitigation Measure 3.8-6. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)		
3.9	**Hydrology and Water Quality**			
3.9-1	**Storm Water Pollution Prevention Plan** Consistent with the requirements of the State Water Resources Control Board General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ), the Applicant shall undertake the Proposed Project in accordance with a project-specific SWPPP. The CVRWQCB, the primary agency responsible for protecting water quality within the project area, is responsible for reviewing and ensuring compliance with the SWPPP. The recommended BMPs, subject to review and approval by the CVRWQCB, include the measures listed below. However, the measures themselves may be altered, supplemented, or deleted during the CVRWQCB's review process, since the CVRWQCB has final authority over the terms of the SWPPP. *General Construction* a. Schedule and sequence construction activities to minimize the areal extent and duration of site disturbance at any time. b. Provide work exclusion zones outside of work areas to protect vegetation and to minimize the potential for removing or injuring trees, roots, vines, shrubs, and grasses. c. Avoid disturbance of riparian and wetland vegetation by installing flagging and temporary fencing.	The applicant shall obtain a project-specific SWPPP prior to ground disturbing activities and provide the County with verification of compliance with the permit. (Use Permit COA)	County	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
d. Use berms, ditches, or other structures to divert natural surface runoff around construction areas. e. Install weed-free fiber rolls, straw-wattles, coir logs, silt fences, or other effective devices along drainage channels to prevent soils from moving into creeks. f. Locate stockpiles at least 50 feet from creeks, drainage channels, and drainage swales, whenever possible. g. Install fiber rolls, straw-wattles, or silt fencing between stockpiles and creeks, drainage channels, and drainage swales. h. After excavating any open-cut slopes, install slope protection measures such as fiber rolls, drainage ditches, or erosion control fabrics to minimize the potential for concentrated surface runoff to cause erosion. i. Implement wind erosion or dust control procedures consisting of applying water or other dust palliatives as necessary to prevent or alleviate dust nuisance generated by construction activities. The contractor may choose to cover small stockpiles or areas as an alternative to applying water or other dust palliatives. j. Control water application rates to prevent runoff and ponding. Repair leaks from water trucks and equipment immediately. *Hazardous Materials* k. Keep hazardous materials and other wastes at least 100 feet from wetlands, creeks, drainage channels, and drainage swales, whenever possible. l. Store hazardous materials in areas protected from rain and provide secondary containment to prevent leaks or spills from affecting water quality. m. Implement the following hazardous materials handling, storage, and spill response practices to reduce the possibility of adverse impacts from use or accidental spills or releases of contaminants: ▪ Develop and implement strict on-site handling rules to keep construction and maintenance materials out of drainages and waterways. ▪ Conduct all refueling and servicing of equipment with absorbent material or drip pans underneath to contain spilled fuel. Collect any fluid drained from machinery during servicing in leak-proof containers and deliver to an appropriate disposal or recycling facility. ▪ Maintain controlled construction staging, site entrance, concrete washout, and fueling areas a minimum of 100 feet from stream channels or wetlands whenever possible to minimize accidental spills and runoff of contaminants in stormwater.			

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	▪ Prevent raw cement; concrete, or concrete washings; asphalt, paint, or other coating material; oil or other petroleum products; or any other substances that could be hazardous to aquatic life from contaminating the soil or entering watercourses. *Dewatering and Treatment Controls* n. Prepare a dewatering plan prior to excavation. o. Impound dewatering discharges in sediment retention basins or other holding facilities to settle the solids and provide treatment prior to discharge to receiving waters as necessary to meet Basin Plan water quality objectives. p. In order to meet the Basin Plan water quality objectives, install turbidity barriers and collect and treat drainage and runoff water from any part of the work area that has become turbid with eroded soil, silt, or clay to reduce turbidity prior to discharge to receiving waters. *Temporary Stream Crossings* q. Construct temporary stream crossings using a temporary bridge with gravel approach ramps or temporary culverts backfilled with clean gravel/cobbles and topped with a gravel road base. r. Do not place earth and rockfill material in stream channels. s. Upon completion of the Proposed Project, remove or stabilize temporary stream crossings with banks graded to a stable angle.			
3.9-2	**Aggregate/Concrete Monitoring and Reporting Program** The Applicant shall undertake the proposed aggregate and concrete production facility in accordance with permit requirements of the CVRWQCB. The Applicant shall submit a Report of Waste Discharge to the CVRWQCB. The Applicant shall comply with monitoring requirements and discharge prohibitions identified by the CVRWQCB. The recommended discharge prohibitions, subject to review and approval by the CVRWQCB, include the specifications listed below. a. Aggregate wash water must be retained within designated operational area and may not be allowed to be percolated or disposed on land or to drainages. b. Aggregate wash and wastewater ponds must be lined and meet storage capacity requirements, maintain adequate freeboard, and be designed to protect ponds from inundation due to floods with a 100-year return frequency. c. Commingling aggregate wastewater and concrete wastewater is prohibited.	The applicant shall obtain a project-specific SWPPP prior to ground disturbing activities and provide the County with verification of compliance with the permit. (Use Permit COA)	County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	d. Construct continuous interior asphalt or concrete berms around batch plant equipment (mixing equipment, silos, concrete drop points, conveyor belts, admixture tanks, etc.) to facilitate proper containment and cleanup of releases. Rollover or flip top curbs or dikes should be placed at ingress and egress points. e. Direct runoff from the paved or unpaved portion of the concrete batch plant into a sump and pipe to a lined washout area or dewatering tank. f. All wastewater that contains residual concrete shall only be discharged to the concrete wastewater system (e.g., primary settling basin and secondary storage pond, or engineered alterative). g. Washout of concrete trucks must be conducted in a designated area with drainage to the concrete wastewater system. h. All stockpiled wastes and products shall be managed to prevent erosion of sediment to surface water drainage courses. i. Collected screenings, sludge, and other solids removed from liquid wastes shall be disposed of in a manner consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.			
3.9-3	**Off-Site Groundwater Well Safe Yield Analysis and Monitoring** Prior to the issuance of an encroachment permit or grading permit for installation of off-site water line along Butts Canyon Road for the use of the off-site agricultural well for water supply on the Guenoc Valley Site, the Applicant shall provide to the County an analysis that defines the safe yield. The safe yield must be set to meet the following performance criteria: avoid drawdown of groundwater beyond 300 feet of the well. The analysis must incorporate pump testing of the well, and be certified by a Registered Professional Engineer or Registered Geologist. Groundwater pumping rates and durations must be limited to the safe yield determined in the hydraulic analysis. The safe yield analysis shall identify the location of one or more monitoring wells necessary to evaluate compliance with the performance criteria. Monitoring of groundwater pumping rates and durations and groundwater levels shall be performed quarterly for the first ten years of use. The Applicant shall be required to submit annual monitoring reports that provide quarterly groundwater pumping and groundwater level data to the Lake County Health Services Department for the first ten years of use. In the event these reports show an impact to the groundwater levels, the Lake County Health Services Department and the Applicant shall develop a Groundwater Management Plan in coordination with a geotechnical engineer for approval by the Community Development Director.	Prior to the issuance of an encroachment permit or grading permit for installation of off site water line along Butts Canyon Road for the use of the off-site agricultural well for water supply on the Guenoc Valley Site, the Applicant shall provide to the County an analysis that defines the safe yield as described in Mitigation Measure 3.9-3 and submit required monitoring reports as well as cooperate with the County to prepare a Groundwater Management Plan as described in	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
		Mitigation Measure 3.9-3. (Use Permit COA)		
3.9-4	**Floodplain Analysis** Prior to the issuance of a grading permit for any development within 1,500 feet of Bucksnort Creek or Putah Creek, the Applicant shall provide to the County a floodplain analysis certified by a Registered Professional Engineer. This analysis shall define the extent of floodwaters (floodplain) and the elevations associated with 100-year flood event within proposed development areas along these creeks. If, due to the performed analyses, the changes in the effective Floodplain Maps and Flood Insurance Studies occur, the Developer will apply for a Letter(s) of Map Revision with the Federal Emergency Management Agency. Prior to the issuance of a grading permit for development of the Middletown Housing Site, including off-site improvements, the Applicant shall provide to the County a floodplain analysis certified by a Registered Professional Engineer. The analysis shall identify any changes in the extent of the 100-year floodplain or changes in flood depths within 750 feet of the Middletown Housing Site that would occur as the result of the proposed housing development and associated improvements. Drainage features shall be incorporated into the project design to ensure that the development will not increase the extent or depth of flooding in adjacent areas. These features may include the additional of drainage swales or larger detention basin capacity within the site.	The Applicant shall provide to the County a floodplain analysis meeting the requirements of this Mitigation Measure with applications for any grading permit for development within 1,500 feet of Bucksnort Creek or Putah Creek, along with Letter(s) of Map Revision with the Federal Emergency Management Agency if required. (Use Permit COA) The Applicant shall provide to the County a floodplain analysis meeting the requirements of this Mitigation Measure with applications for any grading permit for development within the Middletown Housing Site.	Applicant	County
3.9-5	**Inundation Mapping** Prior to the issuance of a grading permit for any development within 4,000 feet of Bucksnort Creek or Putah Creek, the Applicant shall provide to the County inundation maps of Detert Reservoir (Guenoc Lake), Langtry Lake, Bordeaux Lake, Burgundy Lake, and McCreary Lake dams that have been approved by Division of Safety of Dams	The Applicant shall provide to the County inundation maps of Detert Reservoir (Guenoc Lake), Langtry Lake, Bordeaux Lake, Burgundy Lake, and McCreary Lake dams that have been approved by DSOD with applications for	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
		any grading permit for development within 4,000 feet of Bucksnort Creek or Putah Creek. (Use Permit COA)		
3.9-6	**Incorporation of Floodplains and Dam Inundation Zones in Site Plans** a. All site plans submitted to the County for the review of any development within 1,500 feet of Bucksnort Creek or Putah Creek shall identify the extent of the 100-year floodplain within proposed development areas. The 100-year floodplain shown shall be as certified by a Registered Professional Engineer. b. All site plans submitted to the County for the review of any development within 4,000 feet of Bucksnort Creek or Putah Creek shall identify the extent of the inundation zones of Detert Reservoir (Guenoc Lake), Langtry Lake, Bordeaux Lake, Burgundy Lake, and McCreary Lake dams within proposed development areas. Maximum inundation depths shall be identified on the site plans. c. For any facilities identified within the 100-year floodplain or inundation zone, including at the Guenoc Valley, Middletown Housing ,and off-site well sites, any hazardous materials or materials that may pollute flood waters such as, but not limited to fuel, oil, chemicals, pesticides, fertilizer, or cleaning products, shall be adequately protected from release in flood waters or relocated out of the 100-year floodplain and inundation zone.	Applicant to prepare site plans meeting the requirements of this Mitigation Measure and submit to County with applications for development as described in this Mitigation Measure. County to review and make determinations and require appropriate conditions of approval prior to any approvals of such conditionally permitted uses. (Use Permit COA)	Applicant/County	County
3.10	**Noise**			
3.10-1	**Restrict Construction Times in Areas in Proximity to Sensitive Receptors** Construction activities within 1 mile of occupied residential uses not within the Guenoc Valley Site, and where feasible, all construction deliveries, shall be restricted to occur between the hours of 7:00 A.M. and 7:00 P.M.	County to incorporate this restriction into the Conditions of Approval of the project. Applicant to add these requirements to construction contracts. (Use Permit COA)	Applicant/County	County
3.10-2	**Construction Noise Reduction** The following measures shall be implemented to reduce impacts of construction noise. ▪ To reduce construction noise levels at off-site sensitive receptors as well as	County to incorporate this restriction into the Conditions of Approval of the project. Applicant to	Applicant/County	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
wildlife within the site, construction contractors shall be required to implement the following measures. These measures would be incorporated into the construction plan: o Equipment and trucks used for project construction shall utilize the best available noise control techniques, such as improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds. o Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, to achieve a reduction of 5 dBA. Quieter procedures will be used, such as drills rather than impact equipment. o Stationary noise sources shall be located as far from adjacent receptors as possible, and they will be muffled and enclosed within temporary sheds, incorporate insulation barriers, or other measures. o Locate fixed construction equipment such as compressors and generators as far as possible from sensitive receptors. Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on power construction equipment. ▪ Designate a disturbance coordinator and conspicuously post this person's number around the project site and in adjacent public spaces. The disturbance coordinator shall receive all public complaints about construction noise disturbances and shall be responsible for determining the cause of the complaint, and implement any feasible measures to be taken to alleviate the problem. ▪ Well Drilling and Pipeline Construction Noise (Off-Site Infrastructure Improvement only): o Noise curtains shall be utilized during drilling of the well if, at the time of well construction, homes are occupied within 1,000 feet of the well.	add these requirements to construction contracts. (Use Permit COA)		

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
3.10-3	**Future Phases Noise Control** Prior to County approval of conditionally permitted uses which include more substantial exterior noise sources such as amphitheaters and event venues, a noise study shall be prepared by an acoustical engineer that identifies the necessary measures required to achieve compliance with the County's Noise Level Performance Standards at the nearest sensitive receptors. The County shall require that the measures identified in the noise study are implemented as a condition of approval of conditional use permits.	(Use Permit COA)	Applicant/County	County
3.10-4	**Restrict Aircraft and Non-Emergency Helicopter Flight Times** Inbound and outbound flight times to and from the float dock and helicopter landing pads shall be limited to the hours of 7 A.M. to 7 P.M. every day of the week with exceptions for emergency situations only.	County to incorporate this restriction into the Conditions of Approval of the project. (Use Permit COA)	County	County
3.13	**Transportation**			
3.13-1	**Implement Improvements at SR-29 and Butts Canyon Road** Prior to issuance of grading permits for Phase 1, the Developer shall execute and deliver to Caltrans an agreement to mitigate the impacts to the intersection of SR-29 and Butts Canyon Road by paying to Caltrans the cost of the following: State Route 29 at Butts Canyon Road (Intersection #7) – Installation of an intersection control improvement—roundabout or three-way traffic signal with crosswalks, depending on results of an Intersection Control Analysis (ICE).	Applicant to enter into an agreement with Caltrans that meets the requirements of this Mitigation Measure prior to issuance of grading permits for Phase 1. (Use Permit COA)	Applicant	County
3.13-2	**Pay Fair Share towards Lake County Intersection Improvements** The Developer shall execute and deliver to Caltrans an agreement that requires payment, or provides bonding for, a proportionate share of the construction costs of the following improvements. The timing for collection of the fees and implementation of the improvements will be at the discretion of Caltrans as the lead agency. ▪ State Route 29 at Hartmann Road (Intersection #5) – Expansion of the existing roundabout or other intersection control improvement, depending on the results of an Intersection Control Analysis (ICE; required under Baseline plus Phase 1). ▪ SR-29 at Spruce Grove Road South (Intersection #3) – Installation of an intersection control improvement—roundabout or three-way traffic signal with crosswalks, depending on results of an ICE (required under cumulative plus Phase 1).	Applicant to enter into an agreement with Caltrans that meets the requirements of this Mitigation Measure prior to recordation of Final Maps. (TM COA)	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	▪ SR-29 at Hidden Valley Road (Intersection #4) – Installation of an intersection control improvement, roundabout or four-way traffic signal with crosswalks, depending on results of an ICE (required under cumulative plus Phase 1).			
3.13-3	**Conduct Traffic Study and Implement Mitigation for Future Phases** As specified in the Development Agreement, an updated Project Level traffic impact analysis shall be completed prior to approval of future Project phases to determine if future phases would conflict with adopted circulation plans and policies. Improvement measures determined for future phases shall be coordinated with applicable jurisdictional agencies as appropriate, including Lake County, Napa County, City of Calistoga, and Caltrans.	Applicant to prepare updated project-level traffic impact analysis and submit to County with applications for future phases. County to review and make determinations/coordinate with other agencies prior to any approvals of future phases.	Applicant/County	County
3.13-4	**Implement a Transportation Demand Management Program** Prior to issuance of occupancy permits for Phase 1, the Applicant shall develop and submit to the County a final Transportation Demand Management Program for the Proposed Project. The TDM plan shall identify all feasible measures to reduce the VMT per capita of the Proposed Project to below the regional average to the extent feasible. The goal of the TDM Program shall be a 15 percent in reduction in the VMT generated by the Proposed Project. The County shall verify compliance with the plan prior to issuance of occupancy permits for the Proposed Project. Additionally, the Applicant shall undertake annual monitoring and reporting of the TDM Plan, in accordance with Section 1.4 of Appendix TDM. Section 1.4 of Appendix TDM includes provisions regarding the timing, scope, and implementation of monitoring and reporting requirements, and requires the Applicant to adjust the TDM plan based on the monitoring results. The following strategies shall be identified within the TDM plan to reduce the VMT generated by the Proposed Project: ▪ *Private Shuttle Service* – There are currently no plans for Lake Transit to run buses along Butts Canyon Road near the project site and the nearest bus stops are about six miles away in Middletown. While it is possible Lake Transit might consider adding a stop on Butts Canyon Road in the future to serve project employees, it is our understanding that there is no funding available for it at this time. Alternatively, the project shall provide a frequent direct weekday shuttle service specifically for employees during the peak morning and evening commute periods. This could operate between the	Applicant to prepare TDM Program compliant with this Mitigation Measure and submit to County. County to review and approve prior to issuance of the first certificate of occupancy. (Use Permit COA)	Applicant	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
project site any and off-site work force housing with a stop at the Lake Transit bus transfer point in Middletown. Please note that shuttles would need be fully accessible to passengers using wheelchairs. It is recommended the applicant also explore providing a real-time smart-phone app that tracks arrivals to make shuttle use more reliable and convenient. Shuttle service for patrons of the project has been assumed as part of this analysis. The current assumption is that regular shuttle service to and from San Francisco and Sacramento will accommodate approximately 40% of resort patrons. The management shall monitor and provide adequate shuttle headways to accommodate all employees and guests who wish to use the shuttle services. ▪ *On-call Dial-A-Ride Service* – The management shall provide free on-call dial-a-ride transportation service connecting the Guenoc Valley Site to the community of Middletown and to regional transit services. The service shall be made available to the general public within a 15 mile radius of the site, in addition to employees, patrons, and residents of the Proposed Project. ▪ *Carpool and Ride-Matching Assistance Program* – Although on-site employee parking is limited, the management shall offer personalized ride-matching assistance to pair employees interested in forming commute carpools. As an enhancement, management may consider using specific services such as ZimRide, TwoGo by SAP, Enterprise RideShare, 511.org RideShare or the equivalent. ▪ *Preferential Parking for Carpoolers/Vanpoolers* – The management shall offer preferential carpool parking for eligible commuters. To be eligible for carpool parking, the carpool shall consist of three or more people. The number of preferential parking spaces will be based on the number of participants in the program. The management shall monitor and provide adequate carpool spaces to meet or exceed potential demand. ▪ *Dedicated Parking Spaces for Car Share Services* – The management will set aside parking spaces to be dedicated for use by car share services to serve employees. This is expected to reduce parking demand and GHG emissions associated with the project by providing more flexibility for employees who otherwise utilize alternate modes. The availability of car share services within a project can potentially reduce the demand for employees to own their own cars. Car share services allow for employees to make midday trips without needing to have their own personal vehicle on site. The availability of car share services within a project can potentially reduce the demand for			

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
employees to commute by car or even own their own cars. In addition to dedicating parking spaces for car share services for employees, the management may consider dedicating additional parking spaces for car share vehicles dedicated for guest use, if demand exists. The availability of such cars makes traveling to the Project site without a personal vehicle more appealing for some guests The management shall monitor and provide adequate car share spaces to meet or exceed potential demand. ▪ *On-Site Sales of Transit Passes* – The building management shall offer direct on-site sales of Lake County Transit Authority transit passes purchased and sold at a bulk group rate to employees. Although Lake Transit Authority does not currently operate transit service to the site directly, some employees who live in the greater Lake County and surrounding areas may take public transit to Middletown and then could take the private shuttle to the Project site. Offering on-site transit pass sales reduces the barrier of purchasing transit passes and provides a bulk discount to employees, further encouraging transit use as a primary commute mode. ▪ *TDM Coordinator* – Management shall designate a "*TDM coordinator*" to coordinate, monitor and publicize TDM activities. The effectiveness of providing a TDM Coordinator on auto mode share is uncertain but is generally seen as a supportive measure that is beneficial to implement the other TDM measures. The Project sponsor may instruct the management company to designate their on-site manager as the TDM coordinator, or they may designate someone else. ▪ *Transportation and Commute Information Kiosks* - An information board or kiosk will be located in a common gathering area (e.g., lobby, employee entrance, break, or lunch room). The kiosk will contain transportation information, such as Emergency Ride Home (ERH), transit schedules, bike maps, and 511 ride- matching. Information will be updated periodically by the designated TDM Coordinator. ▪ *Tenant Performance and Lease Language – TDM Requirements* - For all tenants, the applicant will draft lease language or side agreements that require the identification of a designated contact responsible for compliance and implementation of the TDM program. ▪ *Tenant/Employer Commute Program Training* - As needed and applicable, the applicant or property management will provide individual tenants of the project with initial TDM (and commute) program training, and commute			

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	program start- up assistance. The overarching goals of this support function are to reduce commute trips for employees and assist with employee marketing and outreach. ▪ *Employee Transportation Brochure* - All employees will be provided with an Employee Transportation Brochure regarding the Commute Program. This brochure will include (but not be limited to) information about shuttle service, carpool parking, transit opportunities, ride-matching services, bicycle routes, and emergency rides home.			
3.13-5	**Pay a Fair Share towards Pedestrian and Bicycle Improvements** Prior to issuance of occupancy permits for Phase 1 and future phases, the Applicant shall enter into an agreement with the Lake City/County Area Planning Council to pay a proportionate impact fee towards pedestrian and bicycle improvement projects in Lake County and Middletown.	Applicant to enter into an agreement with Lake City/County Area Planning Council that meets the requirements of this Mitigation Measure prior to issuance of the first certificate of occupancy. (Use Permit COA)	Applicant/ Lake City/County Area Planning Council	County
3.16	**Wildfire**			
3.16-1	**Fire Prevention during Construction** Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws. During construction, staging areas and areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a firebreak. Additionally, the following measures shall be required on the Guenoc Valley Site: ▪ Every work area shall have one round tip shovel, and one water type fire extinguisher accessible within 10 feet. ▪ Portable Fire Extinguisher rated at a minimum of 4/ABC or larger shall be in every vehicle, or piece of equipment except for privately owned vehicles. ▪ In general, during fire season, mowing of vegetation should be completed prion to noon.	Applicant to incorporate these measures into the Wildfire Prevention Plan and obtain County approval of revised Wildfire Prevention Plan prior to approval of Grading or Improvement Plans- (whichever occurs first). Wildfire Prevention Plan shall be issued to every contractor and construction crew. (Use Permit COA)	Applicant/County	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	▪ Hot Work shall have Fire Watch in place during and 30 minutes after. ▪ Persons activating 911 shall know where they are on property to give directions. ▪ All persons shall have access to a cell phone or radio system to activate 911. ▪ Persons activating 911 shall arrange an escort from the entrance at 22000 Butts Canyon Road to the location of the emergency for the first arriving emergency apparatus. ▪ Each construction site shall be provided with a hand held pressurized air horn such as a marine device (or similar) to alert others of an emergency.			
3.16-2	**Post-Wildfire Emergency Response** After a wildfire, response measures shall include actions to minimize slope instability and installation of warning signs. Immediate actions may include identifying impending threats to safety and property, checking all culverts to ensure proper drainage and installing erosion control mats and fiber rolls around steep areas. There shall also be long-term recovery and restoration actions to rehabilitate burned areas that have the potential to impact safety and property. The post wildfire emergency response plan (PWERP) will also include standards for a five-year long-term recovery and restoration plan to rehabilitate any burned areas that have the potential to impact safety and property. These measures could include restoring burned habitat, reforestation, mulching, and treating noxious weed infestations. This would be prepared by a qualified personnel with burned area restoration expertise and in coordination with and to the approval of the Lake County Department of Environmental Health.	Applicant to incorporate these measures into the Wildfire Prevention Plan and obtain County approval of revised Wildfire Prevention Plan prior to approval of Grading or Improvement Plans- (whichever occurs first). (Use Permit COA)	Applicant/County	County
3.16-3	**Prepare South Lake County Evacuation Traffic Management Plan to Reduce Near-Term Evacuation Times, Incorporate in Updated Lake County Emergency Operations Plan (EOP), and Implement Evacuation Traffic Management Measures** The applicant shall fund the administrative costs for preparation and adoption of a South Lake County Evacuation Traffic Management Plan, which shall be adopted prior to the issuance of the first certificate of occupancy for Phase 1. Lake County Office of Emergency Services (OES) shall be the Lead Agency for adoption of the plan and implementation of the traffic management measures, working in collaboration with other responsible agencies as noted below. The Evacuation Traffic Management Plan strategies, in combination with other mitigation measures described below, shall achieve a 15-minute reduction in total evacuation times for a full evacuation of South Lake County, thereby reducing the 30 minutes in added overall evacuation time due to	Applicant shall prepare the South Lake County Evacuation Traffic Management Plan compliance with this Mitigation Measure and submit to County OES. County to review and adopt prior to issuance of the first certificate of occupancy. (Use Permit COA)	Applicant/County	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
Phase 1 Project evacuation trips. The Evacuation Traffic Management Plan shall be subject to the approval of the Lake County OES, the Lake County Sheriff, the South Lake County Fire Protection District, Caltrans, and the California Highway Patrol (CHP). The approved version of the South Lake County Evacuation Traffic Management Plan shall be incorporated into an updated version of the Lake County Emergency Operations Plan (Lake County Office of Emergency Services) and the Lake County Community Wildfire Protection Plan (CWPP), with evacuation management strategies and improvement measures to address major bottlenecks in the South Lake County evacuation network. These measures shall include but will not be limited to the following: ▪ *SR 29 Evacuation Traffic Reduction Measure* – at the time of an evacuation order for a full South Lake County evacuation and as determined by the Incident Commander and County Sheriff, CHP and/or other police enforcement personnel shall implement measures to stop through traffic on SR 29 through the evacuation area such as stopping northbound SR 29 traffic at Tubbs Lane in Napa County and southbound SR 29 traffic at SR 53 in Lower Lake, thus reducing traffic levels on SR 29 during an evacuation. This measure would prevent inbound traffic on SR 29 from accessing the South Lake County evacuation network but would allow outbound evacuating vehicles to exit via SR 29. ▪ *Hidden Valley Lake Evacuation Traffic Management Measure* – at the time of an evacuation order for a full South Lake County evacuation and as determined by the Incident Commander and County Sheriff, Lake County Sheriff and/or other police enforcement personnel shall implement traffic management for the Hidden Valley Lake community that addresses bottlenecks at the intersections of SR 29 and Hidden Valley Lake community egress roads. The officers would direct Hidden Valley Lake evacuating traffic away from the direction of the wildfire and in a coordinated direction to reduce or avoid conflicting movements at the intersections. ▪ *Guenoc Valley Project SR 29 Evacuation Traffic Reduction Measure* – at the time of an evacuation order for a full South Lake County evacuation, evacuating project traffic shall be directed to alternate routes to SR 29. Unless precluded by wildfire, evacuating project traffic shall be directed to the planned project egress intersections on Butts Canyon Road and to the south on Butts Canyon Road. This measure would not apply if Butts Canyon Road were closed due to wildfire. In that event (such as under Scenario B), evacuating project trips would be directed to travel north on Butts Canyon Road (or via Grange Road as needed), south on SR 29			

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	to Middletown, and then north on SR 175 (presuming that SR 29 to the south over Mt. St. Helena was also closed). Additional details are described for this measure in Mitigation Measure 3.16-4. ▪ *SR 29 Traffic Signal Evacuation Operational Enhancement Measures* – a description of the traffic signal evacuation operational enhancement measures described in Mitigation Measure 3.16-5 shall be included in the Updated Lake County EOP.			
3.16-4	**Reduce Evacuation Time Impacts on SR 29 by Minimizing Project-Related Evacuation Traffic on SR-29** ▪ Prior to occupancy of any project uses, the applicant shall install variable message signs at the outbound lanes of the three project egress roads that connect to Butts Canyon Road and Grange Road. Lake County shall be the Lead Agency to oversee installation of the variable message signs within the project site. The variable message signs shall be connected to the on-site Emergency Response Center so that evacuation-related messages can be controlled by fire personnel managing the evacuation. At the time of an evacuation order for a full South Lake County evacuation, evacuating project traffic shall be directed to alternate routes to SR 29. Unless precluded by wildfire, evacuating Project traffic shall be directed to the planned egress intersections on Butts Canyon Road and to the south on Butts Canyon Road. ▪ The roundabout that will be constructed by the project applicant at the SR 29/Butts Canyon Road intersection shall include a southbound bypass lane to increase intersection capacity.	Applicant shall complete improvements prior to issuance of the first certificate of occupancy. (Use Permit COA)	Applicant	County
3.16-5	**Implement SR 29 Traffic Signal Evacuation Operational Enhancement Measures** ▪ Prior to issuance of the first certificate of occupancy for any Project uses, the applicant shall design, obtain permits for, and install improvements to the signalized intersection of SR 29/SR 53 intersection in Lower Lake and the two signalized intersections on SR 29 in Middletown (SR 175 and Wardlaw Street). The improvements would be funded by the project applicant who shall obtain permits from Caltrans and/or Lake County. The variable message signs and traffic signal controllers shall be connected to Caltrans and Lake County traffic operations staff so they can be managed remotely during an evacuation. Improvements at the SR 29/SR 53 intersection in Lower Lake shall include extending the length of the northbound left turn pocket by 175 feet to a length of approximately 400 feet which could be accomplished by restriping the existing striped median, installing variable message signs on three approaches (i.e., eastbound, southbound, and	Applicant shall obtain permits for and complete improvements prior to issuance of the first certificate of occupancy. (Use Permit COA)	Applicant, County, Caltrans	County, Caltrans

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	westbound), and developing and installing wildfire signal timing plans that can be implemented by County staff during a wildfire that significantly extend maximum green times on the northbound approach. Improvements at the two intersections on SR 29 in Middletown include developing and installing wildfire signal timing plans that can be implemented by County staff during a wildfire that significantly extend maximum green times on the northbound and/or southbound approaches depending on conditions.			
3.16-6	**Provide Dedicated Project Evacuation Shuttles for Phase 1 Hotel Uses** ▪ Prior to the issuance of the first certificate of occupancy for any Project hotel uses, the applicant shall acquire and provide storage for dedicated evacuation shuttle buses that can serve 45 percent of all guests (i.e., six 20-person buses at full occupancy of all Phase 1 hotel uses). Applicant shall identify and provide signage for bus stop evacuation pick-up zones at all hotels, and identify evacuation routes and shelter locations. Applicant shall designate shuttle drivers (hotel staff) and provide ongoing training for staff and drivers for the shuttle buses. ▪ The Project shall obtain, maintain, and store dedicated evacuation shuttles for hotel guests, as individual hotel projects are completed, at a rate of 0.9 shuttle bus seats per room. If shuttle buses with a 20-person capacity are acquired, a total of six dedicated evacuation shuttle buses for hotel guests would be provided for the 127 hotel units when all Phase 1 hotels are completed. The Project shall train employees to operate the shuttles and be aware of alternative routes to designated shelter locations.	Applicant shall acquire and provide storage for evacuation shuttle buses as required by Mitigation Measure prior to issuance of the first certificate of occupancy (Use Permit COA)	Applicant	County
3.16-7	**Updated South Lake County Evacuation Traffic Management Plan** As part of the future project-level CEQA evacuation assessment of full build-out of the Project and prior to issuance of the first certificate of occupancy for any uses beyond those included in Phase 1, the Project shall develop evacuation time reduction strategies to reduce forecast evacuation levels in the Evacuation Area, which the Project will be required to implement after occupancy of such uses. The measures would include any combination of demand, supply, and/or communication strategies as described below such that (1) the added evacuation time estimates (ETEs) (i.e., time until the last evacuee leaves the Evacuation Area) due to Project full build-out evacuation trips shall not exceed one hour beyond the total cumulative no project ETEs for a full evacuation of the Evacuation Area under either Scenario A or B, and (2) the estimated number of added Project full build-out evacuation trips on Butts Canyon Road shall not exceed its evacuation capacity.	Applicant shall include in application for SPD for future phases. County will ensure that this mitigation is implemented prior to approval of SPDs for future phases.	Applicant/County	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
Prior to issuance of the first certificate of occupancy for any use beyond those included in Phase 1, the applicant shall fund the administrative costs for preparation and adoption of a South Lake County Evacuation Plan (Evacuation Plan) that includes strategies to reduce overall cumulative ETEs for the Evacuation Area as described above, and the Evacuation Plan shall have been approved by the Lake County Office of Emergency Services (OES), the Lake County Sheriff, the South Lake County Fire Protection District, and the California Highway Patrol (CHP). Prior to the approval of the Evacuation Plan, a project-level CEQA analysis shall be conducted that analyzes the impacts of any proposed use beyond those included in Phase 1 on evacuation routes, and confirms that the strategies included in the Evacuation Plan meet the performance standards described above related to added ETEs and the evacuation capacity of Butts Canyon Road. The approved version of the South Lake County Evacuation Plan shall be incorporated into an updated version of the Lake County EOP (Lake County Office of Emergency Services). ▪ *Demand Strategies* – demand-side strategies that may reduce evacuation time estimates (ETEs) and evacuation trips include vehicle reduction and phased evacuation measures. A vehicle reduction strategy may include a combination of land use program reductions and/or measures to increase vehicle occupancy (i.e., additional shuttles). A community-wide policy encouraging households to limit the number of evacuating vehicles to one per household is another demand reduction strategy that could help reduce overall evacuation times. Reduction of the number of housing units shall be implemented as a strategy only if implementation of all other feasible demand-side, supply-side, and communication strategies would not reduce ETEs or exceedance of the capacity of Butts Canyon Road sufficiently to meet the performance standards described above. ▪ *Supply Strategies* – supply-side strategies that may reduce ETEs include road lane widening, shoulder widening to provide an additional egress lane, contraflow lane operations (i.e., allowing two lanes of outbound traffic, if needed), and intersection traffic control measures. ▪ *Communication Strategies* – communication strategies that may reduce ETEs include early warning systems, enhanced communication systems, and dynamic route guidance and monitoring. The above strategies are programmatic in nature and may be refined following the additional project-level CEQA analysis described above based on more specific details			

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	regarding future Project phases that will be included in application submittals for such phases, evolving evacuation analysis methods, any future changes to roadway infrastructure and/or capacity, and/or new or enhanced evacuation mitigation strategies.			
3.16-8	**Provide Dedicated Project Evacuation Shuttles for Full Build-out Hotel Uses** Consistent with Mitigation Measure 3.16-6, prior to the issuance of the first certificate of occupancy for any new hotel uses beyond those included in Phase 1, the applicant shall acquire and provide storage for dedicated evacuation shuttle buses that can serve 45 percent of all guests. Applicant shall identify and provide signage for bus stop evacuation pick-up zones at all hotels and identify evacuation routes and shelter locations. Applicant shall designate shuttle drivers and provide ongoing training for staff and drivers for the shuttle buses, including information on alternative evacuation routes and shelter locations. If shuttle buses with a 20-person capacity are acquired, a total of up to eighteen dedicated evacuation shuttle buses for hotel guests would be provided for up to 400 hotel units when all hotels are completed.	Applicant shall include in application for SPD for future phases. County will ensure that this mitigation is implemented prior to approval of SPDs for future phases.	Applicant/County	County
4.11	**Tribal Cultural Resources**			
TCR-1	**Phase 1 TCR Avoidance Strategies** Mitigation Measure 3.5-1 shall be implemented to avoid all identified tribal cultural resource sites during project construction, development, and operation activities. A buffer of 50 feet shall be established around the perimeter of each tribal cultural site and a semi-permanent fence shall be erected that will remain in place throughout construction. The fence shall be installed with a qualified archaeologist and tribal monitor in attendance, and shall determine the established buffer for the location. The buffer can be reduced or modified to accommodate sensitive environmental conditions, based on the assessment of the qualified archaeologist and tribal monitor or cultural advisor (see Mitigation Measure TCR-2). If construction will encroach closer than 50 feet, a qualified archaeological and tribal monitor shall be retained to monitor those activities. Should tribal cultural resources be uncovered within the buffer, all construction in the immediate area shall halt until the find can be assessed for NRHP/CRHR eligibility in accordance with current professional standards using minimization measures and the provisions of the	The applicant shall implement surveys, avoidance and monitoring as described in Mitigation Measure 3.5-1. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	Applicant	County

	Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
	Unanticipated Discoveries Plan developed in compliance with Mitigation Measure TCR-2.			
TCR-2	**Unanticipated Discoveries Plan and Construction Monitoring** 1) Tribal Cultural Advisor: Prior to initial ground disturbance, the Applicant shall retain a project Tribal Cultural Advisor designated by the Middletown Rancheria (Tribe), to direct all mitigation measures related to tribal cultural resources as defined by Public Resources Code 21074(a). 2) Unanticipated Discoveries Plan: Prior to project construction, a qualified professional archaeologist shall be retained to prepare an Unanticipated Discoveries Plan in consultation with Middletown Rancheria, or to update an existing Unanticipated Discoveries Plan supplied by the Tribe. At a minimum, the Unanticipated Discoveries Plan shall include: ▪ Minimization of impact strategies to be agreed upon by the archaeological monitor and tribal monitor or tribal cultural advisor. Minimization measures mean: ○ Avoidance. Priority shall first be given to leaving cultural resources in place and avoidance of any further unnecessary disturbance. The highest priority is to avoid disturbance to cultural resources. All cultural resources shall be left in situ, that is, in place, in the same position in which they were discovered and shall not be removed from the discovery site until arrangements are made for reburial or transfer in accordance with the below. If leaving the resources in situ is not possible, temporary housing at a secured storage location at the discovery site mutually agreed upon by the archaeological and tribal monitor may be considered. ○ Reburial. In situations where avoidance is not feasible, priority shall next be given to immediately reburying the cultural resources in the same location as found, only deeper. In the event that the cultural resources cannot be re- buried in the same location, only deeper, then priority shall next be given to immediately re- burying the cultural resources in an appropriate location within 100 feet of their original discovery in an area that shall not be subject to future subsurface disturbances. If for any reason immediate reburial in place, only deeper, or in an appropriate location within 100 feet of the original discovery is not feasible, then cultural resources may be	The applicant shall implement monitoring and other actions as described in Mitigation Measure TCR-2. The applicant shall include all of these requirements in construction contracts. (Use Permit COA)	Applicant	County

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
re-buried in an appropriate location as determined by the Tribal Cultural Advisor in an area that shall not be subject to future subsurface disturbances. ○ Transfer. In the event that avoidance and reburial above described is not feasible, cultural resources may be removed and transferred to a location designated by the Middletown Rancheria. ○ Laboratory studies, scientific analysis, curation, or video recording shall only be permitted if required to assess CRHR eligibility, or if such strategies are the only means available to mitigate impacts to CRHR eligible resources. Prior to conducting any such studies, the tribal cultural advisor must be consulted. The archaeologist may draw the cultural resources for mapping purposes; however, no electronic means of recording the cultural resources shall be permitted without prior consultation with the Middletown Rancheria. ▪ Description of field or laboratory methods to be used to investigate Unanticipated Discoveries (also applicable to known resources that will be impacted by project construction), to include types of excavation units, screening methods, and sample collection, as appropriate; ▪ A list of permitted in-field analyses or laboratories to be used for specific analyses, as appropriate; ▪ Provisions for reburial or transfer of recovered materials, developed in consultation with Middletown Rancheria. ▪ Measures for documentation of results, including forwarding results to the NWIC as appropriate; ▪ A Burial Treatment plan, provided by the Tribe, shall be followed if Native American remains are discovered during construction; ▪ Maps (provided in pdf and shapefiles to the construction contractor, Applicant, and County) of areas that have not been included in a previous archaeological survey; ▪ Maps of known resource locations (provided in pdf and shapefiles) shall be included in any construction documents that include identification of archaeological monitoring areas, identification of sites where pre-construction archaeological testing or archaeological and tribal monitoring during construction is required, identification of appropriate buffer zones for individual site protection during construction, cease work requirements, unanticipated finds reporting requirements;			

Mitigation Measure	Implementation and Timing	Responsible for Implementing	Responsibility for Monitoring
▪ Assessment criteria to determine NRHP/CRHR eligibility; and ▪ A no-collections policy will be instituted for the Proposed Project, except where a site-specific treatment plan or the Unanticipated Discoveries Plan developed in consultation with the Tribe, calls for collection of a sample of artifacts or materials and analysis. Should any cultural resources, such as wells, foundations, or debris, or unusual amounts of bone, stone or shell, artifacts, burned or baked soils, or charcoal be encountered during ground-disturbing activities, work shall cease within 100 feet of the discovery and the Construction Contractor, Applicant, and Middletown Rancheria shall be notified immediately. The Applicant shall retain a qualified professional archaeologist to assess the find in consultation with the Tribal Cultural Advisor. The Tribe must have an opportunity to inspect and determine the nature of the resource and the best course of action for avoidance, protection and/or treatment of tribal cultural resources to the extent permitted by law, should the find consist of prehistoric or historic-era materials related to Native American occupation or use of the vicinity. If the find appears to be eligible for listing on the NRHP or CRHR, or is determined to be a tribal cultural resource by the Middletown Rancheria, then the provisions of the Unanticipated Discoveries Plan shall be adhered to, which will include consultation with Middletown Rancheria for tribal cultural resources. If the find consists of historic-era materials unrelated to the Native American community, the archaeologist shall determine its significance in compliance with NHPA and CEQA criteria. If adverse effects to a cultural resource cannot be avoided, the Minimization Measures described under the requirements for the Unanticipated Discovery Plan shall be implemented to the extent feasible. 3) Construction Monitoring: Consistent with Mitigation Measure 3.5-2, all ground disturbing activities shall be monitored by qualified tribal monitor(s). Ground disturbing activities occurring in conjunction with the Project include, but are not limited to, surveys, testing, concrete pilings, debris removal, rescrapes, punch lists, erosion control (mulching, waddles, hydroseeding, etc.), pot-holing or auguring, boring, grading, trenching, foundation work, excavations, and ground disturbance involving the moving of dirt or rocks with heavy equipment or hand tools within the Project area. Qualified tribal monitor(s) are defined as qualified individual(s) who have experience with identification, collection, and treatment of tribal cultural resources of value to the Tribe. Such individuals will include those who: a. Possess the desired knowledge, skills, abilities, and experience			

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established by the Native American Heritage Commission (NAHC) through the NAHC's Guidelines for Native American Monitors/Consultants (2005) (https://nahc.ca.gov/wp-content/uploads/2019/04/SB-18-Tribal-Consultation-Guidelines.pdf); OR b. Members of culturally affiliated tribe(s) who: i. Are culturally affiliated with the project area, as determined by the NAHC; and ii. Have been vetted by tribal officials of the Culturally Affiliated Tribes as having the desired knowledge, skills, abilities, and experience established by the Culturally Affiliated Tribes.			

Table 5-2: Project Commitments

	Project Design Features	Timing and Implementation	Implementing Party	Monitoring Party
1	**Construction Project Design Features.** **The project applicant will implement the following construction equipment features for equipment operating at the Project Site, as well as the following construction protocols. These features and protocols would be included in applicable bid documents, and successful contractor(s) must demonstrate the ability to supply such equipment and comply with such protocols. Construction features would include the following:**			
1.1	A portion of the construction workers will stay in temporary on-site housing during construction to reduce traffic and minimize greenhouse gas contribution throughout all stages of construction. Even with accommodations on-site, employee shuttles will be available to move the contractors throughout the site, also reducing the traffic on Butts Canyon Road and any commuter traffic.	Construction only	Project Applicant	Lake County
1.2	Any person entering the site will be required to pick up the emergency handout pamphlet, available at all the entrances. This pamphlet is co-authored by ranch management & CalFire personnel to ensure accurate emergency contact information, ember or spark suppression, and a Ranch Map. This plan shall be laminated, in color, and updated as necessary to include the most recent road layout in conjunction with site development.	At all times.	Project Applicant	Lake County
1.3	All construction, contractors, and resort vehicles on the Ranch shall be required to be equipped with a shovel, fire extinguisher, and water in the event any small fire is	At all times.	Project Applicant	Lake County

	Project Design Features	Timing and Implementation	Implementing Party	Monitoring Party
	sparked, all vehicles and personnel will have the immediate ability to act.			
1.4	Educational training programs will be in place for all construction employees on fire prevention and safety.	Prior to construction.	Project Applicant, Construction Management	Lake County
1.5	A full-time qualified Fire professional will be hired to advise on all on-site activities, future planning, and site maintenance activities.	Prior to Construction.	Project Applicant.	Lake County
2	**Operations Project Design Features.** **The project applicant will implement the following operational equipment requirements and operation protocols for equipment operating at the Project Site. These features would be included in applicable bid documents, and successful contractor(s) must demonstrate the ability to supply such equipment and comply with such protocols. Operation features would include the following:**			
2.1	The Project includes an on-site Emergency Response Center, which shall be designed to CalFire Standards. This emergency response center will house a helipad that is for essential services and emergency use only and will be built as the very first phase. All helipads will be built to accommodate larger, firefighting helicopters and will provided a fire- rated water source (hydrant or fire pump) to allow for refilling. The South Lake County Fire Protection District (SLCFPD) would provide fire protection and fire suppression services to the Guenoc Valley Site and would staff the on-site emergency response and fire center, which will ultimately become SLCFPD Station #61. Approximately 500 square feet of the emergency response and fire center would be dedicated to the Lake County Sheriff's Office for emergency response and law enforcement services.	At time of first occupancy.	Project Applicant.	CalFire & Community Development Department.
2.2	An emergency response notification system, similar to Nixle text message Alerts, shall be established for any guest, resident, or employee as a "non opt-out" notification system. This expands the early warning system to personal devices for easy and universal accessibility.	At time of first occupancy	Project Applicant	CalFire & Community Development Department.

	Project Design Features	Timing and Implementation	Implementing Party	Monitoring Party
2.3	As part of the project intent to increase early warning systems for the Guenoc Valley and surrounding landscapes, a high definition fire camera shall be placed at the highest topography or within key areas of the Project. This will be utilized by CalFire or any private Fire Security team.	At time of first occupancy	Project Applicant	CalFire & Community Development Department.
2.4	An Emergency Evacuation Plan shall be provided to all residents, guests, and employees that identifies and describes emergency meeting areas, routes for safe egress, and protocol for fire safety. The plan shall be prepared consistent with the contents and information provided in the South Lake County Emergency Plan, and shall be provided to all guests that enter the property and posted within guest rooms. In addition, signage shall be installed for emergency meeting areas. The Wildfire Evacuation Plan must be prepared in cooperation with and approved by CalFire, the South Lake County Fire Protection District and the Lake County Sheriff Department.	At time of first occupancy	Project Applicant	Community Development Department, CalFire, South Lake County Fire Protection District and Lake County Sheriff Department
2.5	Establish a separate Road Network plan for Emergency Personnel Ingress & Egress that notes the roads dedicated only for emergency access occasions during interim construction and development.	Prior to Construction. Ongoing.	Project Applicant	Community Development Department, CalFire, South Lake County Fire Protection District and Lake County Sheriff Department
2.6	On-site grazing practices shall be relied on throughout the site as a tool for vegetation management.	Ongoing.	Project Applicant.	CalFire & Community Development Department.
2.7	Security Patrol. The project will maintain 24 hour security patrols, which will aid in early identification of fire events.	At time of occupancy.	Project Applicant.	HOA

	Project Design Features	Timing and Implementation	Implementing Party	Monitoring Party
2.10	Recycling and reuse of all wastewater generated by commercial and resort uses, and most wastewater generated by residential uses. Recycled water must account for approximately 25% of the outdoor water supply.	At time of occupancy	Project Applicant	Community Development Department
2.11	The use of drought tolerant native vegetation in landscaping	At time of occupancy. Ongoing.	Project Applicant.	Community Development Department
2.12	Electric fleet for the resort commercial uses (no less than 75 percent)	At time of occupancy. Ongoing.	Project Applicant.	Community Development Department
3	**Project Design Features** **The project applicant would implement the following project design features. These features would be included in applicable construction or building application documents. Many of these features are detailed within the Guenoc Valley District Zoning Ordinance and/or the Guenoc Valley District Design Guidelines. Design features would include the following:**			
3.1	All occupiable buildings shall be equipped with exterior fire suppression systems, Class A- rated roofs with non-combustible covering, fire-resistant eaves, non-combustible vents and leaf guards, fire-resistant material for exposed foundations, and fire-resistant decks. Exterior fire suppression systems shall be fully autonomous in the event power is cut/shut off, allowing the activation to be fully operational at all times without intervention or activation.	At time of Building Permit.	Project Applicant, Architects	Community Development Department, Plan Check.
3.2	All roads within the Guenoc Valley District shall be two-way roads that comply with State slope and width requirements.	Vegetation Maintenance beings at time of first Occupancy of that road. Road and street standards shall be proven at time of grading permit.	Project Applicant, Civil Engineers, Construction & Site Manager	Community Development Department, Office of Public Works.
3.3	All residential parcels, regardless of the size of the parcel, shall be restricted to the predetermined buildable envelope, as described in the Design Guidelines. The building envelope shall be 1.5 acres, unless the residential parcel is within oak woodland, in which case the buildable envelope shall be no greater than 1 acre. Additional, residential development shall only occur if further environmental review is conducted	At time of building permit.	Project Applicant, Architects & Landscape Designers	Community Development Department

	Project Design Features	Timing and Implementation	Implementing Party	Monitoring Party
	and any additional impacts are mitigated per the direction of the Oak Mitigation Plan and EIR.			
3.4	The Site shall maintain on-site irrigated vineyards, as described within the Wildfire Mitigation Plan, to create and maintain irrigated buffers to act as fire breaks throughout the site. In the event the vineyards are removed an irrigated fire break will continue.	Review at time of final map.	Project Applicant,	Community Development Department
3.5	The Project will clear and maintain 50-foot vegetation management on either side of the roads within the Guenoc Valley for a total fire break of 100-feet, creating a roadway network that provides safe egress and access in the event of an emergency. Additionally, property boundary fire breaks shall be installed, as depicted on Figure 2-10 of the FEIR.	At final occupancy of each structure, applicable fire breaks along roadways providing access to that structure shall be installed. At the time of the recording of the last final map for each of the five subdivision groups (Bohn Ridge Subdivision, Equestrian Subdivision, Maha Farms Subdivision, and Denniston Golf Estates Subdivision~~, and Trout Flat Subdivision~~), the full roadway fire break network shall be completed within that subdivision.	Project Applicant.	Community Development Department
3.6	Evacuation route signage shall meet all of the CalFire requirements and be included throughout the Guenoc Valley site. Specific signage shall be placed at emergency vehicle access roads, for emergency personal only. Signage should indicate ingress/egress.	At time of first occupancy. Ongoing	Project Applicant.	Community Development Department
3.7	A Fire siren shall be placed within the Project Site that shall work in conjunction with the multiple early warning systems.	At time of first occupancy.	Project Applicant.	Community Development Department

	Project Design Features	Timing and Implementation	Implementing Party	Monitoring Party
3.8	Interior Fire alarm systems shall be connected to the Project security systems.	At time of Building Permit.	Project Applicant.	Community Development Department
3.9	Joint trench design will include a hard-wired communication system for all residences.	At time of Grading Permit.	Project Applicant.	Community Development Department
3.10	Each resident or guest unit will communicate with the security system when occupied for emergency evacuation communication purposes.	At time of occupancy.	Project Applicant.	HOA
3.11	The Project will establish 50 workforce housing units at the Middletown Housing Site, or 35 workforce housing units at the Guenoc Valley Site, or both.	At time of first occupancy of resort uses.	Project Applicant.	Community Development Department
3.14	Installation of 300 electric vehicle charging stations as part of Phase 1.	At time of occupancy of resort uses. The percentage of stations installed must be equal to the percentage of resort units (hotel and resort residential) developed.	Project Applicant.	Community Development Department
3.16	Providing on-site refuse collection bins for recyclable waste, compostable waste, and standard waste, in addition to on-sire Compost and Recycling Centers	At time of first occupancy. Ongoing.	Project Applicant.	Community Development Department
3.17	Site-wide lighting design shall preserve nighttime dark skies by minimizing the use of outdoor lighting. Lighting fixtures shall utilize energy-efficient lamps and motion-sensing lighting systems to minimize unnecessary nighttime lighting.	At time of first occupancy. Ongoing.	Project Applicant.	Community Development Department
3.18	Existing overhead PG&E infrastructure will be placed underground and all new electrical ~~and propane~~ infrastructure will be installed via trenching and underground.	At the time of the recording of the last final map for each of the five subdivision groups (Bohn Ridge Subdivision, Equestrian Subdivision, Maha	Project Applicant.	Community Development Department

Project Design Features	Timing and Implementation	Implementing Party	Monitoring Party
	Farms Subdivision, and Denniston Golf Estates Subdivision~~, and Trout Flat Subdivision~~), the full electrical network serving that subdivision within the project site boundaries shall be relocated underground or shall be installed where site conditions permit.		

Table 5-3: Settlement Agreement Commitments

	Required Project Modifications	Timing and Implementation	Implementing Party	Monitoring Party
A)	**Wildfire-Related Project Modifications and Measures**			
i.	The Recreational and Camping Area depicted on Exhibit B-3 [of the Settlement Agreement; **Appendix C**] will be reserved only for recreational and camping uses. Open fires shall be strictly prohibited. *Note, the Camping Area has been voluntarily removed from Phase I.*	At all times. Shall be included in SPD.	Project Applicant	Lake County
ii.	The area consisting of the twenty-five building sites depicted on Exhibit B-1 [of the Settlement Agreement; **Appendix C**] will not be developed, and the associated parcels shall be removed from any and all maps. Those residential units may be relocated to the area depicted on Exhibit B-2 [of the Settlement Agreement; **Appendix C**].	Applicant shall include in updated Tentative Subdivision Maps	Project Applicant	Lake County
iii.	The areas consisting of the thirty-nine building sites depicted on Exhibit C-1 [of the Settlement Agreement; **Appendix C**] will not be developed for residential use, and the associated parcels shall be removed from any and all maps. Those residential units may be relocated to the area depicted in Exhibit C-2 [of the Settlement Agreement; **Appendix C**].	Applicant shall include in updated Tentative Subdivision Maps	Project Applicant	Lake County

	Required Project Modifications	Timing and Implementation	Implementing Party	Monitoring Party
iv.	As indicated on the Roadway Plan attached as Exhibit D [of the Settlement Agreement; **Appendix C**], no dead-end, non-looped road segment may exceed one mile in length.	Applicant shall include in updated Tentative Subdivision Maps	Project Applicant	Lake County
v.	To the extent that the topography feasibly permits, an area of approximately 10 feet on each side of the roadways will be improved with hardscape, as depicted on Exhibit E [of the Settlement Agreement; **Appendix C**].	Applicant shall include in Updated Wildfire Prevention Plan (WPP)	Project Applicant.	Lake County
vi.	The Guenoc Valley Project Homeowners Association ("HOA") will be required by its by-laws to contract with a wildfire expert for the duration of the Project. The costs of retaining that service provider will be paid by the HOA, and will be covered as part of HOA dues. The HOA shall consult with the wildfire expert in its implementation of wildfire prevention measures, including those identified in the Wildfire Prevention Plan. The HOA shall send to the Attorney General's Office a copy of the by-laws within thirty (30) calendar days of adoption by the HOA.	Applicant shall include in Updated WPP and in the CC&Rs and is the responsibility of the HOA. (TM COA)	Project Applicant	Lake County
vii.	The Project's Emergency Response Center will have on-site at least one individual with wildfire expertise related to evacuation and emergency access. The costs of retaining that individual or individuals will be paid by the HOA, which will be covered with HOA dues. After thirty (30) years from the date on which the HOA is established, the HOA may stop implementing and sunset this obligation upon a majority vote of the HOA membership and subsequent notice to the State of such vote.	Applicant shall include in Updated WPP and in the CC&Rs and is the responsibility of the HOA. (TM COA)	Project Applicant.	Lake County
viii.	The Applicant shall pay to the Lake County Fire Protection District ("LCFPD"), on an annual basis, the amount determined by LCFPD to be necessary in order to staff and equip the Emergency Response Center for fire services, including wildfire response.	Ongoing	Project Applicant	South Lake County FPD
B)	**GHG Emissions Reduction Measures**			
1	*Residential Land Uses*			

Required Project Modifications	Timing and Implementation	Implementing Party	Monitoring Party
a. The Applicant shall install photovoltaic ("PV") systems on all residential land use structures within the Project site where site parameters and constraints allow for adequate on-site rooftop and other on-site spaces (such as ground-mounted panels or panels on carports or other surfaces) to comply with Section 110.10(a) of the California Building Energy Efficiency Standards. The minimum electrical generation capacity of the PV Systems shall be equal to or greater than the projected energy needs, collectively, of all residential land use structures that the PV systems will serve. The Applicant shall inform residents, at the time of initial sale or at the time of subsequent sale of each residential land use structure, through placement of a requirement in the Covenants, Conditions and Restrictions ("CC&Rs") that will govern the HOA for each residential land use structure, that the Applicant is responsible for the repair and maintenance of each PV system, or any cleaner or technologically superior system of greater efficacy that is installed, for at least thirty (30) years from the date of initial installation.	At time of first occupancy. Applicant shall include in CC&Rs and is the responsibility of the HOA. (TM COA)	Project Applicant	Lake County
b. The Applicant shall install battery energy storage systems for all residential land use structures and shall design the battery energy storage systems to store the energy produced by the PV systems during daylight hours and discharge that stored energy during evening and nighttime hours, and sized to maximize self-generation and minimize electricity exports to the grid, with an efficiency of at least 80 percent (80%). The Applicant shall design and install the battery energy storage systems to provide energy savings benefits found in Section 150.1 of the California Building Energy Efficiency Standards for thirty (30) years from the date of initial installation.	At time of first occupancy.	Project Applicant	Lake County
c. All PV systems and battery energy storage systems shall be installed and operated consistent with all applicable state laws, regulations and local ordinances, including building codes.	Construction	Project Applicant and Construction Contractor	Lake County

Required Project Modifications	Timing and Implementation	Implementing Party	Monitoring Party
d. The Applicant shall install one fully operable Level 2 or higher-capacity Electric Vehicle Supply Equipment ("EVSE") of at least 240 volts in an appropriate location at each residential land use structure within the Project site. The Applicant shall inform residents, at the time of initial sale or at the time of subsequent sale of each residential land use structure, through placement of a requirement in the CC&Rs that will govern the HOA for each residential land use structure, that the Applicant is responsible for the repair and maintenance of each EVSE, or any cleaner or technologically superior system of greater efficacy that is installed, for at least thirty (30) years from the date of initial installation.	At time of first occupancy. Applicant shall include in CC&Rs and is the responsibility of the HOA. (TM COA)	Project Applicant	Lake County
e. The Applicant shall prohibit the use and extension of all natural gas infrastructure within the Project site. Specifically, the Project shall include in the CC&Rs and/or other enforceable obligations a prohibition on the installation or operation of natural gas infrastructure within the Project site for residential land use structures. Pre-existing natural gas infrastructure at the Project site, if any, shall be capped or removed.	Applicant shall include in Updated Wildfire Prevention Plan (WPP)	Project Applicant.	Lake County
f. The Applicant shall require that all appliances in residential land uses (including water heaters, space conditioning systems, and cooking stoves), operate on energy sources other than natural gas. Appliances, other than those used for stovetop cooking, shall operate on electricity.	Applicant shall include in Updated Wildfire Prevention Plan (WPP)	Project Applicant.	Lake County
g. The Applicant shall install high-efficiency, variable capacity heat pumps at all residential land use structures that comply, at a minimum, with the 2022 edition of Title 24, California Code of Regulations, Part 6 and that will provide energy for space and water heating appliances and clothes drying.	Construction	Project Applicant and Construction Contractor	Lake County
2 *Non-Residential Land Uses*			
a. The Applicant shall ensure that on-site generation of renewable energy is sufficient to produce electricity to supply energy for all nonresidential land use structures. To comply with this requirement, the Applicant shall install any combination of the following: 1. PV systems coupled with battery energy storage systems A. PV systems on non-residential land use structures within the Project site (including parking structures) where site parameters and constraints allow for adequate on-site rooftop and other on-site spaces (such as ground-mounted panels or panels on carports or other surfaces) to comply with Section 110.10(a) of the California Building Energy Efficiency Standards.	At time of occupancy. Ongoing.	Project Applicant.	Lake County

Required Project Modifications	Timing and Implementation	Implementing Party	Monitoring Party
The Applicant shall inform purchasers or tenants, at the time of initial sale or lease or at the time of subsequent sale or lease of each non-residential land use structure, through placement of a requirement in the CC&Rs that will govern the HOA for each non-residential land use structure, that the Applicant is responsible for the repair and maintenance of each PV system, or any cleaner or technologically superior system of greater efficacy that is installed, for at least thirty (30) years from the date of initial installation. B. Battery energy storage systems for all nonresidential land use structures and shall design the battery energy storage systems to store the energy produced by the PV systems during daylight hours and discharge that stored energy during evening and nighttime hours, and sized to maximize self-generation and minimize electricity exports to the grid, with an efficiency of at least 80 percent (80%). The Applicant shall design and install the battery energy storage systems to provide energy savings benefits for thirty (30) years from the date of initial installation. C. All non-residential structures shall comply with the applicable prescriptive requirements for PV and battery energy storage systems sizing specified by the 2022 edition of Title 24, California Code of Regulations, Part 6, section 141.10, effective January 1, 2023, including any subsequently enacted revisions. D. All PV systems and battery energy storage systems shall be installed and operated consistent with all applicable state laws, regulations and local ordinances, including building codes. 2. On-site solar farms A. On-site solar farms to reduce the Project's GHG emissions. The solar farms, in combination with any other on-site PV systems installed to serve the Project's non-residential land uses, shall have the capacity to generate an amount of renewable energy that is equivalent to, or exceeds, 5,500,000 kWh per year, which is the estimated electricity consumption for those land uses as described in the EIR. The Applicant shall site the solar farms in areas served by existing roads to the extent possible and in a manner that minimizes harm to biological resources and wildfire ignition risk.			

Required Project Modifications	Timing and Implementation	Implementing Party	Monitoring Party
b. For the non-residential land uses of the Project, the Applicant shall install at least 300 fully-operable, publicly-accessible4 Level 2 or higher-capacity Electrical Vehicle Charging Stations ("EVCS") of at least 240 volts with at least two ports per charger and 20 fully operable publicly-accessible Level 3 EVCS/Fast Chargers. The Applicant shall ensure that the EVCS are preferential parking spaces for electric vehicles ("EVs") that comply with Tier 2 of Section A5.105.8.1 and Tier 2 of Section A5.106.5.3 of the California Green Building Standards and strategically located to maximize availability. The dedicated EVs spaces shall be in preferential locations, but shall not be located in a way that prevents compliance with requirements in the California Vehicle Code regarding parking spaces for disabled persons or disabled veterans. All publicly-accessible Level 2 and Level 3 EVCS shall be marked with signage indicating that improperly parked vehicles blocking access to the EV charging will be towed. Further, the Applicant shall inform purchasers or tenants, at the time of initial sale or lease, or at the time of subsequent sale or lease, of each non-residential land use structure, through placement of a requirement in the CC&Rs that will govern the HOA for each nonresidential land use structure, that the Applicant is responsible for the repair and maintenance of each EVSC, or any cleaner or technologically superior system of greater efficacy that is installed, for at least thirty (30) years from the date of initial installation.	At time of first occupancy. Applicant shall include in CC&Rs and is the responsibility of the HOA. (TM COA)	Project Applicant	Lake County
c. Except as set forth below, the Applicant shall prohibit the use and extension of all natural gas infrastructure within the Project site for all non-residential land use structures. Specifically, the Project shall include in the CC&Rs and/or other enforceable obligations a prohibition on the installation or operation of natural gas infrastructure within the Project site for non-residential land use structures. Except as set forth below, any preexisting natural gas infrastructure shall be capped or removed, and outdoor fires and the use of natural gas-fueled appliances shall be prohibited within, the Project site.	Applicant shall include in Updated Wildfire Prevention Plan (WPP)	Project Applicant	Lake County

	Required Project Modifications	Timing and Implementation	Implementing Party	Monitoring Party
	d. Except as set forth below, the Applicant shall require that nonresidential land use structures are all-electric, except where it is infeasible for a building to comply with the applicable building codes if it is all-electric. Further, the Applicant shall require that all non-residential land use structures are constructed to accommodate electric appliances exclusively, including water heaters, space conditioning systems, clothes drying and cooktops. 1. The Applicant shall be permitted to install, and operate, natural gas-fueled or propane-cooktops in restaurant kitchens. 2. The Applicant shall be permitted to install, and operate, natural gas-fueled or propane-fire pits in the outdoor patio areas of restaurants.	Applicant shall include in Updated Wildfire Prevention Plan (WPP)	Project Applicant.	Lake County
	e. The Applicant shall install high-efficiency, variable capacity heat pumps at all non-residential land use structures that comply, at a minimum, with the 2022 edition of Title 24, California Code of Regulations, Part 6 and that will provide energy for space and water heating appliances and clothes drying.	Construction	Project Applicant and Construction Contractor	Lake County
3	*Off-Site GHG Emissions Reduction Measures*			
	a. The Applicant's Obligation to Purchase GHG Offset Credits. The Applicant shall, for thirty (30) years from the date of issuance of the initial occupancy permit for the Project, annually purchase and retire voluntary market GHG Offset Credits listed with, and verified by, a CARB-approved Registry. Such credits shall be purchased annually in an amount sufficient to offset the Project's actual GHG emissions in each year. The current estimate is that 14,865 credits will be required annually for that purpose, and the Applicant will make an annual purchase in that amount by the issuance of the initial occupancy permit for Phase 1 of the Project. Future events or developments may affect the availability and utility of the GHG Offset Credits, and the Project's actual GHG emissions. These factors may support an adjustment to the amount of GHG Offset Credits that the Applicant is required to purchase under this Subsection. The Applicant may seek the State's consent in the future to an adjustment of this requirement, and the State will consider such request in good faith. Any adjustment to the amount of GHG Offset Credits to be purchased by the Applicant shall be consistent with CEQA.	At time of initial occupancy. Ongoing.	Project Applicant.	Community Development Department and Attorney General

Required Project Modifications	Timing and Implementation	Implementing Party	Monitoring Party
b. Performance Standards 1. The Applicant shall ensure that all GHG Offset Credits purchased to comply with this Agreement: A. Are purchased for GHG Emissions Offsets with the following geographic priorities: (1) offsets within the County; (2) offsets within the State of California, only if in-county offsets are unavailable; (3) offsets within the United States, only if in-state offsets are unavailable; and (4) international offsets only if in-nation offsets are unavailable. B. Represent past reduction or sequestration of GHG emissions that is not otherwise required. (Cal. Code Regs., tit. 14, § 15126.4, subd. (c)(3).) C. Are "Real," "Additional," "Quantifiable," "Permanent," and "Verifiable," as those terms are defined in California Code of Regulations, title 17, section 95802, subdivision (a). D. Comply with the "additionality requirements" for Offset Projects set forth in California Code of Regulations, title 17, section 95973, subdivision (a)(2). E. Comply with the Verification of GHG Emissions Reductions requirements for Offset Projects set forth in in California Code of Regulations, title 17, section 95977. F. Given a unique serial or tracking number to ensure there is no duplication or double counting. 2. The Applicant shall not rely upon any GHG Offset Credit purchased to comply with this Agreement for any other project or to satisfy any other contractual obligation.	At time of initial occupancy. Ongoing.	Project Applicant.	Community Development Department and Attorney General
4 *Compliance Protocols*			
a. The Applicant shall ensure that all GHG Offset Credits purchased to comply with this Agreement are purchased for GHG Emissions Offsets that comply with an applicable Offset Compliance Protocol from a CARB-approved Offset Registry that satisfies all of the CARB Offset Protocol standards in California Code of Regulations, title 17, section 95972, or any new standards that may become applicable to CARB Offset Protocols during the thirty (30) years starting from date of issuance of the initial occupancy permit for the Project.	At time of initial occupancy. Ongoing.	Project Applicant.	Community Development Department and Attorney General
5 *Monitoring, Reporting, and Recordkeeping*			

Required Project Modifications	Timing and Implementation	Implementing Party	Monitoring Party
a. The Applicant shall select and retain at least one independent, third-party expert on GHG mitigation and offsets to review the documentation provided by the Applicant relating to, among other data, construction- and operation-related emissions, and provide analysis and recommendations to the County, providing the State with a copy of same for information purposes, on whether the Applicant has complied with the off-site GHG emissions reduction measures set forth in this Agreement. The Applicant's selection of each expert, who shall not be a current or former employee or agent of the Applicant, shall be subject to the approval of the Attorney General's Office, which shall not be unreasonably withheld. The Applicant shall retain the expert(s) and fund the activities of the expert(s) starting from the issuance of the first site development permit or the first building permit, whichever occurs earliest, through thirty (30) years after an expert is retained.	Start with issuance of first building or site development permit, whichever occurs earliest.	Project Applicant.	Lake County
b. Each year, the expert(s) retained by the Applicant shall prepare a report and make specific findings as to whether the Applicant has met the requirements set forth in Sections 1(b)(i)–(iii) of this Agreement.	Ongoing.	Project Applicant.	Lake County
c. The Applicant shall provide the expert report and findings to the County and the Attorney General's Office on an annual basis. The Applicant shall also, upon request by the County or the Attorney General's Office, make available within a reasonable time all evidence upon which the expert relied to make such findings.	Ongoing.	Project Applicant.	Lake County and Attorney General

Section 6 | Report Preparation

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Fehr and Peers

Community Wildfire Planning Center

Technical Consultants

Biological and Aquatic Resources	WRA, Inc. Environmental Consultants
Civil Engineering	Sherwood Engineers
Cultural Resources	Montrose Tom Origer & Associates
Traffic	Steve Abrams & Associates

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Section 8 | Acronyms

A ..... Agriculture zoning
AB ..... Assembly Bill
AES ..... Analytical Environmental Services
afy ..... acre-feet per year
amsl ..... above mean sea level
APC ..... Area Planning Council
APE ..... Area of Potential Effects
APN ..... Assessor's Parcel Number
AVMT ..... Average Vehicle Miles Traveled
BAAQMD ..... Bay Area Air Quality Management District
BASMAA ..... Bay Area Stormwater Management Agencies Association
BCM ..... Basin Characterization Model
BI ..... Beneficial Impact
BMP ..... best management practice
BRA ..... Biological Resource Assessment
CAAQS ..... California Ambient Air Quality Standards
CalEEMod ..... California Emissions Estimator Model
CALGreen ..... California Green Building Standards
CAL FIRE ..... California Department of Forestry and Fire Protection
CAP ..... criteria air pollutant
CAPCOA ..... California Air Pollution Control Officers Association
CARB ..... California Air Resources Board
CBC ..... California Building Code
CBD ..... Center for Biological Diversity
CCR ..... California Code of Regulations
CC&R ..... Covenants, Conditions, and Restrictions
CDC ..... California Department of Conservation
CDFW ..... California Department of Fish and Wildlife
CEC ..... California Energy Commission
CESA ..... California Endangered Species Act
CEQA ..... California Environmental Quality Act
CFP ..... California Fully Protected Species
CH_4 ..... methane
CHP ..... California Highway Patrol
CLERC ..... Clear Lake Environmental Research Center
CMVSTAFF ..... California Motor Vehicle Stock Travel and Fuel Forecast
CNPS ..... California Native Plant Society
CO ..... carbon monoxide

CO_2 ..... carbon dioxide
CO_2e ..... carbon dioxide equivalent
CRHR ..... California Register of Historic Places
CTC ..... California Transportation Commission
CWPP..... Community Wildfire Protection Plan
DMP..... Drought Management Plan
EIR ..... Environmental Impact Report
EOP..... Emergency Operations Plan
ETE..... evacuation time estimate
EV ..... electric vehicle
EVCS ..... electric vehicle charging station
EVSE ..... electric vehicle supply equipment
FC ..... Federal Candidate Status
FE..... Federally Listed Endangered Species
FEMA..... Federal Emergency Management Agency
FESA..... Federal Endangered Species Act
FHSZ ..... Fire Hazard Severity Zone
FHWA ..... Federal Highway Administration
FIRM ..... Flood Insurance Rate Map
FMMP..... Farmland Mapping and Monitoring Program
FT..... Federally Listed Threatened Species
GHG..... greenhouse gas
GPD ..... General Plan of Development
gpm ..... gallons per minute
GVD ..... Guenoc Valley District
GWP ..... global warming potential
HAP..... hazardous air pollutant
HCM ..... Highway Capacity Manual
HFC..... hydrofluorocarbon
HOA..... homeowner's association
HVAC ..... heating, ventilation, and air conditioning
LAMM..... Lake County Area-Wide Microsimulation Model
LAPC ..... Lake Area Planning Council
LCAB ..... Lake County Air Basin
LCAQMD..... Lake County Air Quality Management District
LHMP..... Local Hazard Mitigation Plan
LID ..... low impact design
LOS ..... level of service
LSR..... Local Streets and Roads
LTS..... Less than significant
M2B..... Mayacamas to Berryessa Connectivity Network
MM..... Mitigation Measure

MMRP ..... Mitigation Monitoring and Reporting Program
MT ..... metric ton
N/A ..... Not Applicable
N_2O ..... nitrous oxide
NAAQS ..... National Ambient Air Quality Standards
NFIP ..... National Flood Insurance Program
NFPA ..... National Fire Protection Association
NI ..... No Impact
NOA ..... Naturally Occurring Asbestos
NOAA ..... National Oceanic and Atmospheric Administration
NOx ..... nitrogen oxides
NPDES ..... National Pollutant Discharge Elimination System
NRCS ..... Natural Resources Conservation Service
NRHP ..... National Register of Historic Places
NWIC ..... Northwest Information Center
NWPR ..... Navigable Waters Protection Rule
O_3 ..... ozone
OAG ..... Office of the Attorney General
OAH ..... Office of Administrative Hearings
OEHHA ..... Office of Environmental Health Hazard Assessment
OES ..... Office of Emergency Services
OPR ..... Office of Planning and Research
OSPP ..... Open Space Preservation Plan
Pb ..... Lead
PFC ..... perfluorocarbon
PM ..... particulate matter
POU ..... Place of Use
PRC ..... Public Resources Code
PREIR ..... Partially Revised EIR
PS ..... Potentially significant
PV ..... photovoltaic
QSP ..... Qualified SWPPP Practitioner
RHNA ..... Regional Housing Needs Allocations
RL ..... Rural Lands zoning
ROG ..... reactive organic gas
RR ..... Rural Residential zoning
RTP ..... Regional Transportation Plan
RWQCB ..... Regional Water Quality Control Board
S ..... Significant
SB ..... Senate Bill
SC ..... California State Listed Candidate Species
SE ..... California State Listed Endangered Species

SF_6 ..... sulfur hexafluoride
SFBAAB..... San Francisco Bay Area Air Basin
SHS ..... State Highway System
SLCFPD ..... South Lake County Fire Protection District
SO_2..... sulfur dioxide
SO_x..... sulfur oxide
SPD ..... Specific Plan of Development
SR ..... State Route
SRA ..... State Responsibility Area
SSC..... California Species of Special Concern
ST..... California State Listed Threatened Species
SU ..... Significant and unavoidable
SWPPP..... Stormwater Pollution Prevention Plan
SWRCB..... State Water Resources Control Board
TAC ..... toxic air contaminant
TCP ..... traditional cultural property
TCR ..... Tribal cultural resource
TDM..... Transportation Demand Management
TIA ..... Traffic Impact Assessment
TMDL..... Total Maximum Daily Load
UCMP ..... University of California Museum of Paleontology
UP..... use permit
USACE..... U.S. Army Corp of Engineers
USEPA..... U.S. Environmental Protection Agency
USFWS..... U.S. Fish and Wildlife Service
USGS..... U.S. Geological Survey
VMT..... vehicle miles traveled
WCIRP..... Wine Country Interregional Partnership
WPP..... Wildfire Prevention Plan
WRP..... water reclamation plant
WSA..... Water Supply Assessment
WUI ..... Wildfire Urban Interface

Appendix A

Ruling and Order

FILED
SUPERIOR COURT
COUNTY OF LAKE
JAN 04 2022
BY Krista D LeVier Yolanda Blum
Deputy Clerk

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LAKE

CENTER FOR BIOLOGICAL DIVERSITY, Petitioner, PEOPLE OF THE STATE OF CALIFORNIA, EX. REL, ATTORNEY GENERAL ROB BONTA, Petitioner-Intervenor, v. COUNTY OF LAKE, BOARD OF SUPERVISORS OF THE COUNTY OF LAKE; and DOES 1 through 20, Respondents. LOTUSLAND INVESTMENT HOLDINGS, INC.; and DOES 21 through 40, Real Parties in Interest.	Case No. CV421152 **RULING AND ORDER ON PETITIONS FOR WRIT OF MANDATE**

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SCANNED

Ruling

I. Introduction.

The Court's obligation in this case is to answer the following questions:

1. Was there substantial evidence to support the County's decision?
2. Did the County fail to proceed in the manner required by law?

(Pub. Res. Code §§ 21168, 21168.5.)

In answering the first question, the Court "must indulge all reasonable inferences from the evidence that would support the agency's determinations and resolve all conflicts in the evidence in favor of the agency's decision." (*Save Our Peninsula Committee v. Monterey County Board of Supervisors* (2001) 87 Cal.App.4th 99, 117.) "A court may not set aside an agency's approval of an EIR [Environmental Impact Report] on the ground that an opposite conclusion would have been equally or more reasonable." (*Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 393.)

In answering the second question, the Court must determine if the County substantially complied with the procedural requirements of the California Environmental Quality Act (CEQA). (Practice Under the California Environmental Quality Act (2d ed. Cal CEB) § 23.35.) While a court may find noncompliance with CEQA requirements to be a prejudicial abuse of discretion, there is no presumption that such an error is prejudicial. (Pub. Res. Code § 21005(b).) In determining whether a failure to comply with CEQA is prejudicial, a court does not determine whether a different outcome would have resulted. (Pub. Res. Code § 21005(a).)

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II. Wildfire Risk.

A. Compression of Mitigation Measures Into the Project.

When an EIR incorporates mitigation measures into the project description, then concludes that the project has no significant impact, the failure to separately identify significant impacts and analyze the mitigation measures violates CEQA. (*Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645.) This is because by doing so, an EIR "precludes both identification of potential environmental consequences arising from the project and also thoughtful analysis of the sufficiency of measures to mitigate those consequences." (*Id.* at p. 658.)

Lotus v. Department of Transportation, supra, involved a highway construction project through an old growth redwood forest. A portion of the construction was planned to occur within the structural root zone of a number of trees. The EIR described measures that "have been incorporated into the project to avoid and minimize impacts as well as to mitigate expected impacts." (*Id.* at p. 650.) Those measures included restorative planting and replanting, invasive plant removal, and use of an arborist and specialized equipment. In the EIR, the agency concluded that "[n]o significant environmental effects are expected as a result of this project with the implementation of the stated special construction techniques." (*Id.* at p. 651.)

In concluding that the EIR violated CEQA by compressing the analysis of impacts and mitigation measures into a single issue, the Court of Appeal explained:

> The EIR fails to indicate which or even how many protected redwoods will be impacted beyond the tolerances specified in the handbook and, by failing to indicate any significant impacts, fails to make the necessary evaluation and findings concerning the mitigation measures that are proposed. Absent a determination regarding the significance of the impacts to the root systems of the old growth redwood trees, it is impossible to determine whether mitigation

> measures are required or to evaluate whether other more effective measures than those proposed should be considered. Should Caltrans determine that a specific tree or group of trees will be significantly impacted by proposed roadwork, that finding would trigger the need to consider a range of specifically targeted mitigation measures, including analysis of whether the project itself could be modified to lessen the impact.

(*Id.* at p. 656.)

In that case, the measures contained within the project were designed to mitigate the impacts to the health of the trees caused by the construction. The measures at issue were "plainly mitigation measures and not part of the project itself." (*Id.* at p. 656, fn. 8.) The failure to classify those measures as mitigation measures prevented those reviewing the EIR from determining the significance of the impact the construction would have on the health of the trees. (*Id.* at pp. 656-658.)

In the instant case, Petitioners[1] argue certain design elements included in the Wildfire Prevention Plan (WPP), including those relating to relating to vegetation management and firebreaks, were misclassified as part of the Project rather than mitigation measures. Although certain actions such as vegetation management and maintenance of the firebreaks will continue well after the Project is built, those components of the WPP are properly classified as part of the Project itself. This is because those measures, unlike the measures in *Lotus v. Department of Transportation, supra,* are not designed to rectify the impacts to the environment caused by the Project. None of the challenged design elements are meant to repair, rehabilitate or restore the impacted environment. Instead, they are part of the design of the Project meant to avoid

[1] Petitioners includes Intervenor/Petitioner unless otherwise stated.

impacts to the environment in the first place. Accordingly, the Court concludes all of the components of the WPP, including vegetation management and maintenance of the firebreaks, are not mitigation measures improperly misclassified as Project components. Instead, they are part of the Project itself.

B. Adequacy of Analysis of Wildfire Risk.

Petitioners find fault with the EIR's analysis of the wildfire risk and the methodology used to analyze that risk. Although the analysis could have been more thorough and better methodologies could have been used, "challenges to the scope of an EIR's analysis, the methodology used, or the reliability or accuracy of the data underlying an analysis, must be rejected unless the agency's reasons for proceeding as it did are clearly inadequate or unsupported." (*Chico Advocates for a Responsible Economy v. City of Chico* (2019) 40 Cal.App.5th 839, 851.) The EIR's analysis of the Project's impacts on wildfire risk was extensive and specific to both the Project and its location. Without rehashing the evidence contained in the record, the Court concludes substantial evidence supports the County's findings regarding the Project's impact on wildfire risks, with one exception which will be discussed in the following section.

C. Impacts on Emergency Evacuation Routes.

In its briefing, Real Party differentiated project evacuation routes from community or area-wide evacuation routes. The Court agrees that analysis of the Project's evacuation routes are a "reverse CEQA" issue and need not be addressed in the EIR. The Project's impacts to community evacuation routes, however, must be analyzed in the EIR.

In *California Building Industry Assoc. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, at issue was an agency's thresholds of significance for certain air pollutants which required project proponents to evaluate how existing air pollution would affect individuals within the proposed project. The Supreme Court concluded, "CEQA generally does not require an analysis of how existing environmental conditions will impact a projects future users or residents." (*Id.* at p. 386.) CEQA does, however, require an analysis of a "project's potentially significant *exacerbating* effects on existing environmental hazards – effects that arise because the project brings 'development and people into the area affected.'" (*Id.* at p. 388; italics in original.) The Supreme Court explained an "EIR should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas)." (*Ibid.*)

Newton Preservation Society v. County of El Dorado (2021) 65 Cal.App.5th 771, involved a bridge construction project where project opponents, many of whom were residents, alleged the project would have a significant impact on evacuation. The Court of Appeal held the evidence presented in that case did not "support a fair argument that the project may have a significant impact on the environment or may exacerbate existing environmental hazards." (*Id.* at p. 792.) The court determined the comments offered in opposition to the project "lacked factual foundation and failed to contradict the conclusions by agencies with expertise in wildfire evacuations with *specific* facts calling into question the underlying assumptions of their opinions as it pertained to the project's potential environmental impacts." (*Id.* at p. 791, italics in original.)

Real Party is correct that analysis of community evacuation is not required unless the project might exacerbate existing environmental hazards. (Real Party in Interest Lotusland Investment Holding, Inc.'s Supplemental Brief Re: Evacuation filed November 19, 2021, (Real Party's Supplemental Brief), p. 7:7-9.). Here, unlike the case in *Newton, supra,* there is evidence that the Project might exacerbate existing environmental hazards. As pointed out by Petitioners Center for Biological Diversity (CBD) and California Native Plant Society (CNPS), a significant number of wildfire related deaths in California occur during attempts to evacuate. (Petitioners' Opening Brief filed June 15, 2021, pp, 19:26-20:4.) The hazards of a wildfire are certainly exacerbated if community residents are unable to evacuate safely due to congested evacuation routes. It is estimated that the Project will bring 4,070 residents to the area. (AR 6612.) This is a significant population increase when considering the Project is located in Lake County Census Tracts 12 and 13 which had an estimated combined population of 10,163 in 2017. (AR 6608.) If a wildfire occurs, the Project's residents will need to evacuate. These people will likely compete with residents in the surrounding area for safe evacuation routes. The additional people competing for the same limited routes can cause congestion and delay in evacuation, resulting in increased wildfire related deaths. This is undoubtedly a situation where the Project, by bringing a significant number of people into the area, may significantly exacerbate existing environmental hazards; specifically, wildfires and their associated risks. Therefore, this is an issue that is required to be addressed under CEQA.

The County concluded the impacts to existing emergency evacuation plans would be less than significant. (AR 6746.) The evidence supporting this conclusion are

comprised primarily of opinions from traffic engineers and fire and law enforcement personnel. (Real Party's Supplemental Brief, p. 8:2-8; AR 42594-42595; 53739-53740.) Those opinions were not based on any identifiable facts.

There are two problems with this evidence. First, this evidence primarily addresses the issue of whether the Project's residents could safely leave the Project in the event of a wildfire. This evidence does not focus on the issue that is required to be addressed by CEQA; whether evacuation of the residents in the nearby area would be affected by the evacuation of the Project's residents during a wildfire.

Second, this evidence cannot be considered substantial evidence. Substantial evidence includes "expert opinion supported by facts." (14 CCR §15384(b).) Unsubstantiated opinion does not constitute substantial evidence. (14 CCR §15384(a).) The conclusion reached by the County as it relates to emergency evacuation plans is based on unsubstantiated expert opinions. This evidence is legally insufficient to qualify as substantial evidence under CEQA.

Because the County's findings regarding community emergency evacuation routes are not supported by substantial evidence, the EIR does not comply with CEQA.

III. Carbon Credit Program[2].

Petitioners argue the carbon credit program is ineffective as a mitigation measure because it does not include sufficient safeguards to ensure offsets are real, permanent, verifiable and enforceable. (*Golden Door Properties, LLC v. County of San Diego* (2020) 50 Cal.App.5th 467, 506-507.)

[2] The carbon credit program was discussed by the parties under the broader topic of climate impacts and GHG mitigation measures. Also discussed was the transportation demand management plan (TDM). The Court concludes

Here, the carbon credit program was added through an errata to the Final EIR after the public comment period had closed. The County explained:

> Also we added a mitigation requiring the purchase of greenhouse gas carbon credits to offset the project's remaining greenhouse gas emissions that are above and beyond the stated threshholds in the EIR. However, the EIR's conclusion of a significant, unavoidable greenhouse gas impact would not change, given the limited supply of carbon offsets and the uncertainty regarding the availability of offset credits throughout the life of the project.

(AR42599.)

Given the timing of the addition of this measure to the EIR and the comments made by the County, unlike the mitigation measure in *Golden Door Properties, LLC, v. County of San Diego, supra,* the carbon credit program here was not a mitigation measure that the County relied upon in making any findings contained in the EIR. In fact, the County described the modifications to the mitigation measures contained in the Errata, which included the addition of the carbon credit program, to be minor and insignificant. (AR 7193.) To the extent this measure did not comply with CEQA, the Court determines it does not constitute prejudicial error because inclusion of the measure did not "deprive[ ] the public and decision makers of substantial relevant information about the Project's likely adverse impacts." (*Neighbors for Smart Rail v. Exposition Metro Line Constr. Auth.* (2013) 57 Cal.4th 439, 463.)

IV. Water Supply.

Petitioners CBD and CNPS take issue with on an off-site groundwater well located within the Collayami Valley Groundwater Basin. Groundwater from on-site wells and surface water sources are expected to supply all of the projects water demands.

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the TDM substantially complies with CEQA. (cf. *City of Hayward v. Trustees of California State University* (2015) 242 Cal.App.4th 833, 854-855.)

(AR6554-6556.) The off-site well would provide non-potable water if required. (AR 6689.) The County determined because of the characteristics of the basin, the potential impacts of drawing water from the well could not be determined. (AR 6558.) The County therefore imposed mitigation measure 3.9-3 which requires the applicant to provide to the County an analysis that defines a safe yield as specified in the measure. It also requires the applicant to submit annual monitoring reports and provide quarterly data for the first five years of use. (AR 6575.) It further mandates the development of a groundwater management plan should the reports show an impact to groundwater levels. (*Id.*) The County found any potential impact would be mitigated to less than substantial when considering this measure. The County's findings regarding the well are supported by substantial evidence. This mitigation measure complies with CEQA.

V. Special Status Plants.

Two appendices attached to the EIR[3] provide an in depth analysis and disclosure of special status plants. The County's findings relating to the special status plants are supported by substantial evidence. Which specific plants will be impacted cannot be determined because the exact location of the buildings on the site has not been determined. Mitigation measure MM 3.4-3 is designed to accommodate the uncertainty of the impacts on the plants. It requires pre-construction botanical surveys be conducted by a qualified biologist. If avoidance of a special-status plant is not feasible, compensatory planting or transplanting shall occur. Those plants would be subject to monitoring to ensure success of the plants[4]. (AR 6387-6388.) This mitigation measure complies with

[3] The appendices are labeled as BRA1 (AR2489-2926) and BRA2 (AR2927-3403).

[4] These requirements also apply to initial vegetation clearing along proposed roadways. (AR 6387.)

CEQA. (cf. *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 943.)

VI. Project Alternatives.

"The wisdom of approving [a] project, a delicate task which requires a balancing of interests, is necessarily left to the sound discretion of the local officials and their constituents who are responsible for such decisions. The law . . . simply requires that those decisions be informed, and therefore balanced." (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 576.) "'[F]easibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors." (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 401, 417.)

Petitioners contend the County's finding of infeasibility of Alternative C was not supported by substantial evidence. With respect to Alternative C, the County concluded, "[G]iven that the Reduced Intensity Alternative would result in significantly fewer economic benefits, the County finds that the Reduced Intensity Alternative does not warrant approval in lieu of the Proposed Project." Economic benefits are key goals of the project. The stated project objectives included economic growth, expanding high-end hospitality and construction employment opportunities, and increasing revenues for the County. (AR 6769.) Alternative C would restrict the overall luxury market resort and residential community appeal; reduce revenues and workforce; and reduce marketability to investors, buyers and consumers in the high-end luxury resort market. (AR 53789-

53791.) The evidence supports the conclusion that Alternative C would result in fewer economic benefits to the County.[5]

Intervenor suggests the County should have considered alternative locations closer to a transit stop because GHG emissions would have been reduced in such a location.[6] The Project consists of high-end residential, resort, and recreational facilities. It is speculative to conclude consumers of the project will travel from out of the area by public transit.

"It is [the petitioner]'s burden to demonstrate inadequacy of the EIR. [A petitioner] must therefore show the agency failed to satisfy its burden of identifying and analyzing one or more potentially feasible alternatives. [A petitioner] may not simply claim the agency failed to present an adequate range of alternatives and then sit back and force the agency to prove it wrong." *Mount Shasta Bioregional Ecology Center v. County of Siskiyou* (2012) 210 Cal.App.4th 184, 199.) Here, Intervenor "make[s] no attempt to show how such an alternative would have met most of the goals of the Project, would have been potentially feasible under the circumstances, or would have reduced overall environmental impacts of the Project." (*Ibid.*)

The County properly considered and rejected potential alternatives.

VII. Recirculation of the EIR.

Recirculation of an EIR is not required when the changes merely clarify, amplify

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[5] Intervenor's position is that Alternative C was found infeasible based on the applicant's expectation of reduced revenues. (Intervenor People of the State of California's Opening Brief filed June 15, 2021 (People's Opening Brief), p. 35:4-6.) This interpretation is not supported by the language of the EIR as a whole. It is the economic benefits to the County, not the applicant. that was the driving force behind the County rejecting Alternative C.

[6] People's Opening Brief, pp. 32:22-33:1.

or make insignificant modifications to an EIR. (*Laurel Heights Improvement Association v. Regents of University of California* (*Laurel Heights II*) (1993) 6 Cal.4th 1112, 1130.) The County found the Errata contained minor edits and clarifications which did not constitute significant new information that deprived the public of a meaningful opportunity to comment upon a substantial impact resulting from the Project or a mitigation measure. (AR 7193.) This determination is required to be upheld if supported by substantial evidence. (*Laurel Heights II, supra,* at p. 1135.) Reasonable doubts are to be resolved in favor of the agency's decision. (*Ibid.*)

The EIR's analysis of the Project's impacts on wildfire risk was extensive. The County's finding that the EIR did not include any information that showed a substantial increase in the severity of the wildfire related impacts is supported by substantial evidence.

The Errata did add an additional mitigation measure regarding the purchase of GHG carbon credits. Recirculation is required only if a new mitigation measure is not adopted. (*South County Citizens for Smart Growth v. County of Nevada* (2013) 221 Cal.App.4th 316, 330.) The mitigation measure in the Errata was adopted.

Based on the County's findings that the Errata contained only clarifications, amplifications and insignificant modifications to the EIR, recirculation of the EIR was not required.

VIII. Other Issues Raised by Petitioners Not Specifically Discussed.

Due to time constraints, the Court has not discussed each and every issue raised by Petitioners. The Court focused on those issues which it considered to be of primary importance in helping the parties to understand the reasons for the Court's ruling. As to

all other issues raised by Petitioners not specifically discussed herein, the Court has determined all findings made by the County were supported by substantial evidence and the County otherwise substantially complied with the requirements of CEQA.

IX. Timeliness of Intervenor's Claims.

A subsequent pleading may relate back to the original pleading for statute of limitation purposes if it (1) rests on the same general facts as the original; (2) involves the same injury; and (3) refers to the same instrumentality. (*Norgart v. Upjohn Co.* (1999) 21 Cal.4th 383, 408.)

The timeliness of Intervenor's petition is moot as to all claims denied by the Court. As discussed above, the Court has concluded the EIR was deficient because the County's findings regarding community emergency evacuation routes are not supported by substantial evidence. This issue was addressed by causes of action in the Petitions filed by CBD and CNPS. Therefore, the claim related to this issue was timely filed pursuant to the relation-back doctrine.

X. Conclusion.

Because the County's findings regarding community emergency evacuation routes are not supported by substantial evidence, the EIR does not comply with CEQA. Had the findings regarding emergency evacuation routes been supported by substantial evidence, the Court would have concluded the EIR complied with CEQA and therefore denied each of the Petitions.

Order

The Court orders as follows:

1. Respondent's and Real Party in Interest's Joint Motion to Augment the

Administrative Record filed August 17, 2021, is granted. Exhibits A and B attached to the Declaration of Charmaine G. Yu in Support of Respondent's and Real Party in Interest's Joint Motion to Augment the Administrative Record are hereby added to the administrative record in this action.[7]

2. The People's Request for Judicial Notice in Support of Opening Brief filed June 15, 2021, is granted. The Court takes judicial notice of Exhibits 1 and 2 attached to the Declaration of Andrew R. Contreiras.

3. The Objection to the Declaration of Van Bustic Regarding E-Mail Communication in the Record filed October 15, 2021, is sustained.

4. A judgment will issue granting a peremptory writ of mandate ordering Respondent County of Lake to set aside its (a) certification of the final EIR, (b) findings relating to impacts to an adopted emergency evacuation plan, and (c) approval of the Project.

5. Intervenor/Petitioner People of the State of California is directed to prepare a form of judgment and peremptory writ of mandate.

6. The issues of costs and attorney fees are reserved.

Date: January 4, 2022

J. David Markham
Judge of the Superior Court

[7] Prior to the trial in this matter, a number of motions were filed by the parties. The Court ruled on those motions prior to commencement of the trial. At the request of counsel, orders relating to those motions are contained herein.

Center for Biological Diversity vs. County of Lake et al CV421152

PROOF OF SERVICE

I am a Deputy Clerk of the Superior Court of California, County of Lake. I am over the age of 18 and not a party to the action to which this document is attached.

January 4, 2022- On this date, I mailed a true copy of the attached document to the person(s) whose name(s) are set forth below by placing said copy in a sealed envelope addressed to each of said person(s), at the address set forth below, which envelope was then sealed and postage fully prepaid, and deposited in the mail at Lakeport, California to be delivered by United States mail.

Peter Broderick-Center for Biological Diviersity
1212 Broadway, Ste 800
Oakland, CA 94612

Nicole Johnson & Anita Grant – by courhouse mailbox

Arthur F Coon – Miller Starr Regalia
1331 N California Blvd, 5th Fl
Walnut Creek, CA 94596

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Rebecca Davis- Lozeau/Drury LLP
1939 Harrison St, Ste 150
Oakland, CA 94612

Krista D. LeVier, Court Clerk By:

Dated: January 4, 2022

BY 43
Yolanda Blum
Deputy Court Clerk

Appendix B

Judgment and Writ of Mandate

ROB BONTA
Attorney General of California
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Attorneys for Intervenor People of the State of California, ex rel. Rob Bonta, Attorney General

Additional attorneys listed on following page

FILED
SUPERIOR COURT
COUNTY OF LAKE
FEB 25 2022
Krista D. LeVier
BY _____
Deputy Clerk

Exempt From Fees Pursuant to Government Code § 6103.

FEB 16 2022

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LAKE

CENTER FOR BIOLOGICAL DIVERSITY, **Petitioner,** **v.** **COUNTY OF LAKE, BOARD OF SUPERVISORS OF THE COUNTY OF LAKE, AND DOES 1-20,** **Respondents.**	Case No. CV421152 Consolidated with Case No.: CV 421193 ~~[PROPOSED]~~ **JUDGMENT IN CASE NO. CV421152** Dept: 2 Judge: Hon. J. David Markham Trial Dates: October 29, and November 3, 2021 Lead Action (CV-421152) Filed: August 20, 2020 Action (CV-421193) Filed: September 2, 2020
LOTUSLAND INVESTMENT HOLDINGS, INC., AND DOES 21-40, **Real Parties in Interest.**	
PEOPLE OF THE STATE OF CALIFORNIA EX REL. ROB BONTA, ATTORNEY GENERAL **Intervenor/Petitioner**	

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Peter J. Broderick (SBN 293060)
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Attorneys for California Native Plant Society

Petitioner Center for Biological Diversity challenged the July 20, 2020 decision of Respondents County of Lake and the Lake County Board of Supervisors (collectively, "County") to approve the Guenoc Valley Mixed-Use Planned Development Project ("Project") proposed by Real Party in Interest Lotusland Investment Holdings, Inc. ("Real Party") and to certify an Environmental Impact Report ("EIR") for the Project and adopt findings. The case was consolidated with a similar petition filed by the California Native Plant Society (collectively, with the Center for Biological Diversity, "Petitioners") for all purposes except entry of judgment. The People of the State of California, ex rel. Attorney General Rob Bonta ("Intervenor") were granted leave to intervene in the consolidated cases before briefing and trial.

The hearing on the merits was held on October 29, 2021 and November 3, 2021 before the Honorable J. David Markham in Department 2 of the Lake County Superior Court. Peter J. Broderick of the Center for Biological Diversity and Rebecca L. Davis and Brian B. Flynn of Lozeau Drury LLP appeared on behalf of Petitioners. Nicole Rinke, Andrew R. Contreiras, and Shannon Clark of the Office of the Attorney General appeared on behalf of Intervenor. Anita Grant and Nicole D. Johnson of the County of Lake and Arthur F. Coon of Miller Starr Regalia appeared on behalf of the County. Jonathan R. Bass and Charmaine Yu of Coblentz Patch Duffy & Bass LLP appeared on behalf of Real Party.

The Court, having reviewed the record of proceedings in this matter, the briefs and papers submitted by counsel, and the arguments of counsel; and the matter having been submitted for decision,

IT IS ORDERED AND ADJUDGED THAT:

1. For the reasons set forth in this Court's Ruling and Order on Petitions for Writ of Mandate dated January 4, 2022, attached as Exhibit A and incorporated by reference, Judgment is hereby entered granting in part, and denying in part, the Petition for Writ of Mandate, as set forth in more detail in the incorporated Ruling and Order.
2. The Lake County Superior Court issues the peremptory writ of mandate attached as Exhibit B, ordering the County to:

a. Set aside its certification of the EIR;

b. Set aside and vacate its findings relating to impacts to community evacuation or an adopted emergency evacuation plan;

c. Set aside and vacate all approvals adopted in connection with the County's approval of the Project and certification of the EIR, including Amendment to the Lake County General Plan (GPAP 18-01) for the Guenoc Valley Mixed Use Commercial Development; Amendment to the Lake County General Plan Amendment (GPAP 18-01) for the Guenoc Valley Mixed Use Commercial Development; Amendment to General Plan Policy LU 6.12 of Chapter 3, Section 3.9 (Economic Development) of the Lake County General Plan; Zoning Ordinance Text Amendment (AM 18-04); Ordinance No. 3095 Establishing Regulations and Development Standards for the Guenoc Valley Zoning District or "GVD District"; Sectional District Zoning Map No. 3.7(b) 1.401; Sectional District Zoning Map No. 3.7(b) 1.402; General Plan of Development (GPD 18-01); Major Use Permit (UP 18-49); Tentative Subdivision Map (SD 18-01); Development Agreement (DA 18-01); Tentative Subdivision Map (SD 20-01); and Major Use Permit (UP 20-02).

d. Should Real Party choose to proceed with pursuing reapproval of the Project, prior to any reapproval of the Project, the County shall take such specific action as may be necessary to bring its EIR and findings as they relate to the issue of community emergency evacuation routes into compliance with this Court's Ruling and Order and CEQA, and upon any reapproval the County shall return to this Court to show the action it has taken and seek this Court's determination that it has complied with the Writ.

3. The Court reserves jurisdiction over any timely claim for an award of costs and attorneys' fees.

4. The Court retains jurisdiction over the County's proceedings with respect to the

Project, pursuant to Public Resources Code section 21168.9(b) and all applicable law, to ensure compliance with the peremptory writ issued pursuant to this Judgment and CEQA.

DATED: 2/25/2022

David Markham

Hon. J. David Markham
Judge of the Lake County Superior Court

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Attorney General of California
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FILED
SUPERIOR COURT
COUNTY OF LAKE
FEB 25 2022
Krista D. LaDoux
BY _____ Deputy Clerk

Exempt From Fees Pursuant to Government Code § 6103.

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LAKE

CENTER FOR BIOLOGICAL DIVERSITY,

Petitioner,

v.

COUNTY OF LAKE, BOARD OF SUPERVISORS OF THE COUNTY OF LAKE, AND DOES 1-20,

Respondents.

LOTUSLAND INVESTMENT HOLDINGS, INC., AND DOES 21-40,

Real Parties in Interest.

PEOPLE OF THE STATE OF CALIFORNIA EX REL. ROB BONTA, ATTORNEY GENERAL

Intervenor/Petitioner

Case No. CV421152

Consolidated with Case No.: CV 421193

~~[PROPOSED]~~ PEREMPTORY WRIT OF MANDATE

Dept: 2
Judge: Hon. J. David Markham
Trial Dates: October 29, and November 3, 2021

Lead Action (CV-421152) Filed: August 20, 2020
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Attorneys for California Native Plant Society

TO RESPONDENTS COUNTY OF LAKE AND THE LAKE COUNTY BOARD OF SUPERVISORS:

This action challenges the July 21, 2020 decision of Respondents County of Lake and the Lake County Board of Supervisors (collectively, "Respondents") to approve the Guenoc Valley Mixed-Use Planned Development Project ("Project") proposed by Real Party in Interest Lotusland Investment Holdings, Inc. ("Real Party") and to certify an Environmental Impact Report ("EIR") for the Project and adopt findings. The Court having entered Judgment in this proceeding directing that a Peremptory Writ of Mandate issue under the seal of this Court,

HEREBY COMMANDS Respondents, on receipt of this writ, to:

1. Set aside the certification of the EIR within 60 days.
2. Set aside and vacate, within 60 days, the findings relating to impacts to community evacuation or an adopted emergency evacuation plan.
3. Set aside and vacate, within 60 days, the County approvals adopted in connection with the Respondent's certification of the EIR, including Amendment to the Lake County General Plan (GPAP 18-01) for the Guenoc Valley Mixed Use Commercial Development; Amendment to the Lake County General Plan Amendment (GPAP 18-01) for the Guenoc Valley Mixed Use Commercial Development; Amendment to General Plan Policy LU 6.12 of Chapter 3, Section 3.9 (Economic Development) of the Lake County General Plan; Zoning Ordinance Text Amendment (AM 18-04); Ordinance No. 3095 Establishing Regulations and Development Standards for the Guenoc Valley Zoning District or "GVD District"; Sectional District Zoning Map No. 3.7(b) 1.401; Sectional District Zoning Map No. 3.7(b) 1.402; General Plan of Development (GPD 18-01); Major Use Permit (UP 18-49); Tentative Subdivision Map (SD 18-01); Development Agreement (DA 18-01); Tentative Subdivision Map (SD 20-01); and Major Use Permit (UP 20-02).

4. File and serve an initial return to the Writ no later than 75 days after service of this Writ specifying the actions taken as of that date to comply with the terms of this peremptory writ of mandate, as well as the general substance and estimated timing of any future actions contemplated to be taken by County, in any further County proceedings regarding the Project, to comply with this Court's Judgment, Writ, and CEQA.

5. The Court shall retain jurisdiction over these proceedings pursuant to Public Resources Code section 21168.9(b), until the Court determines that Respondent has adequately complied with this Peremptory Writ of Mandate and CEQA. Should the Real Party choose to seek the County's reconsideration and approval of the Project, the County shall conduct such administrative proceedings in a manner consistent with this Court's Judgment and Writ, and this Court shall retain continuing jurisdiction over any such further proceedings before the County on the Project and its related environmental review and findings under CEQA, under all applicable law. Should the County determine to reapprove the Project, then following its action it shall return to this Court to seek a determination that it has complied with this Court's Judgment and Writ.

THE FOREGOING PEREMPTORY WRIT OF MANDATE ISSUES IMMEDIATELY.

IT IS SO ORDERED.

J. David Markham

DATED: 2/25/2022

Hon. J. David Markham
Judge of the Lake County Superior Court

Appendix C

Settlement Agreement

AGREEMENT REGARDING DEVELOPMENT OF GUENOC VALLEY PROJECT

This Agreement is entered into by and between the People of the State of California, ex rel. Rob Bonta, Attorney General of California (the "State") and Lotusland Investment Holdings Inc. ("Lotusland") (collectively, the "Parties"). This Agreement shall be effective upon the date the Agreement is fully signed and executed by the Parties.

Recitals

A. On July 21, 2020, the County of Lake ("County"), by its Board of Supervisors, certified the Environmental Impact Report ("EIR") for the Guenoc Valley Mixed-Use Planned Development Project (the "Project") and adopted findings approving the Project. For purposes of this Agreement, the "Project" also means any development, including any construction and operational phases, that in any way relies on the EIR, including the EIR as may be modified and re-certified, for compliance with the California Environmental Quality Act ("CEQA").

B. On or about August 20, 2020, the Center for Biological Diversity and the California Native Plant Society filed petitions for writs of mandate challenging the certification of the EIR and approval of the Project. The petitions were consolidated for all purposes, except entry of judgment, under Lake County Superior Court Case Number CV 421152 ("Action").

C. The State intervened in the pending Center for Biological Diversity Action and filed a petition for writ of mandate (the "State's Petition") challenging the certification of the EIR and approval of the Project.

D. The Lake County Superior Court ("Superior Court") consolidated the petitions for hearing, and entered Judgment on February 25, 2022. Copies of the Judgment and Writ issued by the Superior Court on February 25, 2022 in Case Numbers CV 421152 and CV 421193 ("Judgment/Writ") are attached as Exhibit A to this Agreement. The State filed a notice of appeal on July 5, 2022.

E. The Parties have agreed to resolve the State's Petition and appeal.

F. Attached as Exhibit B-1 is the existing site plan for the Project's Polo and Equestrian Facility. Attached as Exhibit B-2 is the revised plan for this component of the Project, with the hilltop residential lots removed. Attached as Exhibit B-3 is a map showing the location of the Recreational and Camping Area of the Project's Polo and Equestrian Facility.

G. Attached as Exhibit C-1 is the existing site plan for the Project's golf course area and northern lots. Attached as Exhibit C-2 is the revised plan for this component of the Project.

H. Attached as Exhibit D is a revised roadway plan for the Project site, with the lengths of all dead-end, non-looped road segments indicated.

I. Attached as Exhibit E is a depiction of the roadside hardscape design.

NOW THEREFORE, in consideration of the mutual covenants, representations, and other terms and conditions set forth herein, the Parties agree as follows:[1]

Agreement

1. **Required Project Modifications.** Lotusland shall incorporate the following modifications and requirements into any future request for approval of the Project and, as set forth in Section 4 of this Agreement, may develop the Project only with the following modifications and requirements.

(a) Wildfire-Related Project Modifications and Measures.

(i) The Recreational and Camping Area depicted on Exhibit B-3 will be reserved only for recreational and camping uses. Open fires shall be strictly prohibited.

(ii) The area consisting of the twenty-five building sites depicted on Exhibit B-1 will not be developed, and the associated parcels shall be removed from any and all maps. Those residential units may be relocated to the area depicted on Exhibit B-2.

(iii) The areas consisting of the thirty-nine building sites depicted on Exhibit C-1 will not be developed for residential use, and the associated parcels shall be removed from any and all maps. Those residential units may be relocated to the area depicted in Exhibit C-2.

(iv) As indicated on the Roadway Plan attached as Exhibit D, no dead-end, non-looped road segment may exceed one mile in length.

(v) To the extent that the topography feasibly permits, an area of approximately 10 feet on each side of the roadways will be improved with hardscape, as depicted on Exhibit E.

(vi) The Guenoc Valley Project Homeowners Association ("HOA") will be required by its by-laws to contract with a wildfire expert for the duration of the Project. The costs of retaining that service provider will be paid by the HOA, and will be covered as part of HOA dues. The HOA shall consult with the wildfire expert in its implementation of wildfire prevention measures, including those identified in the Wildfire Prevention Plan. The HOA shall send to the Attorney General's Office a copy of the by-laws within thirty (30) calendar days of adoption by the HOA.

(vii) The Project's Emergency Response Center will have on-site at least one individual with wildfire expertise related to evacuation and emergency access. The costs of retaining that individual or individuals will be paid by

[1] Certain terms used in this Agreement are defined in the Appendix.

the HOA, which will be covered with HOA dues. After thirty (30) years from the date on which the HOA is established, the HOA may stop implementing and sunset this obligation upon a majority vote of the HOA membership and subsequent notice to the State of such vote.

(viii) Lotusland shall pay to the Lake County Fire Protection District ("LCFPD"), on an annual basis, the amount determined by LCFPD to be necessary in order to staff and equip the Emergency Response Center for fire services, including wildfire response.

(b) GHG Emissions Reduction Measures.[2]

(i) Residential Land Uses

a. Lotusland shall install photovoltaic ("PV") systems on all residential land use structures within the Project site where site parameters and constraints allow for adequate on-site rooftop and other on-site spaces (such as ground-mounted panels or panels on carports or other surfaces) to comply with Section 110.10(a) of the California Building Energy Efficiency Standards. The minimum electrical generation capacity of the PV Systems shall be equal to or greater than the projected energy needs, collectively, of all residential land use structures that the PV systems will serve. Lotusland shall inform residents, at the time of initial sale or at the time of subsequent sale of each residential land use structure, through placement of a requirement in the Covenants, Conditions and Restrictions ("CC&Rs") that will govern the HOA for each residential land use structure, that Lotusland is responsible for the repair and maintenance of each PV system, or any cleaner or technologically superior system of greater efficacy that is installed, for at least thirty (30) years from the date of initial installation.

b. Lotusland shall install battery energy storage systems for all residential land use structures and shall design the battery energy storage systems to store the energy produced by the PV systems during daylight hours and discharge that stored energy during evening and nighttime hours, and sized to maximize self-generation and minimize electricity exports to the grid, with an efficiency of at least 80 percent (80%). Lotusland shall design and install the battery energy storage systems to provide energy

[2] The goal of the provisions set forth in this Subsection is the reduction of the Project's GHG emissions and achievement of a zero net energy community. A zero net energy community is defined as an energy-efficient community where, on a source energy basis, the actual annual consumed energy is less than or equal to the on-site renewable generated energy. This Agreement does not impose measures or obligations beyond those expressly set forth in this Subsection in order to achieve that goal.

savings benefits found in Section 150.1 of the California Building Energy Efficiency Standards for thirty (30) years from the date of initial installation.

c. All PV systems and battery energy storage systems shall be installed and operated consistent with all applicable state laws, regulations and local ordinances, including building codes.

d. Lotusland shall install one fully operable Level 2 or higher-capacity Electric Vehicle Supply Equipment ("EVSE") of at least 240 volts in an appropriate location at each residential land use structure within the Project site. Lotusland shall inform residents, at the time of initial sale or at the time of subsequent sale of each residential land use structure, through placement of a requirement in the CC&Rs that will govern the HOA for each residential land use structure, that Lotusland is responsible for the repair and maintenance of each EVSE, or any cleaner or technologically superior system of greater efficacy that is installed, for at least thirty (30) years from the date of initial installation.

e. Lotusland shall prohibit the use and extension of all natural gas infrastructure within the Project site. Specifically, the Project shall include in the CC&Rs and/or other enforceable obligations a prohibition on the installation or operation of natural gas infrastructure within the Project site for residential land use structures. Pre-existing natural gas infrastructure at the Project site, if any, shall be capped or removed.

f. Lotusland shall require that all appliances in residential land uses (including water heaters, space conditioning systems, and cooking stoves), operate on energy sources other than natural gas.[3] Appliances, other than those used for stovetop cooking, shall operate on electricity.

g. Lotusland shall install high-efficiency, variable capacity heat pumps at all residential land use structures that comply, at a minimum, with the 2022 edition of Title 24, California Code of Regulations, Part 6 and that will provide energy for space and water heating appliances and clothes drying.

[3] PG&E, the public utility serving Lake County, generates a portion of its electric power from natural gas. This Agreement does not proscribe the use of electricity generated with the use of natural gas, and transmitted to the Project by a public utility.

(ii) Non-Residential Land Uses

a. Lotusland shall ensure that on-site generation of renewable energy is sufficient to produce electricity to supply energy for all non-residential land use structures. To comply with this requirement, Lotusland shall install any combination of the following:

1. PV systems coupled with battery energy storage systems

(A) PV systems on non-residential land use structures within the Project site (including parking structures) where site parameters and constraints allow for adequate on-site rooftop and other on-site spaces (such as ground-mounted panels or panels on carports or other surfaces) to comply with Section 110.10(a) of the California Building Energy Efficiency Standards. Lotusland shall inform purchasers or tenants, at the time of initial sale or lease or at the time of subsequent sale or lease of each non-residential land use structure, through placement of a requirement in the CC&Rs that will govern the HOA for each non-residential land use structure, that Lotusland is responsible for the repair and maintenance of each PV system, or any cleaner or technologically superior system of greater efficacy that is installed, for at least thirty (30) years from the date of initial installation.

(B) Battery energy storage systems for all non-residential land use structures and shall design the battery energy storage systems to store the energy produced by the PV systems during daylight hours and discharge that stored energy during evening and nighttime hours, and sized to maximize self-generation and minimize electricity exports to the grid, with an efficiency of at least 80 percent (80%). Lotusland shall design and install the battery energy storage systems to provide energy savings benefits for thirty (30) years from the date of initial installation.

(C) All non-residential structures shall comply with the applicable prescriptive requirements for PV and battery energy storage systems sizing specified by the 2022 edition of Title 24, California Code of Regulations, Part 6, section 141.10, effective

January 1, 2023, including any subsequently enacted revisions.

(D) All PV systems and battery energy storage systems shall be installed and operated consistent with all applicable state laws, regulations and local ordinances, including building codes.

2. On-site solar farms

(A) On-site solar farms to reduce the Project's GHG emissions. The solar farms, in combination with any other on-site PV systems installed to serve the Project's non-residential land uses, shall have the capacity to generate an amount of renewable energy that is equivalent to, or exceeds, 5,500,000 kWh per year, which is the estimated electricity consumption for those land uses as described in the EIR. Lotusland shall site the solar farms in areas served by existing roads to the extent possible and in a manner that minimizes harm to biological resources and wildfire ignition risk.

b. For the non-residential land uses of the Project, Lotusland shall install at least 300 fully-operable, publicly-accessible[4] Level 2 or higher-capacity Electrical Vehicle Charging Stations ("EVCS") of at least 240 volts with at least two ports per charger and 20 fully operable publicly-accessible Level 3 EVCS/Fast Chargers. Lotusland shall ensure that the EVCS are preferential parking spaces for electric vehicles ("EVs") that comply with Tier 2 of Section A5.105.8.1 and Tier 2 of Section A5.106.5.3 of the California Green Building Standards and strategically located to maximize availability. The dedicated EVs spaces shall be in preferential locations, but shall not be located in a way that prevents compliance with requirements in the California Vehicle Code regarding parking spaces for disabled persons or disabled veterans. All publicly-accessible Level 2 and Level 3 EVCS shall be marked with signage indicating that improperly parked vehicles blocking access to the EV charging will be towed. Further, Lotusland shall inform purchasers or tenants, at the time of initial sale or lease, or at the time of subsequent sale or lease, of each non-residential land use structure, through placement of a requirement in the CC&Rs that will govern the HOA for each non-residential land use structure, that Lotusland is responsible for the

[4] As used herein, "publicly-accessible" means that the charging stations shall be available to residents, guests, and employees who reside at or visit the Project.

repair and maintenance of each EVSC, or any cleaner or technologically superior system of greater efficacy that is installed, for at least thirty (30) years from the date of initial installation.

c. Except as set forth below, Lotusland shall prohibit the use and extension of all natural gas infrastructure within the Project site for all non-residential land use structures. Specifically, the Project shall include in the CC&Rs and/or other enforceable obligations a prohibition on the installation or operation of natural gas infrastructure within the Project site for non-residential land use structures. Except as set forth below, any preexisting natural gas infrastructure shall be capped or removed, and outdoor fires and the use of natural gas-fueled appliances shall be prohibited within, the Project site.[5]

d. Except as set forth below, Lotusland shall require that non-residential land use structures are all-electric, except where it is infeasible for a building to comply with the applicable building codes if it is all-electric. Further, Lotusland shall require that all non-residential land use structures are constructed to accommodate electric appliances exclusively, including water heaters, space conditioning systems, clothes drying and cooktops.

1. Lotusland shall be permitted to install, and operate, natural gas-fueled or propane-cooktops in restaurant kitchens.

2. Lotusland shall be permitted to install, and operate, natural gas-fueled or propane-fire pits in the outdoor patio areas of restaurants.

e. Lotusland shall install high-efficiency, variable capacity heat pumps at all non-residential land use structures that comply, at a minimum, with the 2022 edition of Title 24, California Code of Regulations, Part 6 and that will provide energy for space and water heating appliances and clothes drying.

(iii) Off-Site GHG Emissions Reduction Measures

a. Lotusland's Obligation to Purchase GHG Offset Credits. Lotusland shall, for thirty (30) years from the date of issuance of the initial occupancy permit for the Project, annually purchase and retire voluntary market GHG Offset Credits listed with, and verified by, a CARB-approved Registry. Such credits shall be purchased annually in an amount sufficient to offset the Project's

[5] The "Project site" excludes the existing agricultural portions marked "Not in Project Site" in the previously approved Project materials, as shown in Exhibit D.

actual GHG emissions in each year. The current estimate is that 14,865 credits will be required annually for that purpose, and Lotusland will make an annual purchase in that amount by the issuance of the initial occupancy permit for Phase 1 of the Project. Future events or developments may affect the availability and utility of the GHG Offset Credits, and the Project's actual GHG emissions. These factors may support an adjustment to the amount of GHG Offset Credits that Lotusland is required to purchase under this Subsection. Lotusland may seek the State's consent in the future to an adjustment of this requirement, and the State will consider such request in good faith. Any adjustment to the amount of GHG Offset Credits to be purchased by Lotusland shall be consistent with CEQA.

b. Performance Standards

1. Lotusland shall ensure that all GHG Offset Credits purchased to comply with this Agreement:

A. Are purchased for GHG Emissions Offsets with the following geographic priorities: (1) offsets within the County; (2) offsets within the State of California, only if in-county offsets are unavailable; (3) offsets within the United States, only if in-state offsets are unavailable; and (4) international offsets only if in-nation offsets are unavailable.[6]

B. Represent past reduction or sequestration of GHG emissions that is not otherwise required. (Cal. Code Regs., tit. 14, § 15126.4, subd. (c)(3).)

C. Are "Real," "Additional," "Quantifiable," "Permanent," and "Verifiable," as those terms are defined in California Code of Regulations, title 17, section 95802, subdivision (a).

[6] For purposes of this provision, offset credits will be deemed "unavailable" if they are either unobtainable through generally accessible markets, or on a per-unit basis: (a) for offset credits within the County of Lake, more than **2** times as costly as offset credits within the State of California, but not within the County of Lake; (b) for offset credits within the State of California, more than **5** times as costly as offset credits within the United States, but not within the State of California; and (c) for offset credits within the International market, no offset credits within the United States are available for purchase at any cost.

D. Comply with the "additionality requirements" for Offset Projects set forth in California Code of Regulations, title 17, section 95973, subdivision (a)(2).

E. Comply with the Verification of GHG Emissions Reductions requirements for Offset Projects set forth in in California Code of Regulations, title 17, section 95977.

F. Given a unique serial or tracking number to ensure there is no duplication or double counting.

2. Lotusland shall not rely upon any GHG Offset Credit purchased to comply with this Agreement for any other project or to satisfy any other contractual obligation.

(iv) Compliance Protocols

Lotusland shall ensure that all GHG Offset Credits purchased to comply with this Agreement are purchased for GHG Emissions Offsets that comply with an applicable Offset Compliance Protocol from a CARB-approved Offset Registry that satisfies all of the CARB Offset Protocol standards in California Code of Regulations, title 17, section 95972, or any new standards that may become applicable to CARB Offset Protocols during the thirty (30) years starting from date of issuance of the initial occupancy permit for the Project.

(v) Monitoring, Reporting, and Recordkeeping

a. Lotusland shall select and retain at least one independent, third-party expert on GHG mitigation and offsets to review the documentation provided by Lotusland relating to, among other data, construction- and operation-related emissions, and provide analysis and recommendations to the County, providing the State with a copy of same for information purposes, on whether Lotusland has complied with the off-site GHG emissions reduction measures set forth in this Agreement. Lotusland's selection of each expert, who shall not be a current or former employee or agent of Lotusland, shall be subject to the approval of the Attorney General's Office, which shall not be unreasonably withheld. Lotusland shall retain the expert(s) and fund the activities of the expert(s) starting from the issuance of the first site development permit or the first building permit, whichever occurs earliest, through thirty (30) years after an expert is retained.

b. Each year, the expert(s) retained by Lotusland shall prepare a report and make specific findings as to whether Lotusland has met the requirements set forth in Sections 1(b)(i)–(iii) of this Agreement.

c. Lotusland shall provide the expert report and findings to the County and the Attorney General's Office on an annual basis. Lotusland shall also, upon request by the County or the Attorney General's Office, make available within a reasonable time all evidence upon which the expert relied to make such findings.

2. **Return to Writ on Community Evacuation**.

(a) In accordance with the Judgment/Writ, it is contemplated that additional environmental analysis will be conducted with respect to the impact of the Project on community evacuation, with said analysis to become part of, or supplement in some manner, the environmental impact report for the Project prior to any further Project approvals. The State reserves all rights to submit comments on any draft environmental document on community evacuation. Subject to Lotusland's compliance with this Agreement, the State's comments, however, if any, shall be limited in scope to the adequacy of the analysis of, and any mitigation for, the Project's impacts on community evacuation, and will not advance or renew other arguments or claims that were the subject of the State's Petition, or that were addressed in the Court's Ruling and Order on Petitions for Writ of Mandate or in the Judgment/Writ.

(b) Before the County takes further action on community evacuation, Lotusland will share the community evacuation materials prepared by the firm of Fehr & Peers (the "F&P evacuation study prepared for the County") for the State's review and input. The State has retained a separate traffic expert with Fehr & Peers (i.e., not a member of the Fehr & Peers team preparing the F&P evacuation study prepared for the County) to review the F&P evacuation study prepared for the County. The experts have agreed to be walled off from communicating with one another about the Project.

(c) Upon receiving the F&P evacuation study prepared for the County, the State will confer with its expert and will not object during the administrative process or oppose the County's return to Writ, or object to the adequacy of the County's analysis of community evacuation if:

(i) The State's expert concludes that the F&P evacuation study prepared for the County has addressed the inadequacies identified by the Superior Court, met the applicable CEQA Guidelines expectations, and supplied substantial evidence supporting the County's related impact findings and recommended mitigation measures; and

(ii) Any Project approval includes all feasible measures to mitigate any community evacuation impact to less than significant as identified in the F&P evacuation study prepared for the County and reviewed by the State's expert.

(d) If the State's expert does not concur with the F&P evacuation study prepared for the County, the Parties agree to meet and confer. With the concurrence of F&P, the experts may be involved in those discussions. To the extent that any differences remain unresolved, the State

reserves the right to participate in the administrative process and reserves the right to pursue further judicial remedies regarding the adequacy of analysis of the Project's community evacuation impacts, as it deems appropriate.

3. **Abandonment of State's Appeal and Continued Appellate Proceedings.**

(a) Within forty-five (45) calendar days of full execution of this Agreement, the State will file a Notice of Settlement with the Court of Appeal and abandon any appeal of the Judgment/Writ consistent with the applicable Rules of Court. The Parties acknowledge that this Agreement relates to the avoidance of litigation and the preclusion of the Petition and appeal as described above and agree that this Agreement is not to be treated or construed, at any time or in any manner whatsoever, as an admission by any Party that any of the allegations in the action or appeal have or lack merit.

(b) The State reserves the right to challenge any future approval for development on the Project site that is inconsistent with this Agreement.

(c) If a subsequent judicial decision results in a partial or full rescission of any Project approvals or a finding of non-compliance with CEQA, Lotusland shall continue to comply with the obligations set forth in this Agreement to the extent permitted under governing law.

4. **Development Obligations and Requirements**.

(a) If Lotusland seeks to develop the Project, Lotusland shall include in any submittal to the County each and every modification and requirement specified in Section 1 as part of the Project, Project design features, or mitigation measures. Lotusland shall further request that the County incorporate all terms specified in Section 1 in the Mitigation Monitoring and Reporting Program (MMRP), whether those terms be listed as mitigation measures, project design features or other requirements.

(i) The Parties recognize that the County is not a party to this Agreement, that the County has declined to make any commitments or receive any benefits under this Agreement, and that, therefore, neither the State nor Lotusland has the power to compel the County to take a specific administrative action pursuant to this Agreement.

(ii) If the County proposes a change to the Project that is inconsistent with Lotusland's obligations under this Agreement, Lotusland shall notify the State as soon as is reasonably practicable.

(iii) Subject to subsections (b) and (c) below, the Parties further recognize that Lotusland may implement and, pursuant to this Agreement, shall implement the modifications and requirements set forth in the Agreement whether or not the County incorporates them into its Project approvals.

(b) Lotusland shall develop the Project only in conformance with each and every term of this Agreement, and shall implement all Project modifications, measures, features,

development restrictions, and limitations contained in this Agreement in addition to any other environmental mitigation measures imposed in any future Project approval. In no event may the Project be developed in a manner that does not conform with this Agreement, except:

(i) If the County finds, based upon substantial evidence, that a requirement set forth in Section 1(b)(i)–(ii) is technologically infeasible and, on that basis, issues an approval incompatible with that requirement, Lotusland may request an alteration to its obligations under this Agreement. After Lotusland makes such a request, the Parties will negotiate in good faith to substitute a measure or requirement that would achieve a materially equivalent environmental benefit or sustainable renewable energy output.

(ii) If the Parties are unable to agree to such an equivalent measure or requirement, and the State determines the unavailability of such a substitute measure or requirement means the resulting environmental benefit, in whole or in part, to the Project cannot be achieved, then Lotusland shall not proceed with the Project and shall thereafter be entitled to develop the Project site only after submittal and approval of a new development application that in no way relies on the EIR or a modified EIR for CEQA compliance.

(c) Nothing contained herein imposes an obligation on Lotusland to develop the Project. The Parties acknowledge that Lotusland may decline to develop the Project site and may in the future seek approval to develop a different project on the Project site. This Agreement applies only to any Project that relies for CEQA compliance on the EIR, or the EIR as it may be modified and re-certified, and not to any project or approvals for which application may be made in the future with respect to the same site that in no way relies on the EIR or a modified EIR for CEQA compliance.

5. **Covenant not to Sue and Reservation of Rights**. Except as otherwise specifically provided herein, the State hereby agrees not to commence or participate in any administrative proceeding or lawsuit against Lotusland with respect to the claims that were raised in the State's Petition, or any other claims that could have been asserted by the State based upon the acts, omissions and/or events that are alleged in the State's Petition or that relate to the County's Project approvals issued on June 21, 2020. Lotusland agrees not to commence any administrative proceeding or lawsuit against the State with respect to the claims asserted or that could have been asserted in litigation relating to the State's Petition or the County's Project approvals issued on June 21, 2020. The State specifically retains the right to assert a claim, demand, or cause of action to enforce this Agreement, to challenge any future County approval of the Project that is inconsistent with the Project Modifications described in Section 1 above, or to challenge future phases of the Project.

6. **Recordation of Memorandum of this Agreement with the County Recorder's Office**.

(a) Lotusland shall record this Agreement (or a memorandum attaching this Agreement as an exhibit) in the chain of title for the Project with the County Recorder's Office by the earlier of twenty-one (21) calendar days following this Agreement's Effective Date, or fourteen (14) calendar days following the County's recordation of the Development Agreement

for the Project. This recordation shall provide any subsequent purchaser and the public with notice of the obligations contained within this Agreement.

(b) Lotusland shall incorporate the text of Section 1 of this Agreement into the CC&Rs, and shall provide that such incorporated Sections cannot be later amended by the HOA without the consent of the State, and shall attach this Agreement as an exhibit to the CC&Rs, recorded in the property's chain of title for the Project.

(c) Lotusland shall provide the Attorney General's Office with proof of each recordation within fifteen (15) calendar days of recordation of this Agreement.

7. **Reporting and Inspection**. Each year, Lotusland shall deliver to the State and County an annual monitoring report for the period covering the prior calendar year ("Annual Report") detailing compliance with the requirements of this Agreement. The Annual Report shall document all of Lotusland's actions implemented in the previous calendar year to comply with Lotusland's obligations and requirements under the Agreement, including but not limited to (i) the payments made to the LCFPD necessary to staff and equip the Emergency Response Center and (ii) the purchase of GHG offset credits. This Annual Report may be sent on the same date, and as part of, the reports required under Section 1(b)(v) of this Agreement. Lotusland agrees that the State may periodically send a representative to inspect the open commercial areas and all roadways on the Project site to assess compliance with this Agreement.

8. **Notice**. Any notice, request, or communication required to be given to the Parties under this Agreement shall be given electronically by e-mail or, upon request, in writing by personal delivery or certified mail to each relevant Party's designee(s) listed in Exhibit F. Any Party may update its designee(s) by giving written notice to all other Parties.

9. **Fees and Costs**. Each Party to this Agreement shall be responsible for the payment of its own costs and attorneys' fees incurred in connection with this Agreement and the Action; however, this provision shall have no effect on any preexisting indemnity agreement or arrangement between any of the Parties.

10. **Compromise; No Admission of Liability**. This Agreement is the result of a compromise between and among the Parties, and it shall never, at any time or for any purpose, be deemed or construed as an admission of, or evidence of, the validity of any of the claims in the Action or the State's Petition. Nor does the compromise in this Agreement constitute a representation that the Project is in compliance with applicable regulations and/or laws.

11. **Voluntary Execution; Consultation with Counsel**. Each Party acknowledges, declares, and represents that it has read and fully understands this Agreement; that it has had a full and unfettered opportunity to understand this Agreement's provisions; that it has been represented by independent legal counsel of its own choosing regarding this Agreement and the meaning of the terms and provisions contained herein; and that it has consulted with its respective counsel regarding the meaning of the terms and provisions contained in this Agreement. Each Party further expressly acknowledges, declares, and represents that it is fully aware of this Agreement's terms, conditions, and legal effect, that it approves and accepts the terms and conditions of this Agreement, and that it executed this Agreement freely and voluntarily.

12. **Authority**. Each Party represents and warrants that it has full authority to enter into this Agreement. Each person executing this Agreement on behalf of a Party hereby warrants that they have full authority to do so.

13. **Successor and Assigns**.This Agreement shall be binding upon, and inure to the benefit of, the Parties hereto, and their successors. Lotusland shall provide written notice to the State of any assignment or transfer of its interest in any portion of the Property or the Project to any third party developers and home builders. To the extent of any such transfer to a third party which is unaffiliated with Lotusland, Lotusland shall be released of its obligations hereunder, and such obligations shall be assumed by the transferee, which shall execute an Assumption Agreement in the form attached as Exhibit G.[7]

14. **California Law**. This Agreement shall be construed under, and shall be deemed governed by, the laws of the State of California. In carrying out any of their obligations under this Agreement, the Parties shall comply with the requirements of applicable laws.

15. **Construction**. The language in this Agreement shall be construed as a whole, according to its plain and fair meaning, and not strictly for or against any Party, regardless of which Party had primary drafting responsibility. The Parties, each having been represented by counsel of their choosing, agree that this Agreement shall be deemed to have been jointly drafted by them.

16. **Entire Agreement of the Parties; Acknowledgements and Recitals**. This Agreement sets forth the entire understanding of the Parties in connection with the subject matter hereof. The Parties acknowledge that, in executing this Agreement, they have not relied on any statement, representation, or warranty in connection herewith, except as expressly set forth herein, and that no such prior or extraneous statements have acted as an inducement for the Parties to enter into the Agreement. Each Party acknowledges that the other Parties have relied and will rely on the acknowledgements made in this Agreement, and that each acknowledgement made in this Agreement is and may be regarded as a recital of fact under pertinent California law, including Evidence Code section 622.

17. **Modification and Waiver**. No amendment, modification or waiver of the provisions of this Agreement shall be valid and enforceable unless such amendment, modification, or waiver is in writing and signed by all the Parties.

18. **Severability**. If any provision of this Agreement is held invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision herein. All remaining provisions shall continue in full force and effect without being impaired or invalidated in any way, and such invalid, illegal, or unenforceable provision shall be restated by a court of competent jurisdiction to reflect as nearly as possible the original intentions of the Parties in accordance with applicable law.

[7] Notwithstanding the foregoing, except to the extent that they become subject to specific obligations set forth in CC&Rs, however, the future homeowners and users of properties within the Project are not intended to be bound by, or become subject to, the terms of this Agreement.

19. **Counterparts**. This Agreement may be executed in counterparts and, as so executed, shall constitute an Agreement binding on all the Parties hereto, as provided herein, notwithstanding that all Parties are not signatories to the original or the same counterpart. A signature delivered by facsimile or PDF/email shall be deemed and treated as an original.

20. **Future Dispute**. This Agreement shall be deemed to have been made in Lake County, California, and the Parties agree that any dispute arising out of or relating to the meaning or enforcement of this Agreement, if litigated, will be litigated in the Superior Court of Lake County, California.

IN WITNESS WHEREOF, the Parties do hereby execute this Agreement by their duly authorized representatives.

Dated: November ___, 2022

People of the State of California
by Rob Bonta, Attorney General of California

By: _____
Name:
Its:

Dated: November ___, 2022

Lotusland Investment Holdings Inc.

By: _____
Name:
Its:

28 Andrew Contreiras

APPENDIX

- "CARB" means California Air Resources Board, a state regulatory agency.
- "CARB-approved Registry" means a Registry that CARB has verified as compliant with the Cap-and-Trade Regulation. Current CARB-approved Registries are the American Carbon Registry ("ACR"), the Climate Action Reserve ("CAR") and Verra (formerly the Verified Carbon Standard).
- "CEQA" means the California Environmental Quality Act, California Public Resources Code sections 21000-21189.7.
- "California Building Energy Efficiency Standards" means the energy and water efficiency requirements set forth in Part 6 of Title 24 of the California Code of Regulations, published on December 12, 2018, and effective on January 1, 2020.
- "California Green Building Standards" means the requirements set forth in Part 11 of Title 24 of the California Code of Regulations, printed July 2019 and effective January 1, 2020.
- "Non-residential land use structure" means a structure or the part of a structure that is used as for resort, commercial, workforce housing that will support resort and commercial uses, and authorized at the Project Site and which does not include Residential Units.
- "GHG" means greenhouse gases.
- "GHG Emissions Offset" means a reduction in GHG emissions – or an increase in carbon storage (e.g., through land restoration or the planting of trees) – that is used to compensate for GHG emissions that occur elsewhere.
- "GHG Offset Credit" means a transferrable instrument that represents the reduction of one metric tonne of carbon dioxide equivalent achieved by a GHG emission reduction project or activity that is not otherwise required.
- "Project" means any development, including the construction and operational phases, that in any way relies on the EIR, including the EIR as may be modified and re-certified, for compliance with CEQA.
- "Residential Unit or Residential Land Use Structure" means a structure or the part of a structure that is used as a home or residence by one or more persons maintaining a household, including but not limited to attached or detached homes, apartments and condominiums.

Exhibit A

to

Agreement Regarding Development of Guenoc Valley Project

Judgment and Writ Issued by Lake County Superior Court

FILED
SUPERIOR COURT
COUNTY OF LAKE
FEB 25 2022
Krista D. LeVier
BY _____ Deputy Clerk

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Exempt From Fees Pursuant to Government Code § 6103.

FEB 16 2022

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LAKE

CENTER FOR BIOLOGICAL DIVERSITY, **Petitioner,** **v.** **COUNTY OF LAKE, BOARD OF SUPERVISORS OF THE COUNTY OF LAKE, AND DOES 1-20,** **Respondents.**	Case No. CV421152 Consolidated with Case No.: CV 421193 **~~[PROPOSED]~~ JUDGMENT IN CASE NO. CV421152** Dept: 2 Judge: Hon. J. David Markham Trial Dates: October 29, and November 3, 2021 Lead Action (CV-421152) Filed: August 20, 2020 Action (CV-421193) Filed: September 2, 2020
LOTUSLAND INVESTMENT HOLDINGS, INC., AND DOES 21-40, **Real Parties in Interest.**	
PEOPLE OF THE STATE OF CALIFORNIA EX REL. ROB BONTA, ATTORNEY GENERAL **Intervenor/Petitioner**	

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Attorneys for California Native Plant Society

Petitioner Center for Biological Diversity challenged the July 20, 2020 decision of Respondents County of Lake and the Lake County Board of Supervisors (collectively, "County") to approve the Guenoc Valley Mixed-Use Planned Development Project ("Project") proposed by Real Party in Interest Lotusland Investment Holdings, Inc. ("Real Party") and to certify an Environmental Impact Report ("EIR") for the Project and adopt findings. The case was consolidated with a similar petition filed by the California Native Plant Society (collectively, with the Center for Biological Diversity, "Petitioners") for all purposes except entry of judgment. The People of the State of California, ex rel. Attorney General Rob Bonta ("Intervenor") were granted leave to intervene in the consolidated cases before briefing and trial.

The hearing on the merits was held on October 29, 2021 and November 3, 2021 before the Honorable J. David Markham in Department 2 of the Lake County Superior Court. Peter J. Broderick of the Center for Biological Diversity and Rebecca L. Davis and Brian B. Flynn of Lozeau Drury LLP appeared on behalf of Petitioners. Nicole Rinke, Andrew R. Contreiras, and Shannon Clark of the Office of the Attorney General appeared on behalf of Intervenor. Anita Grant and Nicole D. Johnson of the County of Lake and Arthur F. Coon of Miller Starr Regalia appeared on behalf of the County. Jonathan R. Bass and Charmaine Yu of Coblentz Patch Duffy & Bass LLP appeared on behalf of Real Party.

The Court, having reviewed the record of proceedings in this matter, the briefs and papers submitted by counsel, and the arguments of counsel; and the matter having been submitted for decision,

IT IS ORDERED AND ADJUDGED THAT:

1. For the reasons set forth in this Court's Ruling and Order on Petitions for Writ of Mandate dated January 4, 2022, attached as Exhibit A and incorporated by reference, Judgment is hereby entered granting in part, and denying in part, the Petition for Writ of Mandate, as set forth in more detail in the incorporated Ruling and Order.
2. The Lake County Superior Court issues the peremptory writ of mandate attached as Exhibit B, ordering the County to:

a. Set aside its certification of the EIR;

b. Set aside and vacate its findings relating to impacts to community evacuation or an adopted emergency evacuation plan;

c. Set aside and vacate all approvals adopted in connection with the County's approval of the Project and certification of the EIR, including Amendment to the Lake County General Plan (GPAP 18-01) for the Guenoc Valley Mixed Use Commercial Development; Amendment to the Lake County General Plan Amendment (GPAP 18-01) for the Guenoc Valley Mixed Use Commercial Development; Amendment to General Plan Policy LU 6.12 of Chapter 3, Section 3.9 (Economic Development) of the Lake County General Plan; Zoning Ordinance Text Amendment (AM 18-04); Ordinance No. 3095 Establishing Regulations and Development Standards for the Guenoc Valley Zoning District or "GVD District"; Sectional District Zoning Map No. 3.7(b) 1.401; Sectional District Zoning Map No. 3.7(b) 1.402; General Plan of Development (GPD 18-01); Major Use Permit (UP 18-49); Tentative Subdivision Map (SD 18-01); Development Agreement (DA 18-01); Tentative Subdivision Map (SD 20-01); and Major Use Permit (UP 20-02).

d. Should Real Party choose to proceed with pursuing reapproval of the Project, prior to any reapproval of the Project, the County shall take such specific action as may be necessary to bring its EIR and findings as they relate to the issue of community emergency evacuation routes into compliance with this Court's Ruling and Order and CEQA, and upon any reapproval the County shall return to this Court to show the action it has taken and seek this Court's determination that it has complied with the Writ.

3. The Court reserves jurisdiction over any timely claim for an award of costs and attorneys' fees.

4. The Court retains jurisdiction over the County's proceedings with respect to the

Project, pursuant to Public Resources Code section 21168.9(b) and all applicable law, to ensure compliance with the peremptory writ issued pursuant to this Judgment and CEQA.

DATED: 2/25/2022

David Markham

Hon. J. David Markham
Judge of the Lake County Superior Court

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Attorney General of California
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FILED
SUPERIOR COURT
COUNTY OF LAKE

FEB 25 2022

Krista D. Lefler
BY _____
Deputy Clerk

Exempt From Fees Pursuant to Government Code § 6103.

Additional attorneys listed on following page

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LAKE

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LOTUSLAND INVESTMENT HOLDINGS, INC., AND DOES 21-40, **Real Parties in Interest.**	
PEOPLE OF THE STATE OF CALIFORNIA EX REL. ROB BONTA, ATTORNEY GENERAL **Intervenor/Petitioner**	

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Attorneys for California Native Plant Society

TO RESPONDENTS COUNTY OF LAKE AND THE LAKE COUNTY BOARD OF SUPERVISORS:

This action challenges the July 21, 2020 decision of Respondents County of Lake and the Lake County Board of Supervisors (collectively, "Respondents") to approve the Guenoc Valley Mixed-Use Planned Development Project ("Project") proposed by Real Party in Interest Lotusland Investment Holdings, Inc. ("Real Party") and to certify an Environmental Impact Report ("EIR") for the Project and adopt findings. The Court having entered Judgment in this proceeding directing that a Peremptory Writ of Mandate issue under the seal of this Court,

HEREBY COMMANDS Respondents, on receipt of this writ, to:

1. Set aside the certification of the EIR within 60 days.
2. Set aside and vacate, within 60 days, the findings relating to impacts to community evacuation or an adopted emergency evacuation plan.
3. Set aside and vacate, within 60 days, the County approvals adopted in connection with the Respondent's certification of the EIR, including Amendment to the Lake County General Plan (GPAP 18-01) for the Guenoc Valley Mixed Use Commercial Development; Amendment to the Lake County General Plan Amendment (GPAP 18-01) for the Guenoc Valley Mixed Use Commercial Development; Amendment to General Plan Policy LU 6.12 of Chapter 3, Section 3.9 (Economic Development) of the Lake County General Plan; Zoning Ordinance Text Amendment (AM 18-04); Ordinance No. 3095 Establishing Regulations and Development Standards for the Guenoc Valley Zoning District or "GVD District"; Sectional District Zoning Map No. 3.7(b) 1.401; Sectional District Zoning Map No. 3.7(b) 1.402; General Plan of Development (GPD 18-01); Major Use Permit (UP 18-49); Tentative Subdivision Map (SD 18-01); Development Agreement (DA 18-01); Tentative Subdivision Map (SD 20-01); and Major Use Permit (UP 20-02).

4. File and serve an initial return to the Writ no later than 75 days after service of this Writ specifying the actions taken as of that date to comply with the terms of this peremptory writ of mandate, as well as the general substance and estimated timing of any future actions contemplated to be taken by County, in any further County proceedings regarding the Project, to comply with this Court's Judgment, Writ, and CEQA.

5. The Court shall retain jurisdiction over these proceedings pursuant to Public Resources Code section 21168.9(b), until the Court determines that Respondent has adequately complied with this Peremptory Writ of Mandate and CEQA. Should the Real Party choose to seek the County's reconsideration and approval of the Project, the County shall conduct such administrative proceedings in a manner consistent with this Court's Judgment and Writ, and this Court shall retain continuing jurisdiction over any such further proceedings before the County on the Project and its related environmental review and findings under CEQA, under all applicable law. Should the County determine to reapprove the Project, then following its action it shall return to this Court to seek a determination that it has complied with this Court's Judgment and Writ.

THE FOREGOING PEREMPTORY WRIT OF MANDATE ISSUES IMMEDIATELY.

IT IS SO ORDERED.

DATED: 2/25/2022

J. David Markham

Hon. J. David Markham
Judge of the Lake County Superior Court

Exhibits B-1 and B-2

to

Agreement Regarding Development of Guenoc Valley Project

Existing and Revised Site Plan, Polo and Equestrian Hilltop Area

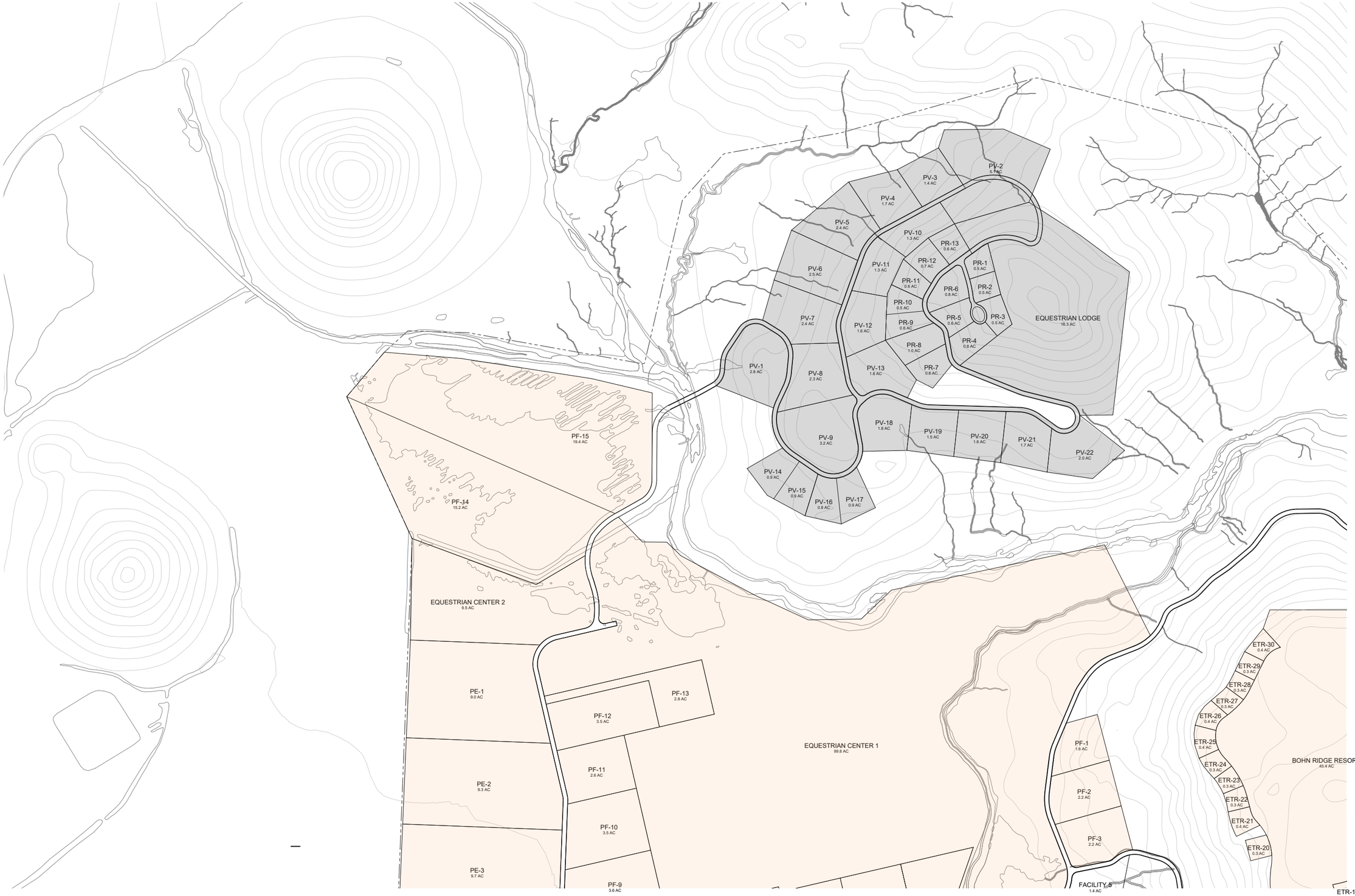
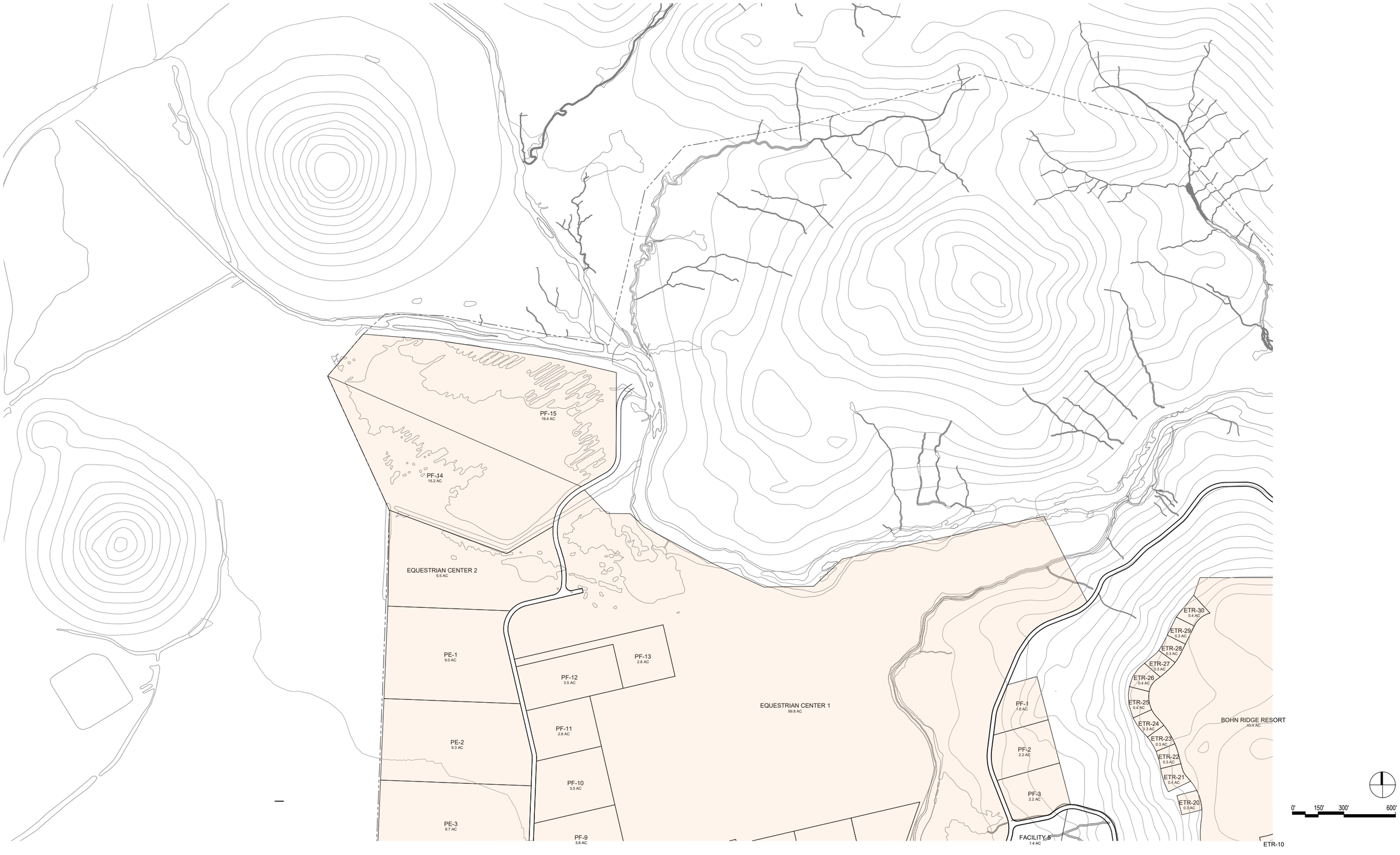


EXHIBIT B1

GUENOC VALLEY PROJECTS
POLO AND EQUESTRIAN HILLTOP

OCTOBER 2022



GUENOC VALLEY PROJECTS
POLO AND EQUESTRIAN HILLTOP REVISED

EXHIBIT B2

OCTOBER 2022

Exhibit B-3

to

Agreement Regarding Development of Guenoc Valley Project

Location of Recreational and Camping Area

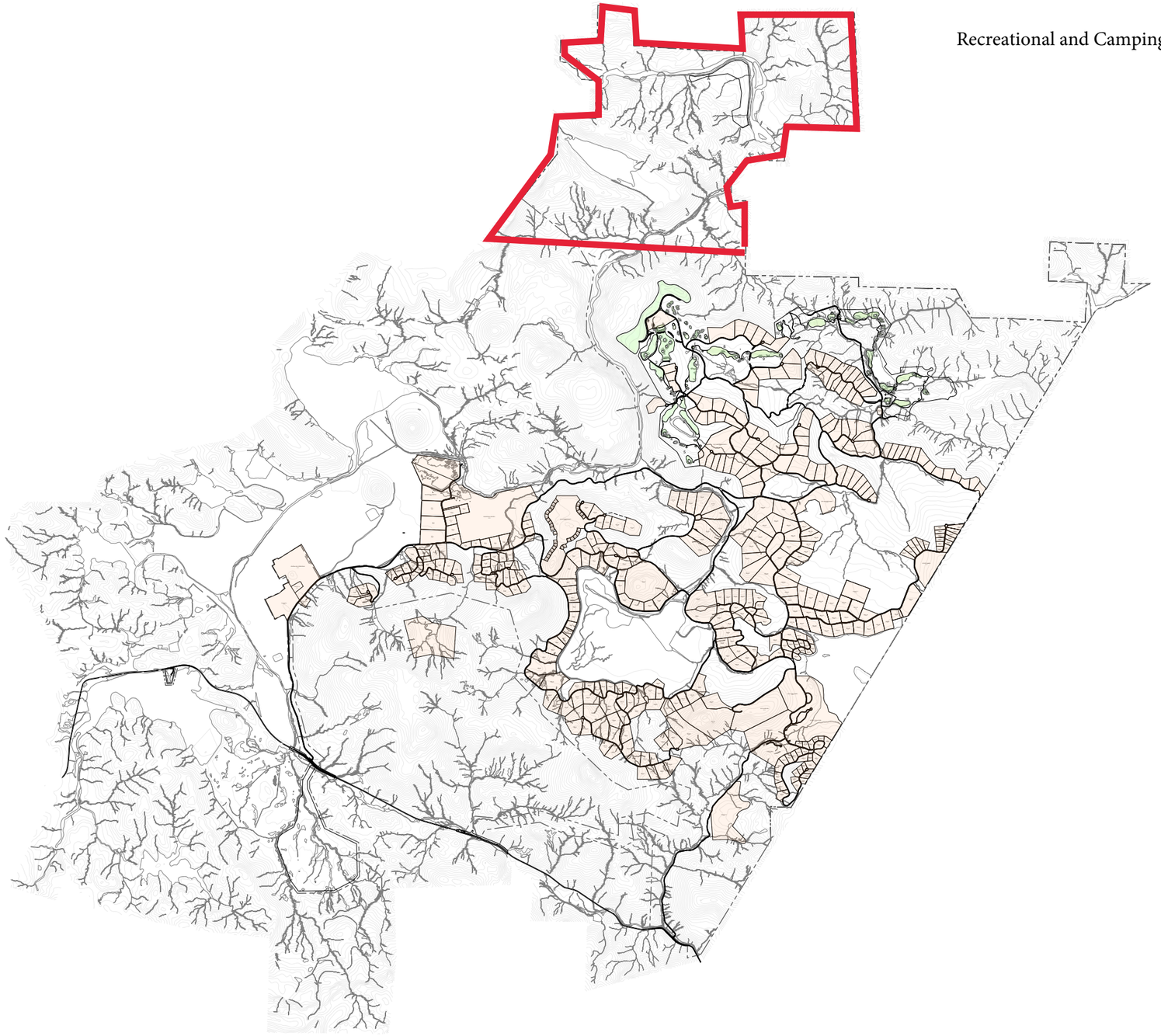


Exhibit B3

Exhibits C-1 and C-2

to

Agreement Regarding Development of Guenoc Valley Project

Existing and Revised Site Plan, Golf Course Area and Northern Lots

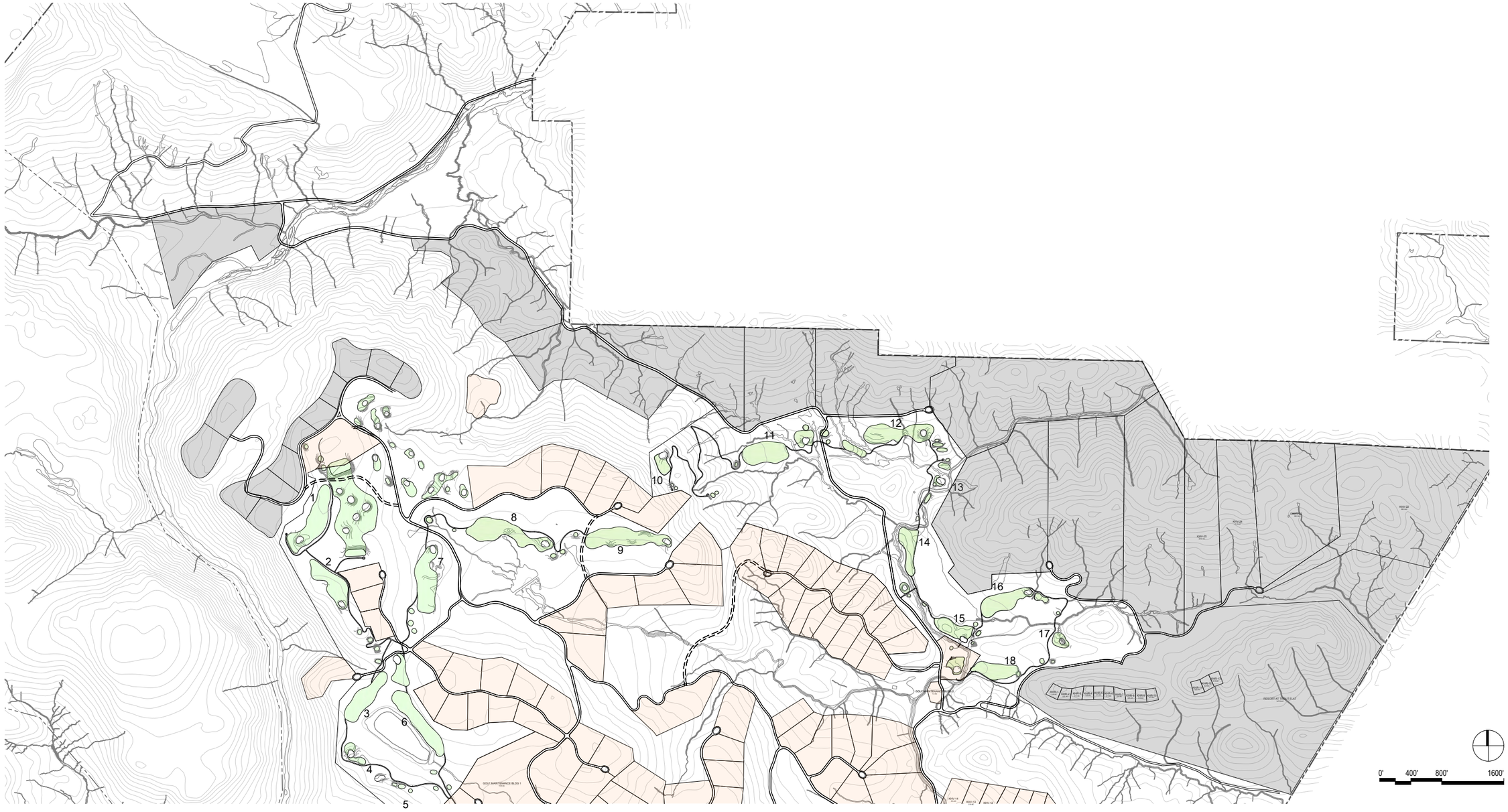


EXHIBIT C1

GUENOC VALLEY PROJECTS
NORTHERN LOTS

OCTOBER 2022

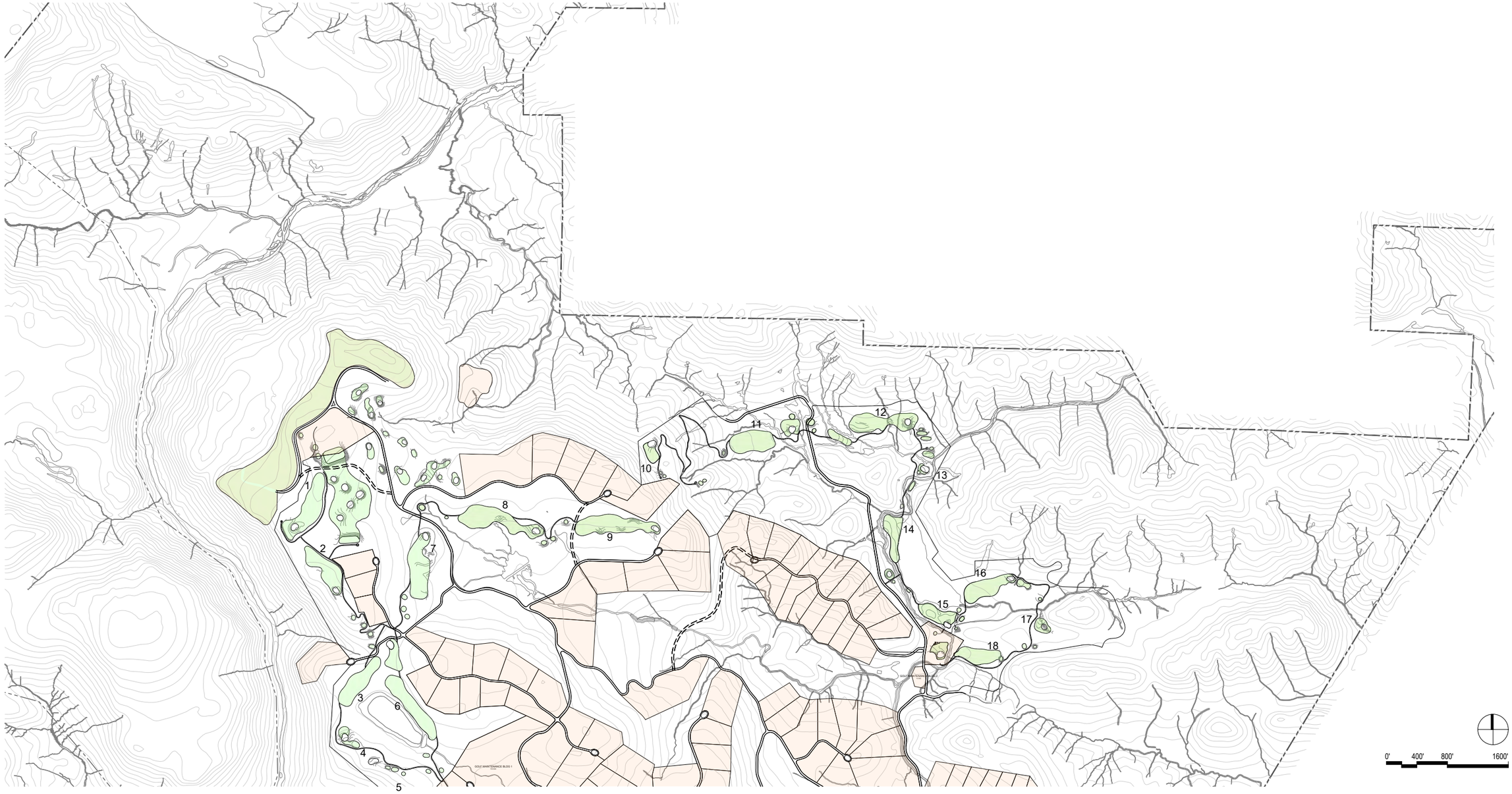


EXHIBIT C2

GUENOC VALLEY PROJECTS
NORTHERN LOTS REVISED

OCTOBER 2022

Exhibit D

to

Agreement Regarding Development of Guenoc Valley Project

Revised Roadway Plan

ROADWAY PLAN

REVISED COMPLIANT LAYOUT

- Proposed Roadways
- Proposed Connector Roadways
- Dead End Road
- Revised Proposed Parcels

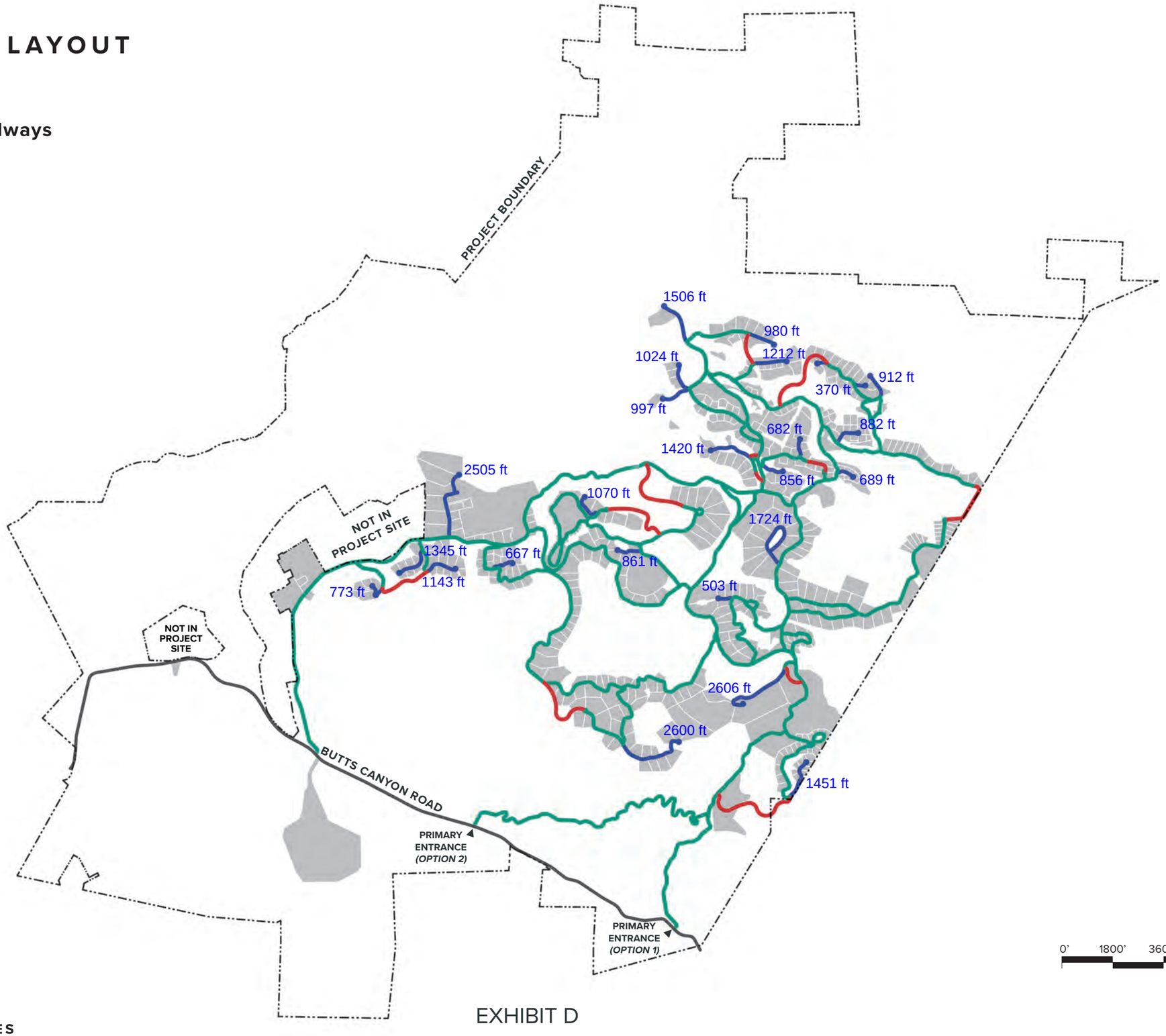


Exhibit E

to

Agreement Regarding Development of Guenoc Valley Project

Revised Roadside Hardscape Design

ROADWAY WILDFIRE BREAKS

EXAMPLE ROADWAY DESIGN







Exhibit F

to

Agreement Regarding Development of Guenoc Valley Project

Parties' Designees for Notices

Exhibit F
Party Designees for Notices

Pursuant to Section 8 of the Agreement, each Party to the Agreement designates the following recipients to receive any notice, request, or communication required.

The People of the State of California, ex rel. Rob Bonta, Attorney General of California

Andrew Contreiras
Deputy Attorney General
California Department of Justice
600 West Broadway, Suite 1800
San Diego, CA 92101
Andrew.Contreiras@doj.ca.gov

Nicole Rinke
Deputy Attorney General
1300 I Street
Sacramento, CA 95814
Nicole.Rinke@doj.ca.gov

Sarah Morrison
Supervising Deputy Attorney General
California Department of Justice
300 S. Spring Street, Suite 1702
Los Angeles, CA 90013
Sarah.Morrison@doj.ca.gov

Lotusland Investment Holdings Inc.

Alex Xu
CEO
Lotusland Investment Holdings, Inc.
P.O. Box 2549
San Francisco, CA 94126
axu@lotuslandinvestment.com

with a copy to:

Alex Xu
CEO
Lotusland Investment Holdings, Inc.
22000 Butts Canyon Rd.
Middletown, CA 95461

Exhibit G

to

Agreement Regarding Development of Guenoc Valley Project

Form Assignment and Assumption Agreement

ASSIGNMENT AND ASSUMPTION AGREEMENT

This Assignment and Assumption Agreement ("Assignment Agreement") is entered into, as of _____, 20__, by and between Lotusland Investment Holdings Inc., a California corporation ("Assignor"), and _____, a _____ ("Assignee"). Assignor and Assignee are sometimes referred to herein individually as a "Party" and collectively as the "Parties."

RECITALS

A. Assignor and the People of the State of California, ex rel. Rob Bonta, Attorney General of California (the "State"), have previously entered into an Agreement Regarding Development of Guenoc Valley Project between State and Assignor dated _____, 2022, recorded on _____, 2022, as Document No. _____, Lake County Official Records ("Settlement Agreement") regarding the development of the Guenoc Valley Mixed-Use Planned Development Project (the "Project"). A true and complete copy of the Settlement Agreement is attached hereto as Exhibit 1.

B. The Parties have entered into a purchase agreement by which Assignor will convey its interest in an approximately [_] acre portion of the Project site, which is more particularly described on Exhibit 2 attached hereto ("Assigned Property") to Assignee.

C. Section 13 of the Settlement Agreement ("Successor and Assigns" therein) refers to Assignor as "Lotusland" and provides that:

> This Agreement shall be binding upon, and inure to the benefit of, the Parties hereto, and their successors. Lotusland shall provide written notice to the State of any assignment or transfer of its interest in any portion of the Property or the Project to any third party developers and home builders. To the extent of any such transfer to a third party which is unaffiliated with Lotusland, Lotusland shall be released of its obligations hereunder, and such obligations shall be assumed by the transferee, which shall execute an Assumption Agreement in the form attached hereto.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals and the mutual covenants hereinafter contained and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Assignment by Assignor. Assignor hereby assigns, transfers and grants to Assignee all of Assignor's rights and obligations under the Settlement Agreement with respect to the Assigned Property (collectively, the "Assigned Rights and Obligations").

2. Acknowledgement and Assumption of Obligations by Assignee. Assignee hereby acknowledges that it has reviewed, is aware of, and intends to honor the Assigned Rights and Obligations with respect to its development of the Assigned Property pursuant to the terms of the Settlement Agreement, and additionally expressly and unconditionally assumes all of the Assigned Rights and Obligations. Assignee represents it has the ability to implement those Obligations of the Assignor contained in the Settlement Agreement that are hereby assigned. Assignee agrees to comply with, perform, and execute all of the Assigned Rights and Obligations.

3. Release of Assignor. Assignee hereby fully releases, indemnifies and holds harmless Assignor with respect to the Assigned Rights and Obligations. Both Assignor and Assignee acknowledge that this Assignment Agreement is intended to fully assign all of the Assigned Rights and Obligations to Assignee, and it is expressly understood that Assignor shall continue to be obligated under the Settlement Agreement only with respect to those portions of the Project site retained by Assignor.

4. Applicable Law/Venue. This Assignment Agreement shall be construed and enforced in accordance with the laws of the State of California, without reference to choice of law provisions. Any legal action arising under, including actions to interpret or enforce, this Assignment Agreement shall be brought only in the Superior Court of the County of Lake, State of California.

5. Interpretation. The rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not be employed in interpreting this Assignment Agreement. Unless the context clearly requires otherwise: (a) the plural and singular numbers shall each be deemed to include the other; (b) the masculine, feminine, and neuter genders shall each be deemed to include the others; (c) "shall," "will," or "agrees" are mandatory, and "may" is permissive; (d) "or" is not exclusive; and (e) "includes" and "including" are not limiting.

6. Severability. If any provision(s) of this Assignment Agreement is (are) held invalid, the remainder of this Assignment Agreement shall not be affected, except as necessarily required by the invalid provisions, and shall remain in full force and effect unless amended or modified by mutual consent of the parties.

7. Counterparts. This Assignment Agreement may be executed in one or more counterparts, each of which shall be deemed to constitute an original, but all of which, when taken together, shall constitute one and the same instrument, with the same effect as if all of the parties to this Assignment Agreement had executed the same counterpart.

8. Notice. Notice of this Assignment or the Agreement shall be sent to the State in writing, and shall be addressed to the persons and addresses set forth below:

Andrew Contreiras
Deputy Attorney General
California Department of Justice
600 West Broadway, Suite 1800
San Diego, CA 92101
Andrew.Contreiras@doj.ca.gov

Sarah Morrison
Supervising Deputy Attorney General
California Department of Justice
600 West Broadway, Suite 1800
San Diego, CA 92101
Sarah.Morrison@doj.ca.gov

Notice shall be made by one of the following methods: (i) deposited in the U.S. mail, first class, certified with return receipt requested and with appropriate postage, (ii) hand delivered or (iii) sent via email with a read receipt. All notices sent in accordance with this Section shall become effective on the date of receipt. From time to time the State may designate a new address for purposes of this Section by notice to the Assignor.

IN WITNESS WHEREOF, Assignor and Assignee have entered into this Assignment Agreement as of the date first written above.

Dated: _____, 20__

ASSIGNOR:

LOTUSLAND INVESTMENT HOLDINGS INC.
a California Corporation

By: _____
Signature of Person executing the Agreement on behalf of Assignor

Name: _____

Title: _____

Dated: _____, 20__

ASSIGNEE:

[INSERT NAME OF ASSIGNEE]

By: _____
Signature of Person executing the Agreement on behalf of Assignee

Name: _____

Title: _____

Appendix D

2020 EIR

Appendix D:
2020 EIR: Draft EIR, Final EIR, and Final EIR Errata

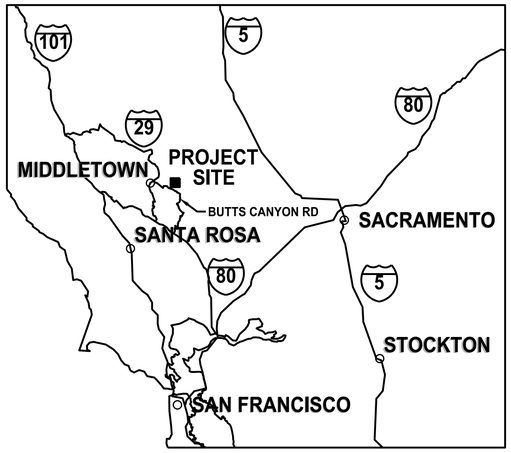
The 2020 EIR components are in multiple volumes corresponding to how they were originally published. Please view them on the enclosed flash drive or online at: lakecountyca.gov/1762.

Appendix E

Tentative Subdivision Maps

MAHA FARMS SUBDIVISION

TENTATIVE MAP



VICINITY MAP
NOT TO SCALE

LEGEND

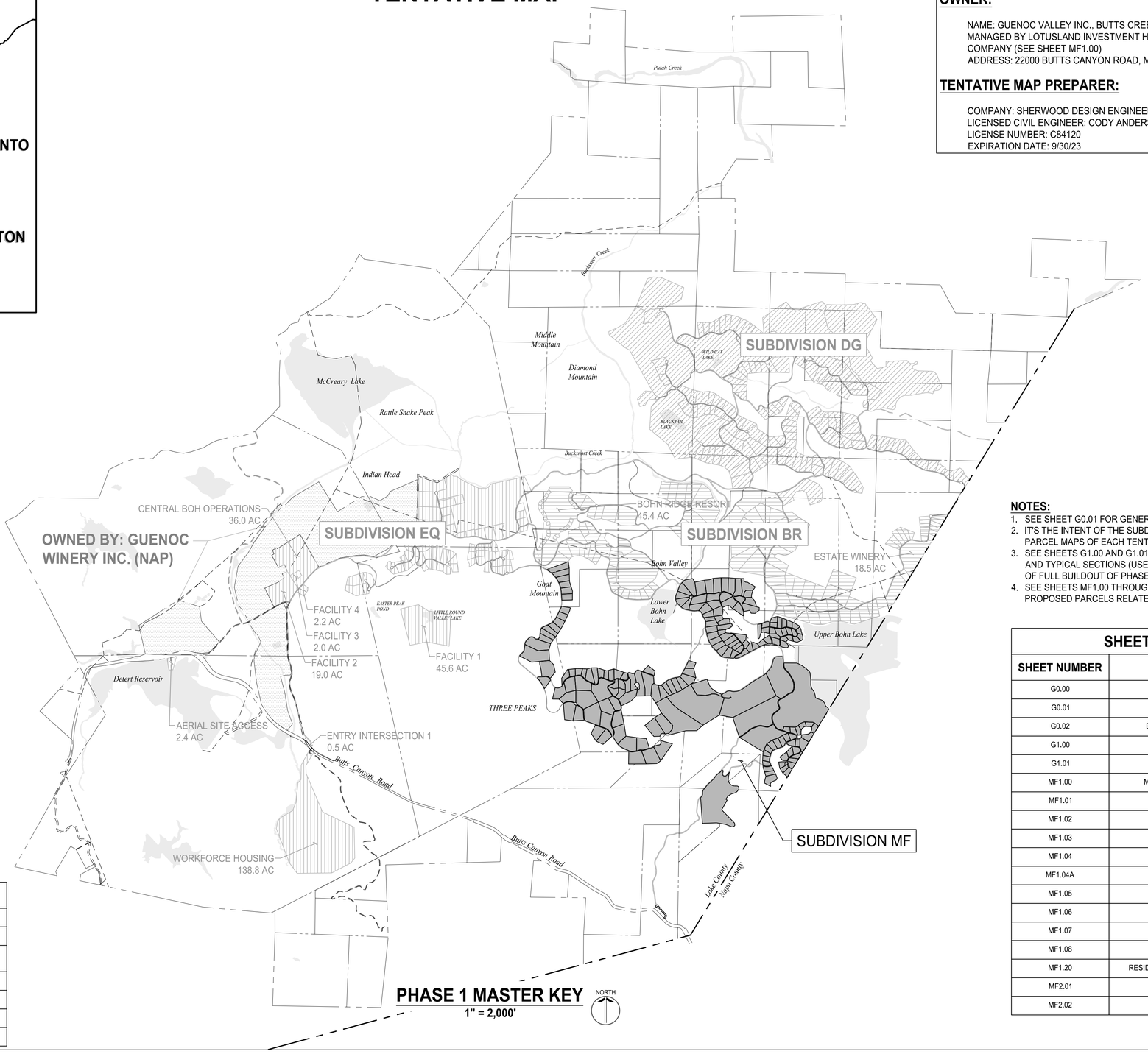
PROPOSED SUBDIVISION MF - MAHA FARMS

PROPOSED SUBDIVISION EQ - EQUESTRIAN UNDER SEPARATE TENTATIVE MAP

PROPOSED SUBDIVISION DG - DENNISTON GOLF ESTATES UNDER SEPARATE TENTATIVE MAP

PROPOSED SUBDIVISION BR - BOHN RIDGE UNDER SEPARATE TENTATIVE MAP

EXISTING PARCELS OWNED BY OTHERS; NOT A PART (NAP) OF THIS TENTATIVE MAP



PHASE 1 MASTER KEY
1" = 2,000'
NORTH

OWNER:

NAME: GUENOC VALLEY INC., BUTTS CREEK INC., BOHN VALLEY INC.
MANAGED BY LOTUSLAND INVESTMENT HOLDINGS, INC., A CALIFORNIA COMPANY (SEE SHEET MF1.00)
ADDRESS: 22000 BUTTS CANYON ROAD, MIDDLETOWN, CA 95461

TENTATIVE MAP PREPARER:

COMPANY: SHERWOOD DESIGN ENGINEERS
LICENSED CIVIL ENGINEER: CODY ANDERSON, P.E.
LICENSE NUMBER: C84120
EXPIRATION DATE: 9/30/23

NOTES:

1. SEE SHEET G0.01 FOR GENERAL NOTES.
2. IT'S THE INTENT OF THE SUBDIVIDER TO PROCESS THE FINAL PARCEL MAPS OF EACH TENTATIVE MAP IN PHASES.
3. SEE SHEETS G1.00 AND G1.01 FOR PHASE 1 MASTER ROAD PLAN AND TYPICAL SECTIONS (USED FOR REFERENCE AND CONTEXT OF FULL BUILDOUT OF PHASE 1).
4. SEE SHEETS MF1.00 THROUGH MF2.02 FOR EXISTING AND PROPOSED PARCELS RELATED TO SUBDIVISION MF.

SUBDIVISION LOT COUNTS

PARCEL TYPE	MAHA FARMS	EQUESTRIAN	DENNISTON GOLF	BOHN RIDGE	TOTAL
VILLA	73	67	133	112	385
RESORT RESIDENTIAL	104	0	7	30	141
COMMERCIAL	5	1	4	2	12
FACILITY	1	11	3	0	15
GOLF	0	0	4	0	4
PERIPHERAL	8	7	8	8	31

SHEET INDEX

SHEET NUMBER	SHEET TITLE
G0.00	GENERAL INFORMATION
G0.01	GENERAL NOTES
G0.02	DEVELOPMENT RESTRICTIONS
G1.00	PHASE 1 MASTER ROAD PLAN
G1.01	TYPICAL ROAD SECTIONS
MF1.00	MF OVERALL SUBDIVISION PLAN
MF1.01	MF SUBDIVISION PLAN
MF1.02	MF SUBDIVISION PLAN
MF1.03	MF SUBDIVISION PLAN
MF1.04	MF SUBDIVISION PLAN
MF1.04A	MF SUBDIVISION PLAN
MF1.05	MF SUBDIVISION PLAN
MF1.06	MF SUBDIVISION PLAN
MF1.07	MF SUBDIVISION PLAN
MF1.08	MF SUBDIVISION PLAN
MF1.20	RESIDENTIAL PARCEL AVERAGE SLOPES
MF2.01	PERIPHERAL PARCEL PLAN
MF2.02	PERIPHERAL PARCEL PLAN

SHERWOOD DESIGN ENGINEERS
2548 Mission Street
San Francisco, CA 94110
www.sherwoodengineers.com

REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No. 84120
CIVIL
STATE OF CALIFORNIA

SCALE: 1:2000
0 1"
Note: If this graphic scale does not equal 1", this sheet has been modified from its original size.

NO	DATE	ISSUANCE

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

MAHA FARMS SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION MF

GENERAL INFORMATION

G0.00

GENERAL NOTES:

1. REFER TO FINAL ADOPTED DEVELOPMENT AGREEMENT FOR FURTHER SUBDIVISION DETAILS, INCLUDING SEQUENCING AND EXPIRATION DETAILS.
2. THE PROPERTIES WITHIN THIS SUBDIVISION ARE PROPOSED TO BE REZONED TO A NEWLY FORMED ZONING DISTRICT, THE GUENOC VALLEY PLANNED DEVELOPMENT (GVPD) WITH OPEN SPACE AND AGRICULTURAL PRESERVE OVERLAYS/COMBINING DISTRICTS. REFER TO THE RELEVANT ZONING DISTRICTS FOR DEVELOPMENT REGULATIONS.
3. REFER TO THE SPECIFIC PLAN OF DEVELOPMENT FOR ALLOWED DEVELOPMENT INCLUDING PLANNED DEVELOPMENT DETAILS, DENSITY, AND SETBACKS.
4. REFER TO THE CC&R'S FOR FUTURE HOMEOWNERSHIP ASSOCIATION DETAILS AND MAINTENANCE REQUIREMENTS.
5. REFER TO THE WATER, WASTEWATER, AND ELECTRICAL FEASIBILITY REPORTS FOR THE PRIVATE UTILITY DISTRICT DETAILS.
6. REFER TO THE DESIGN GUIDELINES FOR LOT LAYOUT, DENSITY, BUILDING MASSING, LANDSCAPE DETAILS, ROAD AND PATHWAY DESIGN, STREET LIGHTING, DIRECTIONAL SIGNAGE AND RESIDENTIAL DESIGNS.
7. REFER TO THE FIRE MANAGEMENT PLAN FOR FIRE PREVENTION GUIDELINES AND VEGETATION FUEL REDUCTION SETBACKS.
8. ALL PROPOSED ROADWAYS WITHIN PROPERTY ARE PRIVATE AND ARE TYPICALLY INDEPENDENT INDIVIDUAL PARCELS, UNLESS OTHERWISE NOTED. THERE WILL BE NO PUBLIC RIGHTS OF WAY EXCEPT ALONG THE ENTRY ROADS UP TO THE FIRST GATE.
9. ALL ROADWAY CORRIDORS SHALL INCORPORATE EASEMENTS OF 50 FEET BEYOND EITHER SIDE OF THE EDGE OF PAVEMENT FOR VEGETATION MANAGEMENT, DEPENDING ON ENVIRONMENTAL CONSTRAINTS, WHICH SHALL BE FURTHER DEFINED IN AND MANAGED BY THE CC&RS.
10. ROAD NAMES ARE REFERENCED WITH NUMBERS, PROPOSED NAMES WILL BE PROVIDED IN SUBSEQUENT SUBMITTAL PRIOR TO HEARING.

SUBDIVISION NOTES:

1. SEE PARCELS SHEETS FOR BEARING, DISTANCE, AND CURVE INFORMATION OF PARCELS.
2. PERIPHERAL PARCELS ARE PROPOSED TO BE SUBDIVIDED AND ARE INCLUDED FOR REFERENCE. SEE PERIPHERAL PARCEL SHEETS FOR BEARING, DISTANCE, AND CURVE INFORMATION.
3. ENVIRONMENTAL PRESERVATION AREAS, INCLUDING SENSITIVE BIOLOGICAL SPECIES OR CULTURAL SITES WHERE APPLICABLE, WITHIN SUBDIVIDED PARCELS MAY BE IDENTIFIED AS CONCEPTUAL ON THE TENTATIVE MAP AND THEN FINAL ON THE FINAL MAP.
4. FOR WATER SUPPLY AND WASTEWATER DISPOSAL SYSTEMS AND DISTRIBUTION, REFER TO SPECIFIC PLAN OF DEVELOPMENT AND TECHNICAL FEASIBILITY REPORTS.
5. PROPOSED PRIVATE UTILITIES WILL BE REQUIRED THROUGHOUT THE SITE, INCLUDING SEWER, WATER, ELECTRIC, COMMUNICATIONS, AND LIQUID PROPANE. PRELIMINARY LOCATIONS OF MAJOR FACILITIES ARE SHOWN FOR REFERENCE IN TENTATIVE MAPS, HOWEVER, ADDITIONAL INFORMATION IS PROVIDED ON THE SPECIFIC PLAN OF DEVELOPMENT.

EASEMENTS:

1. EXISTING EASEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION PER RECORD DATA AND HAVE NOT BEEN FIELD SURVEYED.
2. ALL PROPOSED PRIVATE UTILITY AND ACCESS EASEMENTS (PUE), WHICH ARE TO BE SPECIFICALLY DEFINED DURING THE FINAL MAP STAGE, SHALL INCORPORATE THE FOLLOWING ELEMENTS WITHIN A COMBINED TYPICAL EASEMENT WIDTH OF 50 FEET TOTAL:
   a. TOTAL PAVED ROADWAY, INCLUDING SHOULDERS, FOR SHARED ACCESS (RANGES IN WIDTH FROM 22 TO 28 FEET FOR TWO-WAY ROADS AND 14 FEET FOR ONE-WAY ROADS).
   b. RETAINING AND DRAINAGE CONVEYANCE FEATURES (UP TO 12 FEET WIDE).
   c. UTILITY PIPING AND STRUCTURES (UP TO 10 FEET WIDE)
   d. EXCEPTIONS MAY OCCUR FOR SPECIFIC UTILITY STRUCTURES OR DRAINAGE FEATURES REQUIRING ADDITIONAL WIDTH
3. PROPOSED DRAINAGE MANAGEMENT EASEMENTS SHALL EXTEND TO 30 FEET FROM THE TOP OF BANKS OF PERENNIAL STREAMS AND 20 FEET FROM THE TOP OF BANKS OF INTERMITTENT STREAMS.

EXISTING CONDITIONS AND NATURAL RESOURCE PRESERVATION:

1. SETBACKS FOR DRAINAGES, RARE PLANTS, WOODLANDS, AND RIPARIAN ZONES WILL BE ADDRESSED WITHIN THE SPECIFIC PLAN OF DEVELOPMENT DOCUMENTATION AND THE ENVIRONMENTAL IMPACT REPORT, UNDER SEPARATE COVER.
2. FINAL CONFIGURATION OF DEDICATED OPEN SPACE SHALL BE DEVELOPED AS PART OF THE ENVIRONMENTAL REVIEW PROCESS.
3. OAK WOODLAND PRESERVATION AREAS WITHIN PARCELS MAY BE SUBJECT TO DEED RESTRICTIONS TO LIMIT REMOVAL OF TREES. FINAL LOCATIONS WILL BE DIRECTED BY THE ENVIRONMENTAL IMPACT REPORT AND WILL ULTIMATELY BE RECORDED IN THE FINAL MAP.
4. AREAS IDENTIFIED AS "DEVELOPMENT RESTRICTION AREAS" AS CONTAINING CULTURAL RESOURCES WILL BE DEED RESTRICTED TO PROHIBIT THEIR DISTURBANCE, AND MAY BE MORE ACCURATELY SURVEYED FOR INCLUSION ON THE FINAL MAP.
5. DEDICATED HABITAT CORRIDORS WITHIN PARCELS MAY BE SUBJECT TO DEED RESTRICTIONS TO LIMIT PLACEMENT, HEIGHT AND COMPOSITION OF FENCING, VEGETATION MANAGEMENT AND DISTURBANCE OF NATURAL RESOURCES. FINAL CONFIGURATIONS WILL ULTIMATELY BE RECORDED IN THE FINAL MAP, WITH THE TERMS OF SAID RESTRICTIONS TO BE INCLUDED IN THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE HOMEOWNERS' ASSOCIATIONS AND/OR OTHER REAL ESTATE PURCHASE AGREEMENTS.

PHASING NOTES:

1. FINAL PARCEL MAPS FILED WILL INDICATE SUBDIVISION CONSTRUCTION PHASING.
2. FINAL MAPS DEVELOPED FOR EACH AGREED UPON PHASE OF THE PROPOSED EVENTUAL SUBDIVISION WILL INCLUDE ALL PARCEL TYPES, INCLUDING THE ROAD PARCELS ADJACENT TO AND REQUIRED FOR EACH SUBDIVISION PHASE.

SHERWOOD
DESIGN ENGINEERS
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REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No. 84270
CIVIL
STATE OF CALIFORNIA

SCALE:
0 1"
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NO	DATE	ISSUANCE

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

MAHA FARMS SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION MF

GENERAL NOTES

G0.01

LEGEND

PROPOSED PARCEL BOUNDARY

EXISTING PARCEL BOUNDARY

NOT A PART (NAP)

PRESERVED OPEN SPACE

DEVELOPMENT RESTRICTION

OAK WOODLAND PRESERVATION AREA

HABITAT CORRIDOR

COUNTY LINE

EXISTING ROAD AND UTILITY EASEMENT

NOTE:

1. DEDICATED HABITAT CORRIDOR, PRESERVED OPEN SPACE AND OAK WOODLAND PRESERVATION AREAS ARE SHOWN FOR ILLUSTRATIVE PURPOSES. FINAL CONFIGURATION IS SUBJECT TO CHANGE AND WILL BE INCORPORATED IN THE FINAL MAP.

0 1750' 3500' NORTH

SHERWOOD DESIGN ENGINEERS
2548 Mission Street
San Francisco, CA 94110
www.sherwoodengineers.com

REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
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STATE OF CALIFORNIA

SCALE: 1:1750
0 1"
Note: If this graphic scale does not equal 1", this sheet has been modified from its original size.

NO	DATE	ISSUANCE

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

MAHA FARMS SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

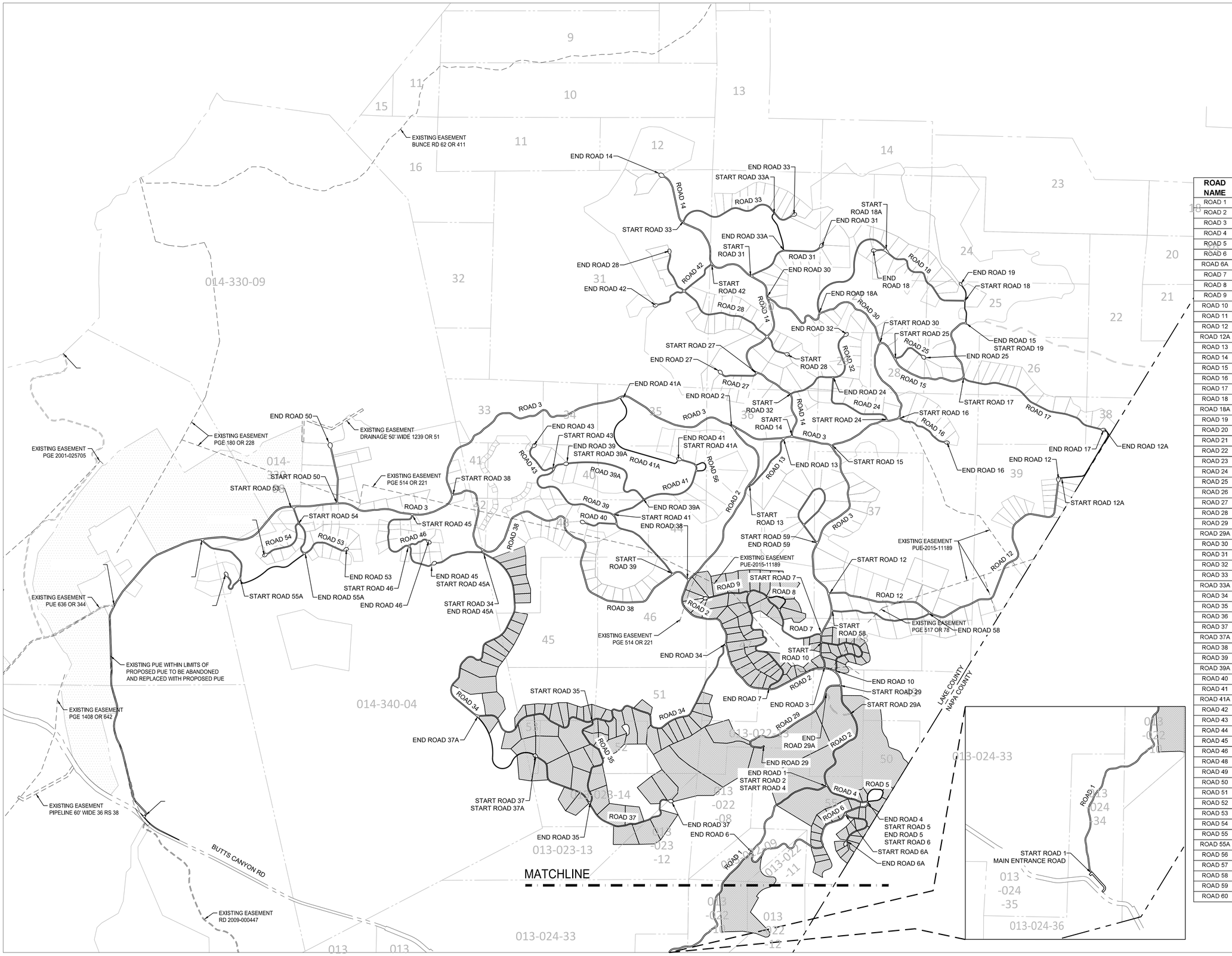


TENTATIVE MAP
SUBDIVISION MF

DEVELOPMENT RESTRICTIONS

G0.02

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG1\PKG1-DEVELOPMENT RESTRICTIONS.DWG



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ROAD 1	17,420	26	A
ROAD 2	14,896	26	A
ROAD 3	32,381	26	A
ROAD 4	1,133	22	B
ROAD 5	1,109	14	D
ROAD 6	4,602	26	A
ROAD 6A	1,327	22	B
ROAD 7	5,805	22	B
ROAD 8	785	14	D
ROAD 9	415	22	B
ROAD 10	2,215	22	B
ROAD 11	1,532	14	D
ROAD 12	8,154	26	A
ROAD 12A	1,900	14	D
ROAD 13	1,569	22	B
ROAD 14	8,716	26	A
ROAD 15	8,503	26	A
ROAD 16	1,331	22	B
ROAD 17	4,204	22	B
ROAD 18	2,776	22	B
ROAD 18A	3,160	16	C
ROAD 19	not used	not used	not used
ROAD 20	not used	not used	not used
ROAD 21	not used	not used	not used
ROAD 22	not used	not used	not used
ROAD 23	not used	not used	not used
ROAD 24	2,085	22	B
ROAD 25	802	22	B
ROAD 26	1,320	26	A
ROAD 27	915	22	B
ROAD 28	4,174	22	B
ROAD 29	3,227	26	A
ROAD 29A	937	16	C
ROAD 30	3,908	26	A
ROAD 31	1,950	22	B
ROAD 32	2,434	26	A
ROAD 33	3,090	22	B
ROAD 33A	1,025	16	C
ROAD 34	13,835	22	B
ROAD 35	2,582	22	B
ROAD 36	7,951	22	B
ROAD 37	5,034	22	B
ROAD 37A	2,515	16	C
ROAD 38	9,614	26	A
ROAD 39	6,025	22	B
ROAD 39A	2,522	16	C
ROAD 40	782	22	B
ROAD 41	2,980	22	B
ROAD 41A	2,883	14	D
ROAD 42	1,761	22	B
ROAD 43	950	22	B
ROAD 44	617	14	D
ROAD 45	4,310	22	B
ROAD 46	667	22	B
ROAD 48	not used	not used	not used
ROAD 49	not used	not used	not used
ROAD 50	9,093	26	A
ROAD 51	not used	not used	not used
ROAD 52	382	22	B
ROAD 53	2,501	22	B
ROAD 54	1,229	22	B
ROAD 55	2,274	22	B
ROAD 55A	1,995	14	D
ROAD 56	615	14	D
ROAD 57	1,387	26	A
ROAD 58	2,533	22	B
ROAD 59	2,825	22	B
ROAD 60	11,696	22	B

0 550' 1100' 2200'

NORTH

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www.sherwoodengineers.com

REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No.84120
CIVIL
STATE OF CALIFORNIA

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
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MAHA FARMS SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



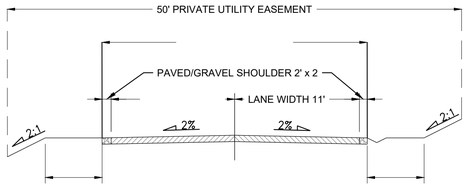
TENTATIVE MAP
SUBDIVISION MF

PHASE 1
MASTER
ROAD PLAN

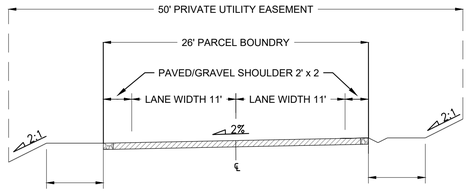
G1.00

TYPICAL ROAD SECTIONS

TYPE A - CROWNED/SUPERELEVATED PRIMARY 2 LANE ROAD



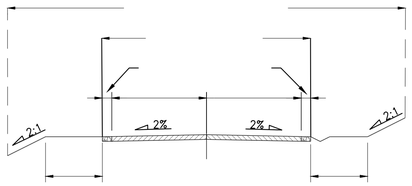
10' @ 10% MAX,
SEE NOTE 5



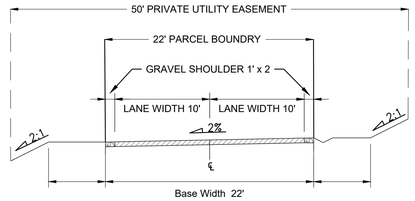
10' @ 10% MAX,
SEE NOTE 5

10' @ 10% MAX,
SEE NOTE 5

TYPE B - CROWNED/SUPERELEVATED SECONDARY 2 LANE ROAD



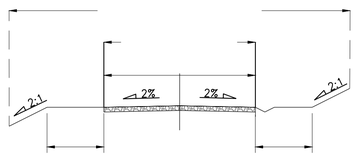
10' @ 10% MAX,
SEE NOTE 5



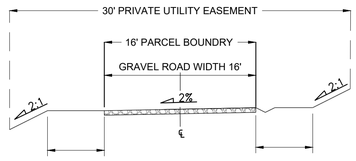
10' @ 10% MAX,
SEE NOTE 5

10' @ 10% MAX,
SEE NOTE 5

TYPE C - CROWNED/SUPERELEVATED GRAVEL ROAD



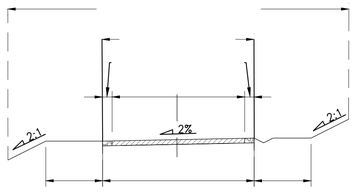
10' @ 10% MAX,
SEE NOTE 5



10' @ 10% MAX,
SEE NOTE 5

10' @ 10% MAX,
SEE NOTE 5

TYPE D - ONE WAY ROAD



10' @ 10% MAX,
SEE NOTE 5

NOTES:

1. SLOPES SHOWN HEREIN REPRESENT TYPICAL OR MAXIMUM CONDITIONS AND ARE SUBJECT TO CHANGE PER PENDING DETAILED ROADWAY DESIGN.
2. EASEMENTS SHOWN HEREIN REPRESENT TYPICAL MINIMUM WIDTH AND COVERAGE SITUATIONS AND ARE SUBJECT TO INCREASING TO ACCOMMODATE SPECIFIC STRUCTURES OR FEATURES TO BE DESIGNED.
3. PLEASE REFER TO THE DESIGN GUIDELINES AS PART OF THE GVD ZONING DESIGNATION FOR ROADWAY DESIGN DETAILS.
4. IN ADDITION TO THE PUE, THERE ARE VEGETATION AND FUEL REDUCTION AREAS 50' ON EITHER SIDE OF THE EDGE OF PAVEMENT. REFER TO THE FIRE MANAGEMENT PLAN.
5. TO THE EXTENT THAT THE TOPOGRAPHY FEASIBLY PERMITS, AN AREA OF APPROXIMATELY 10 FEET ON EACH SIDE OF THE ROADWAYS WILL BE IMPROVED WITH HARDSCAPE.

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MAHA FARMS
SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

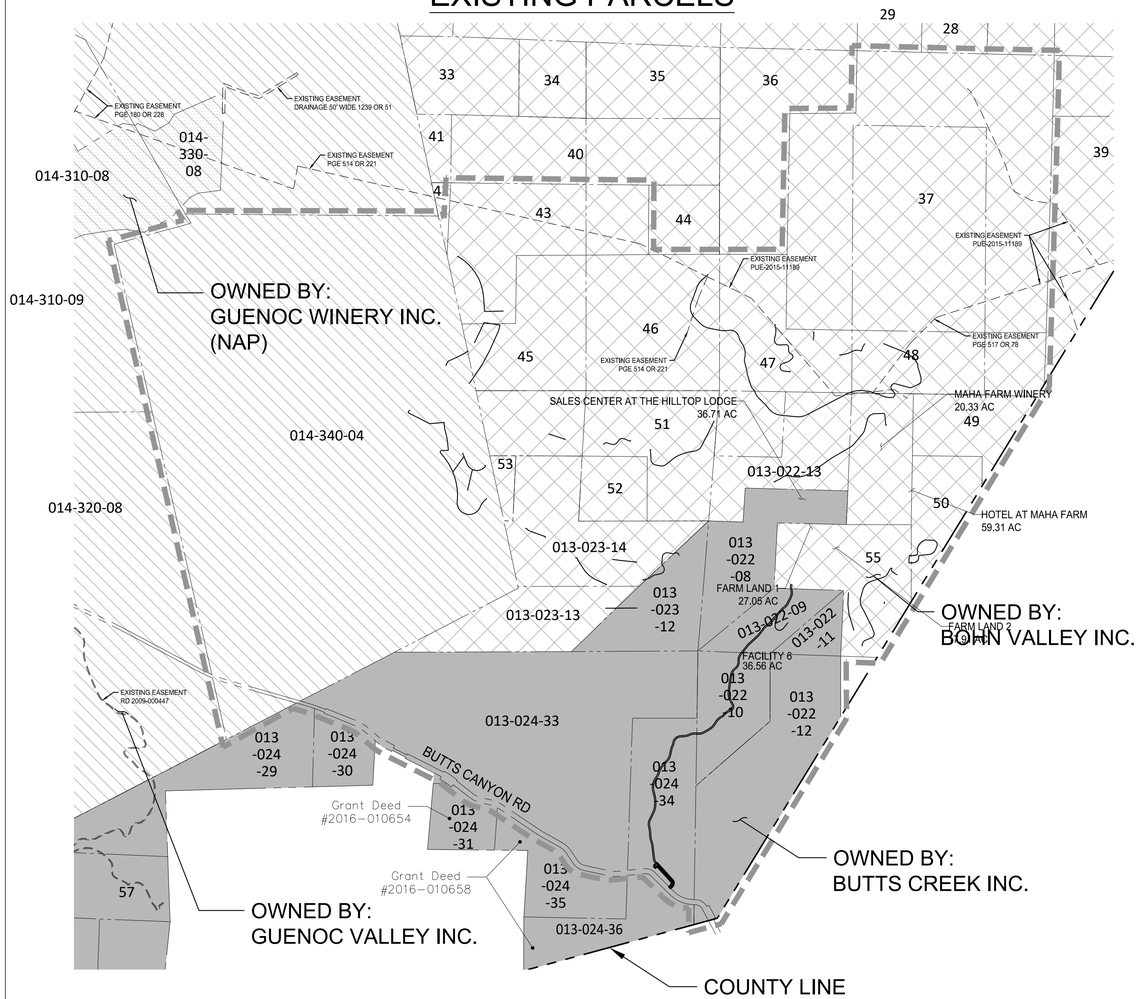


TENTATIVE MAP
SUBDIVISION MF

TYPICAL
ROAD
SECTIONS

G1.01

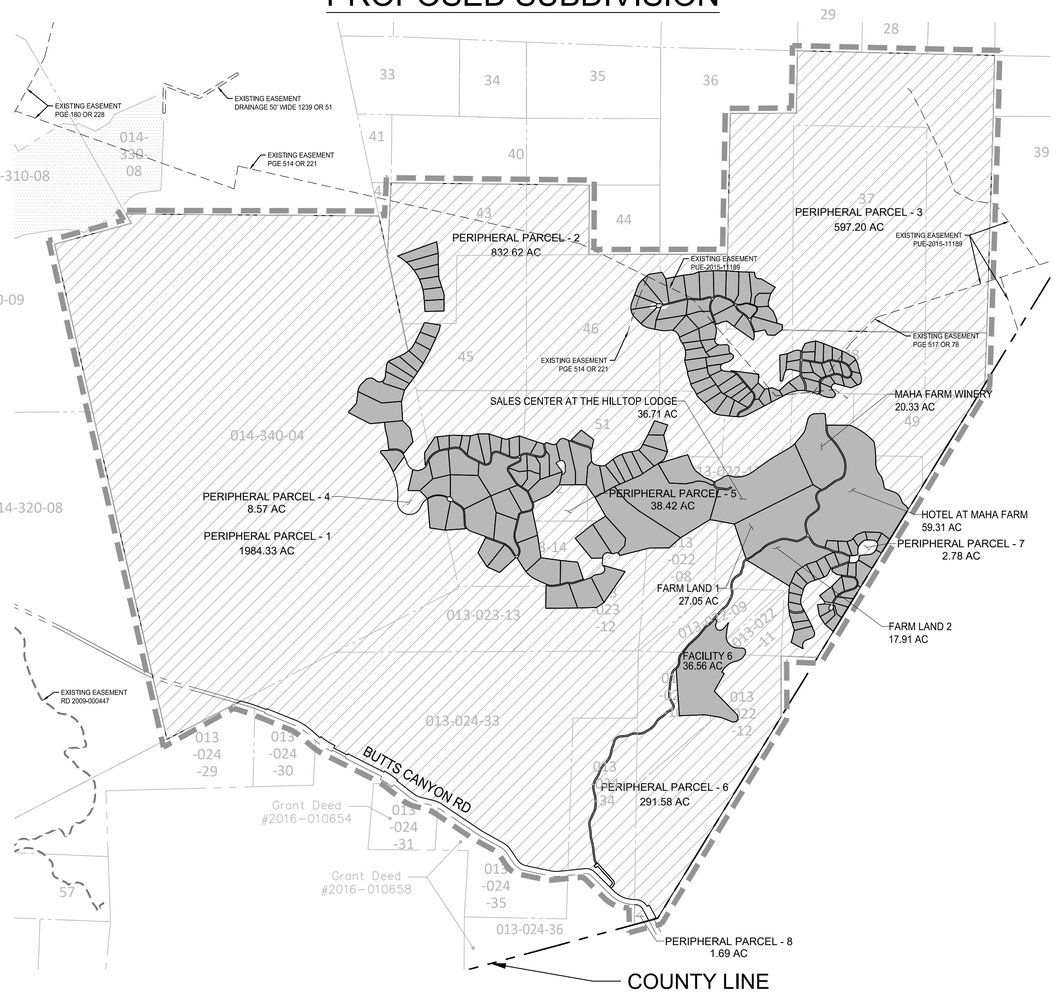
EXISTING PARCELS



EXISTING OWNERSHIP INFORMATION						
#	CC	APN	Owner	CC Doc #	Correction Deed	Approx. Acreage
37	11-64	013-022-01PT, 013-022-02PT, 013-022-05PT	Bohn Valley Inc.	2012006005		600
43	11-36	013-023-10PT, 013-023-07PT	Bohn Valley Inc.	2012006017		160
45	11-32	013-023-15PT, 013-023-10PT	Bohn Valley Inc.	2012006011		165
46	11-34	013-023-07PT	Bohn Valley Inc.	2012006012		160
47	11-37	013-022-01PT, 013-022-15	Bohn Valley Inc.	2012006013		160
48	11-55	013-022-05PT, 013-022-14PT	Bohn Valley Inc.	2012006003		160
49	11-85	013-022-02PT, 013-022-14PT	Bohn Valley Inc.	2012017321		102
50	11-84	013-022-14PT	Bohn Valley Inc.	2012017320		50
51	11-31	013-023-15PT	Bohn Valley Inc.	2012006010		120
52	11-69	013-023-15PT	Bohn Valley Inc.	2012005990		40
53	11-80	013-023-09	Bohn Valley Inc.	2012006007		14
55	11-63	013-022-14PT	Bohn Valley Inc. *Legal changed in 2nd doc	2012006024	2012017315	112
LLA-E	-	013-023-12PT, 013-024-33PT, 013-024-34PT				
LLA-F	-	013-022-10				
LLA-G	-	013-022-12				
LLA-I	-	013-023-14				
LLA-J	-	013-022-13PT, 013-023-13PT, 013-023-15PT				
-	-	014-340-041				

- Grant Deed #2016-016244 - Bohn Valley Inc
  APNs - 013-022-01, 013-022-02, 013-022-05, 013-022-14, 013-022-15, 013-023-07, 013-023-10, 013-023-12, 013-023-13, 013-023-14, 013-023-15,
- Grant Deed #2016-010655 - Guenoc Valley Inc
  APNs - 014-310-09, 014-330-09, 014-340-04, 014-320-08
- Grant Deed #2016-010654 - Butts Creek Inc
  APN - 013-024-31
- Grant Deed #2016-010658 - Butts Creek Inc
  APNs - 013-024-36, 013-024-35
- Grant Deed #2016-016243 - Butts Creek Inc
  APNs - 013-022-08, 013-023-12, 013-024-33, 013-022-09, 013-022-10, 013-024-34, 013-022-11, 013-022-12

PROPOSED SUBDIVISION



PROPOSED PARCEL TYPES	
VILLA	73
RESORT RESIDENTIAL	104
COMMERCIAL	5
FACILITY	1
GOLF	0
PERIPHERAL	8

NOTES:
1. SEE SHEET G0.01 FOR GENERAL NOTES.
2. SEE SHEETS G1.00 AND G1.01 FOR PHASE 1 MASTER ROAD PLAN AND TYPICAL SECTIONS (USED FOR REFERENCE AND CONTEXT OF FULL BUILDOUT OF PHASE 1).
3. SEE SHEETS MF1.00 THROUGH MF1.08 FOR DETAILED SUBDIVISION OF PROPOSED ROAD, COMMERCIAL AND RESIDENTIAL PARCELS.
4. SEE SHEETS MF2.01 THROUGH MF2.02 FOR DETAILED PERIPHERAL PARCELS.

0 750' 1500' 3000' NORTH

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MAHA FARMS SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



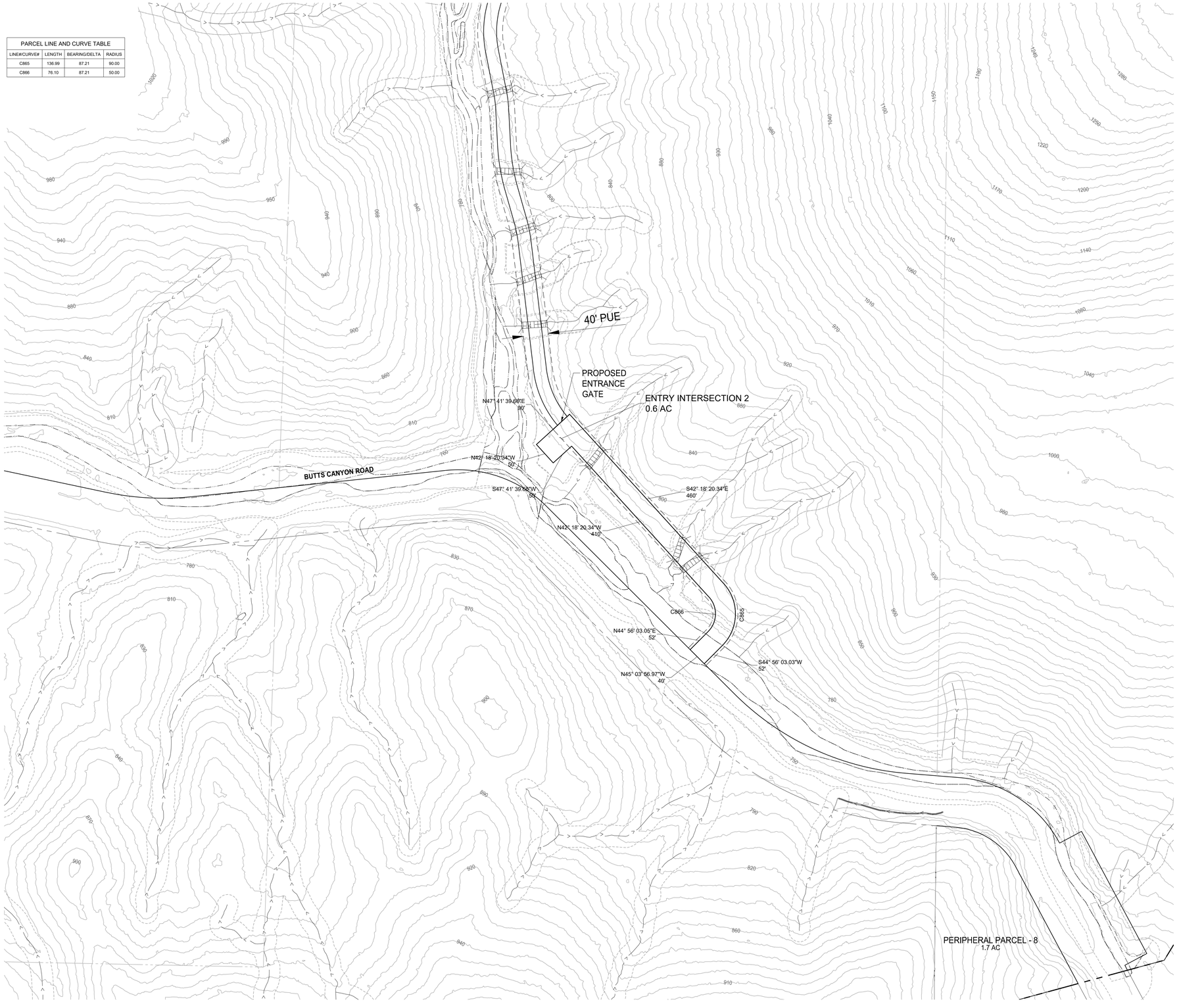
TENTATIVE MAP
SUBDIVISION MF

MF OVERALL SUBDIVISION PLAN

MF1.00

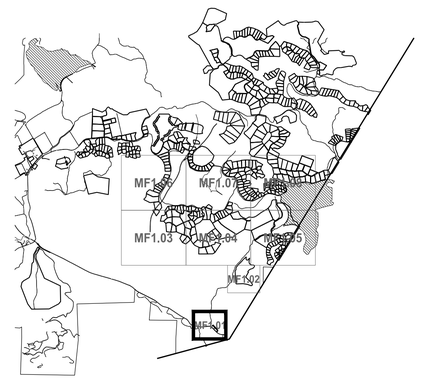
P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG1\PKG1-EXISTING PARCELS.DWG

PARCEL LINE AND CURVE TABLE			
LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C865	136.99	87.21	90.00
C866	76.10	87.21	50.00



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK
- GROUND WATER WELL
- ELECTRICAL SUBSTATION
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



SHEET LAYOUT
NOT TO SCALE

0 50' 100' 200' NORTH

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LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION MF

MF SUBDIVISION PLAN

MF1.01

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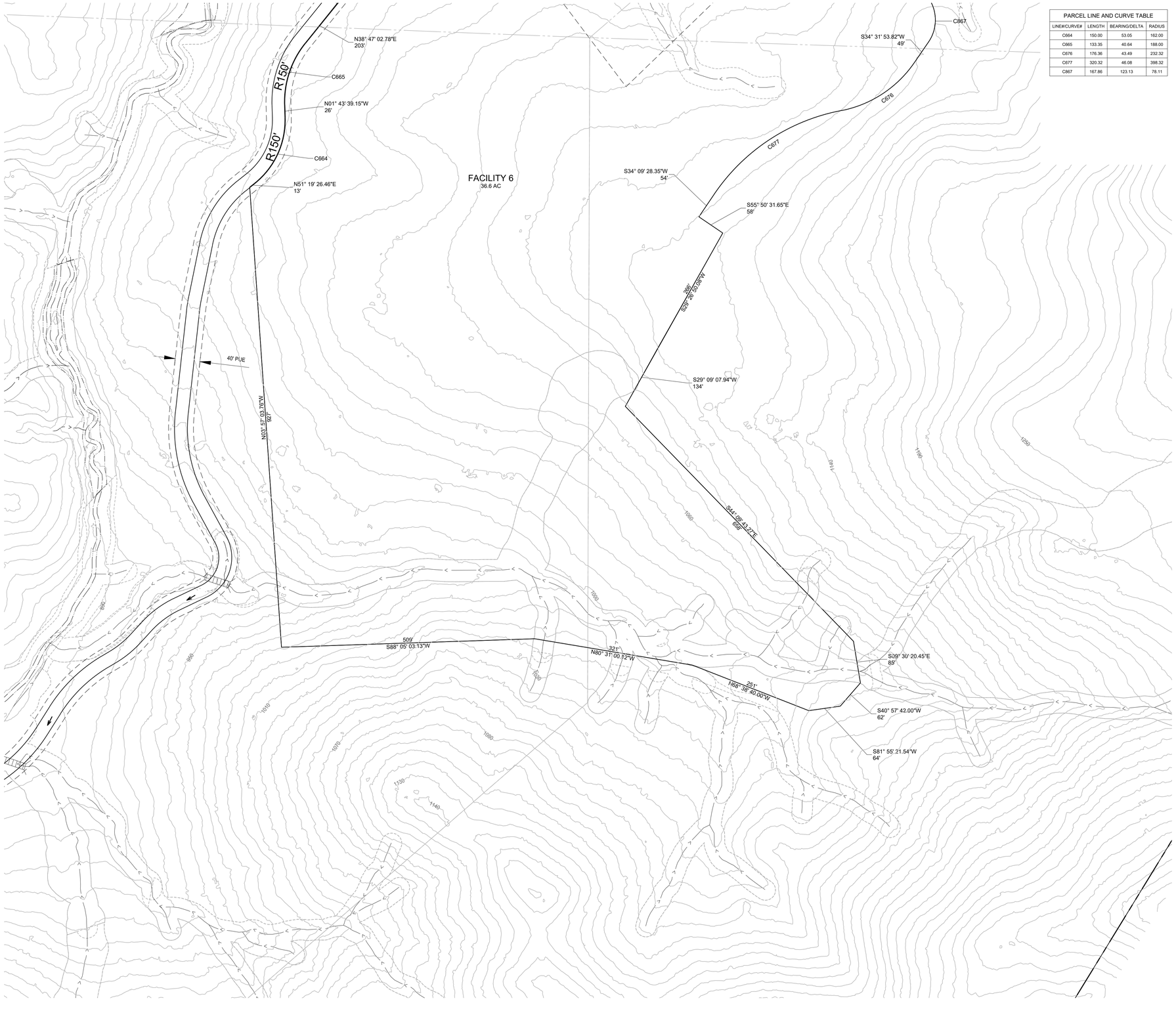
N38° 47' 02.78"E
203'
C665
R150'
R150'
N01° 43' 39.15"W
26'
C664
N51° 19' 26.46"E
13'
FACILITY 6
36.6 AC
40' PUE
N03° 51' 03.76"W
927'
C867
S34° 31' 53.82"W
49'
C676
C677
S34° 09' 28.35"W
54'
S55° 50' 31.65"E
58'
S39° 28' 53.08"W
286'
S29° 09' 07.94"W
134'
S44° 09' 43.27"E
668'
509'
S88° 05' 03.13"W
N80° 31' 00.12"W
251'
N68° 35' 40.00"W
251'
S09° 30' 20.45"E
85'
S40° 57' 42.00"W
62'
S81° 55' 21.54"W
64'
1080
1090
1100
1110
1120
1130
1140
1150
1160
1170
1180
1190
1200
1210
1220
1230
1240
1250
1260
1270
1280
1290
1300
1310
1320
1330
1340
1350
1360
1370
1380
1390
1400
1410
1420
1430
1440
1450
1460
1470

PARCEL LINE AND CURVE TABLE			
LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C361	447.06	20.90	1225.51
C362	69.47	132.67	30.00
C365	230.75	69.95	189.00
C368	33.50	10.21	188.00
C369	339.90	47.38	411.00
C372	74.89	17.95	239.00
C373	22.70	14.31	90.91
C374	30.09	15.53	111.00
C375	147.43	95.14	88.78
C399	213.95	109.45	112.00
C400	160.35	104.41	88.00
C405	104.55	31.56	189.81
C406	37.23	52.93	40.30
C407	65.83	55.76	67.64
C410	24.60	20.83	67.64
C411	29.40	55.90	30.13
C412	425.55	64.41	378.54
C415	346.42	51.16	388.00
C418	93.10	20.36	262.00
C419	335.81	90.76	212.00
C420	29.33	4.33	388.00
C421	33.41	61.67	31.04
C422	80.35	68.06	67.64
C426	413.51	64.99	364.54
C427	10.08	8.53	67.64
C428	37.22	53.35	39.97
C429	158.16	54.00	167.81
C430	89.35	30.00	170.67
C431	74.34	22.44	189.81
C432	173.68	66.94	148.67
L437	163.66	S57° 10' 04.82"E	
L438	49.15	S24° 59' 39.17"W	
L439	111.18	N43° 09' 54.82"W	
L440	80.05	S7° 07' 54.35"W	
L441	2.04	S6° 11' 52.75"E	
L602	80.05	N7° 07' 54.35"E	
L604	442.76	N70° 17' 53.25"W	
L605	192.90	N70° 06' 15.04"W	
L615	49.14	N23° 49' 42.55"E	
L616	302.02	N63° 25' 01.34"W	



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL–DE–SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE

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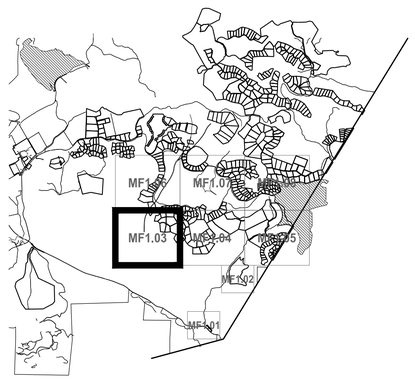
MAHA FARMS SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION MF



SHEET LAYOUT
NOT TO SCALE

0 100' 200' 400' NORTH

MF SUBDIVISION PLAN

MF1.03

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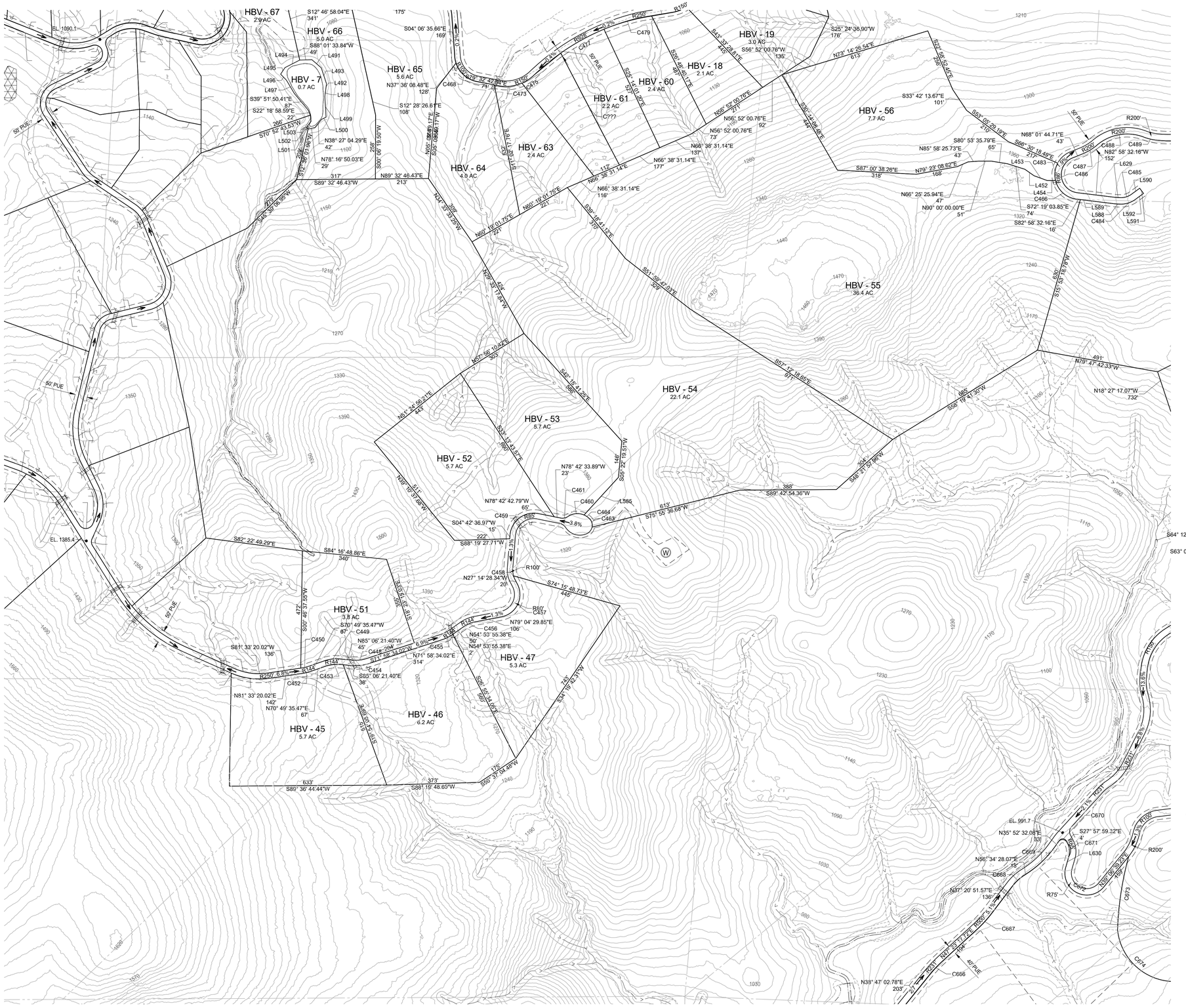

LEGEND

- PARCEL BOUNDARY
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- GROUND WATER WELL (WELL)
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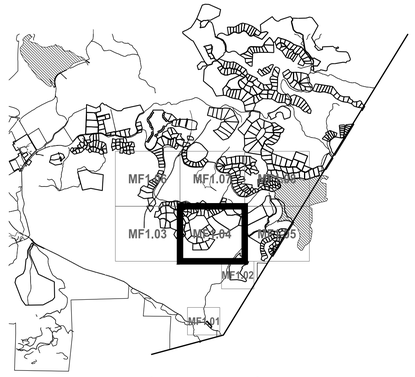
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE

SHEET LAYOUT
NOT TO SCALE



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MAHA FARMS SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION MF

MF SUBDIVISION PLAN

MF1.04

PARCEL LINE AND CURVE TABLE			
LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C377	173.66	52.64	189.00
C378	142.46	50.38	162.00
C380	173.52	112.98	88.00
C381	27.95	6.73	238.00
C385	220.85	112.98	112.00
C386	32.18	13.35	138.13
C387	30.77	6.73	262.00
C389	48.63	43.54	64.00
C390	91.20	85.29	61.26
C391	41.91	80.05	30.00
C392	44.76	22.28	115.09
C393	60.65	54.29	64.00
C394	42.24	17.78	136.11
C395	67.18	33.73	114.11
C396	154.34	98.53	89.74
C397	94.22	62.77	86.00
C398	52.12	21.76	137.24
C401	152.75	41.28	212.00
C402	44.77	85.49	30.01
C403	54.91	80.12	39.26
C404	146.84	97.83	86.00
C433	214.02	39.43	311.00
C434	128.95	49.92	147.99
C435	64.85	123.85	30.00
C436	247.32	37.96	373.32
C437	43.68	7.12	351.32
C438	189.06	30.83	351.32
C439	75.90	7.36	591.11
C440	29.40	56.15	30.00
C441	148.12	49.92	169.99
C442	198.88	39.43	289.00
C443	70.12	62.77	64.00
C444	61.92	31.75	111.74
C445	274.37	26.59	591.11
C446	62.84	12.58	286.16
C447	72.03	17.27	239.00
C448	53.20	22.92	133.00
C449	74.15	29.10	145.98
C450	31.23	13.45	133.00
C451	146.97	29.10	289.37
C452	29.02	10.73	155.00
C453	71.11	23.58	172.79
C454	62.00	22.92	155.00
C455	46.20	17.08	155.00
C456	56.12	24.18	133.00
C457	168.86	106.32	91.00
C458	17.05	10.98	89.00
C459	161.82	96.58	96.00
C460	64.71	54.81	67.64
C461	37.22	53.35	39.97
C463	38.03	58.78	37.07
C464	25.72	21.78	67.64
C466	119.85	69.36	99.00
C468	118.27	60.51	112.00
C473	113.47	40.34	161.16
C475	57.84	20.58	161.00
C477	198.82	12.66	900.00
C479	199.44	13.20	865.92
C483	71.85	41.58	99.00
C484	61.46	35.57	99.00
C485	45.32	35.57	73.00
C486	192.39	151.00	73.00

PARCEL LINE AND CURVE TABLE			
LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C487	68.65	18.47	213.00
C488	200.01	61.28	187.00
C489	56.88	15.30	213.00
C666	64.33	7.55	488.00
C667	89.72	10.04	512.00
C668	63.09	19.23	188.00
C669	149.02	20.70	412.51
C670	42.61	142.65	17.11
C671	58.39	81.10	41.25
C672	240.61	156.66	88.00
C673	300.34	13.39	1285.38
C674	334.89	82.83	231.65
C861	92.13	38.19	138.23
L436	17.53	S24° 00' 15.47"W	
L443	195.91	N68° 10' 14.71"W	
L444	4.60	S19° 09' 59.67"E	
L445	10.27	N21° 09' 03.86"W	
L446	21.81	N58° 53' 33.33"E	
L447	7.21	S58° 53' 33.33"W	
L448	45.75	S70° 43' 26.87"E	
L449	68.95	S77° 27' 08.44"E	
L450	143.97	N77° 27' 08.44"W	
L452	45.23	S54° 49' 59.81"E	
L453	56.75	S70° 01' 35.24"E	
L454	33.36	N89° 22' 51.38"E	
L480	160.54	S82° 14' 58.96"W	
L481	57.69	N87° 51' 29.09"W	
L482	162.19	S0° 23' 07.14"W	
L483	104.66	N66° 17' 38.85"W	
L484	96.09	N79° 04' 01.59"W	
L485	195.26	N0° 05' 28.95"E	
L486	113.49	N0° 05' 28.95"E	
L487	84.73	N55° 58' 43.97"W	
L489	153.51	S76° 17' 02.62"W	
L490	159.76	N76° 17' 02.62"E	
L491	50.12	N49° 05' 59.16"W	
L492	23.63	N7° 28' 30.83"E	
L493	67.32	N18° 13' 01.23"W	
L494	66.63	S62° 59' 17.84"W	
L495	31.58	S33° 26' 16.72"W	
L496	33.56	S43° 44' 28.79"E	
L497	61.93	S30° 43' 31.36"E	
L498	28.14	N7° 28' 30.83"E	
L499	83.45	N3° 28' 11.69"W	
L500	20.29	N64° 24' 37.27"E	
L501	9.50	S33° 42' 12.22"E	
L502	28.58	S37° 31' 04.75"W	
L503	25.50	S7° 07' 42.59"E	
L585	205.17	S42° 23' 59.08"W	
L588	28.96	S86° 52' 24.09"E	
L589	136.56	S82° 58' 32.16"E	
L590	40.20	S53° 39' 37.26"W	
L591	26.00	N36° 20' 22.74"W	
L592	40.20	N53° 39' 37.26"E	
L596	104.53	N39° 37' 04.16"W	
L597	34.85	N70° 43' 26.87"W	
L598	50.68	S57° 45' 43.25"W	
L603	383.22	N68° 10' 11.48"E	
L629	25.42	N86° 52' 24.09"W	
L630	45.10	S15° 46' 10.78"W	

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CIVIL
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NO	DATE	ISSUANCE

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PROJECT NO. 18-016
DATE JULY 31, 2023
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CHECKED CA,MH,SG

MAHA FARMS SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

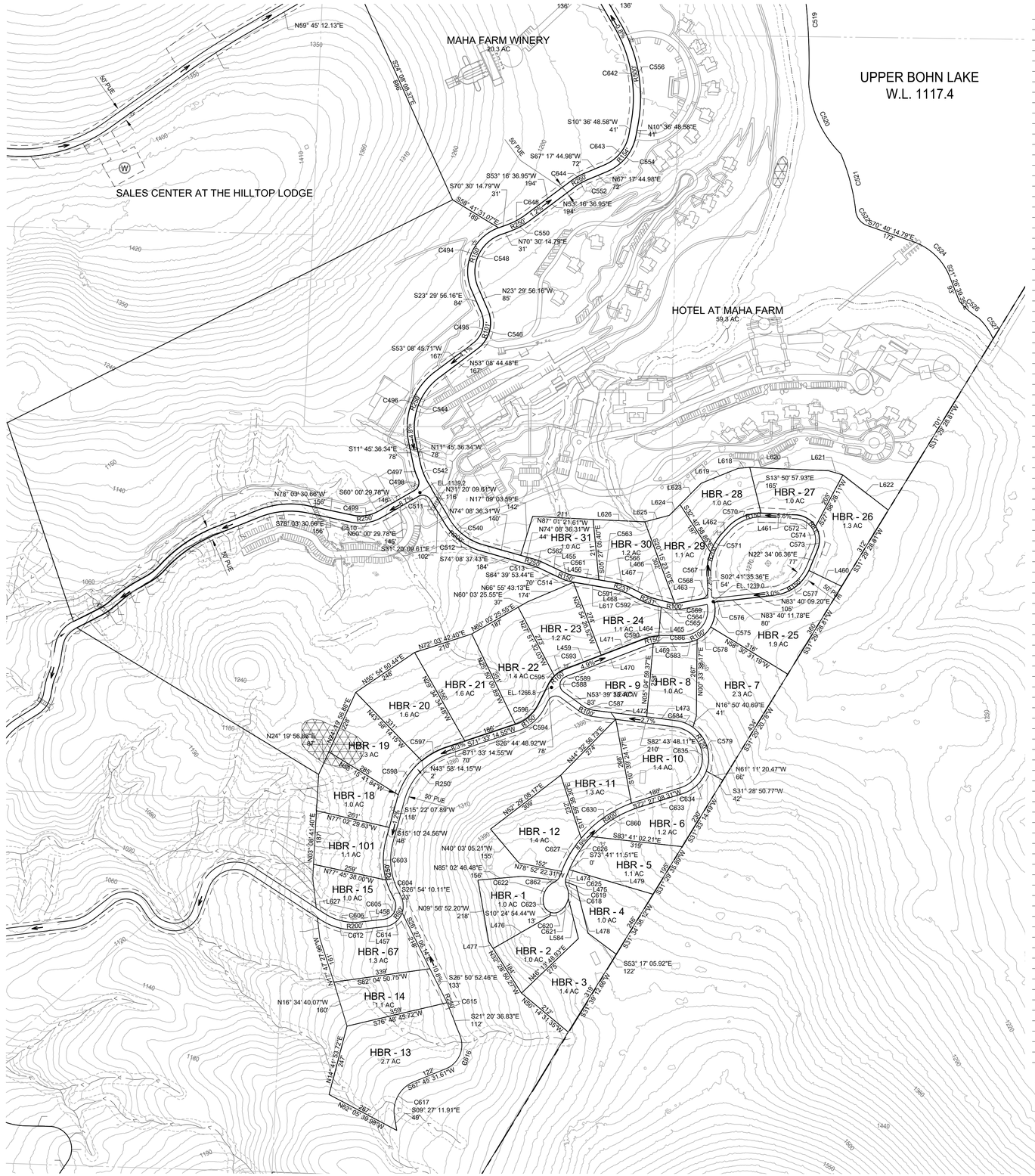


TENTATIVE MAP
SUBDIVISION MF

MF SUBDIVISION PLAN

MF1.04A

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG1\PKG1-PARCELS AND ROADS.DWG



PARCEL LINE AND CURVE TABLE

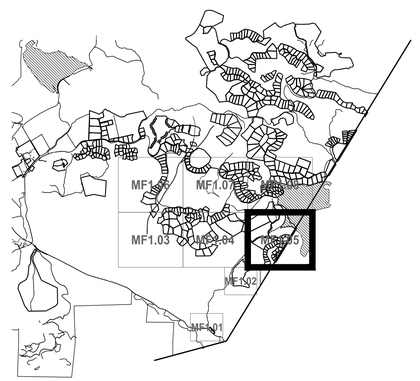
LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C490	164.94	18.01	524.67
C491	212.19	23.17	524.67
C492	243.83	5.39	2590.72
C494	266.86	94.38	162.01
C495	119.03	76.64	88.98
C496	275.28	64.91	243.00
C497	57.80	12.60	262.79
C498	44.19	84.39	30.00
C499	94.41	41.93	129.00
C500	183.45	33.69	312.00
C501	224.44	24.14	532.70
C502	58.06	17.60	189.00
C503	80.53	11.23	411.00
C504	44.85	13.60	189.00
C505	50.07	13.60	211.00
C506	76.22	11.23	389.00
C507	64.82	17.60	211.00
C508	214.63	26.22	469.00
C509	169.33	33.69	288.00
C510	111.98	41.93	153.00
C511	46.42	88.66	30.00
C512	157.38	42.53	212.00
C513	38.97	9.38	238.00
C514	51.34	17.67	166.50
C519	443.95	12.70	2003.46
C520	274.08	41.12	381.93
C521	199.18	15.83	721.12
C522	74.33	68.58	62.10
C524	179.50	48.50	212.05
C526	91.15	19.93	262.12
C527	89.14	23.02	221.87
C540	173.98	49.30	202.20
C542	81.32	19.58	238.00
C544	248.09	64.91	219.00
C546	151.13	76.64	112.98
C548	226.41	94.00	138.00
C550	78.78	17.23	262.00
C552	58.23	14.02	238.00
C554	164.22	56.68	166.00
C556	363.25	40.65	512.00
C561	37.69	15.65	138.00
C562	43.34	9.48	262.00
C563	39.26	0.06	36147.96
C564	18.83	12.26	88.00
C565	49.62	12.98	219.00
C566	84.37	19.31	250.38
C567	83.83	19.17	250.55
C568	35.93	82.35	25.00
C569	18.83	12.26	88.00
C570	130.13	47.82	155.91
C571	73.75	19.11	221.07
C572	82.46	51.19	92.29
C573	50.23	29.71	96.86
C574	35.87	25.65	80.12
C575	85.00	35.91	135.60
C576	25.76	87.05	16.95
C577	157.43	57.82	156.00
C578	65.87	31.78	118.75
C579	171.95	75.21	131.00
C583	50.79	26.26	110.83
C584	62.96	27.54	131.00
C586	24.88	10.27	138.88
C587	44.03	28.34	89.00
C588	59.02	112.71	30.00
C589	15.24	10.04	87.00
C590	52.46	18.28	164.43
C591	66.81	17.48	219.00
C592	55.06	12.98	243.00
C593	46.02	23.75	111.00
C594	59.89	30.90	111.05
C595	35.97	15.07	136.77
C596	49.08	20.23	139.00
C597	97.16	21.33	261.00
C598	146.21	31.99	261.91
C603	140.93	30.70	263.00
C604	52.21	11.37	263.00
C605	90.48	110.30	47.00
C606	129.61	39.71	187.00
C612	147.63	39.71	213.00
C614	81.73	64.15	73.00
C615	11.59	2.78	239.00
C616	138.41	89.10	89.00
C617	149.58	77.21	111.00
C618	39.45	34.46	65.59
C619	20.23	29.00	39.98
C620	38.04	58.78	37.08
C621	51.03	43.22	67.65
C622	90.44	76.59	67.65
C623	38.04	58.78	37.08
C625	16.99	24.35	39.98
C626	139.53	20.55	389.00
C627	134.59	20.98	367.53
C630	216.62	30.20	411.00
C633	162.26	0.93	10000.00
C634	118.78	51.95	131.00
C635	294.29	154.70	109.00
C642	346.23	40.65	488.00
C643	140.48	56.68	142.00
C644	64.11	14.02	262.00
C645	71.56	17.23	238.00

PARCEL LINE AND CURVE TABLE

LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C675	167.86	123.13	78.11
C860	194.05	27.87	398.95
C862	15.46	21.98	40.32
L455	74.76	N64° 39' 52.45"W	
L456	88.07	N80° 18' 16.93"W	
L457	82.99	N83° 24' 13.52"E	
L458	82.99	S83° 24' 13.52"W	
L459	133.47	S69° 05' 35.03"W	
L460	127.38	N64° 09' 06.14"W	
L461	121.18	N87° 11' 54.49"W	
L462	31.99	S42° 45' 59.12"W	
L463	77.29	S79° 39' 35.24"W	
L464	23.76	S75° 48' 52.20"E	
L465	101.16	S4° 41' 36.58"W	
L466	47.52	N75° 48' 52.20"W	
L467	39.59	N62° 49' 58.57"W	
L468	39.59	S62° 49' 58.57"E	
L469	79.04	N89° 43' 24.58"E	
L470	318.36	N69° 08' 17.04"E	
L471	159.95	S69° 05' 33.48"W	
L472	184.93	N82° 57' 08.07"W	
L473	104.23	N82° 30' 08.05"W	
L474	27.46	N21° 23' 38.75"E	
L475	40.40	S69° 17' 09.64"E	
L476	228.94	N60° 10' 58.87"E	
L477	28.26	S32° 28' 50.27"E	
L478	170.66	S14° 04' 50.48"E	
L479	304.71	S73° 47' 11.51"E	
L584	144.60	N14° 07' 12.81"W	
L617	135.64	S80° 18' 40.37"E	
L618	40.07	N85° 44' 04.74"E	
L619	139.82	N68° 03' 50.94"E	
L620	275.95	N87° 34' 59.07"W	
L621	51.44	N73° 33' 03.61"W	
L622	200.62	N52° 13' 36.70"W	
L623	104.76	N44° 48' 38.40"E	
L624	53.33	N44° 48' 38.40"E	
L625	88.31	N75° 14' 31.65"E	
L626	180.70	N87° 25' 03.00"W	
L627	35.73	N57° 39' 46.08"W	
L628	84.49	S88° 48' 03.64"E	

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL–DE–SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



SHEET LAYOUT
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PROJECT NO. 18-016
DATE JULY 31, 2023
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CHECKED CA,MH,SG

MAHA FARMS SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION MF

MF SUBDIVISION PLAN

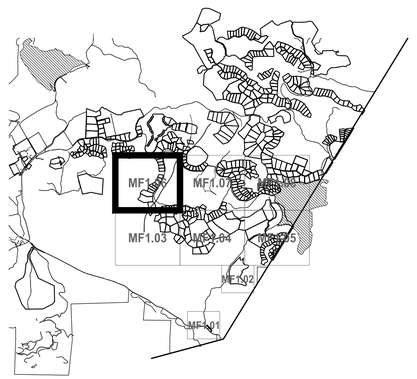
MF1.05



PARCEL LINE AND CURVE TABLE			
LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C345	202.92	11.50	1011.00
C346	214.70	12.17	1011.00
C347	212.27	12.03	1011.00
C348	215.87	12.23	1011.00
C349	152.79	8.66	1011.00
C350	194.55	22.84	487.98
C352	47.88	19.74	139.00
C353	95.20	39.47	138.18
C354	102.02	52.19	112.00
C355	146.48	74.93	112.00
C356	155.26	37.38	238.00
C357	214.00	86.85	138.00
C358	65.63	15.80	238.00
C359	72.66	37.17	112.00
C360	201.34	54.42	212.00
C370	123.01	32.58	216.33
C371	89.27	26.76	191.16
C376	171.94	87.96	112.00
C417	189.09	57.63	188.00
C864	230.75	69.95	189.00
L442	42.01	N68° 27' 47.57"W	
L583	10.71	N60° 38' 52.93"W	
L599	119.04	N79° 18' 54.52"E	
L600	282.87	S4° 49' 38.82"W	

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



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PROJECT NO. 18-016
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MAHA FARMS SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

TENTATIVE MAP
SUBDIVISION MF

MF SUBDIVISION PLAN

MF1.06

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG1\PKG1-PARCELS AND ROADS.DWG



PARCEL LINE AND CURVE TABLE			
LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C1	191.91	28.34	388.00
C2	140.37	28.03	286.96
C3	211.29	46.38	261.00
C4	55.06	105.16	30.00
C5	46.07	29.66	89.00
C6	37.32	19.27	111.00
C379	26.46	24.46	62.00
C382	93.14	47.65	112.00
C384	78.87	118.92	38.00
C480	61.83	21.87	162.00
C481	61.83	21.87	162.00
C482	28.35	10.03	162.00
C646	55.82	28.55	112.00
C648	123.14	80.17	88.00
C662	96.34	49.29	112.00
C663	22.29	5.37	238.00
C678	134.37	22.84	337.00
C679	34.71	7.56	263.00
C685	89.63	21.67	237.00
C686	101.51	24.54	237.00
C687	58.96	15.86	213.00
C688	65.54	19.24	195.15
C690	49.20	15.07	187.00
C693	23.51	6.32	213.00
C695	29.21	8.95	187.00
C697	115.79	19.63	338.00
C699	155.92	26.13	341.89
C700	81.50	19.70	237.00
C701	183.91	63.48	166.00
C702	50.71	17.40	167.00
C703	144.56	17.01	487.00
C704	199.65	33.94	337.00
C705	187.19	37.37	287.00
C713	7.76	0.73	612.00
C717	4.18	11.58	20.67
C718	30.31	57.88	30.00
C719	57.45	29.66	111.00
C720	29.93	19.27	89.00
C721	140.50	58.93	136.60
C728	6.88	1.51	261.00
C729	158.44	31.97	284.00
C730	144.47	85.34	97.00
C731	79.35	52.86	86.00
C732	32.99	19.48	97.00
C733	87.23	92.56	54.00
C734	110.57	117.32	54.00
C735	40.92	26.34	89.00
C736	22.94	17.29	76.00
C737	140.69	106.07	76.00

PARCEL LINE AND CURVE TABLE			
LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C738	41.74	31.47	76.00
C739	128.75	30.87	239.00
C748	194.02	42.59	261.00
C759	134.37	22.84	337.00
C824	27.51	6.20	254.00
C827	199.79	47.90	239.00
C829	163.85	81.92	114.60
C831	166.19	37.49	254.00
C852	21.82	7.19	173.95
C855	21.77	49.89	25.00
C856	143.81	29.85	276.05
L1	210.85	S89° 48' 48.47"E	
L2	140.35	N87° 43' 38.61"W	
L3	14.76	N27° 50' 17.12"E	
L451	118.67	S10° 25' 50.49"E	
L520	105.14	S73° 00' 57.19"W	
L521	277.39	N74° 11' 17.91"E	
L522	14.14	N87° 43' 04.80"W	
L523	535.67	S2° 12' 24.20"E	
L525	638.08	S39° 24' 37.81"E	
L532	83.92	N60° 24' 39.08"W	
L533	83.38	S60° 24' 39.07"E	
L534	83.92	N60° 24' 39.08"W	
L535	124.52	S35° 34' 24.52"E	
L536	31.13	S60° 24' 39.07"E	
L537	28.71	S35° 34' 24.52"E	
L539	62.79	S35° 34' 24.52"E	
L542	26.10	S8° 17' 05.02"E	
L544	173.70	S8° 17' 05.02"E	
L557	91.30	N20° 03' 39.13"W	
L601	282.87	S4° 49' 38.82"W	
L606	132.76	S82° 52' 34.55"E	
L607	21.15	S60° 17' 16.81"E	
L610	55.44	N70° 14' 51.56"W	
L611	105.14	S73° 00' 57.19"W	
L612	7.83	N77° 20' 08.54"W	

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL–DE–SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK
- GROUND WATER WELL
- ELECTRICAL SUBSTATION
- DEVELOPMENT RESTRICTION AREA
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- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
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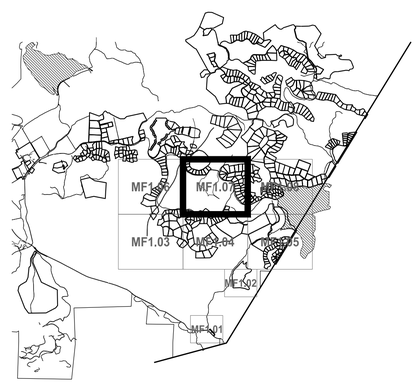
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



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No. 84470
CIVIL
STATE OF CALIFORNIA

SCALE: 1:200
0 1"
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NO	DATE	ISSUANCE

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

MAHA FARMS SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

TENTATIVE MAP
SUBDIVISION MF

MF SUBDIVISION PLAN

MF1.07

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG1\PKG1-PARCELS AND ROADS.DWG

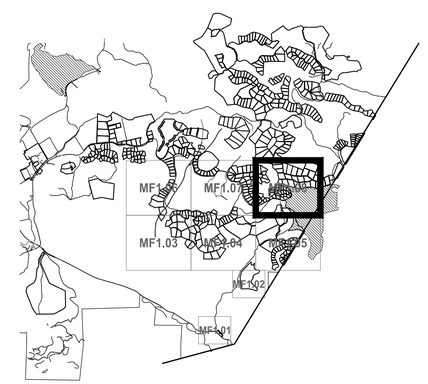


PARCEL LINE AND CURVE TABLE			
LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C493	116.29	18.36	362.92
C516	20.35	1.44	812.00
C518	582.68	26.54	1258.09
C558	186.77	14.04	762.00
C560	190.70	45.91	238.00
C636	94.87	24.98	217.61
C637	208.75	73.59	162.53
C638	45.21	86.35	30.00
C639	97.35	7.08	788.00
C640	209.93	45.91	262.00
C641	180.88	14.04	738.00
C741	48.91	11.73	239.00
C742	134.54	67.62	114.00
C743	111.56	18.69	342.06
C749	157.14	66.20	136.00
C750	75.29	0.43	10000.00
C751	169.39	25.08	387.00
C752	37.28	106.80	20.00
C753	9.88	15.64	36.17
C754	77.56	49.93	89.00
C755	166.12	36.47	261.00
C756	40.03	9.60	239.00
C757	96.74	49.93	111.00
C758	42.71	81.56	30.00
C760	230.55	21.55	613.00
C761	70.61	15.38	263.00
C762	116.70	28.21	237.00
C763	46.09	88.03	30.00
C764	110.95	10.37	613.00
C765	81.13	7.87	591.00
C766	49.31	9.09	310.70
C767	122.46	34.03	206.19
C768	42.91	81.96	30.00
C771	34.99	8.46	237.00
C773	50.30	94.63	30.45
C775	104.81	25.34	237.00
C776	92.39	47.69	111.00
C778	15.37	5.18	170.07
C779	146.56	0.84	10000.00
C780	75.82	49.47	87.82
C781	39.72	75.86	30.00
C782	185.27	30.31	350.23
C783	42.56	81.29	30.00
C785	129.50	28.21	263.00
C786	118.06	103.12	65.60
C787	235.21	32.63	413.08
C788	84.74	43.74	111.00
C789	121.56	92.47	75.32
C790	117.11	75.39	89.00
C791	141.78	42.98	189.00
C792	22.60	13.19	98.17
C795	112.15	62.51	102.79
C796	86.17	1.50	3285.53
C797	120.60	72.81	94.90
C798	96.94	44.60	124.55
C799	43.15	11.67	211.87
C800	149.79	40.68	211.00
C801	25.71	6.98	211.00
C802	28.82	8.74	189.00
C803	101.19	27.48	211.00
C804	75.98	22.48	193.70
C805	118.03	28.54	237.00
C806	43.88	85.30	29.48
C807	38.30	19.77	111.00
C808	39.67	10.77	211.00
C811	28.73	7.80	211.00
C813	77.35	21.01	211.00
C815	39.73	12.05	189.00
C816	73.93	22.41	189.00
C817	129.56	35.18	211.00
C818	172.76	52.13	189.87
C819	182.95	142.35	73.64
C820	226.69	34.27	379.00
C821	142.20	34.09	239.00
C822	13.43	2.03	379.00
C825	115.18	31.28	211.00
C832	143.69	20.10	409.57
C834	103.17	31.28	189.00
C836	52.79	125.39	24.12
C838	40.88	21.89	107.00
C840	38.20	32.19	68.00
C842	133.96	112.88	68.00
C844	30.08	15.08	114.28
C845	62.21	118.82	30.00
C846	22.49	4.94	261.00
C847	19.66	5.48	205.66
C848	22.73	43.41	30.00
C849	34.49	21.25	93.00

PARCEL LINE AND CURVE TABLE			
LINE#/CURVE#	LENGTH	BEARING/DELTA	RADIUS
C850	104.15	72.77	82.00
C851	57.40	40.11	82.00
C853	46.07	32.19	82.00
C854	35.53	21.89	93.00
L504	19.62	N80° 32' 32.28"W	
L505	22.63	S63° 26' 47.91"W	
L506	28.88	S27° 16' 00.93"W	
L507	124.92	S13° 41' 47.74"W	
L508	67.63	S26° 16' 12.03"W	
L509	77.13	S75° 29' 48.37"W	
L510	9.72	N40° 04' 47.76"E	
L511	83.83	N72° 47' 45.06"W	
L512	63.45	N83° 05' 28.43"W	
L513	96.93	S75° 00' 59.77"W	
L514	17.82	S83° 05' 16.85"E	
L515	96.93	N75° 00' 59.77"E	
L516	142.48	S72° 47' 45.06"E	
L517	14.80	N26° 33' 33.90"W	
L518	62.16	N57° 49' 52.60"W	
L531	87.94	N60° 24' 39.05"W	
L545	14.36	S14° 13' 47.78"W	
L546	119.03	S64° 09' 48.81"W	
L547	119.03	N64° 09' 48.81"E	
L548	90.77	N27° 39' 19.77"E	
L549	87.26	S27° 41' 43.65"W	
L550	87.27	S79° 01' 13.16"W	
L551	63.03	N40° 17' 06.69"W	
L552	41.33	S40° 17' 33.05"E	
L553	127.72	S40° 16' 58.16"E	
L554	378.94	N40° 17' 06.69"W	
L555	118.45	S40° 17' 06.69"E	
L556	154.48	S40° 17' 06.69"E	
L558	61.57	N30° 22' 49.96"W	
L559	172.54	N2° 39' 08.98"E	
L560	237.47	S2° 35' 42.55"W	
L561	114.55	N2° 39' 07.59"E	
L562	150.66	S2° 36' 09.43"W	
L563	126.21	S80° 48' 56.09"E	
L564	232.59	N80° 48' 56.09"W	
L565	194.70	S80° 48' 56.09"E	
L566	97.70	N80° 48' 56.09"W	
L567	56.52	N67° 24' 22.93"E	
L568	56.52	S67° 24' 22.93"W	
L569	165.69	N78° 08' 05.66"W	
L570	128.77	S77° 55' 52.47"E	
L571	51.28	S78° 38' 46.70"E	
L572	14.37	N78° 08' 05.66"W	
L573	80.84	S25° 44' 37.39"E	
L574	83.16	N25° 43' 27.38"W	
L575	58.18	N65° 00' 33.20"W	
L576	50.54	N65° 00' 33.20"W	
L577	53.78	S23° 39' 38.53"E	
L578	145.85	S72° 00' 33.07"E	
L579	68.87	N72° 00' 33.07"E	
L580	60.72	S72° 00' 33.07"W	
L581	137.70	N72° 00' 33.07"E	
L609	62.16	S57° 49' 52.60"E	
L613	49.03	S2° 10' 02.33"E	
L614	61.57	S30° 22' 49.96"E	

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



SHEET LAYOUT
NOT TO SCALE

0 100' 200' 400' NORTH

SHERWOOD
DESIGN ENGINEERS
2548 Mission Street
San Francisco, CA 94110
www.sherwoodengineers.com

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PROJECT NO. 18-016
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CHECKED CA,MH,SG

MAHA FARMS SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION MF

MF SUBDIVISION PLAN

MF1.08

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
HBR-01	40,824	14.8%
HBR-02	46,587	15.5%
HBR-03	60,517	20.9%
HBR-04	44,667	14.8%
HBR-05	48,887	19.4%
HBR-06	50,274	24.0%
HBR-07	98,669	26.7%
HBR-08	44,699	21.1%
HBR-09	52,031	21.9%
HBR-10	61,981	30.0%
HBR-11	55,186	30.9%
HBR-12	59,896	20.5%
HBR-13	117,313	32.0%
HBR-14	50,035	33.5%
HBR-15	43,534	33.9%
HBR-16	43,038	10.1%
HBR-17	45,479	8.8%
HBR-18	49,884	36.1%
HBR-19	54,630	20.4%
HBR-20	69,226	24.4%
HBR-21	68,963	31.1%
HBR-22	62,370	31.4%
HBR-23	52,826	23.8%
HBR-24	46,283	20.3%
HBR-25	81,274	20.2%
HBR-26	56,718	22.0%
HBR-27	43,780	30.3%
HBR-28	43,970	31.4%
HBR-29	47,561	23.4%
HBR-30	51,896	27.3%
HBR-31	43,756	25.3%
HBR-32	207,697	28.2%
HBR-33	37,204	18.5%
HBR-34	41,302	19.8%
HBR-35	37,930	11.7%
HBR-36	37,521	10.3%
HBR-37	59,091	8.9%
HBR-38	65,529	7.7%
HBR-39	45,000	5.1%
HBR-40	86,194	28.6%
HBR-41	51,914	13.8%
HBR-42	44,148	19.5%
HBR-43	39,708	22.2%
HBR - 51	56,471	13.1%
HBR - 52	46,399	10.1%
HBR - 53	45,788	13.8%
HBR - 54	83,499	28.2%
HBR - 55	87,398	27.0%

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
HBR - 56	87,243	31.4%
HBR - 57	87,138	29.1%
HBR - 58	87,142	37.1%
HBR - 59	57,285	21.0%
HBR - 60	76,985	24.2%
HBR - 61	87,220	15.1%
HBR - 62	87,235	19.7%
HBR - 63	87,358	20.5%
HBR - 64	33,626	16.7%
HBR - 65	52,731	10.7%
HBR - 66	87,344	30.8%
HBR - 67	58,631	31.6%
HBR - 68	45,648	14.0%
HBR - 69	43,908	12.4%
HBR - 70	65,271	14.0%
HBR - 71	91,083	25.4%
HBR - 72	58,518	10.3%
HBR - 73	68,803	32.7%
HBR - 74	49,219	4.2%
HBR - 75	57,727	9.8%
HBR - 76	59,053	5.3%
HBR - 77	166,372	28.4%
HBR - 78	137,983	32.1%
HBR - 79	145,583	25.4%
HBR - 80	123,431	30.2%
HBR - 81	139,030	28.1%
HBR - 82	155,533	26.5%
HBR - 83	147,389	27.7%
HBR - 84	71,341	22.7%
HBR - 85	94,597	19.6%
HBR - 86	140,927	11.8%
HBR - 87	69,323	10.5%
HBR - 88	98,211	9.5%
HBR - 89	136,779	11.8%
HBR - 90	103,967	9.0%
HBR - 91	117,629	30.7%
HBR - 92	79,999	31.8%
HBR - 93	106,563	27.0%
HBR - 94	72,603	26.5%
HBR - 95	113,421	20.7%
HBR - 96	141,547	34.3%
HBR - 97	116,329	19.1%
HBR - 98	96,584	12.6%
HBR - 99	71,688	27.3%
HBR - 100	50,681	22.8%
HBR - 101	41,581	35.5%
HBR - 102	52,248	27.0%
HBR - 104	50,924	10.7%

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
HBR - 105	47,542	4.3%
HBR - 106	45,749	17.7%
HBR - 107	66,622	11.5%
HBR - 108	87,272	8.3%
HBR - 109	51,743	9.7%
HBR - 110	48,085	8.1%
HBR - 112	49,380	19.8%
HBR - 113	43,650	30.8%
HBV-01	146,325	26.2%
HBV-02	114,289	28.5%
HBV-03	95,157	30.7%
HBV-04	81,502	30.9%
HBV-05	91,235	25.5%
HBV-06	85,485	24.0%
HBV-08	78,416	25.3%
HBV-09	79,843	25.9%
HBV-10	89,909	25.9%
HBV-11	87,834	21.5%
HBV-12	93,408	22.0%
HBV-13	96,423	19.2%
HBV-14	94,225	19.4%
HBV-15	283,581	19.8%
HBV-16	417,206	16.4%
HBV-17	258,411	13.9%
HBV-18	93,165	31.4%
HBV-19	128,901	32.4%
HBV-20	70,535	19.2%
HBV-21	56,048	25.0%
HBV-22	55,897	29.8%
HBV-23	50,071	25.2%
HBV-24	120,160	19.2%
HBV-25	102,972	23.5%
HBV-26	69,142	22.0%
HBV-27	49,672	24.1%
HBV-28	76,557	18.8%
HBV-29	87,382	20.4%
HBV-30	53,982	19.4%
HBV-31	81,168	9.3%
HBV-32	108,055	33.6%
HBV-34	160,543	33.2%
HBV-35	184,643	34.0%
HBV-36	243,964	37.0%
HBV-37	385,819	32.9%
HBV-38	184,815	33.3%
HBV-39	244,087	31.1%
HBV-40	159,760	25.9%
HBV-41	377,316	34.9%
HBV-42	247,744	28.0%

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
HBV-43	153,876	24.9%
HBV-44	151,982	24.3%
HBV-45	247,833	28.4%
HBV-46	271,083	27.2%
HBV-47	229,571	30.9%
HBV-48	195,864	28.0%
HBV-49	218,759	32.7%
HBV-50	268,835	33.2%
HBV-51	165,168	34.7%
HBV-52	248,325	32.2%
HBV-53	249,616	28.9%
HBV-54	961,757	35.0%
HBV-55	1,587,627	34.1%
HBV-56	337,102	30.9%
HBV-57	73,488	40.8%
HBV-58	105,083	35.3%
HBV-60	104,207	27.1%
HBV-61	98,090	26.1%
HBV-62	74,703	26.1%
HBV-63	105,391	28.1%
HBV-64	172,496	22.9%
HBV-65	245,073	26.6%
HBV-66	217,200	27.2%
HBV-67	125,414	20.1%
HBV-68	202,626	26.1%
HBV-69	89,144	24.8%
HBV-70	75,153	23.6%
HBV-71	79,680	26.0%
HBV-72	76,311	24.4%
HBV-73	67,182	19.5%
HBV-74	416,943	29.0%
HBV-75	219,884	30.5%
HBV-76	139,675	25.6%
FARM LAND 1	1,178,150	29.5%
FARM LAND 2	780,005	21.6%
HOTEL AT MAHA FARM	2,583,679	14.5%
MAHA FARM WINERY	885,438	20.0%
SALES CENTER AT THE HILLTOP LODGE	1,599,189	29.0%
FACILITY 6	1,592,418	22.6%

SHERWOOD
DESIGN ENGINEERS
2548 Mission Street
San Francisco, CA 94110
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REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No.84120
CIVIL
STATE OF CALIFORNIA

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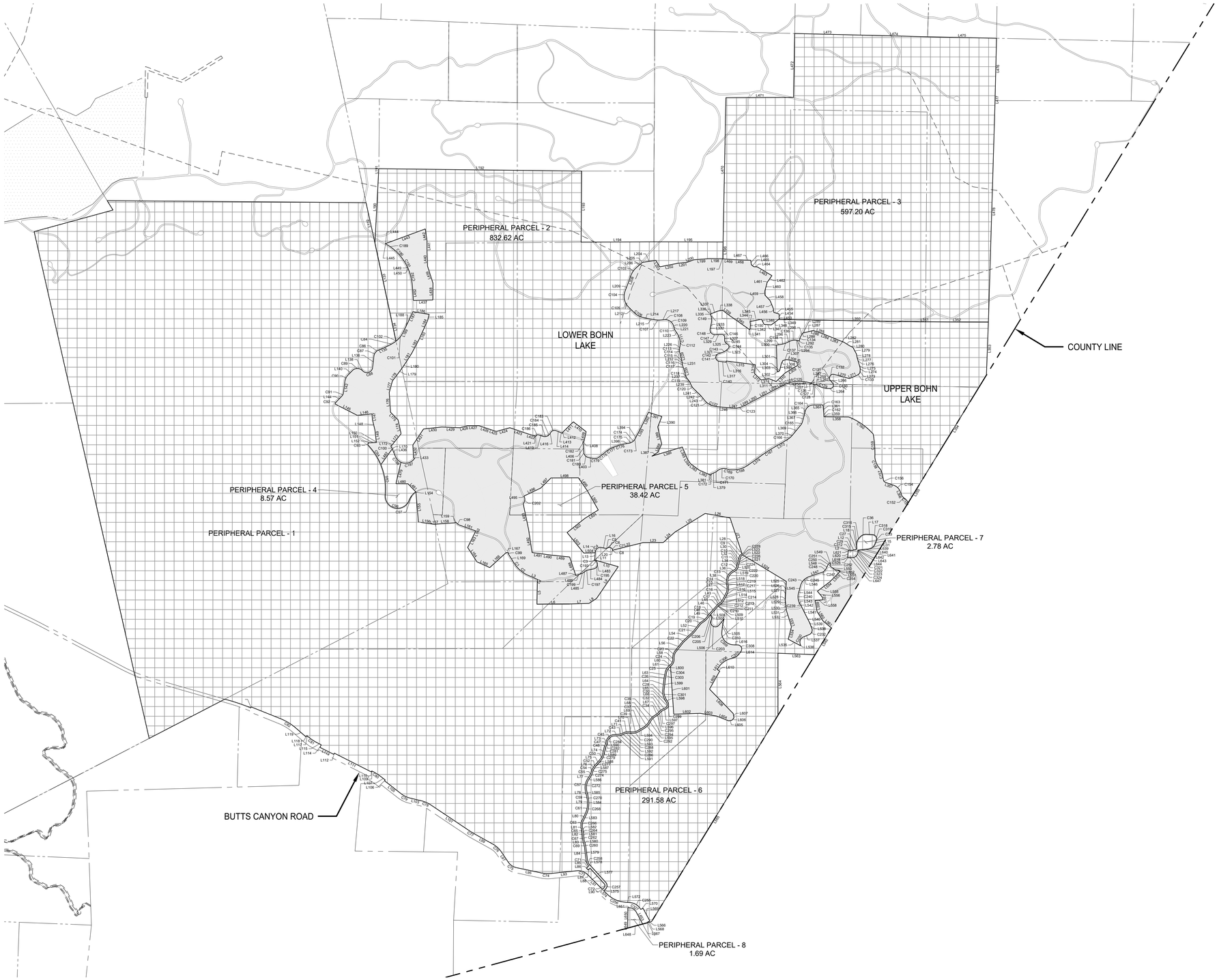
MAHA FARMS
SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION MF

RESIDENTIAL
PARCEL
AVERAGE
SLOPES

MF1.20



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- REMAINDER PARCELS
- DEVELOPMENT PARCELS
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY

0 500' 1000' 2000' NORTH

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2548 Mission Street
San Francisco, CA 94110
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REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No.84120
CIVIL
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MAHA FARMS SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION MF

PERIPHERAL PARCEL PLAN

MF2.01

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C1	75.90	7.36	591.11
C2	274.37	26.59	591.11
C3	40.64	20.98	111.00
C4	161.82	96.58	96.00
C5	37.28	54.54	39.16
C6	90.65	76.33	68.05
C7	37.74	55.92	38.66
C8	0.15	0.22	38.66
C9	106.21	53.85	113.00
C10	49.81	12.04	237.00
C11	31.13	10.94	163.00
C12	59.80	47.58	72.00
C13	188.62	50.74	213.00
C14	95.29	24.42	223.57
C15	134.83	41.31	187.00
C16	91.89	28.16	187.00
C17	46.95	12.63	213.00
C18	29.51	6.43	263.00
C19	157.34	22.71	396.87
C20	71.48	19.23	213.00
C21	85.34	10.04	487.00
C22	75.91	8.48	513.00
C23	151.07	40.64	213.00
C24	126.85	53.05	137.00
C25	147.78	39.75	213.00
C26	28.96	5.30	313.00
C27	35.93	82.35	25.00
C28	190.11	34.80	313.00
C29	18.83	12.26	88.00
C30	100.55	92.92	62.00
C31	157.43	57.82	156.00
C32	80.90	21.76	213.00
C33	50.23	29.71	96.86
C34	72.89	19.42	215.05
C35	147.49	27.00	313.00
C36	130.13	47.82	155.91
C37	139.02	27.75	287.00
C39	103.98	31.86	187.00
C41	93.35	25.11	213.00
C43	63.66	19.50	187.00
C45	212.84	74.82	163.00
C47	51.86	12.54	237.00
C48	63.55	12.65	287.73
C50	93.65	28.69	187.00
C52	49.94	9.14	313.00
C54	88.96	18.90	269.64
C55	72.95	17.64	237.00
C57	256.08	46.88	313.00
C59	79.88	11.83	387.00
C61	186.00	27.54	387.00
C63	135.89	36.55	213.00
C65	26.28	8.05	187.00
C67	92.92	12.89	413.00
C69	45.23	9.03	287.00
C71	123.01	33.09	213.00
C72	76.10	87.21	50.00
C73	221.85	50.85	249.97
C74	171.17	17.83	549.94
C75	192.84	44.20	249.97
C76	211.25	26.90	449.95
C77	77.09	4.65	949.90
C78	195.80	20.40	549.94
C79	192.92	24.57	449.95
C80	209.14	11.20	1069.89
C81	230.39	14.35	919.90
C82	353.96	19.32	1049.89
C83	413.77	5.88	4029.57
C84	202.40	12.68	914.48
C86	48.00	39.27	70.03
C87	95.08	39.47	138.00
C88	248.49	127.12	112.00
C89	214.00	88.85	138.00
C90	155.26	37.38	238.00
C91	72.66	37.17	112.00
C92	65.63	15.80	238.00
C93	69.47	132.67	30.00
C94	447.06	20.90	1225.51
C95	592.44	27.70	1225.51
C96	684.79	165.59	236.94
C97	213.93	32.38	378.54
C98	95.85	36.94	148.67
C99	29.40	56.15	30.00
C100	51.25	15.54	189.00
C101	194.78	22.60	493.79
C102	18.85	1.18	914.48
C103	191.91	28.34	388.00
C104	140.88	28.03	288.00
C105	187.29	36.15	296.82
C106	199.65	33.94	337.00
C107	144.56	17.01	487.00
C108	50.11	21.76	131.93
C109	184.10	62.26	169.41
C110	81.50	19.70	237.00
C111	144.72	24.48	338.67
C112	115.79	19.63	338.00
C113	29.21	8.95	187.00
C114	49.20	15.07	187.00
C115	23.51	6.32	213.00
C116	56.07	17.06	188.32
C117	55.56	5.59	569.62
C118	101.51	24.54	237.00
C119	58.96	15.86	213.00
C120	89.63	21.67	237.00
C121	134.37	22.84	337.00
C122	134.37	22.84	337.00
C123	169.39	25.08	387.00
C124	230.55	21.55	613.00
C125	105.38	9.85	613.00
C126	153.19	22.05	398.00
C127	18.36	2.64	398.00
C128	39.72	75.86	30.00

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C129	235.21	32.63	413.08
C130	118.06	103.12	65.60
C131	2.39	1.82	75.32
C132	119.17	90.65	75.32
C133	96.94	44.60	124.55
C134	92.06	22.26	237.00
C135	12.55	23.97	30.00
C136	111.98	31.12	206.19
C137	49.31	9.09	310.70
C138	68.60	6.21	633.31
C139	68.58	15.00	262.00
C140	41.74	31.47	76.00
C141	140.69	106.07	76.00
C142	22.94	17.29	76.00
C143	40.92	26.34	89.00
C144	110.98	117.75	54.00
C145	79.35	52.86	86.00
C146	87.23	92.56	54.00
C147	32.99	19.48	97.00
C148	144.47	85.34	97.00
C149	158.44	31.97	284.00
C150	121.60	29.15	239.00
C151	89.13	23.13	220.81
C152	91.15	19.93	262.12
C154	179.50	48.50	212.05
C156	74.33	68.58	62.10
C157	199.18	15.83	721.12
C158	274.08	41.12	381.93
C159	443.95	12.70	2003.46
C160	582.68	26.54	1258.09
C162	77.60	5.64	788.00
C163	45.21	86.35	30.00
C164	208.75	73.59	162.53
C165	94.87	24.98	217.61
C166	116.29	18.36	362.93
C167	243.83	5.39	2590.72
C168	377.12	41.18	524.67
C169	56.88	15.30	213.00
C170	200.01	61.28	187.00
C171	68.65	18.47	213.00
C172	51.04	40.06	73.00
C173	28.35	10.03	162.00
C174	61.83	21.87	162.00
C175	61.83	21.87	162.00
C176	199.26	13.20	865.15
C177	199.53	21.66	527.93
C178	197.88	7.17	1581.72
C179	114.06	40.34	162.00
C180	118.27	60.51	112.00
C181	27.86	14.25	112.00
C182	29.97	19.51	88.00
C183	123.14	80.17	88.00
C184	55.82	28.55	112.00
C185	93.14	47.65	112.00
C186	62.65	94.46	38.00
C187	298.03	80.55	212.00
C188	159.46	41.84	218.35
C189	202.92	11.50	1011.00
C190	214.70	12.17	1011.00
C191	212.87	11.18	1091.15
C192	331.82	18.11	1049.64
C193	17.05	10.98	89.00
C195	168.86	106.32	91.00
C197	56.12	24.18	133.00
C199	47.91	17.66	155.40
C202	130.25	66.79	111.74
C203	240.61	156.66	88.00
C205	54.96	43.74	72.00
C206	42.01	117.97	20.41
C210	0.01	0.00	187.08
C211	16.51	5.06	187.00
C212	24.70	7.57	187.00
C213	0.37	0.10	216.75
C214	104.67	28.16	213.00
C217	153.58	41.31	213.00
C219	61.77	18.11	195.41
C220	165.59	50.74	187.00
C222	81.39	47.58	98.00
C224	26.16	10.94	137.00
C226	55.28	12.04	263.00
C228	81.77	53.85	87.00
C230	149.58	77.21	111.00
C232	138.41	89.10	89.00
C239	52.21	11.37	263.00
C240	140.93	30.70	263.00
C243	146.21	31.99	261.91
C245	97.16	21.33	261.00
C247	59.89	30.90	111.05
C248	49.08	20.23	139.00
C250	35.97	15.07	136.77
C251	26.57	13.71	111.00
C252	59.02	112.71	30.00
C254	44.96	49.49	52.05
C255	249.77	57.25	249.97
C256	386.81	40.30	549.94
C257	136.99	87.21	90.00
C258	106.93	32.76	187.02
C260	49.33	9.03	313.00
C262	87.07	12.89	387.00
C264	29.93	8.05	213.00
C266	119.30	36.55	187.00
C268	198.50	27.54	413.00
C270	85.25	11.83	413.00
C272	234.81	46.88	287.00
C274	81.38	17.73	263.00
C275	80.74	18.99	243.64
C277	45.79	9.14	287.00
C279	106.67	28.69	213.00
C281	58.17	12.73	261.73
C282	58.22	12.68	263.00
C284	178.89	74.82	137.00

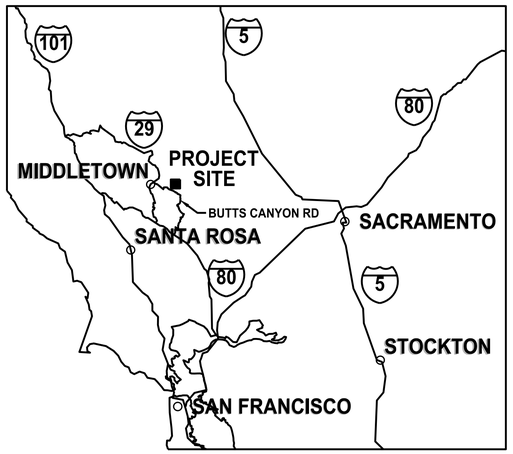
PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C286	72.51	19.50	213.00
C288	81.96	25.11	187.00
C290	118.43	31.86	213.00
C292	151.62	27.75	313.00
C294	134.48	26.85	287.00
C295	81.03	19.26	241.05
C297	71.02	21.76	187.00
C299	142.72	92.92	88.00
C301	174.31	34.80	287.00
C303	136.95	2.05	3819.69
C304	129.74	39.75	187.00
C306	320.32	46.08	398.32
C307	176.36	43.49	232.32
C308	167.86	123.13	78.11
C309	334.89	82.83	231.65
C310	300.34	13.39	1285.38
C312	18.83	12.26	88.00
C315	83.83	19.17	250.55
C316	105.76	24.35	248.85
C318	82.46	51.19	92.29
C319	35.87	25.65	80.12
C321	47.77	20.19	135.60
C322	37.22	15.37	138.74
C323	65.87	31.78	118.75
C324	50.77	25.74	113.00
C326	6.32	2.61	138.88
C327	149.86	57.25	149.98
L2	23.76	S75° 48' 52.20"E	
L3	215.30	S66° 05' 52.95"E	
L4	22.63	S37° 28' 30.68"W	
L5	455.07	S0° 56' 30.71"W	
L6	633.44	N89° 36' 44.44"E	
L7	373.14	N88° 19' 48.65"E	
L8	175.14	N56° 37' 04.48"E	
L9	743.43	N34° 19' 42.31"E	
L10	444.74	N74° 15' 48.73"W	
L11	22.00	S73° 44' 03.99"W	
L12	77.29	N79° 39' 35.24"E	
L13	115.71	N4° 42' 36.97"E	
L14	15.12	N4° 42' 36.97"E	
L15	77.26	S22° 34' 06.36"W	
L16	87.53	S78° 42' 42.79"E	
L17	121.18	S87° 11' 54.49"E	
L18	54.38	N2° 41' 35.36"W	
L20	0.03	S75° 56' 22.88"E	
L22	612.77	N75° 56' 22.88"E	
L23	388.08	N89° 42' 54.36"E	
L24	303.53	N48° 21' 57.96"E	
L25	684.83	N58° 19' 41.30"E	
L26	491.03	S79° 47' 42.33"E	
L27	730.83	S18° 26' 49.07"E	
L28	3.22	S63° 04' 05.75"W	
L30	42.69	S9° 12' 50.08"W	
L32	19.43	S21° 15' 23.15"W	
L34	31.12	S10° 18' 50.59"W	
L36	73.47	S57° 53' 54.95"W	
L38	32.62	S7° 09' 40.57"W	
L41	144.26	S26° 46' 41.95"W	
L43	10.70	S54° 56' 02.51"W	
L45	25.01	S42° 14' 29.80"W	
L46	206.33	S42° 18' 44.52"W	
L48	2.80	S35° 52' 32.08"W	
L49	30.18	S35° 52' 32.08"W	
L52	136.05	S37° 20' 51.57"W	
L54	190.37	S47° 23' 17.72"W	
L56	198.81	S38° 54' 35.74"W	
L58	26.35	S1° 43' 39.15"E	
L60	12.71	S51° 19' 26.46"W	
L61	11.58	S51° 19' 26.46"W	
L63	110.42	S11° 34' 16.71"W	
L64	204.55	S6° 16' 13.11"W	
L65	90.95	S28° 31' 45.05"E	
L66	60.83	S64° 23' 28.92"W	
L67	33.73	S42° 37' 50.58"W	
L68	49.10	S32° 15' 58.96"W	
L69	121.67	S60° 01' 12.66"W	
L70	77.67	N88° 07' 19.63"W	
L71	46.50	S66° 45' 58.57"W	
L72	88.44	S86° 16' 13.52"W	
L73	21.27	S11° 27' 18.51"W	
L74	137.07	S13° 03' 10.23"W	
L75	141.20	S41° 44' 48.60"W	
L76	30.19	S32° 36' 19.03"W	
L77	69.64	S33° 00' 31.57"W	
L78	103.50	S13° 52' 06.46"E	
L79	58.41	S2° 02' 31.97"E	
L80	158.77	S25° 29' 42.88"W	
L81	88.12	S11° 03' 32.52"E	
L82	74.62	S3° 00' 26.05"E	
L83	63.28	S15° 53' 54.47"E	
L84	256.06	S6° 52' 05.32"E	
L85	57.18	S47° 41' 39.66"W	
L86	50.00	S42° 18' 20.34"E	
L87	50.00	N47° 41' 39.66"E	
L88	409.68	S42° 18' 20.34"E	
L90	51.51	S44° 56' 03.05"W	
L91	407.70	N45° 03' 56.97"W	
L93	513.26	S84° 05' 03.02"W	
L95	502.66	N78° 04' 57.00"W	
L97	244.63	N33° 52' 57.00"W	
L99	442.87	N60° 46' 56.99"W	
L101	910.58	N56° 07' 56.99"W	
L103	227.99	N76° 31' 56.93"W	
L105	408.30	N51° 57' 56.90"W	
L106	20.00	N38° 02' 02.60"E	
L107	92.48	N51° 57' 56.90"W	
L109	12.03	N63° 09' 58.13"W	
L110	20.00	S26° 50' 03.22"W	
L111	799.91	N63° 09' 56.99"W	
L112	25.00	S26° 50' 03.49"W	
L113	299.97	N63° 09' 57.00"W	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L114	54.99	N26° 50' 02.92"E	
L115	81.24	N63° 09' 56.82"W	
L117	18.30	N48° 48' 56.93"W	
L118	30.00	S41° 11' 03.32"W	
L119	251.51	N48° 48' 56.95"W	
L121	611.29	N68° 07' 57.00"W	
L122	20.00	S21° 52' 02.93"W	
L123	27.76	N68° 07' 57.19"W	
L125	89.99	N74° 00' 56.99"W	
L126	1648.17	S62° 33' 57.12"W	
L127	6649.50	N12° 46' 50.38"W	
L128	3400.72	N12° 48' 15.65"W	
L129	1581.15	N74° 41' 26.66"E	
L130	213.48	N32° 04' 35.93"W	
L131	5007.29	S89° 33' 15.31"E	
L132	801.02	S12° 25' 43.42"E	
L133	1385.22	S12° 08' 04.86"E	
L134	554.65	S12° 03' 06.83"E	
L135	189.63	S65° 25' 31.65"W	
L136	220.65	S6° 18' 54.56"W	
L138	16.31	N46° 33' 49.09"W	
L140	110.92	S44° 35' 13.05"W	
L142	215.38	S7° 12' 33.93"W	
L144	134.48	S44° 22' 42.69"W	
L145	484.32	S62° 53' 00.52"E	
L146	286.61	N84° 35' 54.45"E	
L147	117.03	S4° 43' 13.88"E	
L148	194.90	S13° 35' 37.72"E	
L149	225.90	S6° 46' 25.05"E	
L150	23.00	S2° 06' 12.16"E	
L151	125.75	S87° 53' 47.84"W	
L152	6.29	S88° 35' 13.46"W	
L154	15.05	S14° 27' 01.07"E	
L155	571.46	S4° 41' 53.05"E	
L156	301.92	S81° 44' 45.89"E	
L157	25.24	N86° 03' 49.29"E	
L158	384.77	N86° 03' 49.29"E	
L159	22.00	N56° 50' 07.88"E	
L161	326.28	S70° 06' 15.04"E	
L162	22.00	S19° 53' 44.96"W	
L163	332.88	S26° 19' 58.66"W	
L164	330.65	S32° 49' 35.26"E	
L165	271.88	S65° 46' 21.55"E	
L166	430.27	N47° 32' 51.04"E	
L167	43.43	S86° 30' 11.76"E	
L169	214.06	S32° 08' 49.98"E	
L170	8.83	N22° 09' 08.24"W	
L172	23.00	N52° 18' 43.90"E	
L173	288.53	N38° 43' 47.10"E	
L174	274.06	N12° 18' 52.52"W	
L175	209.36	N44° 37' 43.86"W	
L176	382.94	N3° 24' 33.11"W	
L177	229.64	N15° 13' 37.74"E	
L178	163.70	N37° 16' 28.73"E	
L179	143.36	N56° 42' 12.79"E	
L180	135.89	N34° 02' 05.55"E	
L181	206.90	N32° 34' 15.80"E	
L182	298.73	N27° 55' 25.13"E	
L183	260.66	N24° 13' 59.11"E	
L184	155.75	N24° 13' 59.11"E	
L185	115.21	N14° 09' 21.06"E	
L186	320.16	N80° 40' 39.88"W	
L187	207.97	S24° 33' 36.09"W	
L188	217.18	S26° 05' 56.51"W	
L189	24.18	S26° 05' 56.51"W	
L190	1393.83	N2° 55' 37.63"E	
L191	46.96	N0° 39' 25.56"E	
L192	3923.86	S89° 20' 19.58"E	
L193	1374.39	S0° 21' 39.07"W	
L194	1406.60	N89° 45' 48.88"E	
L195	1338.18	S89° 53' 46.22"E	
L196	326.57	S0° 46' 00.15"W	
L197	19.77	N85° 42' 22.69"W	
L198	256.76	N89° 24' 25.24"W	
L199	282.95	S85° 31' 56.59"W	
L200	143.73	S69° 50' 56.04"W	
L201	173.21	S84° 13' 37.66"W	
L202	360.52	S78° 48' 20.31"W	
L203	147.49	N31° 07' 40.74"W	
L204	263.28	S81° 23' 16.31"W	
L205	7.76	S48° 20' 58.10"W	
L206	146.39	S48° 42' 45.89"W	
L208	160.63	S20° 01' 01.62"W	
L209	160.63	S20° 43' 49.76"W	
L212	159.47	S45° 01' 08.60"E	
L214	104.97	S78° 57' 45.19"E	
L215	104.97	S78° 57' 45.19"E	
L217	56.77	N84° 01' 45.59"E	
L220	16.06	S15° 17' 34.01"E	
L221	18.15	S15° 17' 34.01"E	
L223	41.80	S34° 59' 44.57"E	
L226	54.63	S9° 09' 51.12"W	
L229	155.59	S14° 51' 34.09"E	
L231	19.48	S5° 54' 56.16"E	
L232	9.46	S3° 17' 40.77"E	
L235	119.41	S16° 03' 14.11"E	
L237	17.84	S40° 16' 17.39"E	
L239	51.58	S24° 24' 40.17"E	
L241	169.01	S46° 04' 45.09"E	
L242	34.68	S42° 17' 55.77"E	
L243	94.15	S38° 31' 06.45"E	
L246	294.24	S84° 12' 27.33"E	
L247	74.90	S87° 21' 19.60"E	
L249	75.29	N62° 21' 10.52"E	
L250	296.57	N62° 21' 10.52"E	
L251	158.49	N62° 21' 10.52"E	
L252	259.84	N62° 34' 24.34"E	
L253	86.74	N61° 41' 32.42"E	
L256	87.02	S83° 16' 39.59"E	
L257	13.41	S87° 44' 18.77"E	
L259	3.56	S27° 26' 11.40"W	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L262	23.66	S68° 52' 27.88"E	
L264	48.29	N87° 16' 51.55"E	
L266	97.90	N40° 31' 46.36"W	
L267	27.07	N6° 41' 16.28"W	
L270	319.47	S74° 49' 54.91"E	
L271	138.97	N66° 24' 30.70"E	
L273	55.06	N6° 50' 38.45"E	
L274	39.88	N3° 22' 47.35"W	
L275	80.28	N15° 59' 49.54"W	
L276	123.32	N16° 37' 28.06"W	
L277	1.01	N16° 37' 28.06"W	
L278	69.05	N9° 41' 34.15"W	
L279	145.93	N27° 47' 13.71"W	
L280	82.36	N62° 36' 46.46"W	
L281	115.49	N58° 06' 21.69"W	
L282	82.50	N67° 58' 57.99"W	
L283	207.01	N67° 58' 57.99"W	
L284	183.53	N67° 58' 57.99"W	
L285	167.11	S71° 52' 34.84"E	
L286	167.11	N71° 52' 34.84"W	
L287	211.41	S76° 26' 26.12"W	
L288	70.08	N29° 14' 03.17"E	
L289	211.41	S76° 26' 26.12"W	
L290	70.08	S29° 14' 03.17"W	
L292	41.26	N83° 25' 14.76"W	
L294	10.48	N80° 37' 32.35"W	
L296	81.39	S65° 20' 41.75"W	
L299	85.93	S81° 46' 57.24"W	
L300	513.26	N1° 20' 19.50"W	
L301	513.26	S1° 20' 19.50"E	
L302	19.62	S80° 32' 32.28"E	
L303	22.63	N63° 26' 47.91"E	
L304	28.88	N27° 16' 00.93"E	
L305	124.92	N13° 41' 47.74"E	
L306	67.63	N26° 16' 12.03"E	
L307	77.13	N75° 29' 48.37"E	
L308	206.52	S76° 58' 24.97"E	
L309	273.71	S58° 54' 25.76"W	
L310	248.33	S46° 54' 57.02"W	
L311	156.80	N68° 16' 42.83"W	
L312	145.53	S78° 34' 42.44"W	
L313	178.58	N46° 25' 12.12"W	
L314	173.94	N4° 19' 04.65"E	
L315	564.20	N82° 52' 34.55"W	
L316	22.00	S7° 07' 25.45"W	
L317	132.76	N82° 52' 34.55"W	
L321	97.27	N71° 48' 55.86"E	
L323	72.49	N50° 15' 53.42"E	
L325	20.75	N60° 09' 19.23"W	
L327	54.60	N0° 21' 34.48"W	
L329	122.94	S87° 05' 01.94"W	
L332	5.10	N11° 54' 15.18"E	
L333	104.06	N11° 54' 15.18"E	
L335	21.77	N20° 03' 39.13"W	
L336	22.00	N69° 56' 20.87"E	
L337	128.14	N68° 17' 06.58"E	
L338	96.03	N78° 36' 43.77"E	
L339	178.07	S52° 47' 59.82"E	
L340	470.55	S54° 59' 38.52"E	
L341	470.55	S54° 59' 38.52"E	
L342	37.20	N12° 33' 26.18"E	
L344	22.00	N73° 24' 19.98"E	
L345	206.00	N78° 55' 56.18"E	
L346	112.42	S26° 20' 29.06"E	
L347	140.04	S86° 51' 11.43"E	
L348	176.16	N53° 26' 10.27"E	
L349	209.82	S88° 54' 02.57"E	
L350	2591.29	S89° 04' 19.05"E	
L351	41.18	S89° 45' 59.96"E	
L352	1214.85	S89° 45' 59.96"E	
L353	1025.73	S2° 10' 17.04"W	
L354	2380.06	S31° 29' 28.81"W	
L355	516.64	S31° 29' 28.81"W	
L356	92.79	N21° 26' 39.35"W	
L357	172.38	N70° 40' 14.79"W	
L358	454.07	N89° 36' 23.94"W	
L359	24.00	N89° 36' 23.94"W	
L361	126.90	N5° 14' 55.41"W	
L363	163.28	S88° 24' 08.49"W	
L365	17.69	S14° 48' 42.29"W	
L366	91.27	S14° 48' 42.29"W	
L367	92.15	S14° 48' 42.29"W	
L369	247.84	S39° 47' 31.21"W	
L370	10.16	S40° 35' 58.46"W	
L372	313.33	S59° 45' 12.13"W	
L374	335.09	S54° 21' 38.98"W	
L379	42.57	S68° 01' 44.71"W	
L381	26.00	N62° 01' 45.96"W	
L382	217.05	N66° 30' 18.49"W	
L383	209.82	N53° 05' 29.19"W	
L384	101.37	N33° 42' 13.67"W	
L385	255.84	N22° 58' 52.45"W	
L386	613.24	S73° 14' 26.54"W	
L387	135.50	N56° 52' 00.76"E	
L388	175.87	N25° 24' 36.90"E	
L389	339.70	N13° 02' 01.91"W	
L390	217.19	N21° 27' 12.00"E	
L391	271.68	N72° 29' 32.66"W	
L392	308.87	S25° 47' 12.08"W	
L393	212.26	S27° 48' 07.49"W	
L394	50.01	S26° 51' 03.56"W	
L398	83.95	S80° 10' 44.55"W	
L403	71.03	N79° 32' 42.84"W	
L406	169.49	N4° 06' 35.66"W	
L408	24.00	N66° 22' 46.50"E	
L409	196.14	N12° 08' 39.07"E	
L410	311.28	N52° 21' 34.22"W	
L411	283.73	S45° 30' 14.50"W	
L412	23.39	S21° 41' 35.53"W	
L413	46.08	N68° 18' 24.47"W	
L414	82.75	N57° 32' 24.23"W	

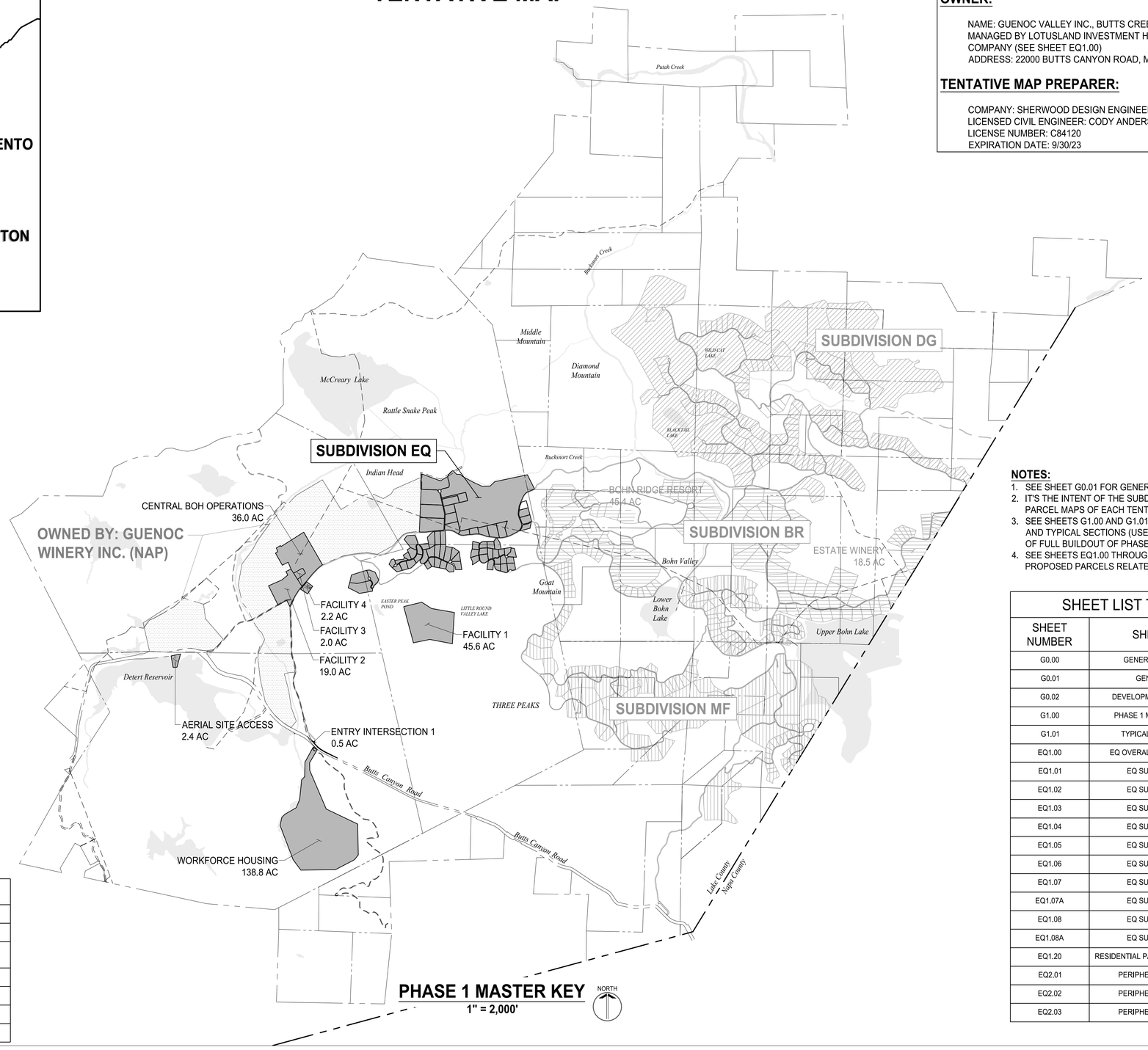
PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L416	33.06	S32° 17' 09.58"W	
L419	92.22	N71° 30' 39.08"W	
L421	24.00	N75° 58' 26.68"W	
L422	133.39	N73° 37' 59.70"W	
L423	373.79	N71° 16' 34.48"W	
L424	271.05	S74° 48' 43.05"W	
L425	90.74	N72° 18' 09.36"W	
L426	264.59	N71° 37' 25.18"W	
L427	220.95	S89° 24' 00.94"W	
L428	152.52	S75° 55' 48.61"W	
L429	348.61	N87° 44' 46.95"W	
L430	355.33	S83° 52' 36.29"W	
L431	371.96	S33° 31' 21.45"W	
L432	246.14	S2° 57' 45.12"E	
L433	24.00	S55° 57' 45.04"E	
L436	158.68	N22° 09' 08.24"W	
L437	376.09	N88° 38' 05.07"E	
L438	324.34	N0° 34' 30.19"E	
L439	345.90	N17° 45' 11.72"W	
L440	272.47	N2° 05' 00.06"W	
L441	217.77	N0° 07' 36.73"W	
L442	231.66	N8° 12' 03.15"W	
L443	821.95	S69° 48' 13.31"W	
L444	1.00	S29° 21' 07.07"W	
L445	9.86	S60° 38' 52.93"E	
L449	0.68	S81° 02' 56.53"W	
L450	36.64	S23° 53' 50.56"E	
L452	283.64	S4° 03' 29.17"E	
L453	11.14	N53° 26' 10.27"E	
L454	98.21	N11° 02' 12.82"E	
L455	107.01	N74° 00' 23.14"W	
L456	87.28	N9° 18' 14.58"W	
L457	152.07	N22° 09' 00.08"W	
L458	149.34	N43° 01' 21.33"W	
L459	80.77	N1° 08' 32.55"W	
L460	169.99	N15° 25' 58.33"E	
L461	16.80	N34° 46' 56.38"E	
L462	144.29	N34° 46' 56.38"E	
L463	329.48	N59° 11' 37.33"W	
L464	66.91	N87° 35' 43.17"W	
L465	60.08	N51° 55' 55.34"W	
L466	89.93	N8° 04' 02.84"W	
L467	106.92	N89° 14' 04.32"W	
L468	203.24	N87° 41' 50.62"W	
L469	229.52	N85° 42' 22.69"W	
L470	2789.92	N1° 07' 32.04"E	
L471	1307.58	N89° 41' 26.38"E	
L472	1235.48	N1° 03' 36.62"E	
L473	1270.92	S88° 35' 16.27"E	
L474	1299.38	S88° 35' 16.27"E	
L475	1333.75	S88° 43' 26.83"E	
L476	1171.95	S1° 21' 53.87"W	
L477	33.08	S0° 41' 39.02"W	
L478	4285.36	S1° 43' 24.83"W	
L479	425.43	S13° 04' 39.48"W	
L480	233.37	S89° 39' 18.18"E	
L481	216.62	S43° 59' 00.69"E	
L482	378.61	N35° 45' 09.48"E	
L483	19.74	S27° 14' 28.34"E	
L484	106.29	S79° 04' 29.85"W	
L485	50.03	S54° 53' 55.38"W	
L486	110.69	S71° 58' 34.02"W	
L487

EQUESTRIAN SUBDIVISION



VICINITY MAP
NOT TO SCALE

TENTATIVE MAP



PHASE 1 MASTER KEY
1" = 2,000'
NORTH

LEGEND

- PROPOSED SUBDIVISION EQ - EQUESTRIAN
- PROPOSED SUBDIVISION MF - MAHA FARMS UNDER SEPARATE TENTATIVE MAP
- PROPOSED SUBDIVISION DG - DENNISTON GOLF ESTATES UNDER SEPARATE TENTATIVE MAP
- PROPOSED SUBDIVISION BR - BOHN RIDGE UNDER SEPARATE TENTATIVE MAP
- EXISTING PARCELS OWNED BY OTHERS; NOT A PART (NAP) OF THIS TENTATIVE MAP

OWNER:

NAME: GUENOC VALLEY INC., BUTTS CREEK INC., BOHN VALLEY INC.
MANAGED BY LOTUSLAND INVESTMENT HOLDINGS, INC., A CALIFORNIA COMPANY (SEE SHEET EQ1.00)
ADDRESS: 22000 BUTTS CANYON ROAD, MIDDLETOWN, CA 95461

TENTATIVE MAP PREPARER:

COMPANY: SHERWOOD DESIGN ENGINEERS
LICENSED CIVIL ENGINEER: CODY ANDERSON, P.E.
LICENSE NUMBER: C84120
EXPIRATION DATE: 9/30/23

NOTES:

1. SEE SHEET G0.01 FOR GENERAL NOTES.
2. IT'S THE INTENT OF THE SUBDIVIDER TO PROCESS THE FINAL PARCEL MAPS OF EACH TENTATIVE MAP IN PHASES.
3. SEE SHEETS G1.00 AND G1.01 FOR PHASE 1 MASTER ROAD PLAN AND TYPICAL SECTIONS (USED FOR REFERENCE AND CONTEXT OF FULL BUILDOUT OF PHASE 1).
4. SEE SHEETS EQ1.00 THROUGH EQ2.03 FOR EXISTING AND PROPOSED PARCELS RELATED TO SUBDIVISION EQ.

SUBDIVISION LOT COUNTS

PARCEL TYPE	MAHA FARMS	EQUESTRIAN	DENNISTON GOLF	BOHN RIDGE	TOTAL
VILLA	73	67	133	112	385
RESORT RESIDENTIAL	104	0	7	30	141
COMMERCIAL	5	1	4	2	12
FACILITY	1	11	3	0	15
GOLF	0	0	4	0	4
PERIPHERAL	8	7	8	8	31

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
G0.00	GENERAL INFORMATION
G0.01	GENERAL NOTES
G0.02	DEVELOPMENT RESTRICTIONS
G1.00	PHASE 1 MASTER ROAD PLAN
G1.01	TYPICAL ROAD SECTIONS
EQ1.00	EQ OVERALL SUBDIVISION PLAN
EQ1.01	EQ SUBDIVISION PLAN
EQ1.02	EQ SUBDIVISION PLAN
EQ1.03	EQ SUBDIVISION PLAN
EQ1.04	EQ SUBDIVISION PLAN
EQ1.05	EQ SUBDIVISION PLAN
EQ1.06	EQ SUBDIVISION PLAN
EQ1.07	EQ SUBDIVISION PLAN
EQ1.07A	EQ SUBDIVISION PLAN
EQ1.08	EQ SUBDIVISION PLAN
EQ1.08A	EQ SUBDIVISION PLAN
EQ1.20	RESIDENTIAL PARCEL AVERAGE SLOPES
EQ2.01	PERIPHERAL PARCEL PLAN
EQ2.02	PERIPHERAL PARCEL PLAN
EQ2.03	PERIPHERAL PARCEL PLAN

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STATE OF CALIFORNIA

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

EQUESTRIAN SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

GENERAL INFORMATION

G0.00

GENERAL NOTES:

1. REFER TO FINAL ADOPTED DEVELOPMENT AGREEMENT FOR FURTHER SUBDIVISION DETAILS, INCLUDING SEQUENCING AND EXPIRATION DETAILS.
2. THE PROPERTIES WITHIN THIS SUBDIVISION ARE PROPOSED TO BE REZONED TO A NEWLY FORMED ZONING DISTRICT, THE GUENOC VALLEY PLANNED DEVELOPMENT (GVPD) WITH OPEN SPACE AND AGRICULTURAL PRESERVE OVERLAYS/COMBINING DISTRICTS. REFER TO THE RELEVANT ZONING DISTRICTS FOR DEVELOPMENT REGULATIONS.
3. REFER TO THE SPECIFIC PLAN OF DEVELOPMENT FOR ALLOWED DEVELOPMENT INCLUDING PLANNED DEVELOPMENT DETAILS, DENSITY, AND SETBACKS.
4. REFER TO THE CC&R'S FOR FUTURE HOMEOWNERSHIP ASSOCIATION DETAILS AND MAINTENANCE REQUIREMENTS.
5. REFER TO THE WATER, WASTEWATER, AND ELECTRICAL FEASIBILITY REPORTS FOR THE PRIVATE UTILITY DISTRICT DETAILS.
6. REFER TO THE DESIGN GUIDELINES FOR LOT LAYOUT, DENSITY, BUILDING MASSING, LANDSCAPE DETAILS, ROAD AND PATHWAY DESIGN, STREET LIGHTING, DIRECTIONAL SIGNAGE AND RESIDENTIAL DESIGNS.
7. REFER TO THE FIRE MANAGEMENT PLAN FOR FIRE PREVENTION GUIDELINES AND VEGETATION FUEL REDUCTION SETBACKS.
8. ALL PROPOSED ROADWAYS WITHIN PROPERTY ARE PRIVATE AND ARE TYPICALLY INDEPENDENT INDIVIDUAL PARCELS, UNLESS OTHERWISE NOTED. THERE WILL BE NO PUBLIC RIGHTS OF WAY EXCEPT ALONG THE ENTRY ROADS UP TO THE FIRST GATE.
9. ALL ROADWAY CORRIDORS SHALL INCORPORATE EASEMENTS OF 50 FEET BEYOND EITHER SIDE OF THE EDGE OF PAVEMENT FOR VEGETATION MANAGEMENT, DEPENDING ON ENVIRONMENTAL CONSTRAINTS, WHICH SHALL BE FURTHER DEFINED IN AND MANAGED BY THE CC&RS.
10. ROAD NAMES ARE REFERENCED WITH NUMBERS, PROPOSED NAMES WILL BE PROVIDED IN SUBSEQUENT SUBMITTAL PRIOR TO HEARING.

SUBDIVISION NOTES:

1. SEE PARCELS SHEETS FOR BEARING, DISTANCE, AND CURVE INFORMATION OF PARCELS.
2. PERIPHERAL PARCELS ARE PROPOSED TO BE SUBDIVIDED AND ARE INCLUDED FOR REFERENCE. SEE PERIPHERAL PARCEL SHEETS FOR BEARING, DISTANCE, AND CURVE INFORMATION.
3. ENVIRONMENTAL PRESERVATION AREAS, INCLUDING SENSITIVE BIOLOGICAL SPECIES OR CULTURAL SITES WHERE APPLICABLE, WITHIN SUBDIVIDED PARCELS MAY BE IDENTIFIED AS CONCEPTUAL ON THE TENTATIVE MAP AND THEN FINAL ON THE FINAL MAP.
4. FOR WATER SUPPLY AND WASTEWATER DISPOSAL SYSTEMS AND DISTRIBUTION, REFER TO SPECIFIC PLAN OF DEVELOPMENT AND TECHNICAL FEASIBILITY REPORTS.
5. PROPOSED PRIVATE UTILITIES WILL BE REQUIRED THROUGHOUT THE SITE, INCLUDING SEWER, WATER, ELECTRIC, COMMUNICATIONS, AND LIQUID PROPANE. PRELIMINARY LOCATIONS OF MAJOR FACILITIES ARE SHOWN FOR REFERENCE IN TENTATIVE MAPS, HOWEVER, ADDITIONAL INFORMATION IS PROVIDED ON THE SPECIFIC PLAN OF DEVELOPMENT.

EASEMENTS:

1. EXISTING EASEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION PER RECORD DATA AND HAVE NOT BEEN FIELD SURVEYED.
2. ALL PROPOSED PRIVATE UTILITY AND ACCESS EASEMENTS (PUE), WHICH ARE TO BE SPECIFICALLY DEFINED DURING THE FINAL MAP STAGE, SHALL INCORPORATE THE FOLLOWING ELEMENTS WITHIN A COMBINED TYPICAL EASEMENT WIDTH OF 50 FEET TOTAL:
   a. TOTAL PAVED ROADWAY, INCLUDING SHOULDERS, FOR SHARED ACCESS (RANGES IN WIDTH FROM 22 TO 28 FEET FOR TWO-WAY ROADS AND 14 FEET FOR ONE-WAY ROADS).
   b. RETAINING AND DRAINAGE CONVEYANCE FEATURES (UP TO 12 FEET WIDE).
   c. UTILITY PIPING AND STRUCTURES (UP TO 10 FEET WIDE)
   d. EXCEPTIONS MAY OCCUR FOR SPECIFIC UTILITY STRUCTURES OR DRAINAGE FEATURES REQUIRING ADDITIONAL WIDTH
3. PROPOSED DRAINAGE MANAGEMENT EASEMENTS SHALL EXTEND TO 30 FEET FROM THE TOP OF BANKS OF PERENNIAL STREAMS AND 20 FEET FROM THE TOP OF BANKS OF INTERMITTENT STREAMS.

EXISTING CONDITIONS AND NATURAL RESOURCE PRESERVATION:

1. SETBACKS FOR DRAINAGES, RARE PLANTS, WOODLANDS, AND RIPARIAN ZONES WILL BE ADDRESSED WITHIN THE SPECIFIC PLAN OF DEVELOPMENT DOCUMENTATION AND THE ENVIRONMENTAL IMPACT REPORT, UNDER SEPARATE COVER.
2. FINAL CONFIGURATION OF DEDICATED OPEN SPACE SHALL BE DEVELOPED AS PART OF THE ENVIRONMENTAL REVIEW PROCESS.
3. OAK WOODLAND PRESERVATION AREAS WITHIN PARCELS MAY BE SUBJECT TO DEED RESTRICTIONS TO LIMIT REMOVAL OF TREES. FINAL LOCATIONS WILL BE DIRECTED BY THE ENVIRONMENTAL IMPACT REPORT AND WILL ULTIMATELY BE RECORDED IN THE FINAL MAP.
4. AREAS IDENTIFIED AS "DEVELOPMENT RESTRICTION AREAS" AS CONTAINING CULTURAL RESOURCES WILL BE DEED RESTRICTED TO PROHIBIT THEIR DISTURBANCE, AND MAY BE MORE ACCURATELY SURVEYED FOR INCLUSION ON THE FINAL MAP.
5. DEDICATED HABITAT CORRIDORS WITHIN PARCELS MAY BE SUBJECT TO DEED RESTRICTIONS TO LIMIT PLACEMENT, HEIGHT AND COMPOSITION OF FENCING, VEGETATION MANAGEMENT AND DISTURBANCE OF NATURAL RESOURCES. FINAL CONFIGURATIONS WILL ULTIMATELY BE RECORDED IN THE FINAL MAP, WITH THE TERMS OF SAID RESTRICTIONS TO BE INCLUDED IN THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE HOMEOWNERS' ASSOCIATIONS AND/OR OTHER REAL ESTATE PURCHASE AGREEMENTS.

PHASING NOTES:

1. FINAL PARCEL MAPS FILED WILL INDICATE SUBDIVISION CONSTRUCTION PHASING.
2. FINAL MAPS DEVELOPED FOR EACH AGREED UPON PHASE OF THE PROPOSED EVENTUAL SUBDIVISION WILL INCLUDE ALL PARCEL TYPES, INCLUDING THE ROAD PARCELS ADJACENT TO AND REQUIRED FOR EACH SUBDIVISION PHASE.

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PROJECT NO. 18-016
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EQUESTRIAN SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

GENERAL NOTES

G0.01

PROPOSED PARCEL BOUNDARY (TYP.)

LEGEND

PROPOSED PARCEL BOUNDARY

EXISTING PARCEL BOUNDARY

NOT A PART (NAP)

PRESERVED OPEN SPACE

DEVELOPMENT RESTRICTION

OAK WOODLAND PRESERVATION AREA

HABITAT CORRIDOR

COUNTY LINE

EXISTING ROAD AND UTILITY EASEMENT

NOTE:

1. DEDICATED HABITAT CORRIDOR, PRESERVED OPEN SPACE AND OAK WOODLAND PRESERVATION AREAS ARE SHOWN FOR ILLUSTRATIVE PURPOSES. FINAL CONFIGURATION IS SUBJECT TO CHANGE AND WILL BE INCORPORATED IN THE FINAL MAP.

0 1750' 3500' NORTH

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EQUESTRIAN SUBDIVISION

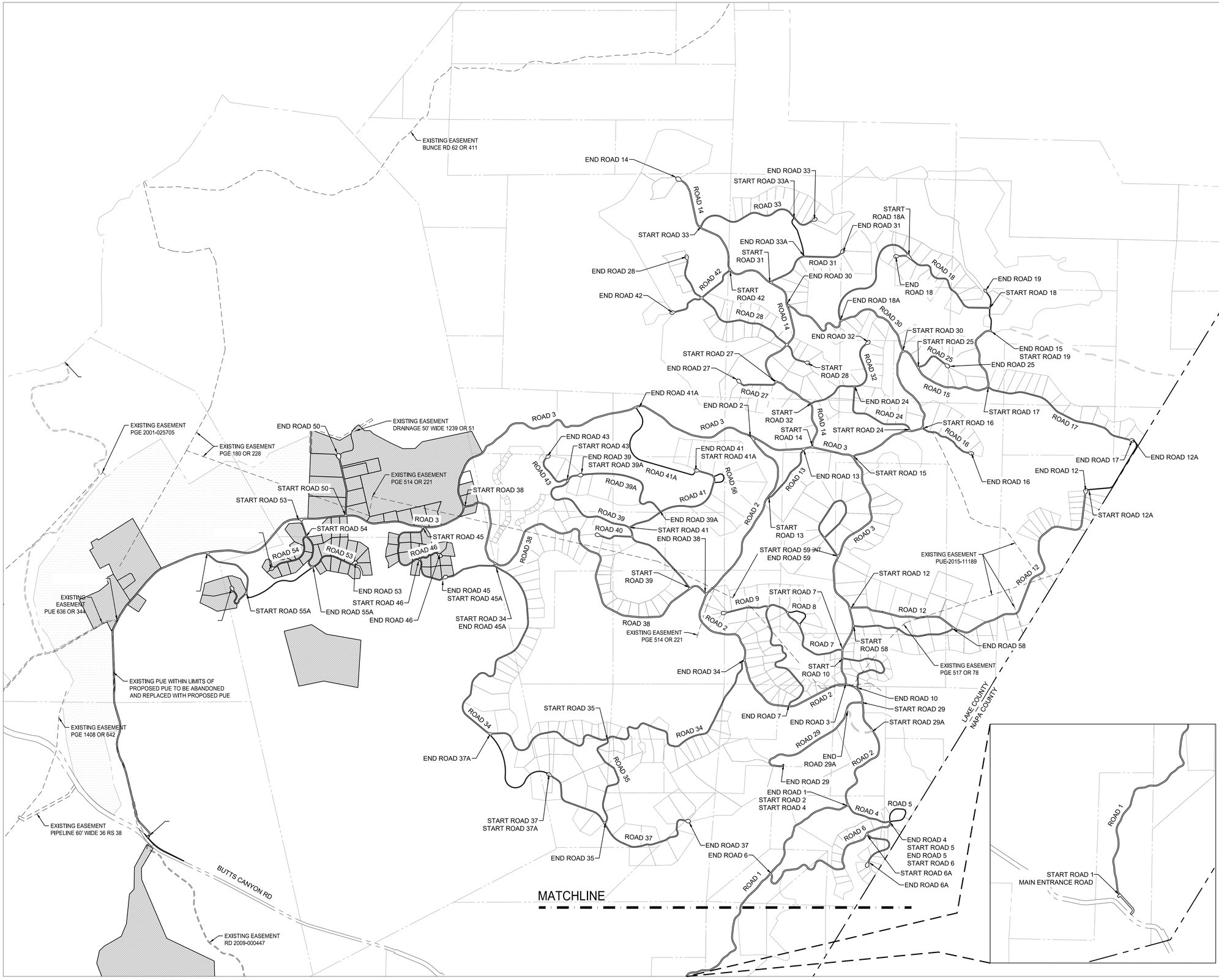
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

DEVELOPMENT RESTRICTIONS

G0.02



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ROAD 1	17,420	26	A
ROAD 2	14,896	26	A
ROAD 3	32,381	26	A
ROAD 4	1,133	22	B
ROAD 5	1,109	14	D
ROAD 6	4,602	26	A
ROAD 6A	1,327	22	B
ROAD 7	5,805	22	B
ROAD 8	785	14	D
ROAD 9	415	22	B
ROAD 10	2,215	22	B
ROAD 11	1,532	14	D
ROAD 12	8,154	26	A
ROAD 12A	1,900	14	D
ROAD 13	1,569	22	B
ROAD 14	8,716	26	A
ROAD 15	8,503	26	A
ROAD 16	1,331	22	B
ROAD 17	4,204	22	B
ROAD 18	2,776	22	B
ROAD 18A	3,160	16	C
ROAD 19	not used	not used	not used
ROAD 20	not used	not used	not used
ROAD 21	not used	not used	not used
ROAD 22	not used	not used	not used
ROAD 23	not used	not used	not used
ROAD 24	2,085	22	B
ROAD 25	802	22	B
ROAD 26	1,320	26	A
ROAD 27	915	22	B
ROAD 28	4,174	22	B
ROAD 29	3,227	26	A
ROAD 29A	937	16	C
ROAD 30	3,908	26	A
ROAD 31	1,950	22	B
ROAD 32	2,434	26	A
ROAD 33	3,090	22	B
ROAD 33A	1,025	16	C
ROAD 34	13,835	22	B
ROAD 35	2,582	22	B
ROAD 36	7,951	22	B
ROAD 37	5,034	22	B
ROAD 37A	2,515	16	C
ROAD 38	9,614	26	A
ROAD 39	6,025	22	B
ROAD 39A	2,522	16	C
ROAD 40	782	22	B
ROAD 41	2,980	22	B
ROAD 41A	2,883	14	D
ROAD 42	1,761	22	B
ROAD 43	950	22	B
ROAD 44	617	14	D
ROAD 45	4,310	22	B
ROAD 46	667	22	B
ROAD 48	not used	not used	not used
ROAD 49	not used	not used	not used
ROAD 50	9,093	26	A
ROAD 51	not used	not used	not used
ROAD 52	382	22	B
ROAD 53	2,501	22	B
ROAD 54	1,229	22	B
ROAD 55	2,274	22	B
ROAD 55A	1,995	14	D
ROAD 56	615	14	D
ROAD 57	1,387	26	A
ROAD 58	2,533	22	B
ROAD 59	2,825	22	B
ROAD 60	11,696	22	B

0 550' 1100' 2200'

NORTH

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EQUESTRIAN SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



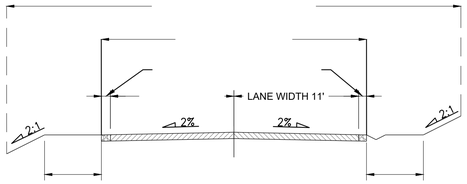
TENTATIVE MAP
SUBDIVISION EQ

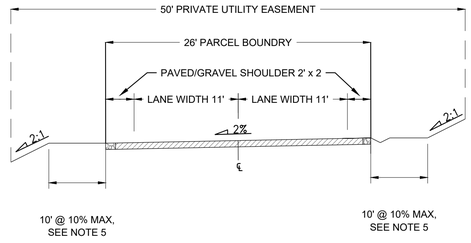
PHASE 1
MASTER
ROAD PLAN

G1.00

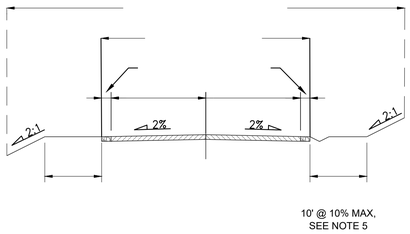
TYPICAL ROAD SECTIONS

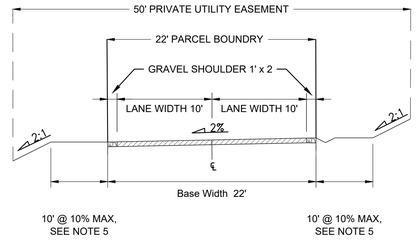
TYPE A - CROWNED/SUPERELEVATED PRIMARY 2 LANE ROAD



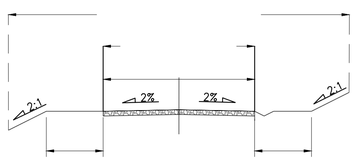


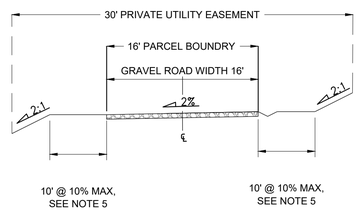
TYPE B - CROWNED/SUPERELEVATED SECONDARY 2 LANE ROAD



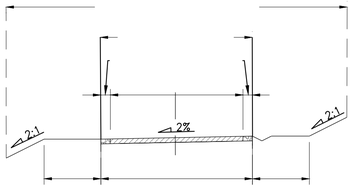


TYPE C - CROWNED/SUPERELEVATED GRAVEL ROAD





TYPE D - ONE WAY ROAD



NOTES:

1. SLOPES SHOWN HEREIN REPRESENT TYPICAL OR MAXIMUM CONDITIONS AND ARE SUBJECT TO CHANGE PER PENDING DETAILED ROADWAY DESIGN.
2. EASEMENTS SHOWN HEREIN REPRESENT TYPICAL MINIMUM WIDTH AND COVERAGE SITUATIONS AND ARE SUBJECT TO INCREASING TO ACCOMMODATE SPECIFIC STRUCTURES OR FEATURES TO BE DESIGNED.
3. PLEASE REFER TO THE DESIGN GUIDELINES AS PART OF THE GVD ZONING DESIGNATION FOR ROADWAY DESIGN DETAILS.
4. IN ADDITION TO THE PUE, THERE ARE VEGETATION AND FUEL REDUCTION AREAS 50' ON EITHER SIDE OF THE EDGE OF PAVEMENT. REFER TO THE FIRE MANAGEMENT PLAN.
5. TO THE EXTENT THAT THE TOPOGRAPHY FEASIBLY PERMITS, AN AREA OF APPROXIMATELY 10 FEET ON EACH SIDE OF THE ROADWAYS WILL BE IMPROVED WITH HARDSCAPE.

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EQUESTRIAN SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

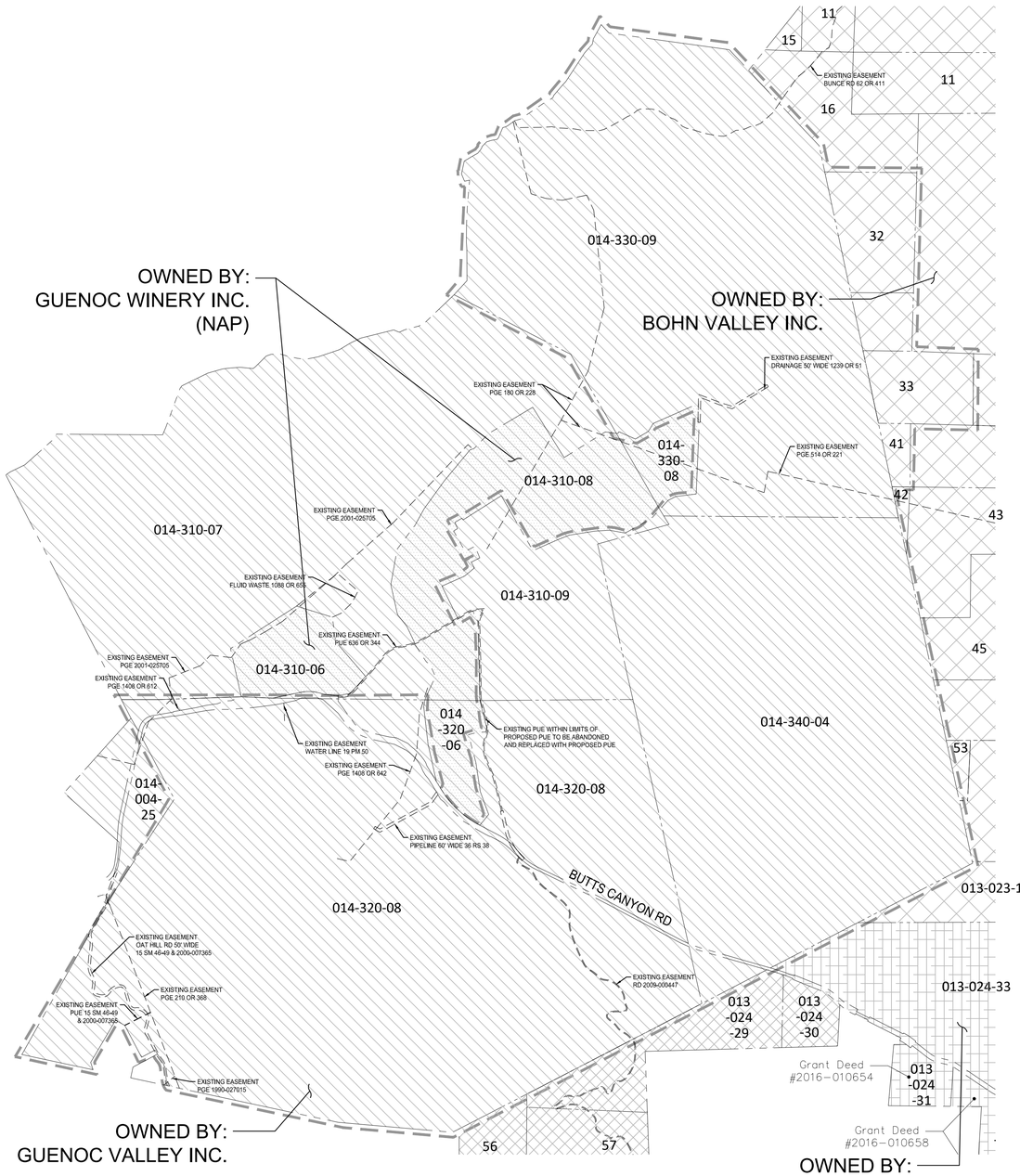


TENTATIVE MAP
SUBDIVISION EQ

TYPICAL ROAD SECTIONS

G1.01

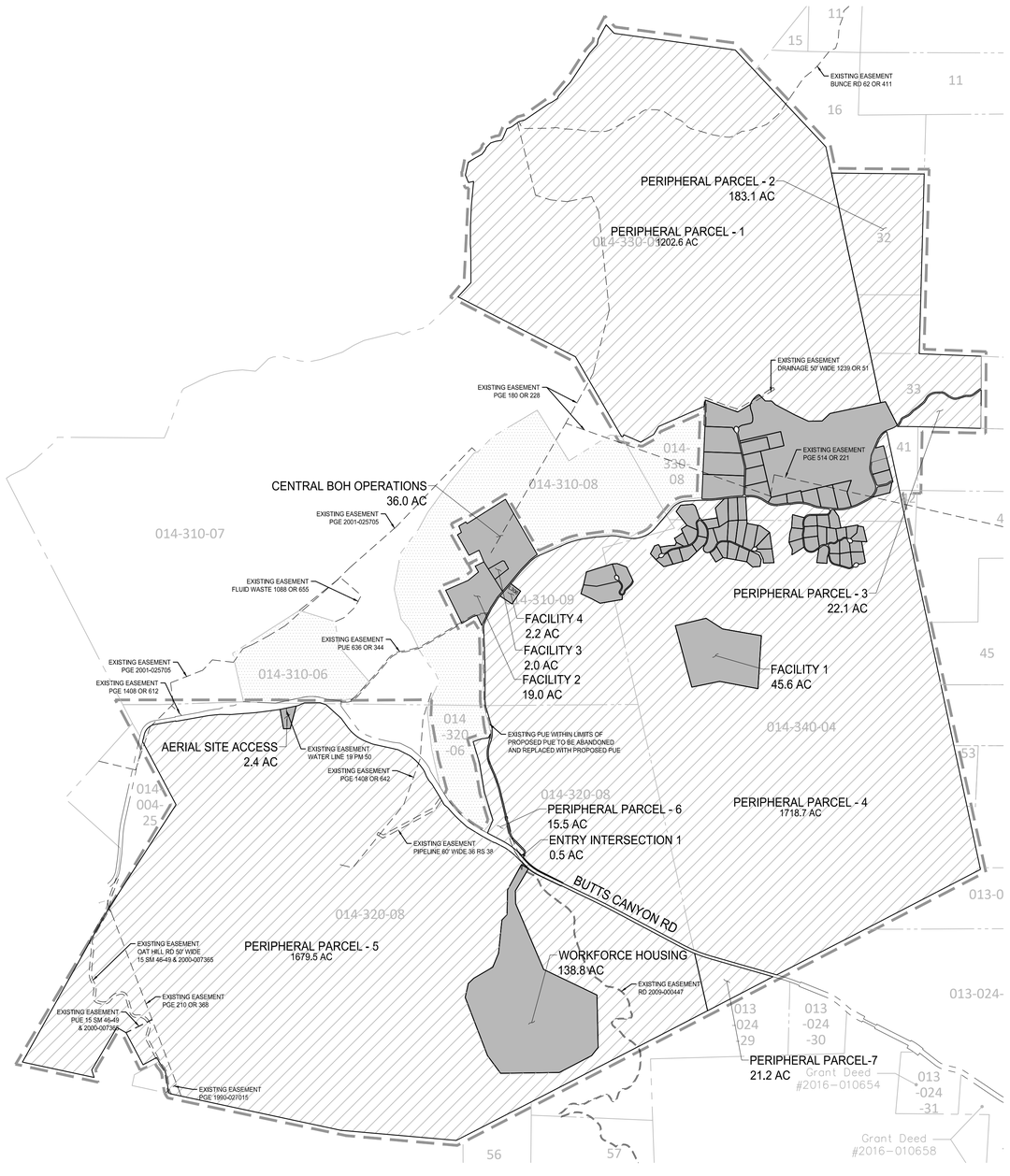
EXISTING PARCELS



EXISTING OWNERSHIP INFORMATION						
#	CC	APN	Owner	CC Doc #	Correction Deed	Approx. Acreage
32	11-66	013-016-05PT	Bohn Valley Inc.	2012005987		98
33	11-44	013-016-05PT, 013-023-10PT	Bohn Valley Inc.	2012005997		104
41	11-82	013-023-11	Bohn Valley Inc.	2012006009		11
-	-	014-330-091	Bohn Valley Inc.			
-	-	014-310-071	Bohn Valley Inc.			
-	-	014-310-091	Bohn Valley Inc.			
-	-	014-340-041	Bohn Valley Inc.			
-	-	014-320-080	Bohn Valley Inc.			

- Grant Deed #2016-016244 - Bohn Valley Inc APNs - 013-016-05, 013-023-10, 013-023-11
- Grant Deed #2016-010655 - Guenoc Valley Inc APNs - 014-310-07, 014-310-09, 014-330-09, 014-340-04, 014-004-25, 014-320-08
- Grant Deed #2016-010654 - Butts Creek Inc APN - 013-024-31
- Grant Deed #2016-010658 - Butts Creek Inc APNs - 013-024-35
- Grant Deed #2016-016243 - Butts Creek Inc APNs - 013-024-33

PROPOSED SUBDIVISION



PROPOSED PARCEL TYPES	
VILLA	67
RESORT RESIDENTIAL	0
COMMERCIAL	1
FACILITY	11
GOLF	0
PERIPHERAL	7

NOTES:
1. SEE SHEET G0.01 FOR GENERAL NOTES.
2. SEE SHEETS G1.00 AND G1.01 FOR PHASE 1 MASTER ROAD PLAN AND TYPICAL SECTIONS (USED FOR REFERENCE AND CONTEXT OF FULL BUILDOUT OF PHASE 1).
3. SEE SHEETS EQ1.00 THROUGH EQ1.08A FOR DETAILED SUBDIVISION OF PROPOSED ROAD, COMMERCIAL AND RESIDENTIAL PARCELS.
4. SEE SHEETS EQ2.01 THROUGH EQ2.03 FOR DETAILED PERIPHERAL PARCELS.

0 750' 1500' 3000' NORTH

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GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

EQ OVERALL SUBDIVISION PLAN

EQ1.00

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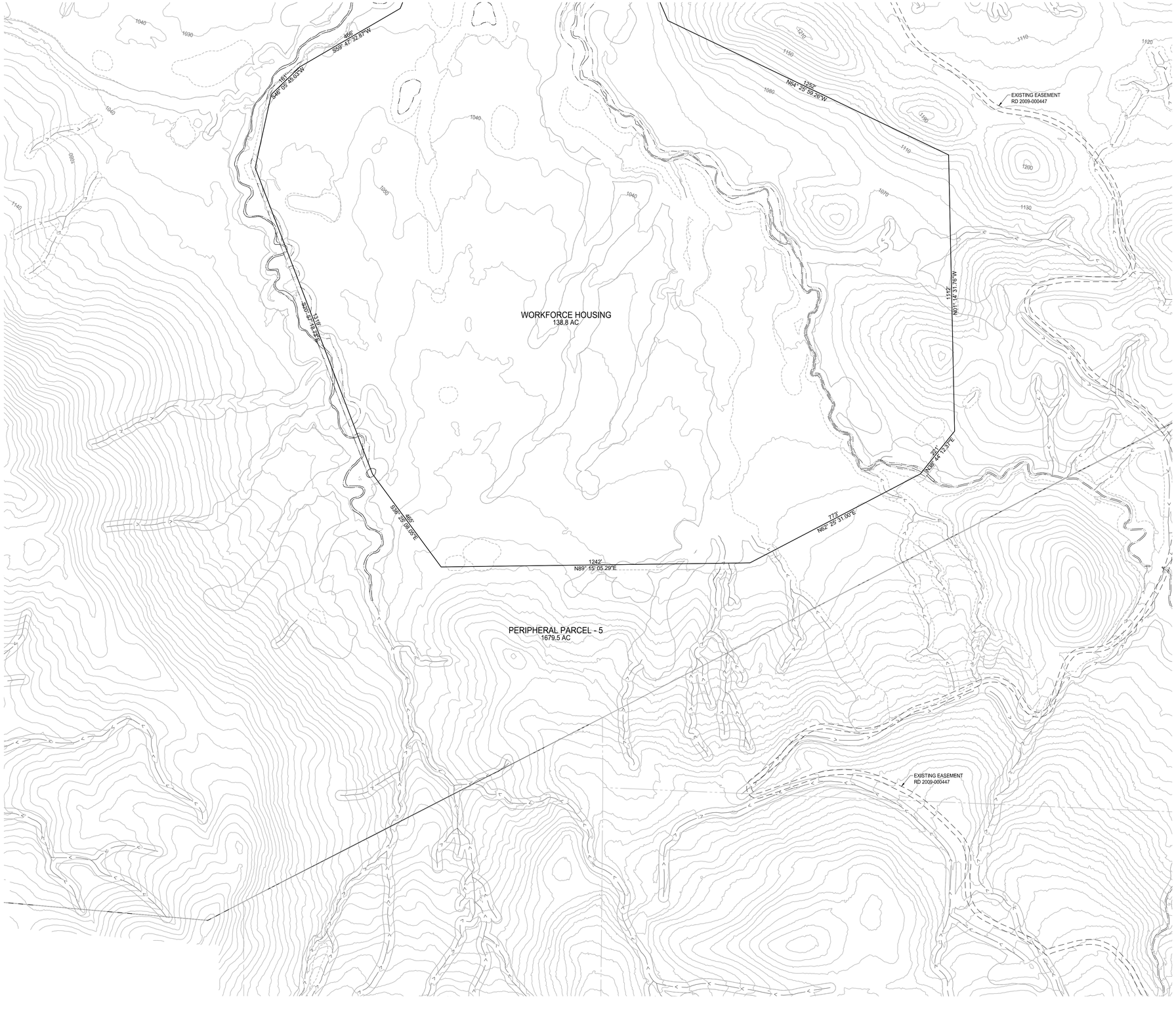
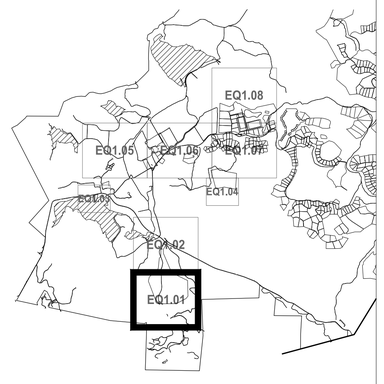


LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



SHEET LAYOUT
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EQUESTRIAN SUBDIVISION

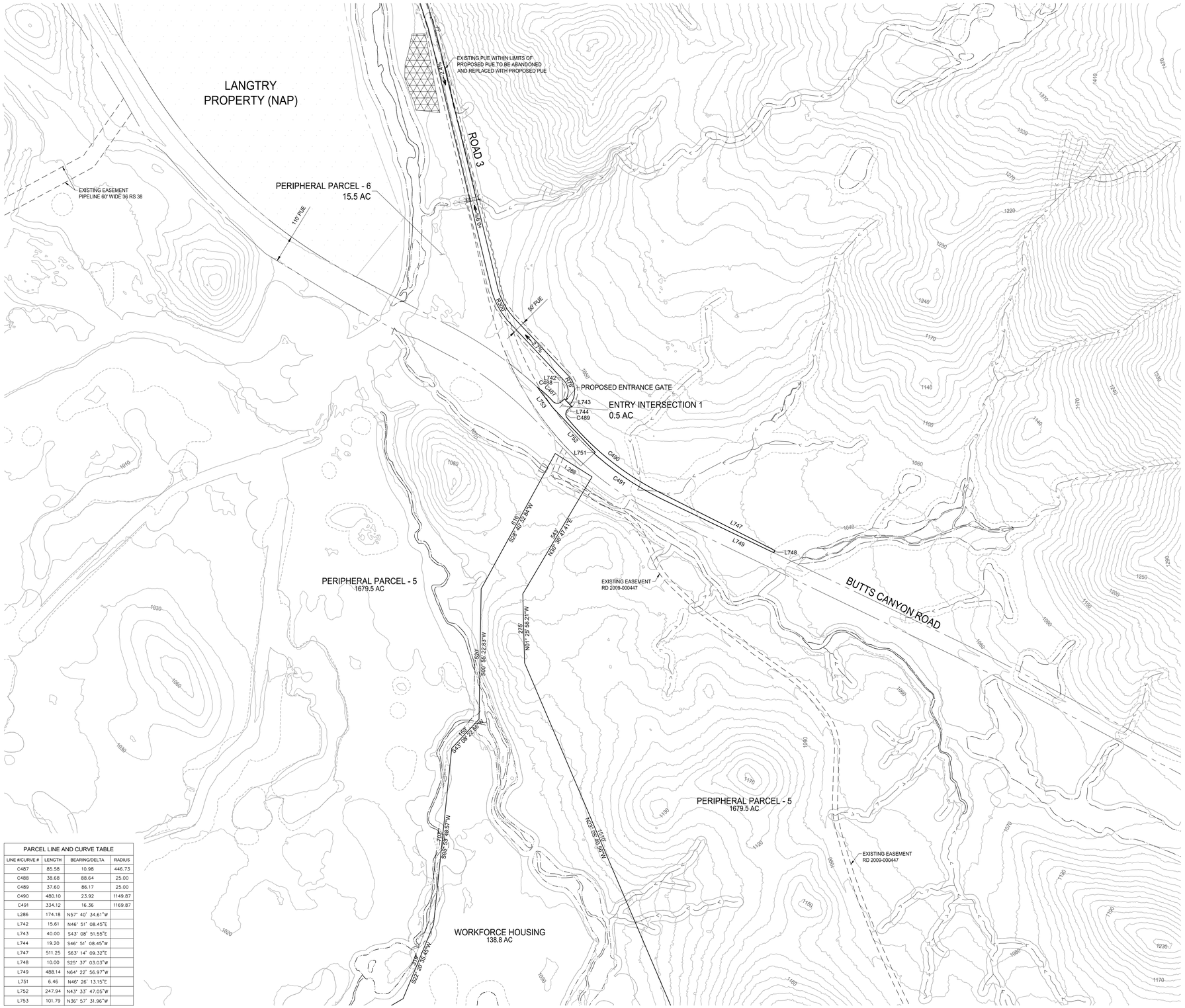
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

EQ SUBDIVISION PLAN

EQ1.01



PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C487	85.58	10.98	446.73
C488	38.68	88.64	25.00
C489	37.60	86.17	25.00
C490	480.10	23.92	1149.87
C491	334.12	16.36	1169.87
L286	174.18	N57° 40' 34.61"W	
L742	15.61	N46° 51' 08.45"E	
L743	40.00	S43° 08' 51.55"E	
L744	19.20	S46° 51' 08.45"W	
L747	511.25	S63° 14' 09.32"E	
L748	10.00	S25° 37' 03.03"W	
L749	488.14	N64° 22' 56.97"W	
L751	6.46	N46° 26' 13.15"E	
L752	247.94	N43° 33' 47.05"W	
L753	101.79	N36° 57' 31.96"W	

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
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- WASTE WATER TREATMENT FACILITY (WW)
- BRIDGE
- WATER PUMP
- WATER TANK (W)
- FIRE HYDRANT
- GROUND WATER WELL (WELL)
- FIRE TANK
- ELECTRICAL SUBSTATION (ELEC)
- EXISTING POWER POLE
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK

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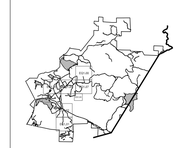
EQUESTRIAN SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ



SHEET LAYOUT
NOT TO SCALE

0 100' 200' 400'
NORTH

EQ SUBDIVISION PLAN

EQ1.02

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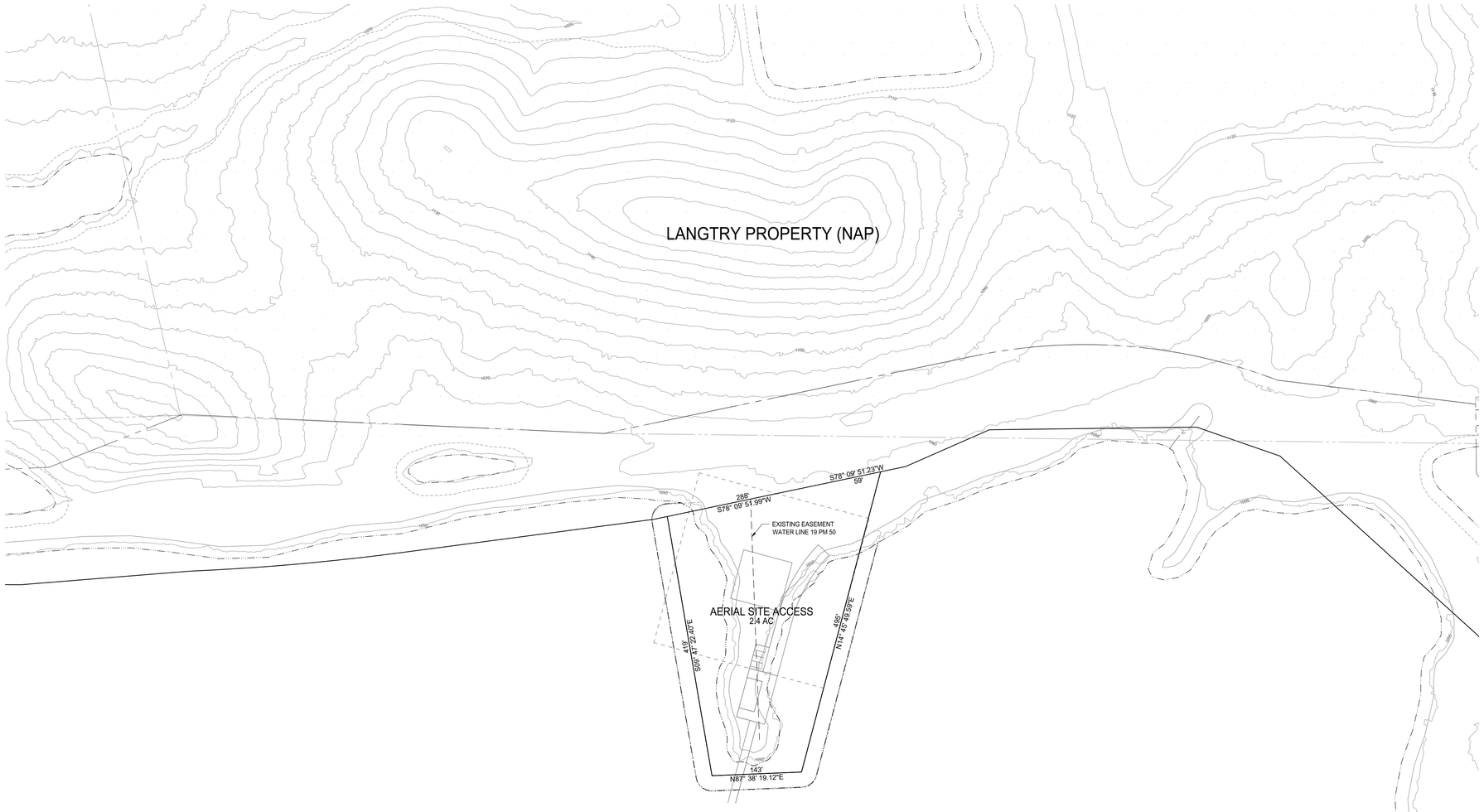

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL–DE–SAC
- COUNTY LINE
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- BRIDGE
- WATER TANK (W)
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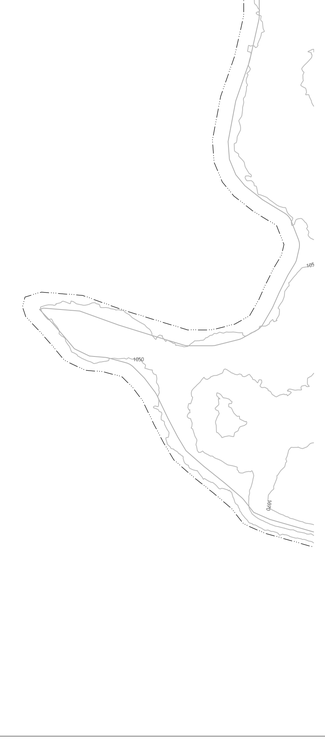
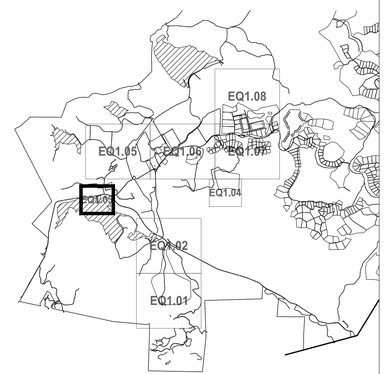
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE





SHEET LAYOUT
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EQUESTRIAN SUBDIVISION

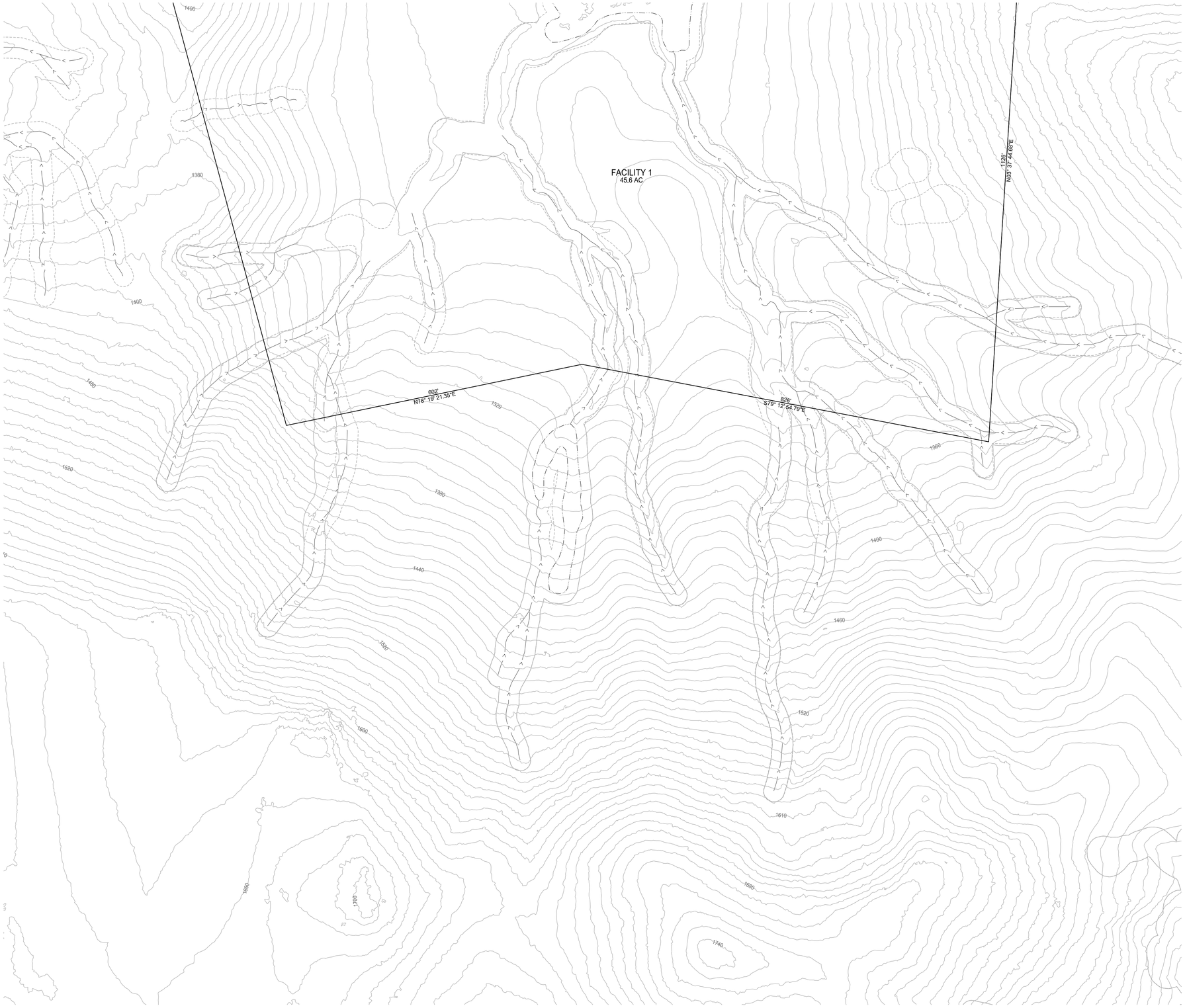
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

EQ SUBDIVISION PLAN

EQ1.03



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
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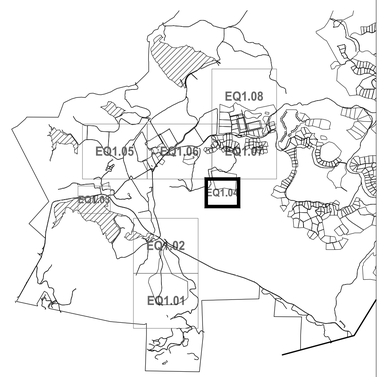
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ



SHEET LAYOUT
NOT TO SCALE

0 50' 100' 200' NORTH

EQ SUBDIVISION PLAN

EQ1.04

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L354	145.38	S21° 33' 13.72"E	
L402	262.13	N58° 48' 22.63"E	
L563	95.96	S58° 51' 48.28"W	



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK
- GROUND WATER WELL
- ELECTRICAL SUBSTATION
- WASTE WATER TREATMENT FACILITY
- WATER PUMP
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- FIRE TANK
- EXISTING POWER POLE
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- INTERMITTENT TOP OF BANK
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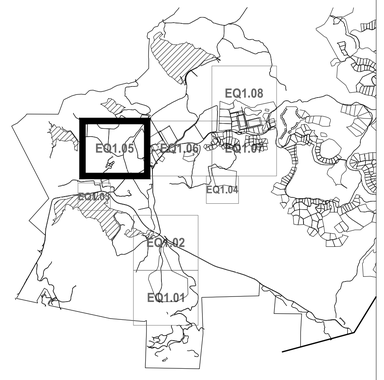
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK



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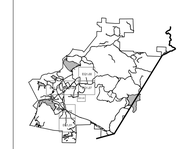
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

EQ SUBDIVISION PLAN

EQ1.05

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PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C120	90.43	76.60	67.64
C121	90.43	76.60	67.64
C122	90.43	76.59	67.64
C198	131.98	34.37	220.00
C243	138.21	71.34	111.00
C251	110.82	71.34	89.00
C265	39.81	30.02	76.00
C289	141.06	132.49	61.00
C301	33.84	52.92	36.63
C303	36.37	50.50	41.26
C308	133.82	196.59	39.00
C310	58.00	89.64	37.07
C344	16.06	1.79	513.00
C464	73.44	5.90	713.00
C465	78.88	8.81	513.00
C469	54.27	4.36	713.00

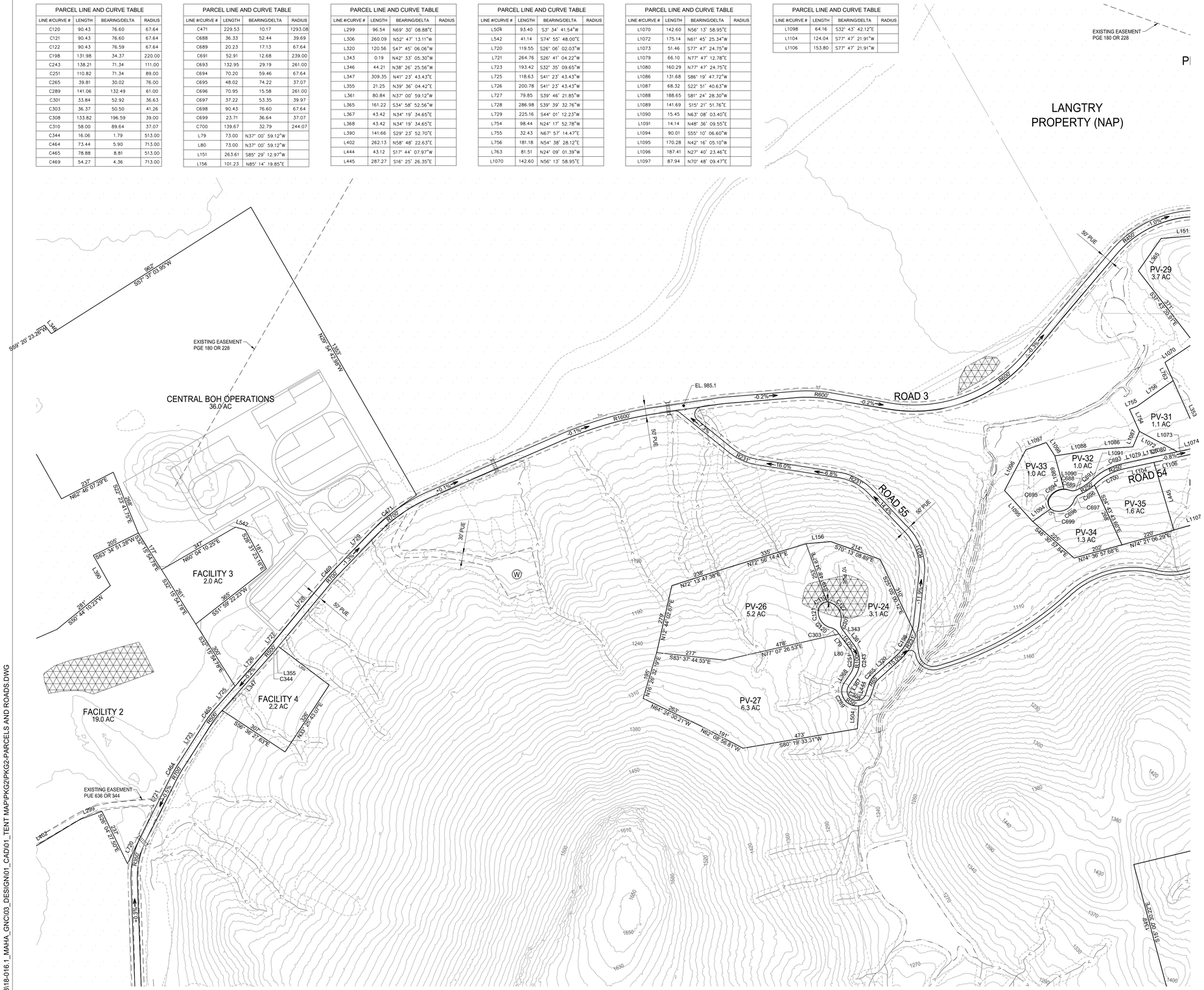
PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C471	229.53	10.17	1293.08
C688	36.33	52.44	39.69
C689	20.23	17.13	67.64
C691	52.91	12.68	239.00
C693	132.95	29.19	261.00
C694	70.20	59.46	67.64
C695	48.02	74.22	37.07
C696	70.95	15.58	261.00
C697	37.22	53.35	39.97
C698	90.43	76.60	67.64
C699	23.71	36.64	37.07
C700	139.67	32.79	244.07
L79	73.00	N37° 00' 59.12"W	
L80	73.00	N37° 00' 59.12"W	
L151	263.61	S85° 29' 12.97"W	
L156	101.23	N85° 14' 19.85"E	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L299	96.54	N69° 30' 08.88"E	
L306	260.09	N52° 47' 13.11"W	
L320	120.56	S47° 45' 06.06"W	
L343	0.19	N42° 33' 05.30"W	
L346	44.21	N38° 26' 25.56"W	
L347	309.35	N41° 23' 43.43"E	
L355	21.25	N39° 36' 04.42"E	
L361	80.84	N37° 00' 59.12"W	
L365	161.22	S34° 58' 52.56"W	
L367	43.42	N34° 19' 34.65"E	
L368	43.42	N34° 19' 34.65"E	
L390	141.66	S29° 23' 52.70"E	
L402	262.13	N58° 48' 22.63"E	
L444	43.12	S17° 44' 07.97"W	
L445	287.27	S16° 25' 26.35"E	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L504	93.40	S3° 34' 41.54"W	
L542	41.14	S74° 55' 48.00"E	
L720	119.55	S26° 06' 02.03"W	
L721	264.76	S26° 41' 04.22"W	
L723	193.42	S32° 35' 09.65"W	
L725	118.63	S41° 23' 43.43"W	
L726	200.78	S41° 23' 43.43"W	
L727	79.85	S39° 46' 21.85"W	
L728	286.98	S39° 39' 32.76"W	
L729	225.16	S44° 01' 12.23"W	
L754	98.44	N24° 17' 52.78"W	
L755	32.43	N67° 57' 14.47"E	
L756	181.18	N54° 38' 28.12"E	
L763	81.51	N24° 09' 01.39"W	
L1070	142.60	N56° 13' 58.95"E	

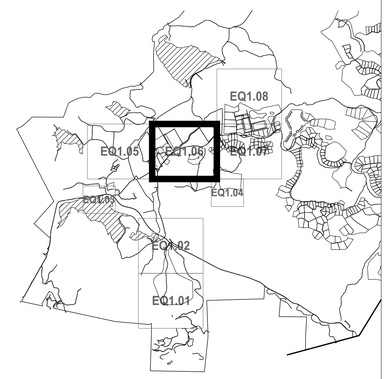
PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L1070	142.60	N56° 13' 58.95"E	
L1072	175.14	N61° 45' 25.34"W	
L1073	51.46	S77° 47' 24.75"W	
L1079	66.10	N77° 47' 12.78"E	
L1080	160.29	N77° 47' 24.75"E	
L1086	131.68	S86° 19' 47.72"W	
L1087	68.32	S22° 51' 40.63"W	
L1088	188.65	S81° 24' 28.30"W	
L1089	141.69	S15° 21' 51.76"E	
L1090	15.45	N63° 08' 03.40"E	
L1091	14.14	N48° 36' 09.55"E	
L1094	90.01	S55° 10' 06.60"W	
L1095	170.28	N42° 16' 05.10"W	
L1096	187.41	N27° 40' 23.46"E	
L1097	87.94	N70° 48' 09.47"E	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L1098	64.16	S32° 43' 42.12"E	
L1104	124.04	S77° 47' 21.91"W	
L1106	153.80	S77° 47' 21.91"W	



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
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EQUESTRIAN SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

TENTATIVE MAP
SUBDIVISION EQ

EQ SUBDIVISION PLAN

EQ1.06

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LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
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CALIFORNIA



TENTATIVE MAP
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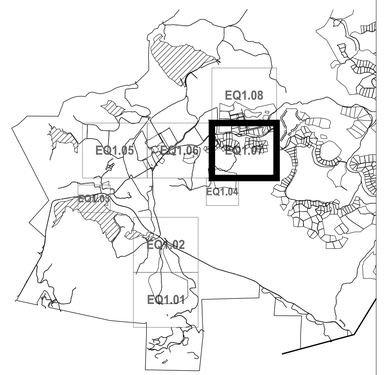

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EQ SUBDIVISION PLAN

EQ1.07

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C103	39.43	26.24	86.10
C108	15.83	32.10	28.26
C297	37.04	49.64	42.74
C306	31.45	46.20	39.00
C309	69.61	58.96	67.64
C320	61.64	70.63	50.00
C406	54.64	13.21	237.00
C407	170.17	13.64	714.60
C416	31.85	15.21	120.00
C419	31.85	15.21	120.00
C441	86.31	6.30	784.79
C449	143.42	28.63	287.00
C451	50.89	83.31	35.00
C452	40.65	26.77	87.00
C453	96.93	33.65	165.04
C510	199.96	136.39	84.00
C517	45.27	39.46	65.72
C522	45.21	38.30	67.64
C527	49.40	94.35	30.00
C529	305.91	34.18	512.86
C530	129.04	7.49	987.00
C532	44.84	85.65	30.00
C533	11.91	2.18	313.00
C534	43.00	3.03	813.00
C535	227.02	38.60	337.00
C537	77.19	7.22	612.34
C541	208.52	16.76	713.00
C543	29.97	9.18	187.00
C545	5.02	0.46	623.40
C546	233.95	17.01	787.81
C547	94.08	11.07	487.00
C548	158.76	31.69	287.00
C549	170.54	52.25	187.00
C552	97.50	26.23	213.00
C554	79.47	14.55	313.00
C555	45.39	74.30	35.00
C557	52.80	26.77	113.00
C559	62.08	25.96	137.02
C578	156.41	28.63	313.00
C579	60.08	21.40	160.90
C581	88.10	23.94	210.90
C582	47.41	14.36	189.10
C583	25.79	1.59	928.51
C584	29.98	10.61	161.88
C585	184.16	75.97	138.90
C586	25.79	3.90	378.76
C587	78.91	23.94	188.90
C590	64.54	39.61	93.35
C591	45.54	1.99	1312.14
C592	40.57	78.95	29.45
C601	26.88	22.77	67.64
C602	37.22	53.35	39.97
C603	13.85	9.27	85.62
C604	101.23	67.74	85.62
C605	45.48	40.71	64.00
C606	47.07	35.67	75.61
C607	68.85	61.64	64.00
C608	90.21	60.10	86.00
C609	21.09	14.57	82.90
C610	157.37	64.85	139.04
C611	289.21	119.30	138.90
C612	73.30	19.89	211.10
C614	56.56	19.10	169.62
C621	207.00	133.11	89.10
C623	64.57	28.14	131.49
C624	23.88	8.50	161.00
C625	62.93	7.42	485.74
C626	152.49	62.86	139.00
C628	38.65	45.20	49.00
C629	45.67	18.83	139.00
C630	78.78	19.04	237.00
C631	48.89	75.56	37.07
C632	90.43	76.60	67.64
C633	37.22	53.35	39.97
C638	25.29	21.42	67.64
C639	70.02	108.21	37.07
C641	64.68	49.92	74.23
C642	37.23	52.92	40.31
C643	85.19	77.79	62.75
C645	63.08	42.02	86.01
C648	99.71	51.42	111.10
C649	92.52	61.64	86.00
C650	47.65	42.66	64.00
C651	27.47	52.46	30.00
C652	67.13	60.10	64.00
C653	45.21	38.30	67.64
C654	14.40	22.26	37.07
C655	35.65	33.49	61.00
C656	86.61	20.76	239.00
C657	160.40	66.12	139.00
C658	152.42	33.46	261.00
C661	100.20	22.00	261.00
C663	124.69	44.37	161.00
C664	69.09	24.59	161.00
C665	137.31	32.92	239.00
C668	42.33	28.87	84.00
C670	112.80	30.63	211.00
C672	169.56	26.91	361.00
C673	187.42	29.75	361.00
C674	30.75	10.65	165.36

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C675	103.85	69.19	86.00
C678	60.10	36.08	95.45
C679	403.16	79.93	289.01
C701	134.15	21.77	352.99
C702	196.43	35.76	314.70
C703	110.71	33.05	191.93
C704	335.23	56.66	339.00
C705	38.71	11.84	187.36
C706	36.41	69.54	30.00
C707	77.29	69.19	64.00
C708	134.94	24.86	311.00
L50	74.40	N80° 34' 21.21"W	
L53	237.42	S65° 19' 12.68"E	
L126	77.06	N1° 23' 24.50"W	
L138	158.93	N24° 24' 40.28"W	
L149	208.59	N88° 59' 01.24"E	
L150	181.25	S57° 58' 10.20"W	
L151	263.61	S85° 29' 12.97"W	
L169	198.54	N84° 28' 25.05"E	
L175	119.36	S80° 29' 20.88"E	
L182	347.54	N3° 55' 01.45"E	
L209	259.18	S75° 34' 39.53"E	
L226	299.17	S8° 12' 38.34"E	
L250	237.98	S66° 12' 11.78"E	
L307	27.71	N52° 43' 08.43"W	
L314	165.35	N48° 55' 31.45"W	
L327	252.72	N46° 21' 32.70"E	
L335	281.39	S7° 22' 18.53"E	
L353	290.08	N24° 09' 01.39"W	
L420	116.38	S23° 17' 22.53"E	
L426	46.23	N57° 58' 10.20"E	
L433	227.59	N19° 30' 53.81"W	
L434	231.29	N56° 31' 00.91"E	
L473	141.26	S9° 55' 04.13"W	
L615	295.20	N13° 03' 09.08"W	
L616	158.93	N2° 09' 18.62"E	
L618	250.96	N13° 03' 09.08"W	
L619	17.56	N2° 09' 18.62"E	
L620	362.57	N2° 09' 18.62"E	
L633	96.40	N69° 56' 03.61"W	
L634	64.83	N83° 08' 41.77"W	
L668	78.62	S82° 35' 25.91"W	
L669	185.80	S89° 04' 53.39"W	
L670	275.07	N83° 08' 41.77"W	
L698	38.25	N21° 28' 12.63"W	
L699	213.99	N21° 28' 12.63"W	
L702	163.86	S78° 51' 20.68"W	
L704	21.31	S52° 05' 18.58"W	
L795	113.05	S80° 06' 58.02"W	
L830	310.33	N88° 27' 30.42"E	
L833	65.88	S87° 48' 06.35"W	
L840	160.50	N89° 55' 07.28"W	
L842	316.24	S82° 35' 25.91"W	
L843	394.58	S2° 09' 18.62"W	
L847	29.65	S87° 48' 06.35"W	
L849	100.00	S85° 37' 15.62"W	
L850	69.07	S85° 37' 15.62"W	
L852	170.30	N2° 09' 18.62"E	
L859	113.44	N58° 01' 56.67"W	
L860	122.18	S31° 53' 09.32"W	
L861	9.50	N58° 50' 23.79"W	
L862	114.32	S81° 45' 19.56"W	
L865	199.61	N5° 48' 57.87"W	
L866	227.98	S12° 59' 45.26"E	
L867	48.73	S80° 15' 21.30"W	
L868	47.00	S89° 26' 23.12"W	
L874	53.60	S73° 32' 21.05"W	
L875	55.69	S73° 32' 21.05"W	
L877	243.19	S62° 28' 19.23"W	
L880	41.92	S30° 46' 52.07"W	
L881	386.61	S75° 21' 17.54"W	
L882	222.23	S10° 55' 50.03"W	
L883	41.92	N30° 46' 52.07"E	
L884	171.42	N78° 51' 32.84"E	
L885	21.31	N52° 05' 18.58"E	
L887	377.31	N74° 17' 34.12"E	
L888	88.55	N7° 09' 42.19"E	
L921	197.30	S7° 09' 42.19"W	
L924	252.24	S21° 28' 12.63"E	
L929	22.18	S10° 55' 04.18"E	
L933	248.41	S84° 17' 09.31"E	
L935	133.12	N17° 09' 14.21"E	
L937	303.25	N73° 10' 14.98"E	
L938	167.62	N25° 08' 08.42"W	
L939	112.26	N4° 15' 04.92"E	
L940	300.67	S57° 18' 15.58"W	
L941	160.97	S6° 53' 10.93"E	
L943	130.64	N88° 59' 01.24"E	
L947	279.97	S86° 11' 28.24"W	
L948	26.88	N10° 48' 22.11"W	
L949	172.96	S35° 18' 05.14"E	
L950	249.25	S11° 39' 08.53"E	
L951	26.01	S83° 08' 44.44"E	
L952	183.27	N86° 15' 23.76"W	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L953	121.78	S86° 44' 16.91"E	
L954	148.56	S8° 48' 26.51"W	
L955	182.81	S48° 00' 22.66"W	
L956	20.35	S4° 50' 29.83"E	
L957	252.34	N80° 21' 58.25"E	
L958	228.89	N4° 44' 12.67"W	
L959	248.20	S8° 36' 34.39"E	
L960	363.50	N0° 14' 42.83"W	
L961	122.45	S81° 50' 20.26"E	
L962	109.15	S80° 21' 58.25"W	
L963	109.03	S80° 21' 58.25"W	
L965	21.89	N47° 12' 41.53"E	
L970	27.60	S59° 15' 41.07"W	
L972	28.89	S45° 16' 07.24"W	
L973	12.27	N73° 05' 30.04"W	
L974	13.79	S46° 48' 37.68"W	
L976	233.22	S8° 30' 44.51"E	
L978	166.18	N6° 53' 10.93"W	
L979	113.00	S53° 48' 57.98"W	
L980	298.80	N82° 54' 09.18"E	
L981	72.25	N10° 15' 11.78"E	
L982	36.11	N6° 53' 10.93"W	
L983	218.04	S1° 43' 58.81"E	
L984	132.60	S3° 25' 37.58"W	
L985	217.07	S85° 37' 12.49"E	
L986	298.87	N8° 44' 28.69"E	
L987	83.99	N53° 48' 57.98"E	
L988	101.32	N76° 26' 50.47"W	
L990	75.87	N13° 35' 21.58"W	
L992	220.10	S89° 02' 12.37"E	
L993	241.62	S0° 30' 00.38"E	
L994	174.25	N73° 14' 51.41"W	
L995	19.74	N76° 26' 50.47"W	
L997	43.10	S61° 33' 15.99"W	
L1001	73.10	S81° 09' 35.50"W	
L1005	227.60	S10° 23' 05.74"E	
L1006	274.05	S88° 55' 53.23"W	
L1007	309.01	N6° 36' 56.25"W	
L1008	221.57	S10° 23' 05.74"E	
L1009	197.42	N6° 36' 56.25"W	
L1010	8.03	S61° 33' 15.99"W	
L1011	230.56	N81° 18' 14.26"E	
L1012	273.08	N0° 31' 29.57"W	
L1015	21.27	N47° 12' 41.53"E	
L1016	68.03	N6° 52' 34.50"E	
L1020	28.89	N45° 16' 07.24"E	
L1022	19.18	N47° 18' 56.74"E	
L1024	12.27	S73° 05' 30.04"E	
L1025	106.17	N72° 08' 57.46"W	
L1029	189.04	S64° 51' 54.91"E	
L1031	163.87	S65° 19' 12.68"E	
L1034	85.75	N79° 46' 52.57"W	
L1035	96.52	S88° 49' 53.45"E	
L1037	11.46	S87° 27' 26.00"E	
L1038	19.96	N25° 03' 04.55"E	
L1040	350.80	N8° 12' 38.34"W	
L1041	423.87	S43° 06' 50.98"W	
L1042	240.77	S54° 52' 50.02"E	
L1043	54.15	S80° 11' 43.41"E	
L1044	232.37	S79° 22' 29.42"E	
L1045	500.90	S10° 39' 01.03"W	
L1046	165.11	N65° 19' 12.68"W	
L1047	170.83	N65° 19' 12.68"W	
L1048	492.57	S6° 59' 11.34"W	
L1049	70.98	S1° 41' 56.33"E	
L1050	16.37	N88° 30' 43.39"W	
L1052	65.36	N65° 19' 12.68"W	
L1053	420.51	N3° 25' 08.35"E	
L1054	326.61	S17° 53' 25.65"E	
L1055	87.05	N88° 49' 53.45"W	
L1057	14.47	S25° 03' 04.55"W	
L1058	46.23	S57° 58' 10.20"W	
L1059	21.78	N41° 10' 34.14"E	
L1060	74.87	N10° 32' 41.37"E	
L1061	177.24	N86° 35' 37.65"E	
L1062	215.81	S11° 28' 59.78"E	
L1063	331.88	N81° 56' 29.27"E	
L1065	10.37	N46° 06' 47.95"W	
L1067	135.05	N80° 06' 58.02"E	
L1068	120.77	N10° 28' 21.77"W	
L1069	6.22	N58° 43' 03.54"E	
L1074	53.29	S74° 42' 45.62"W	
L1107	113.52	N74° 05' 14.80"E	
L1108	181.61	N33° 06' 04.21"W	
L1111	192.21	N78° 26' 22.24"W	
L1112	126.89	N46° 21' 32.70"E	
L1113	71.84	N49° 03' 57.32"E	
L1114	11.76	N41° 10' 34.14"E	
L1116	53.63	N10° 08' 32.60"E	
L1117	21.25	S10° 32' 41.37"W	
L1119	10.29	S46° 06' 47.95"E	
L1122	17.56	N58° 43' 03.54"E	
L1124	119.43	N10° 28' 21.77"W	

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

EQUESTRIAN SUBDIVISION

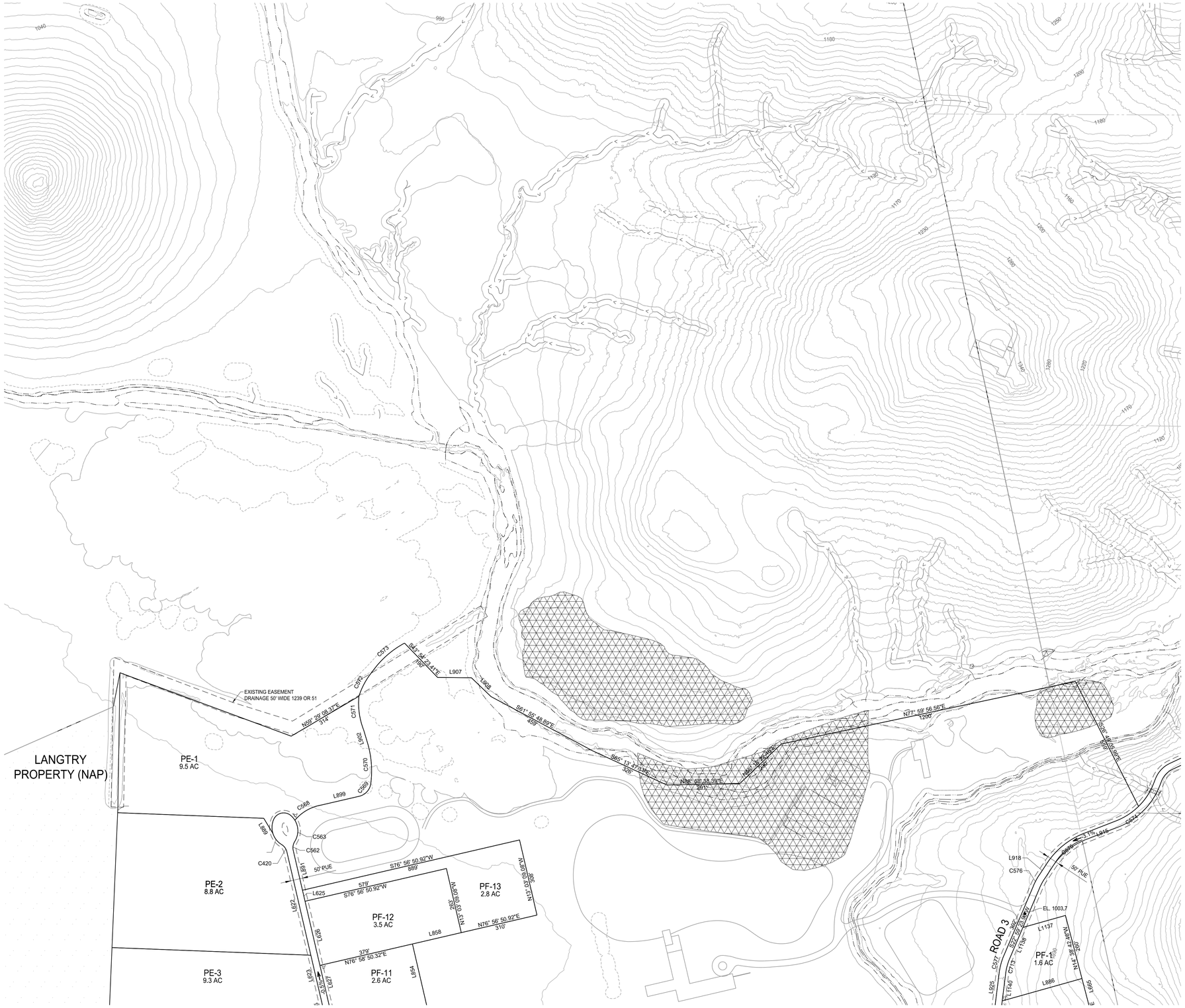
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

EQ SUBDIVISION PLAN

EQ1.07A



LEGEND

PARCEL BOUNDARY			
ROADWAY			
CUL-DE-SAC			
COUNTY LINE			
CULVERT		WASTE WATER TREATMENT FACILITY	WW
BRIDGE		WATER PUMP	
WATER TANK	W	FIRE HYDRANT	
GROUND WATER WELL	WELL	FIRE TANK	
ELECTRICAL SUBSTATION	ELEC	EXISTING POWER POLE	
DEVELOPMENT RESTRICTION AREA			
EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)			
EASEMENT			
EPHEMERAL STREAMS			
ORDINARY HIGH WATER MARK			
INTERMITTENT TOP OF BANK			
PERENNIAL TOP OF BANK			
EXISTING PARCEL BOUNDARY			
EPHEMERAL STREAM SETBACK			

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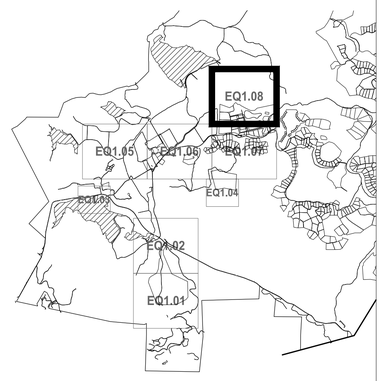
EQUESTRIAN SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ



SHEET LAYOUT
NOT TO SCALE

0 100' 200' 400' NORTH

EQ SUBDIVISION PLAN

EQ1.08

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C420	43.99	53.35	47.25
C561	53.44	38.30	79.95
C562	44.01	52.92	47.65
C563	85.79	61.48	79.95
C568	124.30	40.93	174.01
C569	72.68	69.40	60.00
C570	163.53	24.21	387.00
C571	135.17	25.64	302.01
C572	113.33	21.57	300.99
C573	172.34	26.71	369.68
C574	106.95	23.37	262.15
C575	193.66	35.45	313.00
C576	47.44	10.33	263.00
C577	72.66	15.83	263.00
C713	65.47	15.83	237.00
L622	419.89	N13° 03' 09.08"W	
L623	295.20	N13° 03' 09.08"W	
L625	45.14	N13° 03' 09.08"W	
L626	262.70	N13° 03' 09.08"W	
L627	250.96	N13° 03' 09.08"W	
L665	260.04	S14° 38' 42.46"E	
L854	299.66	N13° 03' 09.08"W	
L858	200.00	N76° 53' 04.68"E	
L886	330.45	N74° 17' 34.12"E	
L889	71.11	N31° 05' 32.95"W	
L891	159.75	N13° 03' 09.08"W	
L897	21.80	N2° 24' 07.36"E	
L899	155.32	N76° 56' 50.92"E	
L902	56.41	N16° 39' 48.10"W	
L907	134.85	S89° 28' 40.21"E	
L908	108.75	S46° 09' 45.59"E	
L915	137.39	S68° 46' 28.58"W	
L918	57.33	S33° 19' 29.85"W	
L925	197.30	S7° 09' 42.19"W	
L1137	176.52	S74° 17' 34.12"W	
L1138	132.90	S22° 59' 22.41"W	
L1140	108.76	S7° 09' 42.19"W	

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EQUESTRIAN SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

EQ SUBDIVISION PLAN

EQ1.08A

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG2\PKG2-PARCELS AND ROADS.DWG

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
PE - 1	413,936	2.2%
PE - 2	404,329	1.3%
PE - 3	420,612	1.2%
PE - 4	383,179	1.0%
PF - 1	69,061	28.6%
PF - 2	95,891	24.9%
PF - 3	94,488	23.1%
PF - 4	163,443	3.9%
PF - 5	158,750	3.7%
PF - 6	108,485	2.6%
PF - 7	71,783	4.5%
PF - 8	63,780	2.7%
PF - 9	154,453	2.5%
PF - 10	152,287	3.3%
PF - 11	113,666	0.8%
PF - 12	152,160	1.2%
PF - 13	121,569	1.8%
PV - 1	133,695	27.2%
PV - 2	274,442	34.2%
PV - 3	227,971	32.1%
PV - 6	85,676	31.3%
PV - 7	72,754	22.6%
PV - 8	90,561	35.2%
PV - 9	96,066	24.3%
PV - 10	121,843	28.2%
PV - 11	97,809	32.2%
PV - 12	115,996	29.1%
PV - 13	88,329	34.4%
PV - 14	64,862	25.8%
PV - 15	75,549	29.8%
PV - 16	74,797	30.2%
PV - 17	44,394	27.8%
PV - 18	63,077	27.0%
PV - 19	58,897	33.1%
PV - 20	70,859	36.7%
PV - 22	162,730	31.9%
PV - 23	56,405	32.7%
PV - 24	56,072	35.3%
PV - 25	77,903	36.7%
PV - 26	89,344	35.3%
PV - 27	55,970	38.6%
PV - 29	87,199	22.6%

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
PV - 31	69,643	37.2%
PV - 33	55,920	37.9%
PV - 35	64,059	32.3%
PV - 37	65,754	26.1%
PV - 38	48,043	32.1%
PV - 39	74,543	29.9%
PV - 40	59,095	26.9%
PV - 41	51,562	36.1%
PV - 43	65,675	31.5%
PV - 44	72,224	26.1%
PV - 46	68,439	32.9%
PV - 47	61,448	30.7%
PV - 48	62,179	27.0%
PV - 49	83,569	24.1%
PV - 51	43,388	34.2%
PV - 52	50,278	34.2%
PV - 53	74,039	27.3%
PV - 56	71,790	27.5%
PV - 57	58,225	28.0%
PV - 58	71,074	22.5%
PV - 59	59,624	31.9%
PV - 69	68,214	37.1%
PV - 70	46,324	21.9%
PV - 71	43,789	31.8%
PV - 72	45,296	28.7%
AERIAL SITE ACCESS	124,076	9.5%
CENTRAL BOH OPERATIONS	1,569,208	4.4%
ENTRY INTERSECTION 1A	91,691	9.1%
ENTRY INTERSECTION 1B	19,890	10.9%
ENTRY INTERSECTION 2	182,824	14.1%
FACILITY 1	1,986,575	12.7%
FACILITY 2	829,702	3.2%
FACILITY 3	86,534	1.5%
FACILITY 4	94,822	19.7%
FACILITY 5	60,517	17.4%
WORKFORCE HOUSING	6,044,076	9.1%
EQUESTRIAN CENTER	4,371,615	5.9%

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EQUESTRIAN SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

RESIDENTIAL PARCEL AVERAGE SLOPES

EQ1.20



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- REMAINDER PARCELS
- DEVELOPMENT PARCELS
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY

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GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

PERIPHERAL PARCEL PLAN

0 500' 1000' 2000' NORTH

EQ2.01

MATCHLINE - SEE EQ2.01

PERIPHERAL PARCEL - 5
1679.5 AC

DETERT
RESEVOIR

PERIPHERAL PARCEL - 6
15.5 AC

PERIPHERAL PARCEL-7
21.2 AC

LEGEND

PARCEL BOUNDARY

ROADWAY

CUL-DE-SAC

COUNTY LINE

REMAINDER PARCELS

DEVELOPMENT PARCELS

EPHEMERAL STREAMS

ORDINARY HIGH WATER MARK

INTERMITTENT TOP OF BANK

PERENNIAL TOP OF BANK

EXISTING PARCEL BOUNDARY

0 500' 1000' 2000' NORTH

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LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION EQ

PERIPHERAL PARCEL PLAN

EQ2.02

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C589	153.43	60.90	144.35
C600	77.58	69.34	64.10
C671	70.76	5.90	687.00
C673	448.75	41.94	613.00
C674	429.72	41.94	587.00
C675	170.34	16.63	587.00
C679	309.46	34.56	513.00
C680	19.37	2.16	513.00
C682	74.88	8.81	487.00
C685	169.16	28.76	337.00
C686	60.35	16.24	213.00
C687	170.09	31.14	313.00
C688	52.98	16.23	187.00
C689	155.97	31.14	287.00
C691	228.71	49.83	263.00
C692	20.84	5.61	213.00
C693	86.44	43.83	113.00
C696	28.27	6.16	263.00
C697	19.24	4.19	263.00
C700	206.10	49.83	237.00
C701	18.30	5.61	187.00
C702	66.55	43.83	87.00
C703	129.87	31.40	237.00
C704	42.75	10.33	237.00
C706	25.47	6.16	237.00
C707	17.34	4.19	237.00
C708	133.65	26.59	288.00
C709	22.01	4.35	289.58
C710	111.12	26.59	239.45
C712	51.94	18.26	163.00
C713	119.42	41.98	163.00
C715	109.59	38.52	163.00
C716	44.79	12.07	212.66
C717	89.40	23.02	222.53
C721	92.74	38.78	137.00
C722	43.65	18.26	137.00
C723	100.37	41.98	137.00
C724	28.70	12.00	137.00
C725	92.11	38.52	137.00
C726	39.32	12.07	186.66
C727	79.32	23.13	196.53
C729	53.46	27.10	113.00
C733	135.23	88.04	88.00
C734	36.14	23.80	87.00
C737	199.96	136.39	84.00
C738	52.84	44.76	67.64
C739	93.67	86.57	62.00
C740	37.23	52.92	40.31
C741	12.70	19.67	36.99
C746	110.33	38.78	163.00
C752	68.24	64.10	61.00
C754	28.29	30.02	54.00
C756	119.19	28.22	242.00
C758	68.69	41.46	94.91
C778	24.48	14.74	95.17
C780	174.92	30.84	325.00
C781	79.24	25.94	175.00
C783	329.16	66.18	284.97
C790	339.28	5.09	3819.55
C803	550.33	34.65	909.90
C808	452.26	23.67	1094.88
C815	350.72	8.93	2249.75
C823	354.69	13.97	1454.84
C825	62.20	4.37	814.88
C844	218.27	15.63	800.00
C848	411.78	2.37	9968.89
C850	306.49	5.80	3029.66
C855	37.60	86.17	25.00
C856	480.10	23.92	1149.87
C857	414.25	2.37	10028.68
C858	621.97	12.00	2969.68
C859	87.66	0.52	9601.05
C861	44.03	1.52	1655.40
C863	47.00	1.12	2401.90
C869	48.74	3.78	739.48
C870	132.44	7.49	1013.00
C871	50.08	0.11	25460.53
C874	640.78	59.99	612.00
C875	115.64	5.04	1314.18
C876	148.60	15.91	535.20
C877	19.11	1.91	572.73
C878	413.95	14.67	1616.28
C884	406.82	14.99	1554.82
C885	85.58	10.98	446.73
C886	113.33	21.57	300.99
C887	172.34	26.71	369.68
C894	37.23	52.92	40.31
C896	27.18	42.00	37.07
C897	90.43	76.59	67.64
C899	56.01	45.20	71.00
C900	176.63	62.86	161.00
C901	305.03	108.62	160.90
C902	177.05	0.40	25469.88
C903	211.42	4.45	2719.56
C904	250.15	20.86	687.00
C905	52.29	4.36	687.00
C906	42.84	0.32	7770.50
C907	81.94	5.96	787.87
C908	267.56	31.48	487.00
C909	254.77	40.21	363.00
C910	78.73	7.68	587.00
C911	34.11	2.62	746.70
C912	365.17	30.46	687.00
C913	60.64	13.21	263.00
C914	328.04	6.20	3029.66
C918	89.68	16.47	312.00
C919	78.78	19.04	237.00
C920	53.86	102.87	30.00
C921	326.01	42.74	437.00
L246	268.02	N79° 41' 52.34"W	
L247	155.44	N79° 47' 54.98"W	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L248	85.75	N79° 46' 52.57"W	
L250	105.33	S77° 59' 56.56"W	
L254	1949.12	N12° 03' 25.93"W	
L256	73.10	S81° 09' 35.50"W	
L257	449.17	S10° 23' 05.74"E	
L270	339.23	N88° 59' 01.24"E	
L278	64.16	S32° 43' 42.12"E	
L284	1332.92	N88° 30' 26.27"W	
L290	48.11	S88° 48' 32.05"E	
L295	1332.92	N88° 30' 26.27"W	
L296	105.60	N88° 23' 36.48"E	
L297	105.60	N88° 23' 36.48"E	
L305	2610.06	N12° 04' 40.74"W	
L306	51.13	S61° 33' 02.19"W	
L312	158.52	S86° 05' 25.65"W	
L313	26.93	N19° 38' 28.81"E	
L314	181.25	S57° 58' 10.20"W	
L316	144.30	S61° 06' 04.08"W	
L319	75.87	N13° 35' 21.58"W	
L321	2450.89	S84° 58' 57.99"E	
L326	230.50	N83° 08' 42.66"W	
L327	138.28	N83° 39' 35.97"E	
L335	1949.62	S30° 02' 00.23"E	
L336	406.72	S42° 31' 23.97"W	
L337	256.82	S40° 02' 29.01"W	
L350	249.25	S11° 39' 08.53"E	
L354	189.36	S58° 45' 38.92"W	
L360	14.41	S0° 39' 33.31"E	
L367	3704.67	S77° 54' 08.00"E	
L370	383.89	S66° 11' 53.81"E	
L381	118.19	S79° 55' 54.96"W	
L383	18.24	N17° 28' 27.27"E	
L392	562.51	S0° 14' 54.00"E	
L396	162.09	N72° 56' 06.74"E	
L402	193.16	N71° 33' 54.18"E	
L405	278.86	S12° 11' 17.04"W	
L408	263.61	N85° 29' 12.97"E	
L433	1052.58	N66° 15' 03.20"E	
L435	44.84	S35° 25' 37.85"W	
L438	60.39	S65° 05' 14.96"E	
L439	60.39	S65° 05' 14.96"E	
L442	189.04	S64° 51' 54.91"E	
L446	9.50	N64° 43' 15.04"E	
L471	162.52	N62° 36' 12.00"E	
L472	2105.45	S62° 42' 57.61"W	
L473	1622.31	N62° 49' 42.35"E	
L474	4203.65	N62° 38' 49.15"E	
L478	2751.76	S62° 33' 51.89"W	
L488	140.92	S44° 07' 03.10"W	
L493	397.22	S0° 26' 08.28"W	
L497	319.59	N59° 19' 05.35"E	
L499	96.40	N69° 56' 03.61"W	
L514	137.06	S3° 59' 31.00"E	
L518	88.53	N64° 57' 05.59"E	
L519	88.53	N64° 57' 05.59"E	
L520	306.66	S56° 36' 27.63"E	
L527	228.45	S23° 08' 52.97"W	
L530	7.32	S62° 21' 40.64"W	
L533	79.32	N55° 40' 40.57"E	
L534	79.32	N55° 40' 40.57"E	
L536	112.72	S72° 37' 54.93"W	
L543	75.30	S53° 05' 08.61"E	
L544	75.30	S53° 05' 08.61"E	
L546	260.12	N52° 47' 13.11"W	
L548	150.77	N52° 24' 27.32"E	
L549	150.77	N52° 24' 27.32"E	
L555	251.71	S46° 19' 15.41"W	
L565	165.35	N48° 55' 31.45"W	
L567	65.91	N43° 36' 35.54"E	
L568	66.30	N43° 36' 35.54"E	
L581	141.48	N50° 04' 18.13"E	
L582	141.48	N50° 04' 18.13"E	
L583	22.00	N47° 51' 21.57"W	
L590	168.36	S22° 27' 43.00"E	
L594	304.16	N44° 42' 17.03"W	
L595	304.16	N44° 42' 17.03"W	
L597	20.12	N33° 47' 54.63"E	
L604	54.45	S21° 47' 24.07"W	
L605	729.83	S33° 17' 26.98"W	
L612	134.64	S42° 48' 23.04"W	
L614	179.11	S53° 48' 10.96"W	
L617	269.99	S73° 53' 37.46"W	
L619	601.70	S55° 38' 22.00"W	
L620	10.06	N41° 23' 43.43"E	
L623	112.36	N86° 15' 23.76"W	
L629	51.46	S62° 43' 22.01"W	
L633	422.88	S2° 47' 19.99"W	
L636	96.15	N30° 49' 11.77"E	
L637	98.29	N30° 57' 26.32"E	
L650	20.35	S4° 50' 29.83"E	
L657	97.77	S38° 08' 18.01"W	
L659	119.36	S80° 29' 20.88"E	
L660	19.20	N21° 07' 20.20"E	
L661	19.20	N21° 07' 20.20"E	
L666	326.07	N33° 25' 43.07"E	
L667	81.40	N33° 19' 29.85"E	
L668	130.33	S74° 19' 19.03"W	
L671	193.42	N32° 35' 09.65"E	
L672	229.34	N32° 01' 49.80"W	
L673	325.10	S13° 09' 09.31"E	
L678	2665.83	S32° 59' 13.13"W	
L679	8.25	N63° 23' 51.61"E	
L686	511.12	S5° 10' 01.02"W	
L689	136.69	S56° 07' 45.09"W	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L690	1515.23	S27° 51' 45.73"E	
L691	97.64	N27° 33' 09.56"E	
L694	558.56	N26° 49' 35.99"W	
L695	264.76	N26° 41' 04.22"E	
L702	199.72	N31° 32' 32.84"E	
L705	728.37	S69° 40' 22.75"E	
L707	2791.57	S62° 57' 44.38"E	
L712	203.27	N23° 55' 09.67"W	
L713	203.27	N23° 55' 09.67"W	
L717	116.38	S23° 17' 22.53"E	
L720	298.10	N23° 03' 23.29"E	
L722	169.53	N22° 59' 25.18"E	
L725	57.60	S29° 48' 30.86"W	
L735	267.88	N19° 43' 36.61"W	
L736	267.88	N19° 43' 36.61"W	
L743	65.92	S73° 29' 08.24"W	
L744	106.58	N18° 01' 28.27"E	
L745	156.61	N9° 53' 27.29"E	
L748	614.68	N16° 58' 19.00"W	
L750	478.29	N16° 41' 57.20"W	
L751	386.06	N16° 32' 19.41"W	
L767	990.76	N13° 34' 05.84"W	
L768	990.76	N13° 34' 05.84"W	
L770	361.36	N80° 21' 58.25"E	
L772	1243.85	N12° 45' 25.11"W	
L774	2186.23	S12° 14' 32.71"E	
L775	35.16	S12° 13' 28.63"E	
L776	1314.36	S12° 11' 26.26"E	
L777	1272.52	S12° 07' 11.31"E	
L780	252.13	S41° 22' 00.96"W	
L781	1331.19	S12° 02' 42.42"E	
L782	2668.96	S12° 01' 09.59"E	
L783	413.36	N12° 01' 05.09"W	
L784	674.75	S11° 34' 24.61"E	
L786	117.22	S0° 36' 45.03"E	
L788	70.37	S10° 44' 42.13"W	
L796	141.26	S9° 55' 04.13"W	
L800	623.22	N9° 31' 12.26"W	
L802	86.51	S64° 30' 10.84"W	
L804	172.96	S35° 18' 05.14"E	
L826	30.62	S82° 29' 41.23"E	
L829	137.96	N11° 05' 58.20"E	
L831	834.80	N2° 04' 30.63"W	
L841	815.97	S0° 22' 25.89"W	
L843	662.88	N0° 05' 15.64"E	
L845	111.42	N77° 47' 04.00"E	
L846	48.11	S88° 48' 32.05"E	
L848	162.09	N72° 56' 06.74"E	
L851	335.05	N72° 56' 14.47"E	
L852	101.23	N85° 14' 19.85"E	
L853	213.53	S70° 13' 08.89"E	
L854	309.84	S25° 05' 00.12"E	
L855	279.36	N12° 44' 02.67"E	
L856	194.52	N16° 26' 32.19"E	
L857	262.72	N64° 24' 30.21"W	
L858	191.48	N62° 08' 56.81"W	
L859	472.71	S80° 19' 33.31"W	
L860	93.40	S3° 34' 41.54"W	
L864	120.56	S47° 45' 06.06"W	
L874	669.33	N76° 29' 55.54"E	
L875	416.44	S57° 08' 51.44"E	
L876	833.17	S80° 08' 50.90"E	
L877	1125.88	S3° 37' 44.68"W	
L878	826.02	N79° 12' 54.79"W	
L879	601.94	S78° 19' 21.35"W	
L880	1349.12	N15° 00' 30.22"W	
L891	62.88	S19° 34' 55.77"W	
L893	215.81	N11° 28' 59.78"W	
L894	331.88	N81° 56' 29.27"E	
L895	78.76	S42° 24' 46.49"E	
L924	386.10	N75° 21' 17.54"E	
L925	222.19	N10° 55' 50.03"E	
L931	190.14	S43° 54' 23.41"E	
L932	134.85	S89° 28' 40.21"E	
L933	108.75	S46° 09' 45.59"E	
L934	459.31	S61° 55' 48.89"E	
L935	325.62	S65° 13' 47.11"E	
L937	3683.62	N29° 15' 56.00"E	
L938	1553.09	N77° 54' 08.00"W	
L939	166.49	S17° 55' 31.09"E	
L940	1045.84	S30° 38' 12.85"W	
L941	222.93	N60° 14' 05.10"W	
L942	768.35	N27° 53' 33.15"W	
L943	328.88	S62° 06' 26.86"W	
L944	99.99	N27° 56' 41.52"W	
L945	147.08	N33° 02' 05.84"W	
L947	321.29	N8° 20' 44.03"W	
L950	5.44	N34° 17' 15.69"W	
L951	157.95	S13° 48' 04.21"W	
L952	440.90	S80° 35' 36.06"W	
L953	10.01	N12° 30' 43.12"W	
L954	702.38	S79° 58' 18.98"W	
L955	244.05	S84° 12' 36.03"W	
L956	242.96	N89° 38' 29.98"W	
L957	269.52	S85° 23' 55.95"W	
L958	406.06	S82° 29' 14.05"W	
L959	21.13	S78° 09' 51.99"W	
L960	419.00	N9° 47' 22.40"W	
L961	142.73	S87° 38' 19.12"W	
L962	494.57	S14° 45' 49.59"W	
L963	40.70	S78° 09' 51.23"W	
L964	145.56	S66° 16' 18.20"W	
L965	330.31	S89° 16' 36.24"W	
L966	140.40	N70° 51' 23.33"W	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L967	376.37	N47° 49' 29.72"W	
L968	49.03	N47° 49' 28.99"W	
L969	226.97	N36° 03' 23.03"W	
L970	108.03	N68° 46' 45.17"W	
L971	399.96	N77° 27' 03.02"W	
L972	147.29	N77° 27' 04.03"W	
L973	278.66	N63° 22' 37.22"W	
L974	126.56	N22° 16' 19.94"W	
L975	99.99	N31° 21' 49.90"W	
L976	101.11	N39° 53' 40.75"W	
L977	315.27	N31° 21' 50.03"W	
L978	190.87	N29° 15' 57.35"W	
L979	105.81	N51° 08' 13.31"W	
L980	212.35	N47° 42' 36.80"W	
L981	361.34	N58° 28' 58.21"W	
L982	186.03	N60° 44' 34.98"W	
L983	99.99	N62° 16' 59.15"W	
L984	50.98	N73° 35' 34.44"W	
L985	107.52	N62° 16' 59.13"W	
L986	120.51	N62° 16' 58.71"W	
L987	247.99	N44° 43' 05.53"W	
L988	174.15	S57° 40' 40.65"E	
L989	615.56	N28° 40' 52.84"E	
L990	520.27	N0° 55' 22.83"E	
L991	159.25	N43° 08' 22.66"E	
L992	707.36	N5° 53' 48.57"E	
L993	319.32	N22° 20' 35.45"E	
L994	465.76	N59° 47' 32.87"E	
L995	161.27	N46° 05' 45.03"E	
L996	301.63	N12° 21' 28.16"E	
L997	1319.30	N20° 57' 18.73"W	
L998	464.78	N36° 25' 08.05"W	
L999	1242.48	S89° 15' 05.29"W	
L1000	772.90	S62° 25' 31.00"W	
L1001	1111.72	S1° 14' 31.76"E	
L1002	1251.83	S64° 25' 59.26"E	
L1003	1509.93	S23° 05' 40.56"E	
L1004	275.37	S1° 25' 58.21"E	
L1005	542.63	S30° 36' 47.41"W	
L1006	569.02	N64° 22' 56.99"W	
L1007	10.00	S25° 37' 03.01"W	
L1008	789.53	N64° 22' 56.99"W	
L1009	1656.24	N62° 00' 56.98"W	
L1019	7.17	N43° 08' 51.55"W	
L1020	19.20	N46° 51' 08.45"E	
L1023	511.25	N63° 14' 09.32"W	
L1024	10.00	N25° 37' 03.03"E	
L1025	789.49	N64° 22' 56.97"W	
L1027	1656.24	N62° 00' 56.99"W	
L1029	1467.85	N74° 00' 56.99"W	
L1037	183.25	S82° 35' 25.91"W	
L1040	288.48	S86° 26' 05.21"W	
L1046	234.65	N80° 26' 07.50"W	
L1047	269.56	S85° 18' 42.89"W	
L1050	237.55	N72° 13' 47.38"E	
L1051	177.34	S81° 31' 15.57"W	
L1052	573.75	S66° 34' 28.56"W	
L1065	357.95	N62° 16' 59.00"W	
L1068	15.61	S46° 51' 08.45"W	
L1069	6.77	N43° 08' 51.55"W	
L1070	113.69	S10° 06' 25.09"W	
L1071	347.20	S28° 53' 23.01"W	
L1072	248.00	N43° 05' 17.94"W	
L1073	2588.36	N82° 07' 45.00"W	
L1074	601.24	N43° 03' 51.99"W	
L1075	2203.90	N43° 06' 24.18"W	
L1076	569.72	N12° 04' 25.78"W	
L1077	291.02	N88° 58' 38.39"E	
L1078	229.55	N46° 18' 22.48"E	
L1079	1094.18	N77° 59' 56.56"E	
L1080	313.75	N59° 29' 08.37"E	
L1083	260.04	S14° 38' 42.46"E	
L1084	260.04	S14° 38' 42.46"E	
L1085	250.43	S14° 38' 42.46"E	
L1086	26.38	S14° 38' 42.46"E	
L1088	161.22	N34° 58' 52.56"E	
L1089	370.65	N37° 43' 20.91"W	
L1090	142.60	N56° 13' 58.95"E	
L1091	81.51	N24° 09' 01.39"W	
L1092	181.18	N54° 38' 28.12"E	
L1093	32.43	N67° 57' 14.47"E	
L1094	98.44	N24° 17' 52.78"W	
L1095	68.32	N22° 51' 40.63"E	
L1096	188.65	N81° 24' 28.30"E	
L1097	131.68	N86° 19' 47.72"E	
L1098	187.41	N27° 40' 23.46"E	
L1099	170.48	N42° 11' 16.31"W	
L1100	224.77	N48° 34' 55.68"W	
L1101	266.54	S74° 36' 57.68"W	
L1102	87.94	N70° 48' 09.47"E	
L1103	206.67	S19° 30' 53.72"E	
L1110	120.45	N76° 26' 50.47"W	
L1112	173.63	N73° 14' 51.41"W	
L1114	132.60	S3° 25' 37.58"W	
L1115	217.07	N85° 37' 12.49"W	
L1116	298.87	N8° 44' 28.69"E	
L1118	300.67	S57° 18' 15.58"W	
L1119	83.99	S53° 48' 57.98"W	
L1120	112.26	N4° 15' 04.92"E	
L1121	167.62	N25° 08' 08.42"W	
L1122	183.40	N5° 04' 56.12"E	
L1123	133.12	N17° 09' 14.21"E	
L1124	276.79	N4° 12' 27.22"E	
L1125	260.11	S75° 45' 08.91"E	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L1125	260.11	S75° 45' 08.91"E	
L1128	334.81	S40° 22' 49.75"W	
L1129	287.47	S39° 39' 32.58"W	
L1132	225.16	S44° 01' 12.23"W	
L1136	136.41	N58° 05' 12.69"W	
L1138	114.32	S81° 45' 19.56"W	
L1143	561.16	S3° 11' 52.19"E	
L1144	284.33	S79° 22' 29.42"E	
L1145	240.70	S55° 04' 28.92"E	
L1146	350.80	S8° 12' 38.34"E	
L1147	299.17	S8° 12' 38.34"E	
L1148	226.59	S88° 36' 35.50"W	
L1149	77.06	N1° 23' 24.50"W	
L1150	158.93	N24° 24' 40.28"W	
L1151	99.86	N72° 08' 55.95"W	
L1152	1560.79	S62° 33' 37.99"W	
L1153	1404.30	S74° 00' 56.98"E	
L1155	1964.26	S89° 29' 00.47"E	
L1156	2565.10	S1° 36' 12.92"W	
L1157	1317.42	S87° 43' 58.23"E	
L1158	685.23	S0° 22' 25.86"W	
L1159	186.76	N62° 28' 14.75"E	
L1160	60.76	N62° 28' 34.05"E	
L1163	271.01	N44° 08' 24.89"E	
L1164	176.52	N74° 17' 34.12"E	

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG2\PKG2-REMAINDER PARCELS.DWG

SHERWOOD
DESIGN ENGINEERS
2548 Mission Street
San Francisco, CA 94110
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REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No. 84710
CIVIL
STATE OF CALIFORNIA

SCALE: N/A
0 1"
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NO	DATE	ISSUANCE

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

EQUESTRIAN SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

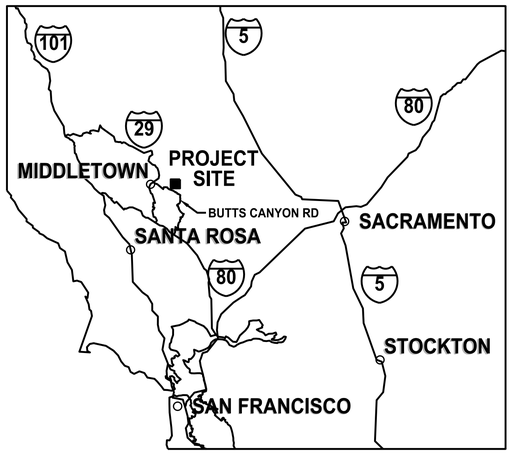


TENTATIVE MAP
SUBDIVISION EQ

PERIPHERAL PARCEL PLAN

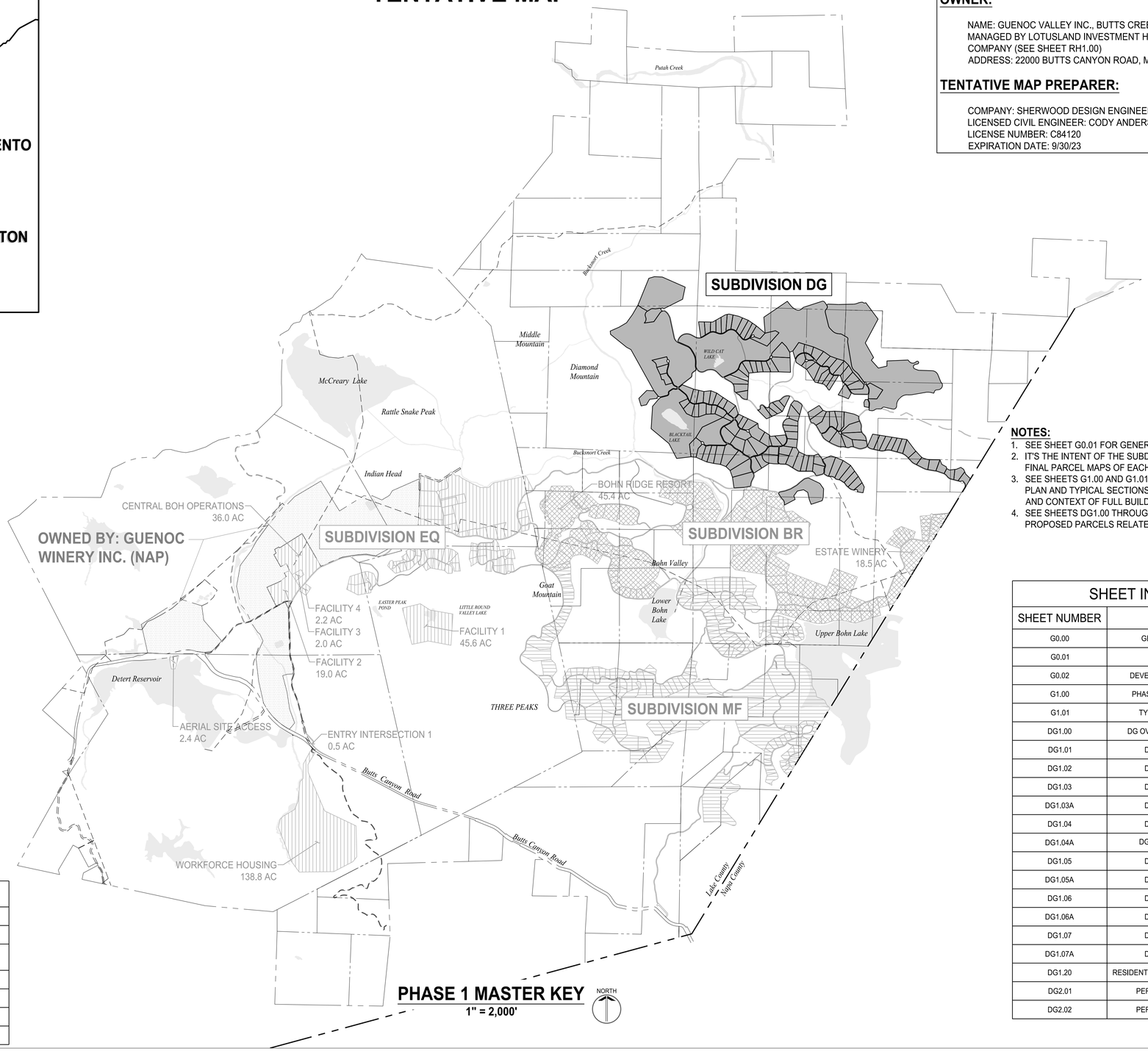
EQ2.03

DENNISTON GOLF ESTATES SUBDIVISION



VICINITY MAP
NOT TO SCALE

TENTATIVE MAP



PHASE 1 MASTER KEY
1" = 2,000'
NORTH

LEGEND

- PROPOSED SUBDIVISION DG - DENNISTON GOLF ESTATES
- PROPOSED SUBDIVISION MF - MAHA FARMS UNDER SEPARATE TENTATIVE MAP
- PROPOSED SUBDIVISION EQ - EQUESTRIAN UNDER SEPARATE TENTATIVE MAP
- PROPOSED SUBDIVISION BR - BOHN RIDGE UNDER SEPARATE TENTATIVE MAP
- EXISTING PARCELS OWNED BY OTHERS; NOT A PART (NAP) OF THIS TENTATIVE MAP

OWNER:

NAME: GUENOC VALLEY INC., BUTTS CREEK INC., BOHN VALLEY INC.
MANAGED BY LOTUSLAND INVESTMENT HOLDINGS, INC., A CALIFORNIA COMPANY (SEE SHEET RH1.00)
ADDRESS: 22000 BUTTS CANYON ROAD, MIDDLETOWN, CA 95461

TENTATIVE MAP PREPARER:

COMPANY: SHERWOOD DESIGN ENGINEERS
LICENSED CIVIL ENGINEER: CODY ANDERSON, P.E.
LICENSE NUMBER: C84120
EXPIRATION DATE: 9/30/23

NOTES:

1. SEE SHEET G0.01 FOR GENERAL NOTES.
2. IT'S THE INTENT OF THE SUBDIVIDER TO PROCESS THE FINAL PARCEL MAPS OF EACH TENTATIVE MAP IN PHASES.
3. SEE SHEETS G1.00 AND G1.01 FOR PHASE 1 MASTER ROAD PLAN AND TYPICAL SECTIONS (USED FOR REFERENCE AND CONTEXT OF FULL BUILDOUT OF PHASE 1).
4. SEE SHEETS DG1.00 THROUGH DG2.02 FOR EXISTING AND PROPOSED PARCELS RELATED TO SUBDIVISION DG.

SUBDIVISION LOT COUNTS

PARCEL TYPE	MAHA FARMS	EQUESTRIAN	DENNISTON GOLF	BOHN RIDGE	TOTAL
VILLA	73	67	133	112	385
RESORT RESIDENTIAL	104	0	7	30	141
COMMERCIAL	5	1	4	2	12
FACILITY	1	11	3	0	15
GOLF	0	0	4	0	4
PERIPHERAL	8	7	8	8	31

SHEET INDEX

SHEET NUMBER	SHEET TITLE
G0.00	GENERAL INFORMATION
G0.01	GENERAL NOTES
G0.02	DEVELOPMENT RESTRICTIONS
G1.00	PHASE 1 MASTER ROAD PLAN
G1.01	TYPICAL ROAD SECTIONS
DG1.00	DG OVERALL SUBDIVISION PLAN
DG1.01	DG SUBDIVISION PLAN
DG1.02	DG SUBDIVISION PLAN
DG1.03	DG SUBDIVISION PLAN
DG1.03A	DG SUBDIVISION PLAN
DG1.04	DG SUBDIVISION PLAN
DG1.04A	DG SUBDIVISION PLAN (3)
DG1.05	DG SUBDIVISION PLAN
DG1.05A	DG SUBDIVISION PLAN
DG1.06	DG SUBDIVISION PLAN
DG1.06A	DG SUBDIVISION PLAN
DG1.07	DG SUBDIVISION PLAN
DG1.07A	DG SUBDIVISION PLAN
DG1.20	RESIDENTIAL PARCEL AVERAGE SLOPES
DG2.01	PERIPHERAL PARCEL PLAN
DG2.02	PERIPHERAL PARCEL PLAN

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REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No. 84120
CIVIL
STATE OF CALIFORNIA

SCALE: 1:2000
0 1"
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NO	DATE	ISSUANCE

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

DENNISTON GOLF ESTATES SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

GENERAL INFORMATION

G0.00

GENERAL NOTES:

1. REFER TO FINAL ADOPTED DEVELOPMENT AGREEMENT FOR FURTHER SUBDIVISION DETAILS, INCLUDING SEQUENCING AND EXPIRATION DETAILS.
2. THE PROPERTIES WITHIN THIS SUBDIVISION ARE PROPOSED TO BE REZONED TO A NEWLY FORMED ZONING DISTRICT, THE GUENOC VALLEY PLANNED DEVELOPMENT (GVPD) WITH OPEN SPACE AND AGRICULTURAL PRESERVE OVERLAYS/COMBINING DISTRICTS. REFER TO THE RELEVANT ZONING DISTRICTS FOR DEVELOPMENT REGULATIONS.
3. REFER TO THE SPECIFIC PLAN OF DEVELOPMENT FOR ALLOWED DEVELOPMENT INCLUDING PLANNED DEVELOPMENT DETAILS, DENSITY, AND SETBACKS.
4. REFER TO THE CC&R'S FOR FUTURE HOMEOWNERSHIP ASSOCIATION DETAILS AND MAINTENANCE REQUIREMENTS.
5. REFER TO THE WATER, WASTEWATER, AND ELECTRICAL FEASIBILITY REPORTS FOR THE PRIVATE UTILITY DISTRICT DETAILS.
6. REFER TO THE DESIGN GUIDELINES FOR LOT LAYOUT, DENSITY, BUILDING MASSING, LANDSCAPE DETAILS, ROAD AND PATHWAY DESIGN, STREET LIGHTING, DIRECTIONAL SIGNAGE AND RESIDENTIAL DESIGNS.
7. REFER TO THE FIRE MANAGEMENT PLAN FOR FIRE PREVENTION GUIDELINES AND VEGETATION FUEL REDUCTION SETBACKS.
8. ALL PROPOSED ROADWAYS WITHIN PROPERTY ARE PRIVATE AND ARE TYPICALLY INDEPENDENT INDIVIDUAL PARCELS, UNLESS OTHERWISE NOTED. THERE WILL BE NO PUBLIC RIGHTS OF WAY EXCEPT ALONG THE ENTRY ROADS UP TO THE FIRST GATE.
9. ALL ROADWAY CORRIDORS SHALL INCORPORATE EASEMENTS OF 50 FEET BEYOND EITHER SIDE OF THE EDGE OF PAVEMENT FOR VEGETATION MANAGEMENT, DEPENDING ON ENVIRONMENTAL CONSTRAINTS, WHICH SHALL BE FURTHER DEFINED IN AND MANAGED BY THE CC&RS.
10. ROAD NAMES ARE REFERENCED WITH NUMBERS, PROPOSED NAMES WILL BE PROVIDED IN SUBSEQUENT SUBMITTAL PRIOR TO HEARING.

SUBDIVISION NOTES:

1. SEE PARCELS SHEETS FOR BEARING, DISTANCE, AND CURVE INFORMATION OF PARCELS.
2. PERIPHERAL PARCELS ARE PROPOSED TO BE SUBDIVIDED AND ARE INCLUDED FOR REFERENCE. SEE PERIPHERAL PARCEL SHEETS FOR BEARING, DISTANCE, AND CURVE INFORMATION.
3. ENVIRONMENTAL PRESERVATION AREAS, INCLUDING SENSITIVE BIOLOGICAL SPECIES OR CULTURAL SITES WHERE APPLICABLE, WITHIN SUBDIVIDED PARCELS MAY BE IDENTIFIED AS CONCEPTUAL ON THE TENTATIVE MAP AND THEN FINAL ON THE FINAL MAP.
4. FOR WATER SUPPLY AND WASTEWATER DISPOSAL SYSTEMS AND DISTRIBUTION, REFER TO SPECIFIC PLAN OF DEVELOPMENT AND TECHNICAL FEASIBILITY REPORTS.
5. PROPOSED PRIVATE UTILITIES WILL BE REQUIRED THROUGHOUT THE SITE, INCLUDING SEWER, WATER, ELECTRIC, COMMUNICATIONS, AND LIQUID PROPANE. PRELIMINARY LOCATIONS OF MAJOR FACILITIES ARE SHOWN FOR REFERENCE IN TENTATIVE MAPS, HOWEVER, ADDITIONAL INFORMATION IS PROVIDED ON THE SPECIFIC PLAN OF DEVELOPMENT.

EASEMENTS:

1. EXISTING EASEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION PER RECORD DATA AND HAVE NOT BEEN FIELD SURVEYED.
2. ALL PROPOSED PRIVATE UTILITY AND ACCESS EASEMENTS (PUE), WHICH ARE TO BE SPECIFICALLY DEFINED DURING THE FINAL MAP STAGE, SHALL INCORPORATE THE FOLLOWING ELEMENTS WITHIN A COMBINED TYPICAL EASEMENT WIDTH OF 50 FEET TOTAL:
   a. TOTAL PAVED ROADWAY, INCLUDING SHOULDERS, FOR SHARED ACCESS (RANGES IN WIDTH FROM 22 TO 28 FEET FOR TWO-WAY ROADS AND 14 FEET FOR ONE-WAY ROADS).
   b. RETAINING AND DRAINAGE CONVEYANCE FEATURES (UP TO 12 FEET WIDE).
   c. UTILITY PIPING AND STRUCTURES (UP TO 10 FEET WIDE)
   d. EXCEPTIONS MAY OCCUR FOR SPECIFIC UTILITY STRUCTURES OR DRAINAGE FEATURES REQUIRING ADDITIONAL WIDTH
3. PROPOSED DRAINAGE MANAGEMENT EASEMENTS SHALL EXTEND TO 30 FEET FROM THE TOP OF BANKS OF PERENNIAL STREAMS AND 20 FEET FROM THE TOP OF BANKS OF INTERMITTENT STREAMS.

EXISTING CONDITIONS AND NATURAL RESOURCE PRESERVATION:

1. SETBACKS FOR DRAINAGES, RARE PLANTS, WOODLANDS, AND RIPARIAN ZONES WILL BE ADDRESSED WITHIN THE SPECIFIC PLAN OF DEVELOPMENT DOCUMENTATION AND THE ENVIRONMENTAL IMPACT REPORT, UNDER SEPARATE COVER.
2. FINAL CONFIGURATION OF DEDICATED OPEN SPACE SHALL BE DEVELOPED AS PART OF THE ENVIRONMENTAL REVIEW PROCESS.
3. OAK WOODLAND PRESERVATION AREAS WITHIN PARCELS MAY BE SUBJECT TO DEED RESTRICTIONS TO LIMIT REMOVAL OF TREES. FINAL LOCATIONS WILL BE DIRECTED BY THE ENVIRONMENTAL IMPACT REPORT AND WILL ULTIMATELY BE RECORDED IN THE FINAL MAP.
4. AREAS IDENTIFIED AS "DEVELOPMENT RESTRICTION AREAS" AS CONTAINING CULTURAL RESOURCES WILL BE DEED RESTRICTED TO PROHIBIT THEIR DISTURBANCE, AND MAY BE MORE ACCURATELY SURVEYED FOR INCLUSION ON THE FINAL MAP.
5. DEDICATED HABITAT CORRIDORS WITHIN PARCELS MAY BE SUBJECT TO DEED RESTRICTIONS TO LIMIT PLACEMENT, HEIGHT AND COMPOSITION OF FENCING, VEGETATION MANAGEMENT AND DISTURBANCE OF NATURAL RESOURCES. FINAL CONFIGURATIONS WILL ULTIMATELY BE RECORDED IN THE FINAL MAP, WITH THE TERMS OF SAID RESTRICTIONS TO BE INCLUDED IN THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE HOMEOWNERS' ASSOCIATIONS AND/OR OTHER REAL ESTATE PURCHASE AGREEMENTS.

PHASING NOTES:

1. FINAL PARCEL MAPS FILED WILL INDICATE SUBDIVISION CONSTRUCTION PHASING.
2. FINAL MAPS DEVELOPED FOR EACH AGREED UPON PHASE OF THE PROPOSED EVENTUAL SUBDIVISION WILL INCLUDE ALL PARCEL TYPES, INCLUDING THE ROAD PARCELS ADJACENT TO AND REQUIRED FOR EACH SUBDIVISION PHASE.

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PROJECT NO. 18-016
DATE JULY 31, 2023
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DENNISTON GOLF ESTATES SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

GENERAL NOTES

G0.01



LEGEND

PROPOSED PARCEL BOUNDARY

EXISTING PARCEL BOUNDARY

NOT A PART (NAP)

PRESERVED OPEN SPACE

DEVELOPMENT RESTRICTION

OAK WOODLAND PRESERVATION AREA

HABITAT CORRIDOR

COUNTY LINE

EXISTING ROAD AND UTILITY EASEMENT

NOTE:

1. DEDICATED HABITAT CORRIDOR, PRESERVED OPEN SPACE AND OAK WOODLAND PRESERVATION AREAS ARE SHOWN FOR ILLUSTRATIVE PURPOSES. FINAL CONFIGURATION IS SUBJECT TO CHANGE AND WILL BE INCORPORATED IN THE FINAL MAP.

0 1750' 3500' NORTH

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DENNISTON GOLF ESTATES SUBDIVISION

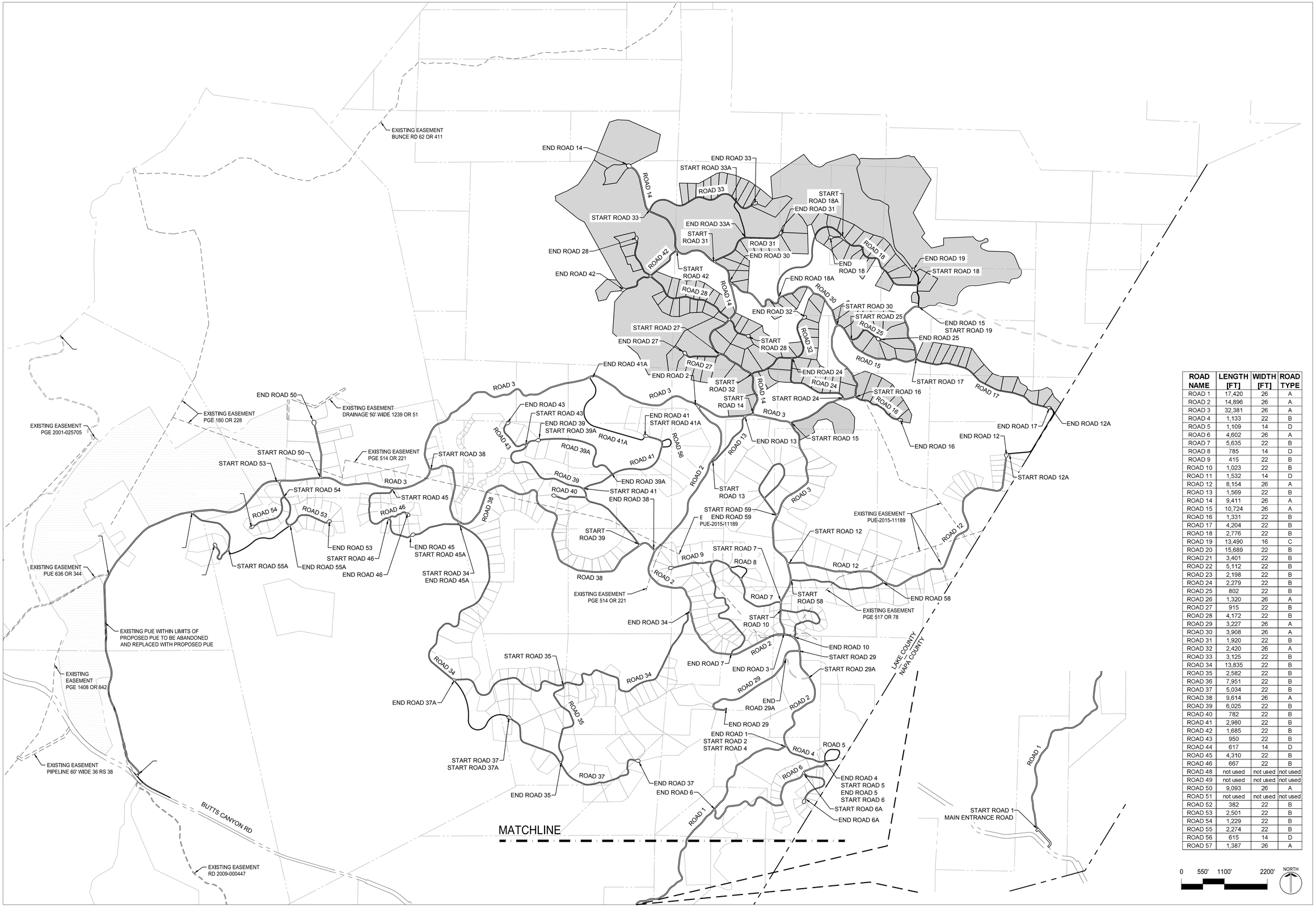
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

DEVELOPMENT RESTRICTIONS

G0.02



ROAD NAME	LENGTH [FT]	WIDTH [FT]	ROAD TYPE
ROAD 1	17,420	26	A
ROAD 2	14,896	26	A
ROAD 3	32,381	26	A
ROAD 4	1,133	22	B
ROAD 5	1,109	14	D
ROAD 6	4,602	26	A
ROAD 7	5,635	22	B
ROAD 8	785	14	D
ROAD 9	415	22	B
ROAD 10	1,023	22	B
ROAD 11	1,532	14	D
ROAD 12	8,154	26	A
ROAD 13	1,569	22	B
ROAD 14	9,411	26	A
ROAD 15	10,724	26	A
ROAD 16	1,331	22	B
ROAD 17	4,204	22	B
ROAD 18	2,776	22	B
ROAD 19	13,490	16	C
ROAD 20	15,689	22	B
ROAD 21	3,401	22	B
ROAD 22	5,112	22	B
ROAD 23	2,198	22	B
ROAD 24	2,279	22	B
ROAD 25	802	22	B
ROAD 26	1,320	26	A
ROAD 27	915	22	B
ROAD 28	4,172	22	B
ROAD 29	3,227	26	A
ROAD 30	3,908	26	A
ROAD 31	1,920	22	B
ROAD 32	2,420	26	A
ROAD 33	3,125	22	B
ROAD 34	13,835	22	B
ROAD 35	2,582	22	B
ROAD 36	7,951	22	B
ROAD 37	5,034	22	B
ROAD 38	9,614	26	A
ROAD 39	6,025	22	B
ROAD 40	782	22	B
ROAD 41	2,980	22	B
ROAD 42	1,685	22	B
ROAD 43	950	22	B
ROAD 44	617	14	D
ROAD 45	4,310	22	B
ROAD 46	667	22	B
ROAD 48	not used	not used	not used
ROAD 49	not used	not used	not used
ROAD 50	9,093	26	A
ROAD 51	not used	not used	not used
ROAD 52	382	22	B
ROAD 53	2,501	22	B
ROAD 54	1,229	22	B
ROAD 55	2,274	22	B
ROAD 56	615	14	D
ROAD 57	1,387	26	A

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GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



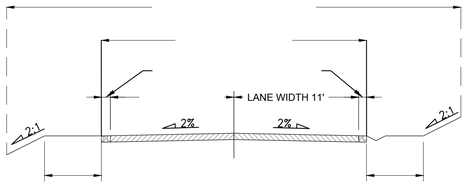
TENTATIVE MAP
SUBDIVISION DG

PHASE 1
MASTER
ROAD PLAN

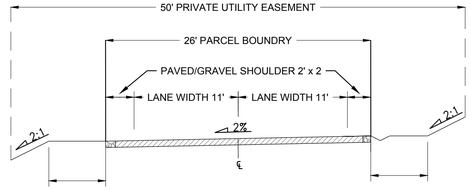
G1.00

TYPICAL ROAD SECTIONS

TYPE A - CROWNED/SUPERELEVATED PRIMARY 2 LANE ROAD



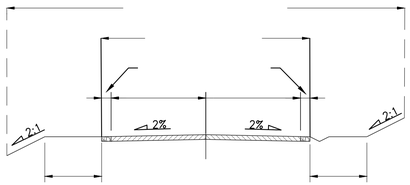
10' @ 10% MAX,
SEE NOTE 5



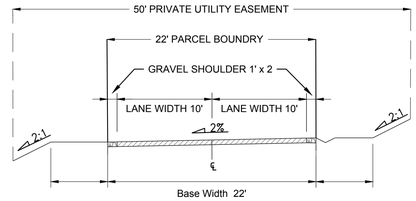
10' @ 10% MAX,
SEE NOTE 5

10' @ 10% MAX,
SEE NOTE 5

TYPE B - CROWNED/SUPERELEVATED SECONDARY 2 LANE ROAD



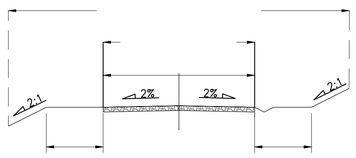
10' @ 10% MAX,
SEE NOTE 5



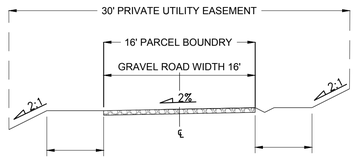
10' @ 10% MAX,
SEE NOTE 5

10' @ 10% MAX,
SEE NOTE 5

TYPE C - CROWNED/SUPERELEVATED GRAVEL ROAD



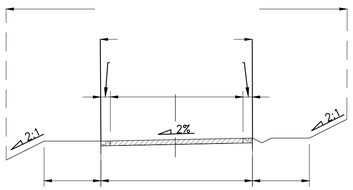
10' @ 10% MAX,



10' @ 10% MAX,
SEE NOTE 5

10' @ 10% MAX,
SEE NOTE 5

TYPE D - ONE WAY ROAD



NOTES:

1. SLOPES SHOWN HEREIN REPRESENT TYPICAL OR MAXIMUM CONDITIONS AND ARE SUBJECT TO CHANGE PER PENDING DETAILED ROADWAY DESIGN.
2. EASEMENTS SHOWN HEREIN REPRESENT TYPICAL MINIMUM WIDTH AND COVERAGE SITUATIONS AND ARE SUBJECT TO INCREASING TO ACCOMMODATE SPECIFIC STRUCTURES OR FEATURES TO BE DESIGNED.
3. PLEASE REFER TO THE DESIGN GUIDELINES AS PART OF THE GVD ZONING DESIGNATION FOR ROADWAY DESIGN DETAILS.
4. IN ADDITION TO THE PUE, THERE ARE VEGETATION AND FUEL REDUCTION AREAS 50' ON EITHER SIDE OF THE EDGE OF PAVEMENT. REFER TO THE FIRE MANAGEMENT PLAN.
5. TO THE EXTENT THAT THE TOPOGRAPHY FEASIBLY PERMITS, AN AREA OF APPROXIMATELY 10 FEET ON EACH SIDE OF THE ROADWAYS WILL BE IMPROVED WITH HARDSCAPE.

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DENNISTON
GOLF ESTATES
SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

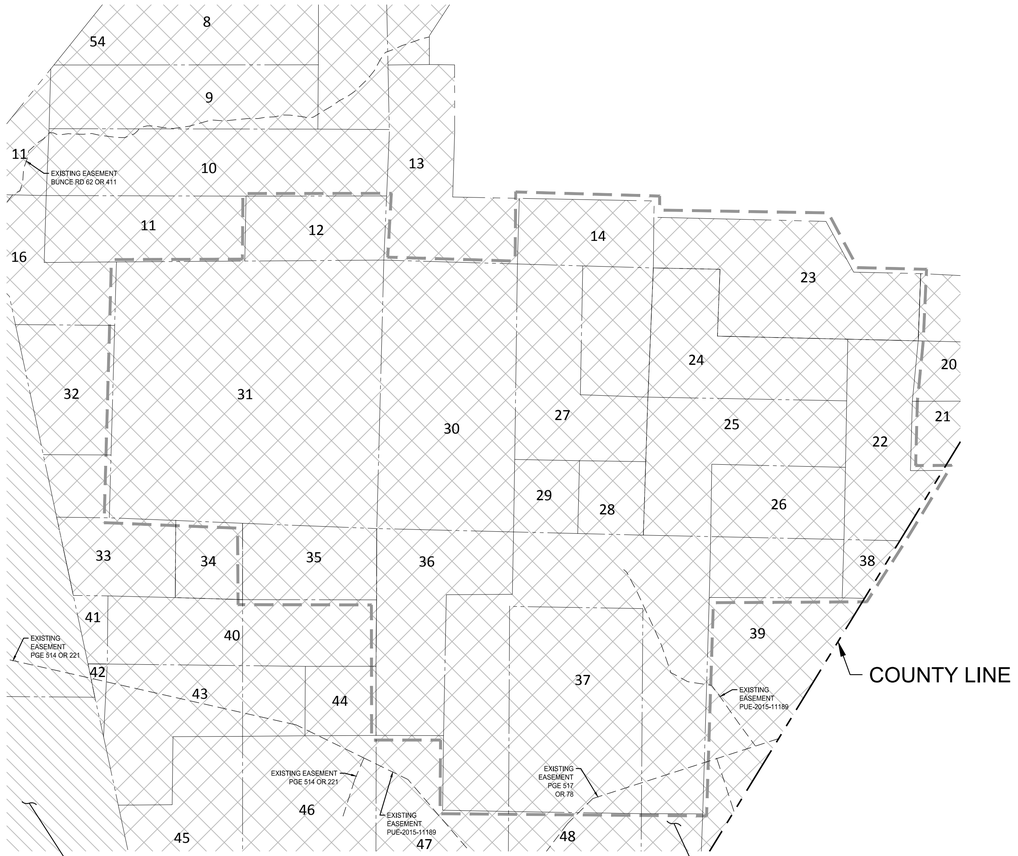


TENTATIVE MAP
SUBDIVISION DG

TYPICAL
ROAD
SECTIONS

G1.01

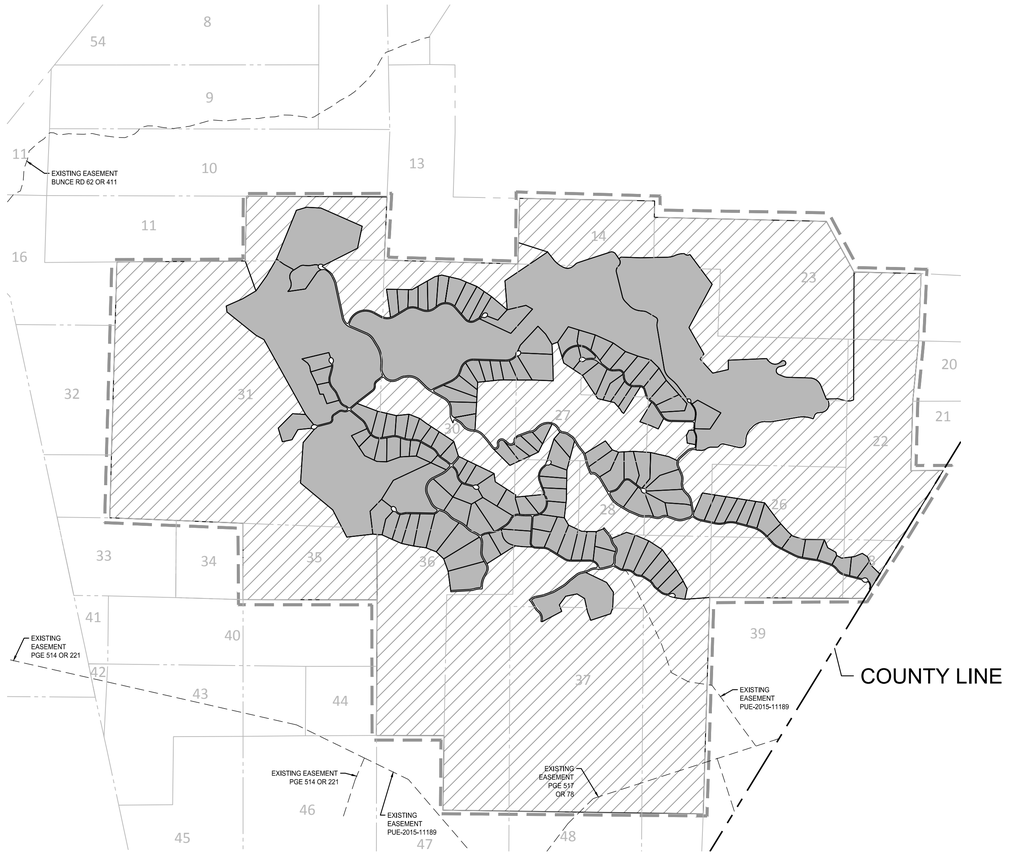
EXISTING PARCELS



EXISTING OWNERSHIP INFORMATION						
#	CC	APN	Owner	CC Doc #	Correction Deed	Approx. Acreage
12	11-57	013-016-04PT	Bohn Valley Inc.	2012006020		80
14	11-40	013-021-06PT, 013-021-09PT	Bohn Valley Inc.	2012006018		160
22	11-83	013-021-10PT	Bohn Valley Inc.	2012017319		126
23	12-16	013-022-02PT	Bohn Valley Inc.	2013003323		18
24	11-77	013-021-10PT	Bohn Valley Inc.	2012017317		160
25	11-76	013-021-10PT	Bohn Valley Inc.	2012017316		160
26	11-90	013-021-10PT, 013-022-02PT	Bohn Valley Inc.	2012017323		160
27	11-60	013-021-09PT	Bohn Valley Inc.	2012006022		160
28	11-86	013-021-09PT	Bohn Valley Inc.	2012005988		40
29	11-86	013-021-09PT	Bohn Valley Inc.	2012005994		40
30	11-65	013-021-09PT	Bohn Valley Inc.	2012006004		320
31	11-74	013-016-06	Bohn Valley Inc.	2012005991		640
35	11-33	013-023-07PT	Bohn Valley Inc.	2012006015		80
36	11-30	013-022-01	Bohn Valley Inc.	2012006016		160
37	11-64	013-022-01PT, 013-022-02PT, 013-022-05PT	Bohn Valley Inc.	2012006005		600
38	12-16	013-022-02PT	Bohn Valley Inc.	2013003323		18

- Grant Deed #2016-016244 - Bohn Valley Inc
  APNs - 013-015-29, 013-016-04, 013-016-06, 013-016-08, 013-019-05, 013-019-09, 013-021-05, 013-021-06, 013-021-09, 013-021-10, 013-022-02, 013-023-07
- Grant Deed #2016-010655 - Guenoc Valley Inc
  APNs - 014-330-09

PROPOSED SUBDIVISION



PROPOSED PARCEL TYPES	
VILLA	28
RESORT RESIDENTIAL	40
COMMERCIAL	3
FACILITY	5
GOLF	4
PERIPHERAL	7

NOTES:
1. SEE SHEET G0.01 FOR GENERAL NOTES.
2. SEE SHEETS G1.00 AND G1.01 FOR PHASE 1 MASTER ROAD PLAN AND TYPICAL SECTIONS (USED FOR REFERENCE AND CONTEXT OF FULL BUILDOUT OF PHASE 1).
3. SEE SHEETS DG1.00 THROUGH DG1.08 FOR DETAILED SUBDIVISION OF PROPOSED ROAD, COMMERCIAL AND RESIDENTIAL PARCELS.
4. SEE SHEETS DG2.01 THROUGH DG2.02 FOR DETAILED PERIPHERAL PARCELS.

0 750' 1500' 3000' NORTH

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DENNISTON GOLF ESTATES SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

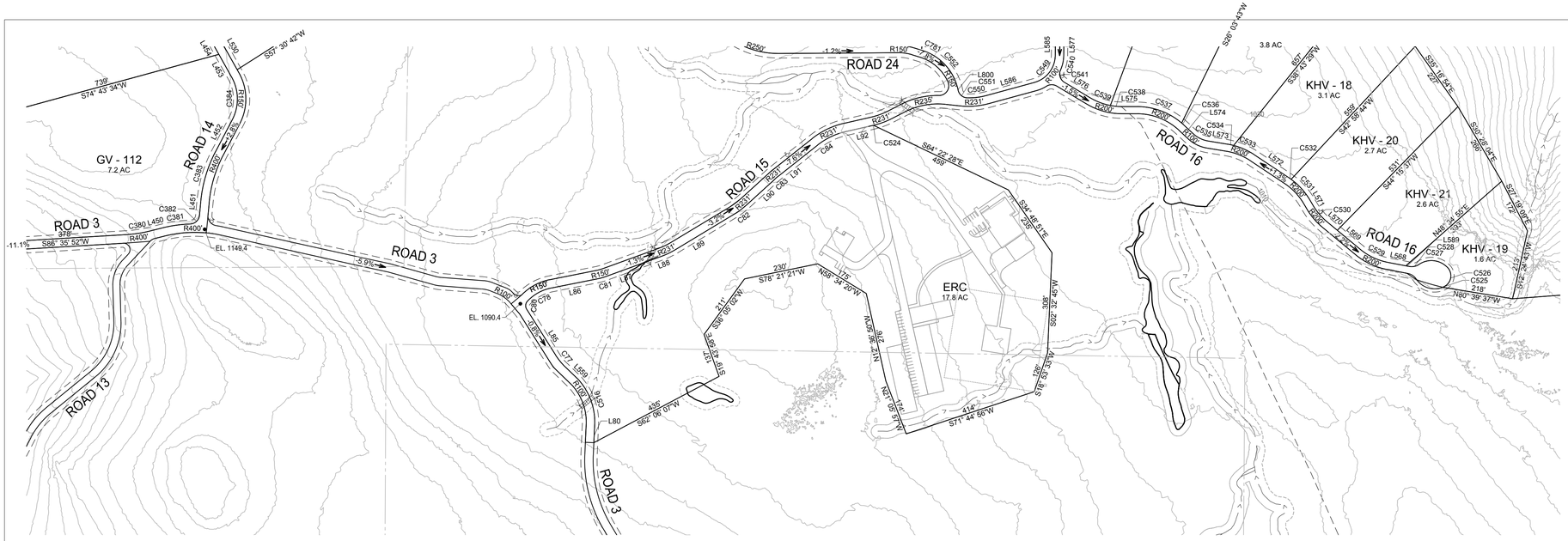


TENTATIVE MAP
SUBDIVISION DG

DG OVERALL SUBDIVISION PLAN

DG1.00

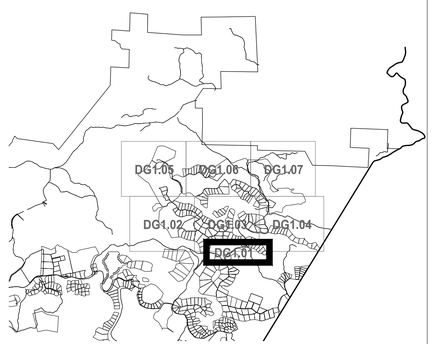
P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG3\PKG3-EXISTING PARCELS.DWG



PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C77	47.68	13.66	200.00
C78	81.55	34.11	137.00
C80	27.06	75.93	20.42
C81	24.72	8.69	163.00
C82	47.68	11.20	244.00
C83	14.92	3.92	218.00
C84	96.95	25.48	218.00
C516	164.60	48.23	195.53
C524	0.62	0.14	244.00
L80	43.84	N2° 31' 19.59"E	
L85	166.26	N32° 17' 30.25"W	
L86	146.64	N78° 43' 17.80"E	
L87	181.93	N70° 01' 50.65"E	
L88	181.93	N70° 01' 50.65"E	
L89	210.53	N58° 53' 58.44"E	
L90	118.62	N47° 42' 11.07"E	
L91	152.45	N51° 37' 31.78"E	
L92	86.75	N77° 06' 27.47"E	
L559	53.76	N45° 57' 00.71"W	

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL–DE–SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



SHEET LAYOUT
NOT TO SCALE

0 100' 200' 400' NORTH

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GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP

SUBDIVISION DG

DG SUBDIVISION PLAN

DG1.01

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG3\PKG3-PARCELS AND ROADS.DWG

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C1	57.82	13.98	237.00
C50	116.58	41.46	161.10
C52	42.44	26.25	92.61
C53	59.46	38.28	89.00
C54	86.03	44.41	111.00
C55	100.40	66.20	86.89
C363	50.75	78.44	37.07
C364	46.50	39.39	67.64
C368	125.42	83.51	86.06
C369	37.22	53.35	39.97
C370	52.37	44.34	67.67
C371	76.49	68.48	64.00
C375	68.98	44.41	89.00
C376	95.71	49.41	111.00
C377	32.94	62.90	30.00
C378	88.71	74.86	67.90
C395	38.88	11.79	189.00
C396	35.56	18.36	111.00
C397	85.68	44.22	111.00
C398	33.85	48.59	39.92
C399	29.09	24.64	67.64
C400	70.82	60.41	67.17
C401	23.83	36.82	37.07
C402	49.71	73.85	38.57
C403	88.67	75.27	67.49
C404	31.16	44.29	40.31
C405	97.21	62.58	89.00
C406	43.40	11.79	211.00
C418	108.85	26.10	239.00
C419	73.29	16.09	261.00
C420	121.17	29.05	239.00
C421	61.05	13.40	261.00
C422	186.14	40.86	261.00
C423	95.60	20.99	261.00
C424	110.18	26.41	239.00
C427	231.59	50.45	263.00
C443	96.33	23.52	234.65
C445	53.03	100.71	30.17
C446	120.32	26.41	261.00
C447	101.32	22.14	262.26
C448	233.89	56.07	239.00
C449	52.73	11.58	261.00
C450	79.59	17.47	261.00
C451	67.11	16.09	239.00
C452	111.68	24.52	261.00
L2	698.53	N12° 05' 17.61"W	
L65	237.66	N75° 34' 12.13"E	
L66	36.22	N23° 39' 20.68"W	
L67	204.46	N50° 00' 51.23"E	
L68	38.70	S65° 08' 39.53"E	
L69	38.70	N65° 08' 39.53"W	
L70	33.01	S78° 31' 06.72"E	
L465	186.23	S89° 05' 17.50"E	
L466	71.69	S89° 05' 17.50"E	
L467	65.92	N79° 07' 36.01"E	
L468	8.51	N38° 17' 37.72"W	
L469	8.61	S38° 17' 37.72"E	
L470	65.92	S79° 07' 36.01"W	
L471	518.89	N89° 05' 17.50"W	
L479	93.37	S86° 44' 29.16"E	
L480	47.55	S86° 44' 29.16"E	
L481	84.97	S70° 39' 06.88"E	
L482	43.40	S70° 39' 06.88"E	
L483	112.22	N80° 18' 01.32"E	
L484	92.34	N80° 17' 57.25"E	
L485	52.44	S24° 26' 58.54"E	
L486	84.72	S24° 26' 56.10"E	
L487	300.25	S50° 51' 48.29"E	
L488	106.85	N56° 21' 53.10"E	
L489	237.66	N75° 34' 11.26"E	
L492	80.93	N26° 03' 59.06"W	
L496	136.87	S23° 39' 20.68"E	
L499	150.00	S14° 50' 51.00"W	
L502	282.15	N50° 51' 49.02"W	
L503	115.85	N24° 26' 58.54"W	
L504	204.55	S80° 17' 59.48"W	
L505	128.36	N70° 39' 06.88"W	
L506	75.99	N86° 44' 29.16"W	
L507	64.94	N86° 44' 29.16"W	
L791	0.00	N23° 39' 20.52"W	
L796	32.65	S78° 31' 00.85"E	
L797	146.66	N50° 00' 51.23"E	



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK
- GROUND WATER WELL
- ELECTRICAL SUBSTATION
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE

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San Francisco, CA 94110
www.sherwoodengineers.com

REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No. 84470
CIVIL
STATE OF CALIFORNIA

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PROJECT NO. 18-016
DATE JULY 31, 2023
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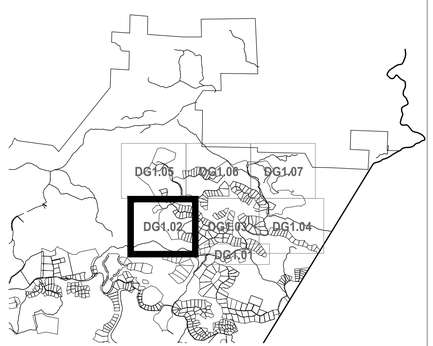
DENNISTON GOLF ESTATES SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG



SHEET LAYOUT
NOT TO SCALE

0 100' 200' 400' NORTH

DG SUBDIVISION PLAN

DG1.02

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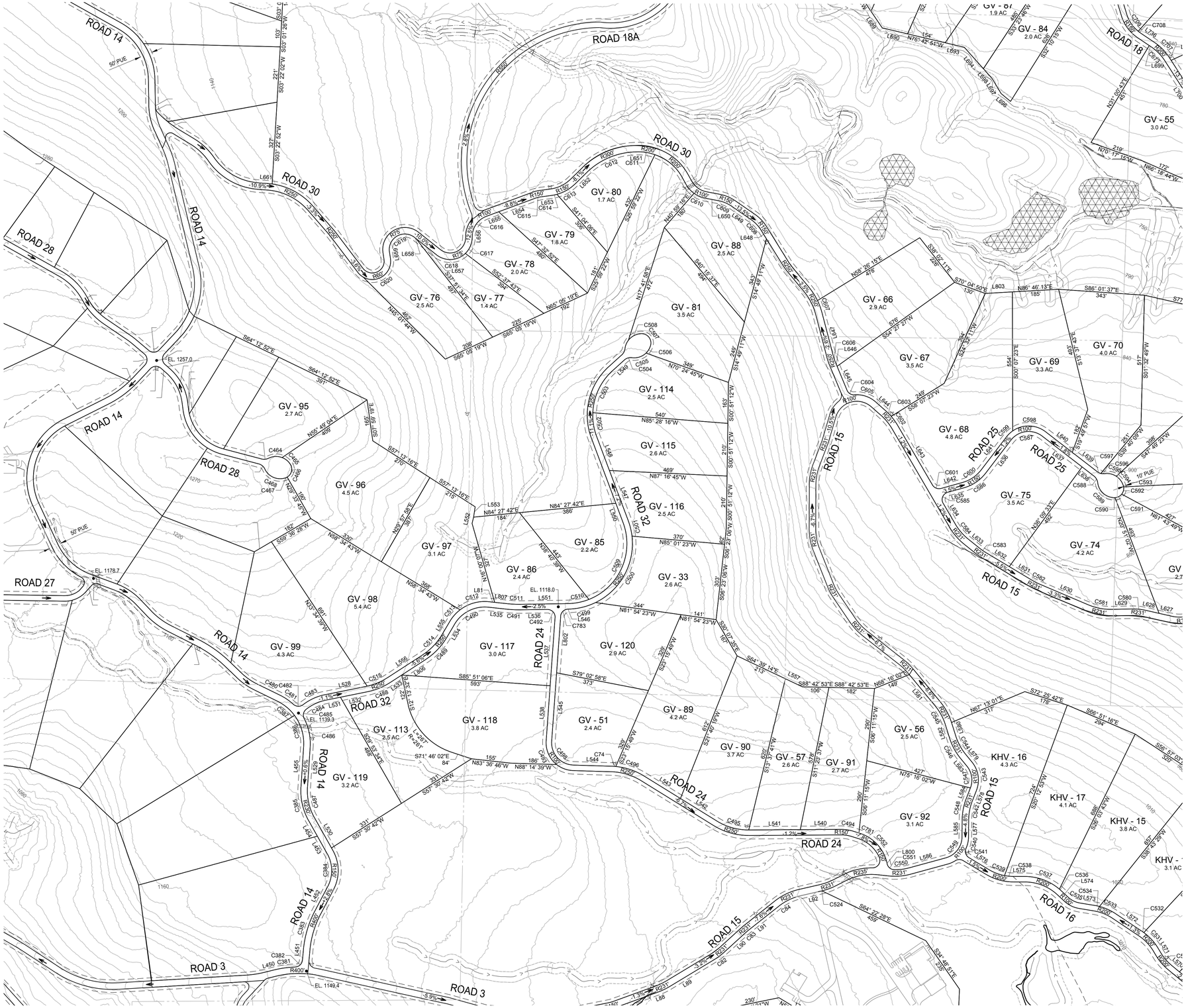

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK
- GROUND WATER WELL
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DENNISTON GOLF ESTATES SUBDIVISION

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LAKE COUNTY
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TENTATIVE MAP
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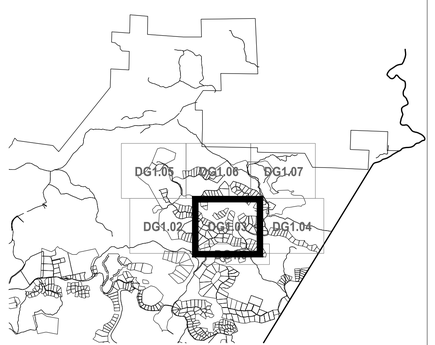

SHEET LAYOUT
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0 100' 200' 400' NORTH

DG SUBDIVISION PLAN

DG1.03

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C380	72.04	10.67	387.00
C381	86.97	12.36	403.28
C382	43.26	82.61	30.00
C383	161.50	22.40	413.00
C384	136.28	57.00	137.00
C385	140.78	33.06	244.00
C386	131.60	40.32	187.00
C387	89.72	27.49	187.00
C388	82.42	17.96	263.00
C389	151.62	17.84	487.00
C390	106.59	19.51	313.00
C391	103.12	24.79	238.35
C392	26.24	66.85	22.49
C393	67.61	34.90	111.00
C394	30.96	15.98	111.00
C407	61.84	39.81	89.00
C408	41.80	101.00	23.71
C409	173.98	37.90	263.00
C410	401.72	87.52	262.98
C411	119.19	17.65	387.00
C412	16.54	2.45	387.00
C413	48.73	93.06	30.00
C414	25.16	6.03	239.00
C415	89.87	19.73	261.00
C416	27.40	6.01	261.00
C417	127.81	30.64	239.00
C453	139.57	30.64	261.00
C454	74.60	23.43	182.42
C455	33.00	7.91	239.00
C456	27.47	6.03	261.00
C457	45.84	89.57	29.32
C458	87.81	17.33	290.31
C459	86.74	16.26	305.58
C460	48.12	91.90	30.00
C461	17.45	5.29	189.00
C462	205.32	61.92	190.00
C463	35.67	49.43	41.35
C464	52.46	44.43	67.64
C465	55.47	51.58	61.62
C466	46.22	71.41	37.09
C467	11.94	18.46	37.07
C468	90.43	76.59	67.64
C469	33.90	50.77	38.26
C470	63.86	17.34	211.00
C471	184.98	50.23	211.00
C472	134.72	40.84	189.00
C473	46.13	88.10	30.00
C474	144.85	20.09	413.00
C475	354.51	85.70	237.00
C476	185.52	44.85	237.00
C477	115.09	26.47	249.09
C478	97.73	19.35	289.34
C479	159.81	17.85	513.00
C480	102.66	1.18	5000.00
C481	63.53	17.09	213.00
C482	42.30	80.79	30.00
C483	96.90	26.31	211.00
C484	87.65	26.57	189.00
C485	41.64	79.53	30.00
C486	116.33	31.29	213.00
C487	125.78	33.06	218.00
C488	98.11	21.54	261.00
C489	120.43	26.44	261.00
C490	158.94	65.51	139.00
C491	61.38	6.88	511.00
C492	49.69	94.90	30.00
C493	107.85	55.67	111.00
C494	49.50	17.62	161.00
C495	133.82	32.08	239.00
C496	119.86	26.31	261.00
C498	143.48	92.37	89.00
C499	114.10	25.05	261.00
C500	321.68	70.62	261.00
C501	63.50	14.03	259.34
C502	95.71	22.93	239.19
C503	189.46	45.44	238.91
C504	33.92	51.14	38.00
C505	58.18	49.39	67.50
C506	32.25	27.38	67.50
C507	76.07	117.57	37.07
C508	57.04	48.42	67.50
C509	371.35	89.02	239.00
C510	86.60	20.76	239.00
C511	58.74	6.88	489.00
C512	122.55	43.61	161.00
C513	61.54	21.90	161.00
C514	110.28	26.44	239.00
C515	86.99	20.85	239.00
C540	46.59	23.99	111.30
C541	43.13	82.38	30.00
C542	79.37	20.86	218.00
C543	119.62	60.65	113.00
C544	82.99	21.81	218.00
C545	83.85	22.04	218.00
C546	92.88	21.81	244.00
C547	92.10	60.65	87.00
C548	88.84	20.86	244.00
C549	112.84	74.31	87.00
C550	59.86	18.01	190.46
C551	40.30	76.96	30.00
C552	169.09	60.17	161.00
C578	141.44	49.02	165.33
C579	93.46	39.09	137.00
C580	59.60	13.99	244.00
C581	92.43	24.29	218.00

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C582	29.93	7.87	218.00
C583	29.88	7.85	218.00
C584	79.66	20.94	218.00
C585	54.86	104.77	30.00
C586	104.07	37.04	161.00
C587	140.17	90.24	89.00
C588	37.23	52.92	40.31
C589	90.43	76.59	67.64
C590	6.60	10.20	37.07
C591	30.95	47.84	37.07
C592	30.95	47.84	37.07
C593	7.57	11.69	37.07
C594	45.21	38.30	67.64
C595	45.21	38.30	67.64
C596	18.61	26.68	39.97
C597	18.61	26.68	39.97
C598	140.27	72.40	111.00
C599	34.55	17.83	111.00
C600	89.85	37.04	139.00
C601	39.39	75.23	30.00
C602	44.91	10.55	244.00
C603	33.06	7.76	244.00
C604	34.60	66.09	30.00
C605	93.76	47.10	114.05
C606	32.45	7.85	237.00
C607	51.42	11.16	264.03
C608	56.34	23.56	137.00
C609	57.28	23.96	137.00
C610	49.91	25.22	113.40
C611	72.61	22.31	186.49
C612	211.72	42.27	287.00
C613	82.76	29.09	163.00
C614	22.37	7.86	163.00
C615	30.63	12.81	137.00
C616	103.67	68.27	87.00
C617	68.88	44.84	88.00
C618	126.20	82.16	88.00
C619	148.31	137.06	62.00
C620	163.54	128.36	73.00
C621	206.25	49.86	237.00
C622	115.31	26.13	252.85
C623	52.72	8.20	368.55
C624	55.48	8.20	387.83
C625	21.17	40.43	30.00
C626	152.39	33.20	263.00
C627	121.89	26.55	263.00
C673	76.42	23.17	189.00
C707	85.32	23.17	211.00
C708	12.09	4.98	139.00
C709	82.26	33.91	139.00
C781	169.09	60.17	161.00
C783	44.18	84.37	30.00
C785	150.40	40.84	211.00
L77	13.21	N32° 52' 36.85"W	
L81	22.99	N83° 53' 42.26"W	
L82	31.86	N7° 42' 47.45"W	
L450	38.80	S75° 55' 55.00"W	
L451	42.05	S5° 17' 41.27"W	
L452	110.18	S27° 42' 03.27"W	
L453	80.52	S29° 17' 44.28"E	
L454	70.62	S29° 17' 44.28"E	
L455	161.04	S3° 45' 42.03"W	
L456	102.65	S64° 02' 52.62"E	
L457	61.25	S46° 05' 25.65"E	
L458	12.06	S63° 11' 06.43"E	
L459	110.71	S63° 11' 06.43"E	
L460	61.00	S43° 40' 21.36"E	
L461	74.42	S69° 47' 34.91"E	
L462	29.75	N41° 57' 23.29"E	
L463	22.78	S41° 40' 58.56"W	
L464	260.97	S89° 05' 17.50"E	
L471	518.89	N89° 05' 17.50"W	
L472	181.02	S24° 56' 35.07"E	
L473	187.03	S63° 26' 22.46"W	
L474	72.80	S43° 20' 40.75"W	
L475	62.98	S49° 43' 08.14"E	
L476	114.45	S55° 44' 59.21"E	
L477	18.27	S30° 00' 22.99"E	
L478	261.25	S60° 38' 46.23"E	
L508	235.32	N60° 40' 12.99"W	
L509	33.12	N60° 38' 46.23"W	
L510	18.27	N30° 00' 22.99"W	
L511	114.45	N55° 44' 59.21"W	
L512	67.32	N49° 47' 35.22"W	
L513	110.23	S43° 14' 20.54"W	
L514	104.38	N43° 19' 56.14"E	
L515	26.65	N48° 33' 08.84"W	
L516	153.02	N75° 17' 01.31"W	
L517	153.02	S75° 17' 01.31"E	
L518	31.86	S7° 42' 47.45"E	
L520	29.37	S48° 33' 08.84"E	
L521	76.73	N43° 20' 40.75"E	
L522	194.12	N63° 24' 29.46"E	
L523	181.02	N24° 56' 35.07"W	
L524	110.49	N69° 47' 34.91"W	
L525	61.00	N43° 40' 21.36"W	
L526	122.77	N63° 11' 06.43"W	
L528	171.81	S78° 33' 39.23"W	
L529	161.04	N3° 45' 42.03"E	
L530	139.07	N29° 17' 44.28"W	
L531	58.49	N78° 33' 59.66"E	
L532	110.47	N78° 33' 59.66"E	
L533	54.48	N57° 01' 45.09"E	
L534	63.04	N30° 35' 30.72"E	
L535	70.31	S83° 53' 42.26"E	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L536	104.40	N89° 13' 20.52"E	
L537	272.81	S4° 07' 21.69"W	
L538	219.51	S4° 07' 21.69"W	
L540	162.47	S89° 38' 51.91"W	
L541	205.57	S89° 38' 51.91"W	
L542	170.53	N58° 16' 15.17"W	
L543	170.53	N58° 16' 15.17"W	
L544	152.91	N88° 14' 39.03"W	
L545	272.92	N4° 07' 21.69"E	
L546	0.17	N88° 39' 02.38"E	
L547	213.75	N20° 33' 45.19"W	
L548	145.56	N20° 33' 45.19"W	
L549	65.92	N47° 48' 03.26"E	
L550	82.25	S20° 33' 45.19"E	
L551	185.66	S89° 13' 20.52"W	
L555	63.04	S30° 35' 30.72"W	
L556	169.12	S57° 01' 45.09"W	
L576	92.38	N59° 00' 50.37"W	
L577	66.80	N0° 26' 34.40"E	
L578	44.61	N21° 18' 12.05"E	
L579	39.49	N39° 21' 00.46"W	
L580	57.49	N17° 32' 20.91"W	
L581	162.60	S39° 34' 38.10"E	
L582	57.49	S17° 32' 20.91"E	
L583	39.49	S39° 21' 00.46"E	
L584	44.61	S21° 18' 12.05"W	
L585	66.80	S0° 26' 34.40"W	
L586	151.44	S74° 45' 27.94"W	
L626	184.58	N70° 57' 23.69"W	
L627	52.82	N77° 15' 19.79"W	
L628	52.82	N77° 15' 19.79"W	
L629	79.66	S88° 45' 00.59"W	
L630	213.68	N66° 57' 26.70"W	
L631	108.99	N59° 05' 29.10"W	
L632	108.99	N59° 05' 29.10"W	
L633	58.19	N51° 14' 16.41"W	
L634	95.53	N30° 18' 05.08"W	
L635	68.46	N74° 28' 05.28"E	
L636	166.24	N37° 25' 51.72"E	
L637	200.81	S52° 19' 58.61"E	
L638	56.83	S52° 19' 58.61"E	
L639	123.17	N52° 19' 58.61"W	
L640	134.47	N52° 19' 58.61"W	
L641	166.24	S37° 25' 51.72"W	
L642	90.07	S74° 27' 59.98"W	
L643	274.59	N30° 18' 02.17"W	
L644	52.11	N48° 36' 38.45"W	
L645	103.37	N22° 31' 01.57"W	
L646	14.17	N22° 31' 01.57"W	
L647	175.67	N14° 40' 18.19"W	
L648	42.00	S31° 50' 47.94"E	
L649	95.16	S55° 24' 32.68"E	
L650	52.41	S79° 21' 54.74"E	
L651	9.91	N87° 55' 33.42"E	
L652	66.86	N45° 39' 30.24"E	
L653	39.83	N82° 29' 29.59"E	
L654	151.09	N69° 40' 55.26"E	
L655	51.74	N69° 40' 55.26"E	
L656	0.00	N1° 24' 32.80"E	
L657	103.27	S51° 34' 54.66"E	
L658	8.19	S51° 34' 54.66"E	
L659	26.41	N8° 38' 31.47"W	
L661	54.95	N85° 13' 10.39"W	
L662	71.20	N58° 47' 14.29"W	
L663	14.94	N2° 51' 33.64"W	
L664	97.05	N0° 57' 18.67"W	
L665	230.74	N60° 42' 32.59"W	
L689	79.73	N33° 59' 54.12"W	
L690	103.86	N76° 42' 51.19"W	
L693	78.35	N76° 42' 51.19"W	
L694	114.38	N41° 42' 19.36"W	
L696	48.97	N50° 02' 39.70"W	
L697	68.79	N30° 44' 57.20"W	
L698	53.23	N41° 42' 19.36"W	
L699	10.05	S56° 02' 38.28"E	
L700	279.20	S32° 55' 24.47"E	
L734	165.93	N32° 52' 36.85"W	
L736	66.14	N56° 02' 38.28"W	
L737	134.73	N17° 09' 07.09"W	
L798	60.82	N46° 05' 37.50"W	
L800	3.63	N12° 33' 44.91"W	
L802	226.44	S4° 07' 21.69"W	
L803	108.43	N86° 46' 13.48"E	
L806	114.63	S57° 01' 45.09"W	
L807	47.32	N83° 53' 42.26"W	

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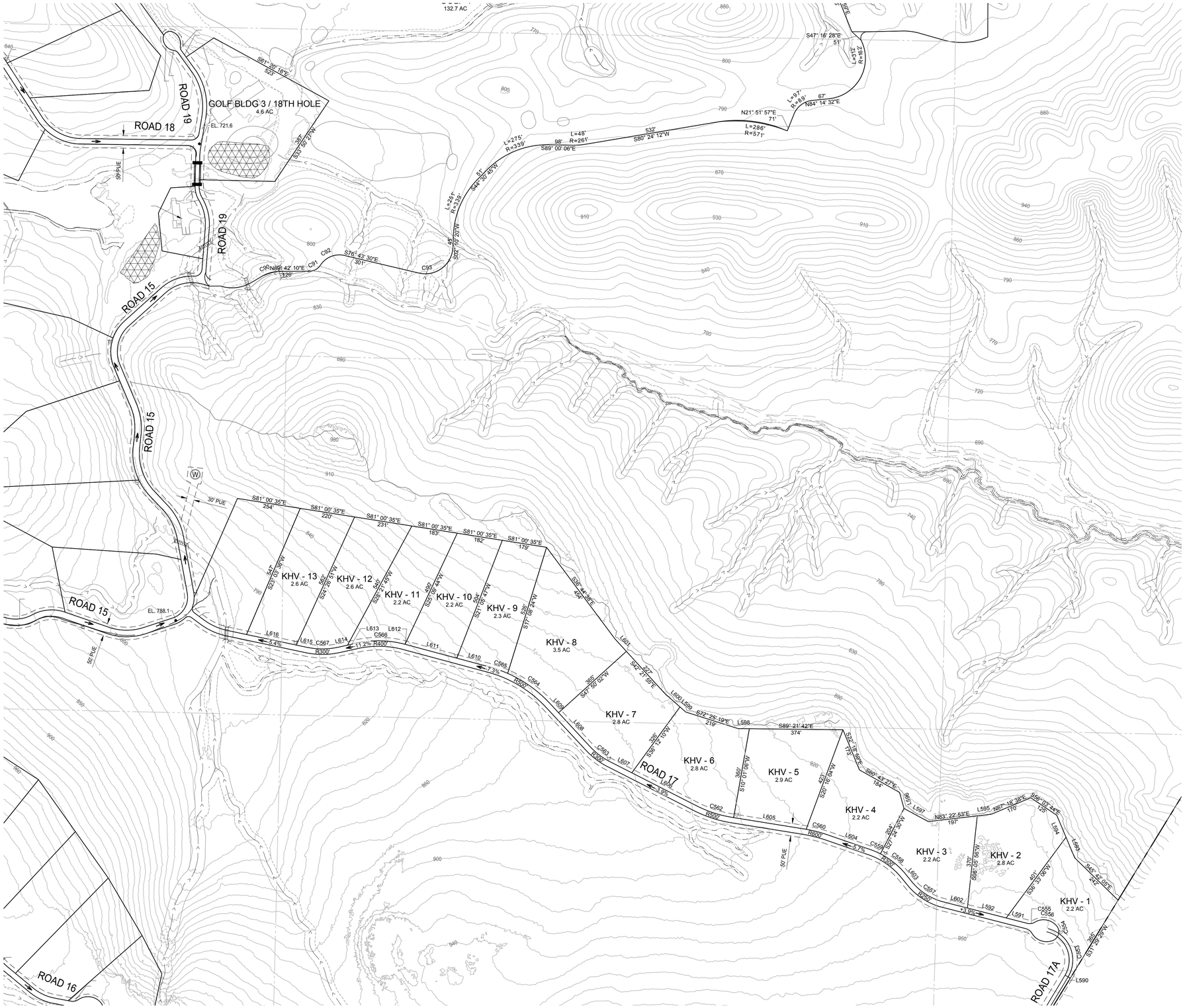
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

DG SUBDIVISION PLAN

DG1.03A



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
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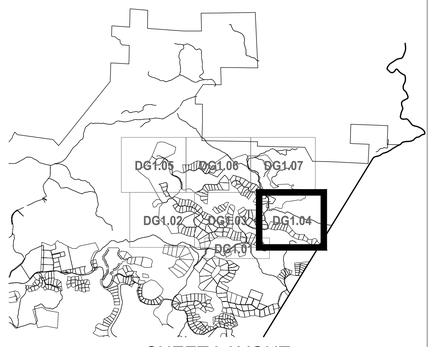
TENTATIVE MAP
SUBDIVISION DG



SHEET LAYOUT
NOT TO SCALE

0 100' 200' 400' NORTH

DG SUBDIVISION PLAN

DG1.04

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C86	124.69	35.11	203.50
C87	46.52	31.36	85.00
C88	62.26	77.66	45.93
C89	129.51	48.02	154.54
C90	71.00	28.52	142.63
C91	53.50	57.35	53.45
C92	114.18	71.83	91.08
C93	193.91	101.10	109.89
C525	1.11	0.94	67.64
C526	76.07	117.57	37.07
C527	90.43	76.60	67.64
C528	37.22	53.35	39.97
C529	94.98	28.79	189.00
C530	64.57	19.58	189.00
C553	196.17	86.80	129.49
C554	34.88	53.90	37.07
C555	37.22	53.35	39.97
C556	90.43	76.60	67.64
C557	151.40	36.38	238.42
C558	128.64	23.15	318.35
C559	42.89	8.43	291.57
C560	92.57	9.27	572.05
C562	158.02	19.06	474.90
C563	101.29	20.08	289.00
C564	208.03	23.33	511.00
C565	77.99	8.02	557.00
C566	196.65	27.41	411.00
C567	123.23	24.43	289.00
C568	102.59	24.55	239.38
C569	39.78	20.17	113.00
C570	25.63	73.41	20.00
C571	119.93	42.15	163.00
C572	110.59	29.06	218.00
C573	135.53	31.83	244.00
C574	74.83	17.57	244.00
C575	125.70	33.04	218.00
C576	124.92	82.27	87.00
C577	141.54	37.20	218.00
C578	141.44	49.02	165.33
C579	93.46	39.09	137.00
C674	38.72	10.51	211.00
C675	55.92	31.36	102.18
C676	114.94	35.12	187.50
C698	41.22	87.46	27.00
C699	65.54	74.86	50.16
C700	27.10	53.54	29.00
C701	186.24	41.45	257.41
C702	37.72	8.48	255.00
C705	46.37	80.37	33.06
C706	195.21	58.82	190.16
C707	85.32	23.17	211.00
C724	174.10	41.20	242.14
C725	27.07	53.49	29.00
C726	65.81	76.95	49.00
C727	14.09	29.90	27.00
L93	27.26	S1° 09' 10.36"W	
L94	176.04	S4° 28' 09.71"W	
L95	2.31	S30° 12' 15.27"E	
L96	44.56	N89° 50' 53.96"E	
L97	44.89	N59° 12' 35.92"E	
L568	55.89	N79° 07' 37.81"W	
L569	91.62	N50° 20' 12.04"W	
L570	41.50	N50° 20' 12.04"W	
L589	7.96	N79° 07' 37.81"W	
L590	9.99	N62° 13' 20.34"W	
L591	83.92	N75° 40' 11.81"W	
L592	159.53	N75° 40' 11.81"W	
L593	89.17	S22° 47' 22.87"E	
L594	95.12	S22° 47' 22.87"E	
L595	56.69	N83° 22' 53.32"E	
L596	66.32	S15° 21' 29.35"E	
L597	109.83	S61° 31' 47.31"E	
L598	44.75	S89° 21' 42.42"E	
L600	81.68	S48° 27' 04.19"E	
L601	69.07	S42° 21' 54.95"E	
L602	98.59	N75° 40' 11.81"W	
L603	41.44	N39° 22' 38.89"W	
L604	177.05	N70° 59' 06.16"W	
L605	280.77	N80° 49' 55.30"W	
L606	287.91	N62° 59' 38.48"W	
L607	96.67	N62° 59' 38.48"W	
L608	184.34	N42° 54' 44.03"W	
L609	51.06	N42° 54' 44.03"W	
L610	133.82	N74° 59' 00.10"W	
L611	214.00	N74° 59' 00.34"W	
L612	0.00	N75° 02' 46.95"W	
L613	35.49	S77° 32' 20.38"W	
L614	38.99	S77° 32' 20.38"W	
L615	44.88	N78° 01' 47.05"W	
L616	203.21	N78° 01' 47.05"W	
L617	78.86	N78° 01' 47.05"W	
L618	48.41	N53° 26' 10.33"W	
L619	58.21	S22° 54' 01.15"E	
L620	111.67	S22° 54' 01.15"E	
L621	53.45	S6° 09' 51.36"W	
L622	78.81	S43° 16' 44.20"E	
L623	88.93	S10° 25' 31.84"E	
L624	137.28	S10° 25' 31.84"E	
L625	121.76	S71° 50' 34.75"W	
L626	184.58	N70° 57' 23.69"W	
L627	52.82	N77° 15' 19.79"W	
L700	279.20	S32° 55' 24.47"E	
L701	88.70	N1° 09' 10.36"E	
L702	97.80	N86° 16' 42.01"E	
L703	2.37	S30° 12' 15.27"E	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L705	124.19	S4° 30' 50.88"W	
L727	28.08	N35° 53' 37.33"W	
L729	72.03	N35° 53' 37.33"W	
L730	128.21	N9° 37' 45.25"E	
L732	426.15	N89° 13' 49.34"W	
L733	90.28	N32° 52' 34.57"W	
L734	165.93	N32° 52' 36.85"W	
L743	73.15	S9° 37' 46.66"W	
L744	99.62	S35° 53' 37.33"E	
L745	325.32	S35° 53' 37.33"E	
L804	101.87	N77° 44' 30.01"W	

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG3\PKG3-PARCELS AND ROADS.DWG

SHERWOOD
DESIGN ENGINEERS
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REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No. 84210
CIVIL
STATE OF CALIFORNIA

SCALE: N/A
0 1"
Note: If this graphic scale does not equal 1", this sheet has been modified from its original size.

NO	DATE	ISSUANCE

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

DENNISTON GOLF ESTATES SUBDIVISION

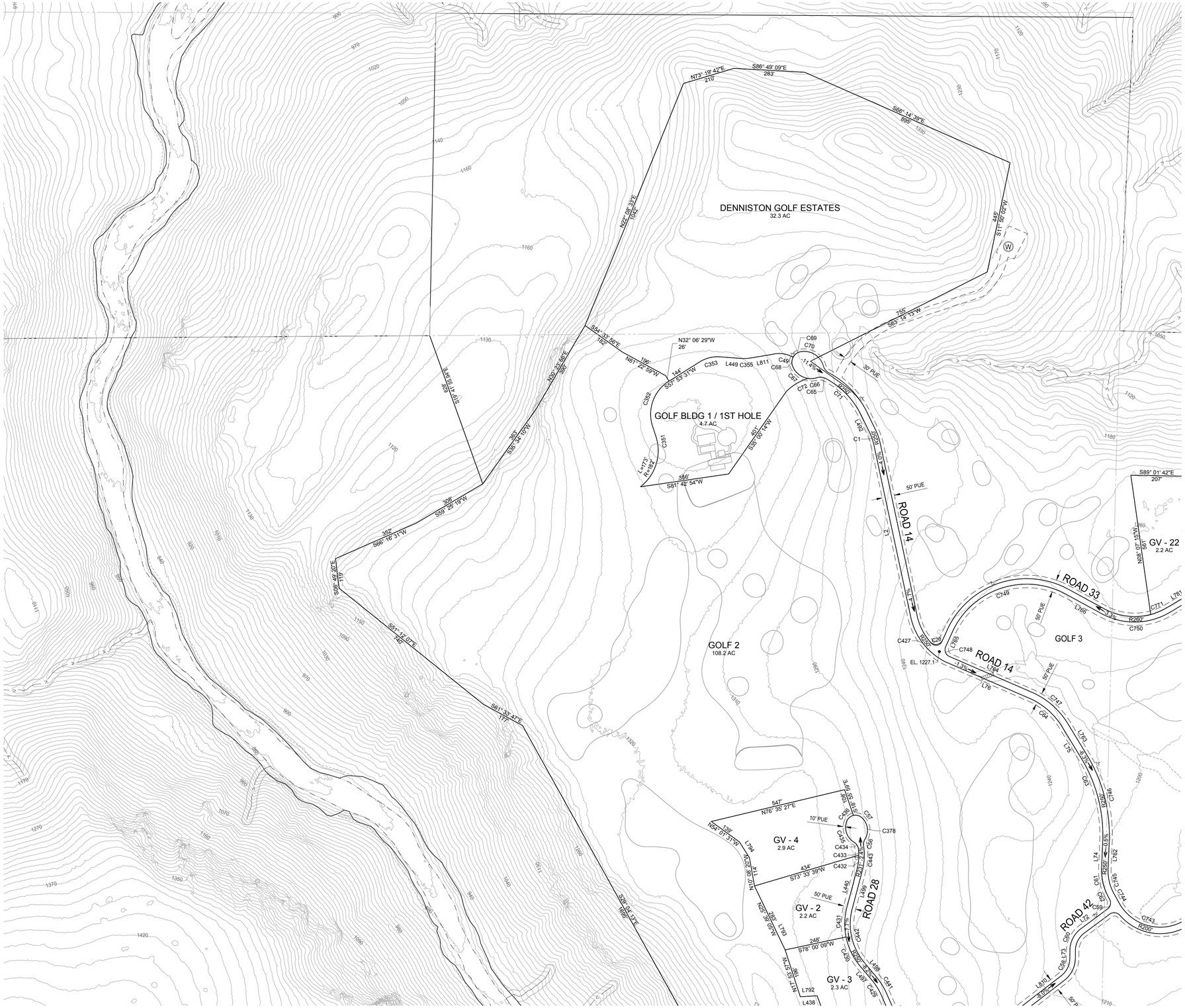
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

DG SUBDIVISION PLAN (3)

DG1.04A


DENNISTON GOLF ESTATES
32.3 AC
GOLF BLDG 1 / 1ST HOLE
4.7 AC
GOLF 2
108.2 AC
GOLF 3
GV - 4
2.9 AC
GV - 2
2.2 AC
GV - 3
2.3 AC
GV - 22
2.2 AC
ROAD 14
ROAD 33
ROAD 28
ROAD 42
50' PUE
30' PUE
10' PUE
N32° 06' 29"W
26'
S86° 49' 09"E
283'
N73° 19' 42"E
210'
S66° 14' 39"E
695'
S11° 46' 02"W
445'
S80° 14' 15"W
755'
N22° 08' 35"E
1045'
S41° 35' 58"E
102'
N30° 23' 46"E
300'
N61° 22' 39"W
106'
S57° 53' 51"W
144'
S89° 01' 42"E
207'
S35° 00' 14"W
401'
S81° 42' 54"W
366'
S59° 25' 19"W
306'
S66° 16' 31"W
352'
S06° 48' 40"E
118'
S81° 42' 07"E
740'
S61° 33' 47"E
1171'
S28° 04' 13"E
1888'
N76° 35' 27"E
547'
N24° 17' 31"W
109'
N10° 08' 20"W
114'
S73° 33' 39"N
434'
N25° 59' 58"W
288'
S78° 00' 09"W
246'
N14° 55' 41"W
681'
S89° 01' 42"E
1320'
N43° 40' 30"E
1320'
S10° 38' 30"W
1320'
S89° 01' 42"E
1320'
EL. 1227.1'
R=172'
R=260'
R=200'
R=300'
R=250'
R=150'
R=100'
R=50'
R=25'
3.5%
-11.5%
-0.6%
-1.3%
-1.4%
-1.5%
-1.6%
-1.7%
-1.8%
-1.9%
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-5.0%
-5.1%
-5.2%

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C628	8.16	7.89	59.22
C629	64.43	123.06	30.00
C630	51.00	11.20	261.00
C631	103.26	22.64	261.29
C632	57.61	12.67	260.48
C633	133.59	32.00	239.21
C634	168.46	40.08	240.85
C635	70.23	15.54	258.95
C636	158.58	34.81	261.00
C637	37.33	52.92	40.42
C638	90.33	76.51	67.64
C639	2.19	3.38	37.16
C640	73.77	113.74	37.16
C641	15.10	18.33	47.19
C642	75.36	63.83	67.64
C643	37.73	53.35	40.52
C644	209.51	50.23	239.00
C645	329.92	72.42	261.00
C646	147.31	35.32	239.00
C647	46.71	11.20	239.00
C648	51.31	18.26	161.00
C649	96.90	13.31	417.21
C650	38.20	72.96	30.00
C651	367.99	61.33	343.77
C652	76.41	4.22	1037.77
C653	348.81	62.11	321.77
C654	145.71	25.94	321.77
C655	251.29	16.99	847.55
C656	63.73	17.30	211.00
C657	75.12	143.46	30.00
C658	37.23	52.92	40.31
C659	72.16	61.12	67.64
C660	18.27	15.47	67.64
C661	59.92	93.02	36.90
C662	106.34	91.95	66.27
C663	37.22	53.35	39.97
C664	143.07	43.37	189.00
C665	14.79	4.02	211.00
C666	140.25	38.08	211.00
C667	128.69	82.85	89.00
C668	7.87	5.07	89.00
C669	84.97	23.07	211.00
C670	179.82	48.83	211.00
C712	83.52	25.31	189.09
C713	196.08	59.44	189.00
C714	35.77	18.47	111.00
C715	134.55	69.45	111.00
C716	72.30	21.92	189.00
C717	66.57	20.18	189.00
C718	13.04	24.91	30.00
C719	55.94	3.83	836.50
C720	272.41	18.67	836.00
C721	117.13	8.02	836.63
C722	161.75	26.96	343.77
C723	367.99	61.33	343.77
C734	115.75	31.15	212.92
C735	126.49	58.92	123.00
C736	134.46	79.42	97.00
C737	124.86	73.75	97.00
C738	56.79	23.75	137.00
C739	181.80	63.90	163.00
C740	278.24	30.19	528.00
C741	278.24	50.93	313.00
C742	77.72	20.91	213.00
C751	240.30	56.76	242.58
C752	262.55	57.57	261.29
C753	367.17	87.83	239.52
C754	221.01	78.65	161.00
C755	37.23	52.92	40.31
C756	84.01	71.16	67.64
C757	6.42	9.34	39.39
C758	76.07	117.57	37.07
C759	90.43	76.60	67.64
C760	37.74	53.53	40.40
C761	118.82	48.98	139.00
C762	72.00	29.68	139.00
C763	28.79	7.02	235.00
C764	207.79	45.71	260.44
C765	151.78	32.83	264.91
C766	128.69	30.85	239.00
C767	106.24	26.42	230.39
C768	83.99	16.70	288.20
C769	123.60	27.03	261.99
C770	44.61	9.25	276.25
L665	230.74	N60° 42' 32.59"W	
L666	187.12	N65° 42' 34.46"E	
L667	166.51	N65° 42' 34.46"E	
L668	50.72	N54° 30' 46.05"E	
L669	90.16	N19° 11' 50.51"E	
L670	106.21	S88° 22' 41.75"E	
L671	219.04	S88° 22' 41.75"E	
L672	198.21	S88° 22' 41.75"E	
L673	115.05	S88° 22' 41.75"E	
L675	126.24	N23° 36' 03.00"E	
L676	638.51	N88° 22' 41.75"W	
L677	120.52	S69° 12' 08.31"W	
L678	90.16	S19° 11' 50.51"W	
L679	50.72	S54° 30' 46.05"W	
L680	353.63	S65° 42' 34.46"W	
L681	182.84	N45° 14' 17.37"W	
L682	89.65	N16° 23' 50.29"W	
L683	40.61	S84° 59' 14.05"W	
L684	44.60	S84° 59' 14.05"W	
L685	85.21	N84° 59' 14.05"E	
L686	36.42	S51° 38' 30.49"E	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L687	0.00	N16° 03' 52.29"W	
L688	195.72	S51° 38' 30.49"E	
L691	89.58	N86° 15' 31.30"E	
L692	48.19	S5° 49' 34.32"E	
L739	48.19	N5° 49' 34.32"W	
L740	89.58	S86° 15' 31.30"W	
L741	138.12	N51° 38' 30.49"W	
L742	78.52	N13° 23' 26.29"W	
L751	121.64	S44° 35' 27.24"E	
L752	492.06	S13° 45' 03.08"E	
L753	19.87	S45° 10' 06.15"W	
L754	110.87	S34° 15' 08.79"E	
L756	122.75	N71° 34' 24.15"E	
L757	64.00	N47° 49' 25.78"E	
L760	55.16	S83° 49' 42.33"W	
L761	87.82	S62° 55' 22.37"W	
L767	268.07	N59° 00' 49.98"E	
L768	98.27	S69° 52' 18.08"E	
L769	91.51	N53° 49' 29.40"E	
L770	295.31	S40° 54' 17.35"E	
L771	101.00	N60° 26' 34.05"E	
L772	48.15	N60° 26' 32.00"E	
L773	48.76	S60° 26' 01.78"W	
L774	100.39	S60° 26' 46.69"W	
L775	131.66	N40° 54' 17.35"W	
L776	175.07	N40° 54' 17.35"W	
L778	55.94	S53° 49' 29.40"W	
L779	96.67	N69° 52' 18.08"W	
L780	162.06	S58° 56' 44.76"W	
L781	115.24	S59° 00' 50.75"W	
L782	70.92	S89° 01' 41.55"E	
L783	136.30	N60° 27' 33.26"E	
L784	67.62	N77° 39' 36.65"E	
L785	67.62	N77° 39' 36.65"E	
L813	98.08	S83° 35' 20.64"W	

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REGISTERED PROFESSIONAL ENGINEER
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EXP: 9/30/23
No. 84470
CIVIL
STATE OF CALIFORNIA

SCALE: N/A
0 1"
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NO	DATE	ISSUANCE

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

DENNISTON GOLF ESTATES SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

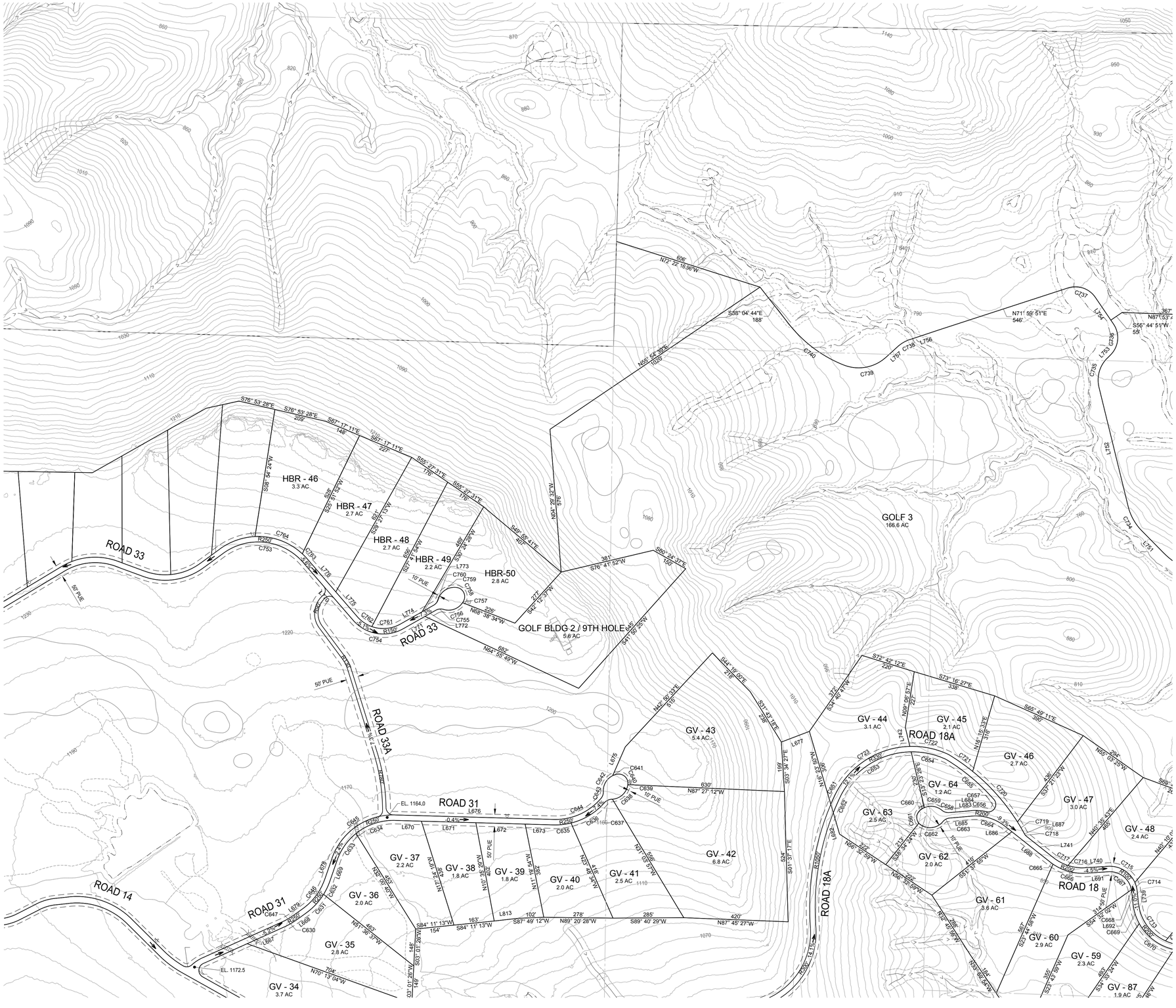


TENTATIVE MAP
SUBDIVISION DG

DG SUBDIVISION PLAN

DG1.05A

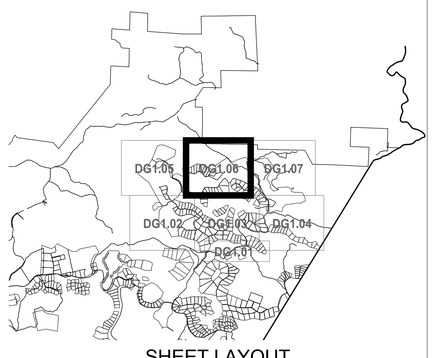
P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG3\PKG3-PARCELS AND ROADS.DWG



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE

SHEET LAYOUT
NOT TO SCALE



0 100' 200' 400' NORTH

SHERWOOD
DESIGN ENGINEERS
2548 Mission Street
San Francisco, CA 94110
www.sherwoodengineers.com

REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No. 84470
CIVIL
STATE OF CALIFORNIA

SCALE: #####
0 1"
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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

DENNISTON GOLF ESTATES SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

DG SUBDIVISION PLAN

DG1.06

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C628	8.16	7.89	59.22
C629	64.43	123.06	30.00
C630	51.00	11.20	261.00
C631	103.26	22.64	261.29
C632	57.61	12.67	260.48
C633	133.59	32.00	239.21
C634	168.46	40.08	240.85
C635	70.23	15.54	258.95
C636	158.58	34.81	261.00
C637	37.33	52.92	40.42
C638	90.33	76.51	67.64
C639	2.19	3.38	37.16
C640	73.77	113.74	37.16
C641	15.10	18.33	47.19
C642	75.36	63.83	67.64
C643	37.73	53.35	40.52
C644	209.51	50.23	239.00
C645	329.92	72.42	261.00
C646	147.31	35.32	239.00
C647	46.71	11.20	239.00
C648	51.31	18.26	161.00
C649	96.90	13.31	417.21
C650	38.20	72.96	30.00
C651	367.99	61.33	343.77
C652	76.41	4.22	1037.77
C653	348.81	62.11	321.77
C654	145.71	25.94	321.77
C655	251.29	16.99	847.55
C656	63.73	17.30	211.00
C657	75.12	143.46	30.00
C658	37.23	52.92	40.31
C659	72.16	61.12	67.64
C660	18.27	15.47	67.64
C661	59.92	93.02	36.90
C662	106.34	91.95	66.27
C663	37.22	53.35	39.97
C664	143.07	43.37	189.00
C665	14.79	4.02	211.00
C666	140.25	38.08	211.00
C667	128.69	82.85	89.00
C668	7.87	5.07	89.00
C669	84.97	23.07	211.00
C670	179.82	48.83	211.00
C712	83.52	25.31	189.09
C713	196.08	59.44	189.00
C714	35.77	18.47	111.00
C715	134.55	69.45	111.00
C716	72.30	21.92	189.00
C717	66.57	20.18	189.00
C718	13.04	24.91	30.00
C719	55.94	3.83	836.50
C720	272.41	18.67	836.00
C721	117.13	8.02	836.63
C722	161.75	26.96	343.77
C723	367.99	61.33	343.77
C734	115.75	31.15	212.92
C735	126.49	58.92	123.00
C736	134.46	79.42	97.00
C737	124.86	73.75	97.00
C738	56.79	23.75	137.00
C739	181.80	63.90	163.00
C740	278.24	30.19	528.00
C741	278.24	50.93	313.00
C742	77.72	20.91	213.00
C751	240.30	56.76	242.58
C752	262.55	57.57	261.29
C753	367.17	87.83	239.52
C754	221.01	78.65	161.00
C755	37.23	52.92	40.31
C756	84.01	71.16	67.64
C757	6.42	9.34	39.39
C758	76.07	117.57	37.07
C759	90.43	76.60	67.64
C760	37.74	53.53	40.40
C761	118.82	48.98	139.00
C762	72.00	29.68	139.00
C763	28.79	7.02	235.00
C764	207.79	45.71	260.44
C765	151.78	32.83	264.91
C766	128.69	30.85	239.00
C767	106.24	26.42	230.39
C768	83.99	16.70	288.20
C769	123.60	27.03	261.99
C770	44.61	9.25	276.25
L665	230.74	N60° 42' 32.59"W	
L666	187.12	N65° 42' 34.46"E	
L667	166.51	N65° 42' 34.46"E	
L668	50.72	N54° 30' 46.05"E	
L669	90.16	N19° 11' 50.51"E	
L670	106.21	S88° 22' 41.75"E	
L671	219.04	S88° 22' 41.75"E	
L672	198.21	S88° 22' 41.75"E	
L673	115.05	S88° 22' 41.75"E	
L675	126.24	N23° 36' 03.00"E	
L676	638.51	N88° 22' 41.75"W	
L677	120.52	S69° 12' 08.31"W	
L678	90.16	S19° 11' 50.51"W	
L679	50.72	S54° 30' 46.05"W	
L680	353.63	S65° 42' 34.46"W	
L681	182.84	N45° 14' 17.37"W	
L682	89.65	N16° 23' 50.29"W	
L683	40.61	S84° 59' 14.05"W	
L684	44.60	S84° 59' 14.05"W	
L685	85.21	N84° 59' 14.05"E	
L686	36.42	S51° 38' 30.49"E	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L687	0.00	N16° 03' 52.29"W	
L688	195.72	S51° 38' 30.49"E	
L691	89.58	N86° 15' 31.30"E	
L692	48.19	S5° 49' 34.32"E	
L739	48.19	N5° 49' 34.32"W	
L740	89.58	S86° 15' 31.30"W	
L741	138.12	N51° 38' 30.49"W	
L742	78.52	N13° 23' 26.29"W	
L751	121.64	S44° 35' 27.24"E	
L752	492.06	S13° 45' 03.08"E	
L753	19.87	S45° 10' 06.15"W	
L754	110.87	S34° 15' 08.79"E	
L756	122.75	N71° 34' 24.15"E	
L757	64.00	N47° 49' 25.78"E	
L760	55.16	S83° 49' 42.33"W	
L761	87.82	S62° 55' 22.37"W	
L767	268.07	N59° 00' 49.98"E	
L768	98.27	S69° 52' 18.08"E	
L769	91.51	N53° 49' 29.40"E	
L770	295.31	S40° 54' 17.35"E	
L771	101.00	N60° 26' 34.05"E	
L772	48.15	N60° 26' 32.00"E	
L773	48.76	S60° 26' 01.78"W	
L774	100.39	S60° 26' 46.69"W	
L775	131.66	N40° 54' 17.35"W	
L776	175.07	N40° 54' 17.35"W	
L778	55.94	S53° 49' 29.40"W	
L779	96.67	N69° 52' 18.08"W	
L780	162.06	S58° 56' 44.76"W	
L781	115.24	S59° 00' 50.75"W	
L782	70.92	S89° 01' 41.55"E	
L783	136.30	N60° 27' 33.26"E	
L784	67.62	N77° 39' 36.65"E	
L785	67.62	N77° 39' 36.65"E	
L813	98.08	S83° 35' 20.64"W	

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San Francisco, CA 94110
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REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
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No. 84270
CIVIL
STATE OF CALIFORNIA

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PROJECT NO. 18-016
DATE JULY 31, 2023
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CHECKED CA,MH,SG

DENNISTON GOLF ESTATES SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

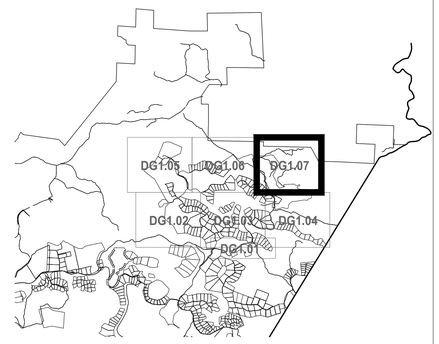
DG SUBDIVISION PLAN

DG1.06A



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



SHEET LAYOUT
NOT TO SCALE

0 100' 200' 400' NORTH

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DENNISTON GOLF ESTATES SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

DG SUBDIVISION PLAN

DG1.07

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C85	40.96	52.92	44.34
C671	47.36	12.86	211.00
C672	17.08	11.00	89.00
C686	3.18	4.47	40.78
C687	99.47	76.59	74.41
C710	54.06	27.91	111.00
C711	88.21	45.53	111.00
C712	83.52	25.31	189.09
C727	14.09	29.90	27.00
C728	147.08	13.44	627.00
C729	217.02	39.73	313.00
C730	122.23	23.11	303.00
C731	87.32	73.46	68.11
C732	66.36	24.22	157.00
C733	230.02	39.58	333.00
C737	124.86	73.75	97.00
L695	110.66	N89° 24' 40.96"E	
L737	134.73	N17° 09' 07.09"W	
L738	111.12	S89° 24' 40.96"W	
L745	325.32	S35° 53' 37.33"E	
L746	90.78	S49° 20' 00.86"E	
L747	818.65	S9° 36' 26.00"E	
L748	8.30	S13° 30' 23.88"W	
L749	204.30	S59° 56' 58.07"E	
L750	82.03	S84° 10' 03.71"E	

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DENNISTON GOLF ESTATES SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

DG SUBDIVISION PLAN

DG1.07A

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG3\PKG3-PARCELS AND ROADS.DWG

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
GV - 1	215,728	19.8%
GV - 2	96,561	7.5%
GV - 3	101,378	16.2%
GV - 4	126,592	4.4%
GV - 5	139,534	17.1%
GV - 6	102,968	10.0%
GV - 7	95,464	11.4%
GV - 8	97,989	10.0%
GV - 9	84,694	9.4%
GV - 10	86,155	9.7%
GV - 11	72,773	8.7%
GV - 12	107,448	13.9%
GV - 13	81,588	18.7%
GV - 14	51,003	11.9%
GV - 15	97,122	11.3%
GV - 16	52,323	10.8%
GV - 17	63,897	8.5%
GV - 18	118,177	4.7%
GV - 19	92,292	6.9%
GV - 20	114,851	12.5%
GV - 21	67,699	15.0%
GV - 22	97,680	8.5%
GV - 23	83,757	8.6%
GV - 24	71,857	8.9%
GV - 25	97,402	10.3%
GV - 33	114,023	14.6%
GV - 34	161,605	7.7%
GV - 35	123,849	8.2%
GV - 36	84,854	8.4%
GV - 37	93,827	9.0%
GV - 38	77,697	10.4%
GV - 39	76,263	13.9%
GV - 40	86,752	19.0%
GV - 41	106,459	21.6%
GV - 42	296,185	25.0%
GV - 43	234,451	15.2%
GV - 44	137,136	24.8%
GV - 45	90,731	24.9%
GV - 46	117,302	19.6%
GV - 47	130,190	33.1%
GV - 48	105,245	24.9%
GV - 49	137,927	31.9%
GV - 50	130,360	27.8%
GV - 51	106,209	10.8%
GV - 52	126,723	22.7%
GV - 53	133,843	27.2%
GV - 54	134,021	27.0%
GV - 55	129,739	20.7%

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
GV - 56	110,695	22.6%
GV - 57	111,430	20.4%
GV - 58	176,417	22.8%
GV - 59	98,174	19.5%
GV - 60	127,993	17.4%
GV - 61	154,715	22.6%
GV - 62	86,366	28.9%
GV - 63	107,427	31.4%
GV - 64	50,805	36.2%
GV - 65	140,631	11.6%
GV - 66	128,434	20.7%
GV - 67	152,891	20.6%
GV - 68	208,380	15.7%
GV - 69	143,516	18.6%
GV - 70	173,858	14.9%
GV - 71	218,000	22.4%
GV - 72	198,400	21.0%
GV - 73	119,160	19.0%
GV - 74	182,484	14.3%
GV - 75	154,118	8.3%
GV - 76	109,441	25.0%
GV - 77	64,003	21.6%
GV - 78	89,059	17.5%
GV - 79	77,245	15.6%
GV - 80	75,688	15.6%
GV - 81	150,425	22.3%
GV - 82	82,108	15.0%
GV - 83	133,340	9.6%
GV - 84	86,471	20.3%
GV - 85	95,999	17.0%
GV - 86	103,880	13.9%
GV - 87	82,785	17.2%
GV - 88	108,403	33.4%
GV - 89	182,964	18.0%
GV - 90	160,107	17.4%
GV - 91	118,193	22.0%
GV - 92	135,896	14.4%
GV - 93	52,471	11.6%
GV - 94	77,946	13.9%
GV - 95	117,640	17.1%
GV - 96	195,681	24.5%
GV - 97	132,462	16.4%
GV - 98	232,577	17.8%
GV - 99	186,424	17.5%
GV - 100	178,601	20.5%
GV - 101	183,034	17.8%
GV - 102	164,418	11.3%
GV - 103	141,581	18.9%

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
GV - 104	189,541	24.5%
GV - 105	112,568	19.8%
GV - 106	113,894	13.2%
GV - 107	133,698	7.2%
GV - 108	179,035	15.6%
GV - 109	277,294	11.6%
GV - 110	262,877	9.1%
GV - 111	281,291	5.8%
GV - 112	314,105	14.3%
GV - 113	107,047	8.3%
GV - 114	106,967	18.5%
GV - 115	110,962	19.4%
GV - 116	109,784	18.3%
GV - 117	129,005	5.3%
GV - 118	161,464	6.2%
GV - 119	137,283	7.4%
GV - 120	126,215	12.3%
GOLF BLDG 1 / 1ST HOLE	211,173	9.8%
GOLF BLDG 2 / 9TH HOLE	242,854	14.7%
GOLF BLDG 3 / 18TH HOLE	196,171	10.3%
DENNISTON GOLF ESTATES	1,408,648	16.1%
GOLF 1	2,911,649	13.2%
GOLF 2	4,685,798	12.5%
GOLF 3	7,253,945	17.1%
GOLF 4	5,620,034	15.6%
HBR - 44	116,084	13.8%
HBR - 45	105,905	17.3%
HBR - 46	144,211	18.2%
HBR - 47	119,626	20.5%
HBR - 48	119,066	18.8%
HBR - 49	95,723	19.5%
HBR - 50	123,330	18.0%
KHV - 1	97,359	20.9%
KHV - 2	119,906	9.1%
KHV - 3	97,103	5.4%
KHV - 4	96,072	6.9%
KHV - 5	126,676	8.6%
KHV - 6	122,511	9.0%
KHV - 7	121,701	6.4%
KHV - 8	153,846	11.7%
KHV - 9	98,826	17.8%
KHV - 10	96,060	19.6%
KHV - 11	94,400	22.6%
KHV - 12	112,777	22.0%
KHV - 13	113,583	19.4%
KHV - 14	130,054	17.1%
KHV - 15	166,381	20.3%
KHV - 16	185,887	19.5%

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
KHV - 17	179,244	21.0%
KHV - 18	135,245	20.1%
KHV - 19	68,490	9.5%
KHV - 20	118,513	17.8%
KHV - 21	114,864	14.2%
ERC	774,768	9.7%
GOLF MAINTENANCE BLDG 1	694,996	9.7%
GOLF MAINTENANCE BLDG 2	43,698	7.9%

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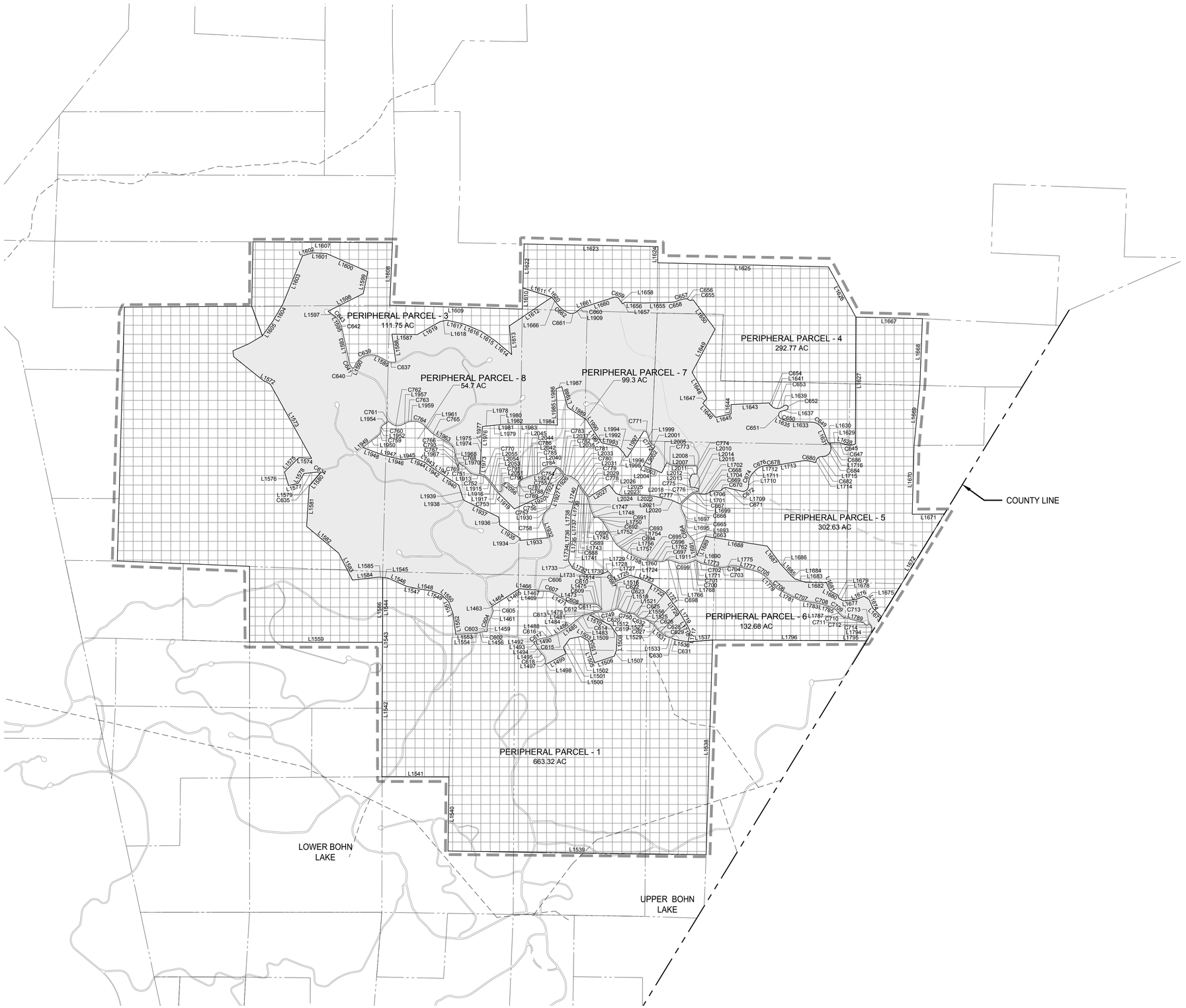
DENNISTON GOLF ESTATES SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

RESIDENTIAL PARCEL AVERAGE SLOPES

DG1.20



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- REMAINDER PARCELS
- DEVELOPMENT PARCELS
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY

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REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
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DENNISTON GOLF ESTATES SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

PERIPHERAL PARCEL PLAN

DG2.01

0 500' 1000' 2000' NORTH

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C602	61.95	9.17	387.00
C603	68.53	10.13	387.61
C604	151.33	22.40	387.00
C605	162.15	57.00	163.00
C606	71.09	36.70	111.00
C607	125.03	29.97	239.00
C608	146.14	32.08	261.00
C609	42.74	17.62	139.00
C610	116.85	48.17	139.00
C611	60.38	115.33	30.00
C612	120.83	27.92	248.00
C613	54.29	14.27	218.00
C614	108.52	25.48	244.00
C615	42.35	11.13	218.00
C616	20.78	8.69	137.00
C617	97.03	34.11	163.00
C618	142.66	48.26	169.37
C619	60.15	14.12	244.00
C620	129.04	33.30	222.00
C622	33.39	16.61	115.21
C623	33.12	63.25	30.00
C625	141.16	42.79	189.00
C626	80.07	24.27	189.00
C627	84.31	25.56	189.00
C628	72.09	19.58	211.00
C629	106.03	28.80	210.97
C630	35.93	2.70	762.20
C631	83.01	6.27	759.05
C632	66.41	34.28	111.00
C634	37.02	42.98	49.36
C635	26.72	22.46	68.17
C637	191.03	43.38	252.32
C639	572.40	94.19	348.20
C640	49.22	112.80	25.00
C641	126.92	30.68	237.00
C642	64.16	13.98	263.00
C643	129.68	28.25	263.00
C645	180.89	39.71	261.00
C647	71.08	17.04	239.00
C649	285.16	64.49	253.34
C650	63.76	18.54	197.04
C651	204.43	144.59	81.01
C652	173.56	202.93	49.00
C653	224.80	80.00	161.00
C654	49.07	31.47	89.33
C655	102.66	78.85	74.60
C656	40.96	52.92	44.34
C657	173.66	22.06	450.95
C658	140.14	23.29	344.74
C659	124.86	73.75	97.00
C660	56.79	23.75	137.00
C661	181.80	63.90	163.00
C662	278.24	30.19	528.00
C663	141.16	33.15	244.00
C664	190.15	49.98	218.00
C665	125.44	29.46	244.00
C666	172.73	72.24	137.00
C667	165.26	59.77	158.42
C668	129.76	49.57	150.00
C669	70.53	17.23	234.52
C670	53.69	59.64	51.58
C671	114.56	73.57	89.22
C672	193.17	99.67	111.05
C674	250.86	42.40	339.00
C676	275.04	46.49	339.00
C678	48.26	10.59	261.00
C680	286.72	33.59	489.00
C682	96.89	62.38	89.00
C684	298.02	106.06	161.00
C686	48.27	110.63	25.00
C687	93.85	22.04	244.00
C688	36.31	7.91	263.00
C689	103.76	25.08	237.00
C690	36.01	7.85	263.00
C691	104.59	68.88	87.00
C692	69.67	18.31	218.00
C693	89.16	20.94	244.00
C694	33.45	7.85	244.00
C695	103.45	24.29	244.00
C696	53.25	13.99	218.00
C697	111.20	39.09	163.00
C698	108.53	45.39	137.00
C699	158.42	37.20	244.00
C700	49.05	24.87	113.00
C701	27.78	79.59	20.00
C702	112.03	24.59	261.00
C703	132.61	24.43	311.00
C704	186.55	27.48	389.00
C705	273.72	32.07	489.00
C706	109.00	20.08	311.00
C707	159.09	17.84	511.00
C708	101.23	9.85	589.00
C709	159.43	31.61	289.00
C710	165.33	36.29	261.00
C711	37.23	52.92	40.31
C712	90.43	76.59	67.64
C713	26.61	41.13	37.07
C714	171.22	84.30	116.37
C749	91.06	21.38	244.00
C750	113.63	30.86	211.00
C751	239.17	51.91	263.99
C752	185.01	44.73	237.00
C753	29.46	23.12	73.00
C754	143.25	43.07	190.54
C755	49.55	25.13	113.00

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C756	33.39	28.29	67.64
C757	35.67	49.43	41.35
C758	311.42	68.36	261.00
C759	100.47	51.37	112.06
C760	83.07	53.48	89.00
C761	44.85	85.65	30.00
C762	282.91	76.10	213.00
C763	68.23	20.91	187.00
C764	255.13	50.93	287.00
C765	111.52	15.47	413.00
C766	247.17	59.75	237.00
C767	107.35	23.39	263.00
C768	51.47	147.46	20.00
C769	94.56	22.86	237.00
C770	188.35	41.03	263.00
C771	97.46	62.74	89.00
C772	109.29	38.89	161.00
C773	142.31	38.64	211.00
C774	66.32	113.40	33.51
C775	46.19	88.44	29.93
C776	142.66	44.57	183.37
C777	81.75	28.74	162.99
C778	63.73	13.88	263.00
C779	32.72	7.91	237.00
C780	67.03	23.56	163.00
C781	68.15	23.96	163.00
C782	76.58	50.43	87.00
C783	135.85	36.54	213.00
C784	348.93	67.80	294.87
C785	88.07	36.83	137.00
C786	36.44	12.81	163.00
C787	65.44	33.18	113.00
C788	7.28	35.09	11.89
C789	137.44	127.01	62.00
C790	210.51	137.06	88.00
C791	124.26	151.48	47.00
C793	247.17	59.75	237.00
L1456	29.78	N75° 55' 55.00"E	
L1459	94.35	N5° 17' 46.18"E	
L1461	110.18	N27° 42' 03.27"E	
L1463	12.08	N29° 17' 44.28"W	
L1464	330.81	N57° 30' 41.66"E	
L1465	330.81	N57° 30' 41.66"E	
L1466	154.99	S83° 36' 45.52"E	
L1467	185.61	S88° 14' 39.03"E	
L1469	152.91	S88° 14' 39.03"E	
L1471	341.07	S58° 16' 15.17"E	
L1473	368.04	N89° 38' 51.91"E	
L1475	26.16	S72° 44' 11.24"E	
L1479	44.89	S62° 50' 19.66"W	
L1481	86.75	S77° 06' 27.47"W	
L1483	169.14	S51° 25' 54.77"W	
L1484	118.62	S47° 42' 11.07"W	
L1485	42.53	S53° 18' 04.75"W	
L1486	210.53	S58° 53' 58.44"W	
L1488	181.93	S70° 01' 50.65"W	
L1490	146.64	S78° 43' 17.80"W	
L1492	44.52	S49° 49' 52.63"W	
L1493	41.68	S40° 10' 07.37"E	
L1494	191.53	S32° 17' 30.25"E	
L1495	80.05	S45° 57' 00.71"E	
L1497	44.56	S2° 31' 19.59"W	
L1498	26.00	S87° 28' 40.41"E	
L1499	435.47	N62° 06' 07.40"E	
L1500	136.90	N19° 43' 58.48"W	
L1501	211.27	N36° 05' 01.60"E	
L1502	229.50	N78° 21' 20.84"E	
L1503	174.71	S58° 34' 19.61"E	
L1504	275.67	S12° 36' 49.94"E	
L1505	174.16	S21° 05' 57.02"E	
L1506	414.22	N71° 44' 56.23"E	
L1507	125.84	N18° 53' 33.00"E	
L1508	308.20	N2° 32' 45.02"E	
L1509	235.07	N34° 48' 50.85"W	
L1510	459.37	N64° 22' 27.91"W	
L1512	44.89	N62° 50' 19.66"E	
L1514	43.71	S83° 51' 31.24"E	
L1516	151.44	N74° 45' 27.94"E	
L1519	106.67	S59° 00' 46.21"E	
L1521	47.51	S89° 52' 10.84"E	
L1525	60.59	S80° 35' 30.74"E	
L1527	126.98	S56° 19' 07.92"E	
L1529	21.66	S30° 45' 40.61"E	
L1531	133.12	S50° 20' 12.04"E	
L1533	63.84	S79° 07' 52.09"E	
L1536	217.65	S80° 39' 36.79"E	
L1537	492.73	N85° 44' 49.24"E	
L1538	4285.36	S1° 43' 24.83"W	
L1539	5151.23	N89° 11' 52.78"W	
L1540	1477.48	N0° 46' 00.15"E	
L1541	1338.18	N89° 53' 46.22"W	
L1542	2684.86	N0° 14' 45.77"E	
L1543	97.47	N0° 40' 45.20"E	
L1544	1196.10	N0° 06' 24.52"E	
L1545	97.58	S85° 06' 01.51"E	
L1546	422.40	S66° 19' 45.57"E	
L1547	242.07	S78° 00' 12.76"E	
L1548	251.54	S81° 41' 37.68"E	
L1549	214.38	S68° 29' 54.61"E	
L1550	203.70	S46° 42' 57.63"E	
L1551	259.08	S19° 34' 13.39"E	
L1552	411.17	S7° 33' 00.84"E	
L1553	365.76	N86° 35' 52.13"E	
L1554	82.31	N85° 51' 36.84"E	
L1556	37.43	N47° 04' 35.77"W	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L1559	2652.65	N89° 53' 29.93"W	
L1560	1510.42	N0° 00' 00.00"E	
L1561	1323.70	N87° 33' 25.40"W	
L1562	1317.42	N87° 43' 55.42"W	
L1563	1244.70	N1° 36' 12.92"E	
L1564	2565.10	N1° 36' 12.92"E	
L1565	1257.20	N1° 36' 12.92"E	
L1566	2540.91	N89° 36' 20.58"E	
L1567	627.71	S19° 41' 55.94"E	
L1568	308.00	S59° 25' 19.01"W	
L1569	351.86	S66° 16' 31.36"W	
L1570	119.00	S6° 49' 20.20"E	
L1571	739.75	S51° 12' 06.91"E	
L1572	176.62	S61° 33' 45.96"E	
L1573	1695.24	S29° 04' 13.54"E	
L1574	255.86	N86° 33' 36.09"W	
L1575	403.84	S44° 57' 57.72"W	
L1576	282.05	S16° 41' 58.10"E	
L1577	194.97	N77° 57' 05.77"E	
L1578	231.69	N30° 46' 03.97"E	
L1579	272.36	N84° 00' 46.46"E	
L1580	348.89	S40° 13' 17.27"W	
L1581	804.01	S3° 43' 09.20"W	
L1582	831.06	S50° 15' 01.73"E	
L1583	605.60	S27° 16' 38.94"E	
L1584	518.91	N83° 31' 13.88"E	
L1585	86.14	S85° 06' 01.51"E	
L1586	1293.57	S0° 08' 59.79"W	
L1587	505.60	N89° 01' 41.55"W	
L1588	561.03	S8° 07' 15.09"E	
L1589	162.58	N61° 22' 49.91"W	
L1590	51.97	S24° 25' 58.49"W	
L1593	698.53	N12° 05' 17.91"W	
L1595	80.30	N26° 03' 56.51"W	
L1597	172.29	N54° 19' 02.01"W	
L1598	789.65	N63° 14' 13.31"E	
L1599	445.32	N11° 50' 02.18"E	
L1600	895.35	N66° 14' 39.32"W	
L1601	282.60	N86° 49' 08.88"W	
L1602	210.18	S73° 19' 42.04"W	
L1603	1042.16	S22° 08' 33.13"W	
L1604	389.63	S30° 23' 56.27"W	
L1605	362.91	S35° 34' 09.63"W	
L1606	1285.86	N1° 06' 44.97"E	
L1607	2781.96	S89° 39' 17.02"E	
L1608	1251.07	S2° 28' 27.18"W	
L1609	2645.82	S88° 20' 24.31"E	
L1610	421.75	N1° 37' 24.67"E	
L1611	605.55	S72° 22' 16.96"E	
L1612	1019.67	S55° 54' 38.73"W	
L1613	575.63	S4° 29' 31.51"E	
L1614	407.23	N49° 55' 41.25"W	
L1615	351.10	N55° 27' 31.39"W	
L1616	375.46	N67° 17' 11.43"W	
L1617	357.56	N76° 53' 27.96"W	
L1618	135.25	S77° 39' 36.65"W	
L1619	525.14	S60° 27' 33.26"W	
L1620	0.18	N38° 04' 43.91"W	
L1622	878.12	N1° 37' 24.67"E	
L1623	2671.81	S88° 54' 09.36"E	
L1624	323.81	S1° 17' 42.65"W	
L1625	3408.81	S88° 37' 52.03"E	
L1626	1141.58	S28° 37' 50.78"E	
L1627	2532.39	S0° 11' 20.10"W	
L1628	98.05	N74° 09' 05.34"W	
L1629	140.69	S88° 48' 31.42"W	
L1630	60.29	N89° 35' 00.26"W	
L1631	276.01	N21° 48' 58.93"W	
L1633	450.00	N88° 22' 55.29"W	
L1635	113.19	N67° 51' 06.29"W	
L1637	93.16	N75° 34' 40.71"E	
L1639	43.49	S52° 38' 36.49"W	
L1641	42.04	N47° 05' 21.41"W	
L1643	763.76	S87° 33' 47.03"W	
L1644	185.46	S0° 00' 00.00"E	
L1645	317.04	S76° 55' 59.18"W	
L1646	378.53	N41° 51' 48.58"W	
L1647	125.58	N39° 25' 22.90"E	
L1648	601.67	N29° 32' 05.08"W	
L1649	971.50	N28° 11' 50.78"E	
L1650	738.00	N36° 41' 31.41"W	
L1655	540.77	S88° 42' 02.45"W	
L1656	385.70	N87° 58' 36.24"W	
L1657	54.74	S55° 44' 51.21"W	
L1658	110.87	N34° 15' 08.79"W	
L1660	546.03	S71° 59' 51.25"W	
L1661	122.75	S71° 34' 24.15"W	
L1666	188.21	N38° 04' 43.91"W	
L1667	1328.68	S88° 39' 36.86"E	
L1668	1332.21	S2° 09' 08.62"W	
L1669	1202.37	S5° 32' 27.79"W	
L1670	1373.60	S1° 32' 49.09"W	
L1671	641.00	N89° 40' 06.90"E	
L1672	2402.42	S31° 28' 42.86"W	
L1673	241.97	N45° 42' 05.19"W	
L1674	184.29	N22° 47' 22.87"W	
L1675	125.04	N56° 03' 43.77"W	
L1676	170.33	S67° 18' 38.20"W	
L1677	253.85	S83° 22' 53.32"W	
L1678	109.83	N61° 31' 47.31"W	
L1679	66.32	N15° 21' 29.35"W	
L1680	183.70	N60° 43' 27.28"W	
L1681	173.12	N22° 18' 58.63"W	
L1682	418.28	N89° 21' 42.42"W	
L1683	219.26	N72° 25' 19.41"W	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L1684	112.17	N48° 27' 04.19"W	
L1685	226.83	N42° 21' 54.95"W	
L1686	69.07	N42° 21' 54.95"W	
L1687	454.49	N36° 44' 37.87"W	
L1688	1248.65	N81° 00' 35.30"W	
L1689	412.67	S23° 39' 22.11"W	
L1690	9.76	N66° 20' 37.89"W	
L1691	226.21	N10° 25' 31.84"W	
L1693	78.22	N43° 14' 02.94"W	
L1695	51.26	N6° 09' 51.36"E	
L1697	168.21	N22° 54' 01.15"W	
L1699	194.34	N47° 59' 30.10"E	
L1701	21.25	S73° 11' 24.31"E	
L1702	44.56	N89° 50' 53.96"E	
L1704	44.89	N59° 12' 35.92"E	
L1706	125.58	N89° 42' 10.27"E	
L1709	300.71	S76° 43' 30.27"E	
L1710	45.16	N2° 10' 19.82"E	
L1711	51.12	N44° 30' 44.78"E	
L1712	97.99	S89° 00' 06.26"E	
L1713	532.46	N80° 24' 12.33"E	
L1714	71.42	N21° 51' 57.45"E	
L1715	67.17	N84° 14' 31.56"E	
L1716	13.94	N21° 48' 58.93"W	
L1717	213.34	N12° 24' 42.86"E	
L1718	172.22	N27° 19' 08.93"W	
L1719	265.88	N30° 28' 03.68"W	
L1720	227.21	N35° 16' 54.28"W	
L1721	254.11	N35° 22' 33.46"W	
L1722	320.11	N56° 57' 03.31"W	
L1723	294.49	N66° 51' 15.85"W	
L1724	177.52	N72° 25' 42.21"W	
L1725	317.00	S67° 13' 01.38"W	
L1727	171.03	N39° 34' 38.10"W	
L1728	27.33	S32° 27' 32.15"W	
L1729	149.00	S68° 16' 02.24"W	
L1730	182.01	N88° 42' 52.72"W	
L1731	105.79	N88° 42' 52.72"W	
L1732	288.09	N64° 39' 14.20"W	
L1733	166.74	N30° 07' 34.63"W	
L1734	302.70	N6° 23' 06.19"E	
L1735	62.10	N6° 23' 06.19"E	
L1736	209.85	N0° 51' 12.26"E	
L1737	209.85	N0° 51' 12.26"E	
L1738	163.37	N0° 51' 12.26"E	
L1739	249.04	N14° 49' 11.29"E	
L1740	343.02	N14° 49' 11.29"E	
L1741	121.34	S31° 50' 47.94"E	
L1743	99.77	S39° 45' 21.94"E	
L1745	175.67	S14° 40' 18.19"E	
L1747	116.85	S22° 31' 01.57"E	
L1748	50.24	S27° 29' 19.35"E	
L1750	52.11	S48° 36' 38.45"E	
L1752	454.92	S30° 18' 02.92"E	
L1754	58.19	S51° 14' 16.41"E	
L1756	217.98	S59° 05' 29.10"E	
L1757	33.47	S63° 01' 27.90"E	
L1758	213.68	S66° 57' 26.70"E	
L1760	79.66	N88° 45' 00.59"E	
L1762	105.64	S77° 15' 19.79"E	
L1766	184.58	S70° 57' 23.69"E	
L1768	121.76	N71° 50' 34.75"E	
L1771	45.06	S53° 26' 10.33"E	
L1773	326.96	S78° 01' 47.05"E	
L1775	74.48	N77° 32' 20.38"E	
L1777	347.37	S74° 59' 00.10"E	
L1779	235.40	S42° 54' 44.03"E	
L1781	384.58	S62° 59' 38.48"E	
L1783	286.50	S80° 49' 55.30"E	
L1785	177.05	S70° 59' 06.16"E	
L1787	41.44	S39° 22' 38.89"E	
L1789	342.05	S75° 40' 13.87"E	
L1794	23.98	S60° 15' 29.40"E	
L1795	202.30	S31° 29' 28.81"W	
L1796	3073.24	N89° 39' 59.37"W	
L1909	64.00	S47° 49' 25.78"W	
L1911	12.26	N63° 39' 22.26"E	
L1913	38.01	S85° 47' 21.32"E	
L1915	123.79	S41° 03' 41.88"E	
L1916	16.11	S39° 06' 51.20"E	
L1917	177.22	S37° 10' 00.52"E	
L1919	462.32	S45° 01' 43.90"E	
L1920	624.90	N65° 05' 18.94"E	
L1922	181.25	N25° 59' 21.97"E	
L1924	31.99	S28° 55' 50.84"E	
L1926	180.32	S40° 59' 16.11"W	
L1927	472.10	S17° 41' 57.74"W	
L1930	65.92	S47° 48' 03.26"W	
L1932	277.07	S20° 33' 45.19"E	
L1933	569.62	S84° 27' 42.43"W	
L1934	41.57	N8° 34' 09.11"E	
L1935	485.28	N57° 13' 15.78"W	
L1936	165.04	N7° 59' 19.39"W	
L1937	765.83	N64° 12' 51.91"W	
L1938	28.88	N41° 31' 40.36"W	
L1939	294.71	N17° 30' 26.99"W	
L1940	347.55	N56° 43' 15.45"W	
L1941	187.66	N56° 43' 15.45"W	
L1942	100.69	N56° 43' 15.45"W	
L1943	181.62	N53° 59' 44.67"W	
L1944	225.70	N68° 29' 53.39"W	
L1945	251.50	S83° 35' 33.20"W	
L1946	191.20	N76° 45' 57.16"W	
L1947	191.20	N76° 45' 57.16"W	
L1948	432.71	N69° 04' 50.82"W	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L1949	45.78	N50° 00' 51.23"E	
L1950	357.10	N52° 20' 13.69"E	
L1952	30.38	N0° 26' 20.51"E	
L1954	124.86	N53° 22' 13.91"E	
L1957	87.82	N62° 55' 22.37"E	
L1959	55.16	N83° 49' 42.33"E	
L1961	182.84	S45° 14' 17.37"E	
L1963	313.90	S60° 42' 32.59"E	
L1967	75.20	S24° 20' 33.83"E	
L1968	35.67	N22° 27' 32.63"E	
L1970	81.10	S58° 37' 44.89"E	
L1973	326.78	N3° 22' 51.51"E	
L1974	220.62	N3° 22' 02.00"E	
L1975	103.17	N3° 03' 12.18"E	
L1976	148.81	N3° 01' 26.27"E	
L1977	148.81	N3° 01' 26.27"E	
L1978	154.42	N84° 11' 13.15"E	
L1979	162.71	N84° 11' 13.15"E	
L1980	98.08	N83° 35' 20.64"E	
L1981	101.94	N87° 49' 11.51"E	
L1982	278.12	S89° 20' 27.91"E	
L1983	284.66	N89° 40' 28.58"E	
L1984	419.86	S87° 45' 26.86"E	
L1985	523.66	N1° 37' 17.05"W	
L1986	199.36	N3° 34' 26.55"W	
L1987	120.52	N69° 12' 08.31"E	
L1988	430.47	S16° 23' 50.29"E	
L1989	444.53	S56° 32' 58.93"E	
L1990	288.03	S32° 45' 55.65"E	
L1991	183.84	S33° 59' 54.12"E	
L1992	79.73	S33° 59' 54.12"E	
L1993	336.28	S76° 42' 51.19"E	
L1994	167.61	S41° 42' 19.36"E	
L1995	68.79	S30° 44' 57.20"E	
L1996	48.97	S50° 02' 39.70"E	
L1997	626.28	N32° 10' 15.40"E	
L1999	134.73	S17° 09' 07.09"E	
L2001	56.09	S56° 02' 38.28"E	
L2002	450.65	S31° 00' 43.40"W	
L2003	219.04	S70° 17' 15.18"E	
L2004	172.32	S66° 18' 43.98"E	
L2005	231.92	N27° 23' 11.86"E	
L2007	414.06	S89° 08' 42.91"E	
L2008	30.01	S89° 09' 32.99"E	
L2010	115.95	S1° 09' 10.36"W	
L2011	97.80	S86° 39' 32.21"W	
L2012	111.49	S25° 57' 00.51"W	
L2013	152.15	S5° 27' 24.90"E	
L2014	165.71	S79° 02' 39.99"E	
L2015	41.91	S4° 20' 12.10"W	
L2018	198.63	S47° 59' 33.43"W	
L2020	189.08	N64° 58' 52.30"W	
L2021	366.77	N77° 10' 20.81"W	
L2022	343.10	N86° 01' 36.61"W	
L2023	184.55	S86° 46' 13.48"W	
L2024	108.43	S86° 46' 13.48"W	
L2025	130.07	N70° 04' 49.54"W	
L2026	225.51	N38° 02' 10.84"W	
L2027	478.26	S58° 26' 15.00"W	
L2029	99.77	N39° 45' 21.94"W	
L2031	163.34	N31° 50' 47.94"W	
L2033	95.16	N55° 24' 32.68"W	
L2035	52.41	N79° 21' 54.74"W	
L2037	31.99	N28° 55' 50.84"W	
L2040	66.86	S45° 39' 30.24"W	
L2042	40.17	S82° 29' 29.59"W	
L2044	202.83	S69° 40' 55.26"W	
L2045	68.13	S52° 08' 10.09"W	
L2051	26.41	S8° 38' 31.47"E	
L2053	177.22	N37° 10' 00.52"W	
L2054	17.87	N39° 06' 51.20"W	
L2055	123.79	N41° 03' 41.88"W	
L2056	111.46	N51° 34' 54.66"W	

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CODY ANDERSON
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No. 84210
CIVIL
STATE OF CALIFORNIA

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PROJECT NO. 18-016
DATE JULY 31, 2023
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CHECKED CA,MH,SG

DENNISTON GOLF ESTATES SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION DG

PERIPHERAL PARCEL PLAN

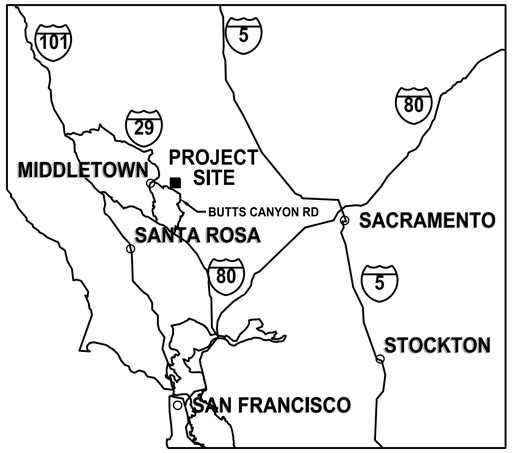
DG2.02

0 500' 1000' 2000' NORTH

P:\2018\18-016.1_MAHA_GNO\03_DESIGN\01_CAD\01_TENT MAP\PKG3\PKG3-REMAINDER PARCELS.DWG

BOHN RIDGE SUBDIVISION

TENTATIVE MAP



VICINITY MAP
NOT TO SCALE

LEGEND

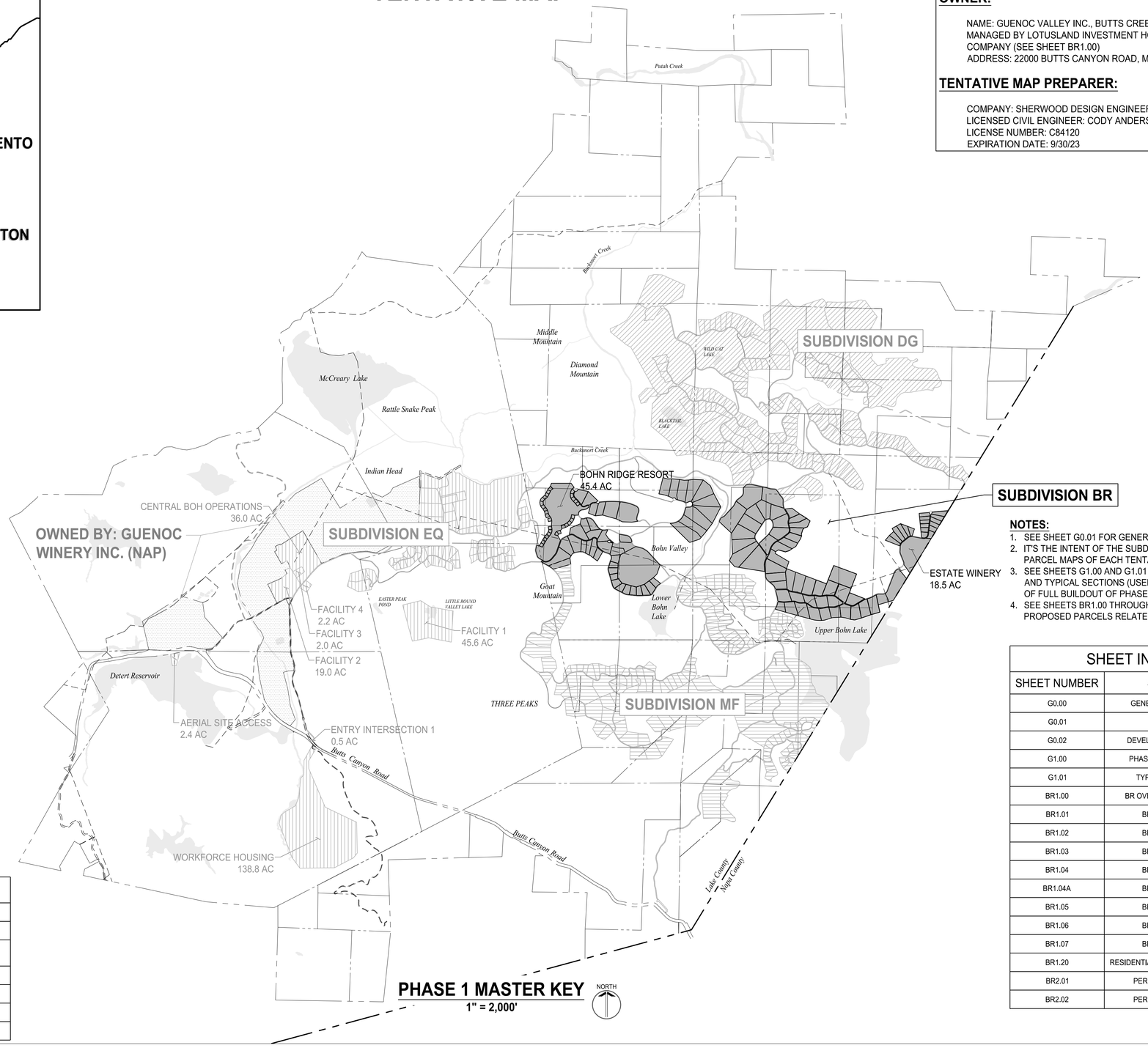
PROPOSED SUBDIVISION BR - BOHN RIDGE

PROPOSED SUBDIVISION MF - MAHA FARMS
UNDER SEPARATE TENTATIVE MAP

PROPOSED SUBDIVISION EQ - EQUESTRIAN
UNDER SEPARATE TENTATIVE MAP

PROPOSED SUBDIVISION DG -
DENNISTON GOLF ESTATES
UNDER SEPARATE TENTATIVE MAP

EXISTING PARCELS OWNED BY OTHERS;
NOT A PART (NAP) OF THIS TENTATIVE MAP



PHASE 1 MASTER KEY
1" = 2,000'
NORTH

OWNER:

NAME: GUENOC VALLEY INC., BUTTS CREEK INC., BOHN VALLEY INC.
MANAGED BY LOTUSLAND INVESTMENT HOLDINGS, INC., A CALIFORNIA COMPANY (SEE SHEET BR1.00)
ADDRESS: 22000 BUTTS CANYON ROAD, MIDDLETOWN, CA 95461

TENTATIVE MAP PREPARER:

COMPANY: SHERWOOD DESIGN ENGINEERS
LICENSED CIVIL ENGINEER: CODY ANDERSON, P.E.
LICENSE NUMBER: C84120
EXPIRATION DATE: 9/30/23

NOTES:

1. SEE SHEET G0.01 FOR GENERAL NOTES.
2. IT'S THE INTENT OF THE SUBDIVIDER TO PROCESS THE FINAL PARCEL MAPS OF EACH TENTATIVE MAP IN PHASES.
3. SEE SHEETS G1.00 AND G1.01 FOR PHASE 1 MASTER ROAD PLAN AND TYPICAL SECTIONS (USED FOR REFERENCE AND CONTEXT OF FULL BUILDOUT OF PHASE 1).
4. SEE SHEETS BR1.00 THROUGH BR2.02 FOR EXISTING AND PROPOSED PARCELS RELATED TO SUBDIVISION BR.

SUBDIVISION LOT COUNTS

PARCEL TYPE	MAHA FARMS	EQUESTRIAN	DENNISTON GOLF	BOHN RIDGE	TOTAL
VILLA	73	67	133	112	385
RESORT RESIDENTIAL	104	0	7	30	141
COMMERCIAL	5	1	4	2	12
FACILITY	1	11	3	0	15
GOLF	0	0	4	0	4
PERIPHERAL	8	7	8	8	31

SHEET INDEX

SHEET NUMBER	SHEET TITLE
G0.00	GENERAL NOTES AND INDEX
G0.01	GENERAL NOTES
G0.02	DEVELOPMENT RESTRICTIONS
G1.00	PHASE 1 MASTER ROAD PLAN
G1.01	TYPICAL ROAD SECTIONS
BR1.00	BR OVERALL SUBDIVISION PLAN
BR1.01	BR SUBDIVISION PLAN
BR1.02	BR SUBDIVISION PLAN
BR1.03	BR SUBDIVISION PLAN
BR1.04	BR SUBDIVISION PLAN
BR1.04A	BR SUBDIVISION PLAN
BR1.05	BR SUBDIVISION PLAN
BR1.06	BR SUBDIVISION PLAN
BR1.07	BR SUBDIVISION PLAN
BR1.20	RESIDENTIAL PARCEL AVERAGE SLOPES
BR2.01	PERIPHERAL PARCEL PLAN
BR2.02	PERIPHERAL PARCEL PLAN

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PROJECT NO. 18-016
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BOHN RIDGE SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

GENERAL NOTES AND INDEX
G0.00

GENERAL NOTES:

1. REFER TO FINAL ADOPTED DEVELOPMENT AGREEMENT FOR FURTHER SUBDIVISION DETAILS, INCLUDING SEQUENCING AND EXPIRATION DETAILS.
2. THE PROPERTIES WITHIN THIS SUBDIVISION ARE PROPOSED TO BE REZONED TO A NEWLY FORMED ZONING DISTRICT, THE GUENOC VALLEY PLANNED DEVELOPMENT (GVPD) WITH OPEN SPACE AND AGRICULTURAL PRESERVE OVERLAYS/COMBINING DISTRICTS. REFER TO THE RELEVANT ZONING DISTRICTS FOR DEVELOPMENT REGULATIONS.
3. REFER TO THE SPECIFIC PLAN OF DEVELOPMENT FOR ALLOWED DEVELOPMENT INCLUDING PLANNED DEVELOPMENT DETAILS, DENSITY, AND SETBACKS.
4. REFER TO THE CC&R'S FOR FUTURE HOMEOWNERSHIP ASSOCIATION DETAILS AND MAINTENANCE REQUIREMENTS.
5. REFER TO THE WATER, WASTEWATER, AND ELECTRICAL FEASIBILITY REPORTS FOR THE PRIVATE UTILITY DISTRICT DETAILS.
6. REFER TO THE DESIGN GUIDELINES FOR LOT LAYOUT, DENSITY, BUILDING MASSING, LANDSCAPE DETAILS, ROAD AND PATHWAY DESIGN, STREET LIGHTING, DIRECTIONAL SIGNAGE AND RESIDENTIAL DESIGNS.
7. REFER TO THE FIRE MANAGEMENT PLAN FOR FIRE PREVENTION GUIDELINES AND VEGETATION FUEL REDUCTION SETBACKS.
8. ALL PROPOSED ROADWAYS WITHIN PROPERTY ARE PRIVATE AND ARE TYPICALLY INDEPENDENT INDIVIDUAL PARCELS, UNLESS OTHERWISE NOTED. THERE WILL BE NO PUBLIC RIGHTS OF WAY EXCEPT ALONG THE ENTRY ROADS UP TO THE FIRST GATE.
9. ALL ROADWAY CORRIDORS SHALL INCORPORATE EASEMENTS OF 50 FEET BEYOND EITHER SIDE OF THE EDGE OF PAVEMENT FOR VEGETATION MANAGEMENT, DEPENDING ON ENVIRONMENTAL CONSTRAINTS, WHICH SHALL BE FURTHER DEFINED IN AND MANAGED BY THE CC&RS.
10. ROAD NAMES ARE REFERENCED WITH NUMBERS, PROPOSED NAMES WILL BE PROVIDED IN SUBSEQUENT SUBMITTAL PRIOR TO HEARING.

SUBDIVISION NOTES:

1. SEE PARCELS SHEETS FOR BEARING, DISTANCE, AND CURVE INFORMATION OF PARCELS.
2. PERIPHERAL PARCELS ARE PROPOSED TO BE SUBDIVIDED AND ARE INCLUDED FOR REFERENCE. SEE PERIPHERAL PARCEL SHEETS FOR BEARING, DISTANCE, AND CURVE INFORMATION.
3. ENVIRONMENTAL PRESERVATION AREAS, INCLUDING SENSITIVE BIOLOGICAL SPECIES OR CULTURAL SITES WHERE APPLICABLE, WITHIN SUBDIVIDED PARCELS MAY BE IDENTIFIED AS CONCEPTUAL ON THE TENTATIVE MAP AND THEN FINAL ON THE FINAL MAP.
4. FOR WATER SUPPLY AND WASTEWATER DISPOSAL SYSTEMS AND DISTRIBUTION, REFER TO SPECIFIC PLAN OF DEVELOPMENT AND TECHNICAL FEASIBILITY REPORTS.
5. PROPOSED PRIVATE UTILITIES WILL BE REQUIRED THROUGHOUT THE SITE, INCLUDING SEWER, WATER, ELECTRIC, COMMUNICATIONS, AND LIQUID PROPANE. PRELIMINARY LOCATIONS OF MAJOR FACILITIES ARE SHOWN FOR REFERENCE IN TENTATIVE MAPS, HOWEVER, ADDITIONAL INFORMATION IS PROVIDED ON THE SPECIFIC PLAN OF DEVELOPMENT.

EASEMENTS:

1. EXISTING EASEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION PER RECORD DATA AND HAVE NOT BEEN FIELD SURVEYED.
2. ALL PROPOSED PRIVATE UTILITY AND ACCESS EASEMENTS (PUE), WHICH ARE TO BE SPECIFICALLY DEFINED DURING THE FINAL MAP STAGE, SHALL INCORPORATE THE FOLLOWING ELEMENTS WITHIN A COMBINED TYPICAL EASEMENT WIDTH OF 50 FEET TOTAL:
   a. TOTAL PAVED ROADWAY, INCLUDING SHOULDERS, FOR SHARED ACCESS (RANGES IN WIDTH FROM 22 TO 28 FEET FOR TWO-WAY ROADS AND 14 FEET FOR ONE-WAY ROADS).
   b. RETAINING AND DRAINAGE CONVEYANCE FEATURES (UP TO 12 FEET WIDE).
   c. UTILITY PIPING AND STRUCTURES (UP TO 10 FEET WIDE)
   d. EXCEPTIONS MAY OCCUR FOR SPECIFIC UTILITY STRUCTURES OR DRAINAGE FEATURES REQUIRING ADDITIONAL WIDTH
3. PROPOSED DRAINAGE MANAGEMENT EASEMENTS SHALL EXTEND TO 30 FEET FROM THE TOP OF BANKS OF PERENNIAL STREAMS AND 20 FEET FROM THE TOP OF BANKS OF INTERMITTENT STREAMS.

EXISTING CONDITIONS AND NATURAL RESOURCE PRESERVATION:

1. SETBACKS FOR DRAINAGES, RARE PLANTS, WOODLANDS, AND RIPARIAN ZONES WILL BE ADDRESSED WITHIN THE SPECIFIC PLAN OF DEVELOPMENT DOCUMENTATION AND THE ENVIRONMENTAL IMPACT REPORT, UNDER SEPARATE COVER.
2. FINAL CONFIGURATION OF DEDICATED OPEN SPACE SHALL BE DEVELOPED AS PART OF THE ENVIRONMENTAL REVIEW PROCESS.
3. OAK WOODLAND PRESERVATION AREAS WITHIN PARCELS MAY BE SUBJECT TO DEED RESTRICTIONS TO LIMIT REMOVAL OF TREES. FINAL LOCATIONS WILL BE DIRECTED BY THE ENVIRONMENTAL IMPACT REPORT AND WILL ULTIMATELY BE RECORDED IN THE FINAL MAP.
4. AREAS IDENTIFIED AS "DEVELOPMENT RESTRICTION AREAS" AS CONTAINING CULTURAL RESOURCES WILL BE DEED RESTRICTED TO PROHIBIT THEIR DISTURBANCE, AND MAY BE MORE ACCURATELY SURVEYED FOR INCLUSION ON THE FINAL MAP.
5. DEDICATED HABITAT CORRIDORS WITHIN PARCELS MAY BE SUBJECT TO DEED RESTRICTIONS TO LIMIT PLACEMENT, HEIGHT AND COMPOSITION OF FENCING, VEGETATION MANAGEMENT AND DISTURBANCE OF NATURAL RESOURCES. FINAL CONFIGURATIONS WILL ULTIMATELY BE RECORDED IN THE FINAL MAP, WITH THE TERMS OF SAID RESTRICTIONS TO BE INCLUDED IN THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE HOMEOWNERS' ASSOCIATIONS AND/OR OTHER REAL ESTATE PURCHASE AGREEMENTS.

PHASING NOTES:

1. FINAL PARCEL MAPS FILED WILL INDICATE SUBDIVISION CONSTRUCTION PHASING.
2. FINAL MAPS DEVELOPED FOR EACH AGREED UPON PHASE OF THE PROPOSED EVENTUAL SUBDIVISION WILL INCLUDE ALL PARCEL TYPES, INCLUDING THE ROAD PARCELS ADJACENT TO AND REQUIRED FOR EACH SUBDIVISION PHASE.

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PROJECT NO. 18-016
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BOHN RIDGE SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

GENERAL NOTES

G0.01



LEGEND

PROPOSED PARCEL BOUNDARY

EXISTING PARCEL BOUNDARY

NOT A PART (NAP)

PRESERVED OPEN SPACE

DEVELOPMENT RESTRICTION

OAK WOODLAND PRESERVATION AREA

HABITAT CORRIDOR

COUNTY LINE

EXISTING ROAD AND UTILITY EASEMENT

NOTE:

1. DEDICATED HABITAT CORRIDOR, PRESERVED OPEN SPACE AND OAK WOODLAND PRESERVATION AREAS ARE SHOWN FOR ILLUSTRATIVE PURPOSES. FINAL CONFIGURATION IS SUBJECT TO CHANGE AND WILL BE INCORPORATED IN THE FINAL MAP.

0 1750' 3500' NORTH

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BOHN RIDGE SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

DEVELOPMENT RESTRICTIONS

G0.02

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BOHN RIDGE SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

PHASE 1
MASTER
ROAD PLAN

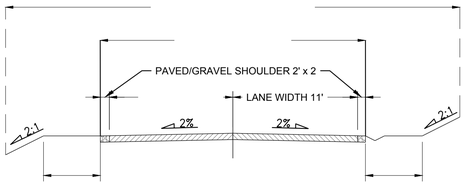
G1.00

ROAD NAME	LENGTH [FT]	WIDTH [FT]	ROAD TYPE
ROAD 1	17,420	26	A
ROAD 2	14,896	26	A
ROAD 3	32,381	26	A
ROAD 4	1,133	22	B
ROAD 5	1,109	14	D
ROAD 6	4,602	26	A
ROAD 6A	1,327	22	B
ROAD 7	5,805	22	B
ROAD 8	785	14	D
ROAD 9	415	22	B
ROAD 10	2,215	22	B
ROAD 11	1,532	14	D
ROAD 12	8,154	26	A
ROAD 12A	1,900	14	D
ROAD 13	1,569	22	B
ROAD 14	8,716	26	A
ROAD 15	8,503	26	A
ROAD 16	1,331	22	B
ROAD 17	4,204	22	B
ROAD 18	2,776	22	B
ROAD 18A	3,160	16	C
ROAD 19	not used	not used	not used
ROAD 20	not used	not used	not used
ROAD 21	not used	not used	not used
ROAD 22	not used	not used	not used
ROAD 23	not used	not used	not used
ROAD 24	2,085	22	B
ROAD 25	802	22	B
ROAD 26	1,320	26	A
ROAD 27	915	22	B
ROAD 28	4,174	22	B
ROAD 29	3,227	26	A
ROAD 29A	937	16	C
ROAD 30	3,908	26	A
ROAD 31	1,950	22	B
ROAD 32	2,434	26	A
ROAD 33	3,090	22	B
ROAD 33A	1,025	16	C
ROAD 34	13,835	22	B
ROAD 35	2,582	22	B
ROAD 36	7,951	22	B
ROAD 37	5,034	22	B
ROAD 37A	2,515	16	C
ROAD 38	9,614	26	A
ROAD 39	6,025	22	B
ROAD 39A	2,522	16	C
ROAD 40	782	22	B
ROAD 41	2,980	22	B
ROAD 41A	2,883	14	D
ROAD 42	1,761	22	B
ROAD 43	950	22	B
ROAD 44	617	14	D
ROAD 45	4,310	22	B
ROAD 46	667	22	B
ROAD 48	not used	not used	not used
ROAD 49	not used	not used	not used
ROAD 50	9,093	26	A
ROAD 51	not used	not used	not used
ROAD 52	382	22	B
ROAD 53	2,501	22	B
ROAD 54	1,229	22	B
ROAD 55	2,274	22	B
ROAD 55A	1,995	14	D
ROAD 56	615	14	D
ROAD 57	1,387	26	A
ROAD 58	2,533	22	B
ROAD 59	2,825	22	B
ROAD 60	11,696	22	B

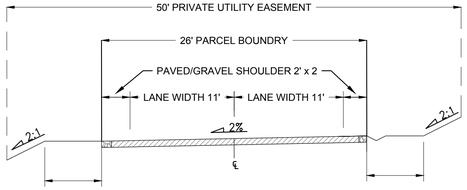
0 550' 1100' 2200'
NORTH

TYPICAL ROAD SECTIONS

TYPE A - CROWNED/SUPERELEVATED PRIMARY 2 LANE ROAD



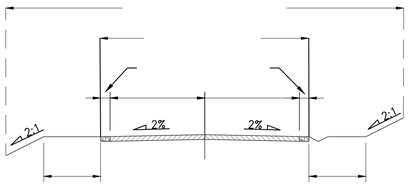
10' @ 10% MAX,
SEE NOTE 5



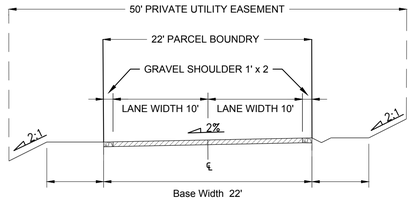
10' @ 10% MAX,
SEE NOTE 5

10' @ 10% MAX,
SEE NOTE 5

TYPE B - CROWNED/SUPERELEVATED SECONDARY 2 LANE ROAD



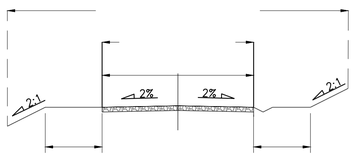
10' @ 10% MAX,
SEE NOTE 5



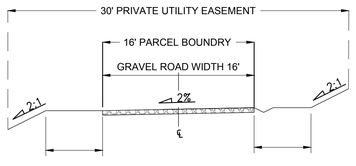
10' @ 10% MAX,
SEE NOTE 5

10' @ 10% MAX,
SEE NOTE 5

TYPE C - CROWNED/SUPERELEVATED GRAVEL ROAD



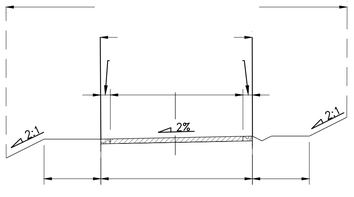
10' @ 10% MAX,



10' @ 10% MAX,
SEE NOTE 5

10' @ 10% MAX,
SEE NOTE 5

TYPE D - ONE WAY ROAD



10' @ 10% MAX,

NOTES:

1. SLOPES SHOWN HEREIN REPRESENT TYPICAL OR MAXIMUM CONDITIONS AND ARE SUBJECT TO CHANGE PER PENDING DETAILED ROADWAY DESIGN.
2. EASEMENTS SHOWN HEREIN REPRESENT TYPICAL MINIMUM WIDTH AND COVERAGE SITUATIONS AND ARE SUBJECT TO INCREASING TO ACCOMMODATE SPECIFIC STRUCTURES OR FEATURES TO BE DESIGNED.
3. PLEASE REFER TO THE DESIGN GUIDELINES AS PART OF THE GVD ZONING DESIGNATION FOR ROADWAY DESIGN DETAILS.
4. IN ADDITION TO THE PUE, THERE ARE VEGETATION AND FUEL REDUCTION AREAS 50' ON EITHER SIDE OF THE EDGE OF PAVEMENT. REFER TO THE FIRE MANAGEMENT PLAN.
5. TO THE EXTENT THAT THE TOPOGRAPHY FEASIBLY PERMITS, AN AREA OF APPROXIMATELY 10 FEET ON EACH SIDE OF THE ROADWAYS WILL BE IMPROVED WITH HARDSCAPE.

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BOHN RIDGE SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

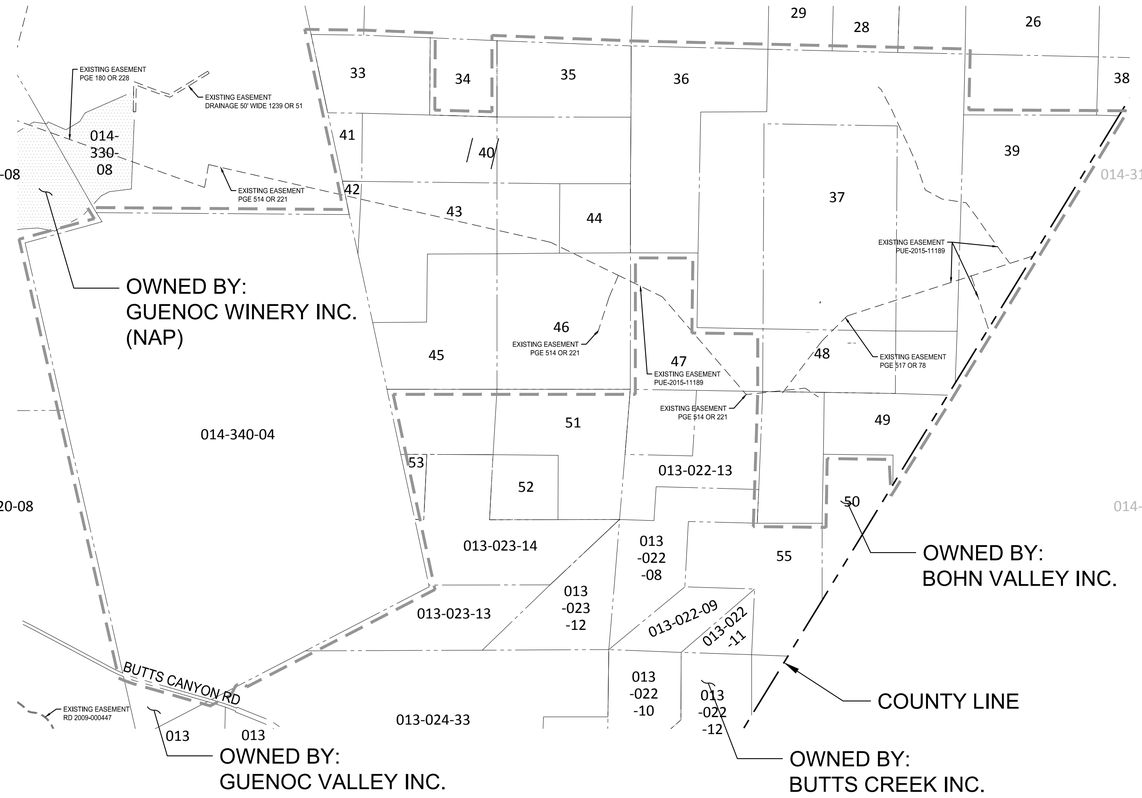


TENTATIVE MAP
SUBDIVISION BR

TYPICAL ROAD SECTIONS

G1.01

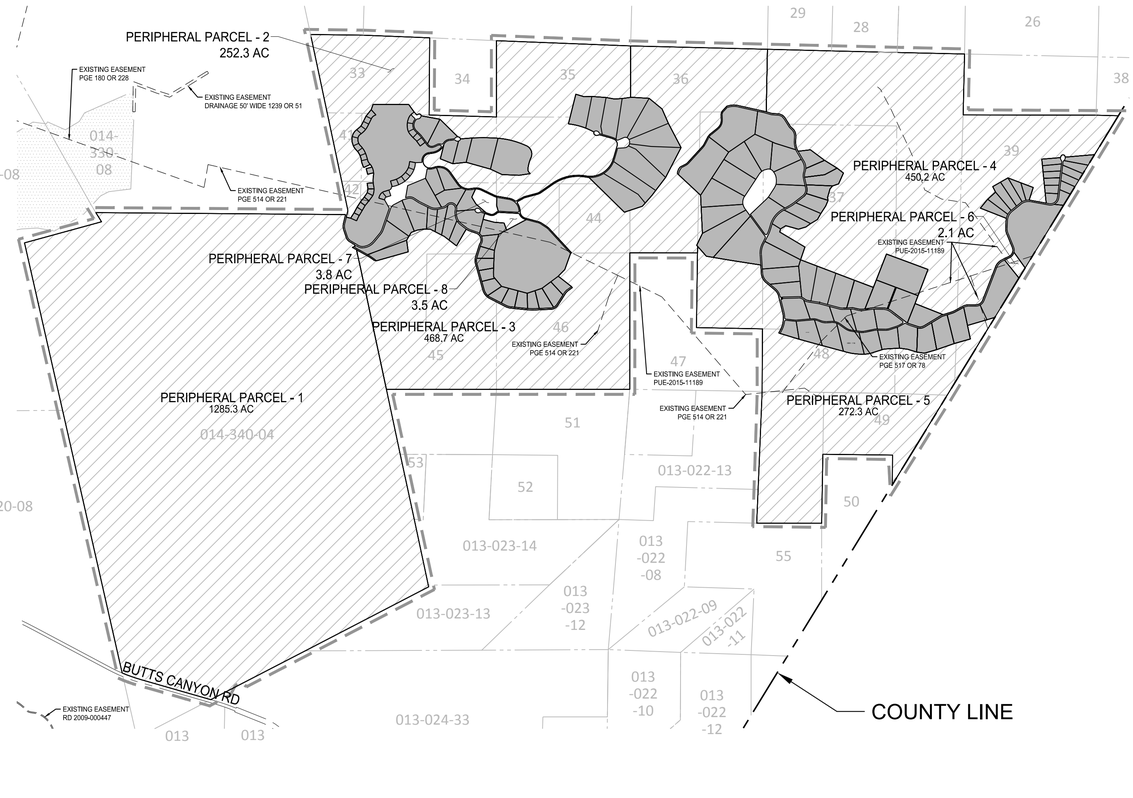
EXISTING PARCELS



EXISTING OWNERSHIP INFORMATION						
#	CC	APN	Owner	CC Doc #	Correction Deed	Approx. Acreage
33	11-44	013-016-05PT, 013-023-10PT	Bohn Valley Inc.	2012005997		104
35	11-33	013-023-07PT	Bohn Valley Inc.	2012006015		80
36	11-30	013-022-01	Bohn Valley Inc.	2012006016		160
37	11-64	013-022-01PT, 013-022-02PT, 013-022-05PT	Bohn Valley Inc.	2012006005		600
39	11-92	013-022-02PT	Bohn Valley Inc.	2012017325		185
40	11-61	013-023-07PT, 013-023-10PT	Bohn Valley Inc.	2012006023		160
41	11-82	013-023-11	Bohn Valley Inc.	2012006009		11
42	11-81	013-023-10PT	Bohn Valley Inc.	2012006008		7
43	11-36	013-023-10PT, 013-023-07PT	Bohn Valley Inc.	2012006017		160
44	11-75	013-023-07PT	Bohn Valley Inc.	2012005992		40
45	11-32	013-023-15PT, 013-023-10PT	Bohn Valley Inc.	2012006011		165
46	11-34	013-023-07PT	Bohn Valley Inc.	2012006012		160
48	11-55	013-022-05PT, 013-022-14PT	Bohn Valley Inc.	2012006003		160
49	11-85	013-022-02PT, 013-022-14PT	Bohn Valley Inc.	2012017321		102
-	-	014-340-041	Bohn Valley Inc.			

- Grant Deed #2016-016244 - Bohn Valley Inc
  APNs - 013-016-05, 013-022-01, 013-022-02, 013-022-05, 013-022-14, 013-023-07, 013-023-10, 013-023-11, 013-023-15
- Grant Deed #2016-010655 - Guenoc Valley Inc
  APNs - 014-310-07, 014-310-09, 014-330-09, 014-340-04, 014-320-08
- Grant Deed #2016-016243 - Butts Creek Inc
  APNs - 013-022-08, 013-023-12, 013-024-33, 013-022-09, 013-022-10, 013-024-34, 013-022-11, 013-022-12

PROPOSED SUBDIVISION



PROPOSED PARCEL TYPES	
VILLA	99
RESORT RESIDENTIAL	30
COMMERCIAL	3
FACILITY	0
GOLF	0
PERIPHERAL	8

NOTES:
1. SEE SHEET G0.01 FOR GENERAL NOTES.
2. SEE SHEETS G1.00 AND G1.01 FOR PHASE 1 MASTER ROAD PLAN AND TYPICAL SECTIONS (USED FOR REFERENCE AND CONTEXT OF FULL BUILDOUT OF PHASE 1).
3. SEE SHEETS BR1.00 THROUGH BR1.07 FOR DETAILED SUBDIVISION OF PROPOSED ROAD, COMMERCIAL AND RESIDENTIAL PARCELS.
4. SEE SHEETS BR2.01 THROUGH BR2.02 FOR DETAILED PERIPHERAL PARCELS.

0 750' 1500' 3000' NORTH

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PK04\PK04-EXISTING PARCELS.DWG

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BOHN RIDGE SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

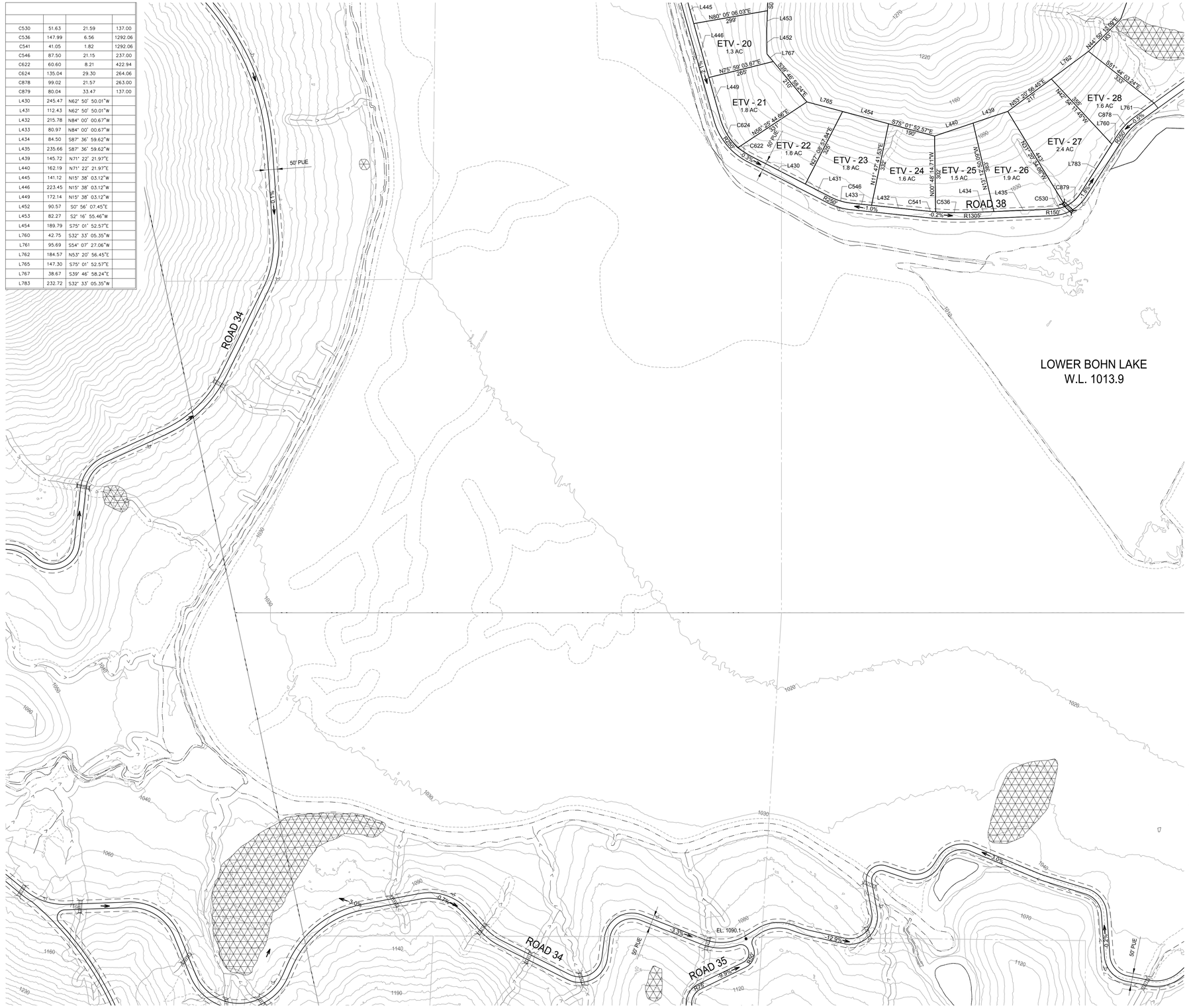


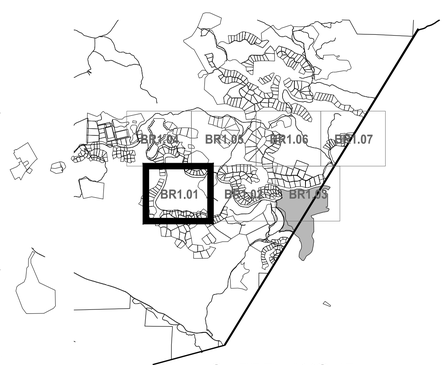
TENTATIVE MAP
SUBDIVISION BR

BR OVERALL SUBDIVISION PLAN

BR1.00

C530	51.63	21.59	137.00
C536	147.99	6.56	1292.06
C541	41.05	1.82	1292.06
C546	87.50	21.15	237.00
C622	60.60	8.21	422.94
C624	135.04	29.30	264.06
C878	99.02	21.57	263.00
C879	80.04	33.47	137.00
L430	245.47	N62° 50' 50.01"W	
L431	112.43	N62° 50' 50.01"W	
L432	215.78	N84° 00' 00.67"W	
L433	80.97	N84° 00' 00.67"W	
L434	84.50	S87° 36' 59.62"W	
L435	235.66	S87° 36' 59.62"W	
L439	145.72	N71° 22' 21.97"E	
L440	162.19	N71° 22' 21.97"E	
L445	141.12	N15° 38' 03.12"W	
L446	223.45	N15° 38' 03.12"W	
L449	172.14	N15° 38' 03.12"W	
L452	90.57	S0° 56' 07.45"E	
L453	82.27	S2° 16' 55.46"W	
L454	189.79	S75° 01' 52.57"E	
L760	42.75	S32° 33' 05.35"W	
L761	95.69	S54° 07' 27.06"W	
L762	184.57	N53° 20' 56.45"E	
L765	147.30	S75° 01' 52.57"E	
L767	38.67	S39° 46' 58.24"E	
L783	232.72	S32° 33' 05.35"W	





SHEET LAYOUT
NOT TO SCALE

0 100' 200' 400' NORTH

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE

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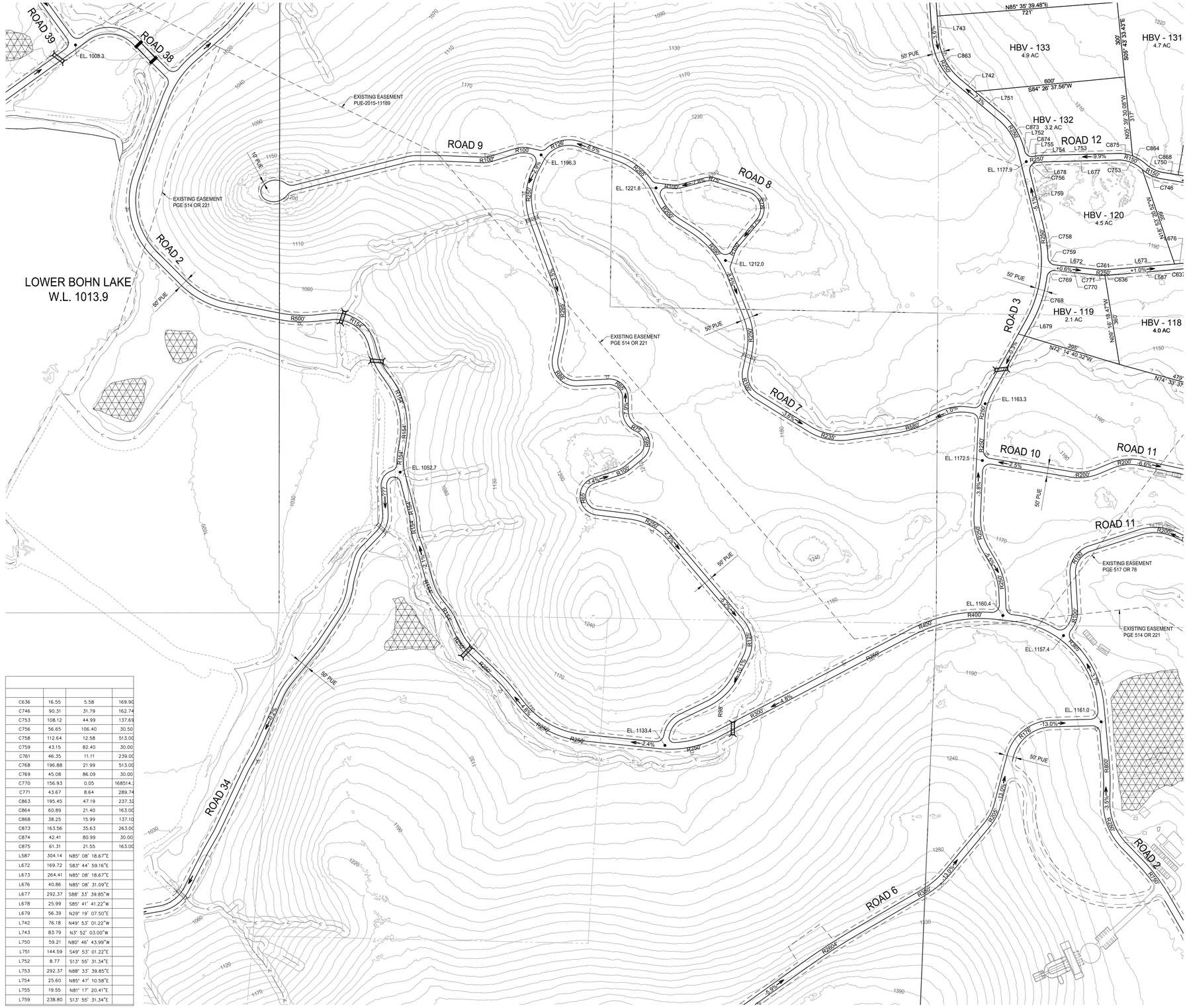
BOHN RIDGE SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

TENTATIVE MAP
SUBDIVISION BR

BR SUBDIVISION PLAN

BR1.01


LOWER BOHN LAKE
W.L. 1013.9
ROAD 39
ROAD 38
ROAD 2
ROAD 9
ROAD 8
ROAD 7
ROAD 3
ROAD 12
ROAD 10
ROAD 11
ROAD 34
ROAD 6
EL. 1008.3
EL. 1196.3
EL. 1221.8
EL. 1212.0
EL. 1052.7
EL. 1177.9
EL. 1163.3
EL. 1172.5
EL. 1160.4
EL. 1157.4
EL. 1161.0
EL. 1133.4
HBV - 133
4.9 AC
HBV - 131
4.7 AC
HBV - 132
3.2 AC
HBV - 120
4.5 AC
HBV - 119
2.1 AC
HBV - 118
4.0 AC
EXISTING EASEMENT
PUE-2015-11189
EXISTING EASEMENT
PGE 514 OR 221
EXISTING EASEMENT
PGE 517 OR 78
50' PUE
10' PUE
N85° 35' 39.48"E
721'
600'
S84° 28' 37.56"W
N25° 20' 39"E
N25° 20' 39"E
N25° 20' 39"E
N80° 46' 43.99"W
N29° 19' 07.50"E
N73° 14' 40.32"W
N74° 33' 37"
N29° 19' 18.47"W
N25° 20' 39"E
N25° 20' 39"E
N25° 20' 39"E



PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C451	46.95	9.73	276.42
C452	58.37	14.11	237.00
C453	16.02	6.87	133.57
C454	85.33	20.63	237.00
C456	73.39	16.16	260.16
C457	50.11	9.17	313.00
C458	64.77	14.11	263.00
C459	118.16	49.42	137.00
C460	45.37	10.97	237.00
C461	34.55	8.35	237.00
C462	76.42	16.60	263.69
C480	140.58	49.41	163.00
C481	113.34	39.84	163.00
C483	70.67	17.09	237.00
C489	15.99	5.62	163.00
C637	43.04	10.39	237.27
C647	126.07	27.68	261.00
C648	151.32	0.87	10000.00
C652	418.43	21.03	1139.74
C703	149.46	36.13	237.00
C704	59.58	113.78	30.00
C705	50.17	11.82	243.22
C706	77.38	18.55	239.00
C727	40.08	8.00	287.00
C729	94.69	20.63	263.00
C731	35.83	14.98	137.00
C735	78.49	18.82	239.00
C737	71.73	13.94	294.78
C742	78.42	17.09	263.00
C743	122.17	26.82	261.00
C744	115.44	27.68	239.00
C764	123.26	26.66	264.89
C765	105.58	25.11	240.89
C767	51.12	11.22	261.00
C773	63.97	15.34	239.00
C775	108.10	23.15	267.54
C777	65.97	2.76	1371.96
C778	97.08	23.27	239.00
C783	62.53	14.99	239.00
C785	190.73	20.47	533.91
C786	85.72	18.82	261.00
C787	58.57	13.43	249.80
C788	148.14	0.85	10000.00
C790	89.89	19.59	262.89
C791	157.39	0.11	84611.52
C795	78.90	16.69	270.88
C796	32.25	61.34	30.13
C797	108.23	26.16	237.00
C799	83.12	29.22	163.00
L472	161.23	S73° 38' 12.07"W	
L475	199.76	N61° 36' 48.72"E	
L476	9.94	N62° 48' 38.51"E	
L477	104.62	N72° 47' 30.72"E	
L478	166.98	S20° 48' 11.06"W	
L479	455.43	S21° 13' 28.22"W	
L480	456.04	N21° 13' 28.14"E	
L481	159.18	N21° 26' 08.01"E	
L545	178.36	N71° 54' 08.39"W	
L546	165.00	N58° 40' 55.70"E	
L547	379.75	S58° 40' 55.70"W	
L549	74.42	N72° 47' 32.69"E	
L551	185.06	N88° 42' 53.32"W	
L552	135.15	S82° 06' 43.81"W	
L554	41.36	S82° 06' 43.81"W	
L555	94.91	N77° 15' 29.89"W	
L565	148.84	N75° 09' 23.21"W	
L566	167.69	N80° 46' 43.99"W	
L578	154.75	N82° 06' 48.43"W	
L636	190.89	S88° 43' 56.11"E	
L638	78.48	S61° 12' 06.77"W	
L639	146.54	S72° 06' 31.74"W	
L640	161.85	N89° 20' 27.48"W	
L657	79.02	S82° 30' 06.48"E	
L658	187.99	N78° 40' 52.96"E	
L659	176.50	S82° 06' 43.81"W	
L661	94.91	N77° 15' 29.89"W	
L662	26.54	S87° 45' 29.33"W	
L663	148.14	S54° 49' 34.88"E	
L664	99.83	S82° 30' 06.48"E	
L665	144.04	S87° 45' 29.33"W	
L666	202.28	N75° 09' 24.59"W	
L667	233.62	N80° 44' 18.44"W	
L668	204.33	N75° 12' 11.00"W	
L674	56.84	S69° 12' 28.05"E	
L675	109.61	N87° 03' 59.63"E	
L680	43.01	N88° 02' 56.61"E	
L681	70.99	S69° 12' 28.05"E	
L683	179.39	N78° 40' 52.96"E	
L684	27.53	S82° 30' 06.48"E	
L685	21.28	S89° 20' 27.48"E	
L686	42.78	S73° 10' 23.74"W	
L688	50.37	S89° 20' 27.48"E	
L689	101.98	S89° 20' 27.48"E	
L690	164.90	S81° 35' 41.78"E	
L691	186.45	S73° 02' 30.42"E	
L692	167.74	N71° 54' 08.39"W	
L693	115.68	S61° 11' 07.22"W	
L694	43.45	S65° 58' 36.75"W	
L695	141.80	S89° 49' 42.32"E	

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
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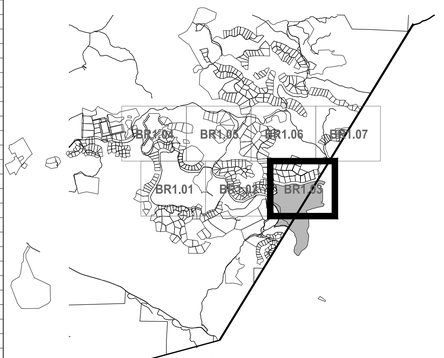
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



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LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

BR SUBDIVISION PLAN

BR1.03



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL–DE–SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
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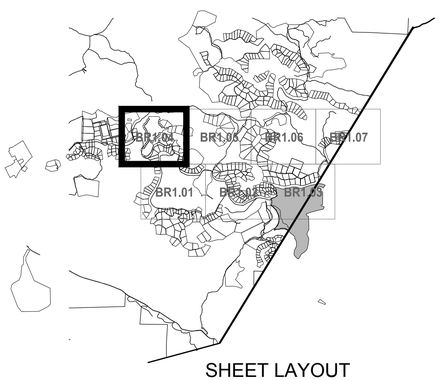
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE

SHEET LAYOUT

NOT TO SCALE



0 100' 200' 400' NORTH

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GUENOC VALLEY
LAKE COUNTY
CALIFORNIA

TENTATIVE MAP
SUBDIVISION BR

BR SUBDIVISION PLAN

BR1.04

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C105	111.06	10.78	590.44
C107	25.88	2.51	590.44
C108	139.60	14.83	539.36
C110	59.81	6.35	539.36
C114	353.58	43.49	465.79
C116	113.46	13.96	465.79
C117	94.10	11.57	465.79
C118	32.42	3.99	465.79
C119	125.67	16.42	438.40
C121	45.54	5.95	438.40
C124	202.65	35.25	329.40
C126	80.71	14.04	329.40
C127	100.94	17.68	327.14
C129	36.36	6.37	327.14
C158	171.19	56.35	174.05
C160	56.49	18.59	174.05
C161	7.19	2.37	174.05
C162	105.98	35.52	170.97
C163	105.25	35.27	170.97
C164	61.63	20.65	170.97
C179	131.73	53.07	142.21
C181	43.24	17.42	142.21
C204	127.07	4.18	1740.89
C205	121.41	5.51	1263.56
C207	34.51	2.75	720.09
C208	63.84	6.36	575.07
C209	201.65	20.29	569.50
C210	119.26	12.15	562.17
C211	142.83	18.76	436.22
C214	51.20	8.19	358.22
C216	56.47	9.67	334.64
C217	195.96	33.60	334.16
C224	225.79	45.08	287.00
C225	241.17	48.91	282.50
C257	37.66	9.03	239.00
C268	182.26	43.98	237.44
C287	78.69	20.31	222.00
C289	121.90	32.04	218.00
C303	263.85	93.90	161.00
C308	114.21	47.75	137.05
C317	86.24	36.07	137.00
C318	97.83	40.91	137.00
C320	53.22	27.23	112.00
C325	149.98	77.41	111.00
C326	77.21	42.63	103.78
C327	53.22	34.20	89.17
C336	74.53	82.12	52.00
C355	59.32	113.28	30.00
C407	513.92	7.63	3857.49
C408	27.90	23.63	67.64
C409	32.52	50.27	37.07
C410	229.30	3.40	3858.77
C547	64.66	22.73	163.00
C550	35.10	54.24	37.07
C551	100.77	85.31	67.68
C552	31.96	45.80	39.98
C556	59.66	20.97	163.00
C558	76.03	18.38	237.00
C560	195.32	47.22	237.00
C562	54.25	13.12	237.00
C565	15.69	3.76	239.00
C566	82.42	18.09	261.00
C567	55.81	28.30	113.00
C568	3.48	0.84	237.00
C569	35.96	55.57	37.07
C570	90.43	76.59	67.64
C571	37.30	53.00	40.32
C573	30.37	15.68	111.00
C576	19.09	4.19	261.00
C580	110.78	24.32	261.00
C581	205.06	49.16	239.00
C584	29.49	7.07	239.00
C585	107.14	38.13	161.00
C586	65.86	15.79	239.00
C587	89.70	19.69	261.00
C588	81.65	34.15	137.00
C590	140.42	49.36	163.00
C591	26.41	6.82	222.00
C592	151.99	39.23	222.00
C593	231.12	117.19	113.00
C594	108.37	23.61	263.00
C595	71.39	47.01	87.00
C596	149.52	98.47	87.00
C597	64.06	13.96	263.00
C598	108.37	23.61	263.00
C607	118.02	49.36	137.00
C608	44.06	11.58	218.00
C610	106.19	42.85	142.00
C625	111.19	26.88	237.00
C626	46.53	11.25	237.00
C627	158.80	55.82	163.00
C881	155.76	35.99	248.00
C882	29.50	6.82	248.00
C884	97.15	34.15	163.00
C885	33.88	64.71	30.00
C886	38.95	122.45	18.23
C892	87.90	20.31	248.00
C894	246.24	45.08	313.00
C895	110.95	38.56	164.88
C897	202.92	11.50	1011.00
C899	152.11	62.70	139.00
C900	37.50	53.20	40.39
C901	62.59	53.66	66.84
C902	58.00	49.87	66.64
C903	37.49	53.61	40.07
C905	153.62	54.67	161.00
C906	40.41	68.75	33.68
C908	74.03	37.57	112.89

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C910	75.07	48.33	89.01
C911	45.60	29.36	89.00
C915	99.81	84.92	67.34
C916	34.67	49.29	40.29
C917	122.80	46.53	151.21
C918	126.72	48.08	151.01
C919	108.91	0.35	17644.34
C920	42.33	8.18	296.37
L45	130.45	N13° 38' 31.33"E	
L51	191.04	N59° 18' 33.67"W	
L53	8.33	S84° 37' 28.38"W	
L92	76.51	N65° 33' 45.57"E	
L94	89.17	S81° 41' 40.03"W	
L98	29.12	N37° 01' 24.00"W	
L99	72.52	S37° 01' 24.00"E	
L100	115.90	N37° 01' 24.00"W	
L101	49.07	N46° 03' 04.89"W	
L102	57.37	N46° 03' 04.89"W	
L111	61.57	N3° 49' 23.84"W	
L112	47.63	N7° 57' 49.20"E	
L113	113.75	N8° 05' 21.64"W	
L114	45.49	N9° 51' 30.73"W	
L115	74.74	N10° 26' 30.63"E	
L116	115.90	S14° 29' 12.69"E	
L117	60.83	N17° 48' 24.65"E	
L118	77.67	N17° 56' 00.49"W	
L119	58.67	N18° 20' 34.18"W	
L120	108.90	N19° 21' 07.65"E	
L121	30.93	N26° 22' 12.22"W	
L122	129.85	S28° 23' 49.94"W	
L123	46.00	N29° 02' 07.47"W	
L124	113.96	S30° 43' 01.87"W	
L125	112.93	S30° 44' 55.10"W	
L126	45.51	N31° 42' 51.62"W	
L127	43.73	N32° 22' 10.55"E	
L128	117.96	N32° 22' 17.50"E	
L129	124.31	S32° 26' 14.70"W	
L130	106.63	S34° 28' 07.98"W	
L131	56.60	N35° 37' 42.06"E	
L132	21.18	N38° 27' 45.02"W	
L133	47.34	N38° 28' 24.45"W	
L134	125.20	S38° 34' 29.84"W	
L135	163.05	N38° 56' 26.60"E	
L136	36.59	S41° 12' 14.08"E	
L137	20.71	N41° 12' 32.07"E	
L138	46.51	N42° 13' 42.43"W	
L139	140.55	S42° 20' 16.72"E	
L140	48.21	N48° 32' 13.15"E	
L141	120.76	N48° 40' 38.52"W	
L142	91.05	N49° 33' 53.44"E	
L143	119.09	S52° 25' 00.47"E	
L144	118.04	S53° 32' 49.41"E	
L145	118.54	S54° 16' 47.84"E	
L146	118.10	N54° 17' 50.94"E	
L147	121.66	N56° 16' 13.78"W	
L148	124.42	N61° 55' 16.24"W	
L149	118.00	S63° 37' 55.20"E	
L150	118.00	S63° 37' 59.28"E	
L151	116.64	S64° 24' 31.91"E	
L152	143.41	S64° 29' 02.82"W	
L153	118.02	S65° 44' 43.52"W	
L154	131.22	N66° 19' 23.36"W	
L155	117.98	S67° 45' 45.89"W	
L156	119.17	S75° 29' 09.21"W	
L157	118.21	N75° 41' 29.92"W	
L158	120.16	N75° 46' 08.77"E	
L159	121.64	N76° 20' 58.74"E	
L160	87.99	N76° 56' 41.83"W	
L161	120.33	N84° 50' 36.78"E	
L162	120.16	S87° 55' 53.97"W	
L163	28.76	S14° 44' 41.65"E	
L164	41.68	S14° 44' 41.65"E	
L166	8.30	S26° 22' 04.88"W	
L167	58.18	S26° 22' 04.88"W	
L168	117.77	S26° 22' 04.88"W	
L170	58.18	N26° 22' 04.88"E	
L171	117.77	N26° 22' 04.88"E	
L172	186.35	S36° 02' 20.67"E	
L173	32.70	S2° 47' 40.36"E	
L174	33.94	S5° 32' 52.43"E	
L175	41.27	S11° 33' 18.58"E	
L176	74.55	S18° 18' 55.36"W	
L177	49.33	S30° 49' 18.49"W	
L178	49.69	S33° 10' 34.04"E	
L179	61.30	S37° 00' 11.03"E	
L180	82.42	S41° 59' 00.20"E	
L181	122.98	S43° 58' 55.64"W	
L182	121.97	N45° 16' 27.38"W	
L183	5.00	S46° 34' 52.66"E	
L184	34.81	S48° 13' 12.73"E	
L185	120.16	N53° 08' 44.47"E	
L186	119.05	N53° 15' 13.79"E	
L187	56.37	S56° 59' 37.16"W	
L188	117.66	N62° 25' 55.22"E	
L189	110.46	N80° 50' 07.90"W	
L190	48.53	S46° 34' 51.17"E	
L192	29.42	S5° 44' 17.35"W	
L193	41.35	S5° 44' 17.35"W	
L195	12.11	S21° 57' 34.94"E	
L196	28.61	S21° 57' 34.94"E	
L198	21.48	S35° 52' 57.04"E	
L199	54.83	S35° 52' 57.04"E	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L201	26.11	S44° 18' 52.72"W	
L202	53.11	S44° 18' 52.72"W	
L203	69.88	S7° 22' 50.46"W	
L204	40.89	S15° 45' 50.46"W	
L205	118.09	S16° 00' 01.08"E	
L206	71.72	S16° 24' 50.90"W	
L207	118.00	S18° 06' 42.15"E	
L208	118.00	N22° 59' 12.50"W	
L209	75.85	S25° 41' 54.67"W	
L210	189.48	S29° 32' 59.69"E	
L211	72.99	S35° 38' 12.99"W	
L212	118.00	S36° 57' 29.27"E	
L213	13.47	S37° 57' 51.93"W	
L214	121.84	N39° 07' 48.93"W	
L215	71.24	S41° 47' 49.78"W	
L216	72.37	S49° 48' 06.95"W	
L217	117.61	S51° 37' 52.45"E	
L218	66.63	S56° 06' 35.56"W	
L219	75.68	S63° 28' 27.91"W	
L220	118.00	N69° 02' 03.49"W	
L221	66.28	S69° 56' 44.73"W	
L222	15.77	S70° 33' 14.21"W	
L223	93.16	S72° 21' 59.61"W	
L224	118.26	S73° 25' 59.87"E	
L225	70.13	S73° 15' 55.34"W	
L226	14.76	S77° 18' 03.78"W	
L227	27.95	S78° 35' 16.86"W	
L228	119.74	N78° 45' 03.60"W	
L229	131.16	S87° 35' 45.59"W	
L230	59.52	N71° 57' 15.92"E	
L371	74.13	S71° 57' 15.92"W	
L391	64.16	N69° 39' 15.96"E	
L393	119.64	S77° 24' 39.71"W	
L394	59.48	N62° 32' 39.07"W	
L395	118.23	N52° 27' 43.19"W	
L397	129.55	N80° 36' 35.47"E	
L398	64.16	N69° 39' 15.96"E	
L399	90.90	N30° 49' 56.98"E	
L405	189.84	N52° 27' 43.19"W	
L406	145.87	S52° 37' 03.33"E	
L407	141.15	N52° 37' 03.33"W	
L408	138.20	N70° 59' 51.96"W	
L409	30.92	S8° 33' 27.89"W	
L410	30.92	S8° 33' 27.89"W	
L411	29.37	S5° 23' 55.08"E	
L412	29.37	N5° 23' 55.08"W	
L413	64.32	N56° 44' 09.84"W	
L415	112.41	S56° 44' 09.84"E	
L416	38.36	N73° 54' 23.43"E	
L417	77.75	S73° 54' 23.43"W	
L418	178.72	S62° 19' 38.26"W	
L419	36.53	S19° 14' 26.54"W	
L420	208.96	S19° 14' 26.54"W	
L425	147.74	N19° 43' 39.87"W	
L426	177.33	N61° 57' 43.86"E	
L427	139.37	N73° 43' 03.41"W	
L429	7.39	N28° 31' 15.65"E	
L456	246.90	N16° 58' 09.50"E	
L457	119.91	S14° 40' 18.51"W	
L458	120.21	S15° 39' 33.68"E	
L460	227.20	N80° 25' 02.54"W	
L461	164.62	S0° 37' 37.82"W	
L464	216.83	N60° 52' 51.16"E	
L466	265.98	N49° 10' 54.08"W	
L467	227.83	S63° 33' 06.20"E	
L612	94.14	S82° 36' 08.52"W	
L613	176.07	N24° 53' 57.35"E	
L614	67.80	S71° 21' 00.92"E	
L615	89.83	S71° 21' 00.92"E	
L616	72.10	N77° 13' 15.68"E	
L617	33.52	N77° 13' 15.68"E	
L618	6.23	N43° 04' 23.81"E	
L619	192.60	S10° 47' 04.88"W	
L620	52.80	S72° 41' 30.09"W	
L621	15.58	N84° 27' 04.67"W	
L770	51.33	S88° 24' 17.65"E	
L771	78.22	N88° 24' 17.65"W	
L772	105.84	N62° 32' 39.07"W	
L773	47.26	S63° 33' 06.20"E	
L774	180.57	N63° 33' 06.20"W	
L775	208.96	S19° 14' 26.54"W	
L776	208.05	S39° 32' 58.15"W	
L777	280.90	S60° 38' 52.93"E	
L778	29.46	N59° 18' 33.67"W	
L779	90.90	N30° 49' 56.98"E	

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BOHN RIDGE SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

BR SUBDIVISION PLAN

BR1.04A

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C383	307.36	35.35	498.16
C384	313.12	36.01	498.16
C385	47.69	5.49	498.16
C386	37.15	70.96	30.00
C387	87.32	46.76	107.00
C388	47.78	25.59	107.00
C389	12.48	8.72	82.00
C390	61.57	32.97	107.00
C391	55.84	39.02	82.00
C392	68.31	47.73	82.00
C393	28.94	66.33	25.00
C394	21.86	9.50	131.81
C395	41.37	17.98	131.81
C396	27.97	5.24	306.00
C397	32.11	45.65	40.31
C398	43.20	36.60	67.64
C399	47.22	40.00	67.64
C400	30.30	46.82	37.07
C401	179.05	7.72	1328.73
C402	354.96	15.31	1328.73
C403	568.28	20.10	1620.23
C404	309.11	98.96	178.96
C405	224.85	16.65	773.53
C406	105.51	63.07	95.86
C574	50.89	97.19	30.00
C575	323.14	77.66	238.41
C617	60.04	14.39	239.00
C809	27.60	6.62	239.00
C810	68.20	14.97	261.00
C811	38.85	20.05	111.00
C812	13.02	29.84	25.00
C813	89.24	21.57	237.00

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C880	75.38	18.07	239.00
C929	179.19	26.53	387.00
C930	17.23	32.90	30.00
C931	69.32	44.62	89.00
C932	193.01	52.41	211.00
L443	442.45	S61° 57' 43.86"W	
L459	349.60	S86° 50' 57.75"E	
L594	119.65	S66° 15' 22.71"W	
L595	116.71	N87° 01' 56.21"E	
L596	12.01	N18° 16' 46.35"W	
L597	158.94	S66° 07' 49.75"E	
L599	49.66	N69° 01' 40.05"W	
L600	168.97	N74° 15' 52.64"W	
L601	42.74	S74° 15' 52.64"E	
L602	161.46	N9° 59' 23.35"W	
L603	67.48	S14° 05' 24.01"W	
L604	169.10	N73° 06' 11.41"W	
L605	154.78	S88° 02' 54.47"W	
L606	282.22	N85° 38' 49.40"W	
L607	172.61	S80° 01' 23.45"E	
L608	149.92	N86° 26' 27.87"E	
L609	180.99	N82° 05' 49.45"E	
L653	644.82	N42° 35' 48.20"W	
L654	122.75	N56° 59' 22.16"W	
L700	137.12	N80° 24' 22.06"W	
L704	21.69	S11° 07' 13.54"W	
L705	33.74	S32° 41' 42.63"W	
L706	106.45	S62° 32' 23.20"W	
L708	140.33	S27° 30' 46.58"W	
L724	173.49	N33° 03' 59.41"E	
L764	341.12	N19° 41' 00.79"E	
L769	230.09	N75° 03' 35.32"W	
L780	225.26	N81° 10' 41.33"E	

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE

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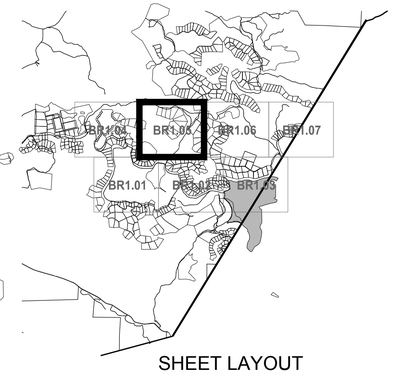
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR



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BR SUBDIVISION PLAN

BR1.05

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PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C438	114.86	38.09	172.79
C439	20.51	4.95	237.48
C442	80.37	26.57	173.31
C444	349.87	41.14	487.29
C806	33.37	63.66	30.03
C807	226.52	31.50	412.00
C808	100.90	26.95	214.51
C814	167.74	45.47	211.38
C828	77.56	40.03	111.00
C832	59.29	8.11	418.92
C837	165.89	64.66	147.00
C838	88.37	8.63	587.00
C841	75.64	20.54	211.00
C845	397.36	44.38	512.97
C846	78.51	11.15	403.56
C847	60.89	116.34	29.99
C848	36.08	7.34	281.67
C850	186.63	44.92	238.04
C852	65.79	17.76	212.24
C853	115.23	31.29	211.00
C856	14.28	6.02	135.78
C857	64.44	20.29	181.98
C858	32.39	6.45	287.76
C859	130.42	28.33	263.80
C860	66.42	14.82	256.77
C861	109.77	25.92	242.61
C862	200.11	29.51	388.58
C872	90.79	12.24	424.95
C876	141.92	3.23	2514.36
C877	92.29	8.63	613.00
C922	142.65	48.23	169.46
C923	179.95	24.97	413.00
C926	74.88	19.80	216.71
C927	53.59	27.66	111.00
L484	120.89	S58° 07' 58.90"W	
L485	260.06	N74° 23' 59.45"W	
L486	155.27	S73° 14' 08.01"W	
L487	114.01	S54° 31' 08.39"W	
L490	176.75	S32° 52' 54.16"W	
L491	121.30	S22° 42' 46.99"W	
L492	58.22	S11° 18' 55.82"E	
L493	178.49	S16° 21' 21.17"W	
L494	76.82	S42° 00' 05.58"W	
L495	124.27	S71° 14' 26.23"W	
L496	158.71	S52° 19' 10.59"E	
L530	131.54	N12° 50' 53.70"W	
L532	62.58	N12° 24' 45.57"W	
L534	196.89	N52° 14' 38.63"E	
L538	17.08	N60° 52' 12.00"E	
L696	19.27	S35° 52' 01.58"E	
L698	120.49	S27° 09' 30.50"W	
L701	149.70	S36° 14' 18.89"E	
L702	25.77	S36° 05' 54.38"E	
L714	11.14	S33° 49' 34.24"E	
L715	157.78	N30° 40' 05.33"W	
L716	53.65	N65° 28' 12.79"W	
L718	109.04	S60° 52' 12.00"W	
L719	236.47	S52° 14' 38.63"W	
L720	50.98	S12° 24' 45.57"E	
L722	112.94	S33° 13' 59.59"W	
L723	10.08	S33° 14' 02.51"W	
L726	115.72	S16° 29' 15.18"W	
L727	482.63	N36° 05' 54.38"W	
L728	456.44	N46° 29' 00.28"E	
L729	49.94	S60° 49' 21.85"W	
L730	143.14	S12° 24' 45.57"E	
L731	22.90	S16° 16' 34.45"W	
L732	47.17	N2° 32' 08.34"W	
L733	30.45	N33° 49' 34.24"W	
L734	56.50	S30° 40' 05.33"E	
L736	247.36	S83° 13' 40.56"W	
L737	216.68	S30° 36' 57.81"E	
L739	132.32	N17° 08' 13.59"E	
L740	69.36	S27° 32' 55.20"W	
L744	147.99	S27° 38' 02.48"W	
L745	131.01	S16° 38' 47.29"W	
L746	12.07	S18° 59' 47.66"W	
L747	196.02	N57° 51' 54.28"W	
L748	63.33	N15° 03' 09.04"E	
L756	157.44	S59° 01' 18.39"W	
L757	137.44	S29° 49' 27.70"W	
L758	39.58	N52° 14' 38.63"E	
L795	47.37	N74° 33' 19.78"E	

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
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- WATER TANK (W)
- GROUND WATER WELL (WELL)
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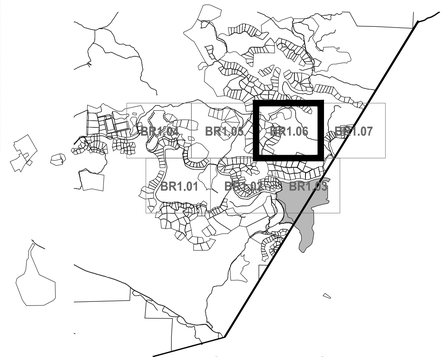
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



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LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

BR SUBDIVISION PLAN

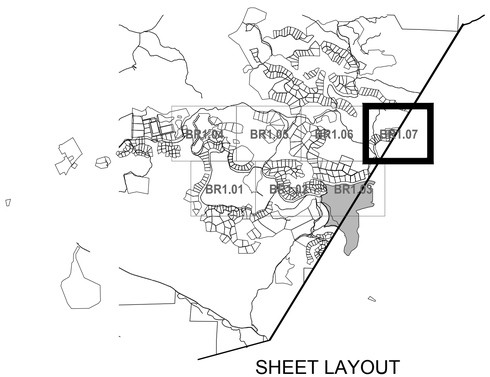
BR1.06



PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C130	82.29	17.93	263.00
C131	62.55	13.63	263.00
C132	47.31	10.31	263.00
C133	97.99	21.35	263.00
C134	85.55	18.64	263.00
C269	204.79	49.51	237.00
C270	200.28	48.42	237.00
C271	101.98	24.65	237.00
C291	103.92	35.87	166.00
C292	162.99	56.93	164.04
C309	223.53	93.48	137.00
C331	55.09	42.42	74.41
C332	76.46	58.87	74.41
C337	40.96	52.92	44.34
C338	40.94	53.35	43.97
C482	165.85	40.10	237.00
L300	156.83	N2° 27' 06.22"E	
L301	15.22	N3° 39' 36.05"E	
L302	39.99	N6° 53' 30.61"E	
L303	20.55	N6° 53' 45.81"E	
L304	15.16	N10° 27' 54.96"E	
L305	295.38	N22° 12' 11.22"W	
L306	233.39	N50° 52' 10.37"E	
L308	63.41	N79° 37' 15.03"W	
L309	368.76	S79° 37' 15.59"E	
L310	150.06	N6° 53' 35.77"E	
L311	157.87	N6° 53' 35.77"E	
L312	181.57	N6° 53' 35.77"E	
L313	164.58	N6° 53' 35.77"E	
L314	80.18	S6° 53' 35.77"W	
L315	138.74	N6° 53' 35.77"E	
L316	135.92	N6° 53' 35.77"E	
L317	147.69	N6° 57' 24.94"E	
L318	170.98	N6° 50' 17.81"E	
L319	3.29	S50° 52' 10.37"W	
L320	93.61	S50° 52' 10.37"W	
L321	136.49	N50° 52' 10.37"E	
L322	139.30	S5° 40' 49.21"E	
L323	122.74	S5° 49' 38.50"E	
L324	130.90	S5° 40' 49.21"E	
L325	126.37	S5° 40' 49.21"E	
L326	153.95	S5° 40' 49.21"E	
L327	202.03	N5° 40' 49.21"W	
L328	186.83	S84° 07' 39.38"E	
L329	151.30	S31° 29' 28.81"W	
L330	152.11	S31° 29' 28.81"W	
L331	172.38	S31° 29' 28.81"W	
L335	122.35	S27° 32' 31.02"E	
L336	170.47	N60° 04' 13.65"E	
L337	176.89	S60° 04' 13.65"W	
L471	54.20	N61° 12' 39.87"E	

LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- CULVERT
- BRIDGE
- WATER TANK (W)
- GROUND WATER WELL (WELL)
- ELECTRICAL SUBSTATION (ELEC)
- DEVELOPMENT RESTRICTION AREA
- EXISTING PG&E POLE LINE EASEMENT (NO WIDTH GIVEN)
- EASEMENT
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY
- EPHEMERAL STREAM SETBACK
- WASTE WATER TREATMENT FACILITY (WW)
- WATER PUMP
- FIRE HYDRANT
- FIRE TANK
- EXISTING POWER POLE



SHEET LAYOUT
NOT TO SCALE

0 100' 200' 400' NORTH

SHERWOOD
DESIGN ENGINEERS
2548 Mission Street
San Francisco, CA 94110
www.sherwoodengineers.com

REGISTERED PROFESSIONAL ENGINEER
CODY ANDERSON
EXP: 9/30/23
No.84120
CIVIL
STATE OF CALIFORNIA

SCALE: 1:200
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PROJECT NO. 18-016
DATE JULY 31, 2023
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BOHN RIDGE SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

BR SUBDIVISION PLAN

BR1.07

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
ETR - 1	16,652	18.30
ETR - 2	15,906	21.93
ETR - 3	15,557	21.09
ETR - 4	13,884	16.50
ETR - 5	13,909	14.32
ETR - 6	15,422	11.05
ETR - 7	15,324	21.51
ETR - 8	15,080	26.18
ETR - 9	15,015	24.45
ETR - 10	15,183	25.82
ETR - 11	13,601	32.69
ETR - 12	12,346	27.42
ETR - 13	14,752	4.51
ETR - 14	14,424	0.98
ETR - 15	13,902	11.08
ETR - 16	14,754	10.06
ETR - 17	14,254	6.29
ETR - 18	13,240	19.14
ETR - 19	14,079	19.40
ETR - 20	14,377	29.21
ETR - 21	16,760	36.95
ETR - 22	13,456	29.38
ETR - 23	13,162	16.80
ETR - 24	15,121	13.09
ETR - 25	17,237	11.89
ETR - 26	16,198	16.67
ETR - 27	13,907	28.79
ETR - 28	13,294	33.75
ETR - 29	13,897	29.28
ETR - 30	16,628	19.19
ETV - 1	253,399	32.05
ETV - 2	203,002	30.05
ETV - 3	212,359	27.04
ETV - 5	77,525	26.08
ETV - 6	82,083	24.32
ETV - 7	83,342	10.19
ETV - 8	221,176	24.47
ETV - 9	123,144	27.94
ETV - 10	108,400	21.67
ETV - 11	140,726	27.35
ETV - 12	121,276	24.30
ETV - 13	173,409	23.64
ETV - 14	122,515	23.06
ETV - 15	126,619	16.36
ETV - 16	100,154	26.79
ETV - 17	78,289	19.46
ETV - 18	63,216	21.99
ETV - 19	72,219	24.67

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
ETV - 20	57,545	29.18
ETV - 21	78,010	30.80
ETV - 22	68,766	26.88
ETV - 23	79,391	26.21
ETV - 24	70,112	28.06
ETV - 25	64,955	27.14
ETV - 26	83,930	23.49
ETV - 27	104,610	24.10
ETV - 28	68,848	27.84
ETV - 29	157,448	13.05
ETV - 30	152,435	12.79
ETV - 31	109,907	15.13
ETV - 32	122,984	17.70
ETV - 33	283,854	17.16
ETV - 34	461,326	23.78
ETV - 35	202,449	23.60
ETV - 36	196,744	22.85
ETV - 37	243,615	24.13
ETV - 38	299,960	23.95
ETV - 39	300,977	26.15
ETV - 40	280,663	24.17
ETV - 41	302,813	20.34
ETV - 42	413,099	26.71
ETV - 43	284,229	29.20
ETV - 44	355,457	26.52
ETV - 47	1,592,459	25.91
HBV - 108	433,337	10.82
HBV - 109	124,423	9.48
HBV - 110	207,390	11.88
HBV - 111	200,189	12.57
HBV - 112	174,690	16.20
HBV - 113	179,277	19.62
HBV - 114	142,321	24.95
HBV - 115	155,746	20.25
HBV - 116	190,648	22.32
HBV - 117	210,194	16.61
HBV - 118	173,232	11.24
HBV - 119	91,502	10.01
HBV - 120	197,761	11.01
HBV - 121	156,922	14.44
HBV - 122	142,728	13.76
HBV - 123	179,321	13.34
HBV - 124	159,051	9.04
HBV - 125	176,658	7.16
HBV - 126	236,317	12.18
HBV - 127	213,151	13.56
HBV - 128	192,338	11.77
HBV - 129	240,392	9.56

AVERAGE CROSS SLOPE TABLE		
PARCEL NAME	AREA (SQ.FT.)	MEAN SLOPE (%)
HBV - 130	242,131	13.76
HBV - 131	204,818	15.32
HBV - 132	140,866	14.12
HBV - 133	213,474	15.59
HBV - 134	263,318	16.38
HBV - 135	236,578	11.94
HBV - 136	162,257	6.56
HBV - 137	144,643	8.58
HBV - 138	133,158	11.97
HBV - 139	104,258	9.44
HBV - 140	161,666	8.75
HBV - 141	122,973	9.33
HBV - 142	100,019	10.52
HBV - 143	230,653	8.05
HBV - 144	227,048	13.57
HBV - 145	222,278	8.42
HBV - 146	216,870	10.05
HBV - 147	247,301	5.16
HBV - 148	266,008	11.49
HBV - 149	315,410	15.84
HBV - 150	319,256	16.17
HBV - 151	275,771	11.89
HBV - 152	399,797	15.00
HBV - 153	522,922	16.99
HBV - 154	524,729	24.60
HBV - 155	532,906	21.05
HBV - 156	379,922	14.08
HBW - 1	48,931	14.12
HBW - 2	47,127	10.17
HBW - 3	43,556	10.41
HBW - 4	43,359	14.01
HBW - 5	43,693	15.61
HBW - 6	44,169	12.80
HBW - 7	49,062	17.02
HBW - 8	45,915	15.42
HBW - 9	50,772	15.28
HBW - 10	59,259	14.84
HBW - 11	65,353	16.74
HBW - 12	74,385	21.09
HBW - 13	45,837	17.99
HBW - 14	61,358	21.38
HBW - 15	86,742	20.35
HBW - 16	97,422	13.16
HBW - 17	74,929	10.80
HBW - 18	80,256	4.25
BOHN RIDGE RESORT	1,978,241	15.33
ESTATE WINERY	804,533	19.56

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CODY ANDERSON
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STATE OF CALIFORNIA

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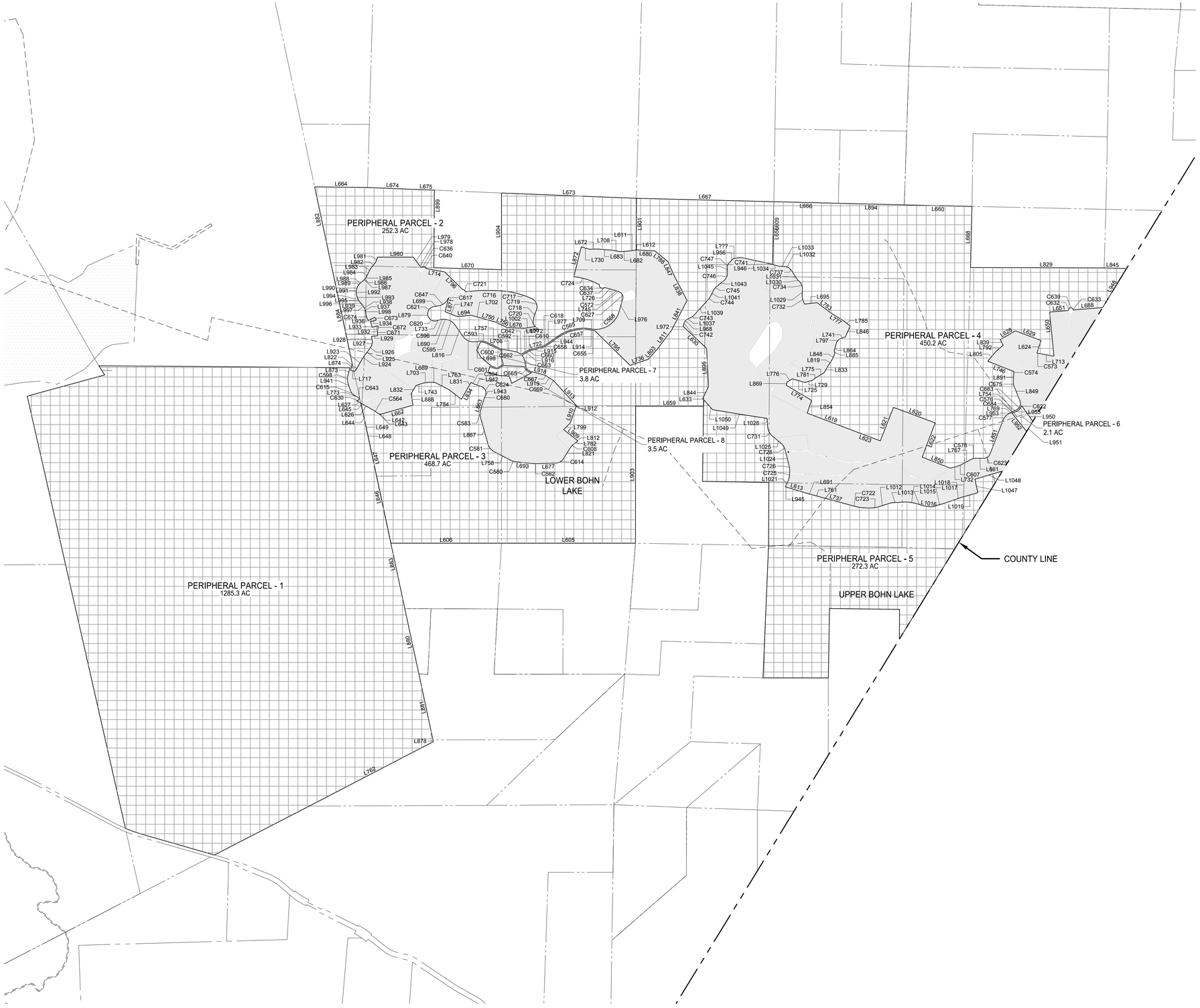
BOHN RIDGE SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

RESIDENTIAL PARCEL AVERAGE SLOPES

BR1.20



LEGEND

- PARCEL BOUNDARY
- ROADWAY
- CUL-DE-SAC
- COUNTY LINE
- REMAINDER PARCELS
- DEVELOPMENT PARCELS
- EPHEMERAL STREAMS
- ORDINARY HIGH WATER MARK
- INTERMITTENT TOP OF BANK
- PERENNIAL TOP OF BANK
- EXISTING PARCEL BOUNDARY

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REGISTERED PROFESSIONAL ENGINEER
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EXP: 9/30/23
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CIVIL
STATE OF CALIFORNIA

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PROJECT NO. 18-016
DATE JULY 31, 2023
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BOHN RIDGE SUBDIVISION
GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

PERIPHERAL PARCEL PLAN

BR2.01

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C562	192.85	8.38	1318.06
C564	159.96	9.28	988.00
C565	697.17	44.88	890.05
C568	697.28	83.90	476.16
C572	25.96	5.24	284.00
C573	35.12	7.65	263.00
C574	38.70	8.43	263.00
C575	113.17	24.65	263.00
C576	22.66	4.94	263.00
C577	184.05	40.10	263.00
C578	131.14	28.57	263.00
C580	97.10	21.15	263.00
C581	216.72	47.21	263.00
C583	151.05	32.91	263.00
C584	79.65	17.35	263.00
C592	127.93	28.08	261.00
C593	150.25	32.98	261.00
C595	223.93	49.16	261.00
C596	104.12	22.86	261.00
C598	136.44	32.04	244.00
C600	66.76	16.00	239.00
C601	259.06	62.10	239.00
C607	46.28	11.19	237.00
C608	89.23	21.57	237.00
C610	51.15	13.89	211.00
C614	156.65	55.07	163.00
C615	116.39	40.91	163.00
C617	0.89	0.37	139.01
C618	48.11	19.83	139.00
C620	230.72	95.10	139.00
C621	227.80	93.90	139.00
C622	211.25	88.35	137.00
C623	165.12	69.06	137.00
C624	237.96	99.52	137.00
C627	164.56	85.10	110.79
C630	44.04	28.35	89.00
C632	44.12	26.69	94.69
C633	22.95	10.24	128.45
C634	90.43	76.60	67.64
C636	45.21	38.30	67.64
C637	31.05	44.51	39.97
C639	83.68	117.57	40.78
C640	66.64	103.00	37.07
C642	29.07	66.63	25.00
C643	50.99	116.85	25.00
C647	274.35	60.23	261.00
C655	61.32	7.05	498.16
C657	679.94	44.88	868.05
C658	55.72	19.83	161.00
C660	45.82	13.89	189.00
C662	49.24	108.51	26.00
C663	158.32	29.01	312.68
C665	177.87	73.32	139.00
C667	82.32	18.07	261.00
C669	65.56	14.39	261.00
C671	137.81	13.87	569.34
C672	59.25	12.02	282.50
C673	64.58	13.10	282.50
C674	142.83	18.76	436.22
C680	51.63	11.25	263.00
C683	146.78	51.59	163.00
C684	20.42	4.94	237.00
C714	363.59	7.01	2969.68
L???	38.95	S75° 55' 55.00"W	
L605	2638.84	N90° 00' 00.00"E	
L606	2178.82	N90° 00' 00.00"E	
L609	1238.81	S1° 03' 38.36"W	
L611	166.17	S82° 05' 49.45"W	
L612	14.81	S82° 05' 49.45"W	
L613	399.49	S73° 11' 47.03"E	
L619	963.69	S69° 13' 23.68"E	
L620	876.93	S69° 38' 02.95"E	
L621	709.25	N21° 25' 49.34"E	
L622	721.53	S20° 48' 11.06"W	
L623	576.76	S69° 13' 23.68"E	
L624	263.58	S17° 55' 36.90"W	
L626	249.44	N60° 38' 52.93"W	
L627	97.90	N60° 38' 52.93"W	
L628	347.36	N60° 04' 13.65"E	
L629	536.56	S69° 13' 04.32"E	
L630	599.05	N46° 57' 50.96"W	
L633	27.57	N41° 44' 11.47"W	
L642	45.09	N80° 55' 28.80"W	
L643	45.09	N80° 55' 28.80"W	
L644	304.31	S12° 25' 43.42"E	
L645	88.93	S12° 25' 43.42"E	
L646	1351.16	S12° 03' 06.83"E	
L647	715.96	S12° 03' 06.83"E	
L648	182.48	S12° 03' 06.86"E	
L649	182.48	S12° 03' 06.86"E	
L650	875.28	N5° 40' 49.21"W	
L651	372.15	N85° 24' 10.28"E	
L656	1238.81	S1° 03' 38.36"W	
L659	1338.18	S89° 53' 46.22"E	
L660	1333.75	N88° 43' 34.41"W	
L661	141.80	S89° 49' 42.32"E	
L662	654.90	S74° 20' 59.24"W	
L663	4944.59	N89° 33' 15.31"W	
L664	1041.75	S89° 17' 01.99"E	
L666	1270.92	N88° 35' 12.34"W	
L667	2709.09	S88° 35' 12.22"E	
L668	1205.03	N1° 20' 47.58"E	
L669	129.55	N88° 24' 17.65"W	
L670	1333.04	S88° 19' 14.80"E	
L672	154.78	S88° 02' 54.47"W	
L673	2658.29	S87° 45' 15.30"E	
L674	990.82	S87° 44' 05.73"E	
L675	326.60	S87° 43' 55.08"E	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L676	338.04	S87° 39' 07.92"E	
L677	320.15	N87° 36' 59.62"E	
L680	354.49	N86° 37' 49.90"W	
L682	149.92	S86° 26' 27.87"W	
L683	282.22	N85° 38' 49.40"W	
L688	582.61	N85° 04' 46.13"E	
L690	15.58	N84° 27' 04.67"W	
L691	150.20	S74° 33' 37.17"E	
L693	296.75	S84° 00' 00.67"E	
L694	265.94	N83° 55' 27.93"E	
L695	247.25	N83° 14' 13.84"E	
L698	94.14	S82° 36' 08.52"W	
L699	89.17	N81° 41' 40.03"E	
L702	250.11	S74° 24' 20.98"E	
L703	129.55	S80° 36' 35.47"W	
L706	227.20	N80° 25' 02.54"W	
L708	172.61	N80° 01' 23.45"W	
L709	4.25	N80° 01' 20.32"W	
L713	306.54	S79° 37' 15.03"E	
L714	377.46	N79° 33' 56.65"W	
L717	87.99	S76° 56' 41.83"E	
L722	256.12	S74° 55' 37.70"W	
L724	1581.15	S74° 41' 26.66"W	
L725	260.06	N74° 23' 59.45"W	
L726	213.45	S74° 15' 52.64"E	
L729	155.27	S73° 14' 08.01"W	
L730	169.10	N73° 06' 11.41"W	
L732	179.04	N72° 47' 32.69"E	
L733	52.80	S72° 41' 30.09"W	
L736	375.36	N71° 48' 58.28"E	
L737	614.90	S74° 55' 22.34"E	
L741	124.27	S71° 14' 26.23"W	
L743	128.33	S69° 39' 15.96"W	
L745	49.66	S69° 01' 40.05"E	
L746	553.53	N68° 34' 57.86"W	
L747	264.86	S68° 29' 34.38"E	
L750	250.11	S74° 24' 20.98"E	
L754	72.18	N66° 08' 47.83"E	
L756	255.12	S64° 38' 34.50"E	
L757	278.56	N64° 24' 49.71"W	
L758	357.90	S62° 50' 50.01"E	
L760	2105.45	N62° 42' 57.61"E	
L761	144.65	S74° 33' 37.17"E	
L762	2751.76	N62° 33' 51.89"E	
L763	308.92	N62° 32' 39.07"W	
L767	195.36	N61° 36' 10.67"E	
L769	66.31	N61° 12' 39.87"E	
L772	146.68	S61° 02' 16.78"W	
L773	102.38	N59° 18' 33.67"W	
L774	581.41	S59° 09' 44.78"E	
L775	157.44	S59° 01' 18.39"W	
L776	120.89	S58° 07' 58.90"W	
L777	291.98	S58° 07' 29.54"E	
L781	114.01	S54° 31' 08.39"W	
L782	96.73	N54° 07' 24.92"E	
L783	348.61	S53° 15' 22.48"E	
L784	308.07	N52° 27' 43.19"W	
L785	158.71	S52° 19' 10.59"E	
L788	330.92	N50° 41' 05.91"W	
L792	211.01	N47° 56' 36.14"E	
L795	982.19	S45° 33' 29.24"E	
L796	496.96	N45° 30' 55.11"W	
L797	76.82	S42° 00' 05.58"W	
L799	182.53	N44° 50' 12.09"E	
L803	285.79	N41° 22' 46.57"E	
L805	228.52	N39° 32' 37.82"E	
L811	446.60	N37° 12' 10.38"E	
L812	26.02	N38° 09' 38.00"W	
L816	282.17	N35° 17' 33.92"W	
L819	176.75	S32° 52' 54.16"W	
L821	275.47	N32° 33' 05.35"E	
L822	124.31	N32° 26' 14.70"E	
L825	213.48	S32° 04' 35.93"E	
L829	2631.80	N89° 50' 52.89"W	
L831	113.19	S30° 50' 36.14"W	
L832	181.81	S30° 49' 56.98"W	
L833	137.44	S29° 49' 27.70"W	
L834	270.34	S29° 43' 15.60"W	
L838	542.23	N27° 35' 32.49"W	
L839	122.35	N27° 32' 31.02"W	
L841	666.37	N27° 26' 36.03"E	
L844	262.52	N25° 37' 15.48"E	
L845	441.53	N88° 35' 03.77"W	
L846	235.82	S23° 58' 33.41"W	
L847	311.12	N23° 49' 58.27"W	
L848	121.30	S22° 42' 46.99"W	
L849	295.38	N22° 12' 11.22"W	
L850	598.66	S68° 27' 54.69"E	
L851	707.70	N21° 06' 55.39"E	
L854	266.60	S18° 53' 05.89"W	
L863	222.02	S17° 16' 23.71"W	
L864	178.49	S16° 21' 21.17"W	
L867	536.71	S15° 38' 03.12"E	
L868	225.26	N81° 10' 41.33"E	
L869	63.33	S15° 03' 09.04"W	
L871	286.00	S14° 06' 08.47"W	
L872	606.83	S14° 05' 24.01"W	
L873	176.86	N13° 38' 31.33"E	
L874	135.14	N13° 38' 31.33"E	
L876	3400.76	S12° 48' 27.94"E	
L877	5332.14	S12° 47' 06.30"E	
L878	35.16	N12° 13' 28.63"W	
L879	8.63	N12° 12' 13.98"W	
L880	1314.36	N12° 11' 26.26"W	

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L881	1331.19	N12° 02' 42.42"W	
L882	1584.21	N12° 01' 09.67"W	
L883	1317.79	N11° 59' 09.39"W	
L884	1977.51	N11° 57' 18.27"W	
L885	58.22	S11° 18' 55.82"E	
L888	231.66	S8° 12' 03.15"E	
L891	156.83	N2° 27' 06.22"E	
L894	1299.38	N88° 35' 12.34"W	
L895	755.54	N2° 43' 57.02"W	
L899	1527.81	S0° 22' 25.89"W	
L901	1018.81	S0° 08' 46.83"W	
L903	2700.77	N0° 02' 53.64"E	
L904	1510.42	N0° 00' 00.00"E	
L909	332.92	N51° 44' 03.24"W	
L910	341.12	N19° 41' 00.79"E	
L912	22.00	N47° 24' 11.80"E	
L913	644.82	N42° 35' 47.88"W	
L914	4.25	S80° 01' 20.32"E	
L915	256.12	N74° 55' 37.70"E	
L916	120.57	N60° 34' 42.32"E	
L918	255.73	N75° 03' 35.32"W	
L919	122.75	N56° 59' 22.16"W	
L923	129.85	N28° 23' 49.94"E	
L924	117.96	N32° 22' 17.50"E	
L925	125.20	N38° 34' 29.84"E	
L926	106.63	N34° 28' 07.98"E	
L927	74.74	S10° 26' 30.63"W	
L928	113.75	S8° 05' 21.64"E	
L929	120.33	S84° 50' 36.78"W	
L932	120.16	N75° 46' 08.77"E	
L933	115.90	S14° 29' 12.69"E	
L934	119.17	S75° 29' 09.21"W	
L936	143.41	N64° 29' 02.82"E	
L937	58.67	N18° 20' 34.18"W	
L938	30.93	N26° 22' 12.22"W	
L939	21.18	N38° 27' 45.02"W	
L941	151.98	N18° 23' 47.44"W	
L942	138.20	S70° 59' 51.96"E	
L943	7.39	S28° 31' 15.65"W	
L944	298.67	N55° 05' 53.75"E	
L945	22.10	S73° 27' 55.69"E	
L946	416.51	N77° 29' 07.51"W	
L948	901.67	N31° 29' 28.81"E	
L950	380.92	S35° 34' 05.91"E	
L951	234.30	S31° 29' 28.81"W	
L952	457.58	N38° 41' 17.75"W	
L953	12.11	N61° 12' 22.83"E	
L955	72.47	N66° 08' 46.39"E	
L956	123.06	S43° 01' 55.57"W	
L968	36.31	S36° 21' 48.42"W	
L972	30.63	N46° 57' 50.96"W	
L976	269.63	S16° 04' 31.20"W	
L977	298.67	S55° 05' 53.75"W	
L978	79.42	S41° 53' 38.78"E	
L979	186.35	S36° 02' 20.67"E	
L980	707.36	N90° 00' 00.00"E	
L981	108.90	N19° 21' 07.65"E	
L982	163.05	N38° 56' 26.60"E	
L983	117.77	N26° 22' 04.88"E	
L984	58.18	N26° 22' 04.88"E	
L985	43.73	N32° 22' 10.55"E	
L986	20.71	N41° 12' 32.07"E	
L987	91.05	N49° 33' 53.44"E	
L988	48.21	N48° 32' 13.15"E	
L989	56.60	N35° 37' 42.06"E	
L990	60.83	N17° 48' 24.65"E	
L991	47.63	N7° 57' 49.20"E	
L992	61.57	N3° 49' 23.84"W	
L993	77.67	N17° 56' 00.49"W	
L994	46.00	N29° 02' 07.47"W	
L995	47.34	N38° 28' 24.45"W	
L996	46.51	N42° 13' 42.43"W	
L997	45.51	N31° 42' 51.62"W	
L998	45.49	N9° 51' 30.73"W	
L1001	1467.85	N74° 00' 56.99"W	

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NO	DATE	ISSUANCE

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PROJECT NO. 18-016
DATE JULY 31, 2023
DRAWN DN,AR,MR,JS,TS
CHECKED CA,MH,SG

BOHN RIDGE SUBDIVISION

GUENOC VALLEY
LAKE COUNTY
CALIFORNIA



TENTATIVE MAP
SUBDIVISION BR

PERIPHERAL PARCEL PLAN

BR2.02

0 500' 1000' 2000' NORTH

P:\2018\18-016.1_MAHA_GNC\03_DESIGN\01_CAD\01_TENT MAP\PKG4\PKG4-REMAINDER PARCELS.DWG

Appendix F

Updated Wildfire Prevention Plan

DRAFT

MAHÁ

GUENOC VALLEY

WILDFIRE PREVENTION PLAN

FOR THE FIRST PHASE OF THE
MAHA RESORT AT GUENOC VALLEY

2020 ORIGINAL PLAN
2023 UPDATED PLAN
2024 UPDATED PLAN

ACKNOWLEDGMENTS

The *Maha Guenoc Valley Wildfire Prevention Plan* was created as part of collaborative effort between the County of Lake, representatives from the California Department of Forestry & Fire Protection (CAL FIRE), design and engineering teams, and grazing consultants. The group relied upon local knowledge and trusted resources to identify the key fire risks throughout the site and then develop an innovative and comprehensive wildfire prevention strategy.

DRAFT

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  - *Regional Wind Patterns*
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Note: Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.

OVERVIEW

GOALS & INTENT

The Maha Resort at Guenoc Valley is situated in a unique northern California landscape. The site's hills and valleys filled with oak woodlands, grasslands, vineyards, and grazing pastures will create an exceptional visitor and resident experience. Yet, this same setting also presents critical wildfire risks. A development of this size and expense requires a comprehensive approach to protect the environment and buildings from wildfire damage.

The *Maha Guenoc Valley Wildfire Prevention Plan* presents an integrated approach to wildfire management throughout the project site. This plan includes a thorough consideration of the site's wildfire history as well as vegetative, topographic, and climatic wildfire risks. These risk patterns inform a series of essential wildfire prevention strategies for all components of the project. This includes innovative concepts and commitments that will contribute to a wildfire resilient setting. For example, goat, sheep, and cattle will reach many hard-to-access areas of the property to graze dry grasses and reduce understory vegetation, both of which are significant wildfire risk factors. The project site will additionally be protected with fire breaks along the roadway network as well as along unprotected areas of the property boundary. In the case of an actual wildfire, the on-site emergency response system will quickly be deployed– which includes everything from high-definition fire detection cameras to an on-site emergency and fire response center.

These efforts will be part of an overall commitment to developing long-term wildfire resilience through innovative partnerships, research, and strategies. The resort will follow the guidance and establish collaborations with the County of Lake, the California Department of Forestry & Fire Protection (CAL FIRE) and the local fire department, South Lake County Fire Protection District, to continuously improve the wildfire prevention plan. These actions will all contribute to the resort's pledge to become a Firewise Community as designated by the National Fire Protection Association (NFPA), which will reinforce the long-term ability to address wildfire risk. With comprehensive and careful planning, Maha Resort at Guenoc Valley will offer a dynamic and effective ability to reduce wildfire risk for all residents, visitors, and workers.

This document was initially revised in June 2020 to reflect the applicant's commitment to timely implementation of roadway fire breaks upon occupancy and to require primary structures to be equipped with an exterior fire suppression system.



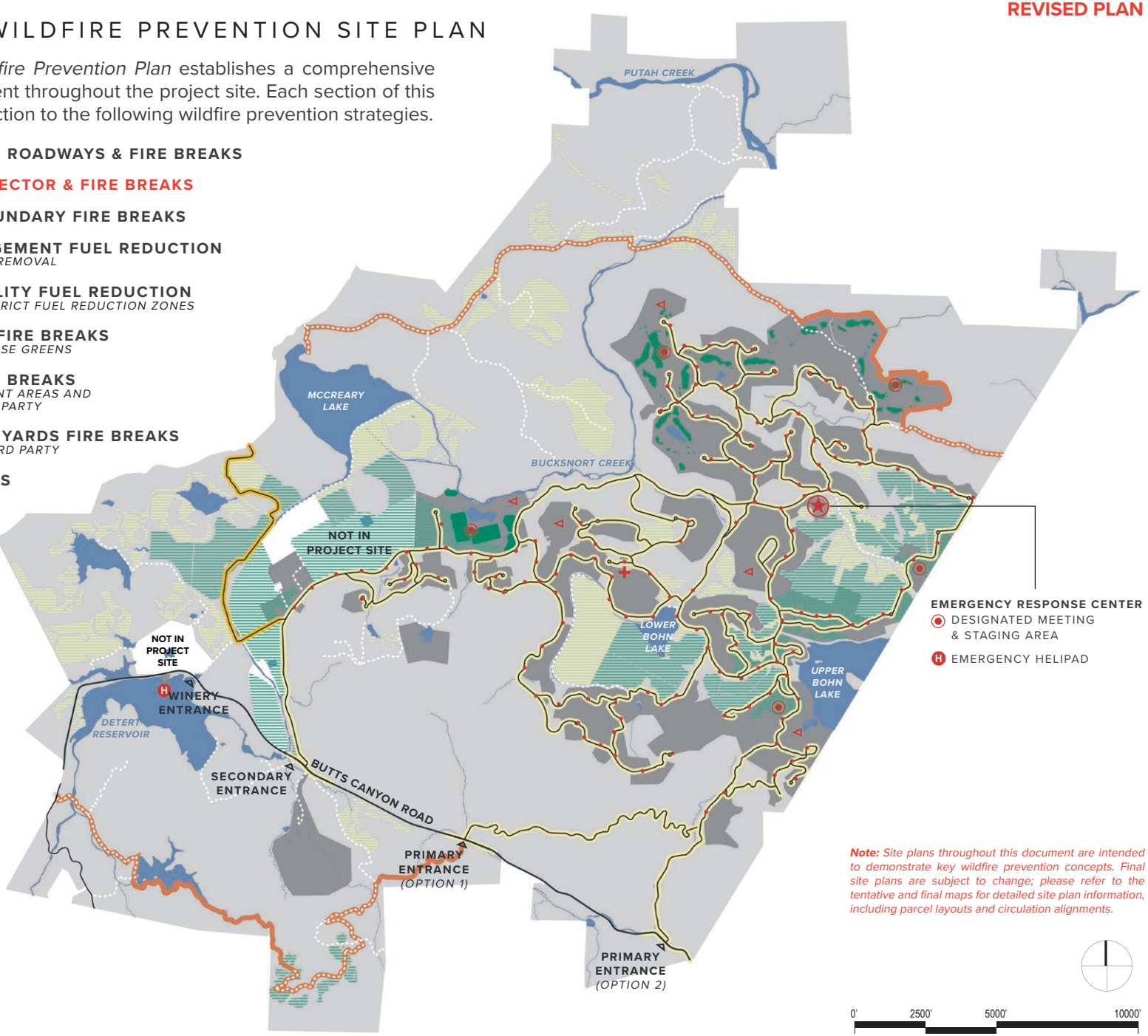
OVERVIEW

COMPREHENSIVE WILDFIRE PREVENTION SITE PLAN

The *Maha Guenoc Valley Wildfire Prevention Plan* establishes a comprehensive approach to wildfire management throughout the project site. Each section of this plan will provide a brief introduction to the following wildfire prevention strategies.

REVISED PLAN

- **PRIMARY TWO-WAY ACCESS ROADWAYS & FIRE BREAKS**
- **EMERGENCY ACCESS CONNECTOR & FIRE BREAKS**
- **VOLUNTARY PROPERTY BOUNDARY FIRE BREAKS**
- **ACTIVE LANDSCAPE MANAGEMENT FUEL REDUCTION**
  GRAZING AND MANUAL VEGETATION REMOVAL
- **RESIDENTIAL/RESORT/FACILITY FUEL REDUCTION**
  STRUCTURE FIRE SPRINKLERS AND STRICT FUEL REDUCTION ZONES
- **IRRIGATED RECREATIONAL FIRE BREAKS**
  EQUESTRIAN FIELDS AND GOLF COURSE GREENS
- **IRRIGATED VINEYARDS FIRE BREAKS**
  CURRENTLY PLANTED IN DEVELOPMENT AREAS AND AREAS LONG-TERM LEASED BY THIRD PARTY
- **POTENTIAL IRRIGATED VINEYARDS FIRE BREAKS**
  IN AREAS LONG-TERM LEASED BY THIRD PARTY
- **EXISTING RANCH ROADWAYS**
  USED FOR ACTIVE FUEL REDUCTION AND EMERGENCY ACCESS
- **EMERGENCY RESPONSE CENTER**
- **EARLY DETECTION SYSTEM**
  HIGH-DEFINITION CAMERA
- **EMERGENCY NOTIFICATION SIREN SYSTEM**
  EXACT LOCATIONS TBD
- **DESIGNATED MEETING & STAGING AREA**
- **HELIPADS**
- **FIRE HYDRANTS**
- **WATER SOURCES**



Note: *Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.*

OVERVIEW
IMPLEMENTATION & MANAGEMENT

The *Maha Guenoc Valley Wildfire Prevention Plan* will create a comprehensive framework to guide the plan's continuous development, implementation, and management. Beyond meeting code requirements defined by the County of Lake and the State of California, including Public Resources Code 4290 and 4291 (see further details regarding compliance in the project Design Guidelines), the project team will work closely with the California Department of Forestry & Fire Protection (CAL FIRE) and the local fire department, South Lake County Fire Protection District ("SLCFPD"), to continuously identify strategies to improve the wildfire prevention plan. Additionally, the Applicant shall pay SLCFPD, on an annual basis, the amount determined by SLCFPD to be necessary in order to staff and equip the Emergency Response Center for fire services, including wildfire response.

The plan will be implemented through the resort's Covenants, Conditions, & Restrictions (CC&Rs), and Guenoc Valley District (GVD) zoning ordinance documents, which will all be overseen by the County of Lake through the development permitting process.

The resort's residential homeowner's association (HOA) will provide ongoing maintenance and compliance for this plan. The HOA will be required by its by-laws to contract with a wildfire expert for the duration of the Project, with costs paid by the HOA; the HOA shall consult with the wildfire expert in its implementation of wildfire prevention measures, including those identified within this plan. The HOA will also cover the costs associated with having on-site at least one individual with wildfire expertise related to evacuation and emergency response at the Project's Emergency Response Center.



SITE CONTEXT
PROJECT SETTING & HISTORY

The Maha Resort at Guenoc Valley is located approximately 100 miles north of the Bay Area in the agricultural and viticultural region of North–central California. The resort is located in the southeastern corner of the County of Lake, three miles southeast of Middletown and on Napa County's northern border.

Guenoc Valley, a small inland valley, is comprised of varying landscapes and conditions. The valley experiences greater seasonal temperature extremes than neighboring areas, and has a wide range of elevation changes throughout the property. These varying elevations support various vegetation types and uses; a series of vineyards generally cover the lower areas and slopes, while oak woodlands, grasslands, and chaparral covered hillsides offer plenty of opportunities for livestock grazing.

At approximately 16,000 acres, the resort site remains one of the largest privately owned properties in the state of California. The property first came to public attention when a portion of the ranch was owned by the British Actress, Lillie Langtry. Through the years the land has continued to be utilized for outdoor recreational pursuits, vineyards, and agriculture.



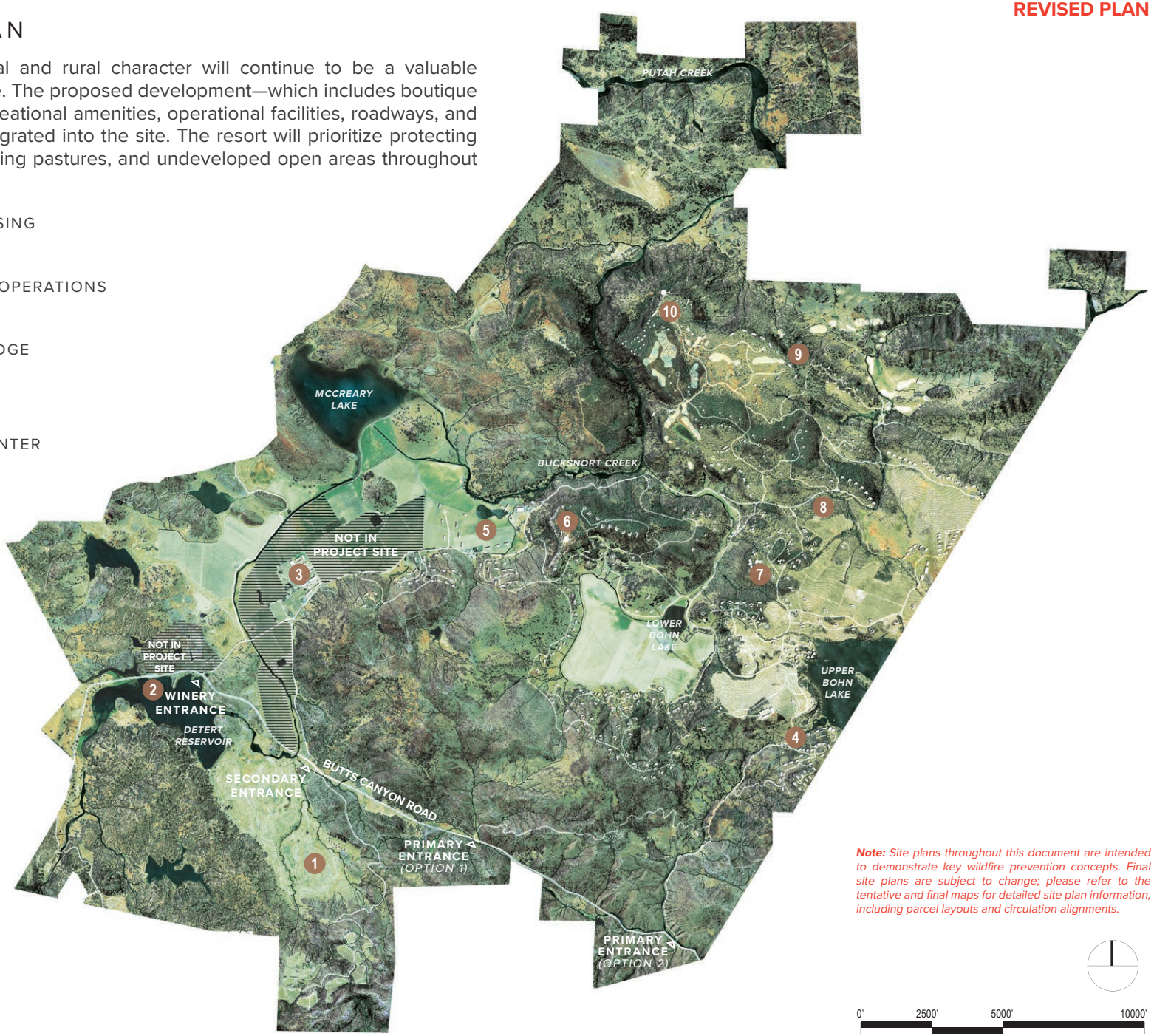
PROJECT SITE LOCATION
In resort site is located approximately 100 miles north of the Bay Area on the border of Napa and Lake County with close access to Clearlake and Santa Rosa.

SITE CONTEXT
PROJECT SITE PLAN

REVISED PLAN

This site's inherent agricultural and rural character will continue to be a valuable aspect of the resort experience. The proposed development—which includes boutique hotels, residential estates, recreational amenities, operational facilities, roadways, and trailways—will be carefully integrated into the site. The resort will prioritize protecting and enhancing vineyards, grazing pastures, and undeveloped open areas throughout the development process.

1 ON-SITE WORKFORCE HOUSING
2 AERIAL SITE ACCESS
3 CENTRAL BACK-OF-HOUSE OPERATIONS
4 MAHA FARM
5 EQUESTRIAN CENTER & LODGE
6 BOHN RIDGE RESORT
7 SPA & WELLNESS
8 EMERGENCY RESPONSE CENTER
9 GOLF COURSE
10 DENNISTON GOLF ESTATES
~~RESORT AT TROUT FLAT~~
~~TENT CAMP AREA~~



Note: *Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.*

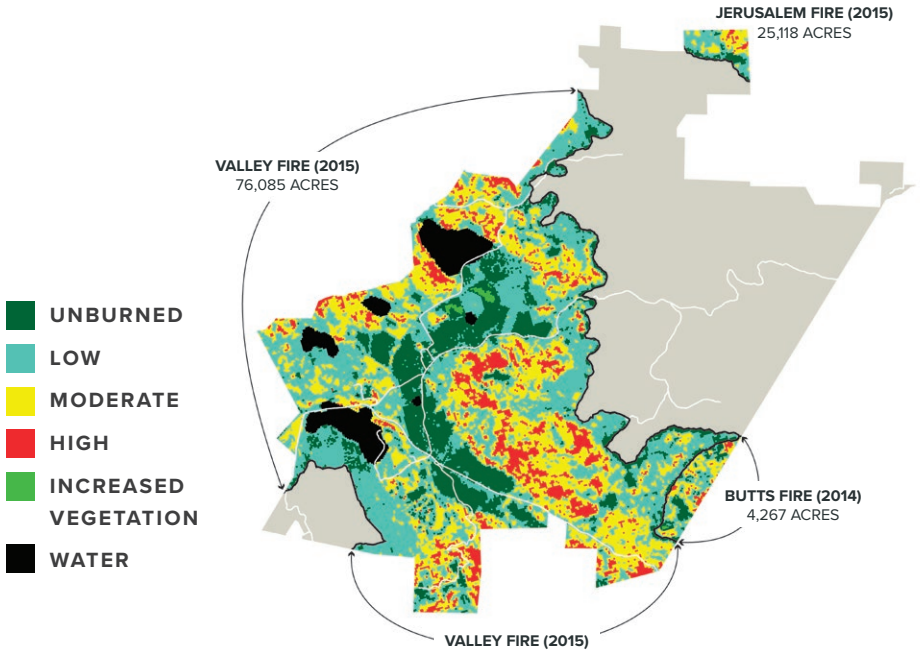
0' 2500' 5000' 10000'

SITE CONTEXT
WILDFIRE HISTORY

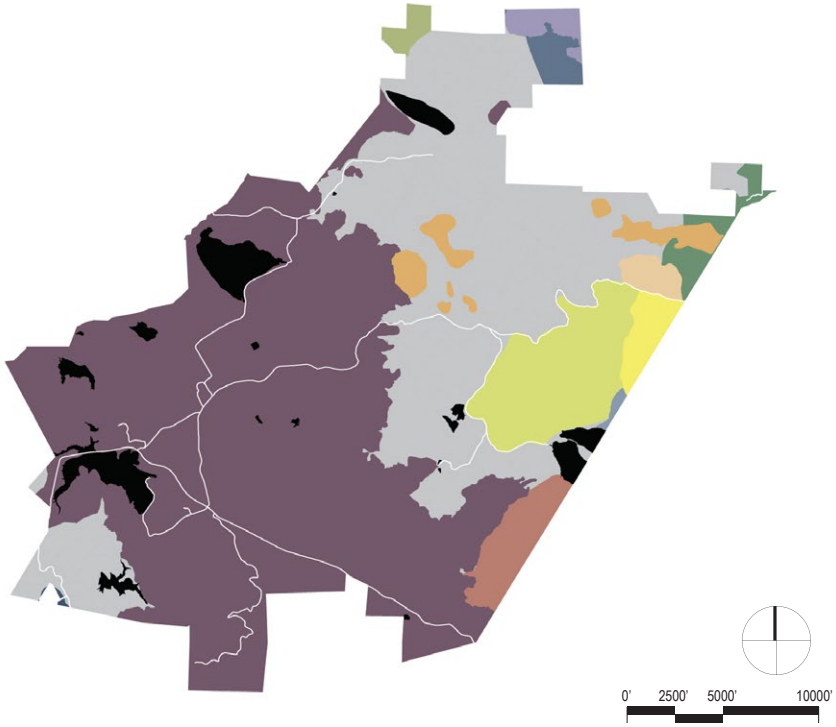
Guenoc Valley is located in a fire prone region of California. Although wildfire is a year-round possibility, risk increases during the late summer into the fall. During this time of the year, hot days with a lack of precipitation dry out vegetation, which increases the risk for wildfire, particularly during windy days. Climate change could further affect these risk factor patterns.

Wildfires have affected the site throughout its history. Since the 1950s, fires of varying size and intensity have burned parts of the project site. A few of the more recent fires, including the Butts Fire in 2014 and the Jerusalem and Valley Fires in 2015, were large-scale fires which spread from off-site and affected large portions of the site as well as nearby properties. In particular, the Valley Fire caused wide-spread damage to the southern portion of the site, including along Butts Canyon Road. These effects are still visible and present today.

The scale, severity, and effects of the most recent wildfires are all important considerations in developing a rigorous wildfire prevention strategy.



BURN SEVERITY OF MOST RECENT WILDFIRES
SOURCE: National Burn Severity Mapping Project, National Park Service - U.S. Geologic Survey, 2014 and 2015



SITE WILDFIRE HISTORY SINCE 1950s
SOURCE: California Fire Return Interval Departure (FRID), USDA Forest Service, Pacific Southwest Region, 2012 with 2016 update

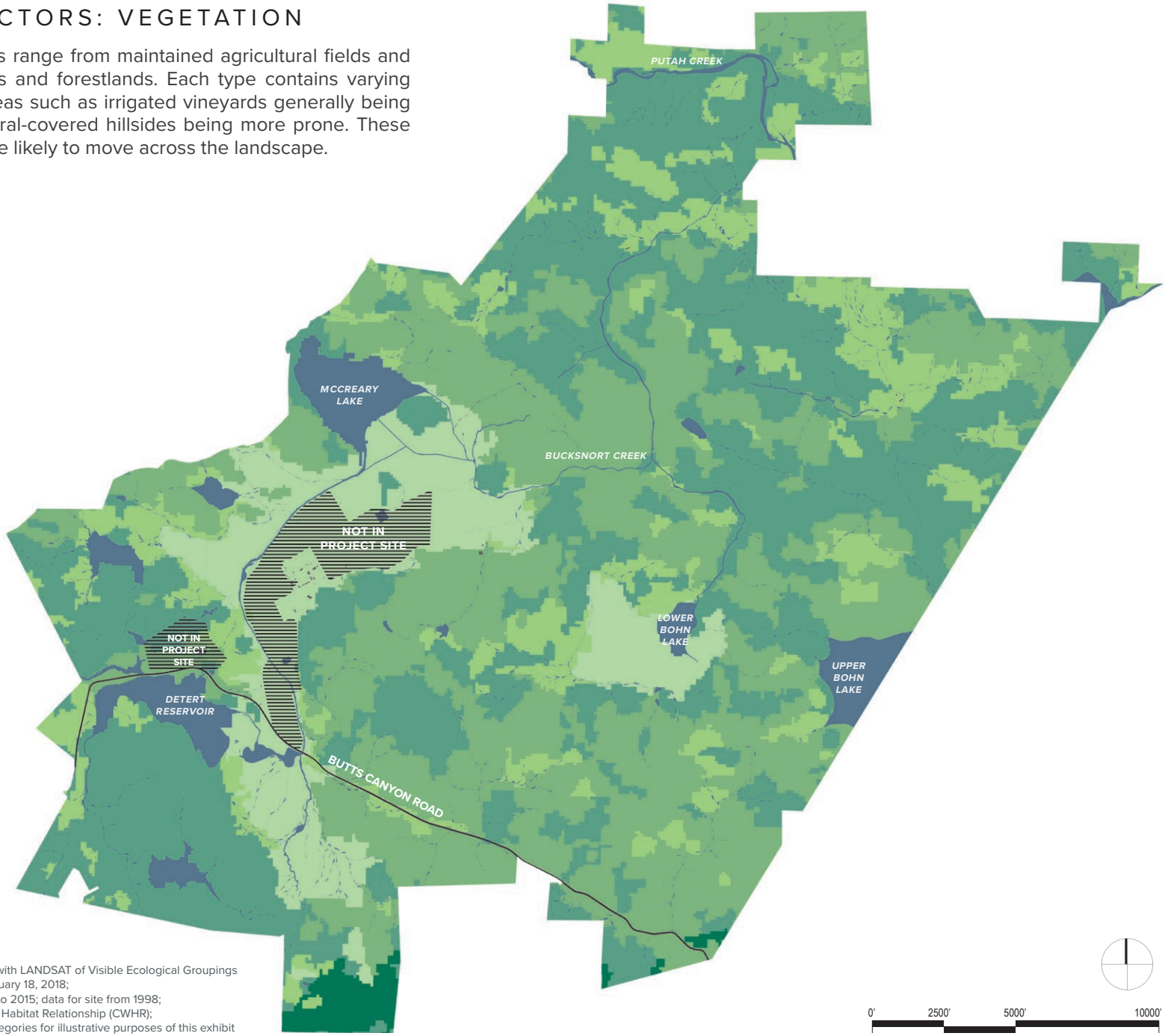
SITE CONTEXT

WILDFIRE RISK FACTORS: VEGETATION

The dominant vegetation types range from maintained agricultural fields and vineyards to dense woodlands and forestlands. Each type contains varying levels of wildfire fuels, with areas such as irrigated vineyards generally being less prone to fires and chaparral-covered hillsides being more prone. These patterns affect how wildfires are likely to move across the landscape.

VEGETATION COVERAGE

- AGRICULTURE
- GRASSLANDS
- CHAPARRAL
- OAK WOODLANDS
- GENERAL FORESTLANDS
- WATER



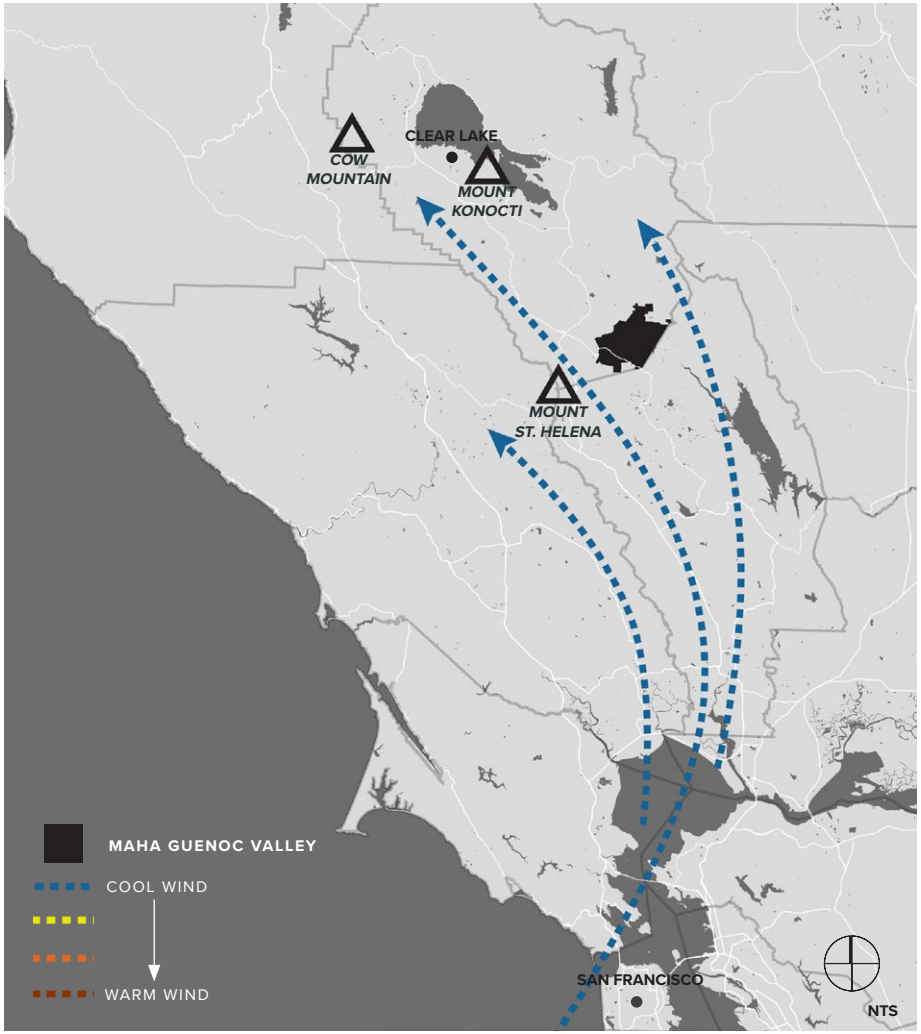
SOURCE:
U.S. Forest Service, Classification and Assessment with LANDSAT of Visible Ecological Groupings (CALVEG), EVeg Mid Region 5 North Coast Mid, January 18, 2018;
data source information ranges from the year 1998 to 2015; data for site from 1998;
data source crosswalked with the California Wildlife Habitat Relationship (CWHR);
CWHR categories simplified to the above seven categories for illustrative purposes of this exhibit

SITE CONTEXT

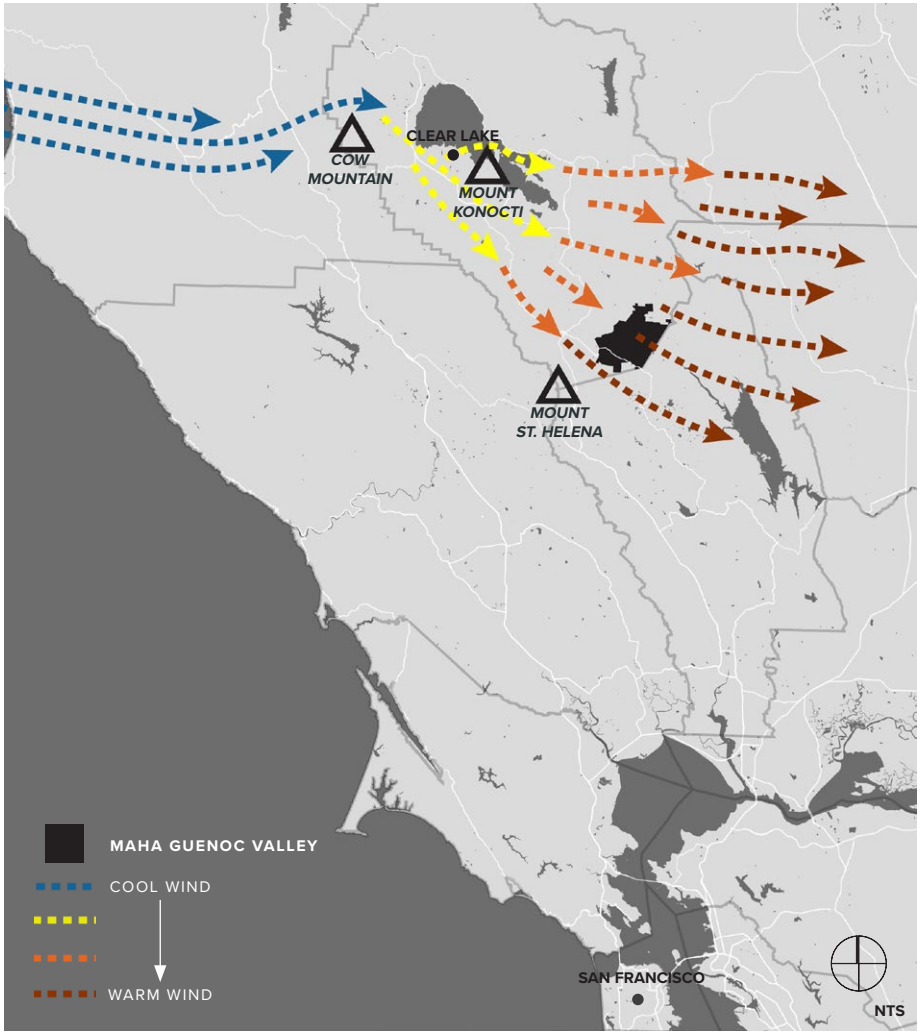
WILDFIRE RISK FACTORS: REGIONAL WIND PATTERNS

Windy conditions during the fire season increase the likelihood of fires erupting, rapidly escalating, and increasing in intensity and scale. Depending on various climatic conditions, regional wind patterns may vary seasonally and even daily. However, the resort site is primarily affected by two regional wind patterns: the Konocti Winds and Diablo Winds.

The Konocti Winds, as shown below, affect the site with varying morning and afternoon wind patterns. In the morning, wind typically flows northward from the Bay Area. In the afternoon, cool air flows eastward from the coast over Cow Mountain and towards Clear Lake, splits around Mount Konocti, and then increases in speed and temperature as it flows southwards towards Highway 20, Morgan Valley, and Guenoc Valley.



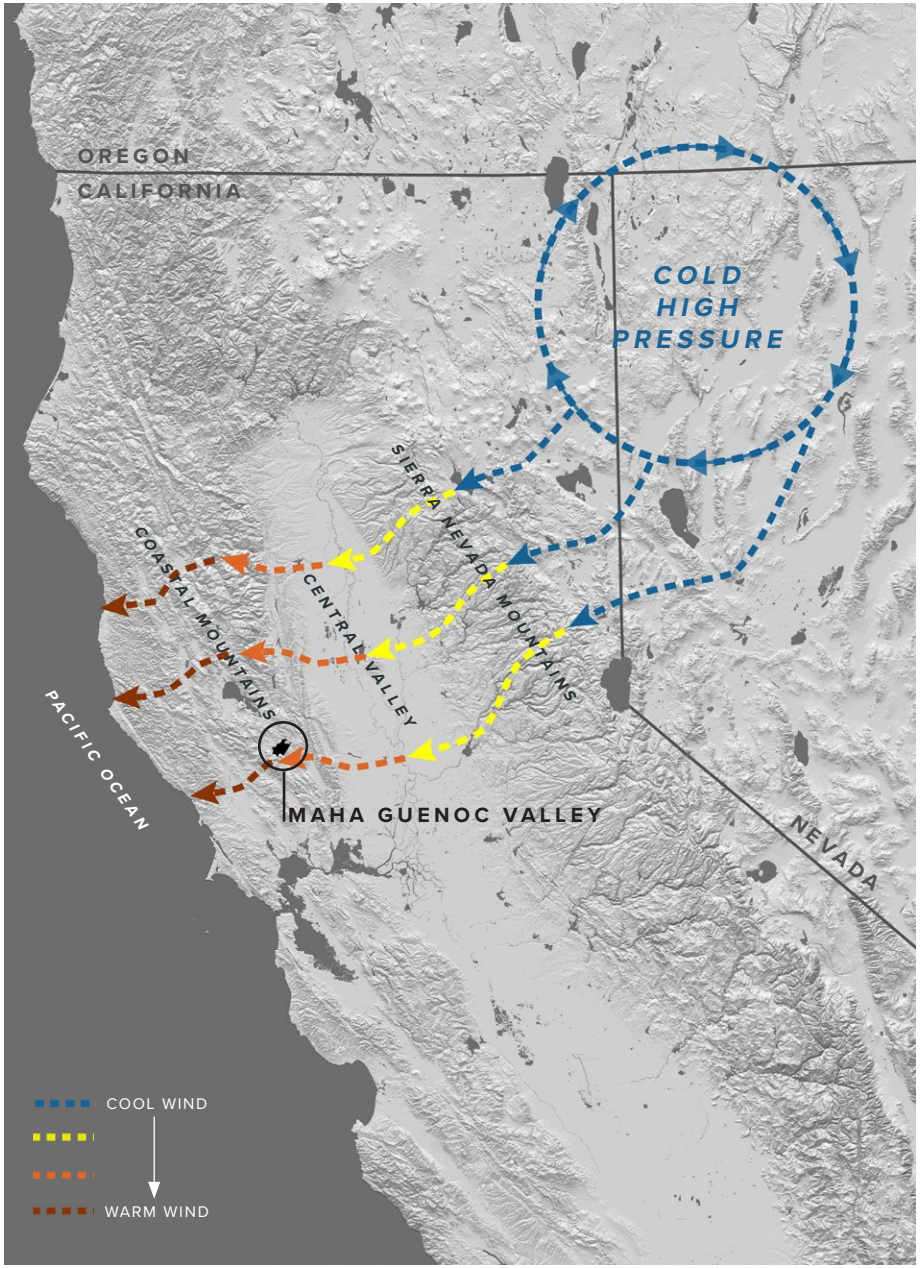
MORNING KONOCTI WIND PATTERNS
SUNRISE – NOON



AFTERNOON KONOCTI WIND PATTERNS
NOON – SUNSET

SOURCE:
South Lake County Fire Protection District and National Weather Service San Francisco Bay Area, 2019

SITE CONTEXT
WILDFIRE RISK FACTORS: REGIONAL WIND PATTERNS



DIABLO WIND PATTERNS

As shown on the right, the resort site is also subject to the Diablo Winds. This wind pattern begins in the Great Basin area of Nevada and Utah. The jet stream pushes cool, high pressure air from the area down to California. Once crossing over and cascading down the Sierra Nevada mountain range, the air increases in temperature and decreases in humidity; the air continues to increase in temperature as it crosses the Central Valley.

Finally, the warm air increases in speed as it pushes between narrow gaps in the Coastal Mountain ranges towards the Pacific Ocean. This pattern primarily affects the region during high fire risk seasons in the fall and winter.

FIRE WEATHER WATHCES & RED FLAG WARNINGS

When certain climate conditions combine, the National Weather Service may issue either a Fire Weather Watch or a Red Flag Warning.

A **Fire Weather Watch** indicates that local conditions resulting in extreme fire could occur in the next 12 - 72 hours. Wildfires are possible, but not imminent or currently occurring.

A **Red Flag Warning**—the highest and most serious type of alert—indicates to residents that local conditions may result in extreme fire behavior within 24 hours. Wildfires are ongoing or may begin shortly.

Various combinations of climate conditions can result in either a watch or warning, including:

- Low relative humidity
- Strong winds
- Dry fuels
- Potential for dry lightening strikes

During both Fire Weather Watches and Red Flag Warnings, residents are urged to practice extreme caution, as major wildfires could be started with a simple spark.

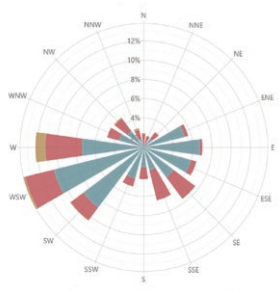
SOURCE:
California Department of Forestry & Fire Protection, “Red Flag Warning & Fire Weather Watches,” 2019
National Oceanic and Atmospheric Administration: National Weather Service, “Understanding Wildfire Warnings, Watches and Behavior,” 2019
San Francisco Chronicle, “Are infamous Diablo winds responsible for recent wildfires?,” 2019

SITE CONTEXT

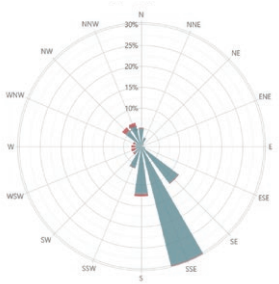
WILDFIRE RISK FACTORS: LOCAL WIND PATTERNS

While affected by the larger Konocti and Diablo wind patterns, the resort site's topography and microclimates also contribute to unique wind conditions. The wind patterns shown in this map are based on three local wind stations and demonstrate a likely wind condition for a typical day during the July through November fire season. Depending on a variety of climatic conditions, local wind patterns could easily change direction and speed and affect the spread of potential wildfires.

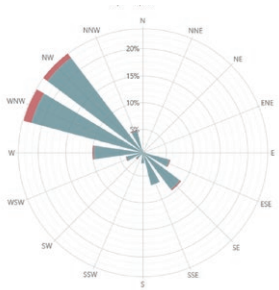
WIND DIRECTION



1 LOWER BOHN



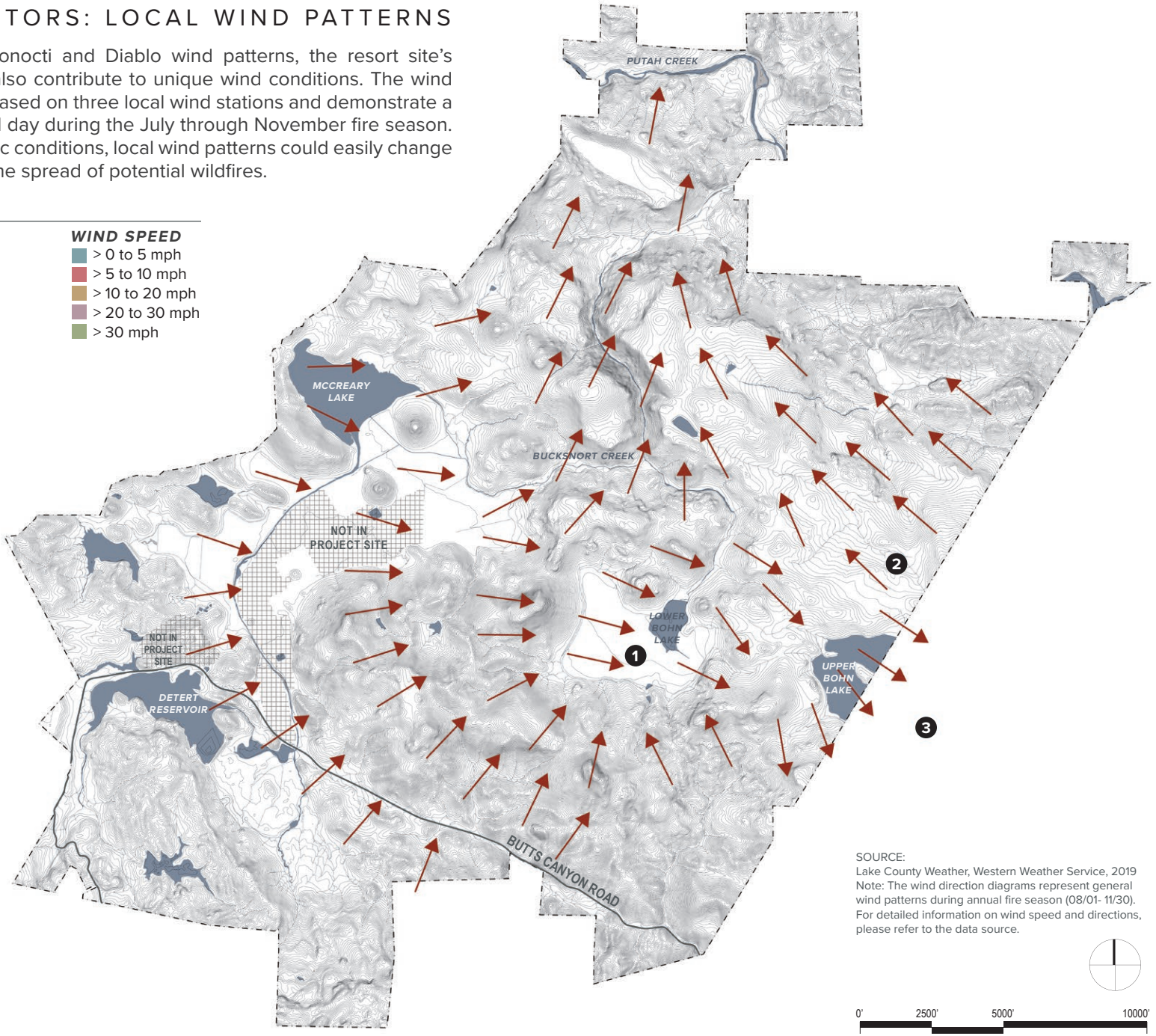
2 UPPER BOHN NORTH



3 UPPER BOHN SOUTH

WIND SPEED

- > 0 to 5 mph
- > 5 to 10 mph
- > 10 to 20 mph
- > 20 to 30 mph
- > 30 mph



SOURCE:
Lake County Weather, Western Weather Service, 2019
Note: The wind direction diagrams represent general wind patterns during annual fire season (08/01- 11/30). For detailed information on wind speed and directions, please refer to the data source.

0' 2500' 5000' 10000'

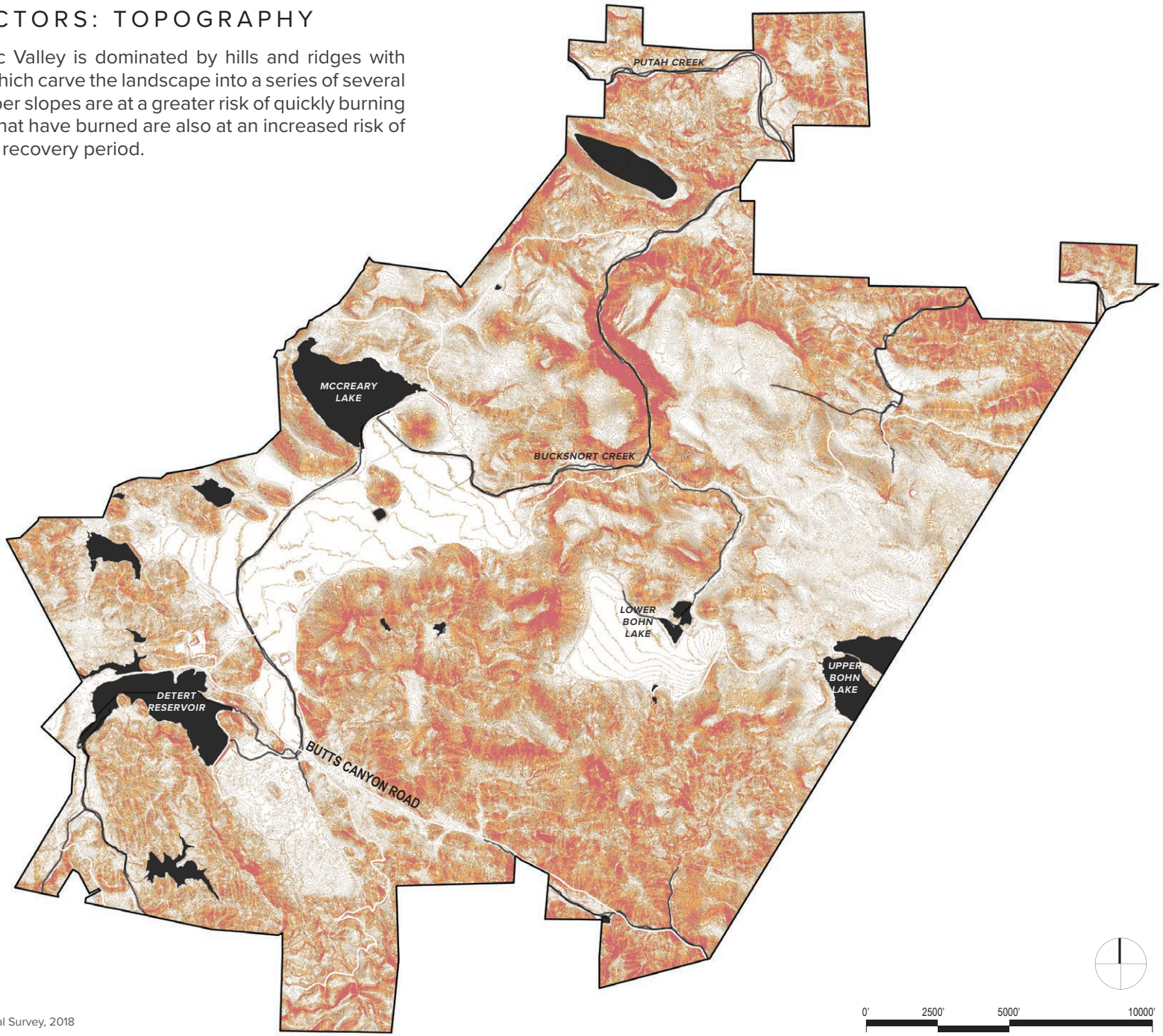
SITE CONTEXT

WILDFIRE RISK FACTORS: TOPOGRAPHY

A significant portion of Guenoc Valley is dominated by hills and ridges with slopes exceeding 30 percent, which carve the landscape into a series of several smaller valleys. Areas with steeper slopes are at a greater risk of quickly burning during a wildfire. Steep slopes that have burned are also at an increased risk of erosion during the post-wildfire recovery period.

SLOPE PERCENTAGE

- 0-5%
- 5-10%
- 10-20%
- 20-30%
- 30-50%
- 50%+



SOURCE:
1 meter Digital Elevation Model (DEM), U.S. Geological Survey, 2018

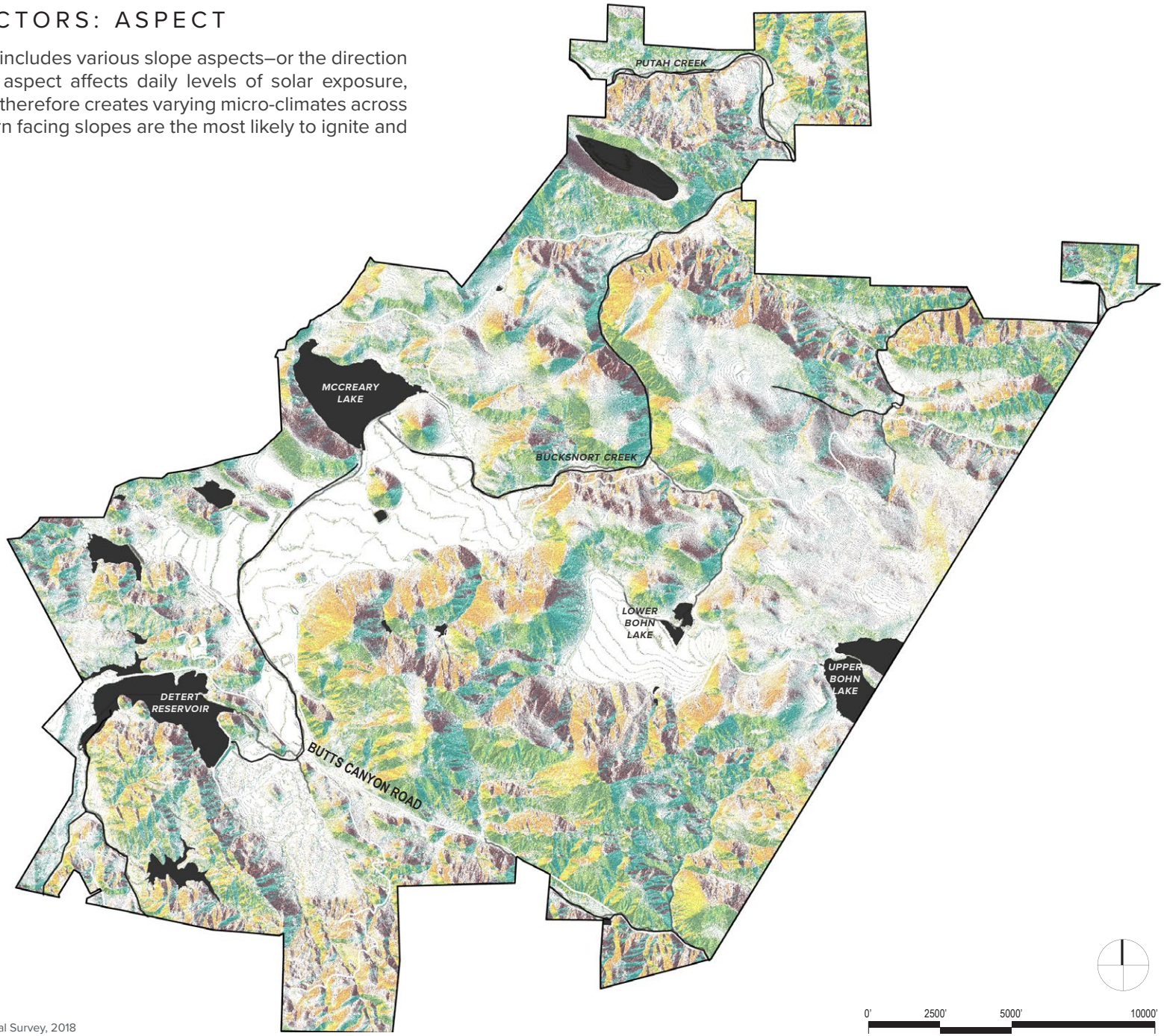
SITE CONTEXT

WILDFIRE RISK FACTORS: ASPECT

The resort site's diverse terrain includes various slope aspects–or the direction that a slope faces. The slope aspect affects daily levels of solar exposure, humidity, and temperature, and therefore creates varying micro-climates across the site. South and southwestern facing slopes are the most likely to ignite and burn.

ASPECT

- FLAT
- NORTH
- NORTHEAST
- EAST
- SOUTHEAST
- SOUTH
- SOUTHWEST
- WEST
- NORTHWEST



SOURCE:
1 meter Digital Elevation Model (DEM), U.S. Geological Survey, 2018

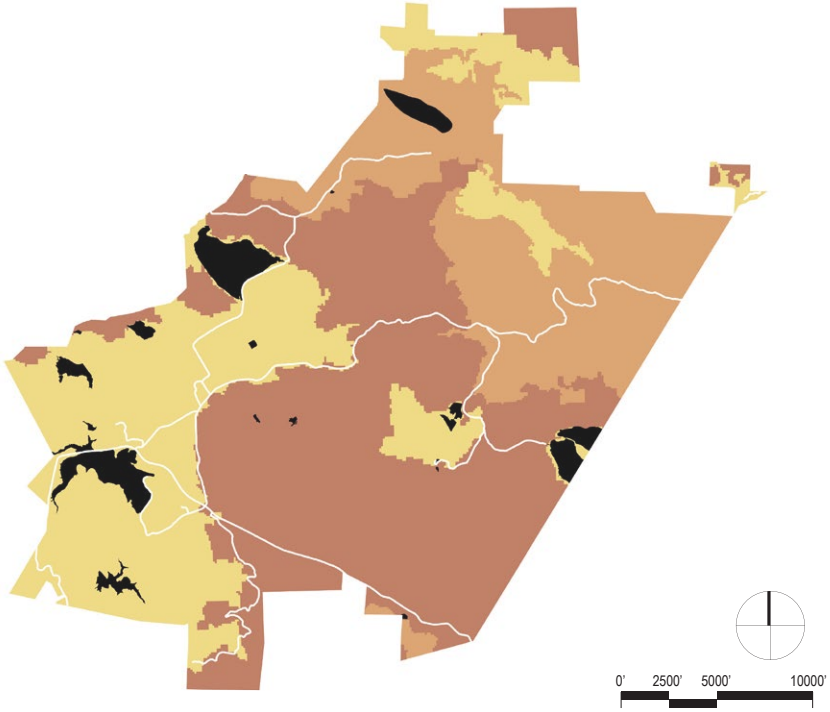
SITE CONTEXT
WILDFIRE RISK SEVERITY

The specific factors that affect wildfire risk are complicated. A wide range of topographic and landscape conditions create a complex environment to predict and prepare for potential wildfires.

Various risk factors—including those described in the preceding pages—are considered in developing CAL FIRE's Fire Hazard Severity Zones rating system and map. This rating system situates the resort site in a moderate to very high severity zone. The highest risk areas are in the southeast and central parts of the site. These areas have the steepest slopes, are more likely to have a chaparral vegetation coverage, and are exposed to northern-moving winds.

Given the connection between fire risk and slopes, the site's lower risk locations tend to be the flatter valley areas to southwest and northeast. This risk is further reduced where the land is more actively cultivated with vineyards and others farming practices. The areas around the site's many water bodies also generally have a lower risk severity.





FIRE HAZARD SEVERITY ZONES
SOURCE: Lake County Fire Hazard Severity Map, CAL FIRE, 2007

- MODERATE SEVERITY
- HIGH SEVERITY
- VERY HIGH SEVERITY

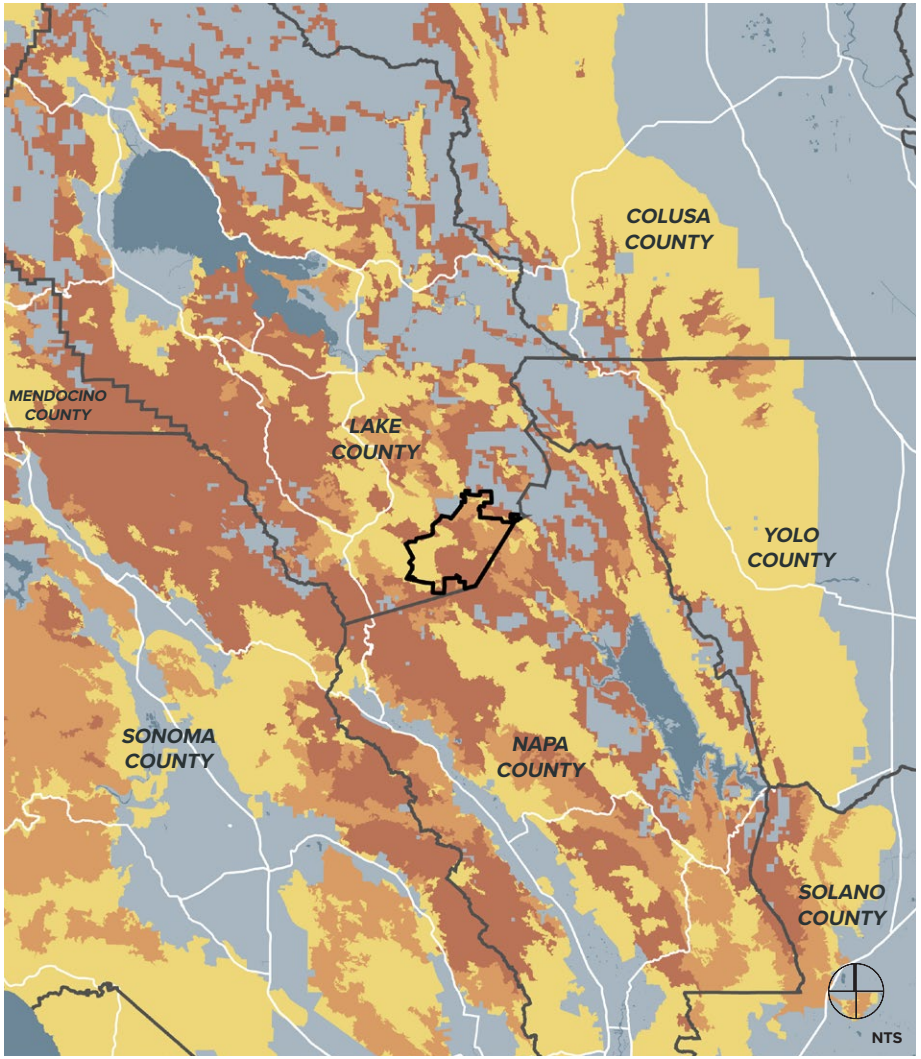
SITE CONTEXT
WILDFIRE REGIONAL RISK

Cataloging environmental risks is the first step to successfully develop a wildfire prevention plan. However, even with the best research and preparation within the site, fires on neighboring properties can rapidly move across the property boundaries.

While Guenoc Valley's setting is an inherent part of its attraction, the surrounding rural landscapes can also increase the site's wildfire risk. The property is bordered by ranches, pastures, woodlands, and forests with various levels of fire hazard severity. The northern edge of the property is adjacent to the Snow Mountain National Monument, an area of land stretching across approximately 330,000 acres and managed by the Bureau of Land Management (BLM).

The minimally managed landscapes within these neighboring areas tend to have less rigorous wildfire prevention practices, which can result in larger fuel reserves. As detailed in the following pages, additional precautions will be taken along the property boundaries where the risk of fires spreading onto the site is greater.





FIRE HAZARD SEVERITY ZONES

SOURCE: California Fire Hazard Severity Map, CAL FIRE, 2007

- *MAHA GUENOC VALLEY*
- FEDERAL OR LOCAL RESPONSIBILITY AREA
- MODERATE SEVERITY
- HIGH SEVERITY
- VERY HIGH SEVERITY

GENERAL WILDFIRE PREVENTION

GENERAL WILDFIRE PREVENTION STRATEGIES

In order to retain the resort site's inherent rural quality, a low-impact design plan prioritizes limited buildings, roadways, or infrastructure. Undeveloped areas will be managed to reduce wildfire risk through the following strategies:

- **Fire Breaks**
  Fire breaks will be established and maintained along all roadway corridors as well as vulnerable property boundary edges.

- **Active Landscape Management**
  Fields, pastures, woodlands will be actively managed to reduce fire risk. These areas will be continuously grazed with a rotation of cattle, sheep, and goat livestock. In certain locations, dead or fire-prone vegetation may also be manually thinned or removed with machinery and crews.

- **Irrigated Green Belt**
  Vineyards, orchards, gardens, and recreational fields—as well as irrigated residential, resort, and facility landscapes—will all become part of a site-wide irrigated green belt.



FIRE BREAKS



DISRUPT FIRE PATHWAYS

A network of fire breaks will be developed throughout the site, especially along roadways; they will be established and maintained as phases are built.

ACTIVE LANDSCAPE MANAGEMENT



LOP & SCATTER

This involves thinning and removing flammable and dead vegetation through felling and cutting; material is then distributed across the ground.



MASTICATE

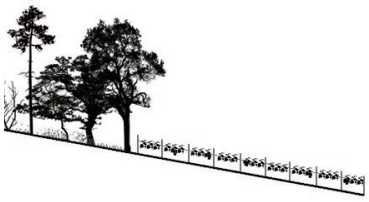
Flammable and dead vegetation is thinned and removed with chopping, grinding, and mowing; material is then scattered across the ground.



GRAZE WITH LIVESTOCK

Sheep, goat, and cattle livestock will graze understory grasses and vegetation; the livestock will continuously rotate throughout the property.

IRRIGATED GREEN BELT



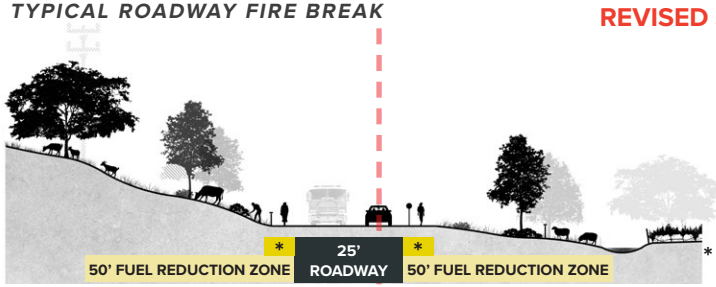
CONNECT IRRIGATED AREAS

Where feasible, contiguous green belts with irrigated farmlands, landscapes, and recreational fields will be developed.

GENERAL WILDFIRE PREVENTION
FIRE BREAK NETWORK

TYPICAL ROADWAY FIRE BREAK

REVISED SECTION

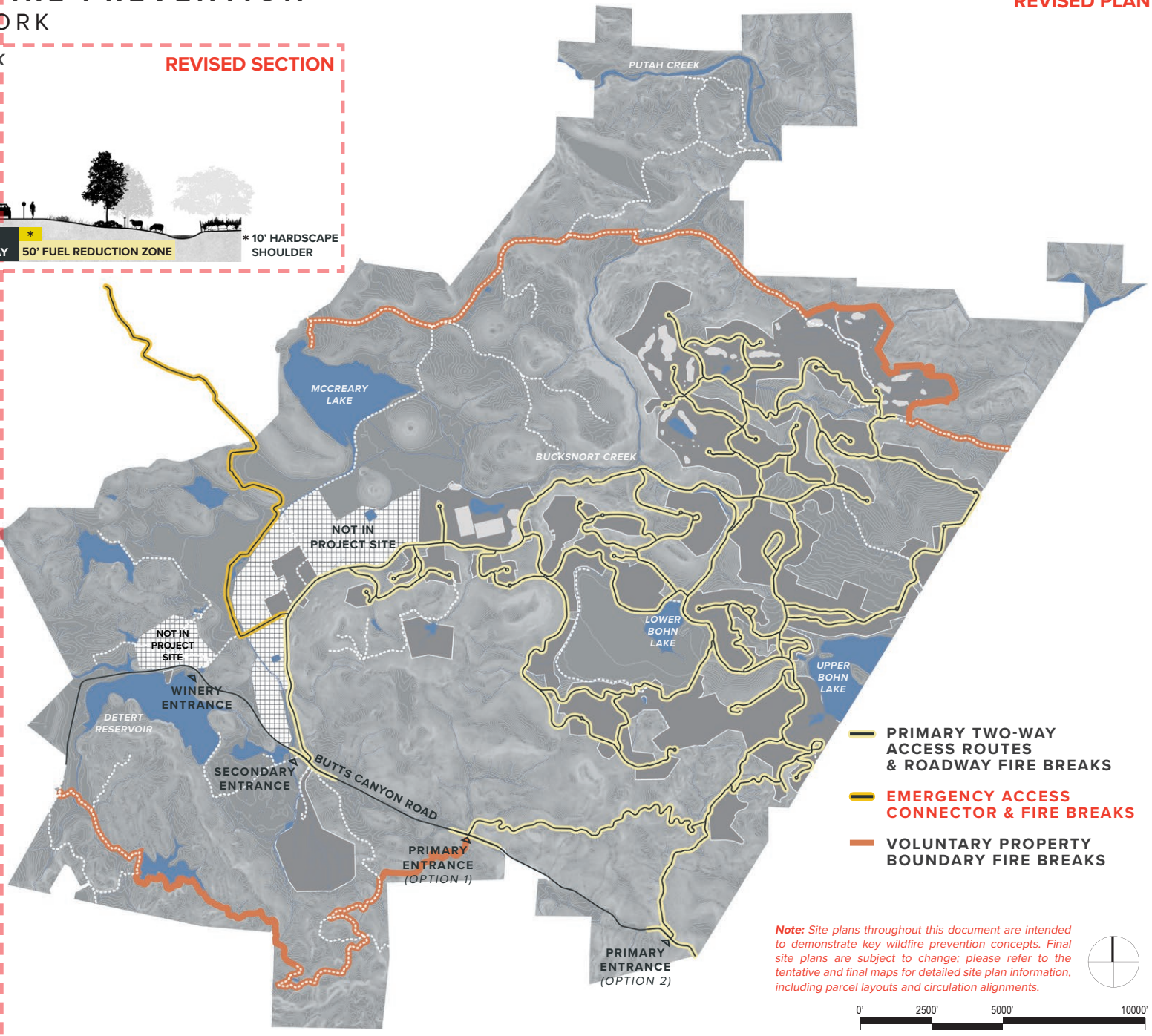


Fire breaks are areas where wildfire risk is reduced by strategies such as thinning and removing dead vegetation, separating canopies, and maintaining the vegetated understory through grazing.

All roadways will be bordered on each side by a fuel reduction zone, including to the extent that the topography feasibly permits, an area of approximately 10 feet on each side of the roadways improved with hardscape. As an overall defense strategy, 100 foot wide fire breaks could also be established and maintained at select vulnerable areas of the property boundary.

At final occupancy of each structure the applicable fire break shall be installed. Further, at the time of the recording of the last final map for each of the subdivision groups the full roadway fire break network shall be completed within that subdivision.

REVISED PLAN



Note: *Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.*

GENERAL WILDFIRE PREVENTION
ACTIVE LANDSCAPE FIRE MANAGEMENT

REVISED PLAN

The resort's landscapes will be actively managed to reduce fire risk. This will be achieved through a two-part strategy. First, livestock grazing will be heavily relied upon to reduce fire risk (see next page). Grazing will primarily take place within the site's undeveloped rural landscapes; where feasible and permissible, grazing may also be used to manage landscapes within resort, residential, and facility parcels as well as within vineyards.

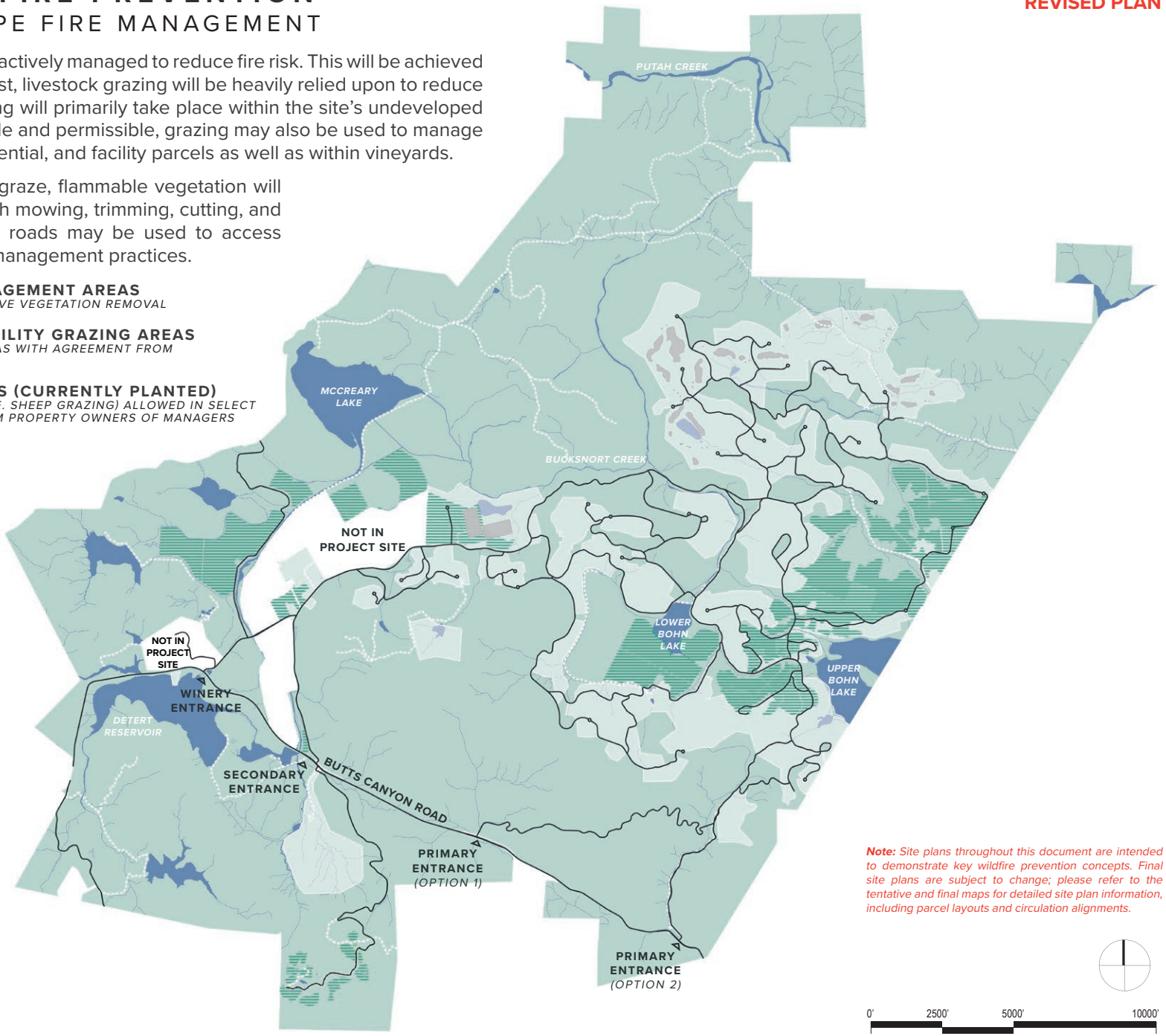
In areas that are infeasible to graze, flammable vegetation will be manually addressed through mowing, trimming, cutting, and brush removal. Existing ranch roads may be used to access more remote areas for active management practices.

ACTIVE LANDSCAPE MANAGEMENT AREAS
CONTINUED GRAZING AND SELECTIVE VEGETATION REMOVAL

RESIDENTIAL/RESORT/FACILITY GRAZING AREAS
GRAZING ALLOWED IN SELECT AREAS WITH AGREEMENT FROM PROPERTY OWNERS OR MANAGERS

VINEYARD GRAZING AREAS (CURRENTLY PLANTED)
MINIMALLY IMPACTFUL GRAZING (I.E. SHEEP GRAZING) ALLOWED IN SELECT VINEYARDS WITH AGREEMENT FROM PROPERTY OWNERS OF MANAGERS

EXISTING RANCH ROADS



Note: *Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.*

0' 2500' 5000' 10000'

GENERAL WILDFIRE PREVENTION
GRAZING PRACTICES

As a key component of the active landscape management plan, goat, sheep, and cattle livestock will continuously rotate throughout the resort site to reduce and remove overgrown and dead vegetation.

As these animals are capable of moving around difficult terrain, allowing them to graze throughout the site will ensure that hard-to-reach areas are regularly maintained. And, as each of these species prefers different types of vegetation, a regular rotation will broaden the types of flammable vegetation that are reduced and removed.

The following matrix provides general standards of site-wide, long-term grazing practices. Although the exact configuration of grazing areas and corridors may shift over time, these general parameters will help to coordinate the placement and movement of herds throughout the site.



Species	**Primary Foraging Behavior**	**Equivalent Animal Unit** *	**Preferred Vegetation**	**Minimum Practical Grazing Area** (Acres) **	**Maximum Practical Grazing Slope** (Percent %) (Wet Ground / Dry Ground)	**Maximum Density** (lbs per acre) (Wet Ground/Dry Ground) ***	**Grazing Season**	**Herd Type**
Goats	Browsing	0.2	Chaparral, Brush, Poison Oak, Weeds	0.15 AC	60% / 80%	15,000 lbs / 60,000 lbs	April - October	Seasonal/ Contracted
Sheep	Grazing	0.2	Oak Woodland/ Grassland, select weeds	0.15 AC	60% / 80%	15,000 lbs / 60,000 lbs	April - June	Seasonal/ Contracted
Cattle	Grazing	1.0	Oak Woodland/ Grassland	0.5 AC	50% / 70%	10,000 lbs / 50,000 lbs	Year Round	Resident

* "Equivalent Animal Units" establishes a consistent unit factor to compare herd sizes; for example, a herd of 10 cows (1.0 AU) is equivalent to a herd of 50 goats (0.2 AU)

** The "Minimum Practical Grazing Area" is significantly dependent on herd size; these minimum practical grazing areas assume that herd sizes will remain equally small in order to accommodate efficient grazing in and around small spaces between buildings and roads.

*** The "Maximum Density" is the maximum collective herd weight supported per graze-able acre

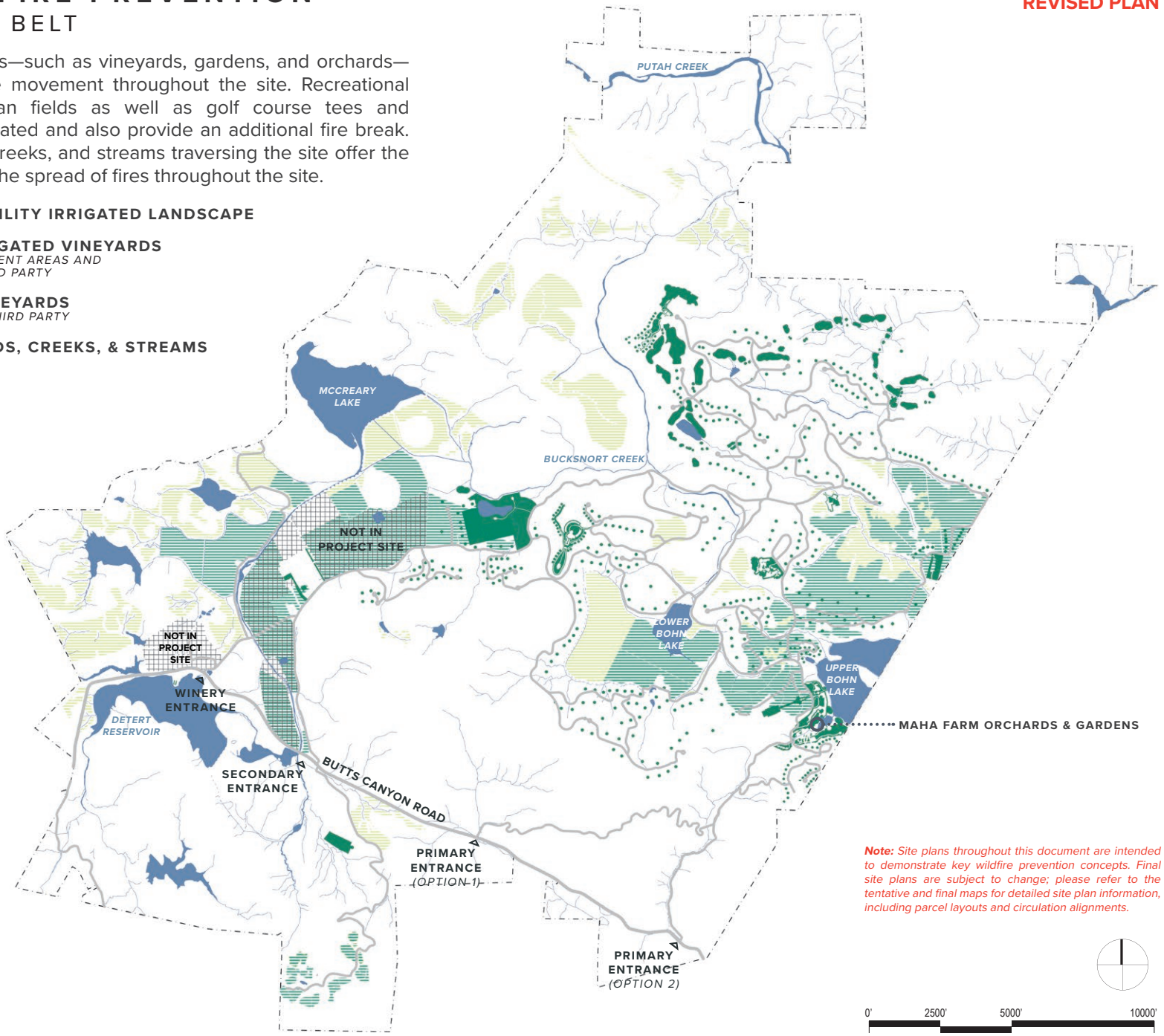
GENERAL WILDFIRE PREVENTION

IRRIGATED GREEN BELT

REVISED PLAN

Irrigated agricultural operations—such as vineyards, gardens, and orchards—will interrupt potential wildfire movement throughout the site. Recreational amenities—including equestrian fields as well as golf course tees and fairways—will be regularly irrigated and also provide an additional fire break. The reservoirs, lakes, ponds, creeks, and streams traversing the site offer the additional benefit of reducing the spread of fires throughout the site.

- **RESIDENTIAL/RESORT/FACILITY IRRIGATED LANDSCAPE**
- **CURRENTLY PLANTED IRRIGATED VINEYARDS**
  CURRENTLY PLANTED IN DEVELOPMENT AREAS AND AREAS LONG-TERM LEASED BY THIRD PARTY
- **POTENTIAL IRRIGATED VINEYARDS**
  IN AREAS LONG-TERM LEASED BY THIRD PARTY
- **RESERVOIRS, LAKES, PONDS, CREEKS, & STREAMS**



Note: *Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.*

CONSTRUCTION WILDFIRE PREVENTION

RESPONSIBILITIES & PROCEDURES

Construction practices will be carefully monitored to ensure that operations which could ignite a wildfire are minimized to the greatest extent possible.

Fire Safety Oversight and Responsibilities

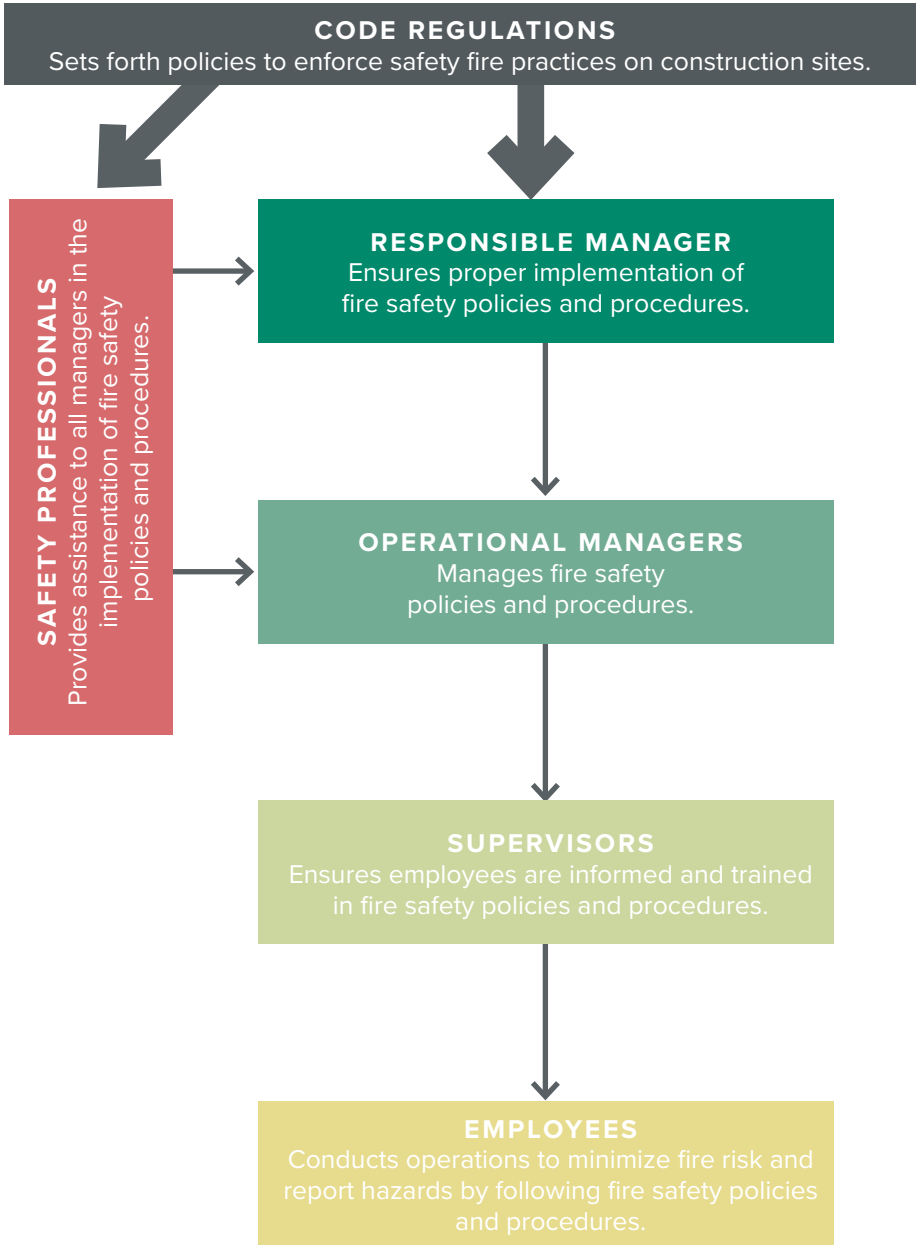
Beyond set code regulations, including Wildland Urban Interface (WUI) Ignition Resistant Construction standards, the project's general contractor has established fire prevention and protection procedures for every level of management and employment (see flowchart). This includes the following:

- Safety Professionals will advise and assist the Responsible and Operational Managers in charge of the project on fire safety;
- Supervisors–as advised by the Safety Professionals–will play a pivotal role in ensuring employees are informed and trained in fire safety. They will often conduct workforce training to educate employees about the fire hazards associated with specific tasks. They will also approve and carefully monitor any hot work or the use of temporary portable heaters. Supervisors will ensure that fire extinguishing equipment is present on all work sites and regularly inspected; and
- All managers and employees will be well-informed on procedures to immediately report fires.

Fire Safety Procedures

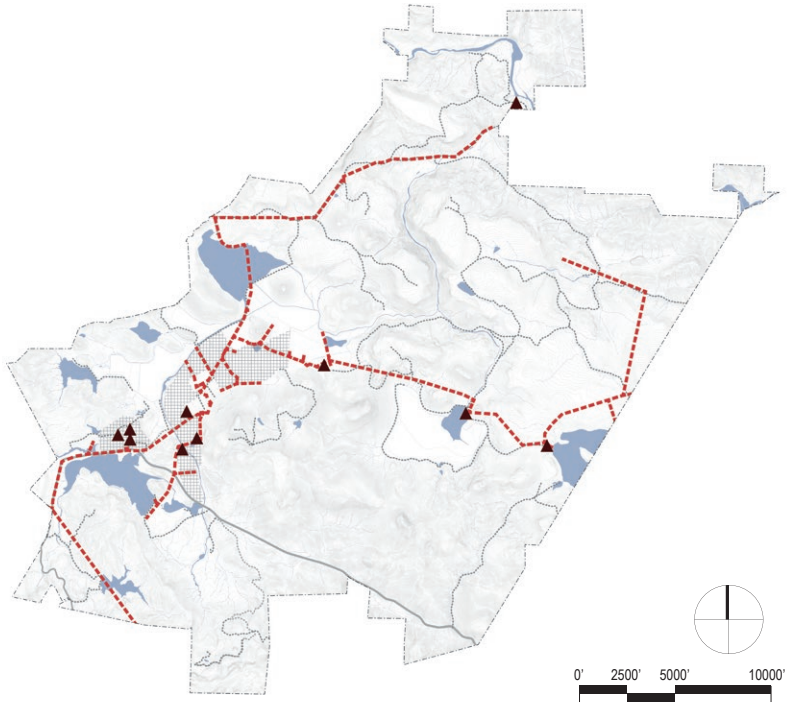
During wildfire season, there is a heightened risk of construction-caused fires. In particular, heavy machinery has the potential to ignite fires during site preparation, preliminary grading, and utility line establishment. In order to mitigate fire risk during construction, the local CAL FIRE unit has recommended the following fire safety procedures, among others:

- One round-tip shovel and one water fire extinguisher should be available within 10 feet of all work areas;
- Portable fire extinguishers should be kept in every construction vehicle and piece of equipment;
- Vegetation within the work area should generally be mowed by noon during wildfire season or whenever wildfire conditions are present;
- Hot work—such as welding, cutting, brazing, or similar fire or spark-producing operations—should include establishing a wildfire watch for the duration of work and for 30 minutes after;
- Everyone working on-site should be aware of their location within the project in the event that they must report a fire;
- Everyone working on-site should have access to a cell phone or radio system to report a fire; and
- Everyone working on-site should have access to a pressurized air horn available to alert others in case of an emergency.



UTILITY WILDFIRE PREVENTION

ELECTRIC NETWORK



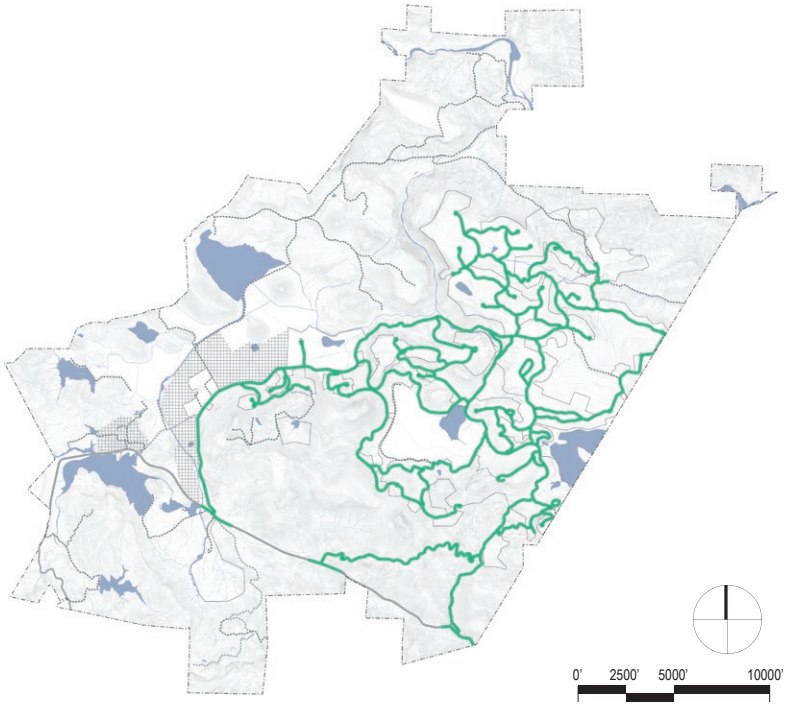
EXISTING OVERHEAD NETWORK

The existing power distribution network primarily relies upon overhead electrical lines, which can pose fire risk in the event of downed or sparking lines.

▲ EXISTING SERVICE CONNECTION

EXISTING OVERHEAD SERVICE LINES

REVISED PLAN



PROPOSED UNDERGROUND NETWORK

To the maximum extent feasible, the proposed electric network will be undergrounded in a joint trench system. This will ensure a safer distribution of power and reduce or eliminate the risk of overhead power lines causing wildfires during windy conditions.

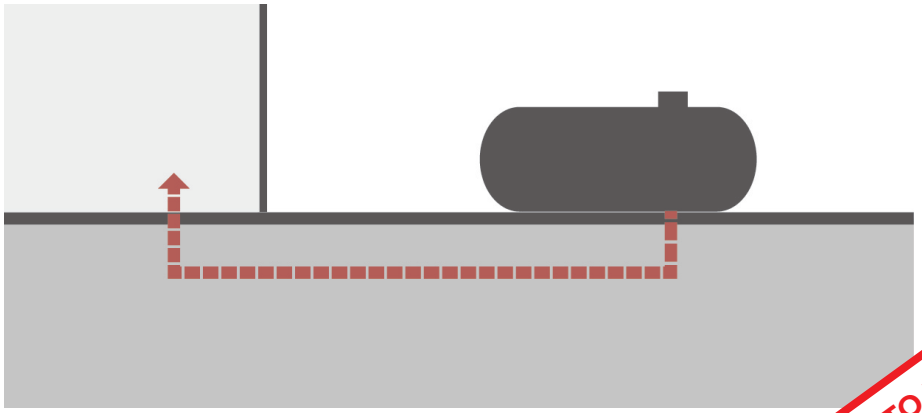
UNDERGROUND POWER AND DATA LINES

Note: *Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.*

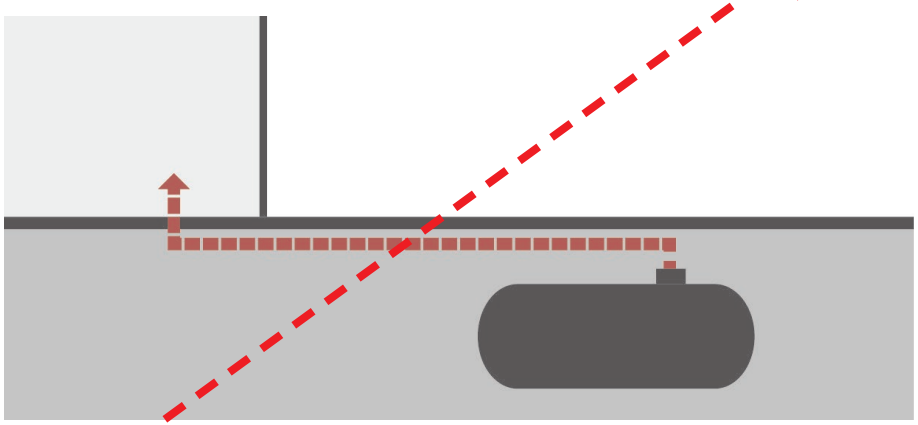
UTILITY WILDFIRE PREVENTION
PROPANE GAS SYSTEM

Similar to the strategy of undergrounding power lines, gas propane tanks will be undergrounded throughout the resort. This approach reduces the risk of gas related wildfires while also controlling for temperature fluctuations.

Each residential estate will be serviced by an individual underground gas tanks. Resort communities—which includes both resort and resort residential structures—will utilize a shared propane gas tank system with a localized underground distribution system.



TYPICAL ABOVE GROUND PROPANE TANKS
Above ground tanks are the standard and more affordable option, but present a greater risk of gas leaks and the potential to fuel wildfires.



PROPOSED UNDERGROUND PROPANE TANK
Propane tanks will be undergrounded to improve wildfire safety and benefit from the stabilized temperature control.

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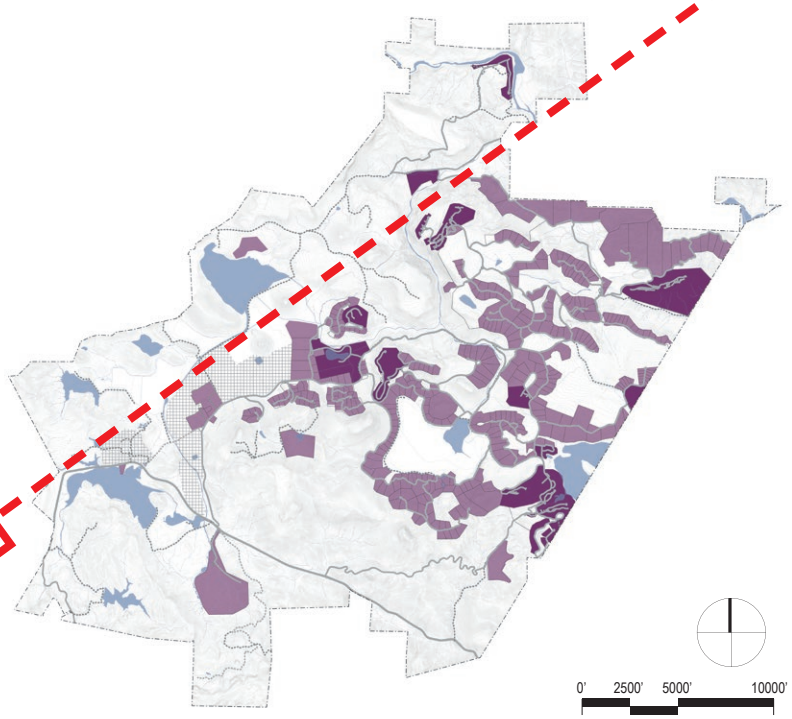


PROPOSED PROPANE GAS NETWORK
To the maximum extent feasible, propane gas tanks will be undergrounded throughout the resort, with residential estates serviced by individual tanks and resort communities serviced by shared tanks and distribution systems.

- **RESIDENTIAL ESTATES AND SUPPORTING FACILITIES SERVICED BY INDIVIDUAL UNDERGROUND TANKS**
- **RESORT COMMUNITIES SERVICED BY SHARED UNDERGROUND TANKS**

LANDSCAPE WILDFIRE PREVENTION

SITE BUILDING & DETERMINE TOTAL DEFENSIBLE SPACE

If a wildfire occurs, it poses a considerable risk to residential homes, commercial structures, facility structures, and their occupants. Homeowners and commercial /facility managers will be advised to implement various wildfire prevention strategies.

Site Structures to Reduce Fire Risk

The first step in addressing wildfire risk is to properly site structures. While the ideal structure location will be based on many factors (including views, accessibility, and privacy), homeowners and commercial/facility managers will be encouraged to closely consider certain criteria which reduce fire risk.

This includes siting buildings on the most level portion of the property. Wherever possible, structures should avoid being placed on mid-slopes, ridge edges, or directly between high points.

Determine Total Defensible Space

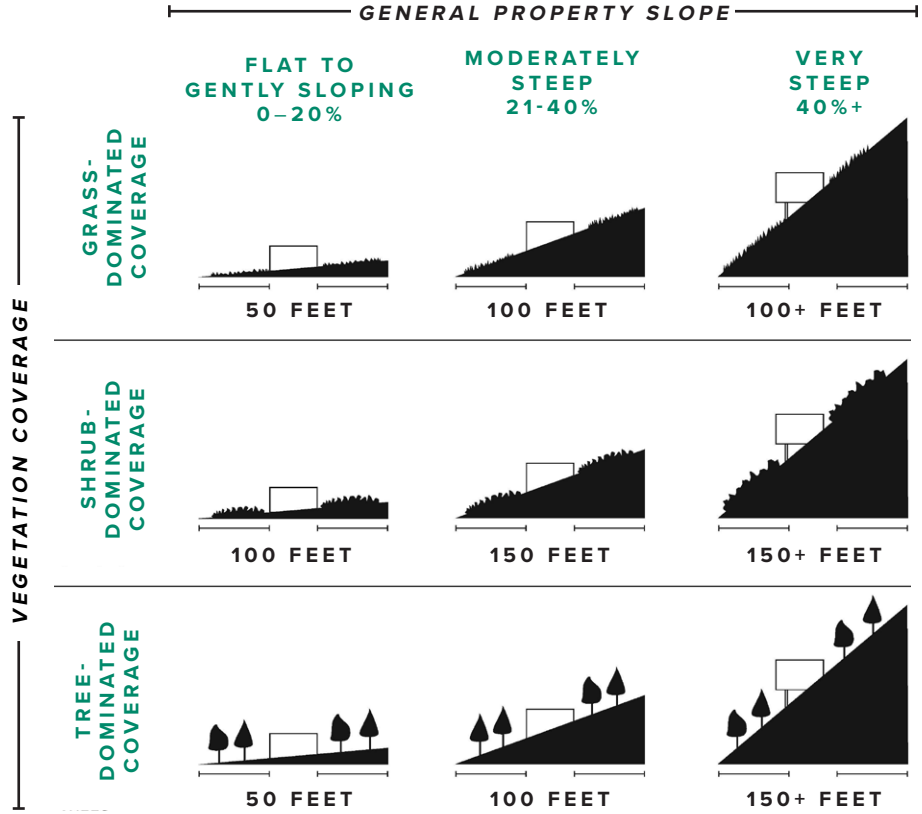
Homeowners and commercial/facility managers will be advised to establish and maintain defensible space for the purposes of reducing fire risk in the immediate vicinity of structures. The total defensible space will depend on the unique vegetated coverage and topographic conditions of each property (see right):

- **Grass-Dominated Coverage**
  Depending on slopes, 50 to 100 feet of total defensible space from the building edge in landscapes dominated by grasses, weeds, and widely scattered shrubs

- **Shrub-Dominated Coverage**
  Depending on slopes, 100 to 150+ feet of total defensible space from the building edge in landscapes dominated by shrubs, scrub, or chaparral

- **Tree-Dominated Coverage**
  Depending on slopes, 50 to 150+ feet of total defensible space from the building edge in landscapes dominated by trees; if understory is substantially shrubs, homeowners should follow “shrub-dominated coverage” category

Wherever necessary or possible, adjacent homeowners, commercial/facility managers, and the resort ownership will cooperatively address defensible space concerns which cannot be fully established or maintained within parcel line.



DETERMINING TOTAL DEFENSIBLE SPACE

The total defensible space will vary based on the unique vegetated coverage and topographic conditions of each property. In the above diagrams, the indicated length relates to the total defensible space measured from the building edge.

LANDSCAPE WILDFIRE PREVENTION
DETERMINE DEFENSIBLE ZONES

Once the building has been sited and the total defensible space has been determined, homeowners and commercial/facility managers will be advised to establish and maintain three zones of defense. These zones and associated fuel reduction strategies will reduce the risk of fire in the immediate vicinity of structures:

- **Zone 0: Establish an Ember-Resistant Zone**
  This zone extends from zero to five feet from the edge of structures and is perhaps the most important zone of defense.

  Within this zone, all combustible materials should be removed. This can be achieved by strategies such as using hardscape materials and eliminating combustible mulch; removing dead and dying vegetation; replacing combustible fencing, gates, and arbors attached to the structure with non-combustible materials; and relocating garbage and recycling containers outside of this zone. These strategies and others can keep fire and embers from igniting materials that spread to the structure.

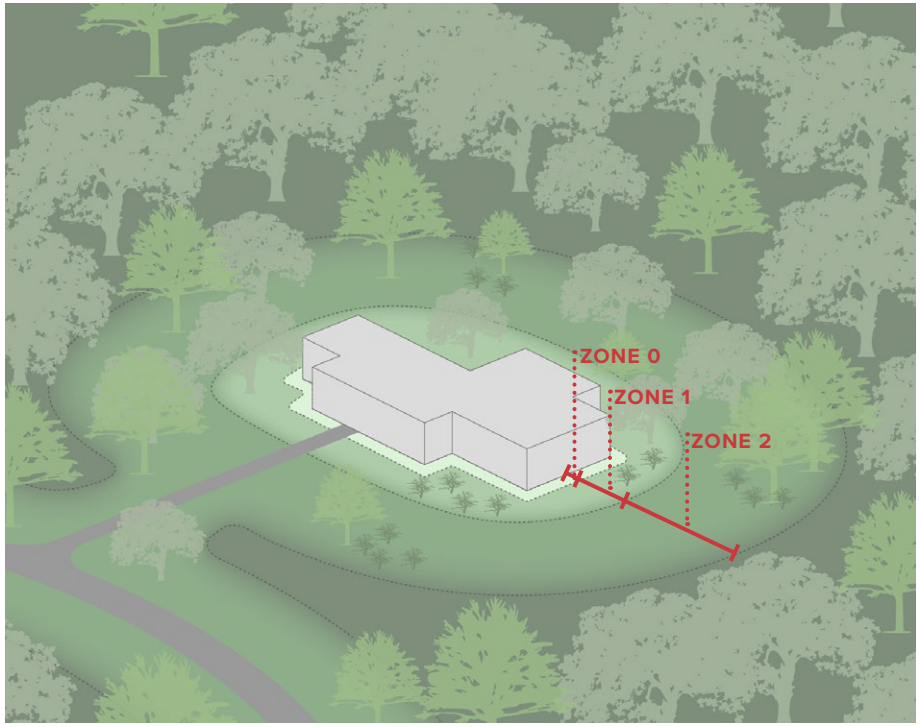
- **Zone 1: Remove Flammable Vegetation**
  ~~Regardless of the total defensible space,~~ It is recommended that the second defense zone should be maintained from five feet ~~zero~~ to 30 feet from the edge of structures.

  Within this zone, flammable vegetation should be removed. This includes removing all standing dead trees and shrubs. All downed dead trees, tree branches, and shrubs should also be removed if not yet decayed. Trees should generally be pruned up to a height of 10 feet, depending on tree species and understory conditions. Flammable shrub species should be thoroughly pruned.

- **Zone 2: Reduce Flammable Vegetation**
  The third defense zone should be maintained from 30 feet from the building edge to the edge of the total defensible space (e.g. 50 feet, 100 feet, 150 feet–see previous page); this includes a defensible space of zero to 15 feet from the driveway edge.

  Within this zone, flammable vegetation should be reduced. Trees and shrubs should be selectively addressed to reduce flammable vegetation parts, including pruning dead or lower branches. Dead vegetation should also be selectively removed within this wider zone.

REVISED DIAGRAM



STANDARD DEFENSIBLE ZONES

Three defensible zones should be established and maintained within the total defensible space.

ZONE 0 ESTABLISH AN EMBER-RESISTANT ZONE

ZONE 1 REMOVE FLAMMABLE VEGETATION

ZONE 2 REDUCE FLAMMABLE VEGETATION

LANDSCAPE WILDFIRE PREVENTION
PREPARE THE PROPERTY

After the defensible space and zones have been determined, residential, commercial, and facility properties should be assessed for key fire risks. Primarily, continuous and dense vegetation creates a condition in which fires can quickly spread. Trees and shrubs should be vertically and horizontally separated in order to reduce "ladder fuel" conditions–or situations in which flames can easily move upwards from the vegetation understory to the canopy.

The following offers general vegetation clearance and spacing recommendations in order prepare sites for structures. Although these standards should be followed across the entire defensible space, greater adherence to these standards should be followed within Zone 1.

Tree and Shrub Vertical Clearance
In general, the lowest level of the canopy branches should be three times greater than the height of the vegetation understory. This vertical separation relationship can be established through either pruning the vegetation understory or the overhead tree limbs. For example, if a shrub is three feet in height, the lowest level of the directly overhead canopy branches would be trimmed or pruned to a height of 12 feet.

Tree and Shrub Horizontal Spacing
Individual or small clusters of trees and shrubs should generally be separated based on the horizontal spacing standards (see right) in order to reduce potential fire movement. For example, if a property is "moderately steep," shrubs that are three feet in height should be separated by 12 feet. Note that the recommended tree and shrub horizontal separation distances are measured from the canopy edge, not the trunk.

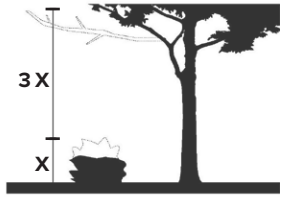
LADDER FUELS



Flames burning at lower levels can ignite taller plants by moving up vegetated "ladder fuels".

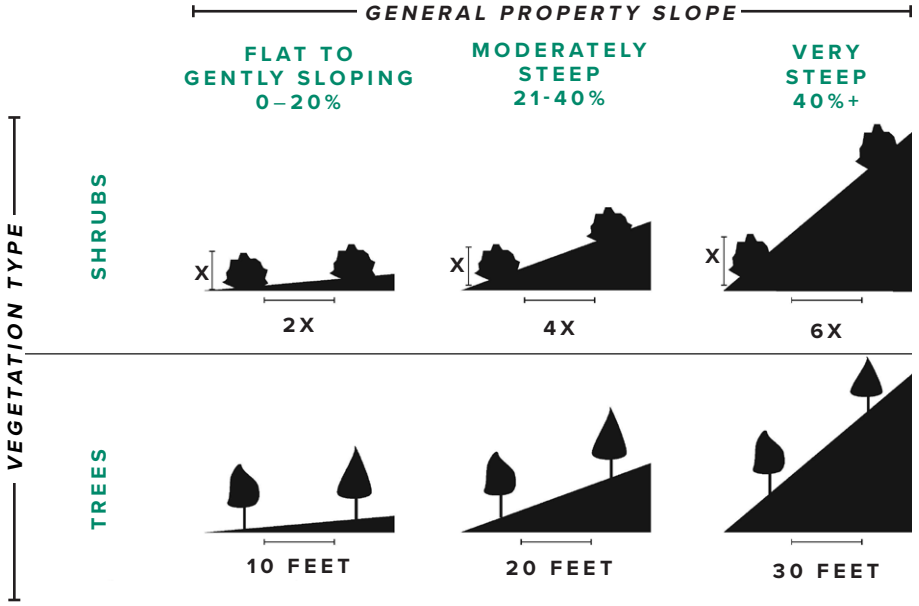
The potential for ladder fuels can be avoided by separating vegetation vertically and horizontally.

VERTICAL CLEARANCE



The lowest level of the canopy branches should be three times greater than the height of the vegetation understory.

HORIZONTAL SPACING



Individual or small clusters of trees and shrubs should be separated in order to reduce potential fire movement

LANDSCAPE FIRE PREVENTION
ESTABLISH NEW LANDSCAPE

After the residential, commercial, or facility property has been cleared of flammable vegetation and ladder fuels have been addressed, various strategies can reduce wildfire risk where establishing a new landscape design.

Fire-Resistant Planting Design and Selection
New planting design should follow the spacing and clearance strategies delineated above. Planting designs and patterns should anticipate the mature size of new trees and shrubs. Simple, low-volume, and well-separated planting designs will generally achieve these spacing and clearance objectives. All efforts should be made to avoid tree limbs touching structures or power lines; tree limbs should also not be within 10 feet of the chimney.

Planting selection should avoid fire-prone species and instead prioritize fire-resistant species. In general, fire-resistant species are low-growing with a high moisture content and have stems or leaves that are not resinous, oily, or waxy. The planting design and selection will additionally need to follow Model Water Efficient Landscape Ordinance (MWELO) requirements (see further details on landscape design requirements in the project Design Guidelines).

Small-Scale Fire Breaks: Hardscapes and Irrigation
Wherever possible, landscape design should be configured to create a series of smaller-scale fire breaks in the immediate vicinity of structures.

For example, driveways, walkways, patios, and parking areas could be selectively spread out to impede a potential fire path; non-combustible materials (such as mulch, boulders, and rocks) will additionally reduce fire risk. Pools, water features, ponds, or streams could also be creatively used as small-scale fire breaks. Irrigation systems used to establish or maintain landscapes could also create an irrigated fire break.

Additional Strategies
Additional landscape design strategies should be prioritized to reduce fire risk and improve emergency response. This includes the following:

- Constructing fencing with non-combustible materials, such as stone or metal, rather than wood;
- Enclosing areas below decks to reduce the risk of debris ignition;
- Clearly marking the address number on the house itself and at the driveway entry to aid in identification in the case of a fire emergency; and
- As much as possible, designing driveways and bridges to allow for large-



FIRE PRONE PLANTING TO AVOID
Certain plants should be avoided because of their fire prone characteristics, such as resinous, oily, or waxy leaves. This includes trees such as the Eucalyptus.



FIRE RESISTANT PLANTING TO USE
Fire resistant plants should be used as much as possible. This includes plants that are low-growing and have a high moisture content.

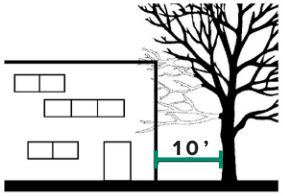
LANDSCAPE FIRE PREVENTION
MANAGE LANDSCAPE TO REDUCE RISK

Various landscape management practices can address wildfire hazards within residential, commercial, and facility landscapes over time.

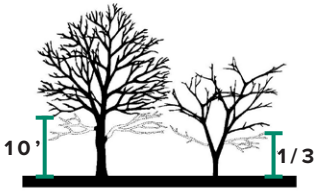
This includes the following recommendations for homeowners or commercial/ facility managers:

- Periodically inspect the property to maintain defensible space—which includes ongoing removal and reduction of flammable vegetation and reestablishment of vegetation clearance and spacing standards;
- Prune tree limbs which are within 10 feet of buildings or chimneys or are otherwise encroaching on power lines;
- Within the defensible space, trim tree limbs below 10 feet in height; for smaller trees, prune the lower 1/3 of the branches;
- Routinely mow grasses and wildflowers within the defensible space to a maximum height of 4 inches, particularly during dry seasons;
- Keep vegetation well-irrigated, particularly within the first defense zone;
- Where feasible, irrigation systems used for plant establishment should be maintained for additional wildfire protection;
- Install fine mesh metal on eaves, roofs, and vents to prevent embers from entering the structure;
- Remove vegetation debris that accumulates on the roof or within the rain gutters;
- Place combustible debris (such as firewood, wood scraps, grass clippings, leaf piles, or garbage cans) and propane tanks outside of the first defense zone; and
- Keep any ignitable outdoor furniture and equipment (i.e. wooden brooms and shovels) 10 feet away from structures.

PRUNE, TRIM, AND MOW



PRUNE: Prune tree limbs which are within 10 feet of building or chimneys or are otherwise encroaching on power lines.

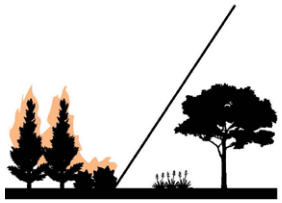


TRIM: Within the defensible space, trim tree limbs below 10 feet in height; for smaller trees, prune the lower 1/3 of the branches

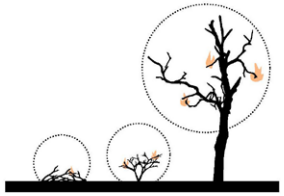


MOW: Mow and grass to a maximum of 4 inches in height.

LEAN, CLEAN, AND GREEN



LEAN: Minimize or eliminate the use of flammable vegetation and emphasize the use of low-growing herbaceous (non-woody) plants. Ornamental trees and shrubs should be kept green.



CLEAN: Remove all dead trees and shrubs within the defensible area. Remove all dead leaves, twigs, cones and branches. Reduce thick layers of pine needles to a depth of 2 inches.



GREEN: Keep plants green and healthy by irrigating throughout the fire season.

BUILDING WILDFIRE PREVENTION

EXTERIOR BUILDING STRATEGIES

The fire safety of a building starts with design and material decisions. All buildings will abide by relevant California Building Codes "CBC" and Wildland Urban Interface "WUI" standards. The following are a selection of strategies to prevent fires on the building exterior:

1 | Class A rated roof with non-combustible covering
The roof is the most vulnerable part of the home in the event of a wildfire. Class A rated roofs are highly resistant to fire by minimizing the ability of flames to spread. Green roof systems will follow widely-recognized standards and guidelines to reduce wildfire risk through landscape design, material selection, and maintenance (see further details on roofing system requirements in the project Design Guidelines).

2 | Fire resistant eaves, overhangs, and soffits
The risk of embers getting caught in the eaves and igniting can be minimized by eliminating or shortening overhangs, or otherwise constructing eaves, overhangs, and soffits with non-combustible materials.

3 | Building vents precautions
Vents in roofs, soffits, and exterior walls should be made of non-combustible materials with screens to prevent the penetration of embers.

4 | Underground utility connections
Wherever possible, utility connections should be undergrounded, particularly for electrical and fuel-related utilities.

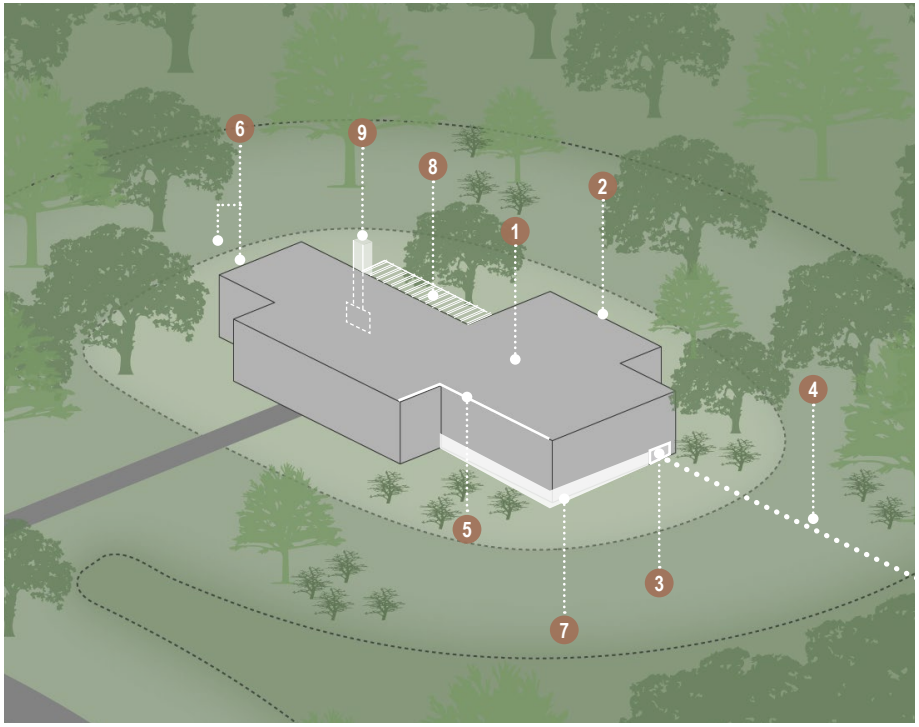
5 | Non-combustible leaf guards over gutters
Leaf guards can reduce the build-up of combustible leaf debris. Guards, gutters, and downspouts should be made of noncombustible material.

6 | Exterior fire suppression systems
Exterior fire suppression systems will be required for all primary structures. These systems are remote or heat-activated. During a fire, they will prevent substantial damage to primary buildings as well as nearby outdoor features.

7 | Fire resistant material for exposed foundations
Fire resistant materials should be used for all exposed foundations above grade, including both open and closed foundations.

8 | Fire resistant deck materials
Decks connected to structures should be fire resistant, which can be achieved by using fire retardant treated timber, fire resistant plastic, and non-combustible materials for all deck components, including skirting to protect the deck underside.

9 | Exterior fireplaces and wood stoves
Anything with an exposed flame, such as a outside fireplace or wood stove, should have a screen built into the design to protect against stray embers.



RECOMMENDED EXTERIOR DESIGN STRATEGIES

The highlighted items are a selection of strategies to incorporate into buildings to address wildfire safety.

1. CLASS A RATED ROOFS WITH NON-COMBUSTIBLE COVERING
2. FIRE RESISTANT EAVES, OVERHANGS, AND SOFFITS
3. BUILDING VENT PRECAUTIONS
4. UNDERGROUND UTILITY CONNECTIONS
5. NON-COMBUSTIBLE LEAF GUARDS OVER GUTTERS
6. EXTERIOR FIRE SUPPRESSION SYSTEMS
7. FIRE RESISTANT MATERIAL FOR EXPOSED FOUNDATIONS
8. FIRE RESISTANT DECK MATERIALS
9. EXTERIOR FIREPLACES AND WOOD STOVES

SOURCE: FEMA, Home Builder's Guide to Construction in Wildfire Zones, 2008

BUILDING WILDFIRE PREVENTION
INTERIOR BUILDING STRATEGIES

On the interior, certain precautions and practices can further protect residential, commercial, and facility structures. The following are a selection of interior building strategies to reduce wildfire risk:

1 | Smoke detectors throughout the home
Smoke detectors should be located throughout structures to cover all livable areas. If placed in hallways between living and sleeping areas, smoke detectors can reach many rooms. In addition, smoke detectors shall be programmed to communicate directly to a fire and security monitoring companies.

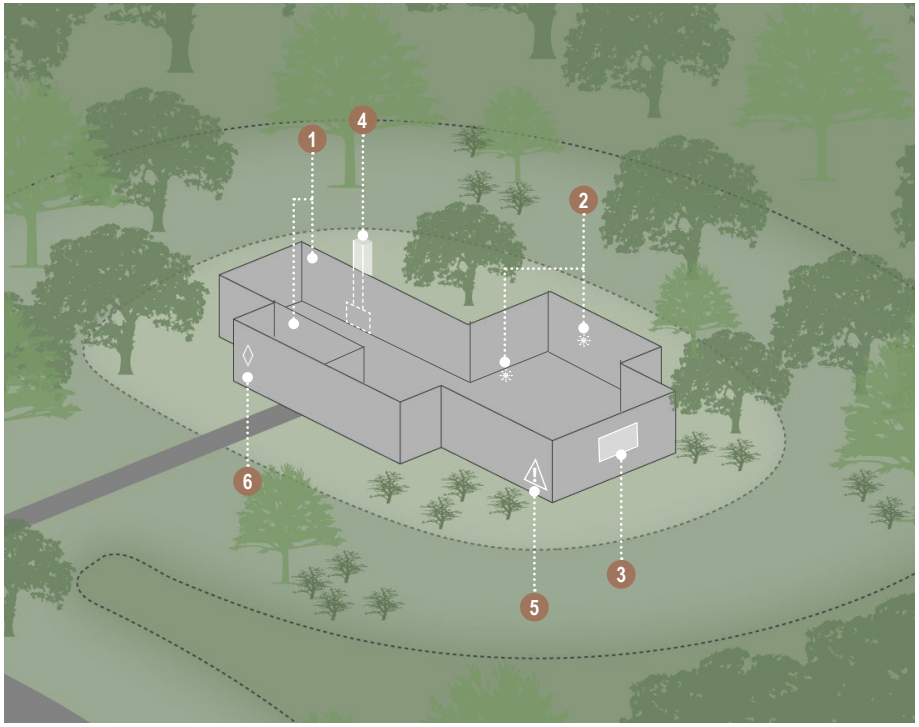
2 | Interior fire sprinklers
Interior fire sprinklers will be required pursuant to the current California building code. They come in a variety of styles in order to blend with interior aesthetics. They are automatically activated by high heat and can include a warning system.

3 | Window security quick-release
If window security bars or other protection systems are installed, a quick-release system should be included to allow for immediate escape in the case of a wildfire emergency.

4 | Chimney maintenance
Chimneys should be inspected yearly to remove all flammable debris and material.

5 | Combustible hazardous material protection
All combustible materials should be stored in protected safety containers away from appliances with ignition sources, such as stoves and water heaters.

6 | Wildfire fighting tools
Homeowners and commercial/facility managers should have easy access to wildfire emergency tools, such as a shovel, hoe, rake, and bucket.



RECOMMENDED INTERIOR DESIGN ELEMENTS

The fire safety of a structure starts with design decisions. The highlighted items are a selection of some strategies to incorporate into building interiors.

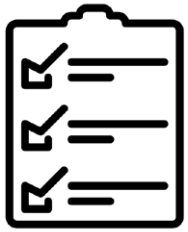
1. SMOKE DETECTORS THROUGHOUT THE STRUCTURE
2. INTERIOR FIRE SPRINKLERS
3. WINDOW SECURITY QUICK-RELEASE
4. CHIMNEY MAINTENANCE
5. COMBUSTIBLE MATERIAL PROTECTION
6. WILDFIRE FIGHTING TOOLS

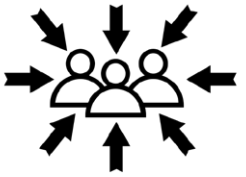
SOURCES: FEMA, Home Builder's Guide to Construction in Wildfire Zones, 2008; CalFire, Homeowners Checklist, 2009

WILDFIRE PREVENTION PREPAREDNESS

RESIDENT RECOMMENDATIONS

Homeowners will be advised to plan for the event of a wildfire. This will require preparing in advance and developing specific action plans for different scenarios.





Pre-Fire Preparations

- Develop an emergency plan with your family;
- Place important documents in a fire-proof box close to the exit;
- Practice how to shut off key utilities, including water, gas, and electricity;
- Discuss plans for evacuation, including what to bring and where to go;
- Determine multiple evacuation routes in case one is blocked;
- Develop a communication plan in case your family is separated;
- Select meeting places a safe distance the home; and
- Identify a non-local contact person who knows your emergency plan.





Potential Fire Threat (including Red Flag Warnings)

- Pay attention to local news for updates and evacuation notices;
- Keep flashlights and portable chargers ready in case of power shutoff;
- Ensure that your car has gas, as stations often become crowded;
- Confirm that all garden hoses are attached and accessible;
- Prop a ladder against the house for the potential need for roof access;
- Disable electronic garage openers so this area can be manually opened;
- Prepare and pack essential items to prepare for potential evacuation; and
- Gather pets in kennel or on leashes to keep them close and safe





Notice to Evacuate

- Stay together as a household and remember that time is of the essence;
- Dress appropriately with long pants/sleeves, layers, and face protection;
- Shut off the home's gas supply, but leave lights and water on;
- Close all doors and windows but leave exterior doors unlocked;
- Pack water, supplies, and other essentials in the car;
- Ensure all car windows are closed while evacuating;
- Choose evacuation routes selected by emergency personnel; and
- Follow all directions and signage provided by emergency personnel.





Shelter in Place

- Take shelter within a building whenever possible;
- Close all windows and doors, but leave unlocked;
- Remain close to the front door and low to the ground;
- Continue to monitor the fire and stay observant;
- If not at home, proceed to a designated meeting & staging area;
- If unable to reach either home or a designated meeting & stage area, park and take shelter in your car;
- If in the car, stay on paved roads and park away from vegetation; and
- Leave headlights and emergency flashers on while you wait for aid.

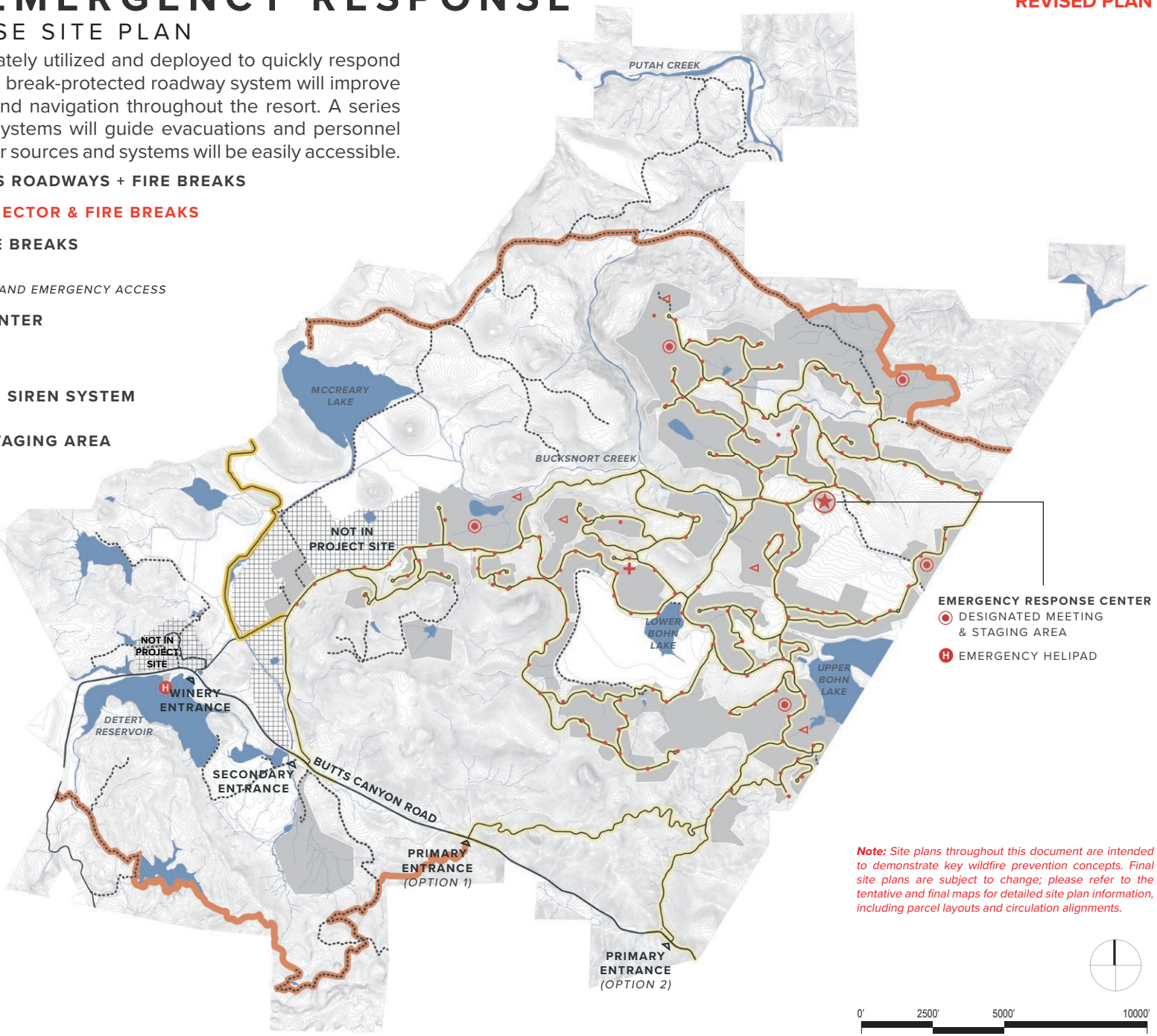
WILDFIRE EMERGENCY RESPONSE

REVISED PLAN

WILDFIRE RESPONSE SITE PLAN

Various systems will be immediately utilized and deployed to quickly respond to a wildfire emergency. The fire break-protected roadway system will improve emergency personnel access and navigation throughout the resort. A series of emergency communication systems will guide evacuations and personnel response. Fire suppression water sources and systems will be easily accessible.

- **PRIMARY TWO-WAY ACCESS ROADWAYS + FIRE BREAKS**
- **EMERGENCY ACCESS CONNECTOR & FIRE BREAKS**
- **PROPERTY BOUNDARY FIRE BREAKS**
- **EXISTING RANCH ROADS**
  USED FOR ACTIVE FUEL REDUCTION AND EMERGENCY ACCESS
- **EMERGENCY RESPONSE CENTER**
- **EARLY DETECTION SYSTEM**
  HIGH-DEFINITION CAMERA
- **EMERGENCY NOTIFICATION SIREN SYSTEM**
  EXACT LOCATIONS TBD
- **DESIGNATED MEETING & STAGING AREA**
- **HELIPAD**
- **FIRE HYDRANTS**
- **WATER SOURCES**
  RESERVOIRS, LAKES, PONDS, CREEKS & STREAMS



Note: *Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.*

WILDFIRE EMERGENCY RESPONSE

WILDFIRE EMERGENCY DETECTION & COMMUNICATION SYSTEMS

Efficient emergency communication is critical for providing immediate information to residents, visitors, and employees. In the event of a wildfire emergency, the following detection and communication systems will quickly be deployed:

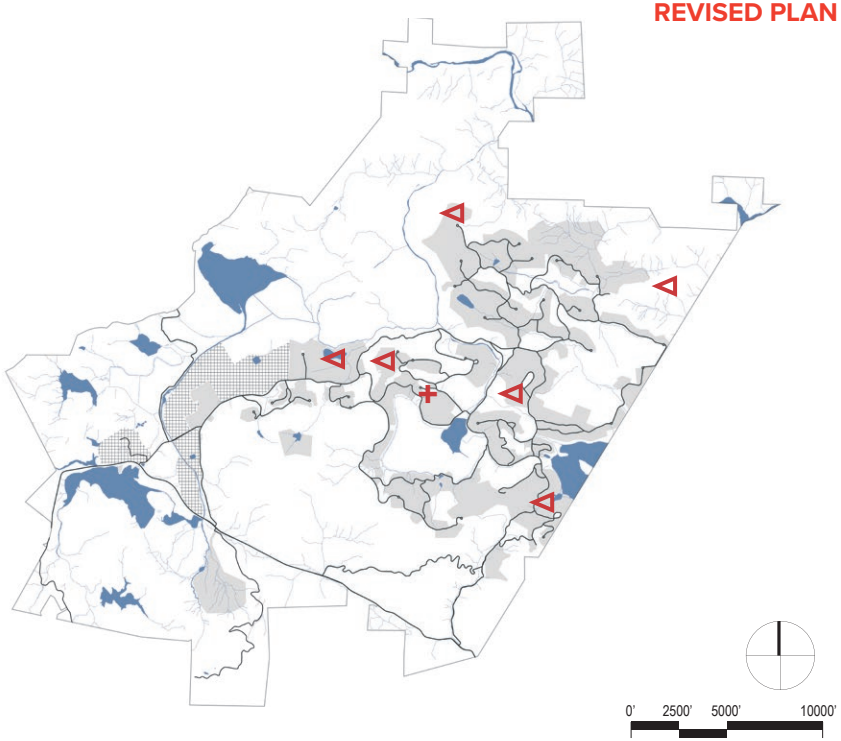
Early Detection System
An early detection system will immediately identify potential fires igniting on site or in the vicinity. This system includes a high-definition camera installed in the center of the resort.

Emergency Notification Siren System
Located throughout the resort, the siren system will alert people to a wildfire emergency and announce updated information and directions.

Opt-out Communication System
All residents, visitors, and employees will be enrolled in an opt-out phone-based communication system, such as Nixle, to receive emergency notifications. This system will supplement the site-wide emergency siren system to ensure that everyone is alerted of important emergency information and updates.



REVISED PLAN



COMMUNICATION RESPONSE SYSTEM

Key communication technologies will aid in detecting and communicating wildfire emergencies.

+ **EARLY DETECTION SYSTEM**
HIGH-DEFINITION CAMERA

◁ **EMERGENCY NOTIFICATION SIREN SYSTEM**
EXACT LOCATIONS TBD

Note: *Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.*

WILDFIRE EMERGENCY RESPONSE

WILDFIRE EMERGENCY RESPONSE CENTER & REFUGE AREAS

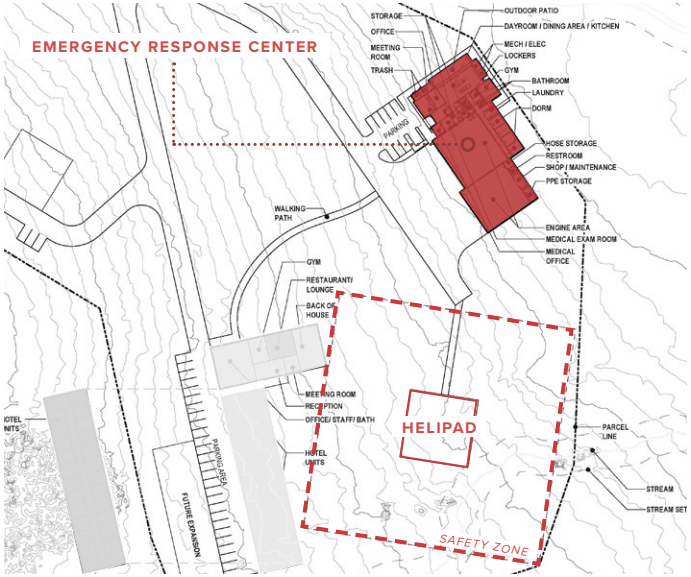
Various areas of the site will play a pivotal role in servicing evacuees and emergency personnel in the case of wildfire emergency.

Emergency Response Center

The on-site Emergency Response Center (ERC) will serve as a primary location for first responders to gather and coordinate efforts; the ERC will have on-site at least one individual with wildfire expertise related to evacuation and emergency access, the cost of which will be paid by the Guenoc Valley Project Homeowners Association (HOA). The center will include essential fire-fighting equipment and minor medical supplies. In the case of a major wildfire, the center can act as a headquarters for operations. A helipad will be located on-site for emergency landings and take-offs; an additional helipad at Detert Reservoir can also be used during emergencies. The Applicant shall pay to the South Lake County Fire Protection District ("SLCFPD"), on an annual basis, the amount determined by SLCFPD to be necessary in order to staff and equip the ERC for fire services, including wildfire response.

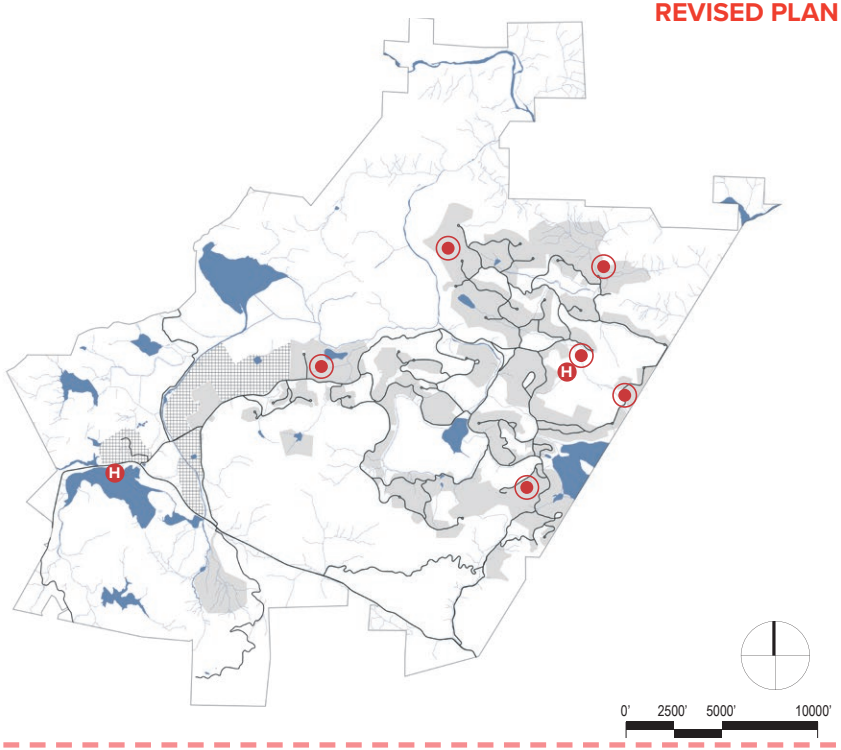
Designated Meeting & Staging Areas

Depending on the circumstances of a wildfire emergency, it may be difficult to evacuate. In this situation, residents, visitors, and employees will be directed to gather at designated meeting & staging areas where they will be provided information and assistance.



EMERGENCY RESPONSE CENTER SITE PLAN

REVISED PLAN



EMERGENCY RESPONSE CENTER & MEETING POINTS

The emergency response center is located in a centralized area to service the entire site; temporary meeting points are dispersed throughout the site in order to provide easily accessible locations for all residents, visitors, and employees.

- EMERGENCY RESPONSE CENTER
- HELIPADS
- DESIGNATED MEETING & STAGING AREAS

Note: *Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.*

WILDFIRE EMERGENCY RESPONSE

WILDFIRE WATER SUPPLY & SUPPRESSION SYSTEM

If wildfires occur, a comprehensive, on-site water supply and fire suppression system will service firefighting needs.

Fire Suppression Water Sources

Fire suppression systems will be serviced by reclaimed and non-potable water sources, such as recycled wastewater, non-treated groundwater, and surface water reservoirs. Surface water sources—including reservoirs, lakes, ponds, creeks, and streams—can also be drawn upon by fire engines or helicopter buckets in the case of a wildfire emergency.

Fire Suppression Water System

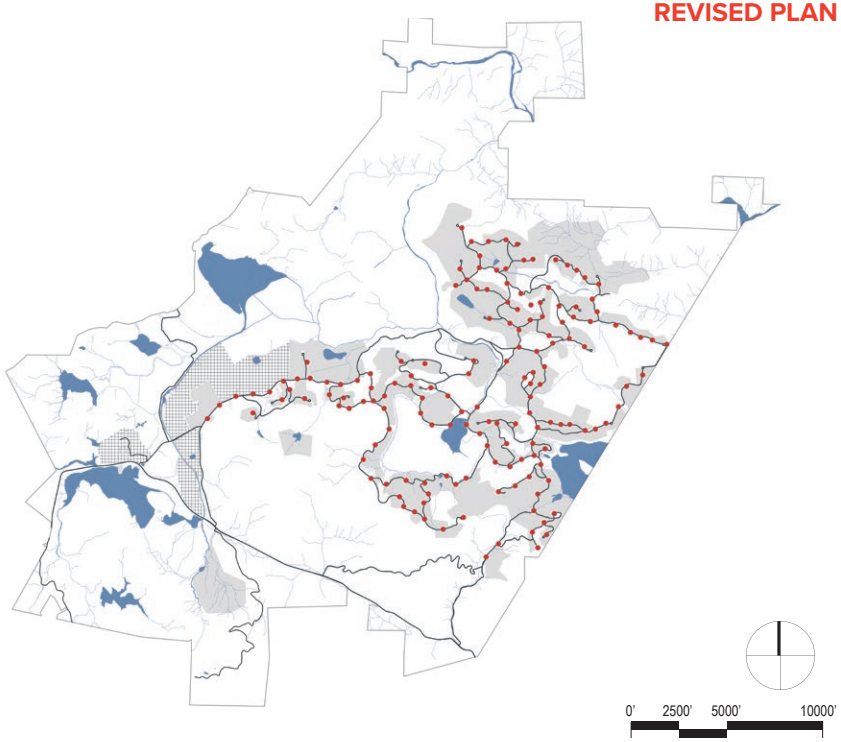
A connected non-potable water distribution system will supply all water to fire hydrants as well as interior and exterior fire suppression systems. Portions of the system will be designed as a loop to maximize flow. Booster pump systems will also maintain water pressure above minimum requirements. Additional water storage may also be established in areas further from water sources for wildfire emergencies.

Fire Hydrants

All hydrants will have the capacity to maintain a minimum of a two-hour flow. Hydrants will be located within close proximity to roadways and spaced to maintain required flow to all parts of the site.



REVISED PLAN



WILDFIRE WATER SUPPLY & SUPPRESSION SYSTEM

A network of fire hydrants and surface water sources will service the entire site.

- **FIRE HYDRANTS**
- **WATER SOURCES**
  RESERVOIRS, LAKES, PONDS, CREEKS & STREAMS

Note: *Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments.*

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SOURCES

1 meter Digital Elevation Model (DEM), U.S. Geological Survey, 2018

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Note: The wind direction diagrams represent general wind patterns during annual fire season (08/01- 11/30). For detailed information on wind speed and directions, please refer to the data source.

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Note: Data source information ranges from the year 1998 to 2015; data for site from 1998; data source crosswalked with the California Wildlife Habitat Relationship (CWHR); CWHR categories simplified seven categories for illustrative purposes of the exhibit.

2023 UPDATED PLAN REVISIONS

- **Cover Page:** Revision dates added
- **Table of Contents:** Propane Gas System page in Table of Contents removed
- **Pg 1:** Description of primary local fire department revised to “South Lake County Fire Protection District”; Last paragraph revised to describe the initial or first revision of the plan in June 2020
- **Pg 2:** Plan revised to incorporate updated parcel extents, roadway layouts, emergency access connector roadway, and voluntary property boundary fire break layout; note added to refer to tentative and final maps for detailed site plan information
- **Pg 3:** Implementation and Management section revised to incorporate three settlement agreement commitments:
  - The Applicant shall pay to the South Lake County Fire Protection District (“SLCFPD”), on an annual basis, the amount determined by SLCFPD to be necessary in order to staff and equip the Emergency Response Center for fire services, including wildfire response.
  - The HOA will be required by its by-laws to contract with a wildfire expert for the duration of the Project, with costs paid by the HOA. The HOA shall consult with the wildfire expert in its implementation of wildfire prevention measures, including those identified in the Wildfire Prevention Plan.
  - Project’s Emergency Response Center will have on-site at least one individual with wildfire expertise related to evacuation and emergency access, the cost of which will be paid by the Guenoc Valley Project Homeowners Association (HOA).
- **Pg 5:** Plan revised to incorporate update parcel extents and roadway layouts; note referencing the “Resort at Trout Flat” removed; note added to refer to tentative and final maps for detailed site plan information
- **Pg 16:** Plan revised to incorporate updated parcel extents, roadway layouts, emergency access connector roadway, and voluntary property boundary fire break layout; section revised to demonstrate 10 foot wide hardscape shoulder on each side of the roadway, within the overall 50 foot wide fuel reduction zone; last paragraph revised to describe that each subdivision group’s full roadway fire break network shall be completed at the time of recording the last final map for that subdivision group; note added to refer to tentative and final maps for detailed site plan information
- **Pg 17:** Plan revised to incorporate updated parcel extents and roadway layouts; note added to refer to tentative and final maps for detailed site plan information
- **Pg 19:** Plan revised to incorporate updated parcel extents and roadway layouts; note added to refer to tentative and final maps for detailed site plan information
- **Pg 20:** Spelling error for “pivotal” corrected; description of “hot work” added
- **Pg 21:** Plan revised to incorporate updated parcel extents and roadway layouts; spelling error for “power lines” corrected; note added to refer to tentative and final maps for detailed site plan information
- **Pg 22:** Page to be removed
- **Pg 26:** Spelling error for “power lines” corrected
- **Pg 27:** Spelling error for “power lines” corrected
- **Pg 28:** Spelling error for “fireplaces” corrected
- **Pg 31:** Plan revised to incorporate updated parcel extents, roadway layouts, and emergency access connector roadway; note added to refer to tentative and final maps for detailed site plan information
- **Pg 32:** Plan revised to incorporate updated parcel extents and roadway layouts; note added to refer to tentative and final maps for detailed site plan information
- **Pg 33:**
  - Plan revised to incorporate updated parcel extents and roadway layouts; note added to refer to tentative and final maps for detailed site plan information
  - Emergency Response Center description revised to incorporate two settlement agreement commitments:
    - Project’s Emergency Response Center will have on-site at least one individual with wildfire expertise related to evacuation and emergency access, the cost of which will be paid by the Guenoc Valley Project Homeowners Association (HOA).
    - The Applicant shall pay to the South Lake County Fire Protection District (“SLCFPD”), on an annual basis, the amount determined by SLCFPD to be necessary in order to staff and equip the Emergency Response Center for fire services, including wildfire response.
- **Pg 34:** Plan revised to incorporate updated parcel extents and roadway layouts; note added to refer to tentative and final maps for detailed site plan information

2024 UPDATED PLAN REVISIONS

- **PG 3:** Description of the project's general code compliance expanded to include compliance with Public Resources Codes 4290 and 4291.
- **PG 20:** Description of the project's general construction code compliance expanded to include compliance with the Wildland Urban Interface (WUI) Ignition Resistant Construction standards.
- **PG 26:** Description of the project's fire-resistant planting design and selection expanded to include compliance with Model Water Efficient Landscape Ordinance (MWELO).
- **PG 28:** Description of Class A rated roof systems (1) expanded to provide general strategies to reduce wildfire risk for green roofs.

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Memorandum

June 19, 2024

To: Laura Hall (Lake County)
Cc: Kevin Case, Pete Zola (Mahaman Development)
From: Cody Anderson, P.E.
Project Number and Name: 18-016.1 Maha Guenoc Valley

RE: Community Development Department, Building Division - Fire Suppression Comments

Laura,

1.0 EXECUTIVE SUMMARY

This memorandum confirms that the Guenoc Valley Project's onsite workforce housing "Santa Clara" site will provide adequate means for fire suppression, per comments received from the County's Community Development Department (CDD), Building Division, comment 4 in the Application Incomplete letter dated May 20, 2024.

2.0 DETAILS

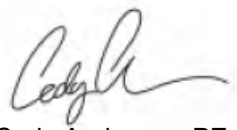
Under the Building Permit Application, the Project will provide adequate water for fire suppression in accordance with International Fire Code (IFC). Fire hydrants served via water main in the Right-of-Way may be preferred by the Project and Fire Marshal, however, if it is determined that flow rates or pressures are inadequate from existing distribution infrastructure, onsite water storage will be provided. This onsite water storage would be calculated per the National Fire Protection Association (NFPA) 1142 "Standard on Water Supplies for Suburban and Rural Firefighting".

The final determination for fire suppression methods will be made after Entitlements are granted and prior to Building Permit submittal. The presented methods will comply with all relevant code requirements.

3.0 CONCLUSIONS

No compliance issues are anticipated for Project fire suppression, and the required detail will be provided during the Building Permit application process.

Regards,



Cody Anderson, PE
Managing Principal

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DESIGN ENGINEERS

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Memorandum

June 19, 2024

To: Laura Hall (Lake County)
Cc: Kevin Case, Pete Zola (Mahaman Development)
From: Cody Anderson, P.E.
Project Number and Name: 18-016.1 Maha Guenoc Valley

RE: Community Development Department, Building Division - Flood Zone Comments

Laura,

1.0 EXECUTIVE SUMMARY

This memorandum confirms that the Guenoc Valley Project will conform with the requirements outlined in the Code of Federal Regulations (CFR) for flood zone development, per comments received from the County's Community Development Department (CDD), Building Division, comment 1.a. and b. in the Application Incomplete letter dated May 20, 2024.

2.0 DETAILS

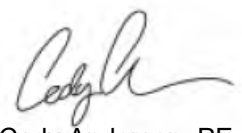
Under the Building Permit Application, the Project will demonstrate that any construction which falls within Federal Emergency Management Agency (FEMA) mapped flood zones A (areas with a 1% annual chance of flooding) and D (areas with possible but undetermined flood hazards) will be reasonably safe from flooding in accordance with the CFR Title 44, Chapter I, Part 60, Section 60.3 (a)(3). This will be demonstrated through design which adequately anchors to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic or hydrostatic loads, including the effects of buoyancy; construction with materials resistant to flood damage; with construction methods and practices that minimize flood damage; and with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

The Project will also demonstrate its compliance with CFR Title 44, Chapter I, Part 60, Section 60.3 (b)(3). The subdivision maps will clearly indicate the base flood elevation data for the Project, as it includes greater than 50 lots or 5 acres. Care will be taken to clearly translate any old vertical datums which may be provided via survey to NAVD88 for consistency in reporting.

3.0 CONCLUSIONS

No compliance issues are anticipated for Project flood zone development, and the required detail will be provided during the Building Permit application process.

Regards,



Cody Anderson, PE
Managing Principal

Appendix G

Water Supply

Appendix G-1

Water Supply Assessment Addendum Memorandum

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Technical Memorandum

June 21, 2024

To: MAHA
Re: Water Supply Wells

Prepared by: Fred Yukic, PE
Reviewed by: Amelia Luna, PE

RE: Guenoc Valley Project Water Supply Wells

A Water Supply Assessment (WSA) was prepared in 2020 by Luhdorff and Scalmanini (L&S) for the MAHA Resort at Guenoc Valley Project (Project) and was included in the Final EIR (FEIR) prepared by Lake County in July 2020. Since the publication of the FEIR, additional groundwater extraction wells have been constructed and tested on the Guenoc Valley site in accordance with the recommendations of the WSA and FEIR. Sherwood reviewed the well construction details and capacity test data provided by MAHA for wells at the site. This memorandum is intended to provide an overview of the groundwater well construction and testing that has been completed to date. Please find attached five packages, one for each well intended for potable water use, for submission to the County. Each package contains the DWR Well Completion Report, well capacity test, and water quality summary.

Potable Water Demand and Supplies

Five potable wells at the site meet the criteria of the State of California for public water systems with a DWR Well log, a well seal equal to or greater than 50 feet, and a well capacity test. The well capacity tests were conducted in accordance with the State of California Code of Regulations Section 64554 by appropriately registered professionals. Some of the wells require additional water quality testing, but the water can be treated to remove any undesirable constituents, if necessary. Note that the FEIR, WSA, and other supporting technical documents prepared at the time of the initial Project review used the term ‘domestic’ and ‘potable’ water well interchangeably.

The five potable wells that currently exist on the Guenoc Valley site are identified by the following names:

Bohn Ridge 3
Camping Area (CA PW-1), now renamed Wilderness Area
Farmstead 1 (FS PW-1)
Red Hills 1 (RH PW-1)
Tephra 4

At the time of the 2020 EIR, only the Camping Area (now named Wilderness Area) well had been constructed and tested. Table 2-3 of the WSA listed the proposed and existing wells as they were understood in 2020, including those existing wells and springs that were not anticipated to provide Project-related water at the time. Since the WSA was prepared, the Farmstead 1 and Red Hills 1 wells that were listed in the WSA were drilled, constructed, and tested. One additional well, the Bohn Ridge 3 well, was drilled in the Bohn Ridge area of the property in Lake County. The Tephra 4 well was an existing well in the Tephra area of the property that was not listed in the WSA that was evaluated for potable use and found to meet the State criteria. The Bohn Ridge 3 and Tephra 4 wells are now proposed as part of the potable supply wells that would serve the Project because they were constructed to potable well standards and the water from these wells can be used for non-potable supply as needed. Because the water from Bohn Ridge 3 and Tephra 4 wells can be used for either potable or non-potable water supply, there is no significant impact on the project ability to meet non-potable supply. The WSA included a proposed well in the McCreary area of the property, which was very low yield when drilled, so it is not included in the list of potable wells.

The total potable water supply capacity for the five wells tested is 645.5 gallons per minute (gpm) which is equal to 1,042 acre feet per year (afy) (see Table 1). This total well capacity was determined in accordance with California Code of Regulations, Title 22, Section 64554, “New and Existing Source Capacity”, with the capacity of each well equal to 50% of the flow maintained during a 10-day pump test. The combined potable well capacity is sufficient to meet the potable water demand shown in the DEIR attachment "Revised Water Demand Analysis for Maha Resort at Guenoc" dated October 22, 2019, for both Phase 1 (249 afy) and the Total Estimated Water Demand which is the combined Phase 1 and Future Phase (685 afy). The potable well capacity currently available on the Guenoc Valley site is in excess of the Total Estimated Water Demand by 357 afy (Table 2).

Because the wells can pump at a higher rate than the DDW Flow Capacity, as shown in the column labeled Flow (gom) in Table 1, the wells can be operated for shorter periods of time and still produce the volume of water needed to meet the demand. This allows for periods when the wells are not operated (i.e., “rested”). For example, the Bohn Ridge Well can be pumped at 550 gpm for 4 hours and produce the same volume of water as the Bohn Ridge Well pumped at 275 gpm for 8 hours, so the higher flow rate allows for periods of “rest”.

Table 1. MAHA Resort at Guenoc Well Capacities

WELL	DWR Well Log	Well Seal Depth (feet)	Well Test Date	Well Tester	Flow (gpm)	Test duration (days)	DDW Flow Capacity (gpm) [50% of 10-day test]	DDW Capacity (afy)	Water Quality Testing
Potable Wells									
Bohn Ridge -3	yes	100	1/19/2021	North State Drilling	550	10	275		Need lab for SOCs, perchlorate, radiological
CA PW-1	yes	100	10/3/2019	L&S	346	10	173		Good
FS-1	yes	50	11/18/2019	L&S	305	9	152.5		Good
RH-1	yes	100	1/19/2021	North State Drilling	43	10	21.5		Manganese high. Need lab for SOCs, perchlorate, radiological, boron
Tephra-4	yes	50	1/19/2021	North State Drilling	47	10	23.5		Need lab for SOCs, perchlorate, radiological
TOTAL							645.5	1,042	
Non-potable Wells									
Crossroads					264	6.6 days	264		good, need boron lab test
TOTAL							264	426	

Table 2. MAHA Resort at Guenoc Water Budgets for Areas Not Using Surface Water

	Demand (afy)		Supply (afy)		Supply - Demand (afy)
	Phase 1	Future	Groundwater	Recycled Water	Balance
Potable Water	249	436	1,042		357
Non-Potable Water (irrigation)	482	760	426	326	-490
Overall Total					-133

Non-Potable Water Demand and Supplies

Non-potable water will be supplied by a combination of groundwater, recycled water generated onsite, and surface water for areas within the Place of Use (POU) for the existing water rights. Areas outside the POUs will not use surface water for water supply, so will be supplied by a combination of groundwater and recycled water. The Project still intends to use existing groundwater wells, recycled water, and additional wells to be constructed to meet Future Non-Potable Water Demand (Table 2).

For non-potable water supply, the Crossroads well was constructed and tested in 2002 according to L&S in their Water Supply Assessment (2021). The Crossroads Well was test pumped for 6.6 days, pumping at 264 gpm which is equal to 426 afy (see Table 1). The Crossroads well water was tested by an analytical laboratory and found to produce good quality water (see attached lab report).

Phase 1 will also generate 163 afy of recycled water (Table 4-7 of the WSA). Therefore, there are 589 afy of non-potable water available to supply Phase 1 which exceeds the Phase 1 non-potable demand of 482 afy.

The non-potable Total Estimated Water Demand for areas outside of the POUs, which is the combined Phase 1 and Future Phase (1,242 afy), will be met by recycled water (which increases to 326 afy at full build-out of the Project) and groundwater. Because potable water can be used to supply non-potable uses, the excess 357 afy of potable water that can currently be produced on the site can be used to meet this demand. Therefore, the deficit of non-potable water at full build-out is 133 afy. To supply the 133 afy of non-potable water for full buildout of the Project, additional non-potable wells will be drilled, constructed, developed and tested which are capable of supplying 133 afy. This volume is equivalent to one additional well with a capacity of 82 gpm. These one to two new non-potable wells would not be required until commencement of development of Future Phases of the Project, so they have not been constructed at this time.

Existing wells on the site shown in Tables 1, 2, and 3, and test drilling at the site shown in Table 3, indicate that drilling and construction of well(s) that produce 82 gpm is technically feasible. There are three existing supply wells on the site that are not part of the project, two for non-potable irrigation (Tephra 1 and 2) and one for potable water supply (Lodge Well) that have an estimated combined pumping rate of 120 gpm which demonstrate the technical feasibility of drilling and constructing additional wells.

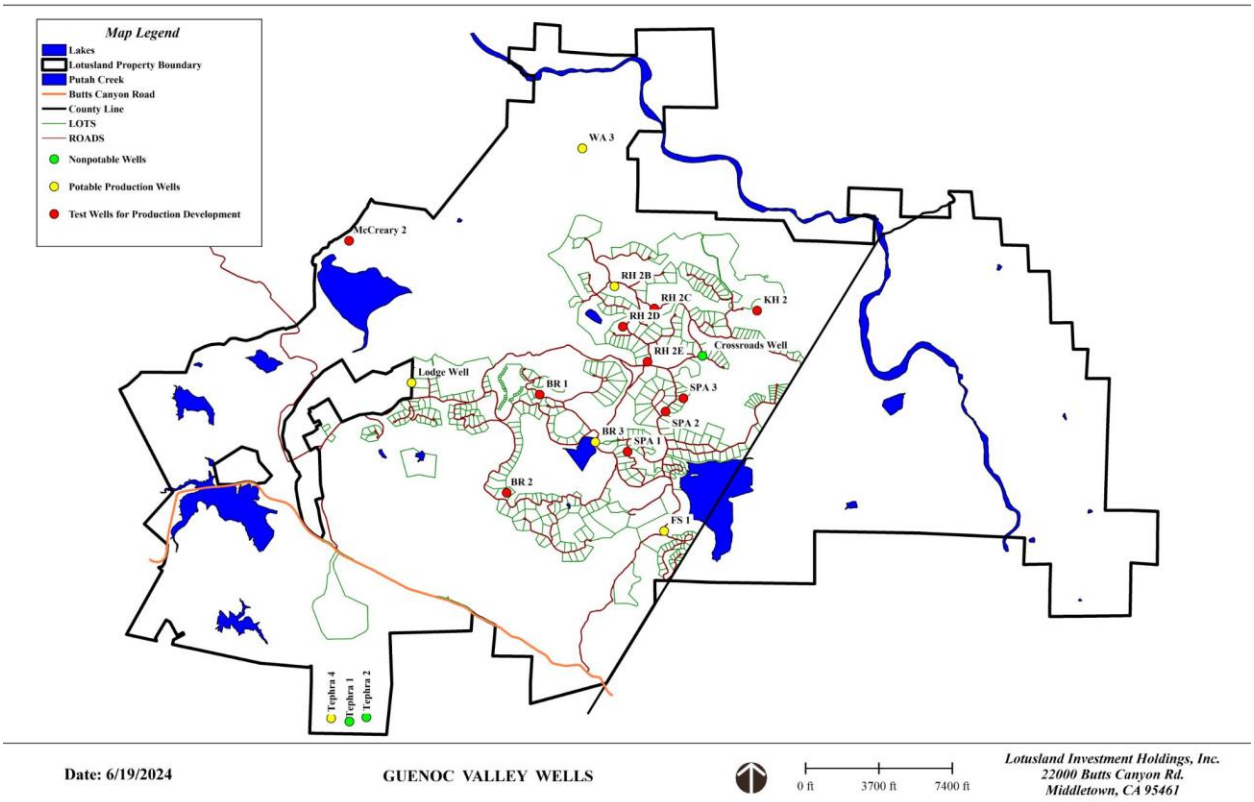
In addition, the exploratory drilling program advanced eleven additional borings at various locations across the site as shown in Figure 1. At three of these locations a PVC casing was installed in the boring, a submersible pump was installed, and the boring was test pumped with results showing a total of 131 gpm from these three borings. At the other eight borings a PVC casing could not easily be installed due to drilling conditions, so these borings were pumped using the air lift method which does not provide as accurate a measurement of flow, with the combined output of an estimated 505 gpm.

The other existing wells and exploratory drilling program demonstrate the presence of groundwater at numerous locations beneath the site with pump tests indicating rates greater than the additional non-potable demand required for future phases.

Table 3. MAHA Resort at Guenoc Other Existing Wells and Exploratory Test Drilling

Well	Use	Air Lift Pumping Rate (gpm)	Constant Rate Pumping Test (gpm)	Remarks
Other Existing Wells				
Tephra 1	Non-potable Production		75	Existing in use for Tephra Vineyards
Tephra 2	Non-potable Production		25	Existing in use for Tephra Vineyards
Lodge Well	Potable Production		20	Existing in use for Lodge and Nursery
Total			**120**	
Exploratory Test Drilling				
BR 1	Test	50		
BR 2	Test	80		
KH 2	Test		31	PVC casing placed in well, pump placed, water pumped, no well constructed
McCreary 2	Test		44	PVC casing placed in well, pump placed, water pumped, no well constructed
RH 2	Test	50		
RH 2C	Test	70		
RH 2D	Test	50		
RH 2E	Test	80		
SPA 1	Test	50		
SPA 2	Test		28	PVC casing placed in well, pump placed, water pumped, no well constructed
SPA 3	Test	75		
Total		**505**	**131**	

Figure 1. MAHA Resort at Guenoc Existing Wells and Exploratory Test Drilling



Dry and Very-Dry Year Groundwater Availability

Section 4.1.5 of the WSA prepared by L&S dated February 2020 presents an analysis of current and projected future groundwater availability using the Basin Characterization Model (BCM) of California developed by the U.S. Geological Survey (USGS). The BCM simulates watershed hydrologic processes for monthly time steps based on observed precipitation, potential evapotranspiration, soil survey data, and geologic conditions.

Recognizing that climate change presents the potential to alter water availability in the future, the analysis performed for the WSA further incorporated a range of possible groundwater availabilities to account for the potential for variation due to climate change. The BCM outputs provided by the USGS include projected future runoff and recharge at the model cell level developed by running the BCM with inputs for future meteorological conditions, including precipitation and air temperature, provided by global climate models.

The WSA projected short-term (years 2020 – 2029) groundwater availability in a dry year to be 6,570 afy and in a very dry year to be 4,800 afy on the Guenoc Valley site. Future years (2030 – 2040) groundwater availability was projected to be 4,950 afy in a dry year and 3,740 afy in a very dry year (accounting for climate change). These groundwater availability projections reflect what is available below the property and do not differentiate between potable or non-potable, which is a factor of well construction and not overall availability. The total demand of 1,926 afy is less than the available groundwater supplies of 3,740 afy in a very dry year, indicating that there is sufficient water available in the subsurface beneath the project site even in a very dry year.

In addition, all of the project wells identified are located outside the mapped boundaries of the Colloyami and Coyote Groundwater Basins identified by the California DWR, both of which are very low priority basins for sustainable groundwater management due to low groundwater use and no documented impacts on groundwater level, storage, quality or subsidence. In addition, both groundwater basins are estimated by the DWR to contain 7,000 af of useable storage capacity, and current groundwater usages of 1,414 afy and 3,250 afy, respectively. Based on these boundaries, usable storage capacity and current groundwater use, the groundwater withdrawal from the project wells will not have an impact on wells on neighboring properties.

Well Testing Report 1:

Bohn Ridge 3

Wagner&Bonsignore
Consulting Civil Engineers, A Corporation

Nicholas F. Bonsignore, P.E.
Robert C. Wagner, P.E.
Paula J. Whealen

Martin Berber, P.E.
Patrick W. Ervin, P.E.
David P. Lounsbury, P.E.
Vincent Maples, P.E.
Leah Orloff, Ph.D, P.E.
David H. Peterson, C.E.G., C.H.G.
Ryan E. Stolfus

MEMORANDUM

To: Sherwood Design Engineers, Inc.
Attn: Mr. Peter Haase, MS, PE

From: David H. Peterson, CEG 1186, CHG 86

Date: January 7, 2021

Re: **Proposed Well Test Procedures,**
Bohn Ridge Production Well 3 (BR PW-3)
Guenoc Ranch, 22000 Grange Road
Middletown, Lake County, California

This memorandum outlines the proposed test procedures to determine the capacity of a recently drilled water well completed in bedrock, identified as the Bohn Ridge Production Well 3, in a pumping test. As shown on the *Bohn Ridge Production Well 3 (BR PW 3) Site Plan*, Attachment 1, The well is located on the Guenoc Ranch property, about 8.1 miles east of the town of Middletown, in Lake County, California.

The well was completed in December 2020 and a well completion report has not yet been prepared. As shown on the *Vicinity Geologic Map*, Attachment 2 (Fox and others, 1973), the well was drilled in an area underlain by meta-graywacke sandstone, greenstone, and metachert of the Jurassic-Cretaceous age Franciscan Complex (map symbol *KJfm* on Attachment 2).

The specific procedures for performing a pump test for a well completed in bedrock (i.e., primary production is from secondary permeability features such as fractures and cracks) are described in Section 64554(g), Title 22 of CCR. Additionally, Section 64554(e) of Title 22 outlines the information about the proposed well test required by the State Water Resources Control Board. The information required by Section 64554(e) is listed below in italics, followed by the provided information.

(1) The name and qualifications of the person who will be conducting the test;

The testing will be conducted by Well Industries Inc. of Chico, California, a California-licensed C-57 Contractor (#812678). During the test, a California-certified Hydrogeologist will be available to provide geologic consultation, as needed.

(2) The proposed test's pumping discharge rate, based on the design rate determined during well development and/or a step-drawdown test.

From discussions with Well Industries/North State Drilling, the well reportedly produced about 500 gallons per minute during development and initial testing. We understand the test pumping rate will also be in this range.

(3) A copy of a United States Geological Survey 7½ minute topographic map of the site at a scale of 1:24,000 or larger (1 inch equals 2,000 feet or 1 inch equals less than 2,000 feet) or, if necessary, a site sketch at a scale providing more detail, that clearly indicates;

(A) The well discharge location(s) during the test, and

(B) The location of surface waters, water staff gauges, and other production wells within a radius of 1000 feet;

See the attached *Well Location Map*, Attachment 3, reproduced at a scale of 1:24,000, for possible well discharge locations, surface waters, and production wells.

(4) A well construction drawing, geologic log, and electric log, if available;

The well was drilled and constructed in December 2020 by Well Industries/North State Drilling of Chico, California. A Well Completion Report has not yet been prepared. In discussions with representatives of North State Drilling, we understand the well was drilled and completed to a depth of 640 feet.

(5) Dates of well completion and development, if known;

The well was reportedly completed and developed during December 2020.

(6) Specifications for the pump that will be used for the test and the depth at which it will draw water from the well;

As previously discussed, the well was never put into production. The well was reportedly constructed to a depth of 640 feet with 10-inch diameter casing. The static water level was measured at 15 feet below ground surface (BGS) at completion of well development in December 2020. Presumably, the pump will be set near the bottom of the well, to allow for drawdown during pumping. However, pump selection and depth will be made by the pump contractor.

(7) A description of the methods and equipment that will be used to measure and maintain a constant pumping rate;

Measurement of the pumping rate will be performed using a flow meter and totalizer installed in the pump discharge line. Pump equipment and discharge rate will be monitored throughout the test to maintain a constant pumping rate.

(8) A description of the water level measurement method and measurement schedule;

Water level changes measurements will be obtained using a tape-style electronic water level meter. The water levels measurements will be collected at a minimum, as required in Section 64554 (f) or (g), depending on the geologic classification of the formation. However, data may be collected at more frequent intervals to provide additional data and to assess the progress of the test.

(9) For wells located in or having an influence on the aquifer from which the new well will draw water, a description of the wells' operating schedules and the estimated amount of groundwater to be extracted, while the new well is tested and during normal operations prior to and after the new well is in operation;

As shown on the *Well Location Map*, Attachment 3, production wells in the vicinity of the Bohn Ridge well are the Farmstead PW-1 well, about 1.1 miles southeast, and the Red Hill PW-1 well, about 1.5 miles north. The Farmstead PW-1 is located in an area mapped by the USGS (Fox and others, 1973, see Attachment 2) as underlain by serpentinite bedrock. The Bohn Ridge PW-3 well is mapped within the Franciscan Complex, and the hydraulic connectivity between these bedrock units is not known. However, given the distance between the wells, the potential for pumping interference is low. The Red Hill PW-1 well is completed in basaltic lava flows of the Clear Lake Volcanics, which overlie the Franciscan Complex and serpentinite units. Groundwater in the Red Hill PW-1 well was reportedly encountered within the Clear Lake Volcanics. Given the distance between the Red Hill and Bohn Ridge wells and differing bedrock aquifer conditions, it is unlikely that there is direct hydraulic connection between these wells.

The Red Hill PW-1, Farmstead PW-1 and Bohn Ridge PW-3 well were drilled to provide water supply for planned development of the Guenoc Ranch. The wells have not been put into production and specific operating schedules and feasible amounts of groundwater to be pumped have not yet been determined.

(10) A description of the surface waters, water staff gauges, and production wells shown in (3)(B);

The nearest staff gauge, operated by the USGS, is located along Putah Creek, about 3.8 miles to the northwest. As shown on the *Well Location Map*, Attachment 3, the nearest surface waters are Lower Bohn Lake, immediately west of the well, which is fed by an

intermittent drainage to the northeast. Nearby production wells include the Red Hill PW-1 well and Farmstead PW-1 well, described in (9) above.

(11) A description of how the well discharge will be managed to ensure the discharge doesn't interfere with the test;

We understand that the water from the well test will be discharged into Upper Bohn Lake, which is located about 120 feet west.

(12) A description of how the initial volume of water in the well's casing, or bore hole if there is no casing at the time, will be addressed to ensure it has no impact on the test results; and

Typically, drawdown and dewatering of the well casing both occur fairly rapidly at the beginning of the test. During this period, the slope of the drawdown plot is (as indicated by a semi-log plot) is generally flatter and non-linear. Water levels will be collected at more frequent intervals during the early portion of the test and plotted (semi-log plot) to identify when the data fall on a straight-line plot. This typically indicates that initial water in the casing has been removed and that the discharge is occurring at a constant rate.

(13) A written description of the aquifer's annual recharge.

The Bohn Ridge well is located in hilly, upland areas outside of an identified groundwater basin as defined in California Department of Water Resources Bulletin 118. Published geologic maps of the vicinity indicate that the bedrock units underlying the area consist of metamorphosed sedimentary and igneous bedrock units of the Franciscan Complex and serpentinite.

Review of published precipitation maps (Cal Fire, Fire and Resource Assessment Program, 2020) indicate that average rainfall in the vicinity of the well is in the range of about 32 to 35 inches per year. Published data for Mediterranean-type climates (receiving almost no precipitation for half the year) indicates that ground-water recharge is typically on the order of 10 to 20 percent of long-term precipitation (Bouwer, ASCE, 2003). Using the average rainfall data for the site vicinity, this would be equivalent to about 3.5 to 7.0 inches of the annual recharge, or about 0.3 to 0.6 acre-feet of groundwater recharge per acre. However, given that the well is located in sloping, upland areas underlain by consolidated, fractured bedrock units, the actual recharge is likely at the lower end of this range.

cc: Lotusland Investment Holdings, Inc.
Attn. Mr. Randy Sternberg

Attachments

Bohn Ridge Production Well 3 Site Plan – Attachment 1
Vicinity Geologic Map - Attachment 2
Well Location Map - Attachment 3

References

Bouwer, H., 2003, Integrated Water Management for the 21st Century, Problems and Solutions in Perspectives in Civil Engineering, Commemorating the 150th Anniversary of the American Society of Civil Engineers: J.S. Russell, Ed., ASCE 150th Anniversary Paper, p. 79-88.

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CDM, 2006, Lake County Groundwater Management Plan: Consultant's report to the Lakc County Watershed Protection District, Final Report dated March 31, 2006, 138p.

Fox, K.F. Jr., Sims, J.D., Bartow, J.A. and Helley, E.J., 1973, Preliminary Geologic Map of Eastern Sonoma County and Western Napa County, California: U.S. Geological Survey Miscellaneous Field Studies Map 483, 4 sheets, Scale 1:62,500.

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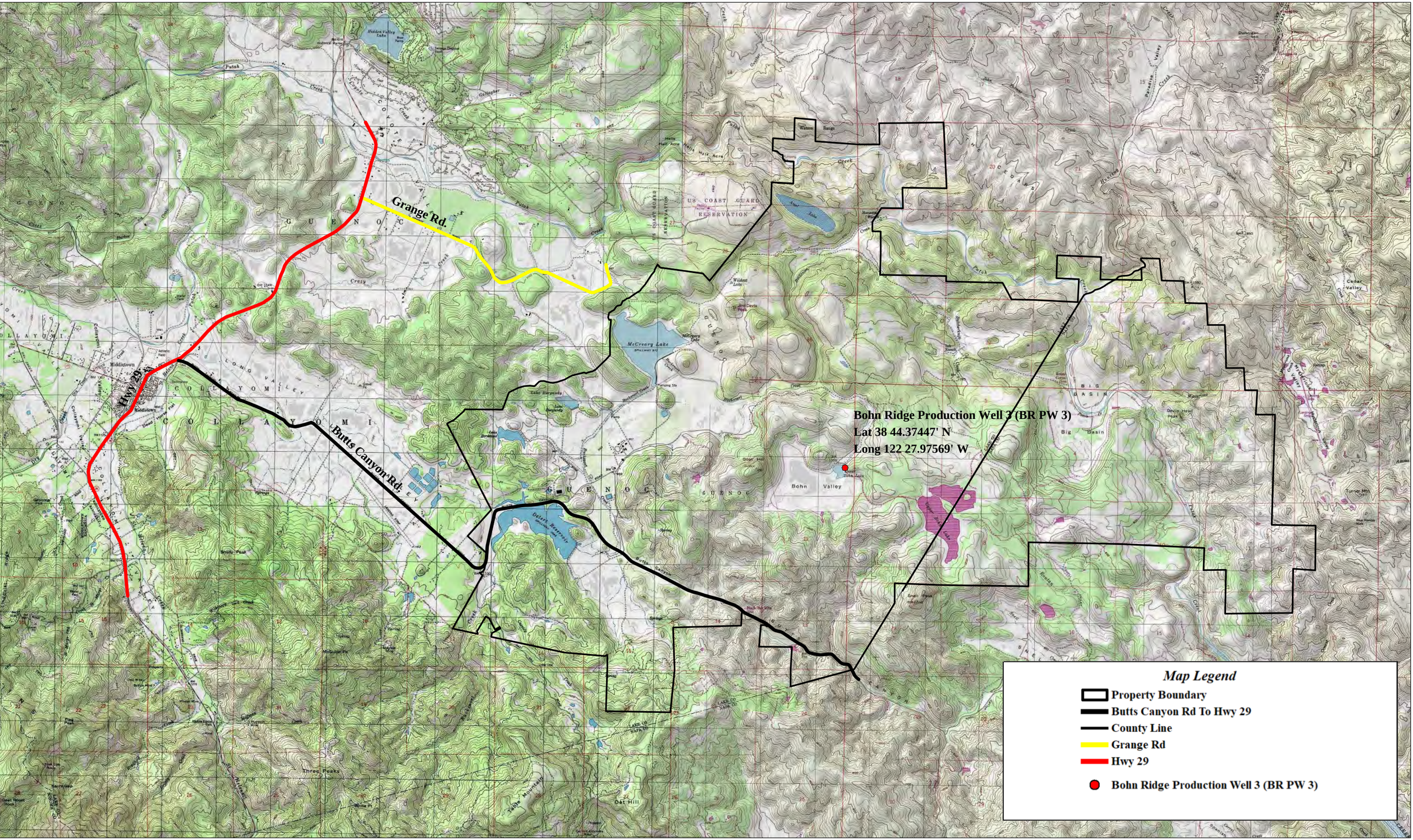
Upson, J.E. and Kunkel, F., 1955, Ground Water of the Lower Lake-Middletown Area, Lake County, California: U.S. Geological Survey Water-Supply Paper 1297, 87p.

Wagner, D.L. and Bortugno, E.J., 1982, Geologic Map of the Santa Rosa Quadrangle, California, 1:250,000: California Division of Mines and Geology Regional Geologic Map Series, Santa Rosa Quadrangle, Map No. 2A (Geology).



Date: 12/18/2020

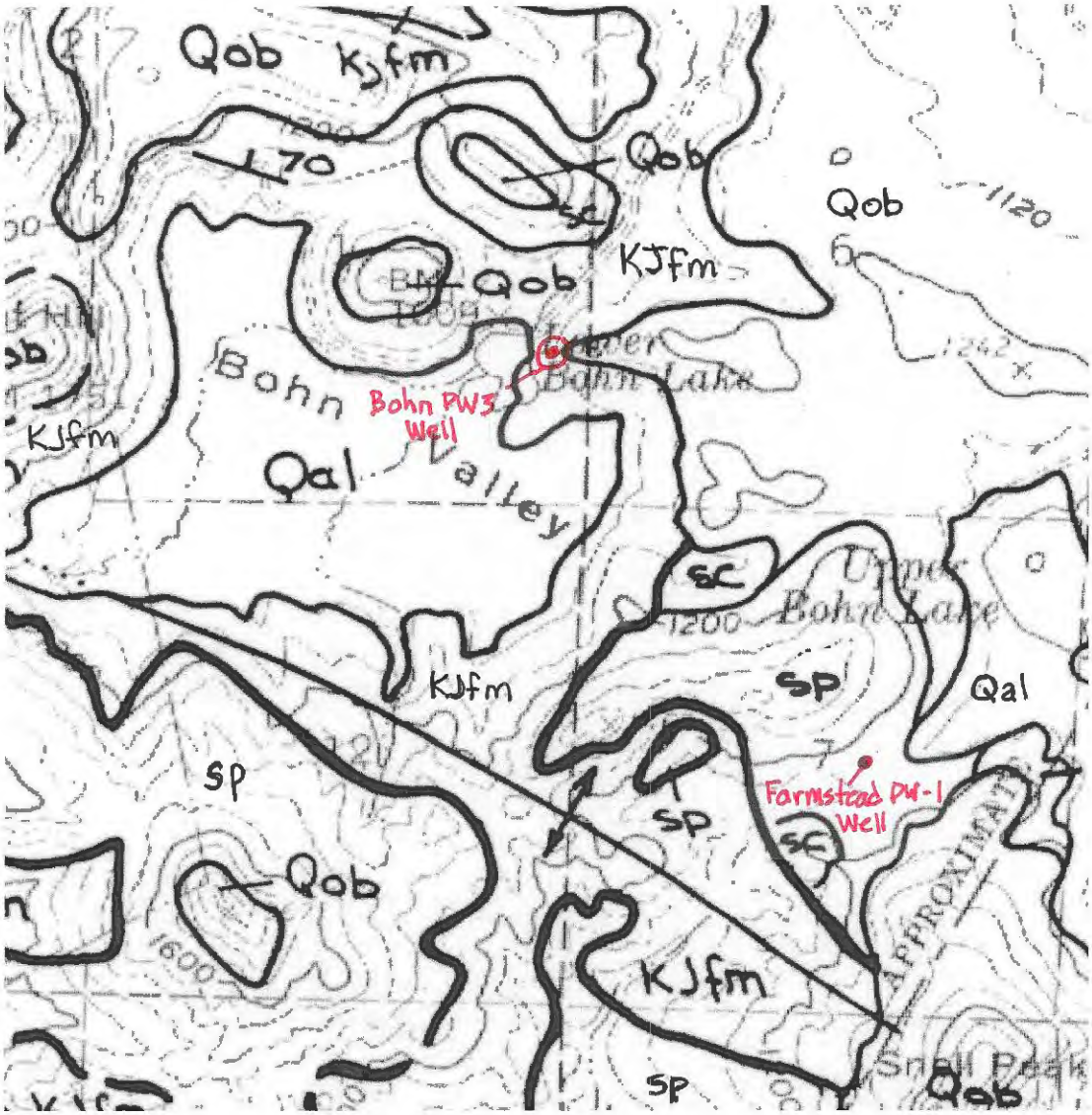
BOHN RIDGE PRODUCTION WELL 3 (BR PW 3) SITE PLAN

0 ft 5000 ft 10000 ft

Lotusland Investment Holdings, Inc.
22000 Butts Canyon Rd.
Middletown, CA 95461

Attachment 1

Reference: Fox and others, USGS, 1973

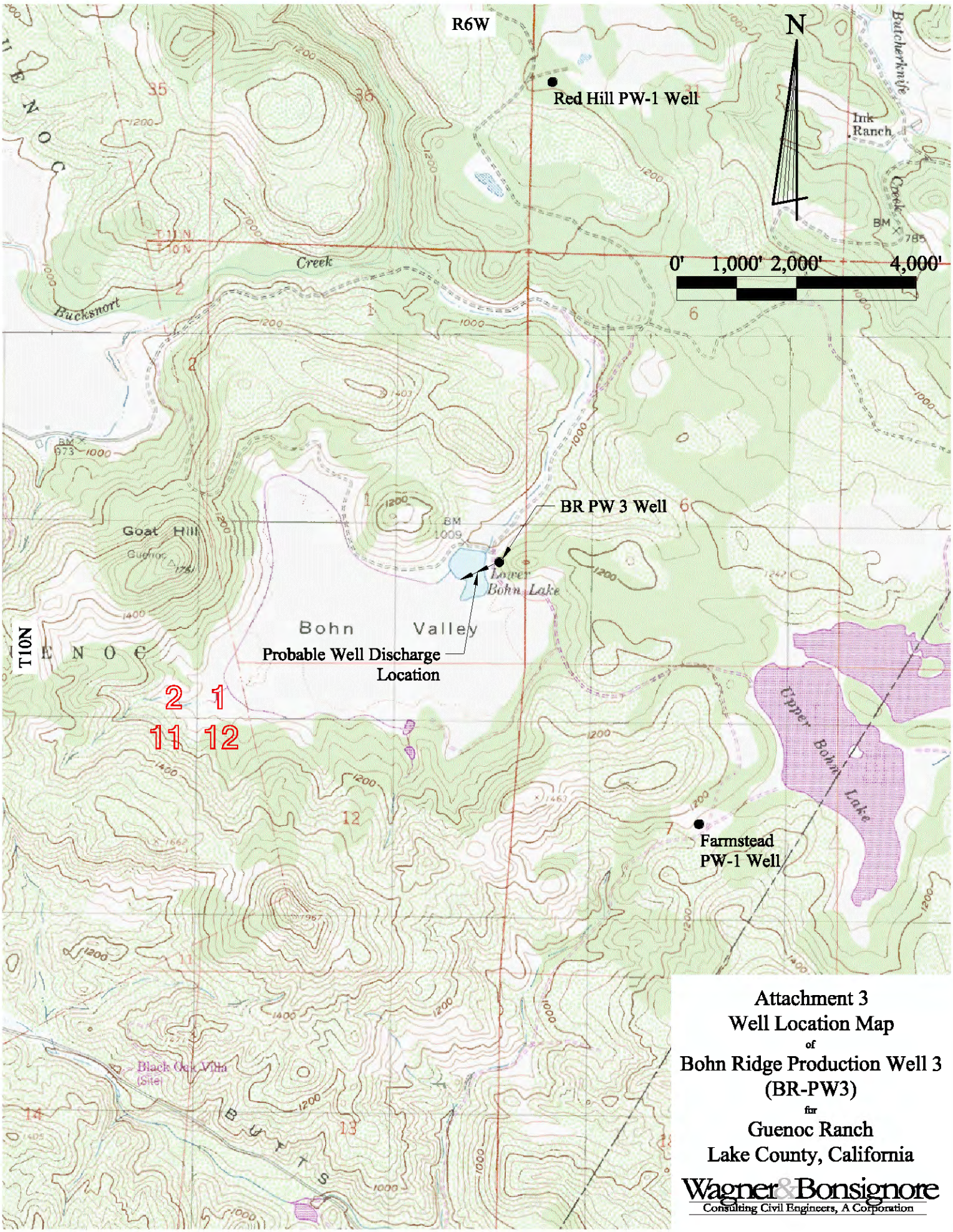


Explanation

Qal - Alluvium
Qob - Clear Lake Volcanics
KJfm - Franciscan Complex
Sp - Serpentinite
SC - silica-carbonate rock

Attachment 2

Vicinity Geologic Map
Bohn Ridge Production Well 3
Guenoc Ranch



Attachment 3
Well Location Map
of
Bohn Ridge Production Well 3
(BR-PW3)
for
Guenoc Ranch
Lake County, California

Wagner & Bonsignore
Consulting Civil Engineers, A Corporation

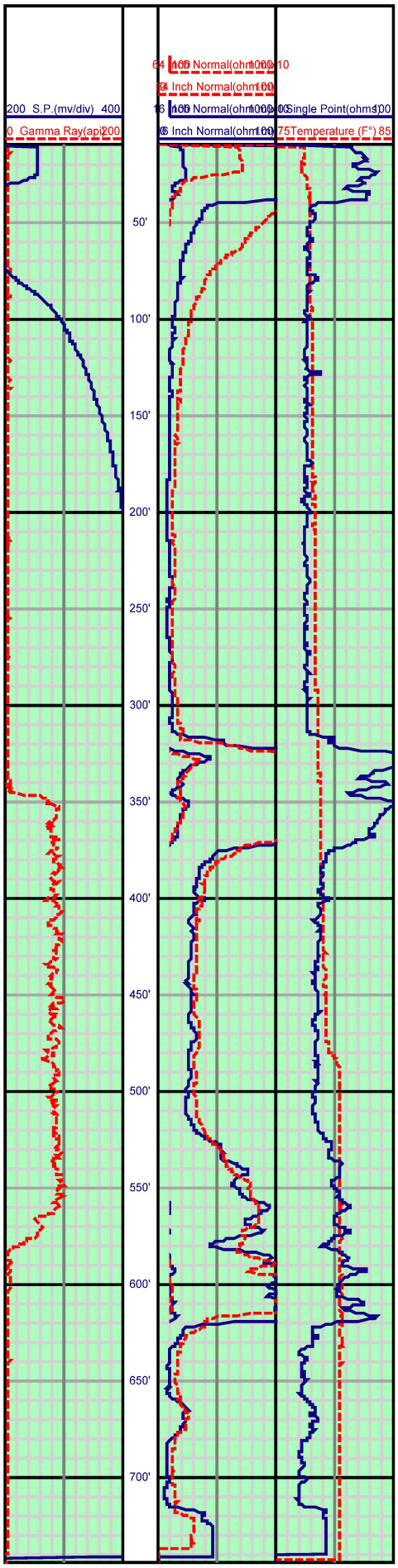
Base map per USGS 7.5 Minute Quad map for Aetna Springs.

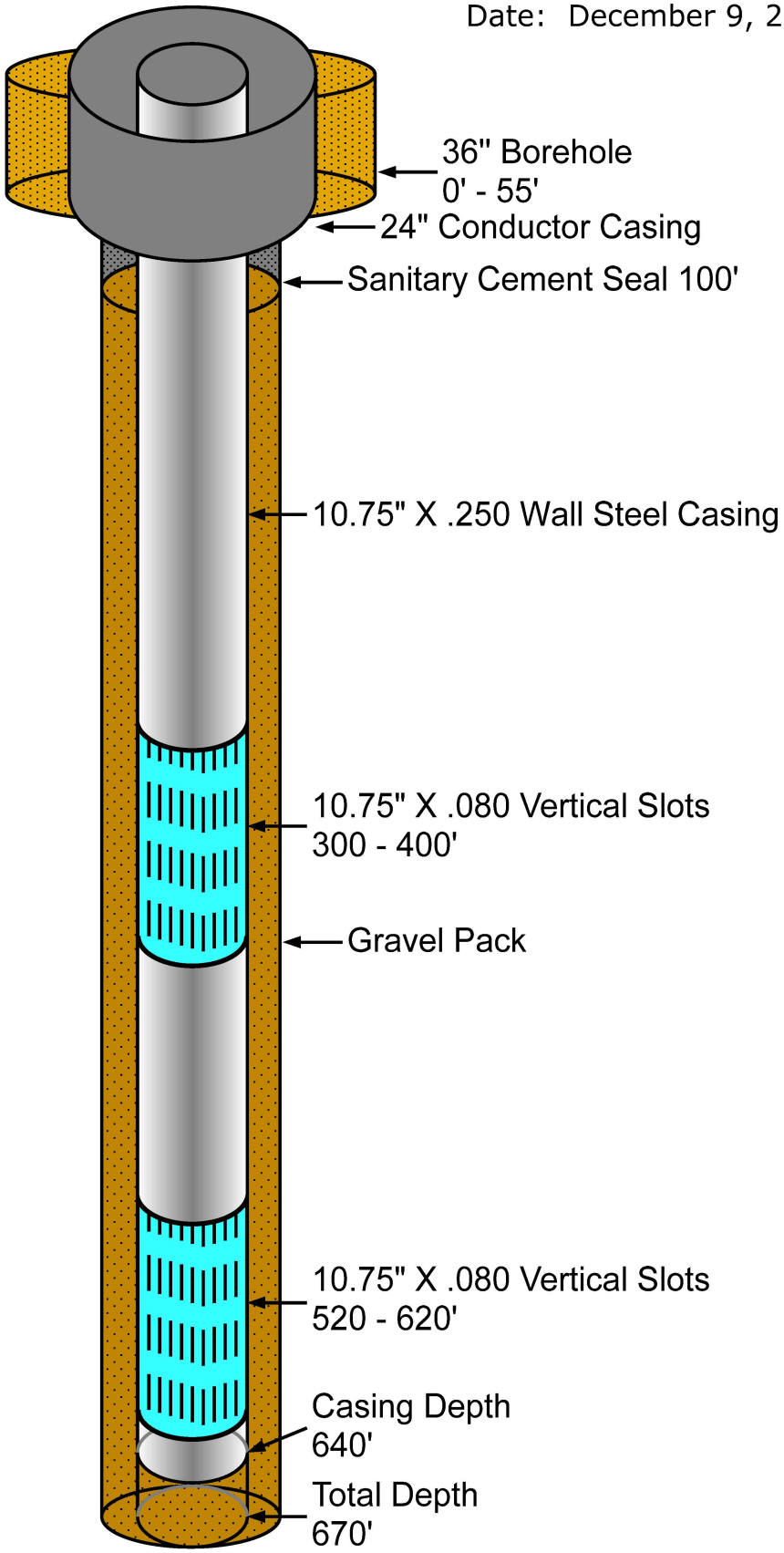
Q:\Drawings\Lotus Land Investment Holdings, Inc\Well Location Map Bohn Ridge.dwg

January 2021

BOREHOLE SCHEMATIC
BOHN 3 PW
BOHN VALLEY, INC.

Well Industries, Inc.
3282 STATE HWY 32
CHICO, CA 95973
Phone: 530-891-5545
Date: December 9, 2020





State of California

Well Completion Report

Form DWR 188 Submitted 1/20/2021

WCR2021-000719

Owner's Well Number: BOHN 3 PW | Date Work Began: 12/01/2020 | Date Work Ended: 12/09/2020

Local Permit Agency: Lake County Health Services Department - Environmental Health Division

Secondary Permit Agency: | Permit Number: WE 65470 P | Permit Date: 11/09/2020

Well Owner (must remain confidential pursuant to Water Code 13752)

Name: BOHN VALLEY, INC.,

Mailing Address: 22000 BUTTS CANYON RD

City: MIDDLETOWN | State: CA | Zip: 95461

Planned Use and Activity

Activity: New Well

Planned Use: Water Supply Public

Well Location

Address: 23790 BOHN VALLEY RD

City: MIDDLETOWN | Zip: 95461 | County: Lake

Latitude: 38 Deg. 44 Min. 23.3159 Sec. N | Longitude: -122 Deg. 27 Min. 58.2839 Sec. W

Dec. Lat.: 38.73981 | Dec. Long.: -122.46619

Vertical Datum: | Horizontal Datum: WGS84

Location Accuracy: | Location Determination Method:

APN: 013-023-071

Township: 10 N

Range: 06 W

Section: 01

Baseline Meridian: Mount Diablo

Ground Surface Elevation: 1026

Elevation Accuracy: Unknown

Elevation Determination Method: GPS

Borehole Information

Orientation: Vertical | Specify:

Drilling Method: Direct Rotary | Drilling Fluid: Bentonite

Total Depth of Boring: 670 Feet

Total Depth of Completed Well: 640 Feet

Water Level and Yield of Completed Well

Depth to first water: 15 (Feet below surface)

Depth to Static Water Level: (Feet) | Date Measured: 01/09/2021

Estimated Yield*: 550 (GPM) | Test Type: Pump

Test Length: 240 (Hours) | Total Drawdown: 430 (feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to Feet		Description
0	55	SURFACE CASING
55	60	CLAY
60	80	CLAY / SHALE
80	140	SHALE
140	150	SHALE / CLAY
150	170	HARD ROCK
170	200	HARD ROCK / CLAY
200	230	CLAY
230	240	BLUE CLAY
240	260	CLAY
260	290	CLAY / HARD ROCK
290	300	CLAY
300	320	CLAY / HARD ROCK
320	350	HARD ROCK
350	390	SHALE

390	400	SHALE / CLAY
400	510	CLAY
510	520	CLAY / GRAVEL
520	530	CLAY
530	550	CLAY / GRAVEL
550	670	CLAY

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	55	Conductor or Fill Pipe	Low Carbon Steel	Grade: ASTM A53	0.375	24			SURFACE CASING
2	0	300	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	10.75			
2	300	400	Screen	Low Carbon Steel	Grade: ASTM A53	0.25	10.75	Milled Slots	0.08	VERTICAL SLOTS
2	400	520	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	10.75			
2	520	620	Screen	Low Carbon Steel	Grade: ASTM A53	0.25	10.75	Milled Slots	0.08	VERTICAL SLOTS
2	620	640	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	10.75			W/ BULLNOSE

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	100	Cement	10.3 Sack Mix		ANNULAR CEMENT SEAL
100	670	Filter Pack	Other Gravel Pack	WELL PACK	GRAVEL ENVELOPE

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	55	36
55	670	17.5

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: WELL INDUSTRIES INC
Person, Firm or Corporation

3282 HIGHWAY 32 (Address) | CHICO (City) | CA (State) | 95973 (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 01/20/2021 (Date Signed) | 812678 (C-57 License Number)

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

N — Latitude Deg/Min/Sec

W — Longitude Deg/Min/Sec

TRS:

APN:

10 Day Well Test Report

Job Name: BOHN-3 Date: 1/19/2021

Static Water Level: 15 ft Pump Setting Depth: 580 ft

Date	GPM / Totalizer	PWL	Sands / Discharge
January 9, 2021	550 GPM / 73,453 Gallons	454'	0.00 / Clear
January 10, 2021	550 GPM / 90,169 Gallons	455'	0.00 / Clear
January 11, 2021	550 GPM / 100,236 Gallons	450'	0.00 / Clear
January 12, 2021	550 GPM / 107,789 Gallons	450'	0.00 / Clear
January 13, 2021	550 GPM / 116,206 Gallons	446'	0.00 / Clear
January 14, 2021	552 GPM / 124,440 Gallons	444'	0.00 / Clear
January 15, 2021	552 GPM / 132,970 Gallons	444'	0.00 / Clear
January 16, 2021	550 GPM / 140,974 Gallons	446'	0.00 / Clear
January 17, 2021	550 GPM / 150,331 Gallons	444'	0.00 / Clear
January 18, 2021	550 GPM / 156,576 Gallons	442'	0.00 / Clear

Recorded By: Ryan P.

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

26 January 2021

Wagner & Bonsignore Engineers
Attn: David Peterson
2151 River Plaza Drive, Suite 100
Sacramento, CA 95833-4133
RE: Water Quality
Work Order: 21A1490

Enclosed are the results of analyses for samples received by the laboratory on 01/12/21 13:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Chelsea L. Sandelin For Stephen F. McWeeney
Lab Manager

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Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	01/26/21 16:47

Bay Area: 262 Rickenbacker Circle | Livermore, CA 94551 | T: 925-828-6226 | F: 925-828-6309 | ELAP# 2728
Central Valley: 9090 Union Park Way Suite 113 | Elk Grove, CA 95624 | T: 916-686-5190 | F: 916-686-5192 | ELAP# 2922
North Bay: 110 Liberty Street | Petaluma, CA 94952 | T: 707-769-3128 | F: 707-769-8093 | ELAP# 2303
San Diego: 2722 Loker Avenue West Suite A | Carlsbad, CA 92010 | T: 760-930-2555 | F: 760-930-2510 | ELAP# 3055

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Bohn Ridge PW-3	21A1490-01	Water	01/12/21 11:45	01/12/21 13:40

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Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	01/26/21 16:47

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Bohn Ridge PW-3 (21A1490-01)		**Sample Type: Water**			**Sampled: 01/12/21 11:45**				
Metals (Drinking Water) by EPA 200 Series Methods									
Calcium	**13 mg/L**	**1.0**	1	AA13965	01/14/21 13:00	01/20/21 18:37	1551	EPA 200.7	
Iron	**160 ug/L**	**100**	1	AA13965	01/14/21 13:00	01/20/21 18:37	1551	EPA 200.7	
Magnesium	**56 mg/L**	**1.0**	1	AA13965	01/14/21 13:00	01/20/21 18:37	1551	EPA 200.7	
Mercury	ND ug/L	1.0	1	AA14154	01/18/21 06:29	01/18/21 12:36	1551	EPA 245.1	
Potassium	**1.1 mg/L**	**1.0**	1	AA13965	01/14/21 13:00	01/20/21 18:37	1551	EPA 200.7	
Sodium	**15 mg/L**	**1.0**	1	AA13965	01/14/21 13:00	01/20/21 18:37	1551	EPA 200.7	
Metals by EPA 200 Series Methods									
Chromium, hexavalent	ND ug/L	1.0	1	AA14417	01/21/21 08:00	01/21/21 13:55	2303	EPA 218.6	
Metals by EPA Method 200.8 ICP/MS									
Aluminum	ND ug/L	50	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Antimony	ND ug/L	6.0	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Arsenic	ND ug/L	2.0	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Barium	**100 ug/L**	**100**	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Beryllium	ND ug/L	1.0	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Cadmium	ND ug/L	1.0	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Chromium	ND ug/L	10	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Copper	**58 ug/L**	**50**	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Lead	ND ug/L	5.0	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Manganese	**26 ug/L**	**20**	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Nickel	ND ug/L	10	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Selenium	ND ug/L	5.0	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Silver	ND ug/L	10	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Thallium	ND ug/L	1.0	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	
Zinc	ND ug/L	50	4	AA13816	01/14/21 11:50	01/15/21 13:06	1551	EPA 200.8	

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Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	01/26/21 16:47

	Result		Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Bohn Ridge PW-3 (21A1490-01)		**Sample Type: Water**				**Sampled: 01/12/21 11:45**				
Conventional Chemistry Parameters by APHA/EPA Methods										
Aggressive Index	**11.68**	**NU**	**2.00**	1	AA13965	01/14/21 13:00	01/25/21 14:21	1551	AWWA	
Bicarbonate	**330**	**mg/L**	**5.0**	1	AA14211	01/19/21 08:00	01/19/21 16:28	1551	SM2320B	
Carbonate	ND	mg/L	5.0	1	AA14211	01/19/21 08:00	01/19/21 16:28	1551	SM2320B	
Color	ND	CU	5.0	1	AA13308	01/12/21 16:00	01/12/21 16:21	2303	SM2120B	
Hydroxide	ND	mg/L	5.0	1	AA14211	01/19/21 08:00	01/19/21 16:28	1551	SM2320B	
MBAS, calculated as LAS, mw 340	ND	mg/L	0.050	1	AA13951	01/14/21 08:15	01/14/21 15:00	1551	SM5540C	
Odor	ND	T.O.N.	1.0	1	AA13308	01/12/21 16:00	01/12/21 16:21	2303	SM2120B	
pH	**7.74**	**pH Units**	**1.68**	1	AA14067	01/13/21 16:00	01/13/21 17:00	1551	SM4500-H+ B	T-14
Specific Conductance (EC)	**490**	**umhos/cm**	**20**	1	AA14067	01/13/21 16:00	01/13/21 17:00	1551	SM2510B	
Total Dissolved Solids	**320**	**mg/L**	**10**	1	AA14156	01/19/21 08:00	01/22/21 09:06	1551	SM2540C	
Turbidity	**0.39**	**NTU**	**0.25**	1	AA13308	01/12/21 16:00	01/12/21 16:21	2303	SM2130B	
Total Alkalinity as CaCO3	**270**	**mg/L**	**5.0**	1	AA14211	01/19/21 08:00	01/19/21 16:28	1551	SM2320B	
Nitrate + Nitrite as N	ND	mg/L	0.40	1	AA14587	01/25/21 14:27	01/25/21 14:29	1551	Calculation	
Hardness, Total	**264**	**mg/L**	**5**	1	AA13965	01/14/21 13:00	01/20/21 18:37	1551	SM2340B	
Miscellaneous Physical/Conventional Chemistry Parameters										
Cyanide (total)	ND	mg/L	0.10	1	AA14318	01/20/21 08:07	01/20/21 13:50	1551	10-204-00-1X	
Anions by EPA Method 300.0										
Chloride	**9.2**	**mg/L**	**0.50**	1	AA13894	01/13/21 12:54	01/13/21 12:54	1551	EPA 300.0	
Fluoride	ND	mg/L	0.10	1	AA13894	01/13/21 12:54	01/13/21 12:54	1551	EPA 300.0	
Nitrate as N	ND	mg/L	0.40	1	AA13894	01/13/21 12:54	01/13/21 12:54	1551	EPA 300.0	
Nitrite as N	ND	mg/L	0.40	1	AA13894	01/13/21 12:54	01/13/21 12:54	1551	EPA 300.0	
Sulfate as SO4	**0.92**	**mg/L**	**0.50**	1	AA13894	01/13/21 12:54	01/13/21 12:54	1551	EPA 300.0	

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2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	01/26/21 16:47

	Result		Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Bohn Ridge PW-3 (21A1490-01)		**Sample Type: Water**				**Sampled: 01/12/21 11:45**				
Microbiological Parameters by APHA Standard Methods										
Total Coliforms	**1.0**	**MPN/100mL**	**1.0**	1	AA13797	01/12/21 16:05	01/13/21 16:30	2303	SM9223B	
E. Coli	ND	MPN/100mL	1.0	1	AA13797	01/12/21 16:05	01/13/21 16:30	2303	SM9223B	
Volatile Organic Compounds by EPA Method 524.2										
Benzene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Carbon tetrachloride	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Chlorobenzene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,2-Dichlorobenzene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,4-Dichlorobenzene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,1-Dichloroethane	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,2-Dichloroethane	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,1-Dichloroethene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
cis-1,2-Dichloroethene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,2-Dichloropropane	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,3-Dichloropropene (total)	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Ethylbenzene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Methyl tert-butyl ether	ND	ug/L	3.0	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Methylene chloride	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Styrene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Tetrachloroethene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Toluene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,2,4-Trichlorobenzene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Trichloroethene	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Trichlorofluoromethane	ND	ug/L	5.0	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Trichlorotrifluoroethane	ND	ug/L	10	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Vinyl chloride	ND	ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Xylenes (total)	ND	ug/L	1.5	1	AA13266	01/12/21 16:00	01/12/21 16:56	2303	EPA 524.2	
Surrogate: Bromofluorobenzene	*85.0 %*		*70-130*		*AA13266*	*01/12/21 16:00*	*01/12/21 16:56*	2303	*EPA 524.2*	
Surrogate: 1,2-Dichlorobenzene-d4	*82.5 %*		*70-130*		*AA13266*	*01/12/21 16:00*	*01/12/21 16:56*	2303	*EPA 524.2*	

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Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	01/26/21 16:47

Notes and Definitions

QM-01	The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
T-14	Residual chlorine, dissolved oxygen, sulfite, and pH must be analyzed in the field to meet the EPA specified 15 minute hold time.
ND	Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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SGS FORENSIC LABORATORIES

Final

ANALYSIS REPORT
ASBESTOS IN DRINKING WATER
Transmission Electron Microscopy*

Client:	Alpha Analytical Lab		
Contact:	Stephen F. McWeeney	Client Number:	2096
Street:	208 Mason St.	Report Number:	T033403
City/state/zip:	Ukiah, CA 95482	Date/time Received:	1/13/21

Site:		Date filtered:	1/13/21
Job ID/PO:	21A1490	Analyst(s):	MF
Date Collected:	1/12/21	Date Analyzed:	1/25/21
Hold time, hrs:	<48	Date Reported:	1/25/21
Filter type:	25mm MCE	Date Printed:	1/25/21
Pore size:	0.22 µm		

ANALYTICAL RESULTS

Sample Number	Bohn Ridge PW-3			
Description				
Lab Sample Number	20131999			
Volume Filtered, mL	30			
Filter Area, mm2	190			
Grid Opening Area, mm^2	0.0086			
Number of GO's Analyzed	4			
Area Analyzed, mm^2	0.0344			
# Asbestos Fibers ≥10 µm	1			
Analytical Sensitivity, MFL	0.2			
Asbestos Concentration, >10um in length, MFL	**0.2**			
Asbestos Type(s) Detected**	**CH**			
95% Upper Conf. Limit, MFL	1.1			
95% Lower Conf. Limit, MFL	0.0			

0

Mark S. Floyd, Analytical Microscopy Supervisor

* Method 100.2 (EPA/600/R-94/134). Results are reported in Millions of Fibers per Liter (MFL) over 10 µm in length.

** Asbestos types: CH=chrysotile; AM=amosite; CR=crocidolite; TR=tremolite; AC=actinolite; AN=anthophyllite; ND=none detected; NA-Not Analyzed; n/a=not applicable (i.e., divide by 0); OV=overloaded; BL=blank sample; PF=prepped not analyzed.

Analytical results and reports are generated by SGS Forensic Laboratories (SGSFL) at the request of and for the exclusive use of the person or entity (Client) named on such report. Results, reports or copies of same will not be released by SGSFL to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full with approval from SGSFL. The client is solely responsible for the use and interpretation of test results and reports requested from SGSFL. This report must not be used by the client to claim product endorsement by NVLAP or any U.S. government agency. SGSFL is unable to assess the degree of hazard resulting from materials analyzed. SGS Forensic Laboratories reserves the right to dispose of all samples after a period of 30 days, according to all state and federal guidelines, unless otherwise specified.

SUBCONTRACT ORDER

Alpha Analytical Laboratories, Inc.

21A1490

SENDING LABORATORY:

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482
Phone: (707)468-0401
Fax: (707)468-5267
Project Manager: Stephen F. McWeeney

RECEIVING LABORATORY:

Forensic Analytical Laboratories
3777 Depot Rd., Ste. 409
Hayward, CA 94545
Phone :(510) 887-8828
Fax: (510) 887-4218
Terms: Net 30

Analysis	Due	Expires	Comments
21A1490-01 Bohn Ridge PW-3 [Water] Sampled 01/12/21 11:45			
Asbestos-DW SUB	01/26/21 12:00	01/14/21 11:45	

Containers Supplied:
1L Poly - Unpres (M)

☐ *Report to State*

System Name: N/A **Employed by:**

User ID: **Sampler:**

System Number:

Email: Speaks78@gmail.com

RECEIVED
JAN 13 REC'D
cym

Released By	Date	Received By	Date
[signature]	1/13/21		

alpha
Alpha Analytical Laboratories Inc.
www.alpha-labs.com
WATERS, SEDIMENTS, SOLIDS

Corporate Laboratory (1551)
208 Mason Street, Ukiah CA 95482
707.468.0401 (phone)
707.468.5267 (fax)
clientservices@alpha-labs.com

North Bay Laboratory (2303)
110 Liberty Street, Petaluma CA 94952

Bay Area Laboratory (2728)
262 Rickenbacker Circle, Livermore CA 94551

Central Valley Laboratory (2922)
9090 Union Park Way #113, Elk Grove CA 95624

San Diego Service Center
2722 Loker Ave West, Ste A, Carlsbad CA 92010

Chain of Custody - Work Order

Reports and Invoices delivered by email in PDF format

Lab No 21A1490 Pg ____ of ____

Report to	Invoice to (if different)	Project Information
Company: Wagner & Bonsignore	Contact: Taryn Smith	Project ID: Guenoc Ranch
Attn: David Peterson	Email address: tsmith@wbecorp.com	Project No: 700.3 ~~Guenoc Ranch~~
Address: 2151 River Plaza Dr., Suite 100 Sacramento, CA 95833	Address:	PO Number: ~~700.3~~
Phone/Fax: 707-484-1798 (Mobile)	Phone/Fax: 916-441-6850	
Email Address: dpeterson@wbecorp.com		

Signature below authorizes work under terms stated on reverse side.

TAT: Standard 10 days ☑ | RUSH: 5 days ○ | 48 hours ○ | Other: ____days ○ | Preapproval required

TEMP °C: Ukiah | Livermore | Elk Grove | Petaluma 4.2 | Carlsbad

Field Sampler - Printed Name & Signature: David Peterson David Peterson

Sample Identification	Sampling Date	Sampling Time	Container: 40ml VOA Vial	Plastic	Glass	Sleeve	Other	Preservative: HCL	HNO3	H2SO4	Other	None	Matrix: Drinking Water	Wastewater	Soil	Other	Total Number of Containers per Sample ID	Analysis Request: Tittle 22 - General Mineral	Tittle 22 - Inorganics	NB-Tittle 22 - General Physical	NB - Tittle 22 - Voc's - 524 DDW	Asbestos	Hexavalent Chromium	Bacteriological Analysis	Notes / DDW Source Codes
Bohn Ridge PW-3	1-12-21	11:45	✓	✓	✓													✓	✓	✓	✓	✓	✓	✓	

Relinquished by	Received by	Date	Time
David Peterson	Alonzo	1-12-21	1:40p

DDW Write On EDT Transmission? ○ Yes ☑ No

State System Number: _____

If "Y" please enter the Source Number(s) in the column above

CA Geotracker EDF Report? ○ Yes ☑ No

Global ID: Sampling Company Log Code:

EDF to (Email Address):

Travel and Site Time: | Mileage: | Misc. Supplies:

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

28 May 2021

Wagner & Bonsignore Engineers
Attn: David Peterson
2151 River Plaza Drive, Suite 100
Sacramento, CA 95833-4133
RE: Water Quality
Work Order: 21E2699

Enclosed are the results of analyses for samples received by the laboratory on 05/24/21 14:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette Poplin

Jeanette L. Poplin For Stephen F. McWeeney
Lab Manager

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch - 700.3	05/28/21 07:28

Bay Area: 262 Rickenbacker Circle | Livermore, CA 94551 | T: 925-828-6226 | F: 925-828-6309 | ELAP# 2728
Central Valley: 9090 Union Park Way Suite 113 | Elk Grove, CA 95624 | T: 916-686-5190 | F: 916-686-5192 | ELAP# 2922
North Bay: 110 Liberty Street | Petaluma, CA 94952 | T: 707-769-3128 | F: 707-769-8093 | ELAP# 2303
San Diego: 2722 Loker Avenue West Suite A | Carlsbad, CA 92010 | T: 760-930-2555 | F: 760-930-2510 | ELAP# 3055

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Bohn Ridge 3	21E2699-01	Water	05/24/21 11:33	05/24/21 14:00

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch - 700.3	05/28/21 07:28

	Result		Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Bohn Ridge 3 (21E2699-01)			**Sample Type: Water**				**Sampled: 05/24/21 11:33**			
Microbiological Parameters by APHA Standard Methods										
Total Coliforms	ND	MPN/100mL	1.0	1	AE14335	05/24/21 14:55	05/25/21 15:30	2303	SM9223B	
E. Coli	ND	MPN/100mL	1.0	1	AE14335	05/24/21 14:55	05/25/21 15:30	2303	SM9223B	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch - 700.3	05/28/21 07:28

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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San Diego Service Center
2722 Loker Ave West, Ste A, Carlsbad CA 92010

Chain of Custody - Work Order

Reports and Invoices delivered by email in PDF format

Lab No 21E2699 Pg ____ of ____

Report to	Invoice to (if different)	Project Information
Company: Wagner & Bonsignore	Contact: Tanya Smith	Project ID: Guenoc Ranch
Attn: David Peterson	Email address: tsmith@ewbecorp.com	Project No: 700.3
Address: same →	Address: 2151 River Plaza Dr. St 100 Sacramento CA 95833	PO Number: —
Phone/Fax: 707-484-1798	Phone/Fax:	
Email Address: dpeterson@ewbecorp.com		

Signature below authorizes work under terms stated on reverse side.

Field Sampler - Printed Name & Signature:

Sample Identification	Sampling Date	Sampling Time	Container: 40ml VOA Vial	Container: Plastic	Container: Glass	Container: Sleeve	Container: Other	Preservative: HCL	Preservative: HNO3	Preservative: H2SO4	Preservative: Other	Preservative: None	Matrix: Drinking Water	Matrix: Wastewater	Matrix: Soil	Matrix: Other	Total Number of Containers per Sample ID	Analysis Request: Bacteriological (coliform/coliform)	Notes / DDW Source Codes
Bohn Ridge 3	5/24/21	11:33a		X									X				1	X	

TAT
- Standard 10 days ✓
- RUSH: 5 days ○ / 48 hours ○ / Other: ___days ○ / Preapproval required

TEMP °C
- Ukiah
- Livermore
- Elk Grove
- Petaluma 15.5
- Carlsbad

Relinquished by	Received by	Date	Time
David Peterson/Dpeterson		5/24/21	1400

DDW Write On EDT Transmission? ○ Yes ✓ No

State System Number: _____

If "Y" please enter the Source Number(s) in the column above

CA Geotracker EDF Report? ○ Yes ✓ No

Global ID: Sampling Company Log Code:

EDF to (Email Address):

Travel and Site Time:	Mileage:	Misc. Supplies:

Well Testing Report 2:

Wilderness Area
[FKA Camping Area (CA PW-1)]

Luhdorff & Scalmanini
Consulting Engineers

WELL CONSTRUCTION SUMMARY

Guenoc Ranch
Wilderness Area Production Well No. 1
March 2020

INTRODUCTION

Luhdorff and Scalmanini, Consulting Engineers (LSCE) has prepared this summary report documenting the construction and testing of the Guenoc Ranch Wilderness Area Production Well No. 1 (PW). This report consists of a well drilling and construction summary, an as-built well construction drawing, a geophysical survey, pumping test hydrographs, and a water quality summary sheet.

Well Drilling and Construction

The TW was drilled and constructed by North State Drilling and Pump of Chico, California (North State). Well construction commenced on September 12, 2019 and final well testing was completed on October 13, 2019.

The borehole for the conductor casing was drilled from ground surface to a depth of 50 feet below ground surface (bgs) at a diameter of 36-inches using the bucket auger drilling method. A 24-inch O.D. x 3/8-inch wall conductor casing was installed to 50 feet bgs and cemented in place. The 17.5" diameter production borehole drilling was completed using the reverse mud rotary drilling method to a depth of 290 feet below ground surface (bgs). A geophysical survey was conducted in the production borehole after drilling. Analysis of the geophysical survey and formation samples were used to finalize the well design.

The well casing assembly consists of 130 feet of 8.625-inch O.D. x 1/4-inch wall ASTM A-53 Grade B steel blank casing, and 140 feet of 8.625-inch O.D. ASTM A-53 Grade B milled slot well screen with a 0.080-inch slot size. The screen intake sections are located from 110 to 170, 180 to 420, and 250 to 270 feet bgs. An As-Built Well Profile showing lithology, electric log, and well construction details are provided in Appendix A.

A gravel envelope of pea gravel was used to fill the annular space between the casing and the borehole from 290 to 100 feet bgs. A sanitary seal consisting of a 10.3-sack sand/cement grout was placed from 100 feet bgs to ground surface.

Initially the PW was developed by open-ended airlifting from the bottom of the casing assembly followed by swab/airlifting development. Final development was completed by pumping with a submersible pump at rates up to approximately 390 gallons per minute (gpm), the maximum rate achievable by the pump.

Pumping Tests

Two different pumping tests were performed on October 2 and October 3 through 13, 2019 to determine well and aquifer characteristics. The first pumping test consisted of a 2-hour step drawdown test while the second pumping test consisted of a 10-day constant rate test. Plots of pumping test data are provided in Appendix B.

Step-Drawdown Test

A two-hour step-drawdown test was performed on October 2, 2019. The static water level measured prior to testing was 115.58 feet bgs. The discharge rate, pumping duration, 24-hour projected drawdown, and 24-hour projected specific capacity of each step are as follows:

Discharge Rate (gpm)	Duration (min)	Drawdown (ft)	Projected 24-Hr Specific Capacity (gpm/ft)
160	120	5.94	27.0
240	120	11.94	20.1
377	120	19.95	18.9

Long Term Constant Rate Test

A 10-day constant rate pumping test was performed on October 3 through 13, 2019. The static water level prior to pumping was 115.74 feet bgs. The average discharge rate during the constant rate test was 346 gpm. After 10-days, the drawdown was 27.25 feet and the specific capacity was 12.7 gpm/ft.

Water Quality

LSCE staff collected and submitted water quality samples from the PW on October 8, 2019 for laboratory analysis at California Laboratory Services (CLS). A summary of water quality analysis results is included in Appendix B. For the constituents analyzed, all concentrations were below the maximum contaminant level (MCL).

Appendix A
Well Construction

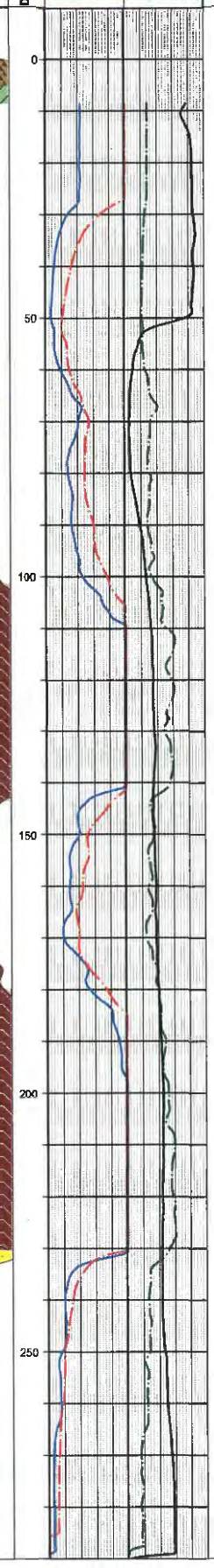
As-Built Profile
Well Completion Report
Geophysical Survey

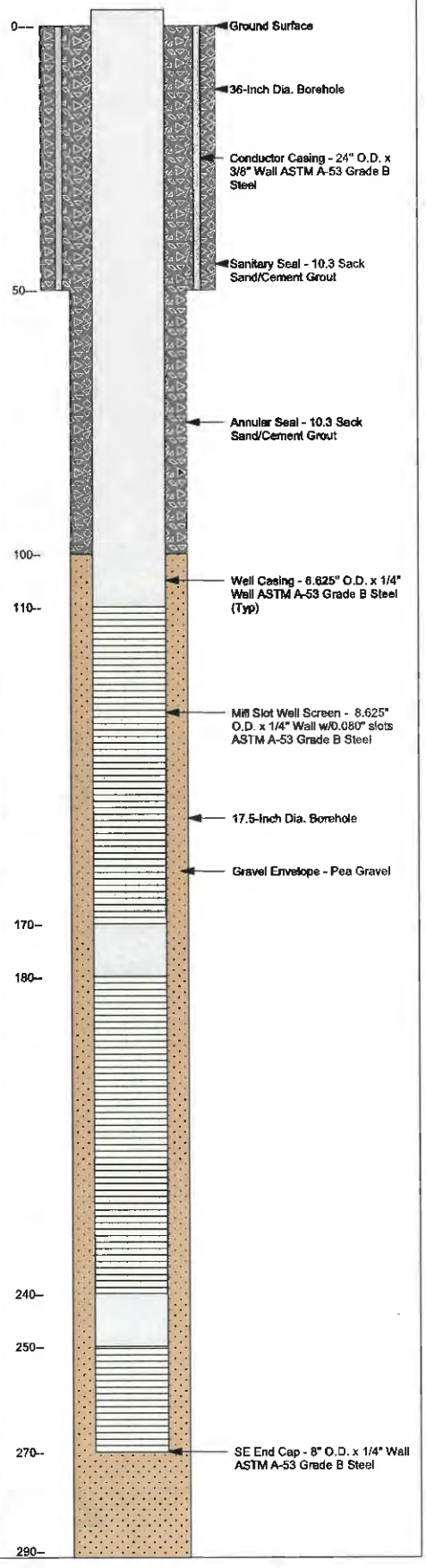
Luhdorff & Scalmanini
Consulting Engineers

Client: Guenoc	**Lat/Long:** 38.780000/-122.468611
Well Name: Wilderness Area PW-1	**GSE (ft-msl)** 1.032 +/-
LSCE #: 17-2-116	**Drill Date:** 9/12/2019 - 9/25/2019
Location: Guenoc Ranch, CA	**Drilling Method:** Reverse Mud Rotary
Geologist:	**Driller:** North State Drilling and Pump

Luhdorff & Scalmanini
Consulting Engineers

Depth (ft bgs)	Lithologic Description	Strat-Column
0	Topsoil	
	Clay	
50	Clay - with some black rock chips	
100	Rock - black, hard, possibly volcanic	
150	Rock - small chips, likely fractured	
	Rock - black, possibly volcanic	
200	Sand - fine, black	
	Sand with Gravel	
250	Clay - blue	





State of California

Well Completion Report

Form DWR 188 Submitted 11/8/2019

WCR2019-015974

Owner's Well Number: WA PW-1 | Date Work Began: 09/12/2019 | Date Work Ended: 09/25/2019

Local Permit Agency: Lake County Health Services Department - Environmental Health Division

Secondary Permit Agency: | Permit Number: WE-5236 | Permit Date: 08/29/2019

Well Owner (must remain confidential pursuant to Water Code 13752)

Name: BOHN VALLEY, INC.,

Mailing Address: ONE EMBARCADERO CTR.
STE 730

City: SAN FRANCISCO | State: CA | Zip: 94111

Planned Use and Activity

Activity: New Well

Planned Use: Water Supply Public

Well Location

Address: 23573 GRANGE RD

City: MIDDLETOWN | Zip: 95461 | County: Lake

	Deg.	Min.	Sec.		Deg.	Min.	Sec.	
Latitude	38	46	48	N	Longitude -122	28	6.9995	W

Dec. Lat.: 38.78 | Dec. Long.: -122.468611

Vertical Datum: | Horizontal Datum: WGS84

Location Accuracy: | Location Determination Method:

APN: 013-016-041-000

Township: 11 N

Range: 06 W

Section: 25

Baseline Meridian: Mount Diablo

Ground Surface Elevation: 1032

Elevation Accuracy: Unknown

Elevation Determination Method: Digital Aerial Photo

Borehole Information

Orientation: Vertical | Specify:

Drilling Method: Direct Rotary | Drilling Fluid: Bentonite

Total Depth of Boring: 290 Feet

Total Depth of Completed Well: 270 Feet

Water Level and Yield of Completed Well

Depth to first water: (Feet below surface)

Depth to Static Water Level: 116 (Feet) | Date Measured: 10/03/2019

Estimated Yield*: 370 (GPM) | Test Type: Pump

Test Length: 240 (Hours) | Total Drawdown: 18 (feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to Feet		Description
0	5	TOP SOIL
5	60	CLAY
60	90	CLAY / BLACK ROCK
90	153	HARD BLACK VOLCANIC ROCK
153	155	SMALL FRACTURED ROCK
155	230	BLACK VOLCANIC ROCK
230	240	FINE BLACK SAND
240	260	SAND W/ GRAVEL
260	270	BLUE CLAY
270	290	BLUE CLAY

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	50	Conductor or Fill Pipe	Low Carbon Steel	Grade: ASTM A53	0.375	24			
2	0	110	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	8.625			
2	110	170	Screen	Low Carbon Steel	Grade: ASTM A53	0.25	8.625	Milled Slots	0.08	24-ROW
2	170	180	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	8.625			
2	180	240	Screen	Low Carbon Steel	Grade: ASTM A53	0.25	8.625	Milled Slots	0.08	24-ROW
2	240	250	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	8.625			
2	250	270	Screen	Low Carbon Steel	Grade: ASTM A53	0.25	8.625	Milled Slots	0.08	24-ROW
2	270	290	No Casing Installed	Other	N/A					NO CASING

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	100	Cement	10.3 Sack Mix		SANITARY CEMENT SEAL
100	290	Filter Pack	Other Gravel Pack	1/4	PEA GRAVEL

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	50	36
50	290	17.5

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: WELL INDUSTRIES INC (Person, Firm or Corporation)

3282 HIGHWAY 32 (Address) | CHICO (City) | CA (State) | 95973 (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 11/08/2019 (Date Signed) | 812678 (C-57 License Number)

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

N — Latitude Deg/Min/Sec

W — Longitude Deg/Min/Sec

TRS:

APN:

STEWART
WELL LOGGING SERVICE

ELECTRIC - GAMMA RAY-TEMPERATURE LOG

Stewart Well Logging Service
Email: stewartwelllogging@gmail.com

Filing No.
D#1966

COMPANY **Well Industries Inc.**
WELL **Guenoc Valley Wilderness Area Production Well #1**
FIELD **Middletown**
STATE **California** COUNTY **Lake**

LOCATION:
Guenoc

OTHER SERVICES:
None

Job No.
0180

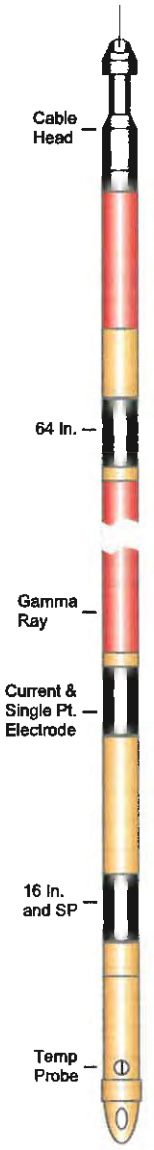
SEC: **25** TWP: **11N** RGE: **6W** LAT.: **38.7803156** LONG.: **-122.4688194**

Permanent Datum: **Ground Level** Elev.: **1025'** Ft. Elevs.: K.B. **1031'** Ft.
Log Measured From: **Ground Level** **0** Ft. Above Perm. Datum D.F. **1030'** Ft.
Drilling Measured From: **Ground Level** G.L. **1025'** Ft.

Run	One			
Date	Sep 24, 2019			
Depth-Driller	290' Ft	Ft	Ft	Ft
Depth-Logger	290' Ft	Ft	Ft	Ft
Top Logged Interval	9' Ft	Ft	Ft	Ft
Btm Logged Interval	290' Ft	Ft	Ft	Ft
Casing-Driller	24" In @ 0-50' Ft	In @ Ft	In @ Ft	In @ Ft
Casing - Logger In@Ft	24" In @ 0-50' Ft	In @ Ft	In @ Ft	In @ Ft
Bit Size	17.5 In @ 50'-290 Ft	In @ Ft	In @ Ft	In @ Ft
Time On Bottom	1330			
Type Fluid in Hole	Bentonite			
Density / Viscosity				
pH / Fluid Loss	ml	ml	ml	ml
Source of Sample	Bore Hole	Water Source		
Rm @ Mea. Temp	26.3 @ 75 °F	24.9 @ 75 °F	@ °F	@ °F
Rmf @ Mea. Temp	28 @ 75 °F	26.4 @ 75 °F	@ °F	@ °F
Rmc @ Mea. Temp	16.4 @ °F	15.6 @ °F	@ °F	@ °F
Source Rmf / Rmc				
Rm @ BHT	75 @ °F	@ °F	@ °F	@ °F
Time Since Circ.	3 Hr	Hr	Hr	Hr
Max. Rec. Temp.	77 °F	°F	°F	°F
Van No. / Location	SWLS-1 WOODLAND			
Recorded By	Stewart			
Witnessed By	Derik			

This Eagle Plot Heading Conforms To API RP 31A

ELECTRIC - GAMMA RAY-TEMPERATURE LOG TOOL



SPONTANEOUS POTENTIAL LOGS:
SP Logs record potentials or voltages developed between the borehole fluid and the surrounding formation and are representations of lithology and water quality. Recording of SP logs are limited to water-filled or mud-filled open holes.

NORMAL RESISTIVITY LOGS:
Normal Resistivity Logs record the electrical resistivity of the borehole environment with lower resistivities indicative of clays and higher resistivities being sands and gravels. Normal resistivity logs are affected by bed thickness, Borehole diameter and borehole fluid.

SINGLE POINT RESISTIVITY LOGS:
Single Point Resistivity Logs record the electrical resistance from points within the borehole to an electrical ground at land surface. Single-point resistance logs are useful in the determination of lithology, water quality, and location of fracture zones.

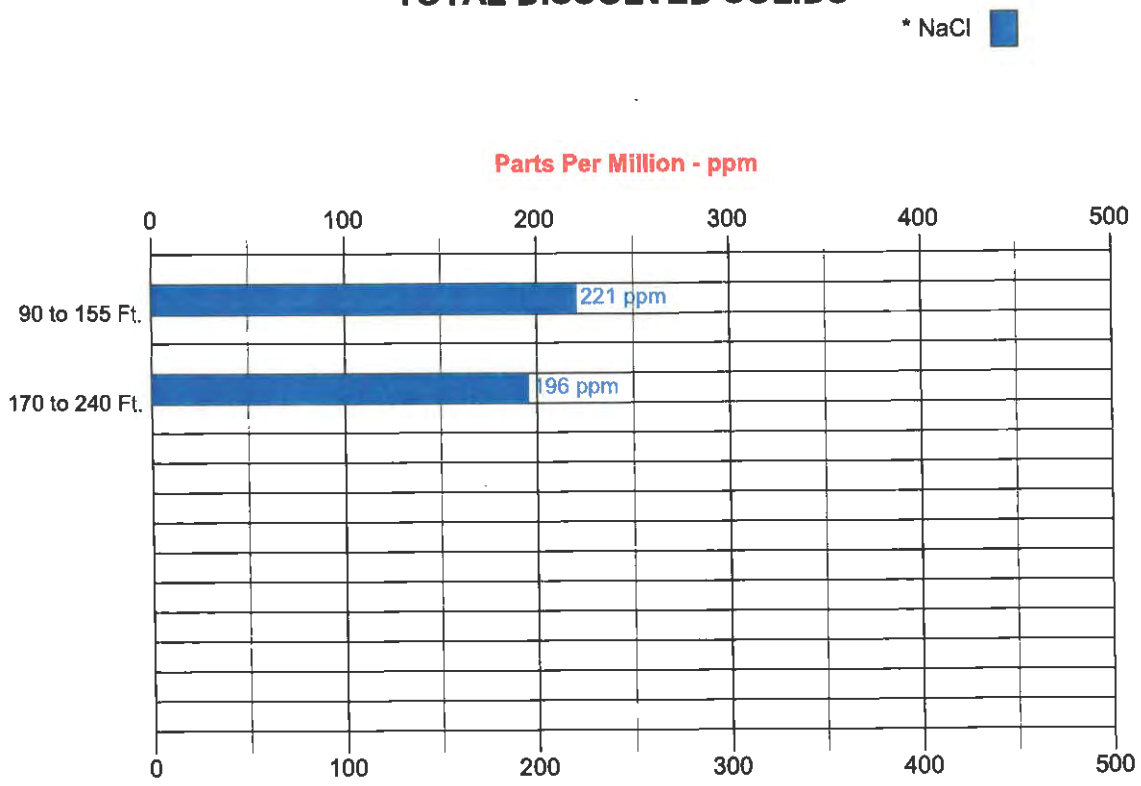
GAMMA RAY LOGS:
Gamma Ray Logs record the amount of natural gamma radiation emitted by the rocks surrounding the borehole. The most significant naturally occurring sources of gamma radiation are potassium 40 and daughter products of the uranium and thorium decay series. Clay and shale bearing rocks commonly emit relatively high gamma radiation because they include weathering products of potassium feldspar and mica and tend to concentrate uranium and thorium by ion absorption and exchange.

TEMPERATURE LOGS:
Temperature Logs record the water temparature in the borehole. Temperature logs are useful for delineating water-bearing zones and identifying vertical flow in the borehole between zones of differing hydraulic head penetrated by wells. Borehole flow between zones is indicated by temperature gradients that are less than the regional geothermal gradient.

ELECTRIC LOG SPECIFICATIONS:

Diameter	1.73 Inches
Length	8.37 Feet
Weight	21.7 Lbs.
Max. Temp	158° F
Resist. Range	0 - 10,000 ohm-m
Gamma Ray	1.97 inches long x .98 inches diameter Scintillation crystal

TOTAL DISSOLVED SOLIDS



TDS Classes

Class 1: Excellent to Good – Less than 700 ppm
Class 2: Good to Injurious – 700 to 2000 ppm
Class 3: Injurious to Poor – More than 2000 ppm

NaCl = Sodium Chloride

NOTICE

All interpretations are opinions based on inferences from electrical and other measurements and we do not guarantee the accuracy or correctness of any verbal or written interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by one of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.

REMARKS

Stewart Well Logging Service - 879 Purdue Drive - CA - 95695 Fax: Phone:530-908-6928

Well Industries Inc.
Guenoc Valley Wilderness Area Production Well #1
Sep 24, 2019

ELECTRIC - GAMMA RAY-TEMPERATURE LOG

Mult. Pages
5"/100'

DEPTHS
(Feet)

< - S.P. (20 mV/div) S.P. + >

0 Gamma Ray(api) 200

200 64 Inch Normal (ohmm²/m) x10 2000

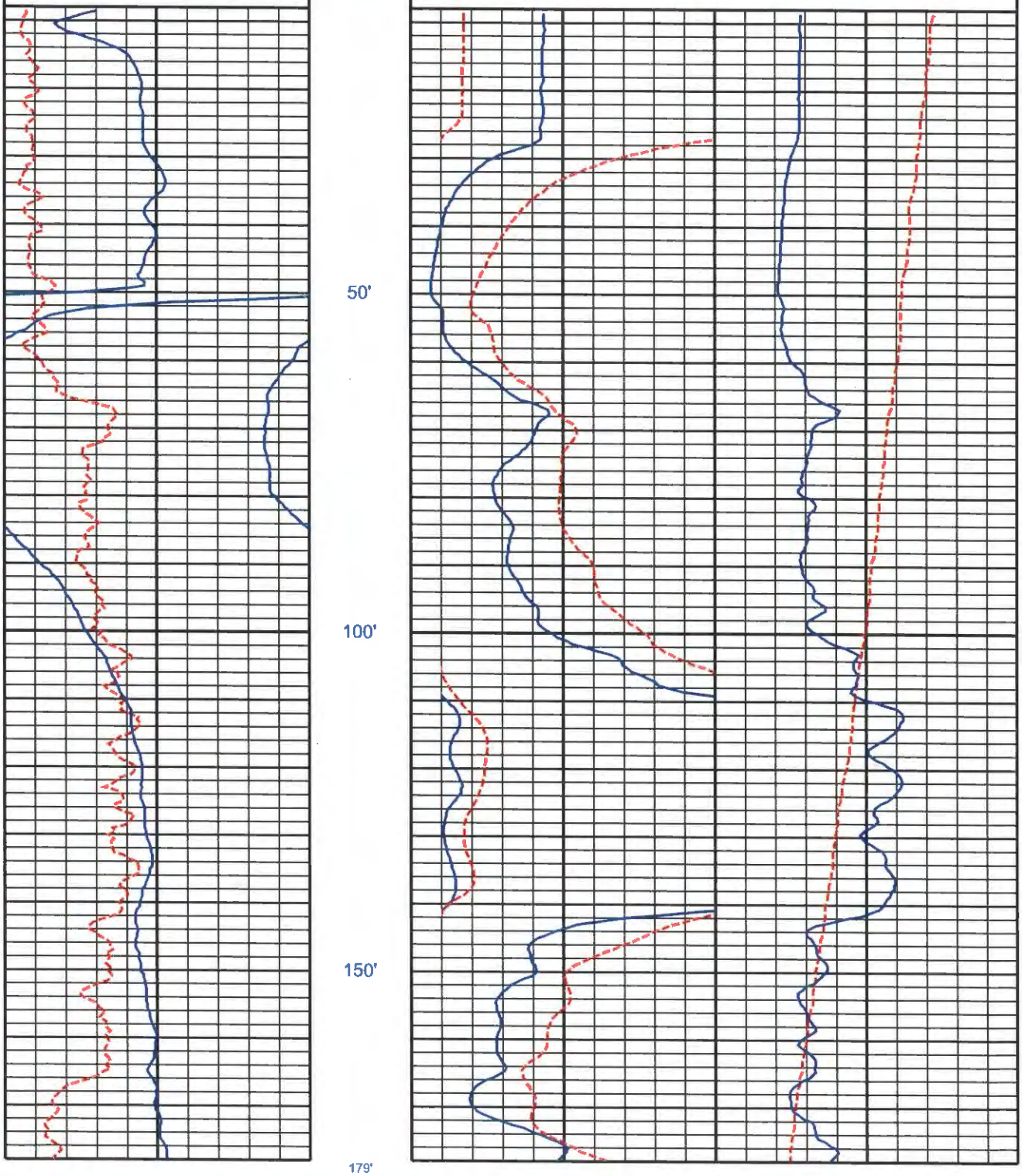
0 64 Inch Normal (ohmm²/m) 200

200 16 Inch Normal (ohmm²/m) x10 2000

0 16 Inch Normal (ohmm²/m) 200

0 Single Point(ohms) 200

70 Temperature (°F) 80



Well Industries Inc.
Guanoc Valley Wilderness Area Production Well #1
Sep 24, 2019

ELECTRIC - GAMMA RAY-TEMPERATURE LOG

Mult. Pages
5"/100'

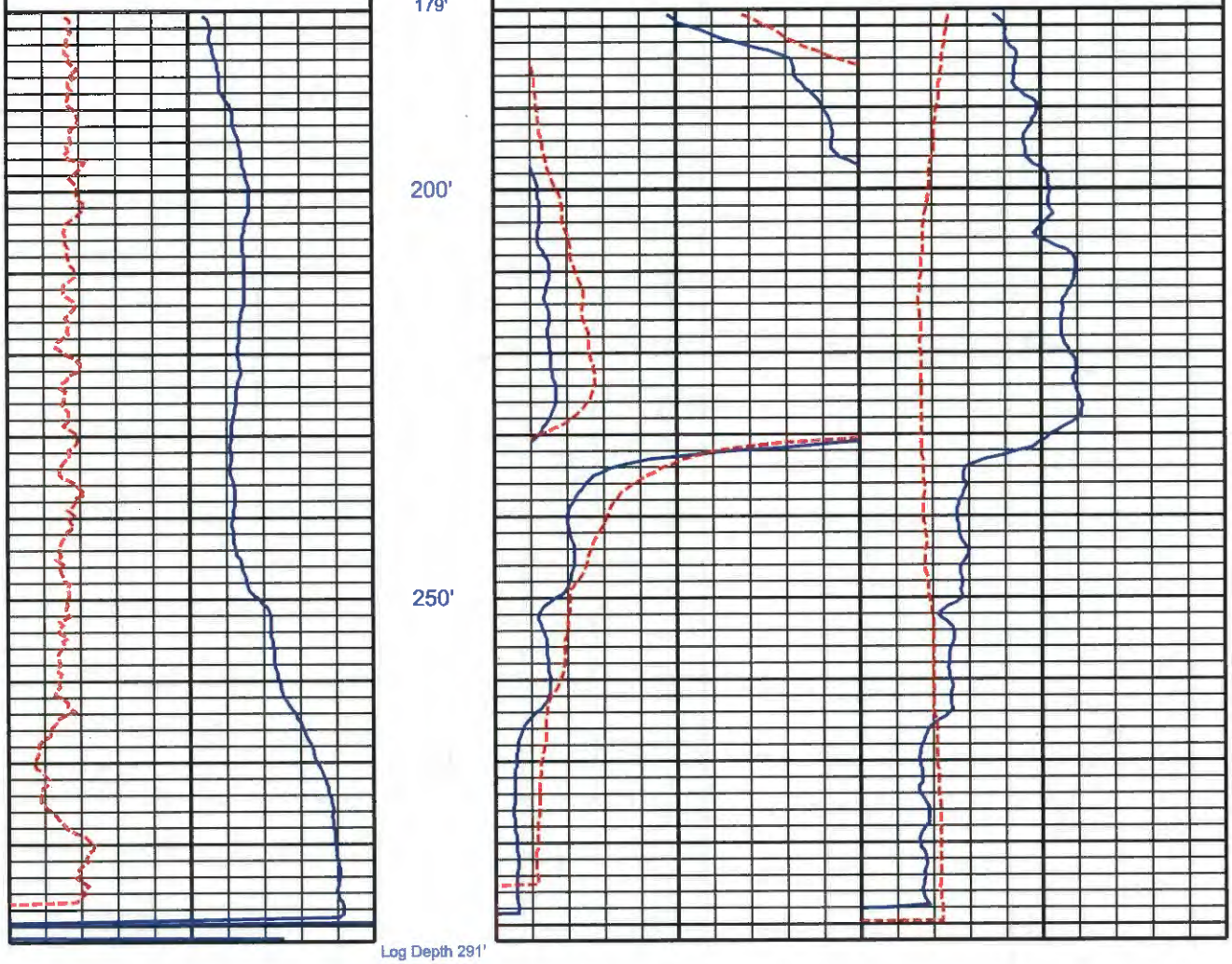
DEPTHS
(Feet)

< - S.P. (20 mV/div) S.P. + >

0 Gamma Ray(api) 200

200 64 Inch Normal (ohmm²/m) x10 2000
0 64 Inch Normal (ohmm²/m) 200
200 16 Inch Normal (ohmm²/m) x10 2000
0 16 Inch Normal (ohmm²/m) 200

0 Single Point(ohms) 200
70 Temperature (°F) 80

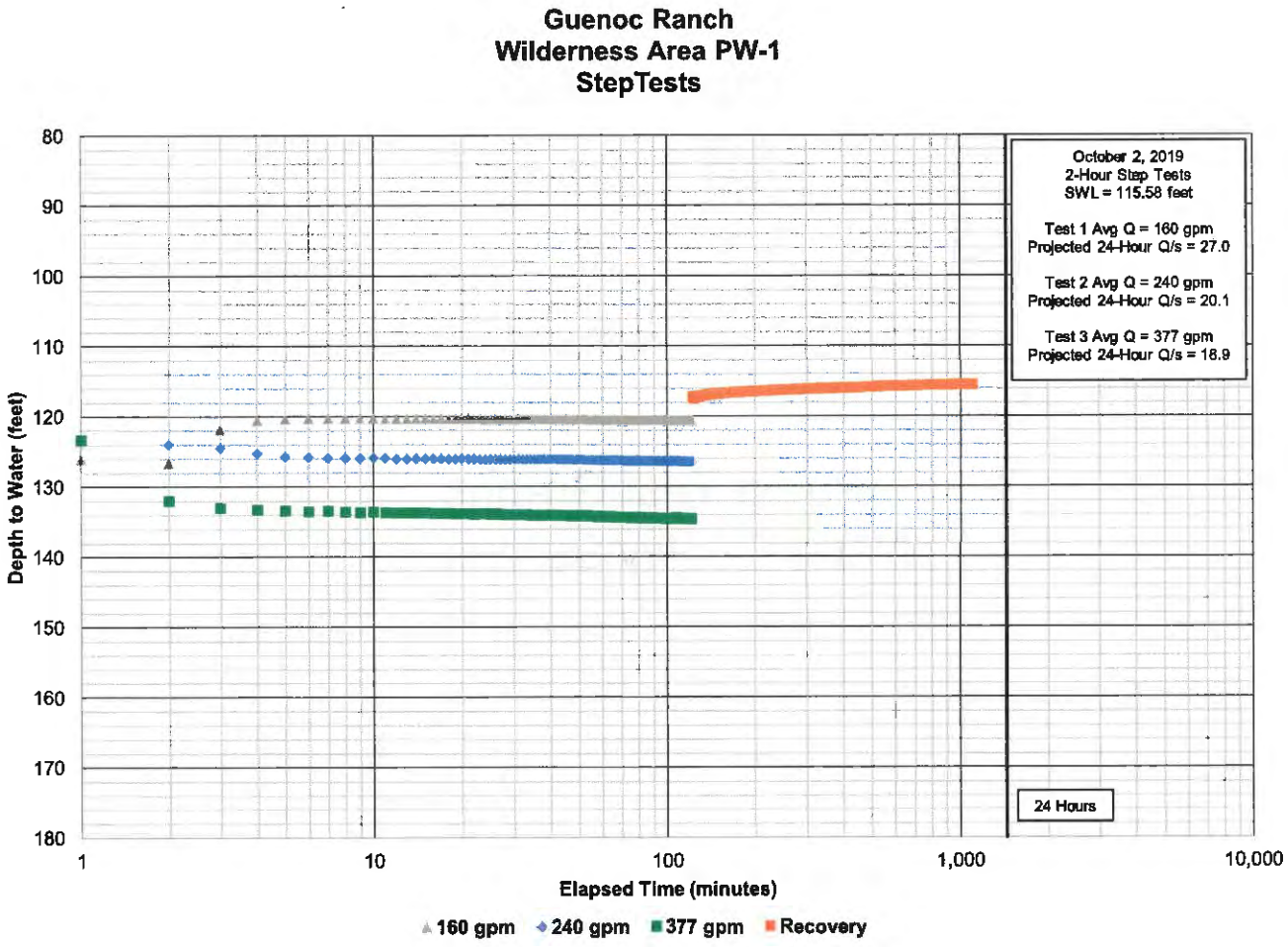


Log Depth 291'

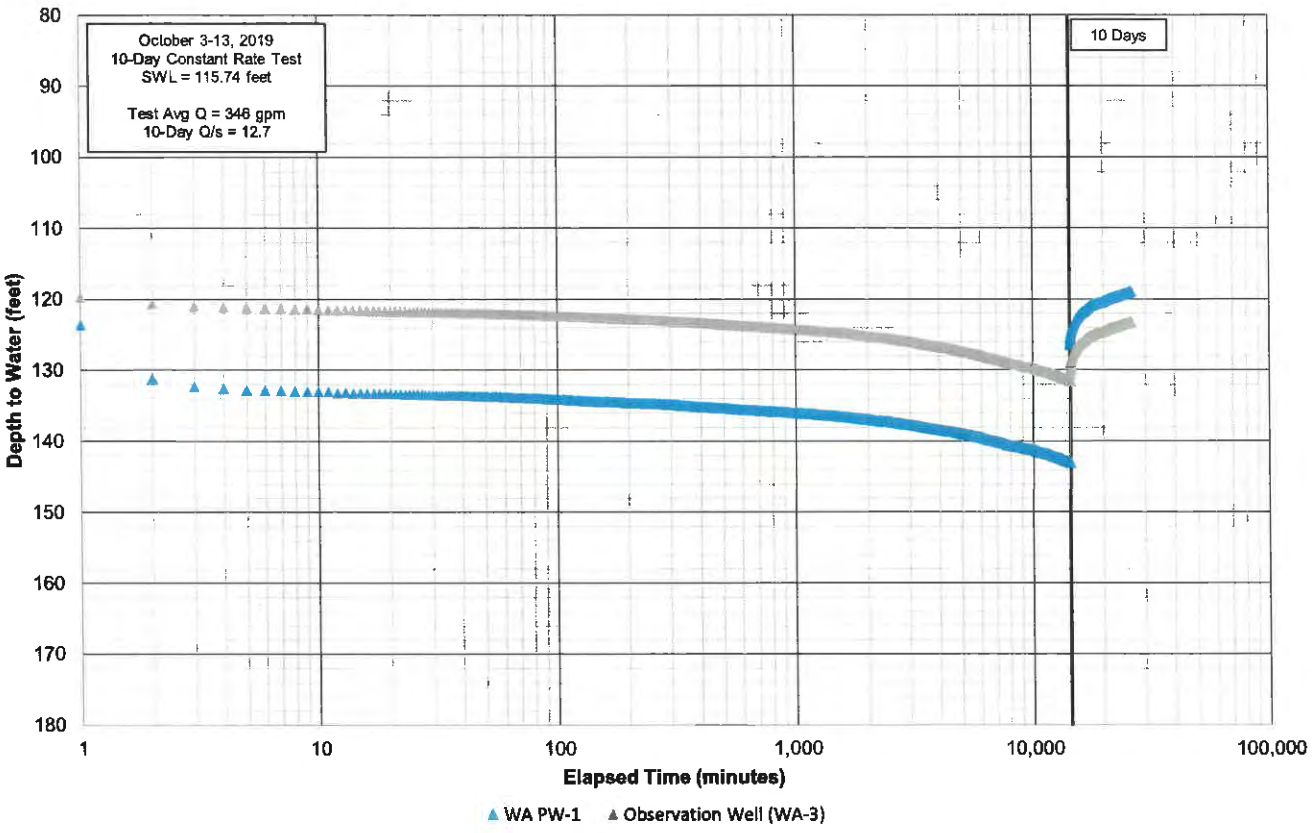
Appendix B
Well Testing

Pump Test Graphs
Water Quality Summary

Luhdorff & Scalmanini
Consulting Engineers


Guenoc Ranch
Wilderness Area PW-1
StepTests
October 2, 2019
2-Hour Step Tests
SWL = 115.58 feet
Test 1 Avg Q = 160 gpm
Projected 24-Hour Q/s = 27.0
Test 2 Avg Q = 240 gpm
Projected 24-Hour Q/s = 20.1
Test 3 Avg Q = 377 gpm
Projected 24-Hour Q/s = 18.9
24 Hours
Depth to Water (feet)
80
90
100
110
120
130
140
150
160
170
180
1
10
100
1,000
10,000
Elapsed Time (minutes)
160 gpm
240 gpm
377 gpm
Recovery

Guenoc Ranch
Wilderness Area PW-1
Constant Rate Test



Guenoc
Wilderness Area PW-1
Water Quality Summary

ANALYTE	UNITS	REPORTING LIMIT	METHOD	MCL	10/8/2019
CATIONS					
Calcium	mg/L	1.0	200.7		17
Magnesium	mg/L	1.0	200.7		25
Potassium	mg/L	1.0	200.7		2.3
Sodium	mg/L	1.0	200.7		18
Total Hardness	mg/L	1.0	200.7		150
ANIONS					
Bicarbonate Alkalinity	mg/L	5.0	SM 2320B		150
Carbonate Alkalinity	mg/L	5.0	SM 2320B		ND
Chloride (Cl)	mg/L	0.50	300.0	250/500[2]	26
Cyanide	mg/L	0.1	SM20-4500-CN	0.15	ND
Fluoride	mg/L	0.10	300.0	2	0.11
Hydroxide Alkalinity	mg/L	5.0	SM 2320B		ND
Nitrate (as N)	mg/L	0.40	300.0	10	ND
Nitrate/Nitrite (as N)	mg/L	0.40	300.0	10	ND
Nitrite (as N)	mg/L	0.40	300.0	0.4	ND
Sulfate (as SO4)	mg/L	0.50	300.0	250/500[2]	3.1
Sulfide	mg/L	1.0	SM4500-S F		ND
Total Alkalinity	mg/L	5.0	SM 2320B		150
Perchlorate	mg/L	0.0040	314.0	0.006	ND
PHYSICAL PARAMETERS					
Color (A.P.H.A)	Color Units	1	SM 2120B	15[2]	ND
pH	pH units	0.01	SM 4500-H B	6.5/8.5[4]	8.01
Methylene Blue Active Substance	mg/L	0.10	SM 5540C	0.5[2]	ND
Specific Conductivity	µmhos/cm	1.0	120.1	900/1,600[2]	360
Total Dissolved Solids (TDS)	mg/L	10	SM 2540C	500/1,000[2]	240
Odor	TON	1	140.1		ND
Turbidity	NTU	0.10	180.1	5[2]	0.22
INORGANICS					
Aluminum	mg/L	0.05	200.7	1[1]/0.2[3]	ND
Antimony	mg/L	0.0040	200.8	0.006	ND
Arsenic	mg/L	0.0020	200.8	0.010	0.0034
Barium	mg/L	0.1	200.7	1	ND
Beryllium	mg/L	0.001	200.7	0.004	ND
Boron	mg/L	0.1	200.7	1[3]	ND
Cadmium	mg/L	0.0010	200.8	0.005	ND
Chromium (Total)	mg/L	0.01	200.7	0.05	ND
Hexavalent Chromium	mg/L	0.001	218.6		ND
Copper	mg/L	0.050	200.7	1.3[2]	ND
Iron	mg/L	0.10	200.7	0.3[2]	ND
Lead	mg/L	0.0050	200.8	0.015[3]	ND
Manganese	mg/L	0.02	200.7	0.05[2]	0.037
Mercury	mg/L	0.0010	245.1	0.002	ND
Nickel	mg/L	0.01	200.8	0.1	ND
Selenium	mg/L	0.0050	200.8	0.05	ND
Silver	mg/L	0.01	200.7	0.1[2]	ND
Thallium	mg/L	0.001	200.8	0.002	ND
Vanadium	mg/L	0.003	200.8	0.05[3]	ND
Zinc	mg/L	0.05	200.7	5[2]	ND
RADIO CHEMISTRY					
Gross Alpha	pCi/L	0.971	900	15/5[3]	7.77 ± 1.26
Gross Beta	pCi/L	0.702	900	50	9.16 ± 1.43
Total Alpha Radium (226)	pCi/L	0.304	903	3	0.084 ± 0.116
Ra 228	pCi/L	0.400	Ra-05	2	0.405 ± 0.826
Uranium	pCi/L	0.342	908	20	0.00 ± 0.400
OTHER ANALYSES					
Purgeable Organic Compounds (VOCs)	µg/L	*	524.2		ND
Benzo(a)pyrene	µg/L	0.10	550		ND
Nitrogen/Phosphorus Pesticides	µg/L	*	507		ND
Semi-Volatile Organic Compounds (SVOCs)	mg/L	*	525.2		ND
Trihalomethanes	µg/L	0.50	524.2		ND
EDB and DBCP	µg/L	*	504.1		ND
Haloacetic Acids	µg/L	*	552.2		ND
Chlorinated Herbicides	µg/L	*	515.3		ND
Chlorinated Pesticides and PCB's	µg/L	*	508		ND
Asbestos	MFL	0.21	600/R-94/134	7	ND
Endothall	µg/L	20	548.1		ND
2,3,7,8-TCDD Dioxin	pg/L	10.8	1613B		ND
1,2,3-Trichloropropane	µg/L	0.0050	SRL524M-TCP		ND
Glyphosate	µg/L	5.0	547		ND
Carbamates	µg/L	2.0	531.2		ND
Diquat	µg/L	4.0	549.2		ND

[1] - Primary MCL
[2] - Secondary MCL (recommended/upper range)
[3] - Notification Level
[4] - Suggested lower/upper acceptable range
* - Various Reporting Limits
ND = Non-Detect

Luhdorff & Scalmanini
Consulting Engineers

Well Testing Report 3:

Farmstead 1 (FS PW-1)

Luhdorff & Scalmanini
Consulting Engineers

WELL CONSTRUCTION SUMMARY

Guenoc Ranch
Farmstead Production Well No.1
March 2020

INTRODUCTION

Luhdorff and Scalmanini, Consulting Engineers (LSCE) has prepared this summary report documenting the construction and testing of the Guenoc Ranch Farmstead Production Well No. 1 (PW). This report consists of a well drilling and construction summary, an as-built well construction drawing, a geophysical survey, pumping test hydrographs, and a water quality summary sheet.

Well Drilling and Construction

The TW was drilled and constructed by North State Drilling and Pump of Chico, California (North State). Well construction commenced on October 14, 2019 and final well testing was completed on November 27, 2019.

The borehole for the conductor casing was drilled from ground surface to a depth of 50 feet below ground surface (bgs) at a diameter of 36-inches using the bucket auger drilling method. A 24-inch O.D. x 3/8-inch wall conductor casing was installed to 50 feet bgs and cemented in place. The 17.5" diameter production borehole drilling was completed using the direct mud rotary drilling method to a depth of 440 feet below ground surface (bgs). A geophysical survey was conducted in the production borehole after drilling. Analysis of the geophysical survey and formation samples were used to finalize the well design.

The well casing assembly consists of 230 feet of 8.625-inch O.D. x 1/4-inch wall ASTM A-53 Grade B steel blank casing, and 200 feet of 8.625-inch O.D. ASTM A-53 Grade B milled slot well screen with a 0.080-inch slot size. The screen intake sections are located from 230 to 430 feet bgs. An As-Built Well Profile showing lithology, electric log, and well construction detail is provided in Appendix A.

A gravel envelope of pea gravel was used to fill the annular space between the casing and the borehole from 440 to 100 feet bgs. A sanitary seal consisting of a 10.3-sack sand/cement grout was placed from 100 feet bgs to ground surface.

Initially the PW was developed by open-ended airlifting from the bottom of the casing assembly followed by swab/airlifting development. Final development was completed by pumping with a submersible pump at rates up to approximately 390 gallons per minute (gpm), the maximum rate achievable by the pump.

Pumping Tests

Two different pumping tests were performed on November 18 and November 19 through 27, 2019 to determine well and aquifer characteristics. The first pumping test consisted of a 2-hour step drawdown test while the second pumping test consisted of a 9-day constant rate test. Plots of pumping test data are provided in Appendix B.

500 First Street
Woodland, CA 95776
(530) 661-0109
lsce.com

Step-Drawdown Test

A two-hour step-drawdown test was performed on November 18, 2019. The static water level measured prior to testing was 45.90 feet bgs. The discharge rate, pumping duration, 24-hour projected drawdown, and 24-hour projected specific capacity of each step are as follows:

Discharge Rate (gpm)	Duration (min)	Drawdown (ft)	Projected 24-Hr Specific Capacity (gpm/ft)
160	120	59.26	2.7
244	120	90.37	2.7
380	120	135.71	2.8

Long Term Constant Rate Test

A 9-day constant rate pumping test was performed on November 18 through 27, 2019. The static water level prior to pumping was 45.70 feet bgs. The average discharge rate during the constant rate test was 305 gpm. After 9-days, the drawdown was 152.50 feet and the specific capacity was 2.0 gpm/ft.

Water Quality

LSCE staff collected and submitted water quality samples from the PW on November 25, 2019 for laboratory analysis at California Laboratory Services (CLS). A summary of water quality analysis results is included in Appendix B. For the constituents analyzed, all concentrations were below the maximum contaminant level (MCL).

Appendix A
Well Construction

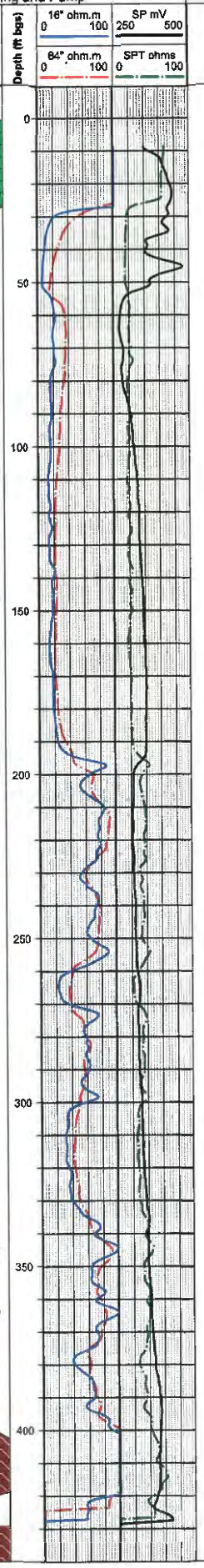
As-Built Profile
Well Completion Report
Geophysical Survey

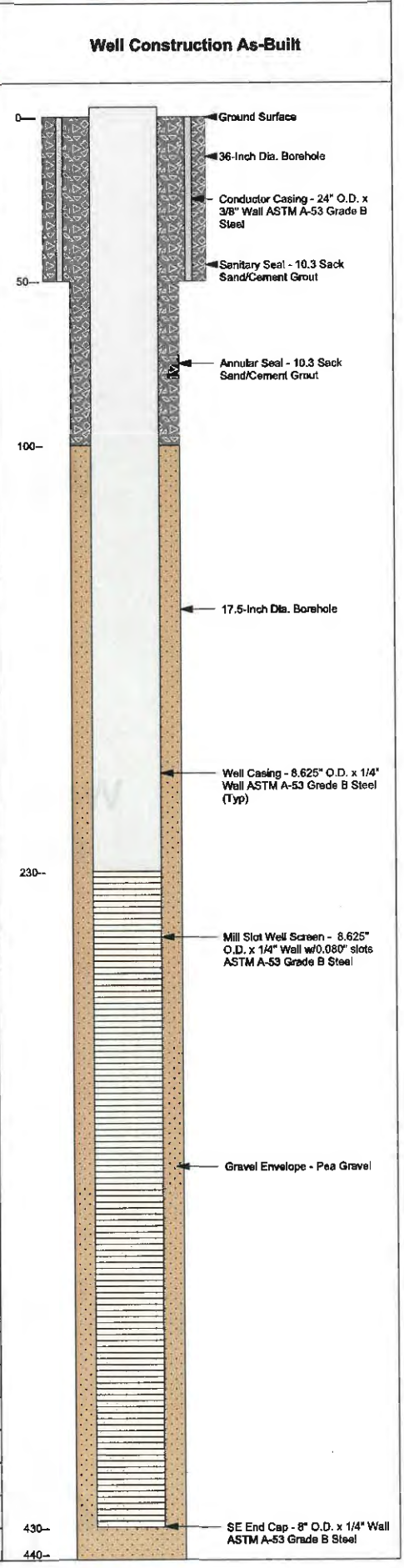
Luhdorff & Scalmanini
Consulting Engineers

Client: Guenoc	**Lat/Long:** 38.7272036/-122.4538855
Well Name: Farmstead PW-1	**GSE (ft-msl)** 1,136 +/-
LSCE #: 17-2-116	**Drill Date:** 10/14/2019 - 10/21/2019
Location: Guenoc Ranch, CA	**Drilling Method:** Direct Mud Rotary
Geologist:	**Driller:** North State Drilling and Pump

Luhdorff & Scalmanini
Consulting Engineers

Depth (ft bgs)	Lithologic Description	Strat-Column
0	Samples not logged	
50	Rock - blue, possibly shale	
200	Rock - blue, green, and white chips	
300	Rock - blue, possibly shale	
	Rock - blue, green, and white chips, chips are approximately 1/4"	
350	Rock - chips are 3/8"	
400	Rock - black, chips are approximately 3/8"	





State of California

Well Completion Report

Form DWR 188 Submitted 1/8/2020

WCR2020-000321

Owner's Well Number: FS PW-1 | Date Work Began: 10/14/2019 | Date Work Ended: 10/21/2019

Local Permit Agency: Lake County Health Services Department - Environmental Health Division

Secondary Permit Agency: | Permit Number: WE-5238 | Permit Date: 08/29/2019

Well Owner (must remain confidential pursuant to Water Code 13752)

Name: BOHN VALLEY, INC.,

Mailing Address: ONE EMBARCADARO CTR

SUITE 730

City: SAN FRANCISCO | State: CA | Zip: 94111

Planned Use and Activity

Activity: New Well

Planned Use: Water Supply Public

Well Location

Address: 24733 BOHN VALLEY RD

City: MIDDLETOWN | Zip: 95461 | County: Lake

	Deg.	Min.	Sec.		
Latitude	38	43	37.9329	N	
Longitude	-122	27	13.9877	W	

Dec. Lat.: 38.7272036 | Dec. Long.: -122.4538855

Vertical Datum: | Horizontal Datum: WGS84

Location Accuracy: | Location Determination Method:

APN: 013-022-140

Township: 10 N

Range: 05 W

Section: 07

Baseline Meridian: Mount Diablo

Ground Surface Elevation: 1136

Elevation Accuracy: Unknown

Elevation Determination Method: GPS

Borehole Information

Orientation: Vertical | Specity:

Drilling Method: Direct Rotary | Drilling Fluid: Bentonite

Total Depth of Boring: 440 Feet

Total Depth of Completed Well: 430 Feet

Water Level and Yield of Completed Well

Depth to first water: (Feet below surface)

Depth to Static

Water Level: 52 (Feet) | Date Measured: 11/16/2019

Estimated Yield*: 300 (GPM) | Test Type: Pump

Test Length: (Hours) | Total Drawdown: (feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to Feet		Description
0	50	SURFACE CASING - CONDUCTOR
50	200	BLUE SHALE
200	295	CHIPPED ROCK - BLUE, GREEN, WHITE
295	330	BLUE SHALE
330	380	1/4" CHIPPED ROCK - BLUE, GREEN, WHITE
380	395	3/8" CHIPPED ROCK
395	440	CHIPPED BLACK ROCK - 3/8"

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	50	Conductor or Fill Pipe	Low Carbon Steel	Grade: ASTM A53	0.375	24			SURFACE CASING
2	0	230	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	8.625			
2	230	430	Screen	Low Carbon Steel	Grade: ASTM A53	0.25	8.625	Milled Slots	0.08	24-ROW

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	50	Cement	10.3 Sack Mix		SANITARY CEMENT SEAL
50	440	Filter Pack	Other Gravel Pack	PEA GRAVEL	GRAVEL PACK

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	50	36
50	440	17.5

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: WELL INDUSTRIES INC
Person, Firm or Corporation

3282 HIGHWAY 32 (Address) | CHICO (City) | CA (State) | 95973 (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 01/08/2020 (Date Signed) | 812678 (C-57 License Number)

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

N — Latitude Deg/Min/Sec

W — Longitude Deg/Min/Sec

TRS:

APN:

STEWART
WELL LOGGING SERVICE

ELECTRIC - GAMMA RAY-TEMPERATURE LOG

Stewart Well Logging Service

879 PURDUE DRIVE, WOODLAND CA 95695 · Email: stewartwelllogging@gmail.com · Contractor's License

Filing No.
#D-1967

Job No.
0190

COMPANY **Well Industries Inc.**

WELL **FS PW-1**

FIELD **Middletown**

STATE **California** COUNTY **Lake**

LOCATION:
Guenoc Valley

OTHER SERVICES:
Sonic

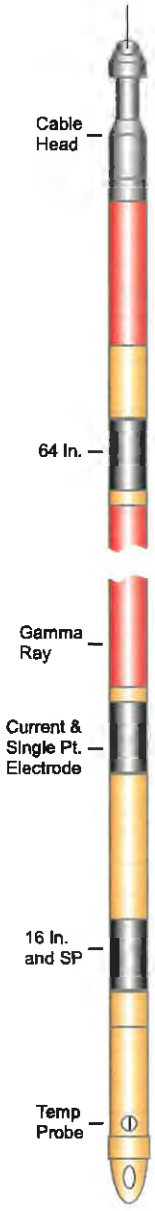
SEC: **7** TWP: **10N** RGE: **5W** LAT.: **38.7272036** LONG.: **-122.4538855**

Permanent Datum: **Ground Level** Elev.: **1136** Ft. Elevs.: K.B. **1141** Ft.
Log Measured From: **Ground Level** **0** Ft. Above Perm. Datum D.F. **1139** Ft.
Drilling Measured From: **Ground Level** G.L. **1136** Ft.

Run	One				
Date	Oct 16, 2019				
Depth-Driller	426 Ft	Ft	Ft	Ft	Ft
Depth-Logger	426 Ft	Ft	Ft	Ft	Ft
Top Logged Interval	9 Ft	Ft	Ft	Ft	Ft
Btm Logged Interval	426 Ft	Ft	Ft	Ft	Ft
Casing-Driller	24" In @ 50' Ft	In @ Ft	In @ Ft	In @ Ft	
Casing - Logger In@Ft	24" In @ 50' Ft	In @ Ft	In @ Ft	In @ Ft	
Bit Size	9-7/8" In @ Ft	In @ Ft	In @ Ft	In @ Ft	
Time On Bottom	2200				
Type Fluid in Hole	Bentonite				
Density / Viscosity					
pH / Fluid Loss	ml	ml	ml	ml	
Source of Sample	Bore Hole	Water Source			
Rm @ Mea. Temp	8.4 @ 75 °F	12.9 @ 75 °F	@ °F	@ °F	
Rmf @ Mea. Temp	8.3 @ 75 °F	13.1 @ 75 °F	@ °F	@ °F	
Rmc @ Mea. Temp	5.9 @ °F	8.7 @ °F	@ °F	@ °F	
Source Rmf / Rmc	Meas.	Meas.			
Rm @ BHT	75 @ °F	@ °F	@ °F	@ °F	
Time Since Circ.	2 Hr	Hr	Hr	Hr	
Max. Rec. Temp.	76 °F	°F	°F	°F	
Van No. / Location	SWLS-1 WDLD				
Recorded By	Stewart				
Witnessed By	Kyland				

This Eagle Plot Heading Conforms To API RP 31A

ELECTRIC - GAMMA RAY-TEMPERATURE LOG TOOL



SPONTANEOUS POTENTIAL LOGS:

SP Logs record potentials or voltages developed between the borehole fluid and the surrounding formation and are representations of lithology and water quality. Recording of SP logs are limited to water-filled or mud-filled open holes.

NORMAL RESISTIIVITY LOGS:

Normal Resistivity Logs record the electrical resistivity of the borehole environment with lower resistivities indicative of clays and higher resistivities being sands and gravels. Normal resistivity logs are affected by bed thickness, Borehole diameter and borehole fluid.

SINGLE POINT RESISTIVITY LOGS:

Single Point Resistivity Logs record the electrical resistance from points within the borehole to an electrical ground at land surface. Single-point resistance logs are useful in the determination of lithology, water quality, and location of fracture zones.

GAMMA RAY LOGS:

Gamma Ray Logs record the amount of natural gamma radiation emitted by the rocks surrounding the borehole. The most significant naturally occurring sources of gamma radiation are potassium 40 and daughter products of the uranium and thorium decay series. Clay and shale bearing rocks commonly emit relatively high gamma radiation because they include weathering products of potassium feldspar and mica and tend to concentrate uranium and thorium by ion absorption and exchange.

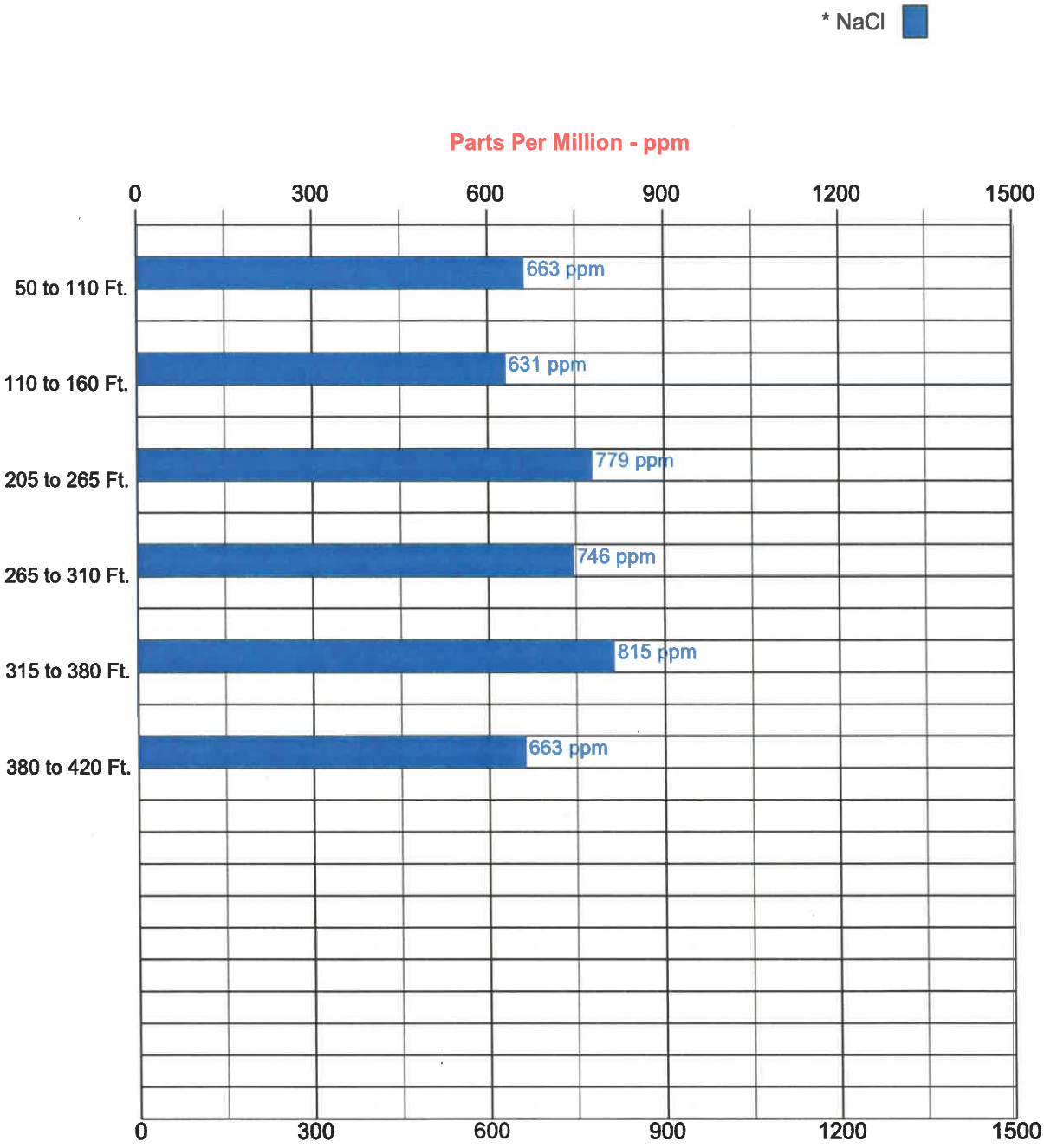
TEMPERATURE LOGS:

Temperature Logs record the water temperature in the borehole. Temperature logs are useful for delineating water-bearing zones and identifying vertical flow in the borehole between zones of differing hydraulic head penetrated by wells. Borehole flow between zones is indicated by temperature gradients that are less than the regional geothermal gradient.

ELECTRIC LOG SPECIFICATIONS:

Diameter	1.73 Inches
Length	8.37 Feet
Weight	21.7 Lbs.
Max. Temp	158° F
Resist. Range	0 - 10,000 ohm-m
Gamma Ray	1.97 inches long x .98 inches diameter Scintillation crystal

TOTAL DISSOLVED SOLIDS



TDS Classes

Class 1: Excellent to Good – Less than 700 ppm
Class 2: Good to Injurious – 700 to 2000 ppm
Class 3: Injurious to Poor – More than 2000 ppm

NaCl = Sodium Chloride

NOTICE

All interpretations are opinions based on inferences from electrical and other measurements and we do not guarantee the accuracy or correctness of any verbal or written interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by one of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.

REMARKS

Well Industries Inc
FS PW-1
Oct 16, 2019

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5"/100'

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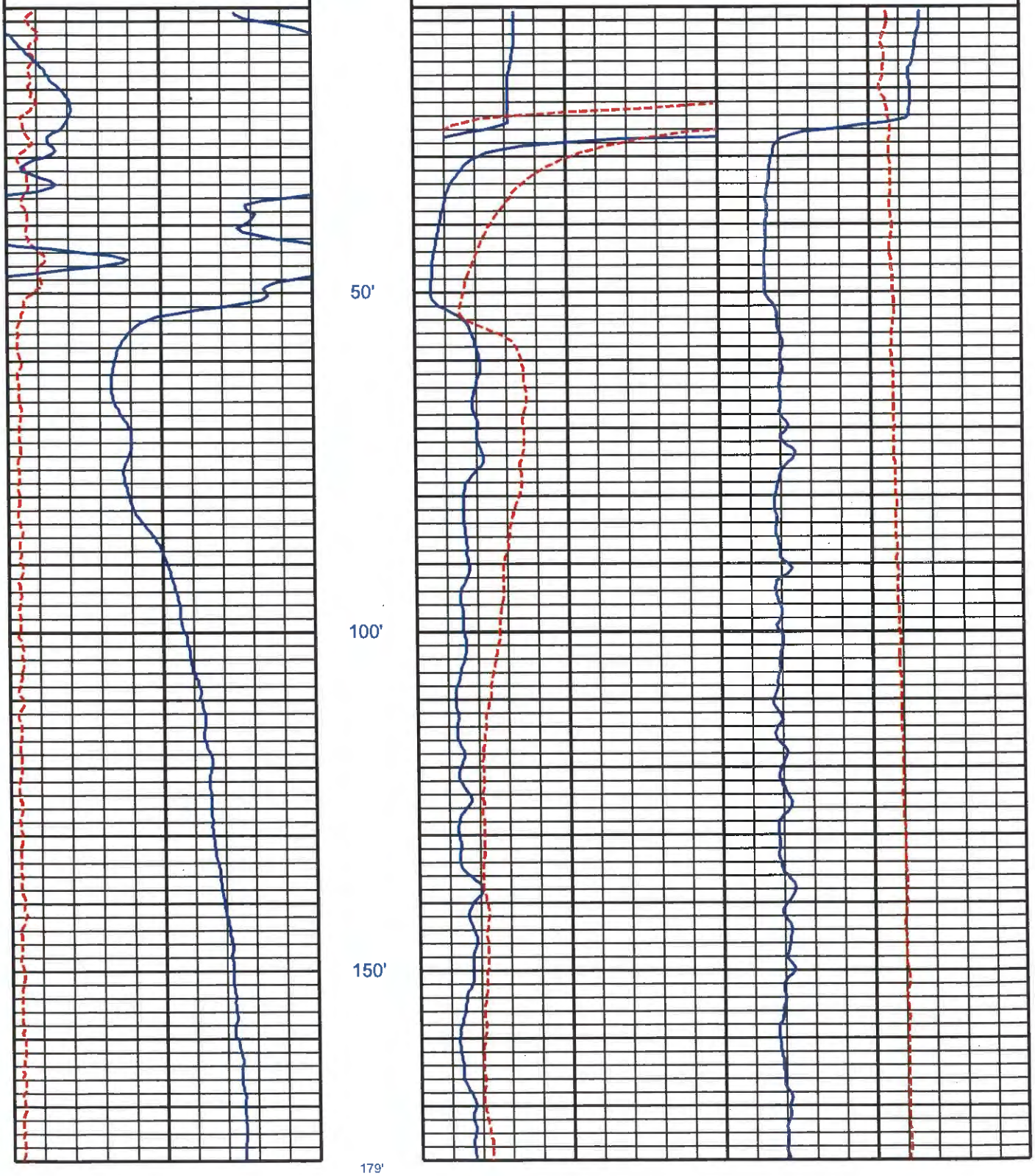

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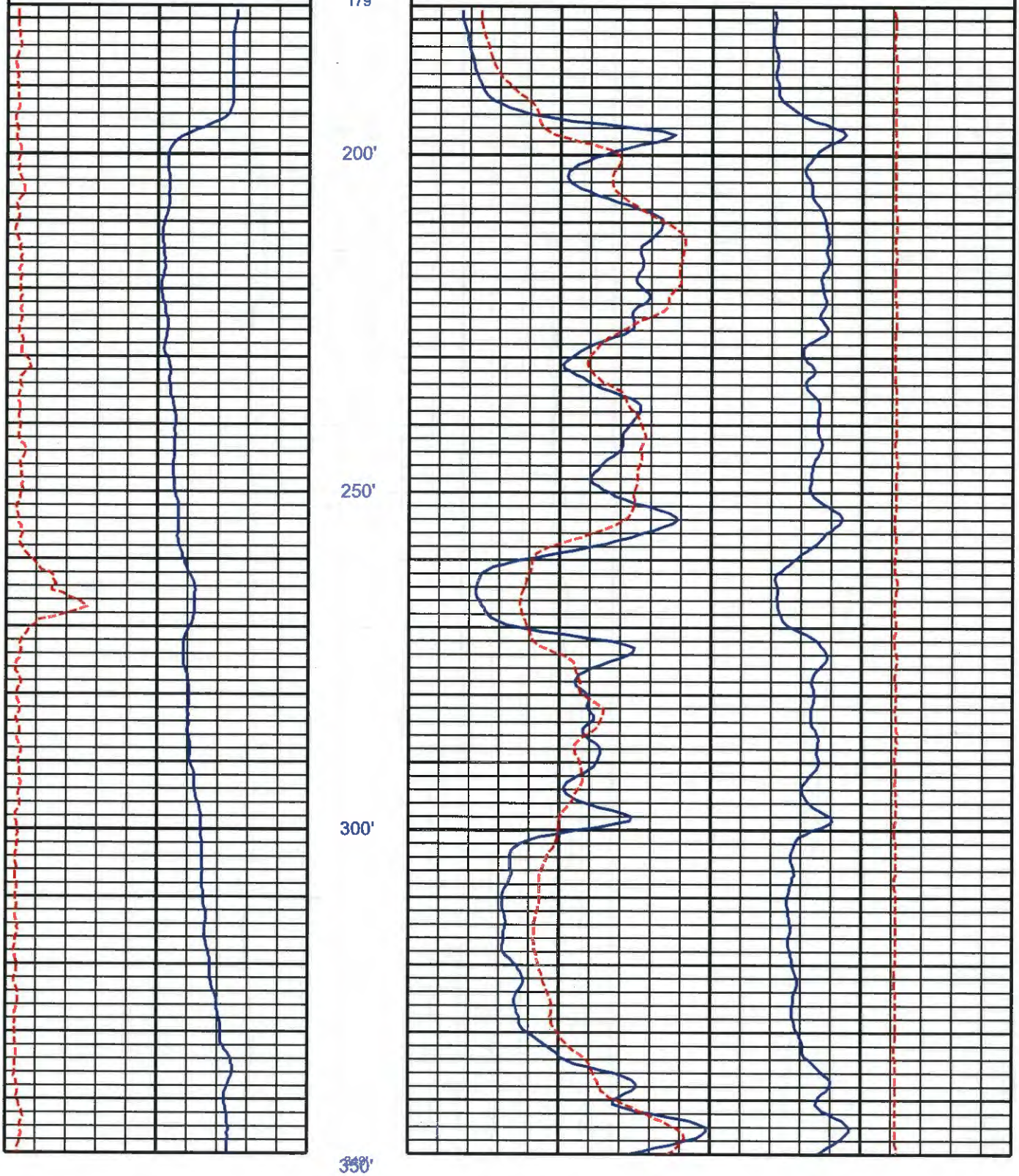

Welf Industries Inc
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Oct 16, 2019

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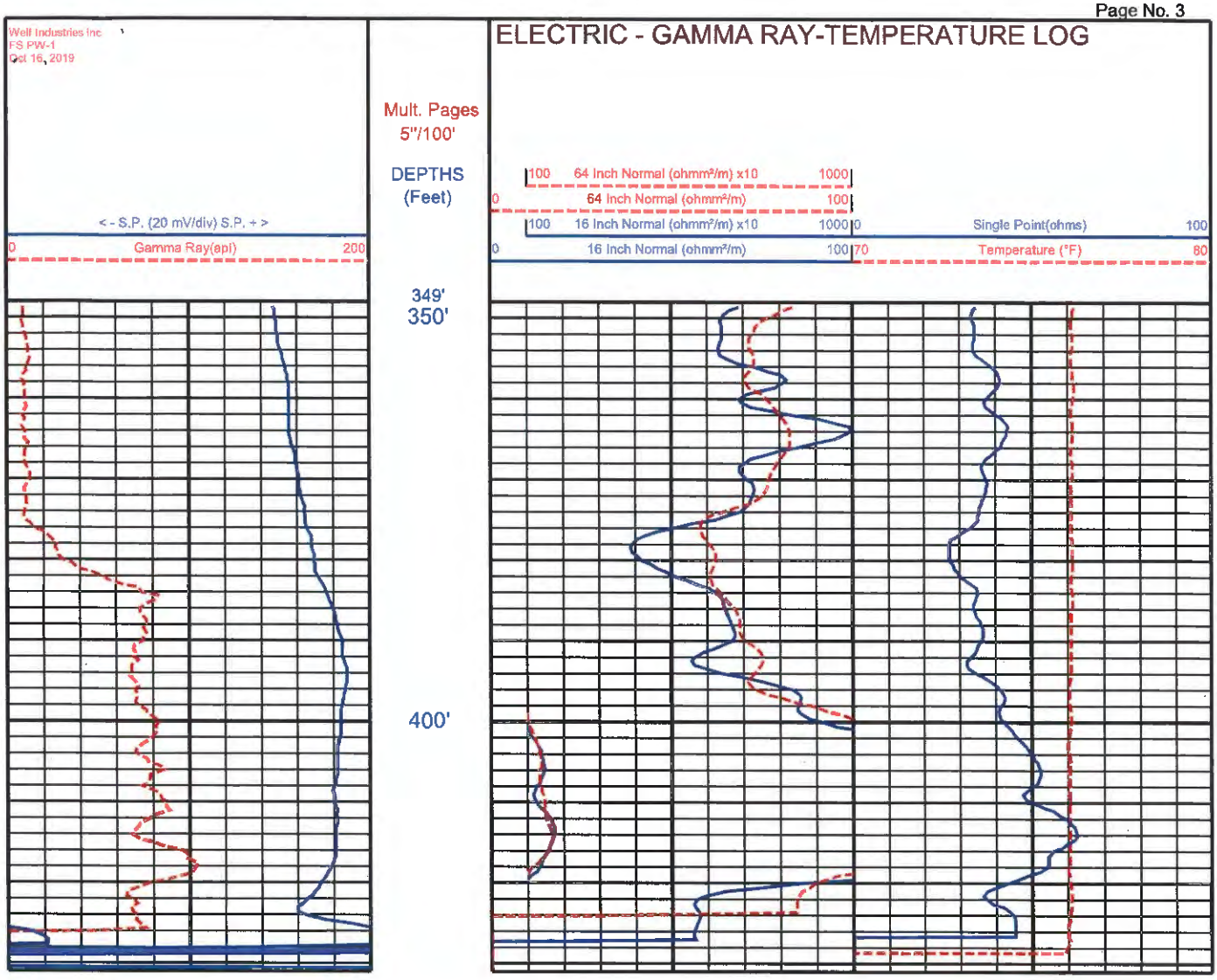
Mult. Pages
5"/100'

DEPTHS
(Feet)



Log Depth 430'

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Well Testing

Pump Test Graphs
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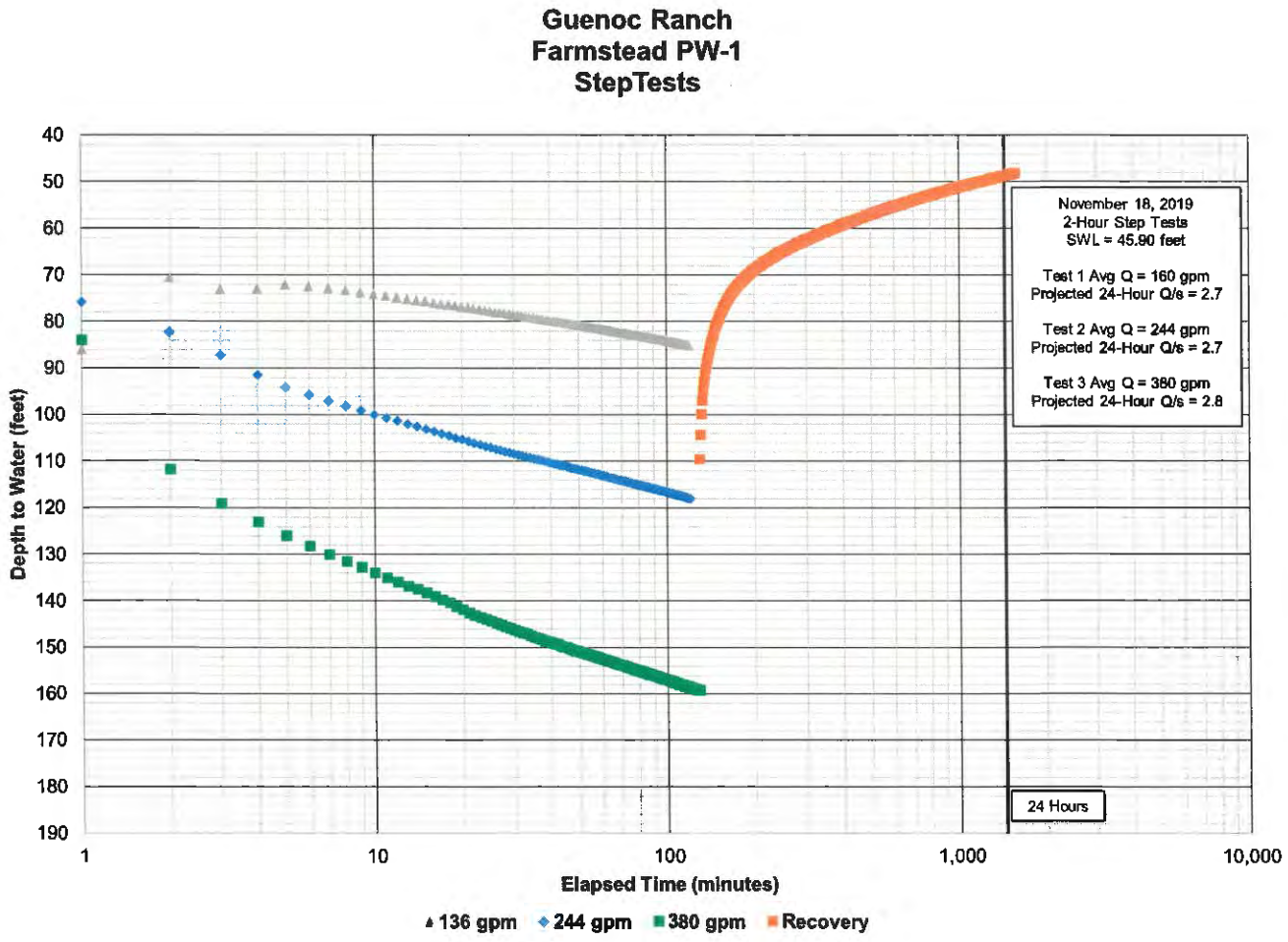
Luhdorff & Scalmanini
Consulting Engineers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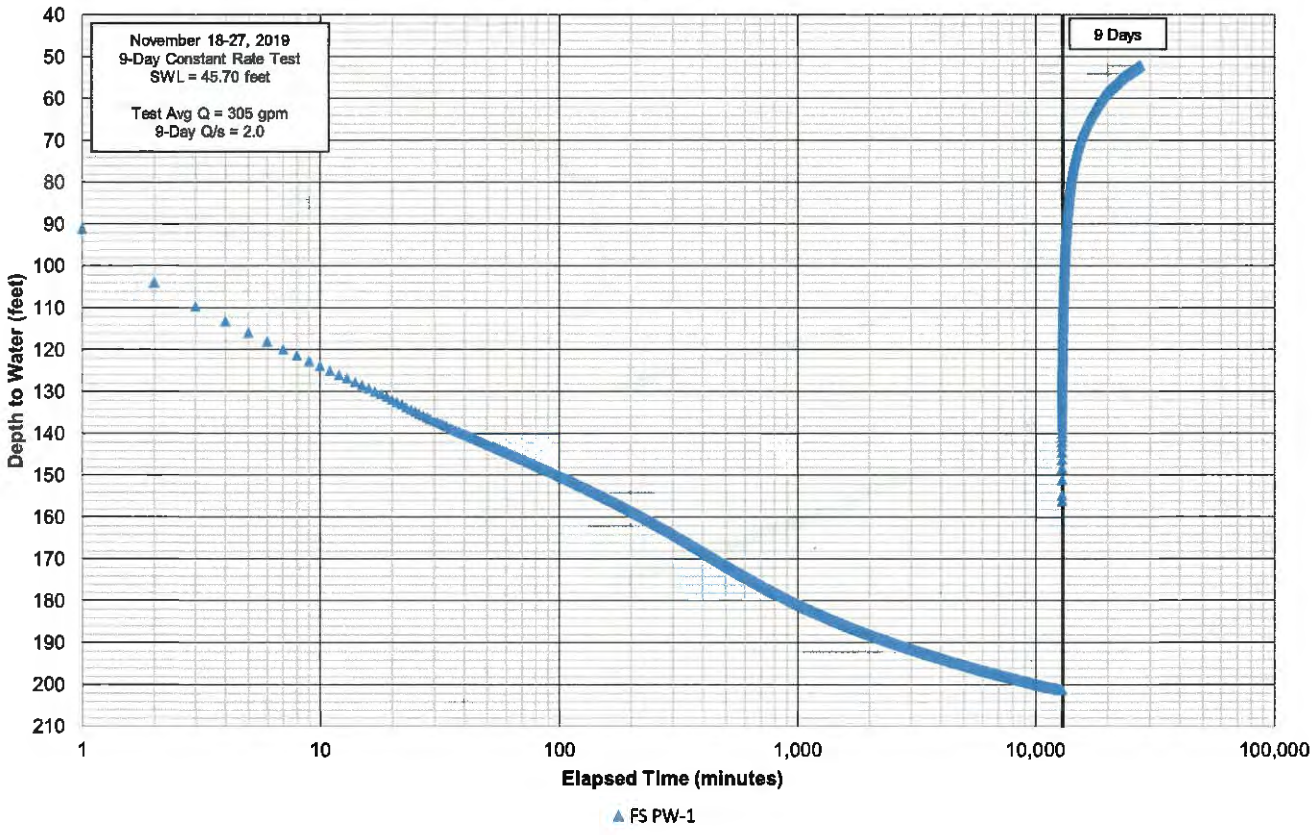
Projected 24-Hour Q/s = 2.7
Test 3 Avg Q = 380 gpm
Projected 24-Hour Q/s = 2.8
24 Hours
Depth to Water (feet)
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
1
10
100
1,000
10,000
Elapsed Time (minutes)
136 gpm
244 gpm
380 gpm
Recovery

Guenoc Ranch
Farmstead PW-1
Constant Rate Test



Guenoc
Farmstead PW-1
Water Quality Summary

ANALYTE	UNITS	REPORTING LIMIT	METHOD	MCL	11/25/2019
CATIONS					
Calcium	mg/L	1.0	200.7		6.3
Magnesium	mg/L	1.0	200.7		90
Potassium	mg/L	1.0	200.7		ND
Sodium	mg/L	1.0	200.7		5.5
Total Hardness	mg/L	1.0	200.7		390
ANIONS					
Bicarbonate Alkalinity	mg/L	5.0	SM 2320B		460
Carbonate Alkalinity	mg/L	5.0	SM 2320B		ND
Chloride (Cl)	mg/L	0.50	300.0	250/500[2]	5.1
Cyanide	mg/L	0.1	SM20-4500-CN	0.15	ND
Fluoride	mg/L	0.10	300.0	2	ND
Hydroxide Alkalinity	mg/L	5.0	SM 2320B		ND
Nitrate (as N)	mg/L	0.40	300.0	10	ND
Nitrate/Nitrite (as N)	mg/L	0.40	300.0	10	ND
Nitrite (as N)	mg/L	0.40	300.0	0.4	ND
Sulfate (as SO4)	mg/L	0.50	300.0	250/500[2]	4.7
Sulfide	mg/L	1.0	SM4500-S F		ND
Total Alkalinity	mg/L	5.0	SM 2320B		460
Perchlorate	mg/L	0.0040	314.0	0.006	ND
PHYSICAL PARAMETERS					
Color (A.P.H.A)	Color Units	1	SM 2120B	15[2]	ND
pH	pH units	0.01	SM 4500-H B	6.5/8.5[4]	7.74
Methylene Blue Active Substance	mg/L	0.10	SM 5540C	0.5[2]	ND
Specific Conductivity	µmhos/cm	1.0	120.1	900/1,600[2]	740
Total Dissolved Solids (TDS)	mg/L	10	SM 2540C	500/1,000[2]	480
Odor	TON	1	140.1		1
Turbidity	NTU	0.10	180.1	5[2]	0.18
INORGANICS					
Aluminum	mg/L	0.05	200.7	1[1]/0.2[3]	ND
Antimony	mg/L	0.0040	200.8	0.006	ND
Arsenic	mg/L	0.0020	200.8	0.010	0.0021
Barium	mg/L	0.1	200.7	1	ND
Beryllium	mg/L	0.001	200.7	0.004	ND
Boron	mg/L	0.1	200.7	1[3]	ND
Cadmium	mg/L	0.0010	200.8	0.005	ND
Chromium (Total)	mg/L	0.01	200.7	0.05	ND
Hexavalent Chromium	mg/L	0.001	218.6		ND
Copper	mg/L	0.050	200.7	1.3[2]	ND
Iron	mg/L	0.10	200.7	0.3[2]	0.110
Lead	mg/L	0.0050	200.8	0.015[3]	ND
Manganese	mg/L	0.02	200.7	0.05[2]	ND
Mercury	mg/L	0.0010	245.1	0.002	ND
Nickel	mg/L	0.01	200.8	0.1	ND
Selenium	mg/L	0.0050	200.8	0.05	ND
Silver	mg/L	0.01	200.7	0.1[2]	ND
Thallium	mg/L	0.001	200.8	0.002	ND
Vanadium	mg/L	0.003	200.8	0.05[3]	ND
Zinc	mg/L	0.05	200.7	5[2]	ND
RADIO CHEMISTRY					
Gross Alpha	pCi/L	0.971	900	15/5[3]	1.42 ± 1.58
Gross Beta	pCi/L	0.702	900	50	12.8 ± 2.24
Total Alpha Radium (226)	pCi/L	0.304	903	3	0.038 ± 0.130
Ra 228	pCi/L	0.400	Ra-05	2	1.69 ± 1.19
Uranium	pCi/L	0.342	908	20	0.101 ± 0.521
OTHER ANALYSES					
Purgeable Organic Compounds (VOCs)	µg/L	*	524.2		ND
Benzo(a)pyrene	µg/L	0.10	550		ND
Nitrogen/Phosphorus Pesticides	µg/L	*	507		ND
Semi-Volatile Organic Compounds (SVOCs)	mg/L	*	525.2		ND
Trihalomethanes	µg/L	0.50	524.2		ND
EDB and DBCP	µg/L	*	504.1		ND
Haloacetic Acids	µg/L	*	552.2		ND
Chlorinated Herbicides	µg/L	*	515.3		ND
Chlorinated Pesticides and PCB's	µg/L	*	508		ND
Asbestos	MFL	0.40	600/R-94/134	7	ND
Endothall	µg/L	20	548.1		ND
2,3,7,8-TCDD Dioxin	pg/L	10	1613B		ND
1,2,3-Trichloropropane	µg/L	0.0050	SRL524M-TCP		ND
Glyphosate	µg/L	5.0	547		ND
Carbamates	µg/L	2.0	531.2		ND
Diquat	µg/L	4.0	549.2		ND

[1] - Primary MCL
[2] - Secondary MCL (recommended/upper range)
[3] - Notification Level
[4] - Suggested lower/upper acceptable range
* - Various Reporting Limits
ND = Non-Detect

Luhdorff & Scalmanini
Consulting Engineers

Well Testing Report 4:

Red Hills 1 (RH PW-1)

Wagner&Bonsignore
Consulting Civil Engineers, A Corporation

Nicholas F. Bonsignore, P.E.
Robert C. Wagner, P.E.
Paula J. Whealen
David H. Peterson, C.E.G., C.H.G.
Leah Orloff, Ph.D, P.E.
David P. Lounsbury, P.E.
Vincent Maples, P.E.
Patrick W. Ervin, P.E.
Martin Berber, P.E.
Ryan E. Stolfus

James C. Hanson, P.E.
Henry S. Matsunaga

MEMORANDUM

To: Sherwood Design Engineers, Inc.
Attn: Mr. Peter Haase, MS, PE

From: David H. Peterson, CEG 1186, CHG 86

Date: November 13, 2020

Re: **Proposed Well Test Procedures, Red Hill PW-1 Well**
Guenoc Ranch, 22671 Grange Road
Middletown, Lake County, California

This memorandum outlines the proposed test procedures to determine the capacity of a recently completed water well, identified as the Red Hill PW-1 well, in a 10-day duration pumping test. The well is located on the Guenoc Ranch property in eastern Lake County, California. As shown on the *Red Hill PW-1 Well Site Plan*, Attachment 1, the well is located about 8 miles east of the town of Middletown.

Review of published geologic mapping for the vicinity (Fox and others, 1973; Graymer and others, 2007) indicates that the well was drilled in an area underlain at the surface by basalt lava flows of the Quaternary-age Clear Lake Volcanics. The specific procedures for performing a pump test for a well completed in bedrock (i.e., primary production is from secondary permeability features such as fractures and cracks) are described in Section 64554(g), Title 22 of CCR. In addition, Section 64554(e) outlines the information about the well test required by the State Water Resources Control Board prior to performing the test. The information required by Section 64554(e) is listed below in italics, followed by the provided information.

(1) The name and qualifications of the person who will be conducting the test;

The testing will be conducted by Well Industries Inc. of Chico, California, a California-licensed C-57 Contractor (#812678). This is also the same company that drilled and developed the well. During the test, a California-certified Hydrogeologist will be onsite periodically to review the field data collected and to provide geologic consultation, as needed.

(2) The proposed test's pumping discharge rate, based on the design rate determined during well development and/or a step-drawdown test.

Based on information obtained from test holes previously drilled in this area of the ranch, preliminary pumping yields reportedly ranged from about 50 to 100 gallons per minute. Most likely, the test pumping rate will be in this range or higher, if feasible. However, step-drawdown tests will likely initially be performed to further assess an appropriate discharge rate for a long-term test.

(3) A copy of a United States Geological Survey 7½ minute topographic map of the site at a scale of 1:24,000 or larger (1 inch equals 2,000 feet or 1 inch equals less than 2,000 feet) or, if necessary, a site sketch at a scale providing more detail, that clearly indicates;

(A) The well discharge location(s) during the test, and

(B) The location of surface waters, water staff gauges, and other production wells within a radius of 1000 feet;

See the attached *Well Location Map*, Attachment 2, reproduced at a scale of 1:24,000, for possible well discharge locations, surface waters, and production wells. The nearest staff gauge is located along Putah Creek, about 3.2 miles to the northwest, and is not shown on Attachment 2. The well test discharge location will be selected by the pump contractor, to discharge water during the test in an area that will not pond and reinfiltrate near the test well.

(4) A well construction drawing, geologic log, and electric log, if available;

The well was recently drilled and completed by Well Industries Inc. of Chico, California, and a Well Completion Report has not yet been submitted. An electric-gamma ray-temperature log was also reportedly performed. When these logs are available, they will be submitted as an addendum.

(5) Dates of well completion and development, if known;

The well was drilled and completed during October, 2020 by Well Industries Inc. of Chico, CA. Well development was reportedly performed just after well construction in late October-early November 2020. Details of well construction and development will be provided when a Well Completion Report is available.

(6) Specifications for the pump that will be used for the test and the depth at which it will draw water from the well;

A submersible test pump capable of pumping at the planned discharge rate will be selected and installed by Well Industries Inc. The static water level measured in 2017 from a test

hole at this location was 290 feet below ground surface; the pump will be set at a depth (presumably near the bottom of the casing) to allow for sufficient drawdown during the duration of the test.

(7) A description of the methods and equipment that will be used to measure and maintain a constant pumping rate;

The well contractor has indicated that measurement of the pumping rate will be performed using a flow meter and totalizer installed in the pump discharge line It is anticipated that somewhat more frequent measurements (i.e., 5- to 10-minute intervals) may need to be taken early in the test, while drawdown is occurring more rapidly, to measure and adjust the discharge to maintain a constant pumping rate. Pump equipment and discharge rate will be monitored throughout the test to maintain a constant pumping rate.

(8) A description of the water level measurement method and measurement schedule;

Water level changes measurements will be obtained using a tape-style electronic water level meter. The water levels measurements will be collected at a minimum, as required in Section 64554(g). However, data may be collected at more frequent intervals to provide additional data and to assess the progress of the test.

(9) For wells located in or having an influence on the aquifer from which the new well will draw water, a description of the wells' operating schedules and the estimated amount of groundwater to be extracted, while the new well is tested and during normal operations prior to and after the new well is in operation;

The Red Hill PW-1 well was drilled in a relatively undeveloped rural ranch area mapped by the U.S. Geological Survey as underlain by bedrock units of the Clear Lake Volcanics. A test hole was previously drilled at this location in 2017. Review of the owner's records indicates the test hole encountered the Clear Lake Volcanics to a depth of 440 feet, underlain by units of the Franciscan Complex. Water was encountered within the volcanics at depths of about 320 and 360 feet.

The nearest identified production well (McCreary PW-1 well) is located about 1.7 miles northwest of the Red Hill well. The McCreary PW-1 well is completed in bedrock units of the Franciscan Complex and draws groundwater from those units. Given the distance between wells and different formation/aquifer conditions, it is unlikely that the Red Hill PW-1 well would have hydraulic influence on the McCreary PW-1 well. No other production wells were identified that are known to have influence on the bedrock aquifer in the vicinity of the Red Hill PW-1 well.

(10) A description of the surface waters, water staff gauges, and production wells shown in (3)(B);

As shown on the *Well Location Map* (Attachment 2), the nearest identified surface water bodies are two seasonal, unnamed pond features located about 700 feet northeast and 1,700 feet southwest of the well. In addition, the USGS mapping shows a seasonal, intermittent watercourse lying about 1,700 feet east of the well. There are no staff gauges or other production wells within 1,000 feet of the Red Hill PW-1 well. The nearest staff gauge, operated by the USGS on Putah Creek (Site No. 11453500) is about 3.2 miles northwest of the well. The nearest production well (not yet in service) is the McCreary PW-1, also on the ranch property, located 1.7 miles northwest.

(11) A description of how the well discharge will be managed to ensure the discharge doesn't interfere with the test;

Water from the well test will be discharged as far as practicable from the pumping well and away from areas where ponding could occur. The static water level measured in 2017 during drilling of a test hole at this location was 290 feet below ground surface. At this depth, the potential for water discharged at the surface to infiltrate back into the pumping zone and to act as a source of recharge during the duration of the test seems unlikely. However, water level drawdown data will be reviewed during the course of the test, to note if recharge is occurring.

(12) A description of how the initial volume of water in the well's casing, or bore hole if there is no casing at the time, will be addressed to ensure it has no impact on the test results; and

A 10-day duration test is proposed. Typically, drawdown and dewatering of the well casing both occur fairly rapidly at the beginning of the test. During this period, the slope of the drawdown plot is (as indicated by a semi-log plot) is generally flatter and non-linear. Water levels will be collected at more frequent intervals during the early portion of the test and plotted (semi-log plot) to identify when the data fall on a straight-line plot. This typically indicates that initial water in the casing has been removed and that the discharge is occurring at a constant rate. Given the duration of the test, initial casing dewatering is not anticipated to have an impact on the test results.

(13) A written description of the aquifer's annual recharge.

The Red Hill PW-1 well is located in hilly, upland areas outside of an identified groundwater basin as defined in California Department of Water Resources Bulletin 118. Published geologic maps of the vicinity indicate that the bedrock units underlying the area consist of basaltic lava flows and minor interbedded tuff of the Clear Lake Volcanics. The volcanics are generally underlain by older, metamorphosed and deformed sedimentary and volcanic units of the Franciscan Complex and sedimentary strata of the Great Valley

Sequence. Locally, prior studies by USGS (Upson and Kunkel, 1955) note that areas underlain by Clear Lake Volcanics "may absorb appreciable quantities of water from rain and melting snow and store it in joints and fractures."

The Lake County Groundwater Management Plan (2006), DWR Water Data Library and SGMA Data Viewer, as well as the USGS National Water Information Service online databases do not identify monitoring wells on the Guenoc Ranch property. Therefore, an estimate of recharge based on annual fluctuations of the water table and associated changes in groundwater storage could not be made.

Review of published precipitation maps (Cal Fire, Fire and Resource Assessment Program, 2020) indicate that average rainfall in the vicinity of the well is in the range of about 32 to 35 inches per year. Published data for Mediterranean-type climates (receiving almost no precipitation for half the year) indicates that ground-water recharge is typically on the order of 10 to 20 percent of long-term precipitation (Bouwer, ASCE, 2003). Using the average rainfall data for the site vicinity, this would be equivalent to about 3.5 to 7.0 inches of the annual recharge, or about 0.3 to 0.6 acre-feet of groundwater recharge per acre in the vicinity of the well. The published geologic mapping (Fox and others, 1973) indicates that the outcrop area of the Clearlake Volcanics in the vicinity of the well is over 2,000 acres, indicating that annual local recharge could be in the range of 600 to 1,200 acre-feet per year. However, given that the well is located in hilly, upland areas underlain by bedrock, the actual recharge may be at the lower end of this range.

cc: Lotusland Investment Holdings, Inc.
Attn. Mr. Randy Sternberg

Attachments

Red Hill Well 1Well Site Plan – Figure 1
Well Location Map, Attachment 2

References

Bouwer, H., 2003, Integrated Water Management for the 21st Century, Problems and Solutions in Perspectives in Civil Engineering, Commemorating the 150th Anniversary of the American Society of Civil Engineers: J.S. Russell, Ed., ASCE 150th Anniversary Paper, p. 79-88.

California Department of Water Resources, 2020, Water Data Library: (http://www.water.ca.gov/waterdatalibrary/).

California Department of Water Resources, 2020, SGMA Data Viewer, Interactive Map Application (Basin boundary, well, and SGMA information): https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels

CDM, 2006, Lake County Groundwater Management Plan: Consultant's report to the Lakc County Watershed Protection District, Final Report dated March 31, 2006, 138p.

Fox, K.F. Jr., Sims, J.D., Bartow, J.A. and Helley, E.J., 1973, Preliminary Geologic Map of Eastern Sonoma County and Western Napa County, California: U.S. Geological Survey Miscellaneous Field Studies Map 483, 4 sheets, Scale 1:62,500.

Graymer, R.W., Brabb, E.E., Jones, D.L., Barnes, J., Nicholson, R.S., and Stamski, R.E., 2007, Geologic Map and Map Database of Eastern Sonoma and Western Napa Counties, California: U.S. Geological Survey Scientific Investigations Map 2956, Scale 1:100,000.

U.S. Geological Survey, 2020, National Water Information Service, data for USGS Station No. 11453500, Putah C NR Guenoc CA: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=11453500

Upson, J.E. and Kunkel, F., 1955, Ground Water of the Lower Lake-Middletown Area, Lake County, California: U.S. Geological Survey Water-Supply Paper 1297, 87p.

Wagner, D.L. and Bortugno, E.J., 1982, Geologic Map of the Santa Rosa Quadrangle, California, 1:250,000: California Division of Mines and Geology Regional Geologic Map Series, Santa Rosa Quadrangle, Map No. 2A (Geology).

Grange Rd.

Butts Canyon Rd.

Hwy 29

Red Hill PW-1
(Lat 38 45.66840' N - Long122 27.77940' W)

US COAST GUARD RESERVATION

McCreary Lake

Bohn Valley

Big Basin

Map Legend

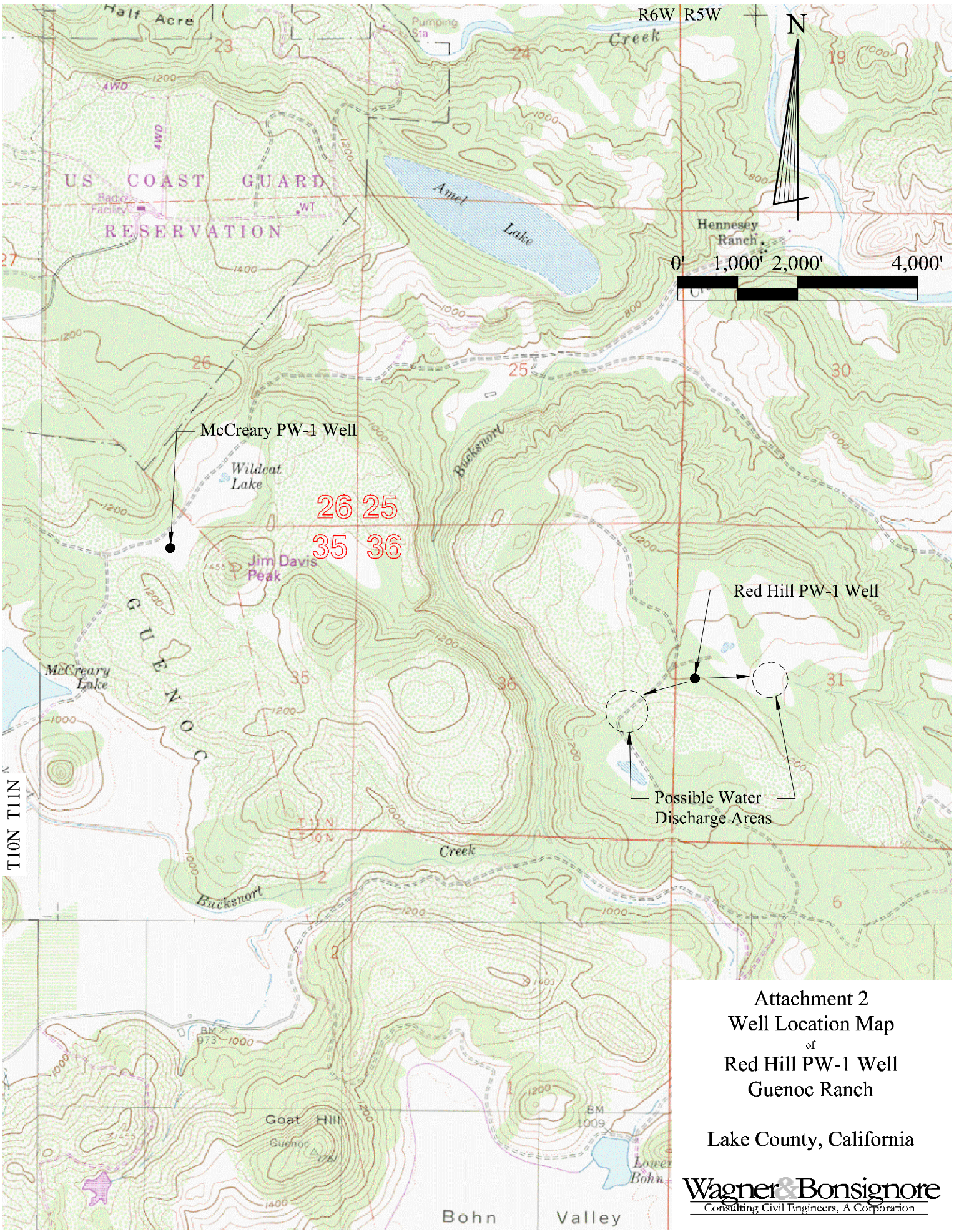
- Property Boundary
- Butts Canyon Rd To Hwy 29
- County Line
- Grange Rd
- Hwy 29
- Red Hill PW-1 (Lat 38 45.66840' N - Long122 27.77940' W)

Date: 10/30/2020

RED HILL PW-1 WELL SITE PLAN

0 ft 5000 ft 10000 ft

Lotusland Investment Holdings, Inc.
22000 Butts Canyon Rd.
Middletown, CA 95461



Attachment 2
Well Location Map
of
Red Hill PW-1 Well
Guenoc Ranch

Lake County, California

Wagner & Bonsignore
Consulting Civil Engineers, A Corporation

Base map per USGS 7.5 Minute Quad maps for Middletown, Jericho Valley, Detert Reservoir, and Aetna Springs

November 2020

Q:\Drawings\Lotus Land Investment Holdings, Inc\Well Location Map Red Hill PW-1 Well.dwg

State of California

Well Completion Report

Form DWR 188 Complete 12/29/2020

WCR2020-015688

Owner's Well Number: RED HILL PW-1 | Date Work Began: 11/06/2019 | Date Work Ended: 10/21/2020

Local Permit Agency: Lake County Health Services Department - Environmental Health Division

Secondary Permit Agency: | Permit Number: WE-5237 | Permit Date: 08/29/2019

Well Owner (must remain confidential pursuant to Water Code 13752)

Name: BOHN VALLEY, INC.,

Mailing Address: 22000 BUTTS CANYON RD

City: MIDDLETOWN | State: CA | Zip: 95461

Planned Use and Activity

Activity: New Well

Planned Use: Water Supply Public

Well Location

Address: 24783 GRANGE RD

City: MIDDLETOWN | Zip: 95461 | County: Lake

Latitude: 38 Deg. 45 Min. 41.6735 Sec. N | Longitude: -122 Deg. 27 Min. 46.62 Sec. W

Dec. Lat.: 38.761576 | Dec. Long.: -122.46295

Vertical Datum: | Horizontal Datum: WGS84

Location Accuracy: | Location Determination Method:

APN: 013-021-091-000

Township: 11 N

Range: 05 W

Section: 31

Baseline Meridian: Mount Diablo

Ground Surface Elevation: 1199

Elevation Accuracy: Unknown

Elevation Determination Method: Digital Aerial Photo

Borehole Information

Orientation: Vertical | Specify:

Drilling Method: Downhole Rotary Hammer | Drilling Fluid: Bentonite

Total Depth of Boring: 630 Feet

Total Depth of Completed Well: 630 Feet

Water Level and Yield of Completed Well

Depth to first water: (Feet below surface)

Depth to Static Water Level: 309 (Feet) | Date Measured: 11/04/2020

Estimated Yield*: 100 (GPM) | Test Type: Pump

Test Length: 8 (Hours) | Total Drawdown: 49 (feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to Feet		Description
0	50	SURFACE CASING
50	320	HARD ROCK
320	380	GRAVEL & CLAY
380	500	HARD ROCK
500	550	BLUE CLAY
550	630	CLAY

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	50	Conductor or Fill Pipe	Low Carbon Steel	Grade: ASTM A53	0.375	24			SURFACE CASING
2	0	360	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	10.75			
2	360	440	Screen	Low Carbon Steel	Grade: ASTM A53	0.25	10.75	Milled Slots	0.08	
2	440	540	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	10.75			
2	540	620	Screen	Low Carbon Steel	Grade: ASTM A53	0.25	10.75	Milled Slots	0.08	
2	620	630	Blank	Low Carbon Steel	Grade: ASTM A53	0.25	10.75			W/ BULLNOSE

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	100	Cement	10.3 Sack Mix		ANNULAR CEMENT SEAL
100	630	Filter Pack	Other Gravel Pack	1/4 PEA GRAVEL	GRAVEL PACK

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	50	30
50	630	17.5

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: WELL INDUSTRIES INC
Person, Firm or Corporation

3282 HIGHWAY 32 (Address) | CHICO (City) | CA (State) | 95973 (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 11/06/2020 (Date Signed) | 812678 (C-57 License Number)

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

N — Latitude Deg/Min/Sec

W — Longitude Deg/Min/Sec

TRS:

APN:

10 Day Well Test Report

Job Name: RH PW-1 Date: 1/19/2021

Static Water Level: 299 ft Pump Setting Depth: 580 ft

Date	Gallon Per Minute	PWL	Sands / Discharge
December 13, 2020	45 GPM	537'	0.00 / Clear
December 14, 2020	44 GPM	537'	0.00 / Clear
December 15, 2020	44 GPM	537'	0.00 / Clear
December 16, 2020	43 GPM	536'	0.00 / Clear
December 17, 2020	43 GPM	537'	0.00 / Clear
December 18, 2020	43 GPM	536'	0.00 / Clear
December 19, 2020	43 GPM	536'	0.00 / Clear
December 20, 2020	43 GPM	536'	0.00 / Clear
December 21, 2020	43 GPM	536'	0.00 / Clear
December 22, 2020	43 GPM	536'	0.00 / Clear

Recorded By: Ryan P.

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

29 December 2020

Wagner & Bonsignore Engineers
Attn: David Peterson
2151 River Plaza Drive, Suite 100
Sacramento, CA 95833-4133
RE: Water Quality
Work Order: 20L1428

Enclosed are the results of analyses for samples received by the laboratory on 12/09/20 12:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette Poplin

Jeanette L. Poplin For Stephen F. McWeeney
Lab Manager

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	12/29/20 14:16

Bay Area: 262 Rickenbacker Circle | Livermore, CA 94551 | T: 925-828-6226 | F: 925-828-6309 | ELAP# 2728
Central Valley: 9090 Union Park Way Suite 113 | Elk Grove, CA 95624 | T: 916-686-5190 | F: 916-686-5192 | ELAP# 2922
North Bay: 110 Liberty Street | Petaluma, CA 94952 | T: 707-769-3128 | F: 707-769-8093 | ELAP# 2303
San Diego: 2722 Loker Avenue West Suite A | Carlsbad, CA 92010 | T: 760-930-2555 | F: 760-930-2510 | ELAP# 3055

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Red Hill PW-1	20L1428-01	Water	12/09/20 11:00	12/09/20 12:45

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	12/29/20 14:16

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Red Hill PW-1 (20L1428-01)		**Sample Type: Water**			**Sampled: 12/09/20 11:00**				
Metals (Drinking Water) by EPA 200 Series Methods									
Calcium	**29 mg/L**	**1.0**	1	AL03710	12/14/20 10:00	12/21/20 13:04	1551	EPA 200.7	
Iron	**110 ug/L**	**100**	1	AL03710	12/14/20 10:00	12/21/20 13:04	1551	EPA 200.7	
Magnesium	**46 mg/L**	**1.0**	1	AL03710	12/14/20 10:00	12/21/20 13:04	1551	EPA 200.7	
Mercury	ND ug/L	1.0	1	AL04192	12/22/20 06:18	12/22/20 13:27	1551	EPA 245.1	
Potassium	**3.5 mg/L**	**1.0**	1	AL03710	12/14/20 10:00	12/21/20 13:04	1551	EPA 200.7	
Sodium	**14 mg/L**	**1.0**	1	AL03710	12/14/20 10:00	12/21/20 13:04	1551	EPA 200.7	
Metals by EPA 200 Series Methods									
Chromium, hexavalent	ND ug/L	1.0	1	AL04064	12/18/20 08:00	12/18/20 10:08	2303	EPA 218.6	
Metals by EPA Method 200.8 ICP/MS									
Aluminum	ND ug/L	50	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Antimony	ND ug/L	6.0	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Arsenic	**3.1 ug/L**	**2.0**	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Barium	ND ug/L	100	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Beryllium	ND ug/L	1.0	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Cadmium	ND ug/L	1.0	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Chromium	ND ug/L	10	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Copper	ND ug/L	50	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Lead	ND ug/L	5.0	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Manganese	**56 ug/L**	**20**	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Nickel	ND ug/L	10	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Selenium	ND ug/L	5.0	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Silver	ND ug/L	10	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Thallium	ND ug/L	1.0	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	
Zinc	ND ug/L	50	4	AL03577	12/11/20 08:30	12/14/20 18:30	1551	EPA 200.8	

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Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	12/29/20 14:16

	Result		Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Red Hill PW-1 (20L1428-01)		**Sample Type: Water**				**Sampled: 12/09/20 11:00**				
Conventional Chemistry Parameters by APHA/EPA Methods										
Aggressive Index	**11.62**	**NU**	**2.00**	1	AL03710	12/14/20 10:00	12/23/20 09:15	1551	AWWA	
Bicarbonate	**360**	**mg/L**	**5.0**	1	AL03738	12/15/20 08:00	12/15/20 16:17	1551	SM2320B	
Carbonate	ND	mg/L	5.0	1	AL03738	12/15/20 08:00	12/15/20 16:17	1551	SM2320B	
Color	ND	CU	5.0	1	AL03103	12/09/20 15:00	12/09/20 16:07	2303	SM2120B	
Hydroxide	ND	mg/L	5.0	1	AL03738	12/15/20 08:00	12/15/20 16:17	1551	SM2320B	
MBAS, calculated as LAS, mw 340	ND	mg/L	0.050	1	AL03604	12/11/20 09:00	12/11/20 15:15	1551	SM5540C	
Odor	ND	T.O.N.	1.0	1	AL03103	12/09/20 15:00	12/09/20 16:07	2303	SM2120B	
pH	**7.28**	**pH Units**	**1.68**	1	AL03631	12/10/20 16:00	12/10/20 17:00	1551	SM4500-H+ B	T-14
Specific Conductance (EC)	**530**	**umhos/cm**	**20**	1	AL03631	12/10/20 16:00	12/10/20 17:00	1551	SM2510B	
Total Dissolved Solids	**360**	**mg/L**	**10**	1	AL03843	12/16/20 05:45	12/21/20 09:35	1551	SM2540C	
Turbidity	ND	NTU	0.25	1	AL03103	12/09/20 15:00	12/09/20 16:07	2303	SM2130B	
Total Alkalinity as CaCO3	**300**	**mg/L**	**5.0**	1	AL03738	12/15/20 08:00	12/15/20 16:17	1551	SM2320B	
Nitrate + Nitrite as N	ND	mg/L	0.40	1	AL04324	12/23/20 11:33	12/23/20 13:24	1551	Calculation	
Hardness, Total	**260**	**mg/L**	**5**	1	AL03710	12/14/20 10:00	12/21/20 13:04	1551	SM2340B	
Miscellaneous Physical/Conventional Chemistry Parameters										
Cyanide (total)	ND	mg/L	0.10	1	AL03717	12/14/20 08:30	12/14/20 14:54	1551	10-204-00-1X	
Anions by EPA Method 300.0										
Chloride	**4.9**	**mg/L**	**0.50**	1	AL03675	12/12/20 03:56	12/12/20 03:56	1551	EPA 300.0	
Fluoride	ND	mg/L	0.10	1	AL03675	12/12/20 03:56	12/12/20 03:56	1551	EPA 300.0	
Nitrate as N	ND	mg/L	0.40	1	AL03520	12/09/20 15:30	12/09/20 20:04	2303	EPA 300.0	
Nitrite as N	ND	mg/L	0.20	1	AL03520	12/09/20 15:30	12/09/20 20:04	2303	EPA 300.0	
Sulfate as SO4	**2.4**	**mg/L**	**0.50**	1	AL03675	12/12/20 03:56	12/12/20 03:56	1551	EPA 300.0	

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Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	12/29/20 14:16

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Red Hill PW-1 (20L1428-01)		**Sample Type: Water**				**Sampled: 12/09/20 11:00**			
Microbiological Parameters by APHA Standard Methods									
Total Coliforms	ND MPN/100mL	1.0	1	AL03507	12/09/20 17:00	12/10/20 17:00	2303	SM9223B	
E. Coli	ND MPN/100mL	1.0	1	AL03507	12/09/20 17:00	12/10/20 17:00	2303	SM9223B	
Volatile Organic Compounds by EPA Method 524.2									
Benzene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Carbon tetrachloride	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Chlorobenzene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,2-Dichlorobenzene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,4-Dichlorobenzene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,1-Dichloroethane	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,2-Dichloroethane	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,1-Dichloroethene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
cis-1,2-Dichloroethene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
trans-1,2-Dichloroethene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,2-Dichloropropane	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,3-Dichloropropene (total)	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Ethylbenzene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Methyl tert-butyl ether	ND ug/L	3.0	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Methylene chloride	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Styrene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,1,2,2-Tetrachloroethane	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Tetrachloroethene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Toluene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,2,4-Trichlorobenzene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,1,1-Trichloroethane	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
1,1,2-Trichloroethane	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Trichloroethene	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Trichlorofluoromethane	ND ug/L	5.0	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Trichlorotrifluoroethane	ND ug/L	10	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Vinyl chloride	ND ug/L	0.50	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Xylenes (total)	ND ug/L	1.5	1	AL03168	12/09/20 15:00	12/09/20 15:54	2303	EPA 524.2	
Surrogate: Bromofluorobenzene	*84.0 %*	*70-130*		*AL03168*	*12/09/20 15:00*	*12/09/20 15:54*	2303	*EPA 524.2*	
Surrogate: 1,2-Dichlorobenzene-d4	*83.4 %*	*70-130*		*AL03168*	*12/09/20 15:00*	*12/09/20 15:54*	2303	*EPA 524.2*	

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Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	12/29/20 14:16

Notes and Definitions

QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
T-14	Residual chlorine, dissolved oxygen, sulfite, and pH must be analyzed in the field to meet the EPA specified 15 minute hold time.
ND	Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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SGS FORENSIC LABORATORIES

Final

ANALYSIS REPORT
ASBESTOS IN DRINKING WATER
Transmission Electron Microscopy*

Client:	Alpha Analytical Lab		
Contact:	Stephen F McWeeney	Client Number:	2096
Street:	208 Mason St.	Report Number:	T033312
City/state/zip:	Ukiah, CA 95482	Date/time Received:	12/10/20

Site:		Date filtered:	12/10/20
Job ID/PO:	20L1428	Analyst(s):	MAB
Date Collected:	12/9/20	Date Analyzed:	12/22/20
Hold time, hrs:	<48	Date Reported:	12/23/20
Filter type:	25mm MCE	Date Printed:	12/23/20
Pore size:	0.22 µm		

ANALYTICAL RESULTS

Sample Number	Red Hill PW-1			
Description				
Lab Sample Number	20131683			
Volume Filtered, mL	30			
Filter Area, mm2	190			
Grid Opening Area, mm^2	0.0086			
Number of GO's Analyzed	4			
Area Analyzed, mm^2	0.0344			
# Asbestos Fibers ≥10 µm	0			
Analytical Sensitivity, MFL	0.2			
Asbestos Concentration, ≥10um in length, MFL	**<0.2**			
Asbestos Type(s) Detected**	**ND**			
95% Upper Conf. Limit, MFL	0.7			
95% Lower Conf. Limit, MFL	0.0			

0



Mark S. Floyd, Analytical Microscopy Supervisor

* Method 100.2 (EPA/600/R-94/134). Results are reported in Millions of Fibers per Liter (MFL) over 10 µm in length.

** Asbestos types: CH=chrysotile; AM=amosite; CR=crocidolite; TR=tremolite; AC=actinolite; AN=anthophyllite; ND=none detected; NA-Not Analyzed; n/a=not applicable (i.e., divide by 0); OV=overloaded; BL=blank sample; PF=prepped not analyzed.

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WATERS, SEDIMENTS, SOLIDS

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San Diego Laboratory (3055)
2722 Loker Ave West, Ste A, Carlsbad CA 92010

Chain of Custody - Work Order

Reports and Invoices delivered by email in PDF format

Lab No 20L1428 Pg ____ of ____

Signature below authorizes work under terms stated on reverse side.

Report to	Invoice to (if different)	Project Information
Company: Wagner & Bonsignore	Contact: Taryn Smith	Project ID: Gucnoc Ranch
Attn: David Peterson	Email address: tsmith@wbecorp.com	Project No: 700.3
Address: 2151 River Plaza Dr., Ste 100 Sacramento, CA 95833	Address: same	PO Number: —
Phone/Fax: (707) 484-1798 (mobile)	Phone/Fax: (916) 441-6850	
Email Address: dpeterson@wbecorp.com		

Field Sampler - Printed Name & Signature: David Peterson

Sample Identification	Sampling Date	Sampling Time	Container: 40ml VOA Vial	Container: Plastic	Container: Glass	Container: Sleeve	Container: Other	Preservative: HCl	Preservative: HNO3	Preservative: H2SO4	Preservative: Other	Preservative: None	Matrix: Drinking Water	Matrix: Wastewater	Matrix: Soil	Matrix: Other	Total Number of Containers per Sample ID	Analysis Request: Title 22 - General Mineral	Title 22 - Inorganics	Title 22 - General Physical	Title 22 - VOCs - 524 DDW	Asbestos	Hexavalent Chromium	Bacteriological Analysis
Red Hill PW-1	12/9/20	11:00a	✓	✓	✓								X					X	X	X	X	X	X	X

TAT
Standard 10 days ✓
RUSH: 5 days ○ 48 hours ○ Other: ____days ○
Preapproval required

TEMP °C
Ukiah
Livermore
Elk Grove
Petaluma 5.8
Carlsbad

Notes / DDW Source Codes
General Physical
Scan logged in for Color, Odor & Turbidity in North Bay. SM
12/9/20

Relinquished by	Received by	Date	Time
David H. Peterson		12/9/20	12:45p

DDW Write On EDT Transmission? ○ Yes ✓ No

State System Number: _____

If "Y" please enter the Source Number(s) in the column above

CA Geotracker EDF Report? ○ Yes ✓ No

Global ID: Sampling Company Log Code:

EDF to (Email Address):

Travel and Site Time: | Mileage: | Misc. Supplies:

Well Testing Report 5:

Tephra 4

Wagner&Bonsignore
Consulting Civil Engineers, A Corporation

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Leah Orloff, Ph.D, P.E.
David H. Peterson, C.E.G., C.H.G.
Ryan E. Stolfus

MEMORANDUM

To: Sherwood Design Engineers, Inc.
Attn: Mr. Peter Haase, MS, PE

From: David H. Peterson, CEG 1186, CHG 86

Date: January 7, 2021

Re: **Proposed Well Test Procedures**
Tephra 4 Production Well
Guenoc Ranch, 21665 Grange Road
Middletown, Lake County, California

This memorandum outlines the proposed test procedures to determine the capacity of an existing water well, identified as the Tephra 4 Production Well, in a pumping test. As shown on the *Tephra 4 Production Well Site Plan*, Attachment 1, the well is located in the southern portion the Guenoc Ranch property, about 6.5 miles southeast of the town of Middletown, in Lake County, California.

The geology in the vicinity of the well is shown on Attachment 2. Review of published geologic mapping for the vicinity (Fox and others, 1973; Graymer and others, 2007) indicates that the well was drilled in an area underlain at the surface by pumice-bearing ash-flow tuff and interlayered andesite and basalt lava flows of the Tertiary-age Sonoma Volcanics. Review of the Well Completion Report for the well (WCR No. 1074876; see Attachment 3) indicates the well primarily encountered soft and porous volcanic rock (tuff) to a depth of 230 feet. From a depth of 170 to 200 feet, "hard, black volcanic rock" was encountered, that may be a locally welded zone in the tuff or an interbedded lava flow. The tuff unit is underlain at 230 feet by green shale that is probably part of the underlying Jurassic- to Cretaceous-age Knoxville formation (Great Valley Sequence) bedrock. Typically, ash-flow tuff is moderately to highly porous and groundwater occurrence, recharge and movement in the relatively porous ash-flow tuffs of the Sonoma Volcanics is through primary porosity, similar to alluvial deposits.

The specific procedures for performing a pump test for a well completed in alluvium are detailed in Section 64554(f) and testing for wells in bedrock (i.e., primary production is from secondary permeability features such as fractures and cracks) are described in Section 64554(g), Title 22 of CCR. Review of the well completion report and area geologic mapping indicate that the geologic unit penetrated by the well is porous and not significantly fractured. For the purposes

of classifying the geologic formation for Title 22 pump test procedures, the tuff unit would more appropriately be classified as similar to an alluvial deposit.

Section 64554(e) of Title 22 outlines the information about the well test required by the State Water Resources Control Board prior to performing the test. The information required by Section 64554(e) is listed below in italics, followed by the provided information.

(1) The name and qualifications of the person who will be conducting the test;

The testing will be conducted by Well Industries Inc. of Chico, California, a California-licensed C-57 Contractor (#812678). During the test, a California-certified Hydrogeologist will be available to provide geologic consultation, as needed.

(2) The proposed test's pumping discharge rate, based on the design rate determined during well development and/or a step-drawdown test.

The pumping discharge rate was estimated by the driller during well development at 55 gallons per minute (gpm). In addition, an existing vineyard irrigation well referred to as the Tephra 1 well, located about 100 feet away (see Attachment 1 for location) reportedly produces about 75 gpm. The test pumping rate will be in this range or somewhat higher, if feasible.

(3) A copy of a United States Geological Survey 7½ minute topographic map of the site at a scale of 1:24,000 or larger (1 inch equals 2,000 feet or 1 inch equals less than 2,000 feet) or, if necessary, a site sketch at a scale providing more detail, that clearly indicates;

(A) The well discharge location(s) during the test, and

(B) The location of surface waters, water staff gauges, and other production wells within a radius of 1000 feet;

See the attached *Well Location Map*, Attachment 4, reproduced at a scale of 1:24,000, for possible well discharge locations, surface waters, and production wells.

(4) A well construction drawing, geologic log, and electric log, if available;

The Well Completion Report (WCR No. 1074876) is attached. The well was drilled and constructed in October, 2008 by Larry Herman Drilling, of Lower Lake, California. The well was drilled and completed to a depth of 257 feet. An electric-gamma ray-temperature log is not available for the well.

The geologic log on the WCR indicates that soft and porous tuff of the Sonoma Volcanics was encountered, with a possible harder layer, most likely a lava flow or welded zone, at a depth of 170 to 200 feet. Fracturing is not described within the tuff unit. Green shale,

probably part of the underlying Knoxville formation (Great Valley Sequence) bedrock unit, was encountered at 230 feet.

(5) Dates of well completion and development, if known;

The well was drilled and completed during October 2008. The WCR indicates the well was developed on October 27, 2008 by air lift methods.

(6) Specifications for the pump that will be used for the test and the depth at which it will draw water from the well;

As previously discussed, the well was never put into production. The WCR indicates that the well casing has an inside diameter of 4.5 inches. Most likely, a 3-inch submersible pump will be used for the test. The static water level was measured at 123 feet below ground surface (BGS) at completion of well development in 2008. Presumably, the pump will be set near the bottom of the well, to allow for drawdown during pumping. However, pump selection and depth will be made by the pump contractor.

(7) A description of the methods and equipment that will be used to measure and maintain a constant pumping rate;

Measurement of the pumping rate will be performed using a flow meter and totalizer installed in the pump discharge line. Pump equipment and discharge rate will be monitored throughout the test to maintain a constant pumping rate.

(8) A description of the water level measurement method and measurement schedule;

Water level changes measurements will be obtained using a tape-style electronic water level meter. The water levels measurements will be collected at a minimum, as required in Section 64554 (f) or (g), depending on the geologic classification of the formation. However, data may be collected at more frequent intervals to provide additional data and to assess the progress of the test.

(9) For wells located in or having an influence on the aquifer from which the new well will draw water, a description of the wells' operating schedules and the estimated amount of groundwater to be extracted, while the new well is tested and during normal operations prior to and after the new well is in operation;

The Tephra well was drilled in a relatively undeveloped rural ranch area mapped by the U.S. Geological Survey as underlain by tuff units of the Sonoma Volcanics. As shown on Attachments 1 and 4, an existing vineyard irrigation well is located about 100 feet to the east and reportedly produces about 75 gpm. This well is generally operated from about April or early May through September. This well will be shut off prior to any planned pump testing of the Tephra well.

Other nearby, identified production wells on the Guenoc Ranch property are the Farmstead PW-1 well and Bohn Ridge 3 well, both located about 3.7 miles to the northeast. Both of these wells were completed in older bedrock units of the Franciscan Complex and serpentinite. Given the distance from the Tephra well and different bedrock aquifer conditions, it is unlikely that there is direct hydraulic connection between these wells.

(10) A description of the surface waters, water staff gauges, and production wells shown in (3)(B);

The nearest staff gauge, operated by the USGS, is located along Putah Creek, about 5.3 miles to the north. As shown on the *Well Location Map*, Attachment 4, the nearest surface waters are two unnamed, intermittent watercourses located about 600 feet east and north of the well, and an unnamed pond along the course of Cassidy Creek, about 2,200 feet southwest. No production wells were identified within 1,000 feet of the Tephra Well, although as previously discussed, an existing vineyard irrigation well is located about 100 feet to the east.

(11) A description of how the well discharge will be managed to ensure the discharge doesn't interfere with the test;

Water from the well test will be discharged as far as practicable from the pumping well and away from areas where ponding could occur. During drilling/development of the Tephra well in 2008, the static water level was measured at 123 feet below ground surface. At this depth, the potential for water discharged at the surface to infiltrate back into the pumping zone and to act as a source of recharge during the duration of the test is unlikely. However, water level drawdown data will be reviewed from the test, to evaluate if recharge is occurring.

(12) A description of how the initial volume of water in the well's casing, or bore hole if there is no casing at the time, will be addressed to ensure it has no impact on the test results; and

Typically, drawdown and dewatering of the well casing both occur fairly rapidly at the beginning of the test. During this period, the slope of the drawdown plot is (as indicated by a semi-log plot) is generally flatter and non-linear. Water levels will be collected at more frequent intervals during the early portion of the test and plotted (semi-log plot) to identify when the data fall on a straight-line plot. This typically indicates that initial water in the casing has been removed and that the discharge is occurring at a constant rate.

(13) A written description of the aquifer's annual recharge.

The Tephra well is located in hilly, upland areas outside of an identified groundwater basin, as defined in California Department of Water Resources Bulletin 118. Published geologic

maps of the vicinity indicate that the bedrock units underlying the area consist of pumice-bearing ash-flow tuff and minor interbedded andesitic and basaltic lava flows of the Sonoma Volcanics. Based on the geologic mapping by Fox and others (1973; see Attachment 2), the outcrop area of the tuff unit was estimated at 1,100 acres. The volcanics are generally underlain by older, metamorphosed and deformed sedimentary and volcanic units of the Jurassic- to Cretaceous-age Great Valley Sequence and serpentinite.

While previous studies by USGS in the Napa Valley area (Kunkel and Upson, 1960) note that the tuffaceous units of the Sonoma Volcanics yield moderate to large quantities of water to wells, no estimate of recharge to these units was made. Review of published precipitation maps (Cal Fire, Fire and Resource Assessment Program, 2020) indicate that average rainfall in the vicinity of the well is in the range of about 32 to 35 inches per year. Published data for Mediterranean-type climates (receiving almost no precipitation for half the year) indicates that ground-water recharge is typically on the order of 10 to 20 percent of long-term precipitation (Bouwer, ASCE, 2003). Using the average rainfall data for the site vicinity, this would be equivalent to about 3.5 to 7.0 inches of the annual recharge, or about 0.3 to 0.6 acre-feet of groundwater recharge per acre. Based on a mapped outcrop area of 1,100 acres for the tuff unit, this would equate to annual local recharge in the range of 330 to 660 acre-feet per year. However, given that the well is located in sloping, upland areas, the actual recharge may be at the lower end of this range.

cc: Lotusland Investment Holdings, Inc.
Attn. Mr. Randy Sternberg

Attachments

Tephra 4 Production Well Well Site Plan, Attachment 1
Vicinity Geologic Map, Attachment 2
Well Completion Report, Attachment 3
Well Location Map, Attachment 4

References

Bouwer, H., 2003, Integrated Water Management for the 21st Century, Problems and Solutions in Perspectives in Civil Engineering, Commemorating the 150th Anniversary of the American Society of Civil Engineers: J.S. Russell, Ed., ASCE 150th Anniversary Paper, p. 79-88.

California Department of Water Resources, 2020, Water Data Library: (http://www.water.ca.gov/waterdatalibrary/).

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CDM, 2006, Lake County Groundwater Management Plan: Consultant's report to the Lakc County Watershed Protection District, Final Report dated March 31, 2006, 138p.

Fox, K.F. Jr., Sims, J.D., Bartow, J.A. and Helley, E.J., 1973, Preliminary Geologic Map of Eastern Sonoma County and Western Napa County, California: U.S. Geological Survey Miscellaneous Field Studies Map 483, 4 sheets, Scale 1:62,500.

Graymer, R.W., Brabb, E.E., Jones, D.L., Barnes, J., Nicholson, R.S., and Stamski, R.E., 2007, Geologic Map and Map Database of Eastern Sonoma and Western Napa Counties, California: U.S. Geological Survey Scientific Investigations Map 2956, Scale 1:100,000.

Kunkel, F. and Upson, J.E., 1960, Geology and Ground Water in Napa and Sonoma Valleys, Napa and Sonoma Counties, California: U.S. Geological Survey Water-Supply Paper 1495, 260p.

U.S. Geological Survey, 2020, National Water Information Service, data for USGS Station No. 11453500, Putah C NR Guenoc CA: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=11453500

Upson, J.E. and Kunkel, F., 1955, Ground Water of the Lower Lake-Middletown Area, Lake County, California: U.S. Geological Survey Water-Supply Paper 1297, 87p.

Wagner, D.L. and Bortugno, E.J., 1982, Geologic Map of the Santa Rosa Quadrangle, California, 1:250,000: California Division of Mines and Geology Regional Geologic Map Series, Santa Rosa Quadrangle, Map No. 2A (Geology).

Grange Rd.

Hwy 29

Butts Canyon Rd.

Tephra 4 - Production Well
Lat 38 42.06614' N
Long 122 30.76324' W

Tephra 1 - Irrigation Well
Lat 38 42.06149' N
Long 122 30.74393' W

Map Legend

- Property Boundary
- Butts Canyon Rd To Hwy 29
- County Line
- Grange Rd
- Hwy 29
- Tephra 1 - Irrigation Well
- Tephra 4 Production Well

Attachment 1

Date: 12/31/2020

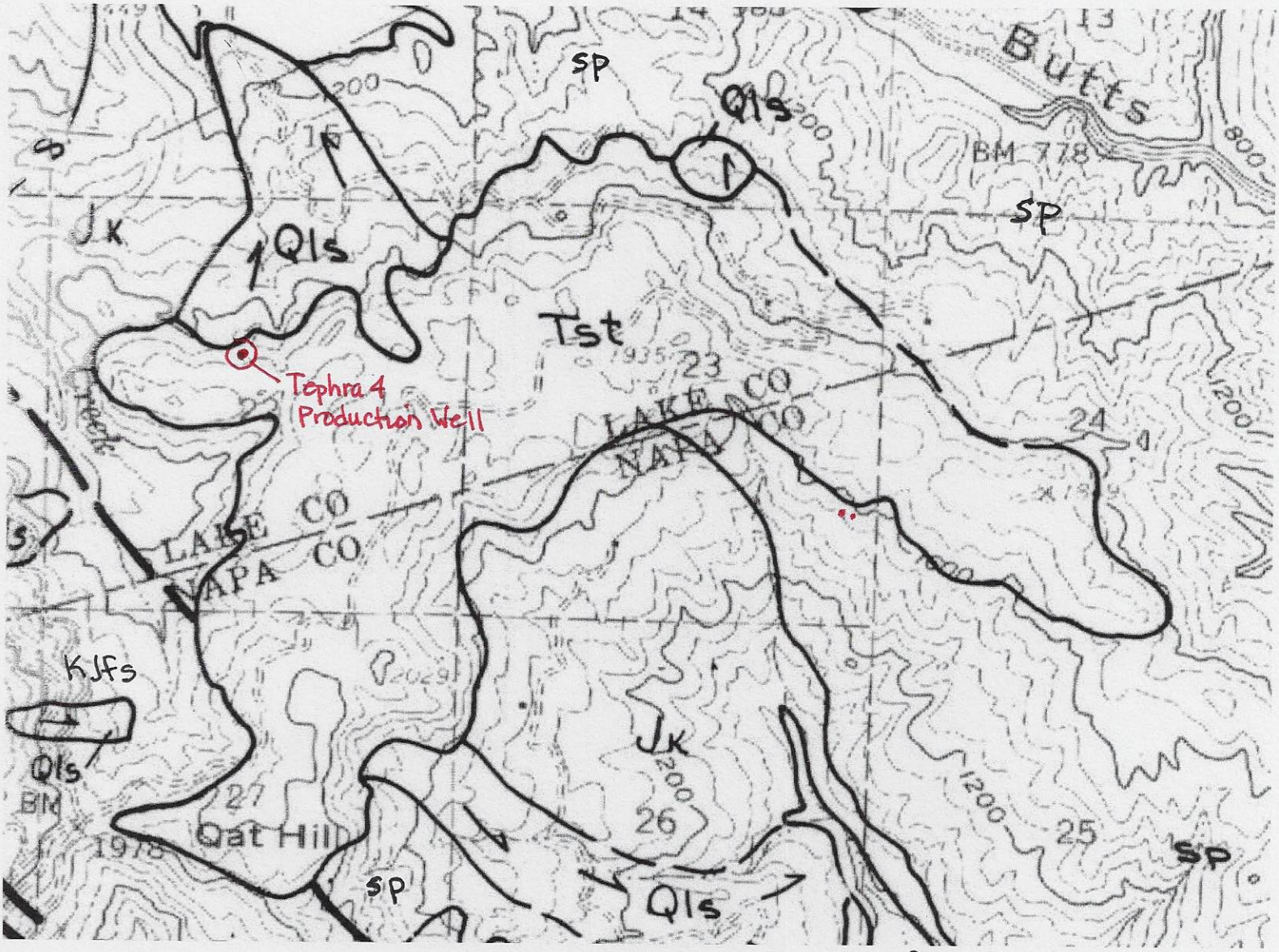
TEPHRA 4 PRODUCTION WELL SITE PLAN

0 ft 5000 ft 10000 ft

Lotusland Investment Holdings, Inc.
22000 Butts Canyon Rd.
Middletown, CA 95461

Reference: Fox and others, 1973
USGS

N



Explanation

Qls - landslides

Tst - Sonoma Volcanics; ash-flow tuffs

JK - Great Valley Sequence; Knoxville fm.

KJfs - Franciscan Complex - sheared shale and sandstone

SP - serpentinite

Attachment 2

Vicinity Geologic Map
Tephra 4 Production Well
Guenoc Ranch

TRIPLICATE
Owner's Copy

Page ___ of ___

Owner's Well No. ___

Date Work Began 10-24-08, Ended 10-28-08

Local Permit Agency Health Dept.

Permit No. WE-2639 Permit Date 10-27-08

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 1074876

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Air Rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	10	Volcanic Rock
10	40	Soft (No Return)
40	170	Soft Blue Volcanic Rock
170	200	Hard Black Volcanic Rock
200	230	Brown Tan Soft Broken Vol Rock
230	257	Green Shale

TOTAL DEPTH OF BORING 257 (Feet)

TOTAL DEPTH OF COMPLETED WELL 257 (Feet)

WELL OWNER

Name Langtry Estates & Vineyards

Mailing Address 900 Fort St. Mall #1500

Honolulu HI 96813

CITY STATE ZIP

WELL LOCATION

Address 21665 Butts Canyon Rd.

City Middletown Ca. 95461

County Lake

APN Book 013 Page 024 Parcel 12

Township 10N Range 6W Section 15

Lat ___ DEG. ___ MIN. ___ SEC. N

Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH

NORTH

*See Attached MAP

WEST EAST

SOUTH

*Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

✓ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ✓ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 150 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 123 (Ft.) & DATE MEASURED 10-27-08

ESTIMATED YIELD * 55 (GPM) & TEST TYPE Air Lift

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	60	9"	X				PVC	4½"	160	
60	137	7"	X				PVC	4½"	160	
137	177	7"		X			PVC	4½"	200	.020
177	197	7"	X				PVC	4½"	160	
197	237	7"		X			PVC	4½"	200	.020
237	257	7"	X				PVC	4½"	160	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	8 Sacks	Grout mix		
50	257		5/16	Pea Gravel	

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Larry Herman Drilling (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS PO Box 1152 CITY Lower Lake STATE Ca ZIP 95457

Signed ___ C-57 LICENSED WATER WELL CONTRACTOR

DATE SIGNED 10-27-08

C-57 LICENSE NUMBER 466071

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Attachment 3

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Page ___ of ___

Owner's Well No. ___

Date Work Began 10-24-08, Ended 10-28-08

Local Permit Agency Health Dept.

Permit No. WE-2628 Permit Date 10-27-08

STATE OF CALIFORNIA

WELL COMPLETION REPORT

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DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Air Rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	10	Volcanic Rock
10	40	Soft (No Return)
40	170	Soft Alive Volcanic Rock
170	200	Hard Black Volcanic Rock
200	230	Brown Tan Soft Broken Volcanic Rock
230	257	Green Shale

TOTAL DEPTH OF BORING 257 (Feet)

TOTAL DEPTH OF COMPLETED WELL 257 (Feet)

WELL OWNER

Name Langtry Estates Vineyards

Mailing Address 900 Fort St. Mall #1500

Honolulu HI 96813

CITY STATE ZIP

WELL LOCATION

Address 21665 Butts Canyon Rd.

City Middletown Ca. 95461

County Lake

APN Book 013 Page 024 Parcel 12

Township 10N Range 6W Section 15

Lat ___ DEG. ___ MIN. ___ SEC. N

Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH

NORTH

WEST EAST

*See Attached MAP

SOUTH

*Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

✓ NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY

___ Domestic ✓ Public

___ Irrigation ___ Industrial

___ MONITORING

___ TEST WELL

___ CATHODIC PROTECTION

___ HEAT EXCHANGE

___ DIRECT PUSH

___ INJECTION

___ VAPOR EXTRACTION

___ SPARGING

___ REMEDIATION

___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 150 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 123 (Ft.) & DATE MEASURED 10-27-08

ESTIMATED YIELD * 55 (GPM) & TEST TYPE Air Lift

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	60	9"	X				PVC	4½"	160	
60	137	7"	X				PVC	4½"	160	
137	177	7"		X			PVC	4½"	200	.030
177	197	7"	X				PVC	4½"	160	
197	237	7"		X			PVC	4½"	200	.030
237	257	7"	X				PVC	4½"	160	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	8 Sack Grout mix			
50	257	5/16			Gravel

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

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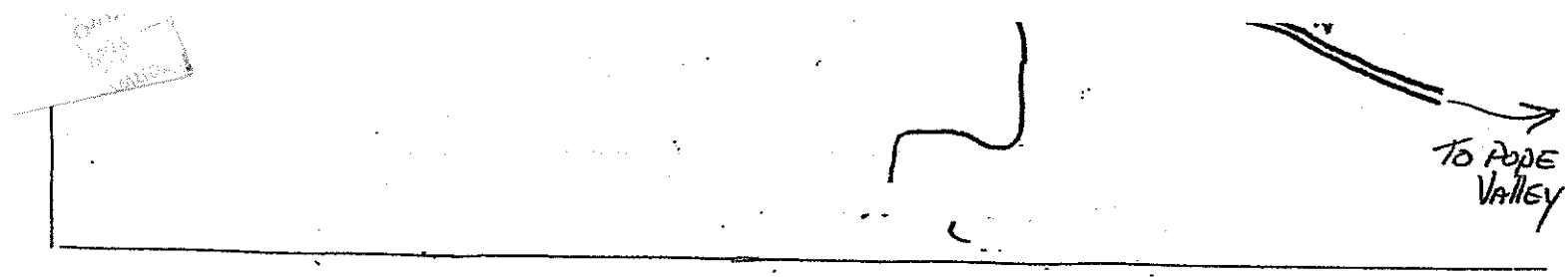
DATE SIGNED 10-27-08

C-57 LICENSE NUMBER 466071

DWR 188 REV. 05-03

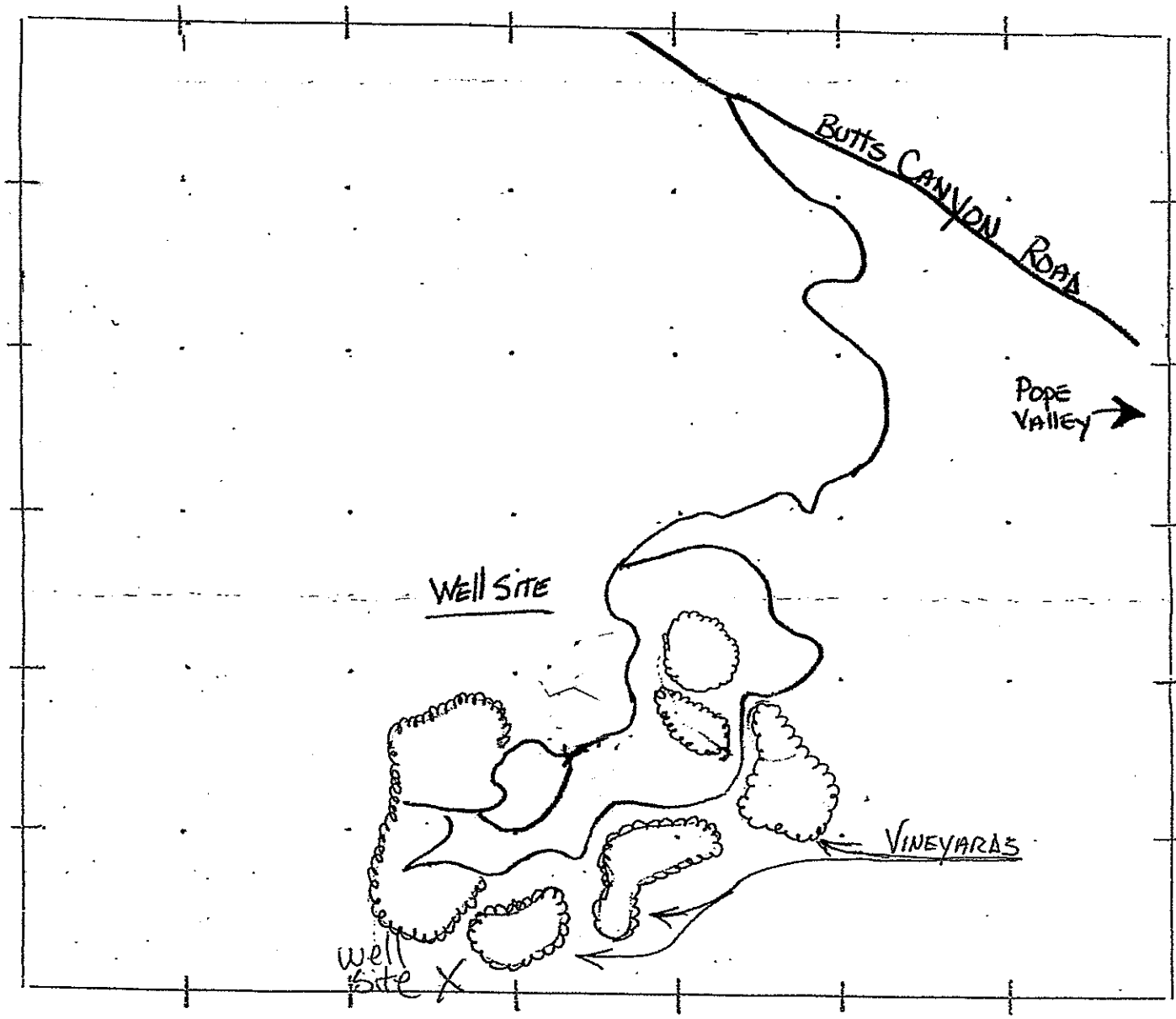
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM



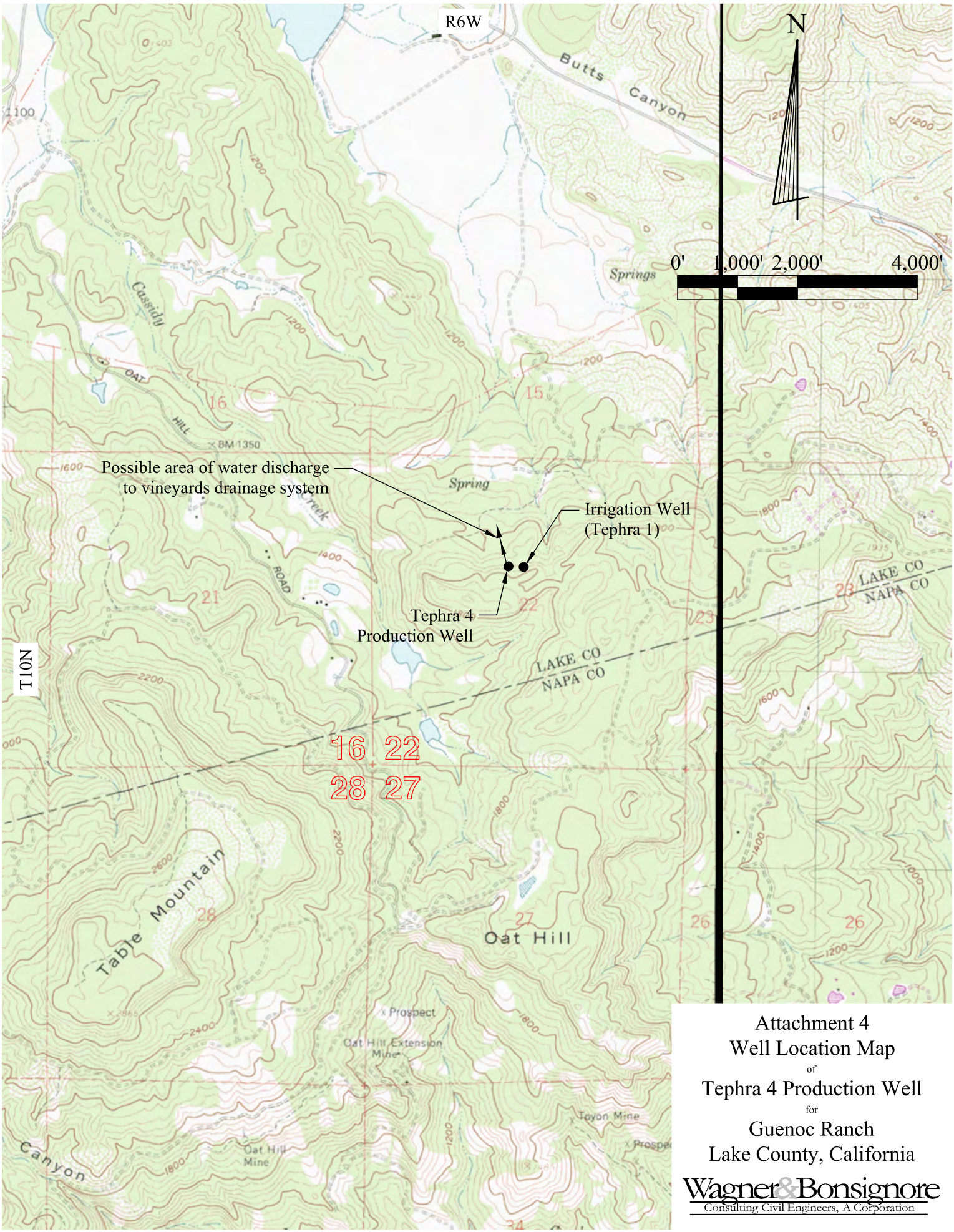
DRAW TO SCALE ANY OF THE FOLLOWING WITHIN 200 FEET OF THE WELL

1. Well/wells existing and proposed
2. Property lines, if over 200 feet
3. Easements or roads
4. All existing and proposed sewage disposal systems within 100 feet, adjacent parcels included
5. Any facilities or piping designed to carry or hold sewage
6. Any storage or mixing area which involves Hazardous Materials
7. Any structures

____. ✓ None of the items above are within 200 feet of the well



DRAWN TO THE SCALE OF 1" = 1000'



Attachment 4
Well Location Map
of
Tephra 4 Production Well
for
Guenoc Ranch
Lake County, California

Wagner&Bonsignore
Consulting Civil Engineers, A Corporation

Base map per USGS 7.5 Minute Quad map for Detert Reservoir.

Q:\Drawings\Lotus Land Investment Holdings, Inc\Well Location Map Bohn Ridge.dwg

January 2021

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Owner's Copy

Page ___ of ___

Owner's Well No. ___

Date Work Began 10-24-08, Ended 10-28-08

Local Permit Agency Health Dept.

Permit No. WE-2639 Permit Date 10-27-08

STATE OF CALIFORNIA

WELL COMPLETION REPORT

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LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Air Rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	10	Volcanic Rock
10	40	Soft (No Return)
40	170	Soft Blue Volcanic Rock
170	200	Hard Black Volcanic Rock
200	230	Brown Tan Soft Broken Vol Rock
230	257	Green Shale

TOTAL DEPTH OF BORING 257 (Feet)

TOTAL DEPTH OF COMPLETED WELL 257 (Feet)

WELL OWNER

Name Langtry Estates & Vineyards

Mailing Address 900 Fort St. Mall #1500

Honolulu HI 96813

CITY STATE ZIP

WELL LOCATION

Address 21665 Butts Canyon Rd.

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County Lake

APN Book 013 Page 024 Parcel 12

Township 10N Range 6W Section 15

Lat ___ DEG. ___ MIN. ___ SEC. N

Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH

NORTH

*See Attached MAP

WEST EAST

SOUTH

*Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

✓ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ✓ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 150 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 123 (Ft.) & DATE MEASURED 10-27-08

ESTIMATED YIELD * 55 (GPM) & TEST TYPE Air Lift

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
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60	137	7"	X				PVC	4½"	160	
137	177	7"		X			PVC	4½"	200	.020
177	197	7"	X				PVC	4½"	160	
197	237	7"		X			PVC	4½"	200	.020
237	257	7"	X				PVC	4½"	160	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	8 Sacks			Sand mix
50	257		5/16	Chips	Gravel

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

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DWR 188 REV. 05-03

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Owner's Well No. ___

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Permit No. WE-2628 Permit Date 10-27-08

STATE OF CALIFORNIA

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LATITUDE LONGITUDE

APN/TRS/OTHER

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ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

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Honolulu HI 96813

CITY STATE ZIP

WELL LOCATION

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County Lake

APN Book 013 Page 024 Parcel 12

Township 10N Range 6W Section 15

Lat ___ DEG. ___ MIN. ___ SEC. N

Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH

NORTH

WEST EAST

*See Attached MAP

SOUTH

*Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

✓ NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY

___ Domestic ✓ Public

___ Irrigation ___ Industrial

___ MONITORING

___ TEST WELL

___ CATHODIC PROTECTION

___ HEAT EXCHANGE

___ DIRECT PUSH

___ INJECTION

___ VAPOR EXTRACTION

___ SPARGING

___ REMEDIATION

___ OTHER (SPECIFY)

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DEPTH TO FIRST WATER 150 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 123 (Ft.) & DATE MEASURED 10-27-08

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TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

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CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
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237	257	7"	X				PVC	4½"	160	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
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50	257	5/16			Gravel

ATTACHMENTS (✓)

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___ Well Construction Diagram

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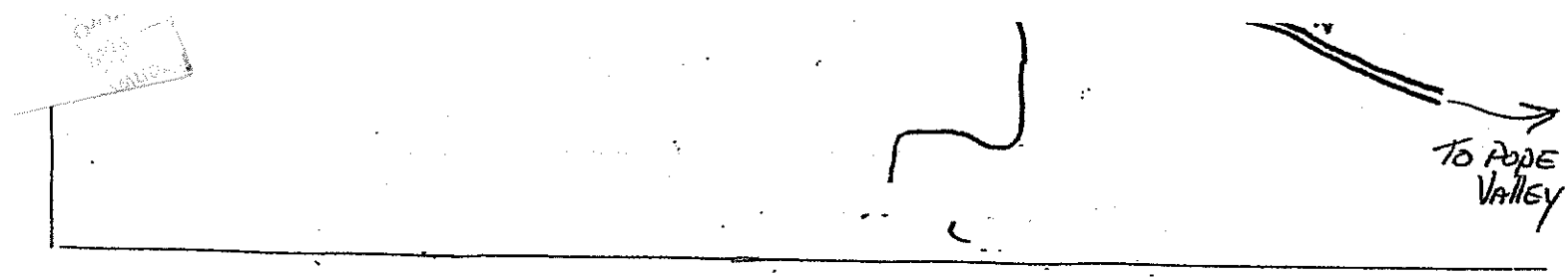
DWR 188 REV. 05-03

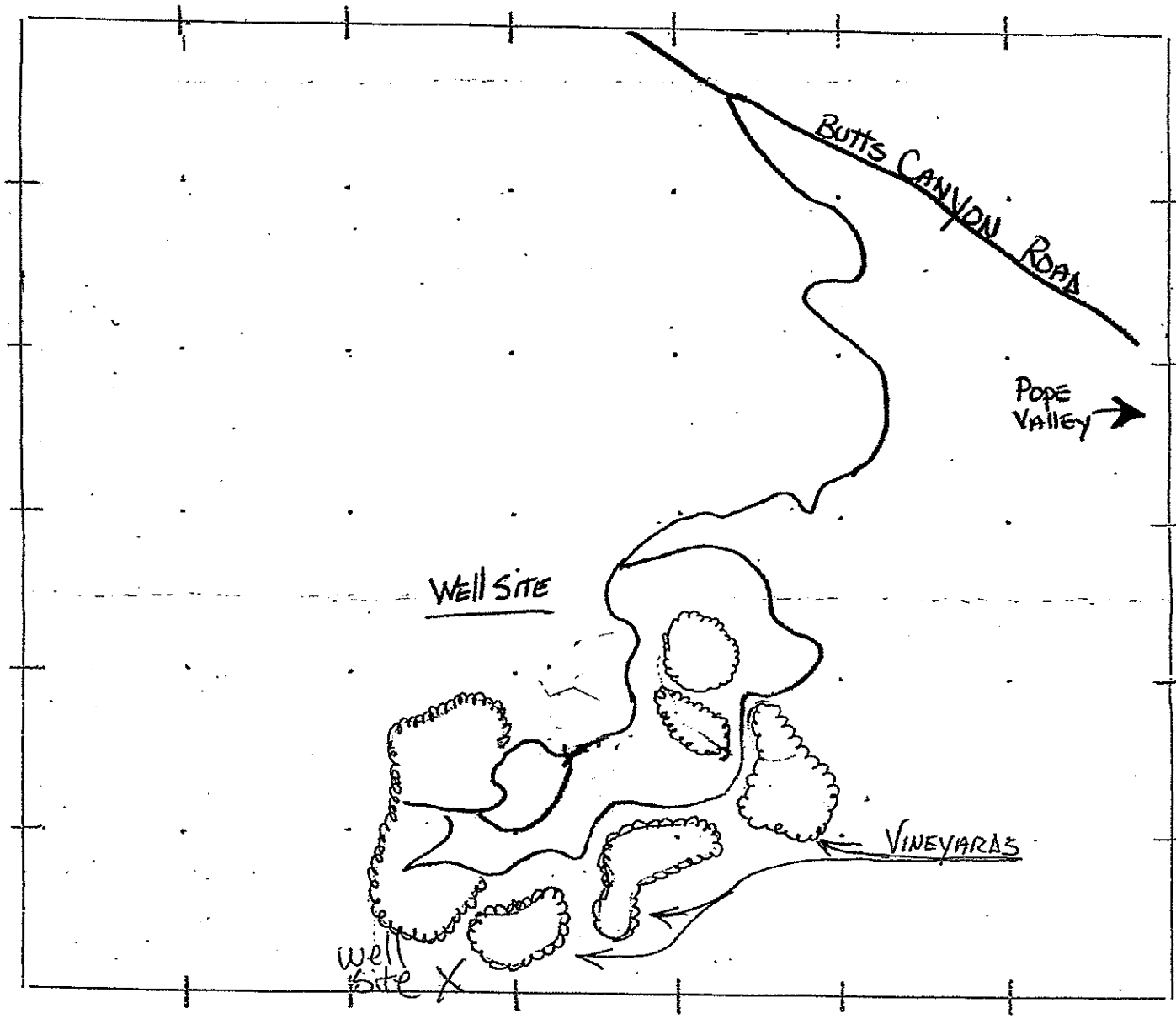
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM



DRAW TO SCALE ANY OF THE FOLLOWING WITHIN 200 FEET OF THE WELL

1. Well/wells existing and proposed
2. Property lines, if over 200 feet
3. Easements or roads
4. All existing and proposed sewage disposal systems within 100 feet, adjacent parcels included
5. Any facilities or piping designed to carry or hold sewage
6. Any storage or mixing area which involves Hazardous Materials
7. Any structures

____. ✓ None of the items above are within 200 feet of the well



DRAWN TO THE SCALE OF 1" = 1000'

10 Day Well Test Report

Job Name: TEPHRA-4 Date: 1/19/2021

Static Water Level: 120 ft Pump Setting Depth: 240 ft

Date	GPM / Totalizer	PWL	Sands / Discharge
January 6, 2021	50 GPM / 125,525 Gallons	200'	-- / Clear
January 7, 2021	50 GPM / 132,327 Gallons	200'	-- / Clear
January 8, 2021	50 GPM / 139,129 Gallons	200'	-- / Clear
January 9, 2021	50 GPM / 144,639 Gallons	200'	-- / Clear
January 10, 2021	50 GPM / 150,382 Gallons	201'	-- / Clear
January 11, 2021	50 GPM / 157,286 Gallons	200'	-- / Clear
January 12, 2021	49 GPM / 163,582 Gallons	205'	-- / Clear
January 13, 2021	48 GPM / 175,382 Gallons	207'	-- / Clear
January 14, 2021	47 GPM / 181,826 Gallons	210'	-- / Clear
January 15, 2021	47 GPM / 187,133 Gallons	220'	-- / Clear

Recorded By: Ryan P.

3282 HIGHWAY 32 ; CHICO, CA 95973 | 530-891-5545 | FAX 530-891-0793
WELLINDUSTRIESINC.COM

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

26 January 2021

Wagner & Bonsignore Engineers
Attn: David Peterson
2151 River Plaza Drive, Suite 100
Sacramento, CA 95833-4133
RE: Water Quality
Work Order: 21A1498

Enclosed are the results of analyses for samples received by the laboratory on 01/12/21 13:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Chelsea L. Sandelin For Stephen F. McWeeney
Lab Manager

Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	01/26/21 16:46

Bay Area: 262 Rickenbacker Circle | Livermore, CA 94551 | T: 925-828-6226 | F: 925-828-6309 | ELAP# 2728
Central Valley: 9090 Union Park Way Suite 113 | Elk Grove, CA 95624 | T: 916-686-5190 | F: 916-686-5192 | ELAP# 2922
North Bay: 110 Liberty Street | Petaluma, CA 94952 | T: 707-769-3128 | F: 707-769-8093 | ELAP# 2303
San Diego: 2722 Loker Avenue West Suite A | Carlsbad, CA 92010 | T: 760-930-2555 | F: 760-930-2510 | ELAP# 3055

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Tephra 4	21A1498-01	Water	01/12/21 11:00	01/12/21 13:40

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	01/26/21 16:46

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Tephra 4 (21A1498-01)		**Sample Type: Water**			**Sampled: 01/12/21 11:00**				
Metals (Drinking Water) by EPA 200 Series Methods									
Calcium	**4.7 mg/L**	**1.0**	1	AA13965	01/14/21 13:00	01/20/21 18:41	1551	EPA 200.7	
Iron	**240 ug/L**	**100**	1	AA13965	01/14/21 13:00	01/20/21 18:41	1551	EPA 200.7	
Magnesium	**2.8 mg/L**	**1.0**	1	AA13965	01/14/21 13:00	01/20/21 18:41	1551	EPA 200.7	
Mercury	ND ug/L	1.0	1	AA14154	01/18/21 06:29	01/18/21 12:25	1551	EPA 245.1	
Potassium	**5.9 mg/L**	**1.0**	1	AA13965	01/14/21 13:00	01/20/21 18:41	1551	EPA 200.7	
Sodium	**13 mg/L**	**1.0**	1	AA13965	01/14/21 13:00	01/20/21 18:41	1551	EPA 200.7	
Metals by EPA 200 Series Methods									
Chromium, hexavalent	ND ug/L	1.0	1	AA14417	01/21/21 08:00	01/21/21 15:05	2303	EPA 218.6	
Metals by EPA Method 200.8 ICP/MS									
Aluminum	**190 ug/L**	**50**	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Antimony	ND ug/L	6.0	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Arsenic	**2.0 ug/L**	**2.0**	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Barium	ND ug/L	100	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Beryllium	ND ug/L	1.0	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Cadmium	ND ug/L	1.0	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Chromium	ND ug/L	10	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Copper	ND ug/L	50	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Lead	ND ug/L	5.0	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Manganese	ND ug/L	20	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Nickel	ND ug/L	10	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Selenium	ND ug/L	5.0	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Silver	ND ug/L	10	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Thallium	ND ug/L	1.0	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	
Zinc	ND ug/L	50	4	AA13816	01/14/21 11:50	01/15/21 13:15	1551	EPA 200.8	

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Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	01/26/21 16:46

	Result		Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Tephra 4 (21A1498-01)		**Sample Type: Water**				**Sampled: 01/12/21 11:00**				
Conventional Chemistry Parameters by APHA/EPA Methods										
Aggressive Index	**9.35**	**NU**	**2.00**	1	AA13965	01/14/21 13:00	01/25/21 14:20	1551	AWWA	
Bicarbonate	**62**	**mg/L**	**5.0**	1	AA14211	01/19/21 08:00	01/19/21 16:28	1551	SM2320B	
Carbonate	ND	mg/L	5.0	1	AA14211	01/19/21 08:00	01/19/21 16:28	1551	SM2320B	
Color	ND	CU	5.0	1	AA13308	01/12/21 16:00	01/12/21 16:21	2303	SM2120B	
Hydroxide	ND	mg/L	5.0	1	AA14211	01/19/21 08:00	01/19/21 16:28	1551	SM2320B	
MBAS, calculated as LAS, mw 340	ND	mg/L	0.050	1	AA13951	01/14/21 08:15	01/14/21 15:00	1551	SM5540C	
Odor	ND	T.O.N.	1.0	1	AA13308	01/12/21 16:00	01/12/21 16:21	2303	SM2120B	
pH	**6.57**	**pH Units**	**1.68**	1	AA14067	01/13/21 16:00	01/13/21 17:00	1551	SM4500-H+ B	T-14
Specific Conductance (EC)	**110**	**umhos/cm**	**20**	1	AA14067	01/13/21 16:00	01/13/21 17:00	1551	SM2510B	
Total Dissolved Solids	**160**	**mg/L**	**10**	1	AA14156	01/19/21 08:00	01/22/21 09:06	1551	SM2540C	
Turbidity	**2.4**	**NTU**	**0.25**	1	AA13308	01/12/21 16:00	01/12/21 16:21	2303	SM2130B	
Total Alkalinity as CaCO3	**51**	**mg/L**	**5.0**	1	AA14211	01/19/21 08:00	01/19/21 16:28	1551	SM2320B	
Nitrate + Nitrite as N	ND	mg/L	0.40	1	AA14587	01/25/21 14:27	01/25/21 14:29	1551	Calculation	
Hardness, Total	**23**	**mg/L**	**5**	1	AA13965	01/14/21 13:00	01/20/21 18:41	1551	SM2340B	
Miscellaneous Physical/Conventional Chemistry Parameters										
Cyanide (total)	ND	mg/L	0.10	1	AA14318	01/20/21 08:07	01/20/21 13:56	1551	10-204-00-1X	
Anions by EPA Method 300.0										
Chloride	**3.2**	**mg/L**	**0.50**	1	AA13894	01/13/21 14:49	01/13/21 14:49	1551	EPA 300.0	
Fluoride	ND	mg/L	0.10	1	AA13894	01/13/21 14:49	01/13/21 14:49	1551	EPA 300.0	
Nitrate as N	ND	mg/L	0.40	1	AA13894	01/13/21 14:49	01/13/21 14:49	1551	EPA 300.0	
Nitrite as N	ND	mg/L	0.40	1	AA13894	01/13/21 14:49	01/13/21 14:49	1551	EPA 300.0	
Sulfate as SO4	**1.2**	**mg/L**	**0.50**	1	AA13894	01/13/21 14:49	01/13/21 14:49	1551	EPA 300.0	

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Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	01/26/21 16:46

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Tephra 4 (21A1498-01)		**Sample Type: Water**			**Sampled: 01/12/21 11:00**				
Microbiological Parameters by APHA Standard Methods									
Total Coliforms	ND MPN/100mL	1.0	1	AA13797	01/12/21 16:05	01/13/21 16:30	2303	SM9223B	
E. Coli	ND MPN/100mL	1.0	1	AA13797	01/12/21 16:05	01/13/21 16:30	2303	SM9223B	
Volatile Organic Compounds by EPA Method 524.2									
Benzene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Carbon tetrachloride	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Chlorobenzene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,2-Dichlorobenzene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,4-Dichlorobenzene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,1-Dichloroethane	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,2-Dichloroethane	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,1-Dichloroethene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
cis-1,2-Dichloroethene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
trans-1,2-Dichloroethene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,2-Dichloropropane	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,3-Dichloropropene (total)	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Ethylbenzene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Methyl tert-butyl ether	ND ug/L	3.0	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Methylene chloride	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Styrene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,1,2,2-Tetrachloroethane	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Tetrachloroethene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Toluene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,2,4-Trichlorobenzene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,1,1-Trichloroethane	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
1,1,2-Trichloroethane	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Trichloroethene	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Trichlorofluoromethane	ND ug/L	5.0	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Trichlorotrifluoroethane	ND ug/L	10	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Vinyl chloride	ND ug/L	0.50	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Xylenes (total)	ND ug/L	1.5	1	AA13266	01/12/21 16:00	01/12/21 17:19	2303	EPA 524.2	
Surrogate: Bromofluorobenzene	*90.8 %*	*70-130*		*AA13266*	*01/12/21 16:00*	*01/12/21 17:19*	2303	*EPA 524.2*	
Surrogate: 1,2-Dichlorobenzene-d4	*85.4 %*	*70-130*		*AA13266*	*01/12/21 16:00*	*01/12/21 17:19*	2303	*EPA 524.2*	

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Wagner & Bonsignore Engineers	Project Manager: David Peterson	
2151 River Plaza Drive, Suite 100	Project: Water Quality	Reported:
Sacramento, CA 95833-4133	Project Number: Guenoc Ranch / 700.3	01/26/21 16:46

Notes and Definitions

QM-01	The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
T-14	Residual chlorine, dissolved oxygen, sulfite, and pH must be analyzed in the field to meet the EPA specified 15 minute hold time.
ND	Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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SGS FORENSIC LABORATORIES

Final

ANALYSIS REPORT
ASBESTOS IN DRINKING WATER
Transmission Electron Microscopy*

Client:	Alpha Analytical Lab		
Contact:	Stephen F. McWeeney	Client Number:	2096
Street:	208 Mason St.	Report Number:	T033402
City/state/zip:	Ukiah, CA 95482	Date/time Received:	1/13/21

Site:		Date filtered:	1/13/21
Job ID/PO:	21A1498	Analyst(s):	MF
Date Collected:	1/12/21	Date Analyzed:	1/25/21
Hold time, hrs:	<48	Date Reported:	1/25/21
Filter type:	25mm MCE	Date Printed:	1/25/21
Pore size:	0.22 µm		

ANALYTICAL RESULTS

Sample Number	TEPHRA 4			
Description				
Lab Sample Number	20131998			
Volume Filtered, mL	30			
Filter Area, mm2	190			
Grid Opening Area, mm^2	0.0086			
Number of GO's Analyzed	4			
Area Analyzed, mm^2	0.0344			
# Asbestos Fibers ≥10 µm	0			
Analytical Sensitivity, MFL	0.2			
Asbestos Concentration, ≥10um in length, MFL	**<0.2**			
Asbestos Type(s) Detected**	**ND**			
95% Upper Conf. Limit, MFL	0.7			
95% Lower Conf. Limit, MFL	0.0			

0

Mark S. Floyd, Analytical Microscopy Supervisor

* Method 100.2 (EPA/600/R-94/134). Results are reported in Millions of Fibers per Liter (MFL) over 10 µm in length.

** Asbestos types: CH=chrysotile; AM=amosite; CR=crocidolite; TR=tremolite; AC=actinolite; AN=anthophyllite; ND=none detected; NA-Not Analyzed; n/a=not applicable (i.e., divide by 0); OV=overloaded; BL=blank sample; PF=prepped not analyzed.

Analytical results and reports are generated by SGS Forensic Laboratories (SGSFL) at the request of and for the exclusive use of the person or entity (Client) named on such report. Results, reports or copies of same will not be released by SGSFL to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full with approval from SGSFL. The client is solely responsible for the use and interpretation of test results and reports requested from SGSFL. This report must not be used by the client to claim product endorsement by NVLAP or any U.S. government agency. SGSFL is unable to assess the degree of hazard resulting from materials analyzed. SGS Forensic Laboratories reserves the right to dispose of all samples after a period of 30 days, according to all state and federal guidelines, unless otherwise specified.

SUBCONTRACT ORDER

Alpha Analytical Laboratories, Inc.

21A1498

SENDING LABORATORY:

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482
Phone: (707)468-0401
Fax: (707)468-5267
Project Manager: Stephen F. McWeeney

RECEIVING LABORATORY:

Forensic Analytical Laboratories
3777 Depot Rd., Ste. 409
Hayward, CA 94545
Phone :(510) 887-8828
Fax: (510) 887-4218
Terms: Net 30

Analysis	Due	Expires	Comments
21A1498-01 Tephra 4 [Water] Sampled 01/12/21 11:00			
Asbestos-DW SUB	01/26/21 12:00	01/14/21 11:00	

Containers Supplied:
1L Poly - Unpres (M)

☐ *Report to State*

System Name: _____ **Employed by:** _____

User ID: _____ **Sampler:** _____

System Number: _____

Email: Speaks78@gmail.com

RECEIVED
JAN 13 REC'D
afm
FF

Released By	Date	Received By	Date
[signature]	1/12/21		

Alpha Analytical Laboratories Inc.
www.alpha-labs.com
WATERS, SEDIMENTS, SOLIDS

Corporate Laboratory (1551)
208 Mason Street, Ukiah CA 95482
707.468.0401 (phone)
707.468.5267 (fax)
clientservices@alpha-labs.com

North Bay Laboratory (2303)
110 Liberty Street, Petaluma CA 94952

Bay Area Laboratory (2728)
262 Rickenbacker Circle, Livermore CA 94551

Central Valley Laboratory (2922)
9090 Union Park Way #113, Elk Grove CA 95624

San Diego Service Center
2722 Loker Ave West, Ste A, Carlsbad CA 92010

Chain of Custody - Work Order

Reports and Invoices delivered by email in PDF format

Lab No 21A1498 Pg ____ of ____

Report to	Invoice to (if different)	Project Information
Company: Wagner & Bonsignore	Contact: Taryn Smith	Project ID: Guenoc Ranch
Attn: David Peterson	Email address: tsmith@wbecorp.com	Project No: 700.3
Address: 2151 River Plaza Dr., Suite 100 Sacramento, CA 95833	Address:	PO Number:
Phone/Fax: 707-484-1798 (Mobile)	Phone/Fax: 916-441-6850	
Email Address: dpeterson@wbecorp.com		

Signature below authorizes work under terms stated on reverse side.

Field Sampler - Printed Name & Signature: David Peterson

Sample Identification	Sampling Date	Sampling Time	Container: 40ml VOA Vial	Container: Plastic	Container: Glass	Container: Sleeve	Container: Other	Preservative: HCL	Preservative: HNO3	Preservative: H2SO4	Preservative: Other	Preservative: None	Matrix: Drinking Water	Matrix: Wastewater	Matrix: Soil	Matrix: Other	Total Number of Containers per Sample ID	Analysis Request: Tittle 22 - General Mineral	Tittle 22 - Inorganics	NB-Tittle 22 - General Physical	NB - Tittle 22 - Voc's - 524 DDW	Asbestos	Hexavalent Chromium	Bacteriological Analysis	Notes / DDW Source Codes
Tephra 4	1-12-21	11:00a	✓	✓	✓													✓	✓	✓	✓	✓	✓	✓	

TAT
Standard 10 days ✓
RUSH: 5 days ○ 48 hours ○ Other: ____days ○ Preapproval required

TEMP °C
Ukiah
Livermore
Elk Grove
Petaluma 4.7
Carlsbad

Relinquished by	Received by	Date	Time
David Peterson	[signature]	1-12-21	1:40p

DDW Write On EDT Transmission? ○ Yes ✓ No

State System Number: _____

If "Y" please enter the Source Number(s) in the column above

CA Geotracker EDF Report? ○ Yes ✓ No

Global ID: Sampling Company Log Code:

EDF to (Email Address):

Travel and Site Time: | Mileage: | Misc. Supplies:

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Lab No 21A1498 Pg ____ of ____

Report to	Invoice to (if different)	Project Information
Company: Wagner & Bonsignore	Contact: Taryn Smith	Project ID: Guenoc Ranch
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Email Address: dpeterson@wbecorp.com		

Signature below authorizes work under terms stated on reverse side.

Field Sampler - Printed Name & Signature: David Peterson

Sample Identification	Sampling Date	Sampling Time	Container: 40ml VOA Vial	Container: Plastic	Container: Glass	Container: Sleeve	Container: Other	Preservative: HCL	Preservative: HNO3	Preservative: H2SO4	Preservative: Other	Preservative: None	Matrix: Drinking Water	Matrix: Wastewater	Matrix: Soil	Matrix: Other	Total Number of Containers per Sample ID	Analysis Request: Tittle 22 - General Mineral	Tittle 22 - Inorganics	NB-Tittle 22 - General Physical	NB - Tittle 22 - Voc's - 524 DDW	Asbestos	Hexavalent Chromium	Bacteriological Analysis	Notes / DDW Source Codes
Tephra 4	1-12-21	11:00a	✓	✓	✓													✓	✓	✓	✓	✓	✓	✓	

TAT
Standard 10 days ✓
RUSH: 5 days ○ 48 hours ○ Other: ____days ○ Preapproval required

TEMP °C
Ukiah
Livermore
Elk Grove
Petaluma 4.7
Carlsbad

Relinquished by	Received by	Date	Time
David Peterson	[signature]	1-12-21	1:40p

DDW Write On EDT Transmission? ○ Yes ✓ No

State System Number: _____

If "Y" please enter the Source Number(s) in the column above

CA Geotracker EDF Report? ○ Yes ✓ No

Global ID: Sampling Company Log Code:

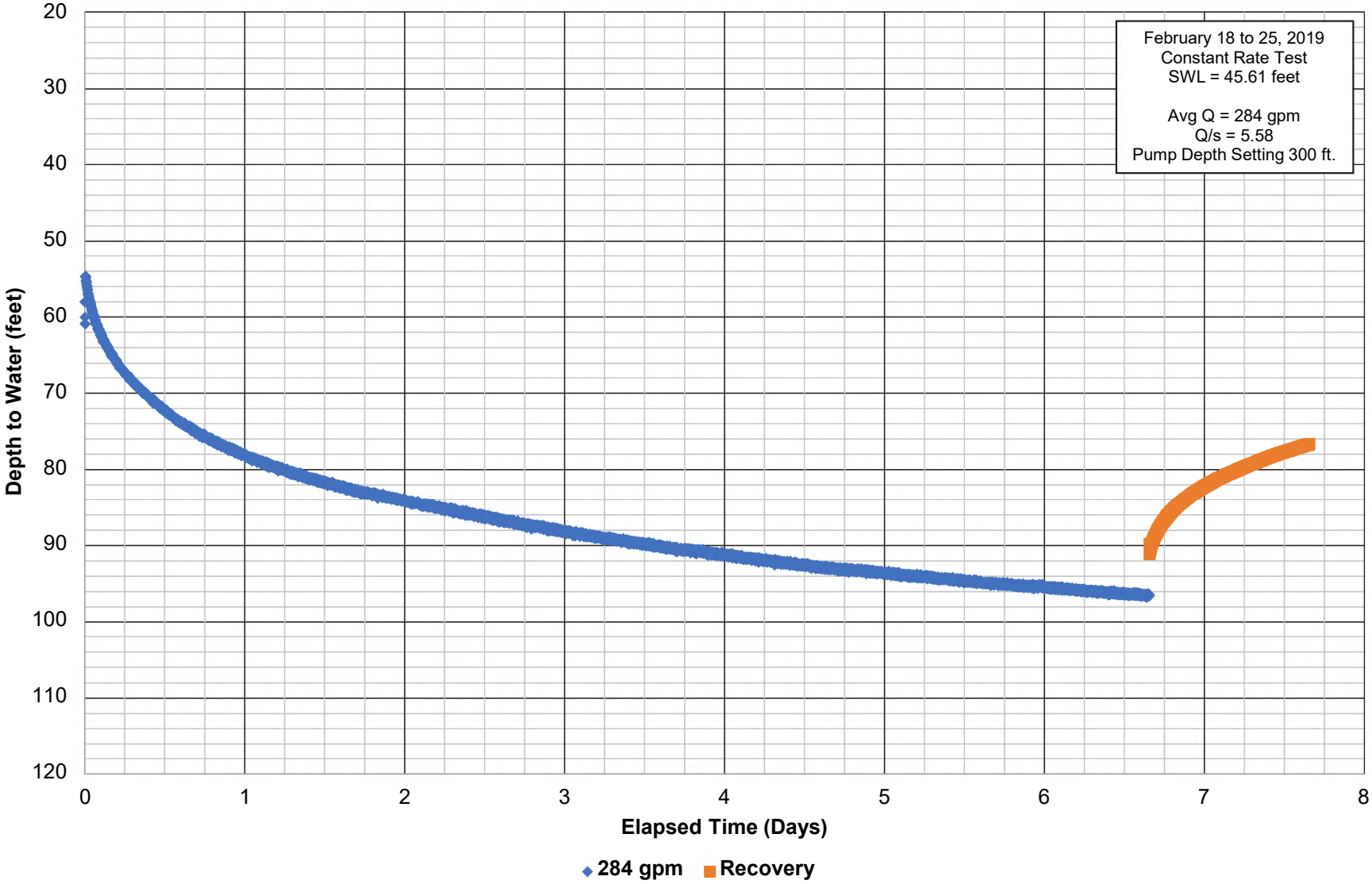
EDF to (Email Address):

Travel and Site Time: | Mileage: | Misc. Supplies:

Well Testing Report 6:

Crossroads

Guenoc Ranch
Crossroads Well
Constant Rate Test



Luhdorff & Scalmanini
Consulting Engineers

Guenoc Ranch - Crossroads Well
Water Quality Summary

ANALYTE	UNITS	REPORTING LIMIT	METHOD	MCL	Crossroads Well 2/25/2019
CATIONS					
Calcium	mg/L	1.0	200.7/2340B		17
Magnesium	mg/L	1.0	200.7/2340B		19
Potassium	mg/L	1.0	200.7/2340B		ND
Sodium	mg/L	1.0	200.7/2340B		10
Total Hardness	mg/L	1.0	200.7/2340B		120
ANIONS					
Bicarbonate Alkalinity	mg/L	5.0	SM 2320B		140
Carbonate Alkalinity	mg/L	5.0	SM 2320B		ND
Chloride (Cl)	mg/L	5.0	300.0	250/500[2]	5.2
Fluoride	mg/L	0.10	300	2	ND
Hydroxide Alkalinity	mg/L	5.0	SM 2320B		ND
Nitrate (as N)	mg/L	0.40	300.0		ND
Sulfate (as SO4)	mg/L	0.50	300.0	250/500[2]	0.88
Total Alkalinity	mg/L	5.0	SM 2320B		140
PHYSICAL PARAMETERS					
Color (A.P.H.A)	Color Units	1	SM 2120B	15[2]	ND
pH	pH units	0.01	SM 4500-H B	6.5/8.5[4]	7.44
Methylene Blue Active Substance	mg/L	0.10	SM 5540C	0.5[2]	ND
Specific Conductivity	µmhos/cm	1.0	120.1	900/1,600[2]	250
Odor	T.O.N.	1.0	140.1		ND
Total Dissolved Solids (TDS)	mg/L	10	SM 2540C	500/1,000[2]	190
Turbidity	NTU	0.50	180.1	5[2]	ND
INORGANICS					
Aluminum	µg/L	50	200.7	1,000[1]/200[3]	ND
Barium	µg/L	100	200.7	1,000	ND
Beryllium	µg/L	1.0	200.7	4	ND
Boron	µg/L	100	200.7	1,000[3]	ND
Chromium (Total)	µg/L	10	200.7	50	ND
Copper	µg/L	50	200.7	1,000[2]	ND
Iron	µg/L	100	200.7	300[2]	ND
Iron (Dissolved)	µg/L	100	200.7	300[2]	ND
Manganese	µg/L	20	200.7	50[2]	ND
Manganese (Dissolved)	µg/L	10	200.7	50[2]	ND
Mercury	ng/l	1.0	245.1	2	ND
Nickel	µg/L	10	200.7	100	ND
Silver	µg/L	10	200.7	100[2]	ND
Zinc	µg/L	50	200.7	5,000[2]	ND

[1] - Primary MCL

[2] - Secondary MCL (recommended/upper range)

[3] - Action Level

[4] - Suggested lower/upper acceptable range

ND = Non-Detect

Appendix G-2

Drought Management Plan

MAHA Water System

DRAFT Drought Management Plan

Guenoc Valley, Lake County, California

Sherwood Design Engineers
June 21, 2024

2548 MISSION STREET, SAN FRANCISCO, CA 94110
(415) 677-7300 | WWW.SHERWOODENGINEERS.COM

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1.0 INTRODUCTION

A water system is planned for formation for the MAHA project located at 22000 Butts Canyon Road, Middletown, Lake and Napa Counties, California. The Lake County Board of Supervisors Ordinance 3106 requires preparation of a Drought Management Plan (DMP) for the MAHA water system to plan for droughts so that the water system can act promptly and carefully, to better protect the water supply for its customers.

MAHA water system has developed this DMP, drought related rules, and other planning tools for the water system. This formal plan includes diligent monitoring, community awareness and strict conservation measures and incentives, so that customer water remains available throughout the upcoming years.

This DMP has three drought management sub-plans, one for each of the three different user types: potable water, golf course water, and equestrian center water. The three DMP sub-plans will utilize the same staffing, operation, and maintenance; development of average water demand; and development of goals and triggers.

1.1 Staffing, Operation and Maintenance

The MAHA Water System will be operated and maintained by state certified water treatment and distribution operators as required by State of California regulations. Staff will monitor information on the water system including seasonal production data, seasonal characteristics (depths to water in wells, lake levels, etc.), and seasonal water quality data. Historical data (from the previous five years) will be examined. These data points will show how much water storage has been historically available over the previous five years and will be used in developing the goals and trigger points for the Drought Management Plan.

1.2 Monitoring Plan

Monitoring of well water volumes pumped will be done continuously with flow meters at each well that record the total volume pumped. This data will be collected and tabulated monthly for use in determining the water demand.

Water level measurements will be collected in wells at the site quarterly. All wells will have sounding ports for insertion of devices for measuring water levels. Water levels will be monitored in supply wells when not operating to capture static water levels. These periods of static water may include seasonal reduction in demand, during times of the day when demand is low so the pumps are off, or by planned pump shut-downs to facilitate depth to water measurements.

1.3 Average Water Demand

Water use by the water system will be examined by looking at the customer type and the average water use. This classification will initially be broken down into three categories: “potable”, which includes residential and commercial customers; “golf course” which applies to the golf course demand; and “equestrian center”. For each category, the “Basic Use” and “Peak Use” will be determined by averaging the water use for January and February (Basic Use) and August and September (Peak Use). Basic Use typically represents the essential water use, and Peak Use represents the Basic Use plus all other uses. These data points will also be used in developing the goals and trigger points for the Drought Management Plan.

1.4 Goals and Triggers

The goals and triggers are the basis for when to implement various stages of the Drought Management Plan. The information obtained from the condition assessments and water use is used to set the conservation goals. This information, combined with the practical experience of the water treatment plant operators, is used to set the triggers (or stages) of this Plan. The triggers are developed based on use, storage, supply condition (i.e., well level or surface water level), and public safety.

2.0 POTABLE WATER DROUGHT MANAGEMENT PLAN

When there is a potential threat to the supply of any system, the MAHA water system will implement Stage 1 of the Drought Management Plan. This stage is to alert the community to the potential threat and ask all customers to comply with voluntary conservation. During Stage 1, all customers will be required to comply with any and all State regulations and requirements concerning conservation. This will include prohibited uses, limited landscape watering and mandatory reductions in usage.

During Stage 1, the system's capacity and consumption will be monitored closely and, in the event, the potential threat is not alleviated or worsens, the MAHA water system will declare a Stage 2 condition for the system. At such time as Stage 2 is declared, a plan will be provided to monitor and report on the system's characteristics. Water system staff will use the data collected to establish Stage 3 and 4 triggers, representing the levels of action needed to meet worsening conditions. These stages are typically seasonal, however, if Lake County experiences additional dry periods, or a water system experiences ongoing capacity issues, these stages could remain in effect for a longer period of time.

2.1 Drought Stages

Drought stages are set at 5%, 10%, 25%, and 50% shortage levels as proposed by the California Department of Water Resources Water Use Efficiency Branch (Appendix 2 Proposed Water Shortage Contingency Plan Components for Small Water Systems Serving 1,000 to 2,999 Service Connections, March 2021):

Stage 1 – Voluntary Conservation and compliance with State conservation regulations and requirements. Emphasis on community awareness and outreach.

Stage 2 – Initiate mandatory conservation measures (implement surcharge for violations through a "Water Waste" Urgency Ordinance)

Stage 3 – Through additional Urgency Ordinances, implement additional mandatory conservation measures and revised water rates (Base, Tier 1, Tier 2 rate structure adjustments) to financially discourage non-essential water use. Include surcharges for usage over the maximum allowed.

Stage 4 – Implement Urgency Ordinance with stringent consumption limits and penalties.

2.2 Stage Description

Stage 1 – Implemented when a potential threat to capacity is seen. MAHA water system will mail out conservation notices to all customers. Water use will be examined to see how much customer water conservation is taking place. Targeted voluntary reduction for this effort will be consistent with State and County guidelines and requirements, historically that has been a 25% reduction from pre-drought consumption levels. All State conservation regulations or requirements in effect must be adhered to during this stage.

Voluntary conservation measures include the following:

a. Irrigation of landscaping only every 2 days.

b. Irrigation of landscaping only between the hours of 7:00 pm to 10:00 am.

c. No washing of cars at residences.

d. No washing down of driveways.

Stage 2 – Implement “phased” mandatory conservation measures to prohibit non-essential water use. At the Stage 2 trigger point, the voluntary water conservation efforts have not provided enough reduction in water use and/or storage and supply have deteriorated to a point where additional measures are needed to reduce overall water use. Mandatory conservation measures include an Urgency Ordinance prohibiting nonessential water use. Nonessential water use for Stage 2 is defined, as follows:

a. The use of water through a handheld hose unless it is equipped with a functional positive shut-off nozzle.

b. Use of water through a hand-held hose for washing buildings, structures, mobile homes, sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard- surfaced areas.

c. Use of water that results in flooding or results in runoff in gutter or streets.

d. Use of water through any meter where the person billed for the service has been given 10 days written notice to repair broken or defective plumbing, sprinkler, watering, or irrigation systems and failed to affect such repairs.

e. Use of water for filling or refilling after draining of any existing or new swimming pool, spa, hot tub.

f. Use of water to clean, fill or maintain levels in decorative fountains.

g. Use of water for construction purposes (dust control, consolidation of backfill, etc.)

h. Use of water through a sprinkler system between the hours of 10:00 am and 7:00 pm.

The Urgency Ordinances can include a surcharge of $500 for each day a violation occurs. The goal of this stage is to achieve a reduction in water use and ensure compliance with all State regulations not achieved through Stage 1 voluntary compliance.

Stage 3 – Implement by Urgency Ordinance additional mandatory conservation measures AND revised rate structures, to financially discourage non-essential water use. It would include surcharges for consumption above a prescribed base usage. Stage 3 would also allow MAHA water system to install flow restrictors on connections that violate the urgency ordinance more than twice.

Additional mandatory conservation measures for Stage 3 are the following:

a. All landscape watering is prohibited.

b. Moratorium on new connections.

Electronic flow meters allow for monitoring to determine leaks and usage.

At the time the Stage 3 trigger has been reached, an Urgency Ordinance is recommended to be enacted resetting the maximum amount of water allowed to protect the system capacity. Rates are established to financially discourage non-essential water use. The goal of this stage is to achieve a reduction in overall water use based on the conditions of the system and projections of capacity limitations. Stage 3 conditions will be implemented when 25% shortage levels occur.

All water customers (residential, commercial and industrial) are to reduce water use by 25% of their normal water demand. However, residential users whose total water use is already below the State provisional standard of 55 gallons per person per day will not be required to further reduce their water use.

The prescribed base usage will be based on historical use of the customer service connection, modified by the drought conservation goal of a reduction by 25% for Stage 3. For customers who do not implement the

mandatory conservation measures a flow restriction device can be installed to limit water delivery to the service connection.

Stage 4 – Implement minimum usage and a Connection Moratorium. Depending on the condition of the water system and the degree of conservation observed within the water system during Stages 1, 2 and 3, Stage 4 may be necessary. Stage 4 will be implemented when a system is potentially unable to meet the demands of the customers. Stage 4 will set the maximum gallons per person per day as low as needed to ensure essential health and safety can be met and the water system capacity protected. Stage 4 would prohibit new connections. Stage 4 would include a surcharge for water consumption above a prescribed base usage. Stage 4 conditions will be implemented when 50% shortage level occurs.

2.3 Public Information / Media Program

Getting customers involved is a key element in a successful program. During any stage of this plan, MAHA water system will utilize a variety of Public Service Announcements, mail-outs to customers, website and social media updates, and advertisements.

MAHA water system will also work to provide conservation and water system information to local decision makers, County Departments, Fire Districts, and other water-dependent operations to provide technical guidance and educational assistance.

MAHA water system will provide detailed information to residential accounts, commercial accounts, restaurants, and other groups asked to comply with specific use restrictions. MAHA water system will provide local news groups with frequent updates on water and conservation efforts.

If system conditions require Stage 3 (re-structuring of rates or surcharges), information will be available to all customers in advance of their first billing to further educate them on reading their water meter and monitoring use throughout the billing period. Customers will be provided the tools (i.e., post card instructions) to better understand and calculate their ongoing costs and water use during the billing period.

2.4 Supply and Demand Balance

MAHA water system staff will examine the current conditions and supply. Along with this information we will develop and use 12-month growth tables showing actual growth (customer accounts) and forecast potential growth for the next five years.

The growth report will identify infrastructure needs (storage, supply, and distribution) to meet those growth projections, and how those growth projections affect the water system in normal rainfall/system recharge year as well in a continued drought condition.

2.5 Improvements in Supply

Historically, during drought or other water emergency conditions, system operators were able to supplement their supply with purchased water from another source. Unfortunately, during a prolonged drought, most other sources may not have an excess supply and cannot be relied upon to supply emergency water.

MAHA water system will also examine and evaluate existing well sources for rehabilitation or re- working to recover or increase production capabilities. MAHA water system will also work toward increasing the efficiency of water delivery. This will include more staff involvement with inspections and looking for water waste, increasing the frequency of system leak checks and reducing system pressures where possible.

3.0 GOLF COURSE WATER DROUGHT MANAGEMENT PLAN

MAHA water system intends to utilize recycled water for a portion of golf course irrigation needs. In addition, the golf course will be designed and managed with consideration of the following drought management strategies:

- Metering use
- A calibration schedule for meters
- Lining ponds
- Irrigation system maintenance and inspection schedule
- Installation of central, weather-based control system
- Aeration schedule
- Use of non-irrigated areas as part of the course
- Raising turf height
- Drought tolerant turf species (e.g., *Zoysia* spp.)
- Employee training

When there is a potential threat to the supply of any system, the MAHA water system will implement Stage 1 of the Golf Course DMP. This stage is to alert the operator and community to the potential threat and notify the community that the golf course will comply with voluntary conservation. During Stage 1, the golf course will be required to comply with any and all State regulations and requirements concerning conservation. This will include prohibited uses, limited landscape watering and mandatory reductions in usage.

Stage 1 - Requires that golf courses submit a drought management plan specific to in-play areas of the golf course – landscape must follow a one-day-a-week restriction for landscape irrigation.

Stage 2 - Requires, in addition to Stage 1 requirement, no watering between 10 a.m. and 8 p.m.

Stage 3 - Watering only allowed per county and/or state ordinance/regulation.

Stage 4 - Requires removal of grass in places where it won't affect the game, planting drought-resistant vegetation, letting the turf turn brown in spots and installing smart watering systems.

The various stages are automatically triggered by the level of water in the aquifer as measured at the production wells, ponds, and/or lakes which are the main sources water supply. Trigger water levels will be developed during the first five years of operation.

4.0 EQUESTRIAN CENTER DROUGHT MANAGEMENT PLAN

Drinking water for horses cannot be curtailed.

Stage 1 - Washing of horses limited to one day a week for each horse. Development of a pasture management program that includes soil fertility testing, regular mowing, weed control, and rotational grazing. Include a grazing system that removes horses from pastures before plants are overgrazed, and gives them a chance to recover and regrow, will result in deeper roots that can access deep soil moisture.

Stage 2 - Requires, in addition to Stage 1 requirement, no watering between 10 a.m. and 8 p.m. and light irrigation every few weeks will keep the grass plants alive, delivering just enough to keep the roots alive (about ½ inch)

Stage 3 - Provide supplemental/substitute feed, so that not relying on pasture. Pasture watering only allowed per county and/or state ordinance/regulation.

Stage 4 – No pasture watering. Ship horses to non-drought areas.

Appendix H

Community Wildfire Evacuation Analysis

Appendix H-1

Wildfire Evacuation Assessment

Guenoc Valley Mixed Use Planned Development Project: Wildfire Risk and Evacuation Assessment

Prepared for:
Lake County

January 2024

SF23-1343

FEHR PEERS

CWPC
Community Wildfire Planning Center

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Key Terms: Wildfire Risk and Risk Reduction Analysis

(Source: CWPC)

The following table compiles key terms relevant to the Wildfire Risk and Risk Reduction Analysis**.** The table defines each key term using recognized national or state sources and shares applicable characteristics and considerations for evacuation planning and/or wildfire response safety. The table also shows how each defined term relates to the local project context and relevant resource materials (e.g., plans, websites, EIR).

Term	Standard Definition	Characteristics and Considerations	Local Applicability
Escape Routes	A preplanned and understood route firefighters take to move to a safety zone or other low-risk area. Source: NWCG Glossary of Wildland Fire, PMS 205	• Escape routes are planned by firefighters based on the current and expected fire behavior. • Escape routes must always lead to a Safety Zone. • There must always be more than one escape route available to firefighters. • The most common escape routes (or part of an escape route) include the fireline • When escape routes deviate from a defined physical path, they should be clearly marked (flagged) • Escape routes should be reassessed throughout an operational period	• **Lake County Emergency Operations Plan Wildland Urban Interface** (WUI Annex), Office of Emergency Services 2021, discusses escape routes in the context of firefighter roles, safety, and response.
Emergency Operations Center (or Emergency Response Center)	Physical or virtual location from which leaders of a jurisdiction or organization can coordinate information and resources to support incident management activities. Source: National Incident Management System Operations Center How-To Quick Reference Guide (FEMA, 2021)	• Primary functions include collecting, analyzing, and sharing information, supporting resources needs and requests.	• **EIR Appendix FIRE - Guenoc Valley Wildfire Prevention Plan** identifies an on-site Emergency Response Center as a primary location for first responders to gather and coordinate efforts. • The proposed center will function as a headquarters for emergency operations and include firefighting equipment and minor medical supplies. • The proposed center is located in a centralized area to service the entire site.

Term	Standard Definition	Characteristics and Considerations	Local Applicability
Evacuation Assembly Point	A temporary location exclusively for evacuation embarkation and transportation coordination in a field setting. Source: Planning Considerations: Evacuation and Shelter-in-Place (FEMA, 2019)	• Basic life-sustaining services are not generally available at these locations (no logistics, bathrooms, etc.). • Locations may be distributed throughout the community to provide assembly areas that are a relatively short distance from homes. • Assembly areas may also serve as potential Safety Zones for fire fighters and the public, dependent upon the current and expected fire behavior of an event, and Incident Commander approval.	• **South Lake County Wildland Fire Preparation and Emergency Plan** (2016) identifies temporary assembly zones (or areas) that will usually be those established locations on the emergency plan evacuation map. Assembly zones nearest to the resort are Middletown High School (20932 Big Canyon Road) and Coyote Valley Elementary School (18950 Coyote Valley Road). • **EIR Appendix FIRE** also identifies temporary meeting points as being dispersed throughout the site for residents, visitors, and employees.
Evacuation Center / Shelter (mass care)	A facility where government agencies and/or pre-established voluntary organizations process, evaluate, and provide disaster services to evacuees without an endpoint destination. Source: Planning Considerations: Evacuation and Shelter-in-Place (FEMA, 2019)	• These facilities must be resilient to wildfire and smoke exposure with features such as non-combustible construction, and air filtration systems that will result in a safe interior environment for evacuees. • Meals and water should be available, as well as basic first aid, pet sheltering (if applicable), sleeping quarters, hygienic support, and basic disaster services (e.g., counseling, financial assistance, and referral). • Durable medical equipment, communication aids and other necessary support assistance will be available at these locations as well.	• The Lake County Department of Social Services (LCDSS) is responsible for coordinating all care and shelter support for the county before, during, and after disasters. LCDSS leads a Mass Care and Shelter team that directs other agencies. • **South Lake County Wildland Fire Preparation and Emergency Plan** (2016) notes that Red Cross will attempt to have a representative at the Command Post to support people for long-term care. Twin Pine Casino Event Center is a Red Cross Shelter.

Term	Standard Definition	Characteristics and Considerations	Local Applicability
Evacuation Order	A jurisdictionally initiated action for an organized, phased, and supervised withdrawal, dispersal, or removal of people from dangerous or potentially dangerous areas and their reception and care in safe areas. Source: Planning Considerations: Evacuation and Shelter-in-Place (FEMA, 2019)	• Law enforcement agencies are typically responsible for enforcing an evacuation order.	• **EIR Appendix FIRE** states there will be an emergency notification fire siren system located throughout the resort and an opt-out mobile application will provide wildfire safety, evacuation information, and emergency alerts for guests and employees of the project site.
Evacuation Routes	Routes designated by county civil defense authorities or the regional evacuation plan for the movement of persons to safety in an emergency event. Source: Law Insider dictionary (n.a. 2022)	• Routes are specific to the hazard event and may vary according to the location of the event. • Law enforcement coordinates with first responders to identify, issue, and update roads that are safe to use as evacuation routes.	• **Lake County CWPP** (2022) has evacuation routes, fuel treatments, and other mitigations noted in Appendix A of the Lake County CWPP. • Local evacuation maps and additional emergency preparedness information is available for residents at the Lake County Fire Safe Council website, including primary and secondary evacuation routes and alert sign ups. • **EIR Appendix FIRE** states that the Emergency Response Center will provide directions and assist guests and employees during an evacuation. • **EIR Appendix FIRE** provides a map of potential access routes and roadway fire breaks, including vegetation management strategies.

Term	Standard Definition	Characteristics and Considerations	Local Applicability
Evacuation Zone	A defined area to which residents may be directed to evacuate, depending upon the impacts of the hazard. Source: Planning Considerations: Evacuation and Shelter-in-Place (FEMA, 2019)	• Officials determine the areas to be evacuated and escape routes to use depending upon the fire's location, behavior, winds, terrain, and other factors	• **Lake County CWPP** (2022) discusses evacuation planning, including emergency notifications, communications, and Zonehaven. • The Lake County Sheriff's Office, Lake County Office of Emergency Services "Know Your Zone" campaign and worked with Zonehaven to develop an evacuation map divided into specific zones for the entire county. • California Highway Patrol and the Lake County Sheriff's Department enforce traffic flow and maintain access for emergency equipment.
Safety Zone	A preplanned area of sufficient size and suitable location that is expected to protect fire personnel from known hazards without using fire shelters Source: Field Operations Guide ICS 420-1 (FIRESCOPE 2017)	• For radiant heat only, the distance separation between the firefighter and flames must be at least four times the maximum flame height. Convective heat from wind and/or terrain influences will increase this distance requirement. • The best locations are usually in the black, have a minimum of, or are devoid of, ground/aerial vegetation, or are large bodies of water. Other areas that can function as Safety Zones may include wet meadows, cleared open space, large parking lots, school/athletic fields, parks with open, grassy areas, previously burned areas with no flammable overstory. • Safety zones and viable escape routes may not be immediately available should fire behavior increase unexpectedly.	• **Lake County Emergency Operations Plan Wildland Urban Interface** (WUI Annex), Office of Emergency Services 2021, discusses safety zones in the context of firefighter roles, safety, and response. • **EIR Appendix FIRE** identifies a helipad site near the Emergency Response Center as a safety zone, and an additional helipad site at Detert Reservoir (near Winery) can also be used during emergencies, as well as equestrian and polo areas, golf course, irrigated vineyards.

Term	Standard Definition	Characteristics and Considerations	Local Applicability
Shelter in Place	The use of a structure to temporarily separate individuals from a hazard or threat. Source: Planning Considerations: Evacuation and Shelter-in-Place (FEMA, 2019)	• Sheltering in place is the primary protective action in many cases. Often it is safer for individuals to shelter-in-place than to try to evacuate. • Sheltering in place is appropriate when conditions necessitate that individuals seek protection in their home, place of employment, or other location when disaster strikes. • California standard statewide evacuation terminology issued by CalOES: Go indoors. Shut and lock doors and windows. Prepare to self-sustain until further notice and/or contacted by emergency personnel for additional direction. • CAL FIRE offers guidance if trapped near a wildfire.	• **Lake County LHMP** notes that all evacuation and sheltering in place for medium and high-level catastrophic incidents will be coordinated through Lake County EOC. Low level incidents will be handled at a more local level, such as through local fire departments (Appendix C-69). • **EIR Appendix Fire** includes resident recommendations on evacuations and shelter in place actions.
Temporary Refuge Area (TRA)	A preplanned area where firefighters can immediately take refuge for temporary shelter and short-term relief without using a fire shelter in the event that emergency egress to an established Safety Zone is compromised. Source: Field Operations Guide ICS 420-1 (FIRESCOPE 2017)	• Can be anything that offers protection from radiant or convective heat. Examples include the lee side of structure, inside of structure, cab of apparatus, large lawn, meadow, pasture, parking area, large turnouts, cul-de-sacs,. • Allows responders to develop an alternate plan to safely survive the increase in fire behavior. • Often more accessible in a Wildland Urban Interface (WUI) environment than a safety zone or escape route but is not a replacement for an identified safety zone because of changing fire conditions. • Always requires another planned tactical action.	• **Lake County Emergency Operations Plan Wildland Urban Interface** (WUI Annex), Office of Emergency Services 2021, defines TRA, safety zones, and other terms • **EIR Appendix FIRE** identifies a helipad site near the Emergency Response Center and an additional helipad site at Detert Reservoir (near Winery) can also be used during emergencies, as well as equestrian and polo areas, golf course, irrigated vineyards.

1. Introduction

This report presents the results of the wildfire risk analysis and evacuation time analysis conducted for the Guenoc Valley Mixed Use Planned Development Project (hereafter referred to as "Guenoc Valley Project" or "Project") to comply with the requirements of the California Environmental Quality Act (CEQA) as established in the CEQA Statute and CEQA Guidelines and applicable/published court decisions.

The potential wildfire risk and evacuation time impact effects of full build-out of the Project under the proposed General Plan amendment and rezoning of the Guenoc Valley Site are analyzed on a programmatic level. In addition to the program-level analysis, a project-level analysis of the impacts of the first phase (Phase 1) of the proposed Project is provided.

This section describes the purpose of this document, Project description, court ruling, consultation with local agency staff, and report organization.

Purpose

The purpose of this wildfire evacuation assessment is to address the Superior Court Ruling on the Guenoc Valley Mixed Use Planned Development Project (Project) Environmental Impact Report (EIR), subsequent CEQA guidance released by the Attorney General, and compliance with CAL FIRE regulations related to wildfire evacuation and emergency access.

Project Description

The Guenoc Valley Project consists of the development of a master planned mixed-use resort and residential community within a portion of the 16,000-acre Guenoc Valley Ranch property (Guenoc Valley Site) in southeast Lake County, off-site workforce housing located in central Middletown (Middletown Housing Site), and off-site water supply well (Off-Site Well Site) and pipeline located adjacent to and within Butts Canyon Road.

At a program-level, General Plan & Zoning Ordinance Amendment (AM 18-04) would introduce a new zoning district and rezone the Guenoc Valley Site to Guenoc Valley District ("GVD"), which would permit the development of up to 850 hotel and resort residential units, 1,400 residential estates, workforce housing, resort amenities, and accessory uses within the Guenoc Valley Site. The zoning ordinance amendment would also include an Agricultural Preserve Combining District and an Open Space Combining District.

The following changes to the Project evaluated in the Final EIR certified in July 2020, that are relevant to this Wildfire Risk and Evacuation Assessment, are part of a revised project description assessed herein.

- Construction of improvements for a third evacuation route to and from the Guenoc Valley Site (evacuation egress and emergency access only) with an all-weather surface that will access SR 29 via Grange Road.
- Removal of 64 hilltop residential lots from being closer to the WUI and relocation of these lots to a designated area within the project core.
- Reservation of the Recreational and Camping Area in the northern portion of the Guenoc Valley Site for recreational and camping purposes only, and strict prohibition of open fires within that area.
- Revised roadway plan with new connector roadways and with no dead-end, non-looped road segments that exceed one mile in length.
- Revised Roadside Hardscape Design with an area of approximately 10 feet on each side of the roadways improved with hardscape, to the extent that topography feasibly permits.
- Project's Emergency Response Center will have on-site at least one individual with wildfire expertise related to evacuation and emergency access, the cost of which will be paid by the Guenoc Valley Project Homeowners Association (HOA).
- The HOA will be required by its by-laws to contract with a wildfire expert for the duration of the Project, with costs paid by the HOA. The HOA shall consult with the wildfire expert in its implementation of wildfire prevention measures, including those identified in the Wildfire Prevention Plan.
- The Applicant shall pay to the South Lake County Fire Protection District ("SLCFPD"), on an annual basis, the amount determined by SLCFPD to be necessary in order to staff and equip the Emergency Response Center for fire services, including wildfire response.

The first phase of development (Phase 1) would include development of seven separate subdivisions throughout the Guenoc Valley Site. The total number of residential and hotel units, employees, and visitors with Phase 1 includes the following:

- 401 residential estate units
- 141 resort residential units
- 127 hotel rooms
- Middletown off-site employee housing for 221 employees
- 610 employees
- 100 visitors

The total number of residential and hotel units, employees, and visitors at full build-out includes the following:

- 1,400 residential estate units
- 450 resort residential units

- 400 hotel rooms
- Middletown off-site employee housing for 221 employees
- 1,220 employees
- 200 visitors

Access to the site would be provided via two entrance roadways extending from Butts Canyon Road. The primary access to the Guenoc Valley Site for residents and guests would occur via a new roadway and intersection. The Primary Access Road would be located at McCain Canyon, approximately 2.6 miles south of the existing Langtry Winery Entrance. Secondary access would be provided through improvements to the existing intersection and roadway located approximately halfway between the Langtry Winery entrance and the primary entrance options. Both the new primary and existing secondary access intersections would include turning lanes and deceleration/acceleration lanes as needed and would include stop and yield signs. A third route to and from the Guenoc Valley Site, for evacuation egress and emergency access only, will connect to SR 29 via Grange Road. The Applicant will provide a weekday shuttle service for employees from the Middletown Housing Site to the Guenoc Valley Site. Additionally, the Applicant will offer ride-matching assistance and preferential parking for carpools.

The Guenoc Valley Emergency Action and Fire Management Plan identifies fire safety measures to be implemented by the Project. Proposed fire management facilities include extensive fuel breaks along roadways and drainages, five designated temporary refuge areas (emergency gathering and protection sites), vegetation management areas, and the construction of an on-site Emergency Response Center and helipad for emergency access/transportation. At final occupancy of each structure, applicable fire breaks along roadways providing access to that structure shall be installed. At the time of the recording of the last final map for each of the five subdivision groups (Bohn Ridge Subdivision, Equestrian Subdivision, Maha Farms Subdivision, Golf Estates Subdivision, and Trout Flat Subdivision), the full roadway fire break network shall be completed within that subdivision.

The Emergency Response Center will include a structure to house firefighting equipment, as well as a headquarters space and will also house minor medical supplies. Approximately 500 square feet of the Emergency Response Center would be dedicated to the Lake County Sheriff's Office for law enforcement services. The South Lake County Fire Protection District (SLCFPD) would provide fire protection and fire suppression services to the Guenoc Valley Site and would staff the on-site Emergency Response Center. CAL FIRE would provide fire protection and suppression services in the event of a wildland fire since the Guenoc Valley Site is within CAL FIRE's state responsibility area. Multiple on-site water sources are available for fire suppression and will be supplemented with fire hydrants for first responders. A communication system such as Nixel and early fire detection system high-definition cameras and an emergency notification siren system would be installed throughout the site.

Fire wise landscaping techniques such as reducing fire prone vegetation within fifty feet from both edges of each proposed roadway will be managed by the HOA. This will include cutting down dead trees and removing all flammable shrubs. The understory below trees will be maintained by mowing, grazing, and manual vegetation removal; in addition, shrubs will be removed below trees. Within this zone, individual trees or tree clusters will be adequately spaced to prevent fires from quickly spreading. In addition, landscape within 300 feet of proposed commercial buildings and within 50 feet of residential buildings will be primarily native and low fuel vegetation to reduce vegetated fire risk, and exterior fire suppression systems will be required for all primary structures. Sprinkler systems will be installed on residential buildings on dead-end drives over 0.25 miles. These systems will be remote or heat activated.

FIGURE 1-1
PROJECT LOCATION



Figure 1-1. Project Location

Guenoc Valley Project Court Ruling

The Superior Court Ruling (County of Lake) issued on January 4, 2022, ruled in favor of the County and the project applicant on every issue raised in the litigation – and concluded that substantial evidence supported the County's findings regarding the Project's impacts related to wildfire risks – with one exception involving the County's findings regarding community emergency evacuation routes. Due to that exception, the Court ordered Lake County to set aside its certification of the Final EIR, set aside and vacate its findings related to impacts to an adopted emergency evacuation plan, and set aside and vacate its approval of the Guenoc Valley Project. The EIR prepared for the Project concluded the impacts to adopted emergency response or emergency evacuation plans would be less than significant based on opinions from traffic engineers and fire and law enforcement personnel. The Court held that this was not substantial evidence for two reasons: (1) the evidence did not focus on whether evacuation of the residents in the nearby area would be affected by the evacuation of the Project's residents during a wildfire; and (2) the expert opinions were not based on any identifiable facts. The Court concluded that "*because the County's findings regarding community emergency evacuation routes are not supported by substantial evidence, the EIR does not comply with CEQA.*"

Attorney General Guidance

On October 10, 2022, the Attorney General's office published *Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act* (AG Guidance). The AG Guidance is designed to help lead agencies comply with CEQA when considering whether to approve projects in wildfire-prone areas. The guidance provides "*suggestions for how best to comply with CEQA when analyzing and mitigating a proposed project's impacts on wildfire ignition risk, emergency access, and evacuation*."

The AG Guidance describes CEQA's requirements in the following two analysis categories.

- Analyzing Impact on Wildfire Risk
- Analyzing Impact on Evacuation & Emergency Access

Section IV.B of the AG guidance outlines variables that should be considered in the analysis of impact on wildfire risk related to the following project characteristics.

- Project Density
- Project Location in the Landscape
- Water Supply and Infrastructure

Section IV.C of the AG Guidance contains the following recommendations regarding evacuation and emergency access.

> *Evacuation modeling and analysis should include the following:*

- *Evaluation of the capacity of roadways to accommodate project and community evacuation and simultaneous emergency access.*
- *Assessment of the timing for evacuation.*
- *Identification of alternative plans for evacuation depending upon the location and dynamics of the emergency.*
- *Evaluation of the project's impacts on existing evacuation plans.*
- *Consideration of the adequacy of emergency access, including the project's proximity to existing fire services and the capacity of existing services.*
- *Traffic modeling to quantify evacuation time estimates under various likely scenarios.*

The analysis contained in this report addresses the above recommendations in the AG Guidance.

CAL FIRE Regulation Compliance

The Guenoc Valley Project is located on lands designated as a State Responsibility Area (SRA), where CAL FIRE is the primary emergency response agency responsible for fire suppression and prevention. As a result, the Project must comply with state requirements for wildfire protection and safety, as reviewed and approved by CAL FIRE. These state requirements include State Minimum Fire Safe Regulations, California Building and Residential Codes (Materials and Construction Methods for Exterior Wildfire Exposure), and California Fire Code Chapter 49 (Requirements for Wildland-Urban Interface Areas). Regulation compliance is further discussed in **Chapter 3**.

Consultation with Local Agency Staff

The following text provides a summary of consultation with staff from Lake County (Sheriff, Counsel, Planning, Public Works, and Social Services), CAL FIRE, Caltrans District 1, the Lake Area Planning Council (Lake APC), and the Guenoc Valley Project Team.

A series of meetings were arranged to gather information and inform the evacuation assessment approach presented in this report:

- Kick-off Meeting: CEQA Evacuation Methodology Context, Work Plan, Next Steps (County Counsel, Community Development, Public Works, and Battalion Chief Wink)
- Work Session #1: Hazard/Wildfire and Evacuation History (Battalion Chief Mike Wink)
- Work Session #2: Legal Framework, Regulatory Context, and Setting (County Counsel, Community Development, and Public Works)
- Work Session #3: Project Evacuation and Emergency Response Plan (Project Team)
- Work Session #4: Model Consultation - Wine Country Travel Model and Lake Area Microsimulation Model (Lake APC and Caltrans District 1 staff)

- July 27 Meeting: CEQA Evacuation Analysis Methodology (County Counsel, Community Development, Public Works, and Battalion Chief Wink)
- October 14 Meeting: Evacuation Analysis Update/October 2022 Attorney General Guidance (County Counsel, Community Development, Public Works, and Battalion Chief Wink)

CAL FIRE Battalion Chief Mike Wink

The Project Team consulted with Battalion Chief Wink and reviewed information on historic Lake County wildfires and evacuations including the 2020 Lake Napa Unit (LNU) Lightning Complex Fire (LNU Complex Fire) that prompted evacuations of Middletown, Hidden Valley Lake, and surrounding areas[1]. The team also discussed with Battalion Chief Wink the 2015 Valley Fire that prompted evacuations, the 2015 Jerusalem Fire located northeast of the Project site, and other historical fires that have occurred on or near the Project site.

The 2015 Valley Fire was a significant wind-driven weather event with a low-pressure system on top of normal winds. The fire traveled downhill – from northwest to southeast - from Cobb Mountain into the valleys and communities of Middletown and Hidden Valley. The priority for firefighters were the populated areas in the interior of the South Lake County evacuation area. The Project site is currently a rural property that is lightly populated and mostly consists of vineyards, grazing, and agricultural lands. As such, it wasn't a priority for several days. The current site also has a limited road system to access the area, so firefighting is focused along the main ranch road where housing and wine storage is located.

The 2020 LNU Lightning Complex Fire had several lightning fires that started not far from the Project site and spread onto the property. As noted above, firefighting activities focused on the populated area with critical infrastructure along the main ranch road. Lack of resources and roads to access the more remote, rural areas of the Project site to the south limited the ability to contain the spread of fire at these locations.

The 2015 Jerusalem Fire located northeast of the Project site started by Hidden Valley Lake and several hundred residents of the rural area were evacuated. The fire moved away from the populated area and had limited effect on the Project site.

The Guenoc Valley Project as designed, with a staffed on-site Emergency Response Center (three first responders and an additional ambulance); a more extensive road system that forms a fire break network; vineyard, golf course, and polo field firebreaks; and improved access to on-site surface water, would present significantly different conditions than exist today for firefighting. The Project will also provide underground power and underground propane tanks.

[1] Personal communication with Battalion Chief Mike Wink, CAL FIRE, June 3, 2022 [Personal interview by phone].

The provision of Grange Road as a third emergency evacuation route will provide increased access for firefighters and an alternative egress route for evacuees. The evacuation study area includes Middletown, Hidden Valley Lake, and the Cobb area communities as well as the Project site.

Lake County Sheriff Brian Martin

Sheriff Martin indicated that the LNU Lightning Complex Fire in 2020 and the Valley Fire in 2015 were the fires that involved the most comprehensive evacuations since 2015. He indicated that the two fires were different from an evacuation perspective. Greater levels of congestion occurred for the Valley Fire, as it was faster-moving, and the combination of smoke and darkness caused more problems. The LNU Lightning Complex Fire was slower-moving, and the evacuations were more precautionary and called because of limited county resources. Five deaths occurred in Lake County during the Valley Fire and none during the LNU Lightning Complex Fire.

Sheriff Martin indicated the following about fatalities that occurred during the Valley Fire. "The five persons who died in the Valley Fire all either received an evacuation notification or were contacted directly by someone and informed of the need to evacuate. None of the five decided to evacuate at the time of notification. None died in a vehicle attempting to evacuate."[2]

During a wildfire event, the first priority for Lake County Deputies is to provide notification to residents and the second is to evacuate residents who are unable to evacuate without assistance. For a large wildfire event that requires a large-scale evacuation like the Valley Fire, the sheriff would not have resources to provide traffic control at intersections The sheriff would request support from the California Highway Patrol (CHP), other police departments, Caltrans, and the Department of Public Works to augment and support traffic control at congested intersections.

Additional details provided by Sheriff Martin on the evacuations are included in Section 2 in a subsection titled South Lake County Wildfire Evacuation History.

Lake County Department of Social Services

Michele Dibble and Crystal Markytan, with the Lake County Department of Social Services, provided information on shelter facilities and use in past evacuations[3]. Their experience with recent fires including the Mendocino Complex fire is that most residents go to hotels or homes of friends, and don't use the provided shelters. Reasons for that include Covid and advanced screening requirements, shelter rules, and reduced shelter capacity. Shelters are primarily used by seniors, disabled, and lower income residents who don't have a car and tend to live in Clearlake and in the SR 20 corridor. The communities in South Lake County tend to have higher income residents and it was the consensus that they expected shelter use from evacuating residents from the area would be

[2] Personal communication with Sheriff Brian Martin, Lake County Sheriff, October 6, 2022 [Email correspondence].
[3] Personal communication with Michele Dibble and Crystal Markytan, Lake County Department of Social Services, October 7, 2022 [Personal interview by phone].

relatively low. This is consistent with the results of evacuee surveys conducted by UC Berkeley for California wildfires from 2017 to 2019 that found low use of public shelters (2% to 5%).

Report Organization

The following chapters are included in this report to meet County requirements for evaluating evacuation impacts of the proposed Project:

Chapter 1 – Introduction includes the purpose of this document, Project description, court ruling, consultation with local agency staff, and report organization.

Chapter 2 – Wildfire and Evacuation History describes the history of Lake County wildfires and wildfire evacuations as well as recent wildfire research studies.

Chapter 3 – Wildfire Risk Analysis provides an analysis of the wildfire hazard and risk on the Guenoc Valley Project Site and associated compliance with state minimum requirements and additional measures that will be undertaken to reduce the Project's wildfire risk.

Chapter 4 – Evacuation Time Analysis describes the evacuation time methodology and results for various evacuation scenarios.

Chapter 5 – CEQA Impacts and Mitigation Measures describes CEQA impacts and mitigation measures.

2. Wildfire and Evacuation History

This section provides a description of wildfire and evacuation history in South Lake County, both in the vicinity of the Project site and in the surrounding communities of Middletown, Hidden Valley Lake, and Cobb.

Project Site/Ranch Wildfire History and Conditions

The Project site is characterized by rolling terrain resulting in valley drainages and subtle ridgelines. The natural vegetation cover is dominated by Oak Savanah fuel types consisting of oak trees and, grass and dispersed shrubs. The terrain and vegetation cover are interrupted by wetlands, creeks, reservoirs, and vineyards. Left unchecked, the Oak Savanah fuel complex typically supports low intensity, fast moving fires. However, according to local fire authorities, and ranch managers, the Project area's long grazing history has significantly lowered the fire intensity and spread potential within the Project area. This is demonstrated by the recent history of fires that have burned onto the property.

During the 2020 LNU Lightning Complex, there were no known ignitions within the Project area; however, once the fire spread onto the property it exhibited very low growth. This same situation was observed during the 2015 Valley Fire. Local fire authorities attribute the presence of the active grazing program and vineyards to creating a fire resilient landscape that did not propagate the further spread of fire.

Another recent fire of note that may have impinged on the property was the 2015 Jerusalem Fire. Previous to 2015, the next most recent fire that burned onto the property was a 100-acre fire in 1996.

Historically, there were a number of fires that have burned on the property; however, ongoing grazing and regular prescribed fire use by the ranch employees through the 1950s, 60s and 70s reduced fire behavior and growth.

It's important to note that, although the vegetative conditions on the property did not promote aggressive fire behavior during these fires, access has been a significant challenge. The rural nature of the property and associated minimal road network limit fire suppression access.



Figure 2-1. Topography, Vegetation, and Existing Land Uses in the Guenoc Valley Project Area
Source: CWPC

South Lake County Wildfire History

The following wildfire history map (**Figure 2-2**) shows major fires that have occurred in Lake County between 2015-2020. **Table 2-1** provides a description of the most significant wildfires that have affected the South Lake County communities as well as past fires specific to the Guenoc Valley Project site.

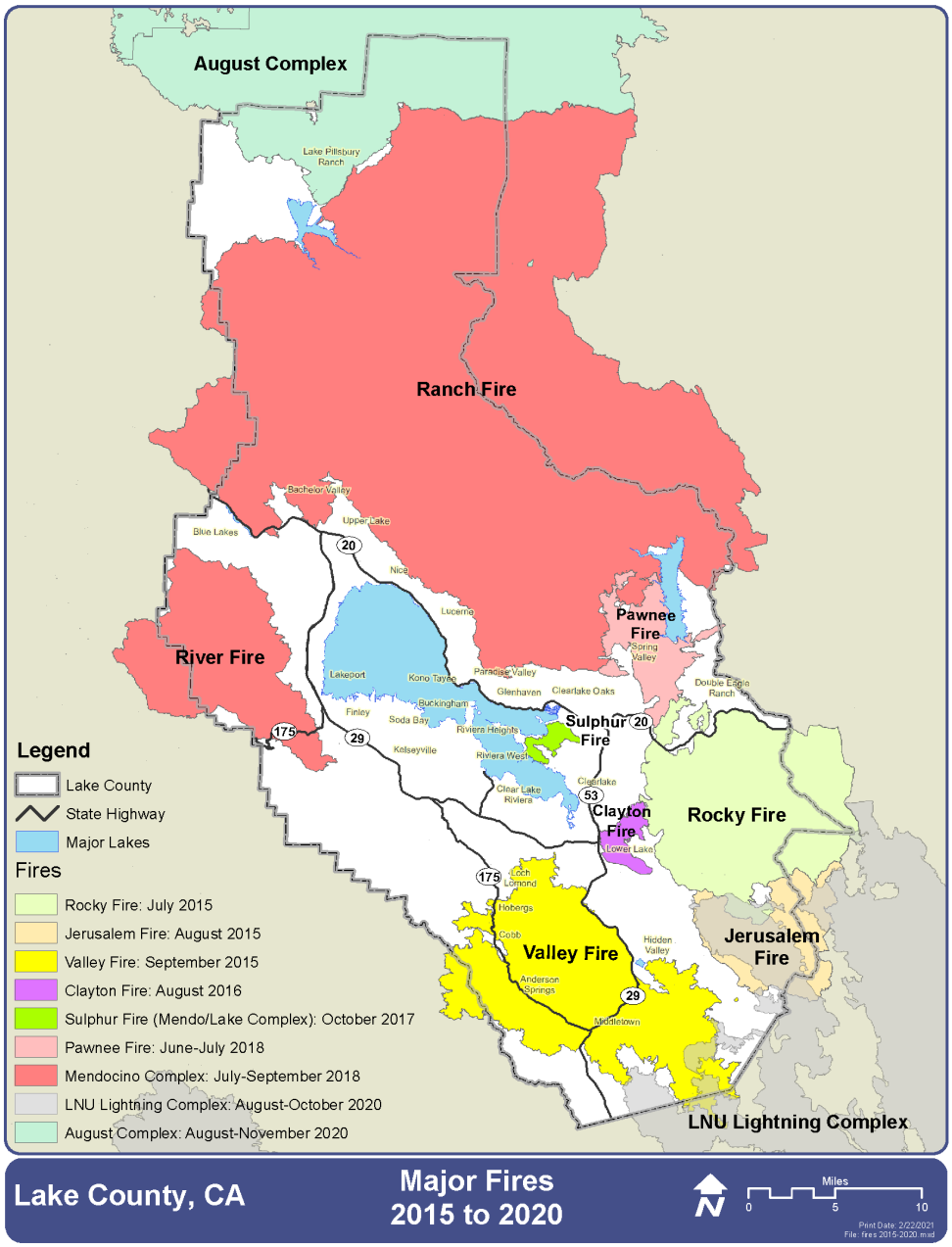


Figure 2-2. Major Fires in Lake County: 2015 to 2020
Source: Lake County CWPP

South Lake County Communities

Fires listed in **Table 2-1** affected the southern, southeastern, or central portions of Lake County within the past decade.

The LNU Complex Fire[4] started near Lake Hennessey in Napa County on August 17, 2020[5]. An evacuation warning for the LNU Complex Fire issued by the Lake County Sheriff's Office on August 20, 2020, included Middletown proper as well as all areas west of Highway 29 (including areas west of Saint Helena Creek Road), north and east of the Lake/Napa County Line (extending north to the Anderson Springs Road prolongation between the county line and Highway 175), south of Anderson Springs Road, Neft Road and the Boggs Mountain Recreation Area prolongation to the intersection of Hofacker Lane and Highway 29. Evacuation orders were issued the following day for the Hidden Valley Lake and Jerusalem Valley areas as well as the greater Middletown area.

The 2015 Valley Fire[6] began on September 12, 2015 and burned about 76,000 acres in Lake, Sonoma, and Napa Counties, south of Clear Lake. Major areas impacted include Middletown, Cobb, and Hidden Valley. Approximately 99 percent of Boggs Mountain Demonstration State Forest rapidly burned (roughly 3460 acres of the total Forest area of 3493 acres). The Valley Fire area burned went from 400 acres in the first few hours to 40,000 acres in approximately the first 18 hours due to high wind conditions, reported up to 60 mph.

Other recent fires that occurred in north or central Lake County include the Ranch Fire and River Fire (Mendocino Complex) that destroyed 157 homes (2018), the Pawnee Fire that destroyed 12 homes (2018), Sulphur Fire that destroyed 138 homes (2017) and the August Complex.

[4] *2020 Fire Siege*, CAL FIRE, April 7, 2021.
[5] *Wildfires on the Horizon*, Solano County Civil Grand Jury, 2020-2021.
[6] *Valley Fire Post Fire Watershed Emergency Response Team Report,* California Natural Resources Agency, October 12, 2015.

Table 2-1. Summary of South Lake County Wildfires

Fire Name	Summary	Evacuation Area	Sources
Butts Fire (Napa County, south of study area to the north of Pope Valley)	• Ignited on 7/1/14 off Butts Canyon Road in Pope Valley, northwest of Lake Berryessa • 2 deaths in Napa County • Two residences and seven outbuildings were destroyed • 4,300 acres burned	• Affected Napa and Lake Counties • Evacuation orders were along Butts Canyon Road from James Creek to Snell Valley Road, Berryessa Estates • Evacuation advisories included areas in Lake County on Butts Canyon Road from Lake County line to Langtry Estates	https://www.fire.ca.gov/incidents/2014/7/1/butts-fire/ https://wildfiretoday.com/2014/07/01/california-butts-fire/
Clayton Fire (Lake County, north of study area in Lower Lake)	• Ignited on 8/13/16 off Highway 29 and Clayton Creek Road south of Lower Lake • Contained on 8/26/16 • 300 structures destroyed; 189 homes many in historic downtown Lower Lake • 28 structures damaged • 3,929 acres burned • Cause of fire was arson	• 5,000-6,000 people evacuated from Lower Lake and Clearlake, including St. Helena Hospital Clearlake • Evacuation center opened at Highlands Senior Services Center	https://www.fire.ca.gov/incidents/2016/8/13/clayton-fire/ https://www.lakeconews.com/index.php/news/61943-man-accused-of-setting-clayton-fire-other-fires-around-lake-county-reaches-plea-agreement https://www.sfgate.com/news/article/Lake-County-wildfire-grows-to-1-400-acres-four-9141748.php
Jerusalem Fire (Lake County, east of study area in eastern Lake County)	• Ignited on 8/9/15 in Lake County in Jerusalem Valley northeast of Middletown and southeast of Lower Lake, near Rocky Fire area • Fire driven by fuels and terrain with total fuel consumption due to multi-year drought • Fire headed northeast and merged with Rocky Fire	• Mandatory evacuations for Jerusalem Valley areas and Hidden Valley Lake • Evacuation Center set up at Middletown High School • Temporary evacuation point set up at former Pearce Field airport in Clearlake	https://abc7news.com/jerusalem-fire-lake-county-evacuations-lower/920925/ https://www.capradio.org/articles/2015/08/10/jerusalem-fire-in-lake-county-prompts-mandatory-evacuation/ https://www.lakeconews.com/news/66393-evacuation-order-issued-for-hidden-valley-lake-and-jerusalem-valley-areas https://www.abc10.com/article/news/local/california/cal-fire-rocky-and-jerusalem-fires-have-merged/103-181832719 Interview with CAL FIRE Battalion Chief Wink

Fire Name	Summary	Evacuation Area	Sources
LNU Lightning Complex (Napa, Sonoma, Lake, Yolo, and Solano Counties) (includes Morgan, Hennessey, Gamble, Spanish, Markley, Walbridge, 15-10, 13-4, 11-16)	• Ignited on 8/17/20 • 47 days active • 363,220 acres burned • Caused by multiple lightning-sparked fires and arson (Markely fire in Solano County) • 1,490 structures destroyed; 232 structures damaged • 5 injuries • 6 deaths (3 in Napa County and 3 in Solano County) • Fires affecting Lake County: Hennessey, Morgan • No known ignitions on Guenoc Valley property from LNU Complex	• Mandatory evacuations for Hidden Valley Lake, Jerusalem Valley areas, Lower Lake • Evacuation warnings for areas north of Lower Lake to Highway 20 (excluding Clearlake) and greater Middletown area • Reports from the scene stated that authorities closed southbound Highway 29 to allow both lanes of the highway to be driven north by evacuees • Deputies and firefighters spent hours going house to house, notifying residents of the need to evacuate, according to radio traffic	http://www.lakeconews.com/index.php/news/66434-lnu-lightning-complex-adds-almost-12-000-acres-overnight https://www.lakeconews.com/index.php/news/66397-lnu-lightning-complex-nearly-triples-in-size-lake-county-evacuations-remain-in-place https://www.lakeconews.com/news/66438-lnu-lightning-complex-remains-priority-for-resources-firefighters-hold-down-daytime-growth https://www.fire.ca.gov/incidents/2020/8/17/lnu-lightning-complex-includes-hennessey-gamble-15-10-spanish-markley-13-4-11-16-walbridge/ https://www.frontlinewildfire.com/wildfire-news-and-resources/2020-california-lightning-complex-fires/ Lake County CWPP May 2022 Sonoma-Lake-Napa Unit 2021 Strategic Fire Plan Interview with CAL FIRE Battalion Chief Wink
Rocky Fire (Lake County, northeast of study area in east Lake County)	• Ignited on 7/29/15 near Morgan Valley Road and Rocky Creek Road, east of Clear Lake • Contained on 8/14/15 • 96 structures destroyed • 8 structures damaged • 69,438 acres burned • Caused by gas water heater failure near an outbuilding containing flammable liquids	• Mandatory evacuations for Jerusalem Valley area (full list in links) • Evacuation Centers at Middletown High School, Kelseyville High School, Upper Lake Middle School • Evacuation centers for animals • Local homeowner group raised issues about community-specific evacuation plans	https://www.fire.ca.gov/incidents/2015/7/29/rocky-fire/ https://www.fire.ca.gov/media/5143/2015_rockyfirecause.pdf https://m.facebook.com/recordbee/posts/10153483386874280?locale2=ar_AR https://m.facebook.com/recordbee/posts/10153483386874280?locale2=ar_AR https://bit.ly/3z9BlQd

Fire Name	Summary	Evacuation Area	Sources
Valley Fire (Lake County, encompassed entirety of study area)	• Ignited on 9/12/15 in Lake County near Cobb • Contained on 10/15/15 • 5 homeowner deaths, 4 CAL FIRE firefighters entrapped and sustained second-degree burns • 1280 Homes lost • 1955 structures destroyed • 93 structures damaged • 76,067 acres burned • Caused by faulty wiring of a hot tub at a home on High Valley Road outside the community of Cobb • Fire spread onto Guenoc Valley property but was not a priority because it was not a significant threat to lives or property	• Affected communities of Cobb, Loch Lomond, Anderson Springs, Middletown, Hidden Valley • Mandatory evacuations for Cobb Mountain and adjacent areas, Ranchos • Vehicle dash camera released by Lake County Sheriff's Office show deputies driving during Valley Fire to assist with evacuations (footage between Hidden Valley Lake and Middletown)	https://www.fire.ca.gov/incidents/2015/9/12/valley-fire/ https://www.columbian.com/news/2015/sep/15/deadly-valley-fire-in-northern-california-grows-to-67000-acres/ https://wildfiretoday.com/2015/10/29/dash-cam-video-shot-during-the-valley-fire-released/?hilite=valley+fire https://bit.ly/3PIF9io https://youtu.be/iuCz52nTp_s Interview with CAL FIRE Battalion Chief Wink

South Lake County Wildfire Evacuation History

This section is based on consultations with Sheriff Brian Martin, CAL FIRE Battalion Chief Mike Wink, and other historical documents including a presentation by CAL FIRE Division Chief Linda Green who was the Incident Commander for the Valley Fire during the first burn period. The most comprehensive information on evacuation conditions is available for the 2015 Valley Fire, which was a fast-moving fire with a series of evacuation orders that occurred over the course of the afternoon and evening of Saturday, September 12, 2015. **Table 2-2** below provides a timeline of the 2015 Valley Fire based on information from Sheriff Brian Walker and CAL FIRE Division Chief Linda Green. The mandatory evacuation order for Hidden Valley Lake, the most heavily populated community in South Lake County, was issued just before 6:00 pm. Most of the evacuations in Lake County were completed by midnight. CAL FIRE information indicates that the fire spread into Napa County around midnight and an evacuation order south to Pope Valley and Aetna Springs was issued around 2:00 am.

Table 2-2. 2015 Valley Fire Timeline

Time (PM)	Source	What Happened?
1:21	2	Fire reported
1:47	2	Evacuations started west of Bottle Rock Road and east of High Valley Road
2:00	2	Evacuation includes entire community of Cobb
3:05	1	*Bottle Rock at 175 closed*
3:15	1	*County Roads set up blocks at Bottle Rock Rd at Sulphur Creek*
3:21	1	*Bottle Rock Road closed at Harrington Flat Road*
3:23	1	*Hwy 175 shut down south of Loch Lomond*
3:23	2	Evacuation expanded to include Harbin Hot Springs, Big Canyon Road to just north of Middletown
3:43	1	*Hwy 175 is shut down at Anderson Springs*
3:46	2	Fire moved north to Loch Lomond, expanded evacuation
4:40	1	*Evacuation center established at church in Kelseyville*
4:40-4:56	2	Mandatory evacuation of Middletown, Highway 175 corridor
5:00	1	*Evacuation orders updated to include all of Highway 175 from Cobb to Dry Creek including all side streets*
5:11-5:51	2	Advisory evacuation for Hidden Valley Lakes
5:25	1	*Evacuation of Hidden Valley Lake ordered*
5:51	2	Mandatory evacuation for Hidden Valley Lakes
5:56	1	*Fire has jumped to Grange Road*
6:29	1	*Southbound traffic on Hwy 29 blocked at intersection of Hwy 53*
6:42	1	*RP reports signal in Lower Lake holding up traffic and it's backed up from Wardlaw to County line*

Time (PM)	Source	What Happened?
6:44	1	*CAL FIRE requests Hidden Valley Lake fire gates to be opened*
6:56	1	*Sheriff Martin requests Hidden Valley Security to direct traffic out Spruce Grove towards Lower Lake instead of towards Hwy 29.*
7:07	1	*CHP requested to stop traffic at Hwy 29 and Tubbs Lane in Napa County.*
7:25	1	*CHP reporting Hwy 29 closed south of Middletown with officers only allowing southbound traffic.*
8:20	1	*Lakeport PD units arrive on scene to assist with evacuations from Hidden Valley main gate*
9:43	1	*Additional evacuation center established at the Calistoga Fairground*
10:10	1	*Napa So Deputy advises he is stopping northbound traffic and turning them around*
10:12	1	*Sgt. Gregory contacting Caltrans to set up traffic control for one-way traffic*

Sources

1. Sheriff Brian Walker, August 19, 2022 meeting.
2. Valley Fire Case Study and Lessons Learned, Presentation by Linda Green, CAL FIRE, Division Chief (Sonoma, Lake, and Napa Units), Incident Commander for Valley Fire during first burn period, https://www.nrfirescience.org/resource/14495.

Notes

1. For source 1, all notes in italics are verbatim from sheriff timeline report.

Sheriff Walker indicated that the main evacuation bottleneck during the 2015 Valley Fire was at the Hidden Valley subdivision, which is a gated community and is the most heavily populated residential area in South Lake County. There are limited routes that remain open at all times. The volume of traffic generated by the Hidden Valley Lake subdivision caused a traffic jam as the fire was approaching from the north and eventually burned across SR 29. To mitigate congestion levels, the Sheriff decided to direct the northern half of the Hidden Valley Lake community to the north on SR 29 and the southern half of the community to the south on SR 29. Officers created contraflow conditions by establishing two northbound only lanes fed by the northerly half of the Hidden Valley Community (evacuated north towards Lower Lake and Clearlake) and two southbound only lanes fed by the southerly half of the Hidden Valley Community (evacuated south towards Middletown and Calistoga). An officer was stationed at the SR 29/SR 53 signalized intersection in Lower Lake to prevent any traffic from going south on SR 29 towards the northbound contraflow operations and another officer stationed on SR 29 and Tubbs Lane in Napa County to prevent any traffic from going north on SR 29 into Lake County.

Lake County uses Zonehaven, Everbridge, Nixle, and Wireless Emergency Alerts (WEA) via cell phones to notify residents of evacuation notices. Communication is a challenge for first responders as there are many residents who do not have the ability or systems to get messages. Particularly in the Cobb and Loch Lomond areas, there is mountainous terrain with dead spots for cell systems. For residents who use VOIP, the reverse notifications don't go through if they don't sign up for the alerts.

For the Valley Fire, Sheriff Martin indicated that Middletown residents primarily evacuated to Calistoga via SR 29, Cobb and Loch Lomond residents primarily evacuated north to Kelseyville and Lakeport, and Hidden Valley Lake residents split their evacuations north on SR 29 to Lower Lake and Clear Lake and south on SR 29 to Middletown and Calistoga. Lower Lake was not evacuated.

The 2020 LNU Lightning Complex fire was spread out over several days and not as urgent as the 2015 Valley Fire. The fire was first reported at 6:40 am on Monday, August 17, 2020. Evacuation orders or warnings occurred on Tuesday through Thursday, August 18 through 20. In Lake County, the evacuations were more precautionary based on the experience of first responders with the Valley Fire and the knowledge that they had limited resources to manage traffic. Congestion was more due to the slow response of residents to evacuate. Based on experience with the Valley Fire, more fire gates around the Hidden Valley Lake community were opened earlier in the evacuation process than with the Valley Fire and that proved to be a significant benefit in the evacuation process. The evacuations were also easier because most happened during daylight hours.

Fatalities During Wildfire Evacuations

Wildfire evacuations occurred in South Lake County communities surrounding the Guenoc Valley Project during the 2020 LNU Lightning Complex Fire, the 2015 Valley Fire, and the 2015 Jerusalem Fire. Five persons died as a result of the 2015 Valley Fire in Lake County. There were no fatalities in Lake County as a result of the LNU Lightning Complex Fire or Jerusalem Fire. In Napa County south of the project, two persons died during the 2014 Butts Fire in Pope Valley. Interviews with CAL FIRE Battalion Chief Wink[7] and Lake County Sheriff Brian Martin[8], combined with reviews of fire[9] and media[10] reports, indicate that no one died in a vehicle attempting to evacuate in Lake County during these fires.

Wildfire Evacuation Research

The following provides a summary of recent relevant research conducted of California wildfires and wildfire risk reduction measures.

Review of California Wildfire Evacuations from 2017 to 2019

Wong, S., Broader, J., Shaheen, S. (2020). *Review of California Wildfire Evacuations from 2017 to 2019*. https://escholarship.org/uc/item/5w85z07g

[7] Personal communication with Battalion Chief Mike Wink, CAL FIRE, June 3, 2022 [Personal interview by phone].
[8] Personal communication with Sheriff Brian Martin, Lake County Sheriff, October 6, 2022 [Email correspondence].
[9] *Wildfires on the Horizon*, Solano County Civil Grand Jury, 2020-2021.
[10] *Human bones IDd as brothers burned in 2014 Napa fire, San Francisco Chronicle, Oct. 5, 2016; The Markley Fire, set to cover up a murder, killed two other people, Wildfire Today, Apr. 30, 2021; 4 dead in LNU Lightning Complex Fire, 215,000 acres scorched, CAL FIRE says, ABC 7 NEWS, Aug. 20, 2020.*

The research report summarizes the evacuation of eleven major wildfires in California between 2017 and 2018 based on empirical data collected via surveys of evacuees. Approximately 1.1 million people were ordered to evacuate in the 11 wildfires that were studied. Case studies are presented for each wildfire including the Kincade Fire in Sonoma County (200,000 evacuees), the Camp Fire in Paradise/Butte County (52,000 evacuees), and the Mendocino Complex Fire (17,000 evacuees in Lake, Mendocino, Glenn, and Colusa counties).

The surveys yielded the following results with respect to individual behavior (e.g., evacuate or stay), communication (e.g., type and source of evacuation orders received), use of logistical resources (e.g., transportation mode and shelter resources), evacuation characteristics (e.g., destination and route), and return to impacted areas (e.g., reentry) for wildfires.

- A weighted average of 1.89 vehicles evacuated per household;
- A non-compliance rate (i.e., individuals who received a mandatory evacuation order but did not evacuate) ranging between 3% and 13%;
- A shadow evacuation rate (i.e., individuals who did not receive a mandatory evacuation order but evacuated) ranging between 29% and 75%;
- A “within county” evacuation rate ranging between 66% and 70%;
- Spikes in evacuation departure days ranging between 33% and 78% of evacuees leaving on a single day, depending on the wildfire;
- Variable evacuation departure times with 51% to 73% departing at night between 6:00 p.m. and 5:59 a.m., depending on the wildfire;
- Preference to shelter with family or a friend (49% to 70%) and at a hotel or motel (13% to 23%);
- Initial sheltering through a peer-to-peer service, such as Airbnb (0.4% to 3%) and low use of public shelters (2% to 5%);
- Predominate use of one vehicle (34% to 45%) and two or more vehicles (49% to 62%) to evacuate;
- Variable use of routes as the primary road type of travel but generally higher use of highways (32% to 62%), no majority type (17% to 35%), and major roads (15% to 27%);
- A low GPS-navigation usage rate ranging between 8% and 19% for routing; and
- A wide spread of reentry days (with 3% to 32% returning two weeks or more after the initial wildfire outbreak) and only 22% to 33% of respondents stating they received information to return from an official source.

Results also indicate that agencies were only moderately successful in issuing evacuation orders, communicating to the public, and managing transportation. Specific communication and opinion of government response results include:

- A moderately high rate of respondents (59% to 79%) who received a mandatory evacuation order and who found the message to be extremely clear
- A moderately low rate of respondents (37% to 45%) who received a voluntary evacuation order and who found the message to be extremely clear;
- A wide distribution of communication methods for mandatory orders, with four different platforms (two wildfires) and seven different platforms (one wildfire) each reaching 25% or more of respondents;
- Highly variable avenues of receiving information for mandatory evacuation orders that significantly differed by wildfire such as reverse 911 calls (8% to 39%); text messages (29% to 50%); social media (15% to 34%); alerts from a subscribed service (12% to 42%); and internet websites (8% to 38%);
- Receipt of mandatory evacuation orders directly through personal interactions with public officials (30% to 42%) and secondary sources such as friends, neighbors, and extended family (27% to 38%);
- A low rate of receiving mandatory evacuation orders through television announcements (13% to 21%);
- A high rate of seeking additional information, ranging from 30% to 50% and 62% to 67% of respondents for mandatory and voluntary evacuation orders respectively;
- Moderately low overall opinion of an extremely effective or very effective government management of roads (29% to 42%), shelters (37% to 40%), and overall evacuation (39% to 49%); and
- Low overall opinion of an extremely effective or very effective government management of communication (23% to 35%) and evacuation of carless populations (10% to 13%).

Post Santa Rosa Fire Survey

Santa Rosa Post-Fire Survey, (2019).
https://www.cmap.illinois.gov/documents/10180/995345/CATMUG-20190403-Lupa-EvacSurvey.pdf/f5550362-e8b3-8d57-2a50-11b4e56162f1

The following is a summary of the results of surveys conducted of residents who evacuated from the 2017 Tubbs Fire in the City of Santa Rosa, Sonoma County. It is relevant to this study because it is one of the few studies in the last five years to quantify the number of vehicles evacuated per residential household. The goal of the survey was to identify critical issues in the transportation and communication aspects of household emergency evacuation.

- A weighted average of 1.75 vehicles evacuated per household;
- The most common number of vehicles used was 1 (46%) and 2 (38%), with fewer evacuees using 3 (11%) or 4+ vehicles (5%);
- Over half of the evacuees traveled less than 10 miles to their first stop (63%);

- The most common items carried out were wallet and cellphone (85%), pets (58%), clothing (45%), medication (39%), important documents (39%), photo albums (27%), jewelry (16%), and food and drink (9%).

Assessing Effectiveness of Green Landscape Buffers to Reduce Fire Severity and Limit Fire Spread in California

Herbert, C.; Butsic, V., 2022. *Assessing the Effectiveness of Green Landscape Buffers to Reduce Fire Severity and Limit Fire Spread in California: Case Study of Golf Courses*. https://www.mdpi.com/2571-6255/5/2/44

The research report documents research to evaluate whether golf courses, as landscape buffers, alter fire severity[11] and limit wildfire spread. The analysis uses propensity score matching and multiple linear regression on golf courses that burned in California between 1986 and 2020. The research reaches the following conclusions:

- Golf courses had a predicted 49 percent reduction in fire severity relative to otherwise vegetated land.
- This reduction in fire severity is regionally dependent, with the effect of golf course buffering landscapes most pronounced in the North Bay region.
- For limiting fire spread, golf courses function similarly to hardscaped land uses such as airports, suggesting that irrigation and vegetation management can be effective in creating desired buffering qualities.
- These methods suggest that artificially created irrigated green zones act as effective buffers, providing de facto fuel breaks around communities, and can be reproduced for other potential buffering landscape features.
- "Golf courses in California are just one example of a type of landscape feature which could be incorporated as part of a community buffer zone.[12]" Other examples of artificially created irrigated green zones noted in the research are vineyards or agricultural uses. The polo field in the project is also this type of green landscape buffer use.

[11] Fire severity is defined in the report as a measure of biomass or soil change used to gauge how intensely an ecosystem was impacted by fire.

[12] Herbert, C.; Butsic, V., 2022. *Assessing the Effectiveness of Green Landscape Buffers to Reduce Fire Severity and Limit Fire Spread in California: Case Study of Golf Courses*.

3. Wildfire Risk Analysis

This section provides an analysis of the wildfire hazard and risk on the Project site and associated compliance with state minimum requirements and additional measures that will be undertaken to reduce the Project's wildfire risk.

State Responsibility Areas & Fire Hazard Severity Zones

State Responsibility Areas (SRAs) are recognized by the California State Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency responsible for fire suppression and prevention.

Public Resources Code 4202 requires the State Fire Marshal to classify lands within SRAs into fire hazard severity zones (FHSZs). Each zone shall embrace relatively homogenous lands and shall be based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified by CAL FIRE as a major cause of wildfire spread.

SRA and FHSZ designations determine where policy, regulations, and standards apply. The Guenoc Valley Project site is located on lands designated as (SRA). Within this designation, fire hazard severity zones within the Project site have been mapped by CAL FIRE as moderate, high, and very high fire hazard severity.

Figure 3-1 shows the currently adopted FHSZs for the Guenoc Valley Project site[13]. CAL FIRE released updated draft FHSZ maps for State Responsibility Areas in November 2022. The updated final FHSZ map shown was adopted in June 2023.

[13] CAL FIRE Fire Hazard Severity Zones in SRA for Lake County, adopted on June 15, 2023.

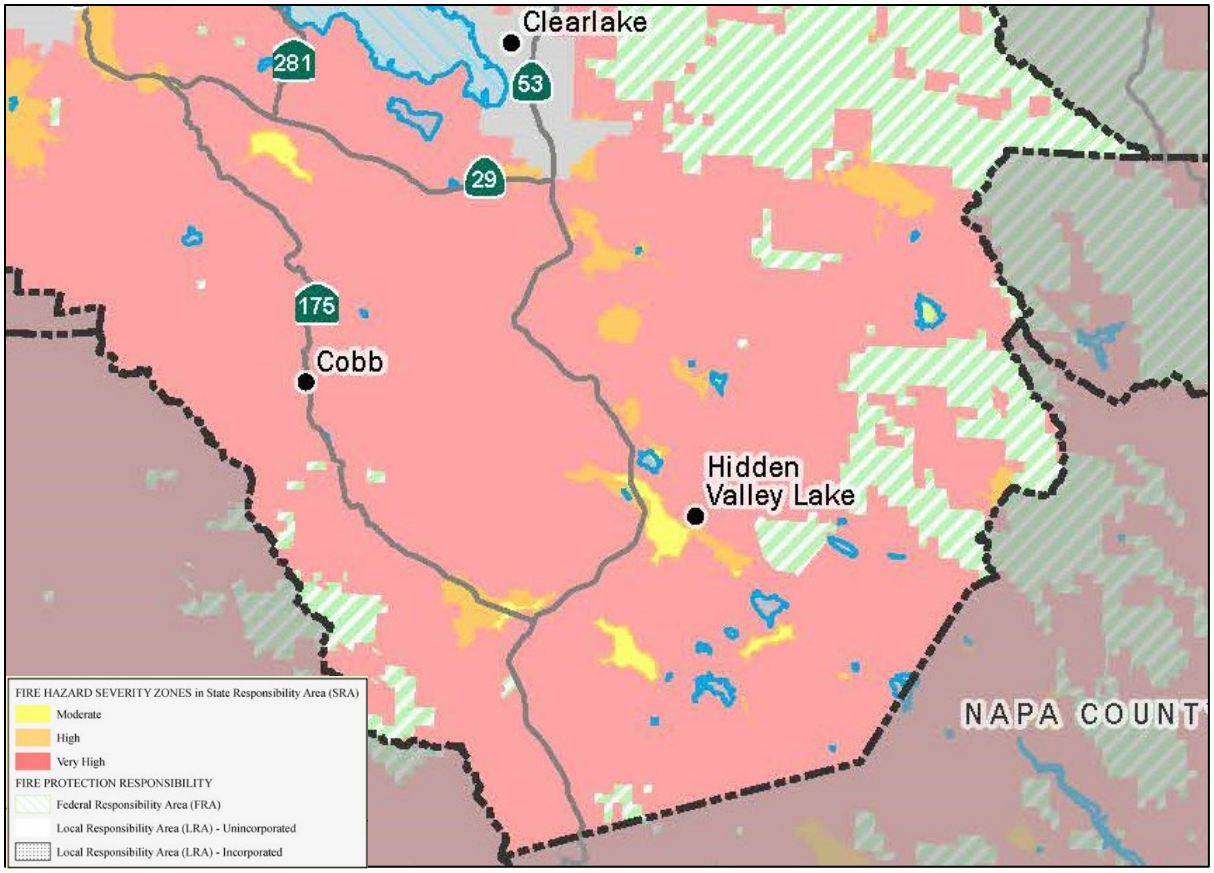


Figure 3-1. Fire Hazard Severity Zone Mapping for the Guenoc Valley Project Area
Source: CAL FIRE

State Wildfire Safety Minimum Requirements

Development applications within the SRA are reviewed by CAL FIRE to ensure compliance with the following state minimum requirements for wildfire protection and safety:

State Minimum Fire Safe Regulations (Title 14 of the California Code of Regulations, Division 1.5, Chapter 7, Subchapter 2)

State Minimum Fire Safe Regulations establish minimum wildfire protection standards in conjunction with building, construction, and development in the SRA and VHFHSZ as defined in Government Code § 51177(i). Wildfire protection measures provide for basic emergency access and perimeter wildfire protection, signing and building numbering, private water supply reserves for emergency fire use, and vegetation modification.

At the California State Board of Forestry and Fire Protection in August 2022, the Board approved proposed amendments to the State Minimum Fire Safe Regulations. The proposed amendments[14] promote compliance with the revisions to Public Resources Code (PRC) 4290 within SB 901 (Chapter 626, 2018), and improve clarity of certain administrative processes within Article 1 of the existing regulations, specifically to:

- Establish standards for fuel breaks and greenbelts near communities;
- Establish measures for the preservation of undeveloped ridgelines;
- Improve clarity regarding the inspection and enforcement agencies;
- Promote local jurisdiction compliance with the Fire Safe Regulations and to clarify the process by which that occurs;
- Increase the flexibility offered to local jurisdictions in implementing the minimum standards provided in these regulations.

These amendments are currently under review by the Office of Administrative Law and are anticipated to go into effect in 2023. There were no proposed changes to the standards for road or driveway access, building and road signing, or water supply requirements.

California Building Standards Code (Title 24 of the California Code of Regulations, Parts 2, 2.5, 9)

Jurisdictions in California with defined WUI areas, Fire Hazard Severity Zones, and State Responsibility Areas are required to adopt minimum building design and construction regulations, as identified in the California Building Standards Code (CBSC). These standards are found in several parts of the CBSC, including:

- Part 2 – California Building Code Chapter 7A Materials and Construction Methods for Exterior Wildfire Exposure
- Part 2.5 – California Residential Code Chapter R337 Materials and Construction Methods for Exterior Wildfire Exposure
- Part 9 – California Fire Code, Chapter 49 Requirements for Wildland-Urban Interface Areas

Due to its location in SRA moderate, high, and very high fire hazard severity zones, all new buildings for which an application for a building permit is submitted within the Guenoc Valley Project site will comply with minimum requirements as specified in the CBSC Building Code, Residential Code, and Fire Code. Applicable WUI provisions from the CBSC, including the Fire Code, are adopted as per Chapter 5 – Building Regulations, Article I of the County of Lake Code of Ordinances.

[14] The proposed rule package is available on the Board of Forestry and Fire Protection website: https://bof.fire.ca.gov/regulations/proposed-rule-packages/

Wildfire Risk

Often, the terms wildfire hazard and wildfire risk are incorrectly used interchangeably, or even combined to create the term "wildfire hazard risk." It is important to understand the difference between these two terms and use them appropriately in the community wildfire planning context (Scott et al. 2013; Thompson et al. 2016).

The Fire Hazard Severity Zones that are published by CAL FIRE describe the hazard, which is the likelihood of a wildland fire occurring and the potential intensity at which it will occur, while the broader concept of wildfire risk also includes the potential impacts a wildfire will have on the Project.

Specifically, the term wildfire risk describes the wildfire hazard along with the factors that contribute to the susceptibility of the Project, or the impact wildfire will have on what are considered highly valued resources and assets. The concept of wildfire risk is best described using the wildfire risk triangle, which combines the likelihood of ignitions and the intensity of the fire (the components of wildfire hazard) with the susceptibility of the built environment (**Figure 3-2**).

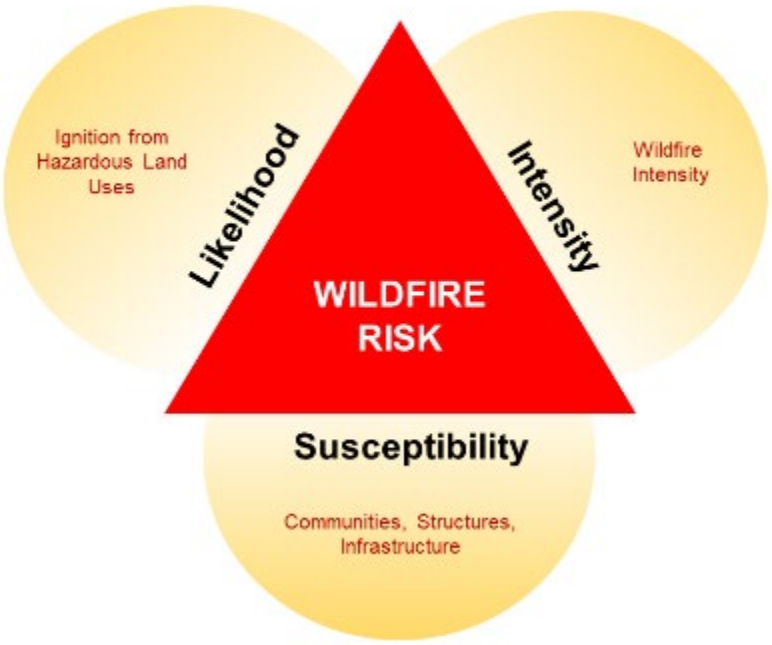


Figure 3-2. The Wildfire Risk Triangle
Source: CWPC

Factors that contribute to the susceptibility component of the wildfire risk may include the following:

- Public safety

- Ember transport modeling
- Structure and infrastructure susceptibility
- Natural resource values and susceptibility
- Source water vulnerability
- Population demographics

Most of the above factors relate directly to the physical spread and intensity of fire, and the ability for fire suppression resources to effectively intervene. However, demographics is another factor that may influence the ability of a population to respond to risk. For example, an elderly population demographic may indicate decreased mobility, or health challenges that will impact the populations' ability to efficiently evacuate without significant responder assistance.

Project Risk Reduction Measures

In September 2022, the State of California Office of the Attorney General released guidance for analyzing and mitigating wildfire impacts of development projects under CEQA. This guidance provides suggestions for how best to comply with CEQA when analyzing and mitigating a proposed project's impacts on wildfire ignition risk, emergency access, and evacuation. When analyzing a project's impact on wildfire risk, the guidance outlines several variables to consider: project density, project location in the landscape, and water supply and infrastructure. Additional examples of project mitigation measures and design alternatives to address project impacts are provided.

The following matrix (**Table 3-1**) lists wildfire risk reduction measures being implemented at the Guenoc Valley Project site. This report organizes measures into seven categories that address potential impacts resulting from increased risks identified in the Attorney General's guidance:

1. project density;
2. project location in the landscape;
3. water supply and infrastructure;
4. emergency access and egress;
5. safety zones and temporary refuge areas;
6. initial construction suppression resources;
7. communication, management, and maintenance.

Each wildfire risk reduction measure is discussed in additional detail in terms of its relevance to the Project.

Table 3-1. Project Measures to Reduce Wildfire Risk Impacts

Category	Wildfire Risk Reduction Measure
1. PROJECT DENSITY	64 residential buildings relocated to Project core
	Wildfire safety design standards and suppression systems for all buildings
	Defensible space for all buildings
	Reservation of recreational and camping area in northern portion of Project for recreational and camping uses only, with open fires strictly prohibited in that area
2. PROJECT LOCATION IN THE LANDSCAPE	Consolidated design for commercial and residential areas
	Ranch management – grazing rotations to reduce wildfire potential
	Property-wide fire breaks and resort edge defensible space
	Golf Course – buffer for fire spread
	Vineyards – buffer for fire spread
3. WATER SUPPLY AND INFRASTRUCTURE	Fire suppression surface water sources and dedicated nighttime water source for aerial firefighting
	Existing interconnected water pumping system and fire hydrants
	Power – existing generators for water system
	Underground power lines and electric system
	Microgrid system for commercial buildings
4. EMERGENCY ACCESS AND EGRESS	Additional emergency access route along Grange Road to SR 29
	On-site Emergency Response Center (ERC) located in core of Project
	Two emergency helipads
	Roadway wildfire fuel breaks – 125 feet
	Parking restricted on primary access roads
	Revised road network and surfacing– paved two-way gravel roads, added connector roads, no dead-end roads greater than 1 mile in length
5. SAFETY ZONES AND TEMPORARY REFUGE AREAS	Safety Zones for Firefighters
	Temporary Refuge Areas
6. CONSTRUCTION SAFETY	Added firefighter staff during construction
	Fire safety oversight and procedures during construction
7. COMMUNICATION, MANAGEMENT, AND MAINTENENANCE	ERC with staffed wildfire mitigation expertise in access and evacuation
	HOA funding for annual vegetation and defensible space management
	HOA contract with wildfire expert for Project duration to support homeowner education and response planning
	Early detection system and emergency notification siren system
	Opt-out communication system

Project Density

There is no definitive evidence that supports either increasing or decreasing project density as a single determinant that will change wildfire structure loss outcomes. Density can influence the amount of fire suppression resources required, with lower density developments requiring more resources that are spread out, while higher density allows less resources to protect more structures. In concept, this works well for high density areas, until more than one structure becomes fully involved with fire. A fully involved structure fire not only requires significant fire suppression resources, but in a high-density development there is a significantly higher risk of a single structure fire spreading to adjacent structures, which will quickly overwhelm fire suppression resources. Therefore, what does change these outcomes is the effective mitigation of the Home Ignition Zone.

The Home Ignition Zone (HIZ) concept consists of the condition of the structure itself, and the immediate surroundings of the structure out to 100 feet with respect to vulnerability of fire (**Figure 3-3**).

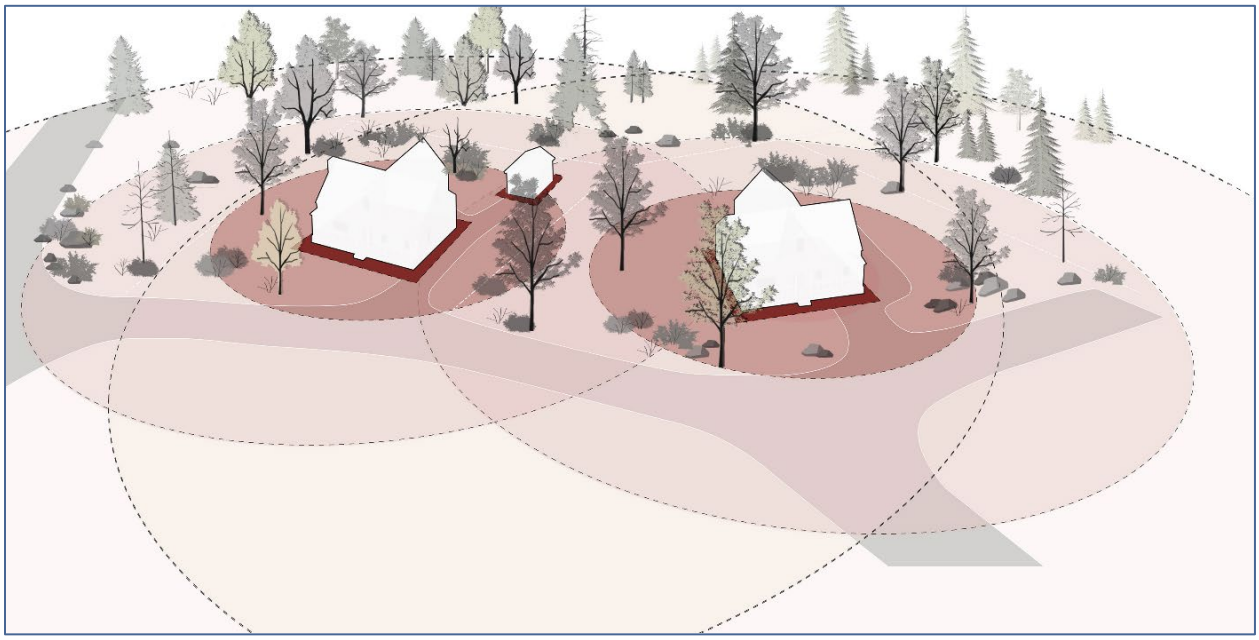


Figure 3-3. The Home Ignition Zone
Source: CWPC

Lower density developments can allow individual homeowners to manage more of their HIZ within their legal property boundaries. Conversely, higher density projects result in the HIZ's extending beyond legal property boundaries, increasing homeowners' reliance on their neighbors for effective HIZ mitigation. Regardless, diligent ongoing maintenance of the HIZ is key to effective ongoing reduced risk.

Based on these concepts, the following measures are being taken to address wildfires risks associated with project density:

- Home construction to the California Building Code Chapter 7A standards.
- HIZ management and defensible space maintenance for every building within the Project area that is required through covenants to be paid for by the HOA and supported by the resort maintenance staff.
- Reservation of the recreational and camping area in the northern portion of the Project only for recreational and camping uses, with open fires strictly prohibited to reduce ignition sources associated with this type of use in a high hazard severity zone.

Project Location in the Landscape

The Project is located in a landscape of rolling terrain of slopes and drainages dominated by Oak Savannah vegetative fuel types consisting of grass, shrubs, and oak trees. Outside of and surrounding the proposed developed areas, the current land uses of cattle grazing and vineyards will continue. New land uses, such as a golf course and a polo field, will also be developed. The topography and native vegetation are conducive to frequent and fast moving low to moderate intensity fires. Values located on ridgetops or steep slopes can result in increased susceptibility. However, the current grazing practices (**Figure 3-4**) and vineyards (**Figure 3-5**), along with the future golf course and polo field, can offer a significant benefit to risk reduction as fuel breaks, if the development is strategically located in relation to these features. Furthermore, reducing "outlying developments" and concentrating the majority of the Project population to these areas can increase both emergency response and evacuation effectiveness.

The following measures are being taken to address wildfires risks associated with Project location:

- Consolidated design in valley / commercial core so that structures are away from areas where fire behavior may be most extreme
- Strategically locating development in relation to landscape fuel break features (intensive grazing, vineyards, golf course, and polo field) with ongoing grazing management
- Maintenance of property-wide fire breaks and defensible space along the edge of developed areas in the resort



Figure 3-4. Grazed Site vs. a Site That is Not Grazed within the Guenoc Valley Project
Source: CWPC



Figure 3-5. Maintained and Irrigated Vineyards within the Guenoc Valley Project Area
Source: CWPC

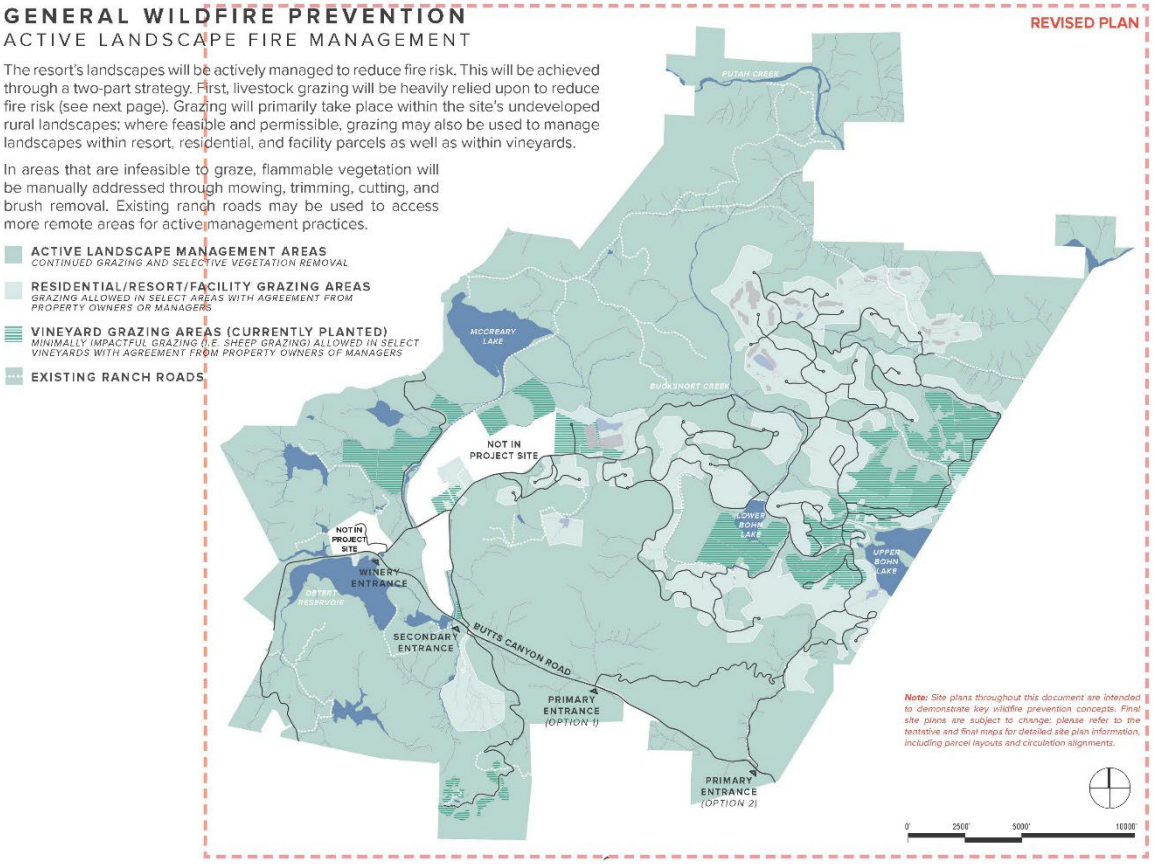


Figure 3-6. Guenoc Resort Proposed Vineyard, Grazing and Sports Facility Layout to Support Strategic Fuel Breaks
Source: SWA

Water Supply and Infrastructure

A reliable and sustainable fire water supply and electrical utility service is crucial to effective fire suppression, and community wildfire resilience. The infrastructure that supports these systems can be vulnerable to wildfire. Conversely, above ground electrical utilities have the potential to cause wildfires.

The ranch has numerous lakes with the largest amount of impounded surface water in the region. In developed portions of the Project, fire apparatus require municipal type hydrant systems with a minimum reliable fire flow to which they can connect. In the undeveloped portions of the Project, nearby water sources can be used by water tenders and firefighters to fight wildland fires. An electrical utility supply is required to keep the water system pumps running.

The following measures are being taken to address wildfires risks associated with water supply:

- A high-volume water supply through the existing irrigation system will be immediately available for all construction phases and will remain to support wildland fire water needs into the future. The presence of this volume of water supply exceeds the state's Minimum Fire Safe Regulations.
- A municipal-type fire hydrant system that meets the requirements of the California Fire Code will be installed with each new construction phase of the Project.
- All electrical utilities will be buried underground.
- Vulnerable water supply and electrical utility infrastructure will be placed underground for protection from wildfire damage.



Figure 3-7. High Volume Irrigation Pump Located on The Guenoc Valley Project Site
Source: CWPC

Emergency Access and Evacuation Egress

Effective fire suppression emergency access, and public emergency egress are critical to ensure the safe and efficient response of fire suppression resources, and evacuation of the public. The California Minimum Fire Safe Regulations require two routes of access/egress for a development. Roadside fuel breaks should also be incorporated along the project access and egress routes to reduce the fire impacts of radiant and convective heat on the travelers.

The following measures are being taken to address wildfires risks associated with emergency access and evacuation egress:

- Three access and egress routes are planned; two that connect directly to Butts Canyon Road and a third is now planned through Grange Road to SR 29.
- All roadways within the Project area will exceed the minimum California Fire Safe Regulations with a 50-foot-wide fuel treatment on each side, which will be maintained by grazing (**Figure 3-8**)
- All roadways will be 25 feet wide with an all-weather surface.
- Fire suppression resources will be stationed on site at the Emergency Response Center (ERC) to minimize response times and mitigate evacuation traffic counter flow barriers for initial attack fire suppression resources.
- Two emergency helipads will provide aerial support site access points

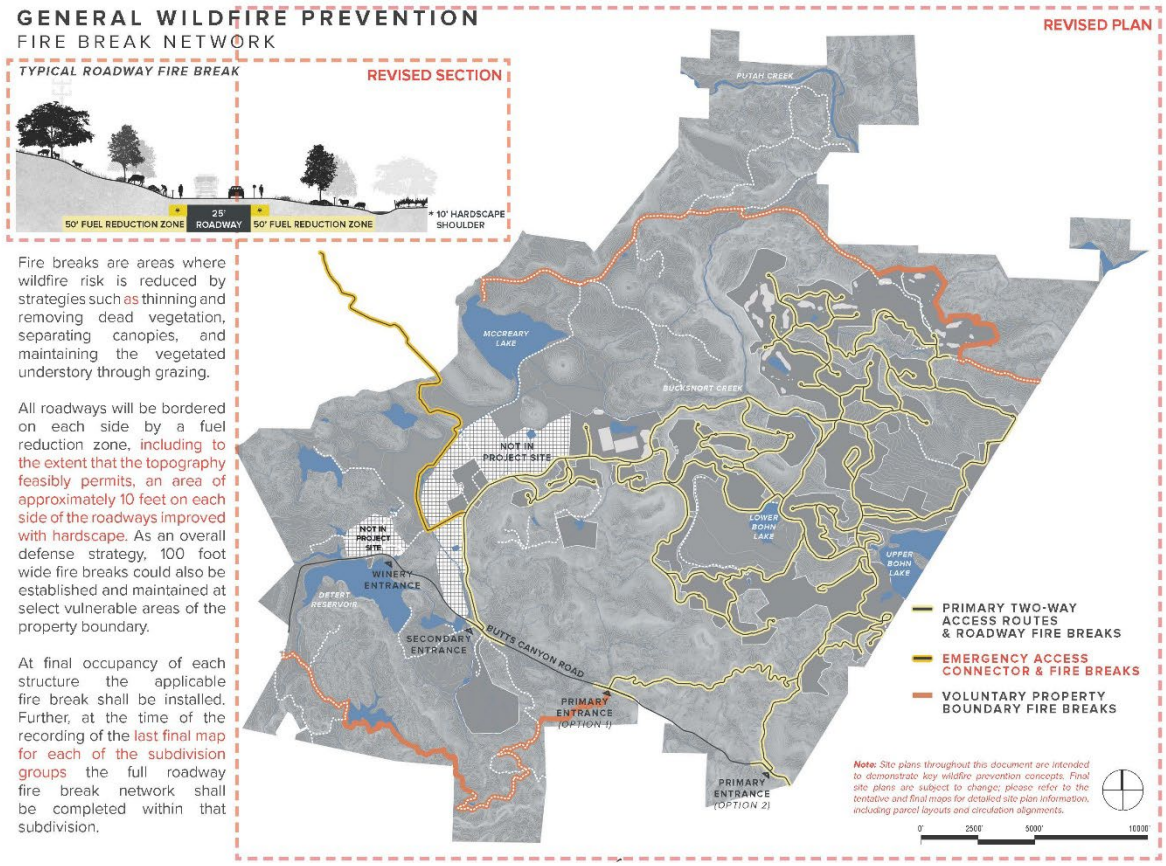


Figure 3-8. Guenoc Resort Proposed Roadway Fuel Breaks
Source: SWA

Safety Zones and Temporary Refuge Areas

In the event that evacuation routes are compromised, either by fire, or other unforeseen events, it is important to ensure that there are opportunities within the Project area to establish Temporary Refuge Areas for public members. Furthermore, a core safety requirement for all firefighters is to establish at least two escape routes, which lead to effective safety zones. Ultimately, fire suppression resources will determine where to establish escape routes, and effective safety zones, based on location, and the current and expected fire behavior, and the Incident Commander will determine where effective Temporary Refuge Areas for the public can be established, using the same criteria. However, understanding the general needs for a safety zones and temporary refuge areas and integrating these needs into the Project design, will provide opportunities for firefighters as part of their decision-making process.

Research on safety zone size is ongoing. The current general guidance from USDA Forest Service researchers with regards to the size of an effective safety zone is an area that will not support fire

that is four times (4x) the maximum flame height to the nearest person within the safety zone, where flame height can be estimated as two times (2x) the vegetation height.

The following measures are being taken to address wildfires risks associated with safety zones and temporary refuge areas:

- Identifying the maintained polo field, golf course, grazed areas, and vineyards as safety zone and temporary refuge area opportunities.

Construction Safety

It is important to have fire response and suppression resources available throughout all phases of development. These resources can respond to onsite ignitions associated with accidental equipment sparks during construction and other wildfires or emergency situations that threaten the safety of Project staff, development crews, and visitors. Staffing up a fully staffed and equipped Emergency Response Center (ERC), however, can take time. As a result, the following measures are being taken to address wildfire risks associated with the initial construction phase prior to completion of the ERC:

- The Guenoc Valley Project developer will formalize an agreement with the Lake County Fire Protection District to pay them to hire and train new emergency responders, who will initially be housed at the Middletown fire station. This additional capacity ensures a smooth transition and eliminates any coverage gaps from start of construction through when the ERC is ready to have 24/7 staff on-site.
- Additional fire safety oversight and procedures will be implemented to avoid construction-caused fires, immediately report any accidental fires, and provide appropriate equipment for notification and response (e.g., shovels, fire extinguishers, air horn).

Communication, Management, and Maintenance

Many of the risk reduction measures outlined above rely on communication, management, and maintenance strategies to ensure they are implemented as intended and can be maintained for the life of the Project for sustained risk reduction. To achieve these outcomes, the following measures are being taken to provide for effective and ongoing communication, management, and maintenance:

- The Guenoc Valley Project Homeowners Association (HOA) will contract with a fire expert to educate homeowners and visitors on wildfire safety and mitigation and consult with the HOA in its implementation of wildfire prevention measures. This position would be required to be funded for the full duration of the Project.
- The Project's ERC will have at least one individual on-site with wildfire expertise related to evacuation and emergency access, the costs for which will be paid by the Guenoc Valley Project HOA, for a minimum of 30 years.

- The HOA will also pay for vegetation and HIZ / defensible space management around homes, which will be written into HOA bylaws. Homes will also have fire tools and fire extinguishers.
- The Project will maintain an onsite early detection system to identify potential fires igniting onsite or in the vicinity.
- All residents, visitors, and employees will be enrolled in an opt-out phone-based communication system to receive emergency notifications.

Key Takeaways

All proposed development projects in the SRA, including the Guenoc Valley Project, must comply with a set of minimum wildfire safety requirements that are set forth in California's Code of Regulations and Public Resources Code. These include the California Building Code, Fire Code, Minimum Fire Safe Regulations, and defensible space inspections. Guidance by the California State Attorney General provided additional considerations for projects to comprehensively address wildfire risk.

This chapter reviewed the proposed Guenoc Valley Project measures for compliance with minimum fire safety standards (as required by the state) and analyzed wildfire risk reduction across seven categories based on the California State Attorney General's guidance:

1. project density;
2. project location in the landscape;
3. water supply and infrastructure;
4. emergency access and egress;
5. safety zones and temporary refuge areas;
6. initial construction suppression resources;
7. communication, management, and maintenance.

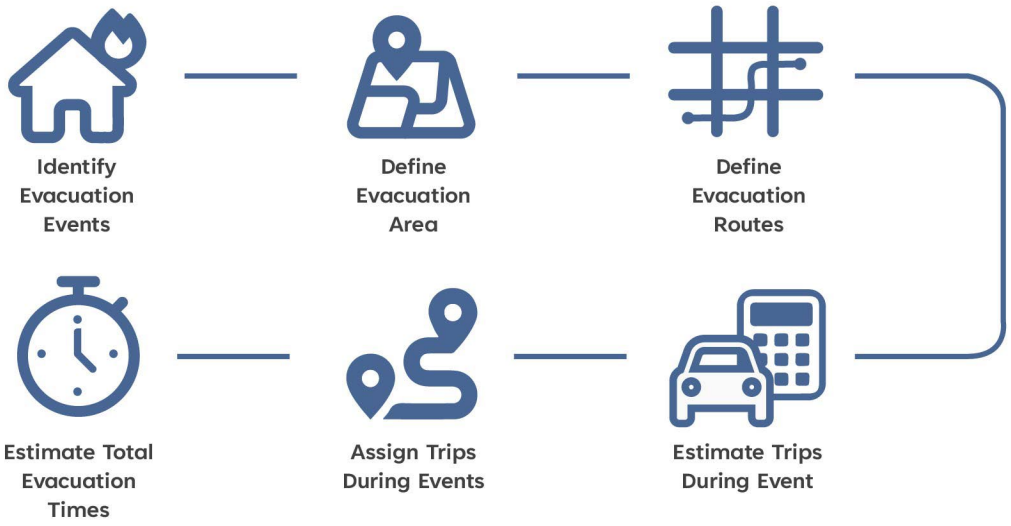
Based on the review and analysis, the Guenoc Valley Project meets and exceeds state minimum requirements for wildfire safety by incorporating a comprehensive set of measures, including but not limited to:

- addressing wildfire risk across multiple scales by identifying strategies that reduce risk at the building/lot site level, commercial and residential development nodes, and landscape scale;
- incorporating appropriate land uses to reduce fire behavior and provide for potential firefighter safety zones and temporary areas of refuge for the public, such as strategic placement of the golf course and polo field;
- expansion of vegetation management along roadways and incorporation of a third access route for emergency evacuation;
- implementation of communication and maintenance measures that occur from Project inception and throughout the duration of the Project.

4. Evacuation Assessment

This chapter presents the evacuation assessment approach and total evacuation times for two wildfire evacuation event scenarios in South Lake County for the Guenoc Valley Project. The following flow chart illustrates the steps in the process that are based on the Lake County Superior Court decision, subsequent Attorney General Guidance, and consultation with Lake County first responders and staff:

- Identify evacuation event scenarios
- Define the evacuation area
- Define evacuation routes
- Estimate evacuation trip demand for evacuation scenarios
- Assign trips along evacuation routes during evacuation scenarios
- Estimate total evacuation times



The following is an overview of key parameters for the evacuation assessment.

- Evacuation Time: Summer Friday afternoon with 4:00 pm evacuation notice
- Two Wildfire Hazard Event Scenarios
- Two Horizon Years (2022 and cumulative 2040), Baseline and Plus Project Conditions for each Wildfire Scenario
- 100 percent of community households and Project households occupied

- 80 percent of community employees and 100 percent of Project employees are at work
- 85 percent of community hotel rooms and 100 percent of Project hotel rooms occupied
- Police/first responders not assumed to be available for traffic management
- Through traffic not stopped during evacuation
- Lake County Area-Wide Microsimulation Model (LAMM) used to estimate evacuation times

Evacuation Area and Evacuation Routes

Based on a review of Lake County wildfire history including fire reports, consultation with local first responders, and emergency declaration/warnings for the areas evacuated for the 2020 LNU Complex Fire and 2015 Valley Fire, the Evacuation Area encompasses the South Lake County communities of Middletown, Hidden Valley, Cobb, Loch Lomond, and surrounding areas (hereafter referred to as "Evacuation Area"). **Figure 4-1** shows the Evacuation Area.

The Lake County Superior Court Decision, which upheld the CEQA analysis for the Project in all other respects, specifically addresses the need to analyze the Project's "impacts to community emergency evacuation routes." Evacuation routes are used to transport evacuees to temporary shelter using either their own vehicle or a vehicle provided by others. Routes that provide the most direct path to exit the Evacuation Area with the least exposure to risk will be used by evacuees. The primary and secondary evacuation routes for South Lake County communities are identified in the South Lake County Wildland Fire Preparation and Emergency Plan.[15] **Figure 4-2** shows the designated community evacuation routes that are listed below.

Primary Community Evacuation Routes

- State Route (SR) 29
- SR 175

Secondary Community Evacuation Routes

- Butts Canyon Road
- Big Canyon Road
- Spruce Grove Road
- Loch Lomond Road
- Bottleneck Road
- Seigler Canyon Road

[15] *South Lake County Wildland Fire Preparation and Emergency Plan*, South Lake County Fire Protection District and South Lake Fire Safe Council, 2016.

The Guenoc Valley Project site now would have three evacuation routes for vehicles exiting the site as described below, including a recently added route that would connect to SR 29 via Grange Road, in addition to two previously analyzed evacuation routes that provide access to Butts Canyon Road. The first evacuation route connecting to Butts Canyon Road is the new Primary Access Road that would be located at McCain Canyon, approximately 2.6 miles south of the existing Langtry Winery Entrance. The second evacuation route (Secondary Access Road) would connect to Butts Canyon Road at the existing intersection located approximately halfway between the Langtry Winery entrance and the entrance to the Primary Access Road. The third evacuation route would be via a newly improved road, for evacuation egress and emergency access only, that would connect from the interior of the Project site through an adjacent property (per easement agreement) to SR 29 via Grange Road.

Project Evacuation Routes

- Primary Access Road to Butts Canyon Road
- Secondary Access Road to Butts Canyon Road
- Grange Road (evacuation egress and emergency access only) connection to SR 29

Evacuation Scenarios

This section provides a description of the wildfire events and study years that define the evacuation scenarios evaluated in this assessment.

Wildfire Scenarios

Two primary hypothetical wildfire events as summarized below are evaluated based on a review of the South Lake County wildfire history described in ***Section 2: Wildfire and Evacuation History*** and consultation with wildfire experts.

- **Wildfire Scenario A (wildfire from north to south)** is based on a wildfire that starts in Boggs Mountain Demonstration State Forest in the northwest portion of the Evacuation Area and moves to the southeast, similar to the 2015 Valley Fire that was a significant wind-driven weather event that traveled from northwest to southeast from Cobb Mountain into the valleys and communities of Middletown and Hidden Valley Lake.
- **Wildfire Scenario B (wildfire from south to north)** is based on a wildfire that starts on Mt. St. Helena in the southernmost portion of the Evacuation Area and moves to the north. This is somewhat similar to the LNU Lightning Complex fire that affected the southern portion of the Evacuation Area.

Evacuation Study Years

The following evacuation study years will be evaluated for each of the wildfire hazard scenarios described above.

- Baseline (2022)
- Baseline (2022) plus Guenoc Valley Project Phase 1
- Cumulative (2040)
- Cumulative (2040) plus Guenoc Valley Project Full Build-out

Study Scenarios

Table 4-1 summarizes the eight study scenarios that encompass the two wildfire hazard scenarios and four evacuation study years described above. All eight evacuation scenarios assume a mandatory evacuation order is issued for the Evacuation Area on a typical Friday afternoon (i.e., at approximately 4:00 PM) during the summer season (i.e., August). Counts conducted at various locations along SR 29 indicate that the highest hourly volumes in the pm period on a Friday occur between 4:00-5:00 pm.

Scenarios 1-4 are based on a wildfire originating in the northwest of the Evacuation Area that travels to the south while Scenarios 5-8 are based on a wildfire originating in the southern part of the Evacuation Area that travels to the north.

Table 4-1. Evacuation Scenarios

Scenario	Wildfire Hazard Scenario	Evacuation Study Year	Project Conditions
1	Wildfire Scenario A – wildfire from north to south	2022	No Project
2		2022	Project Phase 1
3		2040	No Project
4		2040	Project Build-out
5	Wildfire Scenario B – wildfire from south to north	2022	No Project
6		2022	Project Phase 1
7		2040	No Project
8		2040	Project Build-out

Source: Fehr & Peers

FIGURE 4-1
EVACUATION AREA

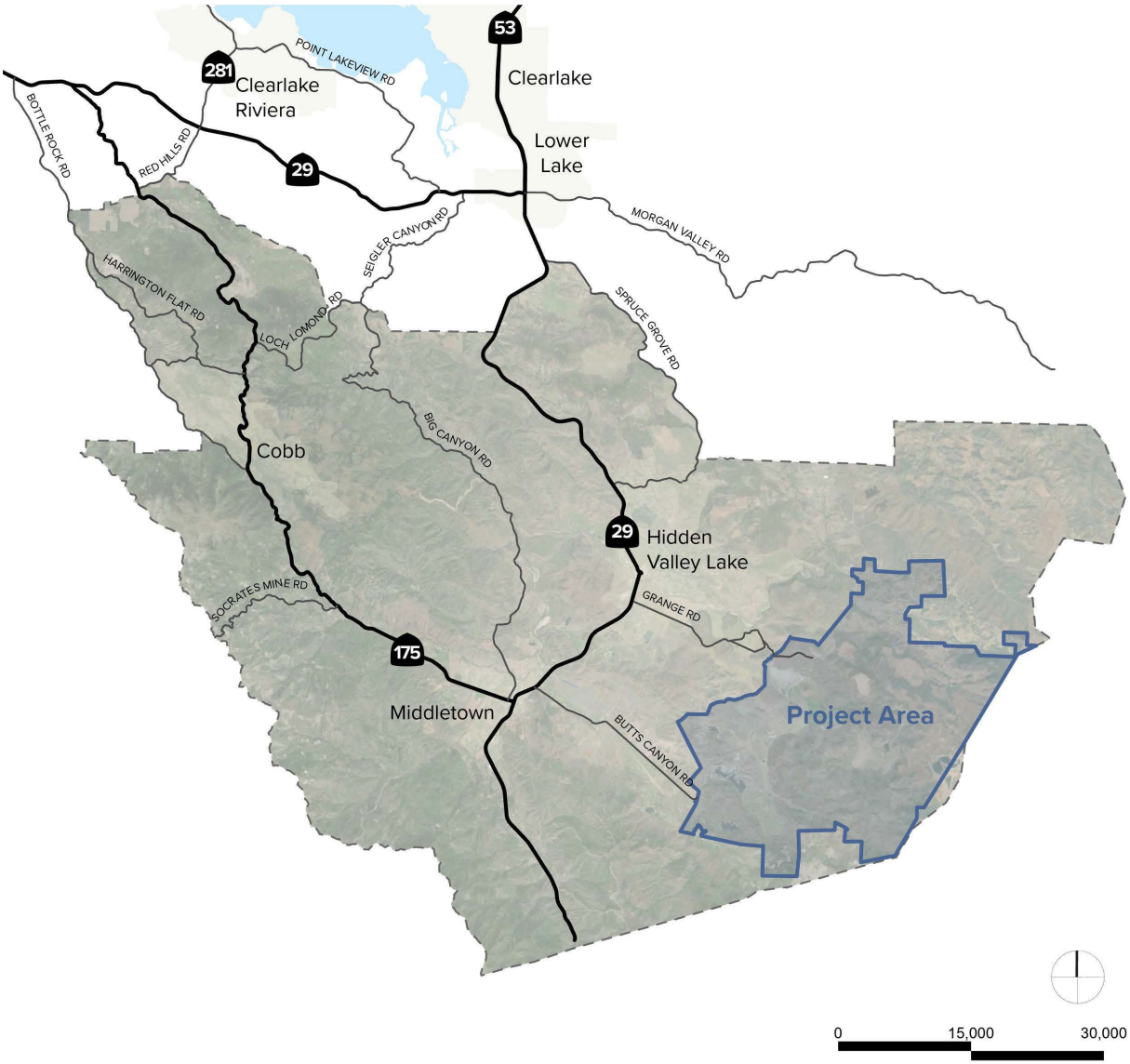


Figure 4-1. Evacuation Area

FIGURE 4-2
EVACUATION ROUTES

Primary Evacuation Route

Secondary Evacuation Route

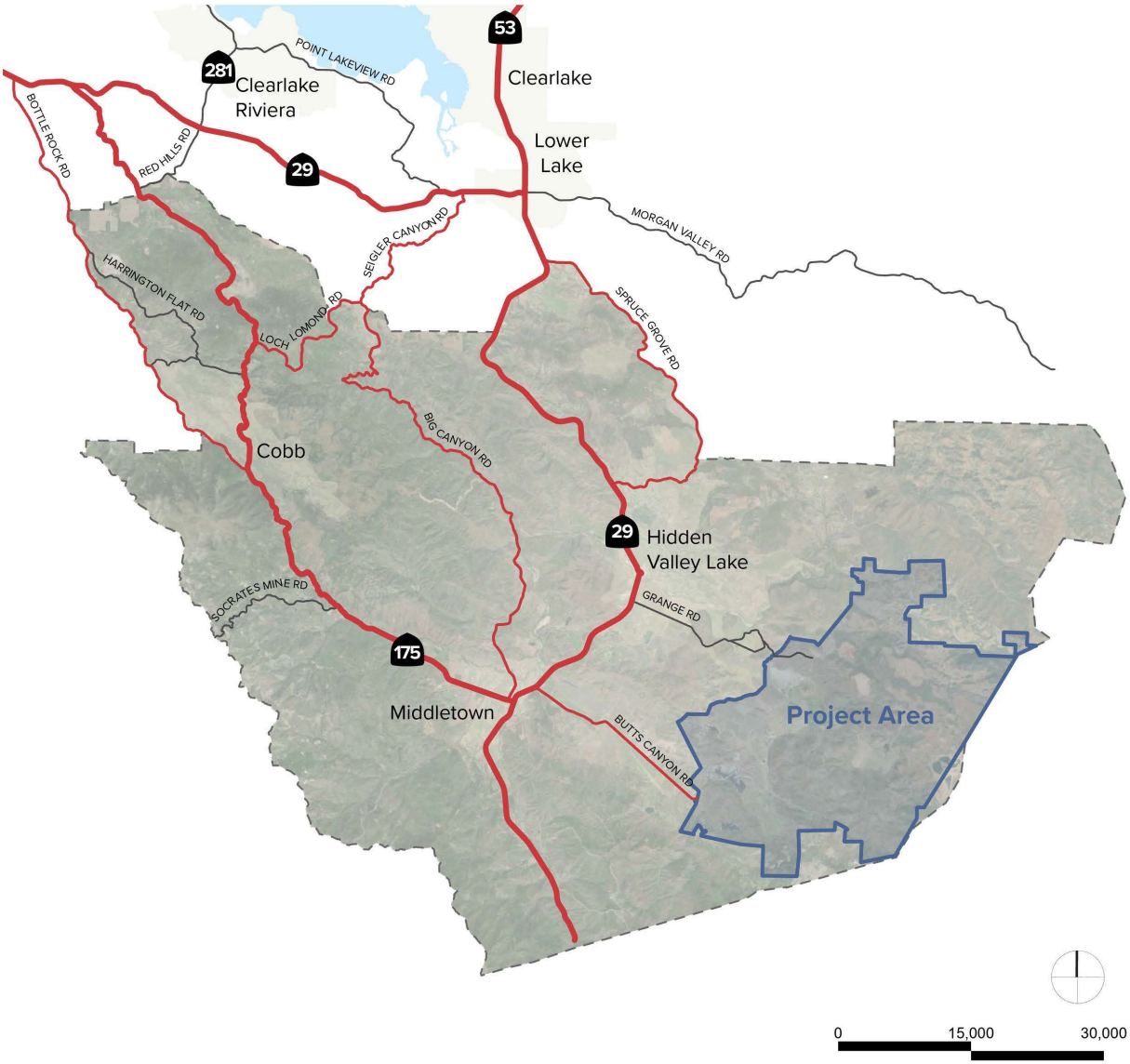


Figure 4-2. Evacuation Routes

Evacuation Model

The following section describes the simulation model used to develop evacuation time estimates for the study scenarios.

Traffic Simulation Model

Assessing the capacity of the evacuation system can be completed in different ways, from identifying a theoretical hourly capacity of the roadways and comparing it to an expected traffic volume to a full simulation of the roadway network to assesses how traffic will redistribute to alternative routes during an evacuation and identification of congested locations in the event of an evacuation.

For this assessment, evacuation time estimates were prepared using the Lake County Area-Wide Microsimulation Model (LAMM) that spans most of Lake County and was originally prepared for the Lake County/City Area Planning Council.[16] LAMM is a 450-square-mile microscopic traffic simulation model spanning most of Lake County. The model study area includes 720 road miles, 120 of which are on State Routes 20, 29, and 53. The model also includes road network detail in local communities. LAMM was prepared using a simulation-based Dynamic Traffic Assignment (DTA) package called TransModeler.[17] Calibration and validation criteria published by the Federal Highway Administration (FHWA) and Caltrans were targeted in the calibration and validation phases of model development. An extensive traffic count data collection effort was conducted in September of 2011. The LAMM met all standards set by Caltrans for micro-simulation projects for both the AM and PM periods overall and within each of their three hours. The LAMM also met all of the statistics for the turning movement counts.

The LAMM was designed to interface with the Wine Country Interregional Partnership (WCIRP) travel demand model (TDM). The LAMM and WCIRP TDM are built on shared geographic information system platform. The LAMM includes nearly every street in Lake County and was calibrated and validated based on criteria published by the Federal Highway Administration (FHWA) and Caltrans. LAMM was used for the traffic operations assessment for the SR 29 South Corridor Engineered Feasibility Study.[18]

The LAMM relies on a series of zones consistent with the WCIRP TDM, trip tables that identify trips between land uses in the origin zones and destination gateways, and the existing road network. LAMM estimates traffic and levels of congestion on 15-minute intervals and, as link congestion builds (i.e., roads fill with cars), it dynamically reassigns traffic to less congested routes if available.

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[16] *Lake County Area-Wide Micro-Simulation Model Draft Report*, Prepared for the Lake County/City Area Planning Council, Caliper Corporation, February, 2013.

[17] TransModeler Traffic Simulation Software, Caliper Corporation, https://www.caliper.com/transmodeler/default.htm

[18] *State Route 29 South Corridor Engineered Feasibility Study*, Prepared for Caltrans District 1 and Lake County/City Area Planning Council, Prepared by Omni-Means, January, 2014.

This is a dynamic approach to estimating trip assignment and identifying congested locations on the transportation network.

For this evacuation study, the road network in the LAMM was updated to include the roundabout at SR 29 and Hartmann Road. Current geometrics and traffic signal phasing/timing data was updated for all signalized intersections in the road network. Total population in Lake County grew between 2011, when the LAMM model was originally developed, and 2022 from 64,300 to 68,200 for a total growth of 6.1 percent.[19] This indicates there was not a substantial change in population in Lake County over the period of time since the LAMM model was originally developed and that it may be applied based on the original model development. To support this conclusion, turn movement counts collected at 14 intersections on Friday, August 19, 2022 were compared to the updated LAMM to confirm that the new model is accurately representing observed field conditions.

Cumulative (2040) Transportation Network Adjustments

One modification to the transportation network was made in the LAMM for the cumulative (2040) analysis. For cumulative (2040) conditions, Segment 2C of the Konocti Corridor (formerly Lake 29 Improvement) project was added to the LAMM network.[20] The Konocti Corridor project would ultimately widen SR 29 to a four-lane expressway with access control between the communities of Lower Lake and Kelseyville. Segment 2C, which is currently under construction, is a 3.1-mile segment (from postmile 28.5 to 31.6) from just west of the junction with SR 175 to about one-half mile west of the signalized intersection at SR 281/Red Hills Road. The following is a summary of the SR 29 Segment 2C improvements that are incorporated in the cumulative (2040) transportation network.

- Widening of SR 29 from 2 to 4 lanes with a 46’ median (where the left turn and acceleration lanes described below will be located) for the 3.1 mile Segment 2C (Caltrans postmile 31.6 to 28.5), from just west of the junction with SR 175 to about one-half mile west of the signalized intersection at SR 281/Red Hills Road.
- 4-leg intersection at SR 29/SR 175 with side street stop control on the north and south (new) approaches.
    - SR 175 approach reconfigured to connect at 90-degree angle
    - Eastbound and westbound left turn pockets on SR 29 (assume 800’ long storage/deceleration lane length)
    - Eastbound and westbound acceleration lanes to support 2 stage left turns onto SR 29 (assume 1,000’ long acceleration lanes)

[19] UC Census Bureau. Quick Facts. Retrieved August 4, 2023, from https://www.census.gov/quickfacts/fact/table/lakecountycalifornia/PST045222.

[20] *Lake 29 Improvement Project Final Environmental Impact Report/Environmental Assessment and De Minimis Section 4 (f),* Caltrans District 1, November 2016.

Segments 2A and 2B of the Konocti Corridor project are not included in the cumulative (2040) network because funding for the two segments is not currently programmed.[21]

Caltrans District 1 staff have indicated that improvement measures to increase the capacity of the signalized SR 29/Wardlaw Street intersection in Middletown are funded and design efforts are under way[22]. Since the exact configuration of the intersection improvements has yet to be finalized, capacity improvements at the intersection are not included in the cumulative (2040) network.

Project Phase 1 and Project Build-out Networks

For both the Phase 1 and Build-out Project scenarios, a roundabout is added to the existing network at the intersection of SR 29 and Butts Canyon Road. The roundabout improvement at this intersection is identified as a Project mitigation measure to be constructed prior to the beginning of Phase 1 construction.

Reduced Road Network Capacity During Evacuation

The typical daily operating conditions for both the number of travel lanes per direction and associated hourly capacity per lane in the LAMM is based on road segment capacity and intersection capacity as defined in the *Highway Capacity Manual* (HCM).[23] The HCM is a national guide for computing the capacity and quality of service of various transportation facilities including rural highways, arterial roads, roundabouts, and signalized and stop-controlled intersections.

However, depending on the emergency event, the roadway capacity and intersection capacity of the evacuation routes can change over the duration of the event. This may be due to changes in driver behavior and/or presence of wildfire smoke, debris, or other hazards that change throughout the modeled evacuation period.

There is little research on how people drive in wildfire smoke and how changes in driver behavior during a wildfire evacuation affect roadway capacity. Research conducted in China[24] reports that drivers reduce their speed in low-visibility conditions by approximately 40 percent in order to increase safety. For this evacuation assessment, a reduced capacity of approximately 40 percent below standard road capacity levels is applied to reflect the effects of smoke and evacuation conditions on driver behavior.

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[21] *2022 State Transportation Improvement Program (STIP),* California Transportation Commission, Adopted March 16, 2022.

[22] Personal communication with Rex Jackman, Office Chief of Transportation Planning/South Counties – Lake and Mendocino, California Department of Transportation (Caltrans), May 31, 2022 [Personal interview by phone].

[23] *Highway Capacity Manual 7th Edition: A Guide for Multimodal Mobility Analysis*, Washington, D.C., Transportation Research Board, 2022.

[24] *Investigating factors influencing drivers' speed selection behavior under reduced visibility conditions*, Zhang W, Hu Z, Feng Z, Ma C, Wang K, Zhang X (2018).

Two lane roads comprise all of the evacuation routes within the study area. The per-lane capacity of a two-lane highway is estimated at 1,700 passenger cars per hour (pc/h) based on the Highway Capacity Manual. This capacity value has been used in numerous evacuation studies for two lane roads including the *City of Ashland Evacuation Time Estimate Study* (April 2021)[25]. For this evacuation study, a reduced capacity of 1,000 passenger cars per hour per lane was applied to the evacuation routes to account for the effect of low-visibility conditions.

Evacuation Vehicle Trip Demand

The following section describes the population groups that would evacuate, and the number of vehicle trips generated by both community population groups (existing residents, employees, and visitors) and Project population groups. The following are key parameters of the evacuation demand estimates.

- Evacuation order issued at 4:00 pm on a Friday afternoon in August
- All homes are occupied for both community population groups and Project population groups
- 100 percent of residents for both community population groups and Project population groups in Evacuation Area evacuate
- 80 percent of employees for community population groups and 100 percent of employees for Project population groups are at their place of employment
- 85 percent hotel occupancy for community population groups and 100 percent hotel occupancy for Project population groups

Traffic counts obtained for SR 29, the evacuation route with the highest volumes in the Evacuation Area, show that daily volumes are highest on Fridays when compared to Wednesday and Thursday counts. PM peak hour volumes are traditionally the highest hourly volumes of weekdays, and counts conducted at various locations along SR 29 indicate that the highest hourly volumes in the pm period on a Friday occur between 4:00-5:00 pm, which is why the evacuation assessment is based on an evacuation order at 4:00 pm on a Friday in August when background volumes are at their highest.

It is unlikely that the combination of the above key parameters would occur and, as such, the evacuation vehicle trip demand estimates are likely to be conservative. As an example, surveys conducted for a UC Berkeley study of California Wildfire Evacuations from 2017 to 2019 summarized earlier in this report indicate an evacuation non-compliance rate ranging between 3 and 13 percent, and this assessment is based on 100 percent evacuation of project residents, employees, and visitors.

[25] *City of Ashland Evacuation Time Estimate Study*, prepared for City of Ashland, Oregon, KLD Engineering, P.C., page 4-6, April 2021.

One component not described above is the evacuation of people who do not have access to a vehicle, such as people with mobility limitations, zero vehicle households, and visitors staying in South Lake County. As described in Section 2, a priority for Lake County Sheriff personnel is evacuation notification and evacuation of residents who are not able to evacuate themselves. The Sheriff maintains a database of residents who need evacuation assistance in the Zonehaven platform and identifies those residents for assistance when their zone is designated for evacuation. In previous fires such as the Valley Fire, the Sheriff has performed these evacuations and requested and obtained assistance from other agency staff to support these evacuations.

Evacuation Trips Generated by Community Population Groups

The affected community population groups would be permanent residents, employees, and visitors/tourists who would be present during an evacuation in the Evacuation Area. The estimate of evacuation trips for community population groups assumes that 100 percent of all residential units are occupied, 85 percent of hotel units are occupied, and 80 percent of all employees are on-site when the evacuation order occurs on Friday at 4:00 pm.

Trips generated by residential households were informed by the most recent available data from the US Census Bureau. This includes data on population, the number of households, persons per household, and vehicles per household.

Employees who work in the Evacuation Area include those who live within the Evacuation Area and those that live outside the Evacuation Area. The analysis assumes that employees who live within the Evacuation Area would make a trip from work to home, and then be part of a subsequent evacuation trip from their primary household via an evacuation route to the boundary of the Evacuation Area which is hereafter described as a gateway. Employees that live outside the Evacuation Area were assumed to travel directly to a gateway and beyond to their residence.

Employees that live within but work outside the Evacuation Area would be at work at the time of the evacuation order. The analysis assumes that they would make a trip from their place of work outside the Evacuation Area to their residence within the Evacuation Area, and then be part of a subsequent evacuation trip from their primary household to a gateway.

For the 2022 No Project evacuation scenario, the Evacuation Area includes approximately 4,455 households, 1,214 second homes, 123 hotel rooms, 1,591 employees at work who live and work inside the Evacuation Area, 1,240 employees at work who work inside but live outside the Evacuation Area, and 1,414 employees at work who live inside but work outside the Evacuation Area. These population groups are estimated to generate a total of 13,542 evacuation-related trips. **Table 4-2** identifies the number of evacuation trips generated by each of the community population groups.

For the 2040 No Project evacuation scenario, growth in households and employment was forecast based on land use forecasts in the Wine Country Travel Model. Average annual growth rates were

identified based on 2009 and 2030 land use forecasts in the model. Those average annual growth rates were applied to the Year 2022 residential and employment totals described above to generate year 2040 land use forecast. An overall growth of 28 percent in households and employment is forecast to occur on the South Lake County communities of Cobb, Hidden Valley Lake, and Middletown from 2022 to 2040. This represents a forecast annual average growth of about 1.6 percent through the cumulative horizon year of 2040. For reference, the annual average growth in Lake County population between 2011 and 2022, from 64,300 to 68,200, was 0.6 percent[26]. The cumulative forecast growth is more than double the rate of growth experienced in Lake County over the past decade. Almost half of this growth is forecast to occur in the Hidden Valley Lake community and surrounding area.

Table 4-2. Evacuation Trips for Community Population Groups

Group	Units	Quantity	Trips
Primary Households	Dwelling Units	4,455	7,735
Second Homes	Dwelling Units	1,214	1,457
Hotels	Hotel Rooms	123	105
Employees at Work (who live and work inside Evacuation Area)	Persons	1,591	1,591
Employees at Work (who work inside but live outside Evacuation Area)	Persons	1,240	1,240
Employees at Work (who live inside but work outside Evacuation Area)	Persons	1,414	1,414

Source: Fehr & Peers

Evacuation Trips Generated by Project Population Groups

The affected Project population groups would be estate residents, hotel guests, employees, and visitors who would be present within the Project site during an evacuation. The estimate of evacuation trips for the Project population groups assumes that 100 percent of all Project residential and hotel units are occupied, and that 100 percent of all Project employees are on-site when the evacuation order occurs on Friday at 4:00 pm.

Evacuation trips by residents of estate units were assumed to occur 90 percent by private vehicle and 10 percent by plane or helicopter. Evacuation trips by hotel unit guests were assumed to occur 55 percent by private vehicle, 30 percent by shuttle, and 15 percent by plane or helicopter. Air transportation and/or arrival will be provided via an on-site helipad and float plane dock. Additionally, an emergency heliport will be centrally located at the on-site Emergency Response Center. The estate units that evacuate via private vehicle are estimated to generate 1.9 vehicle

[26] UC Census Bureau. Quick Facts. Retrieved August 4, 2023, from https://www.census.gov/quickfacts/fact/table/lakecountycalifornia/PST045222.

evacuation trips per unit. For context, the 1.9 trips per unit rate is higher than the rates identified through the previously noted surveys of recent fire evacuees.

- Santa Rosa Post-Fire Survey – 1.75
- UC Berkeley Study of 2017-19 Fires – 1.89

Resort residential units were assumed to generate 1.0 vehicle evacuation trips per unit, as these units would be smaller two-bedroom, two-bath houses rented through the hotels, with parking for one vehicle.

Phase 1 of the Guenoc Valley Project would include or be assumed to include 401 estate units, 141 resort residential units, 127 hotel rooms, 610 employees, and 100 visitors on a Friday at 4:00 pm. These population groups are estimated to generate a total of 1,609 evacuation trips. **Table 4-3** identifies the number of evacuation trips generated by Phase 1 of the Project population groups.

Table 4-3. Evacuation Trips for Project Phase 1 Population Groups

Group	Units	Quantity	Trips
Estate Units	Dwelling Units	401	686
Resort Residential Units	Dwelling Units	141	141
Hotels	Hotel Rooms	127	89
Employees	Persons	610	610
Visitors	Persons	100	83

Source: Fehr & Peers

Full build-out of the Guenoc Valley Project would include or be assumed to include 1,400 estate units, 450 resort residential units, 400 hotel rooms, 1,220 employees, and 200 visitors on a Friday at 4:00 pm. These population groups are estimated to generate a total of 4,511 evacuation trips. **Table 4-4** identifies the number of evacuation trips generated by Build-out of the Project population groups.

Table 4-4. Evacuation Trips for Project Build-out Population Groups

Group	Units	Quantity	Trips
Estate Units	Dwelling Units	1,400	2,394
Resort Residential Units	Dwelling Units	450	450
Hotels	Hotel Rooms	400	280
Employees	Persons	1,220	1,220
Visitors	Persons	200	167

Source: Fehr & Peers

Background Traffic Trips

"Background" traffic is comprised of through trips on the evacuation routes that do not have an origin or destination in the Evacuation Area. Examples of background traffic on a late Friday afternoon in the summer are recreational trips destined for Lake County and employees returning to homes in communities north of the Evacuation Area from jobs in adjacent Napa or Sonoma Counties.

SR 29 is the primary route for through traffic in the Evacuation Area, as it serves as the direct route between Napa and communities on the east side of Clear Lake. Road segment counts conducted on SR 29 just south of Lower Lake on Friday, September 30, 2022 yielded a total daily volume of 13,430 which exceeded the daily volumes on the two prior days of 11,970 on Wednesday and 12,290 on Thursday. The highest hourly volumes on this segment of SR 29 occurred on Friday between 3:30 and 4:30 pm when a total of 1,020 vehicles per hour were counted. The hourly segment volumes were 860 between 5:00-6:00 pm and 380 between 8:00-9:00 pm.

Through trips for the Evacuation Area network were estimated based on daily and peak hour traffic counts collected in 2022 as well as origin-destination matrices extracted from the WCIRP TDM.

To facilitate evacuation on SR 29 during the 2015 Valley Fire evacuation, southbound traffic on SR 29 was stopped at Lower Lake and northbound traffic on SR 29 was stopped at Tubbs Lake in Napa County by California Highway Patrol (CHP) and Napa sheriff deputies, respectively. These road closures, which stopped through traffic in both directions on SR 29, were made about 5 to 5.5 hours after the Valley Fire was initially reported. To provide a conservative assessment of evacuation conditions, this evacuation assessment does not assume closure of SR 29 as occurred in the Valley Fire. As such, through traffic continues to travel on the transportation network throughout the evacuation simulation period.

Evacuation Departure Time Distribution

The evacuation departure time for trips leaving the Evacuation Area varies by many factors including, but not limited to, the time of day, type of hazardous event, perceptions of risk, and

relative preparedness of evacuees. For situations where ample notice is given or the family unit is already together, less time is needed to prepare for the evacuation. On the other hand, where there is minimal notice given or when the family unit is not together, the time required to prepare for an evacuation is typically longer as residents need to pack belongings, collect their animals, and conduct other coordination activities before beginning their evacuation trip.

With different evacuation starting times for evacuees, the impact of the evacuation trips on the roadway network will be dispersed. For the evacuation scenario testing, the starting time for all evacuation scenarios was set at 4:00 PM, which represents the earliest time evacuees begin their trip to leave the Evacuation Area after receiving a mandatory evacuation notice.

The evacuation time distribution is the anticipated rate at which evacuees would vacate and begin their travel on the evacuation routes. The evacuation time distributions by affected population groups for the eight evacuation scenarios are shown in **Table 4-5**. The table shows the percent of the population that begins their evacuation trips, by 15-minute intervals, starting at 4:00 PM. The trip allocation ranges are separately provided for trips by employees/tourists, residents without a commuter, residents with a commuter, and employees for the proposed Project. The table builds on research conducted for the *City of Ashland Evacuation Time Estimate Study* (April 2021) which identified evacuation curves for employees and residents based on surveys. Employees and tourists in the community population group have the steepest departure curve as they do not have to pack items or coordinate evacuations with others. Residents that do not have a worker employed outside the household are able to evacuate quicker than residents with a worker employed outside the household, as many of those households would wait for the person to return home from work before evacuating. Lastly, Guenoc Valley Project employees would have a delayed departure curve compared to other employees in the Evacuation Area because most of them would be required and would be trained to assist in the evacuation of residents and guests.

Table 4-5. Percent of Population Beginning Evacuation Trip after Evacuation Notice

Time Interval (PM)	Employee or Tourist	Resident with No Commuter	Resident with Commuter	Project Employees
4:00-4:14	45%	8%	0%	0%
4:15-4:29	82%	48%	1%	5%
4:30-4:44	93%	75%	8%	10%
4:45-4:59	96%	85%	23%	15%
5:00-5:14	100%	92%	43%	20%
5:15-5:29		95%	60%	25%
5:30-5:44		96%	73%	45%
5:45-5:59		97%	81%	82%
6:00-6:14		98%	86%	93%
6:15-6:29		99%	90%	96%
6:30-6:44		99.5%	94%	100%
6:45-6:59		100%	96%	
7:00-7:14			97%	
7:15-7:29			98%	
7:30-7:44			99%	
7:45-7:59			100%	

Sources: *City of Ashland Evacuation Time Estimate Study*, April 2021; Fehr & Peers, 2022.

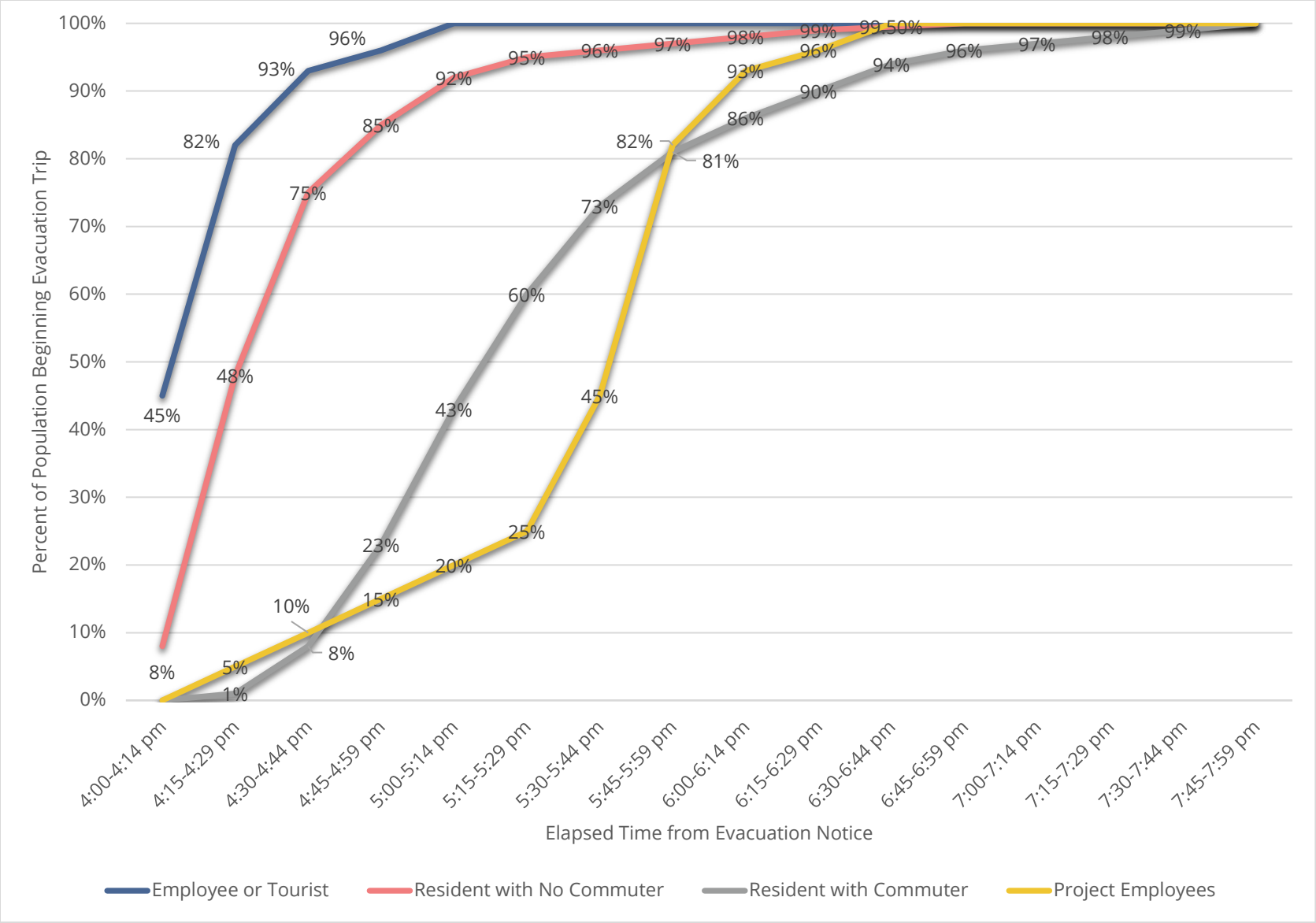

Figure 4-3. Evacuation Departure Time Distribution – Start Time for Evacuation Trip

Evacuation Departure Directional Distribution

The following section describes the directional distribution of evacuation trips to four primary gateways at the edges of the Evacuation Area.

1. Northwest towards Kelseyville and Lakeport via SR 175 and Bottle Rock Road
2. North towards Lower Lake and Clear Lake via SR 29
3. Southeast towards Napa, Sacramento, and East Bay via Butts Canyon Road
4. South towards Calistoga, Sonoma, Marin, and San Francisco Counties via SR 29

Figures 4-4 and **4-5** show the directional distribution to each gateway for Wildfire Scenarios A and B for the community and Project population groups, respectively. Additional background on the directional distribution is provided below.

Directional Distribution for Community Population Groups

Evacuation trips generated by households would likely be pretty evenly distributed to the northwest, north, and south gateways for Wildfire Scenario A (fire moving from north to south) based on data gathered about evacuation patterns for previous wildfires, particularly the 2015 Valley Fire. Under Wildfire Scenario B (fire moving from south to north), the number of evacuation trips traveling to the south via SR 29 would likely be reduced by half with those trips shifting to the northwest and north gateways. Employees that are working on a Friday afternoon and live within the Evacuation Area would travel home and then become part of the household evacuation based on the household distribution. Employees that live outside the Evacuation Area are distributed directly to gateways based on distribution data extracted from the WCIRP TDM for the 2020 scenario.

Evacuation trips generated by second homes would likely be pretty evenly distributed to the north and south gateways, with almost half expected to evacuate via the south gateway as many of the visitors coming to Lake County would travel from areas towards the south, such as the Bay Area. Under Wildfire Scenario B (fire moving from south to north), the number of evacuation trips traveling to the south would be reduced by almost half with those trips shifting primarily to the northwest gateway. Evacuation trips generated by hotel guests would be distributed similarly to those generated by second homes as both population groups would have a similar visitor profile.

Directional Distribution for Project Population Groups

Residents living in the Project's estate units and hotel guests would primarily travel to the Project site from the Bay Area or Sacramento Valley and are thus primarily assigned to the south and southeast gateways for Wildfire Scenario A (fire moving from north to south). Under Wildfire Scenario B (fire moving from south to north), the number of evacuation trips traveling to the south and southeast gateways would be reduced by half with those trips shifting to the northwest and north gateways.

A large share of employees are expected to live in Lake County and, under Wildfire Scenario A, would travel either to homes in the Evacuation Area (and then evacuate to gateways based on the household distribution above for community population groups) or to the north or northwest gateways. Under Wildfire Scenario B, the number of evacuation trips traveling to the south and southeast gateways would be reduced by half with those trips shifting to the northwest and north gateways.

Visitors to the Project site are expected to be equally distributed between those who live in Lake County to the north and those who live in the Bay Area and Sacramento Valley to the south. Most visitor evacuation trips are assigned equally to the southeast and north gateways under Wildfire Scenario A, with a smaller share assigned to the northwest and south gateways. Under Wildfire Scenario B, the number of evacuation trips traveling to the southeast gateway would be reduced by almost half with those trips shifting to the northwest and north gateways.

FIGURE 4-4
COMMUNITY TRIP DISTRIBUTION

	1 SR 175 N		2 SR 29 N		3 Butts Canyon Rd		4 SR 29 S	
Scenario	A	B	A	B	A	B	A	B
Households	31%	37%	38%	47%	1%	1%	30%	15%
Second Homes	10%	25%	42%	47%	3%	3%	45%	25%
Visitors	10%	25%	42%	47%	3%	3%	45%	25%

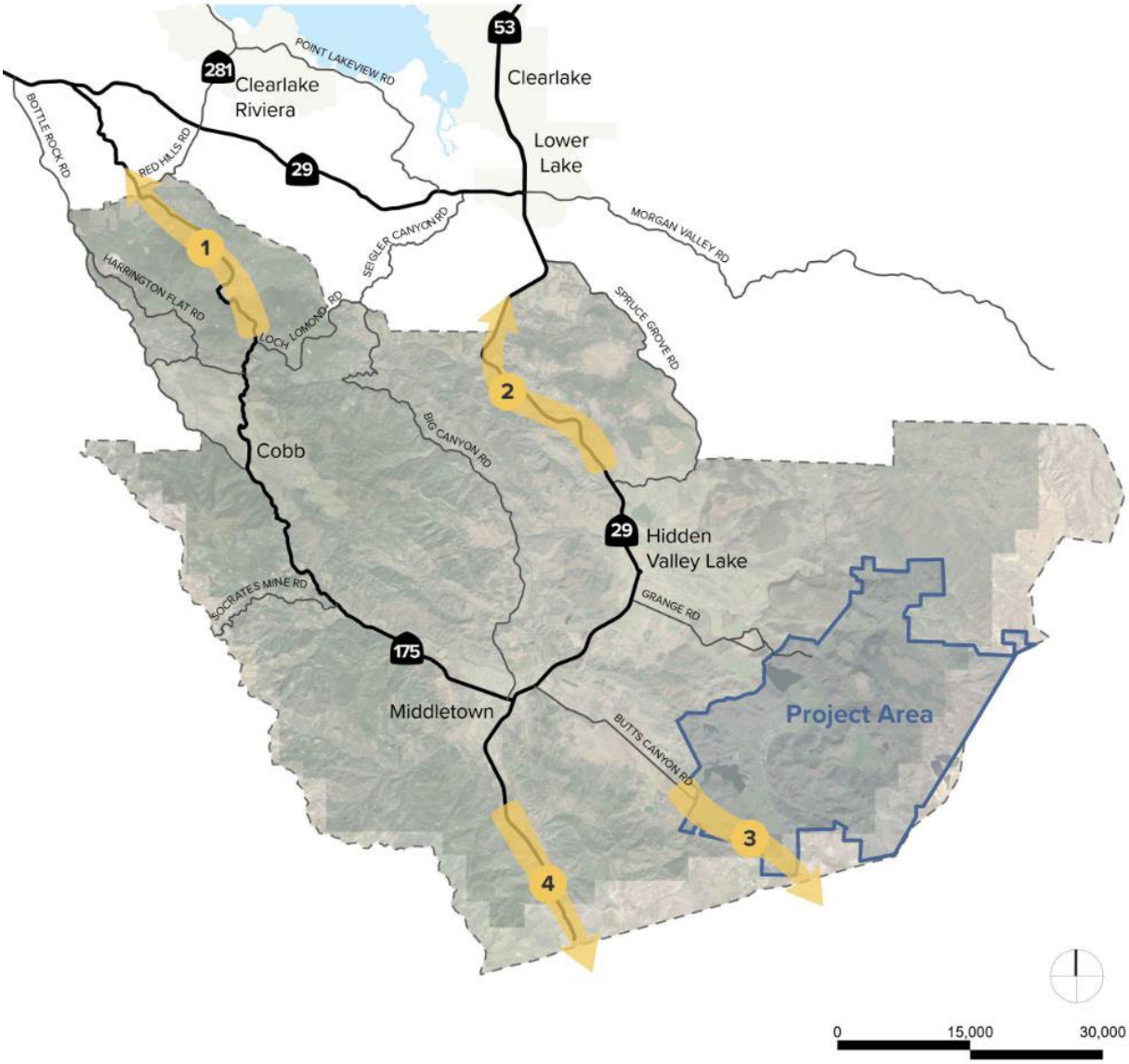

Figure 4-4. Community Trip Distribution

FIGURE 4-5
PROJECT TRIP DISTRIBUTION

	1 SR 175 N		2 SR 29 N		3 Butts Canyon Rd		4 SR 29 S	
Scenario	A	B	A	B	A	B	A	B
Estate Units	5%	25%	5%	25%	45%	30%	45%	20%
Hotel Guests	5%	20%	15%	35%	40%	25%	40%	20%
Employees	20%	25%	50%	60%	20%	10%	10%	5%
Visitors	10%	20%	40%	45%	40%	25%	10%	10%

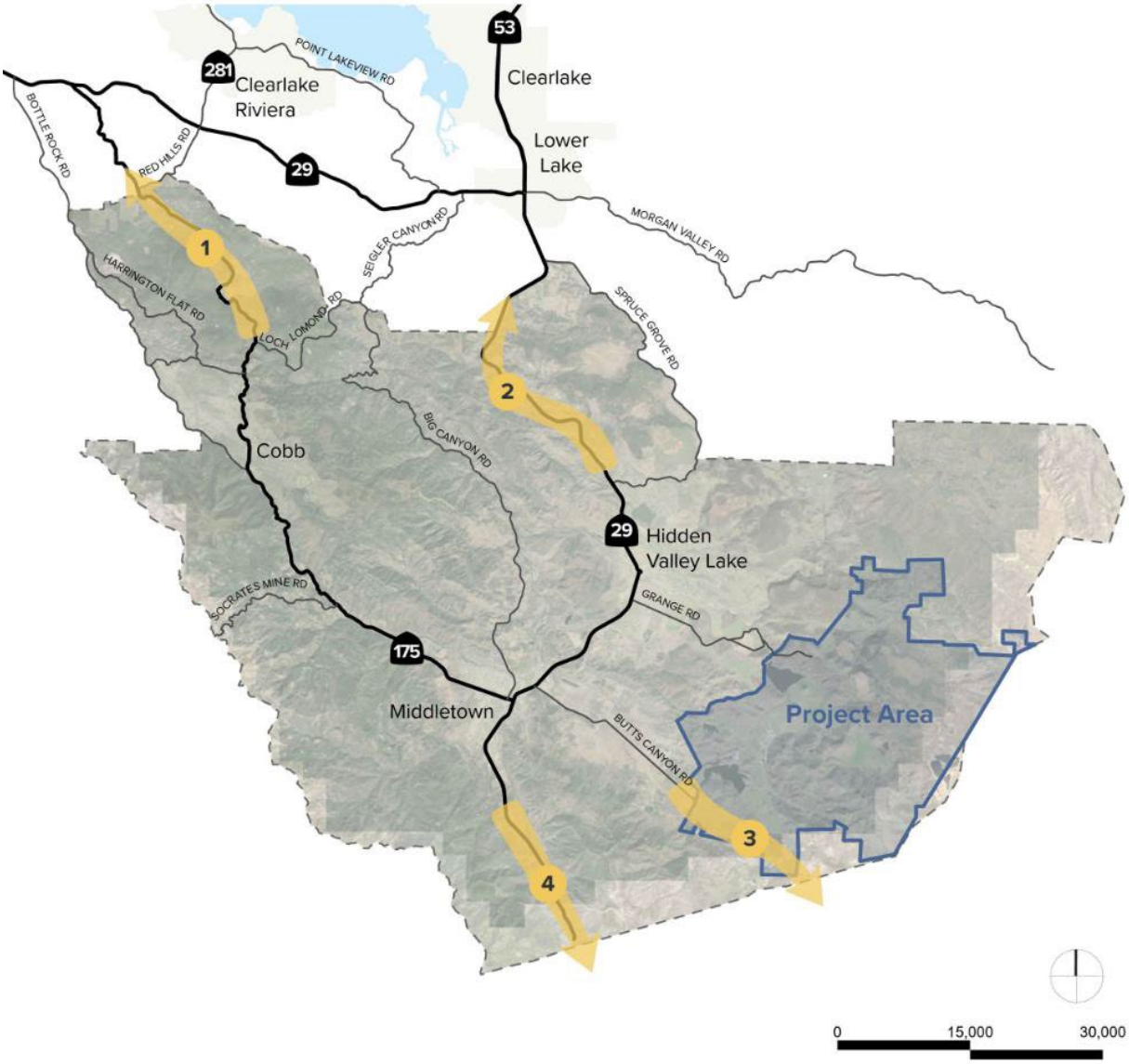

Figure 4-5. Project Trip Distribution

Evacuation Time Estimates

After determining the evacuation trip demand and associated transportation network, a dynamic traffic assignment was performed to reflect congestion and departure time to estimate evacuation times, or ETE. An ETE is a metric that is defined as the estimated time necessary to safely evacuate all evacuees, from the time when a hazard is first identified until the time when either the last evacuee leaves a hazardous area, or the remaining population is forced to shelter-in-place. The determination of whether it is the last evacuee or forced shelter-in-place is made by emergency response personnel, is hazard-specific, and considers factors such as the type of hazard or threat, level of notice, population characteristics of the area at the time of the hazardous event, and evacuee behavior. There are several phases of an ETE described below:

- Hazard Detection: Time when hazard is first identified.
- Hazard Notification to the Public: Time when any official releases an evacuation order to the public.
- Evacuation Order Received: Time when people receive the evacuation order.
- Preparation: Time it takes to prepare to depart after receiving evacuation order.
- Evacuation Time: The total elapsed time until all people in vehicles are out of the Evacuation Area including time driving (moving) and delay due to congestion. The calculated evacuation time does not account for unexpected complications or incidents on the roadways during the evacuation.

It should be noted that some phases may not occur. This can result from a variety of events including failure of officials to identify the hazard, slow response in sending evacuation orders, damaged or non-functional communication networks, and/or a sufficiently high perceived threat of the hazard by residents. Additionally, research on California wildfire evacuations found that some people evacuated their home prior to receiving an evacuation order (Wong et al. 2020). This assessment assumes that Lake County officials and emergency response personnel will be able to send out informed evacuation orders in a timely manner.

This assessment calculates the evacuation time estimates (last evacuee leaves the Evacuation Area) after an evacuation order was received by the public. The evacuation time estimates do not account for time it takes for a hazard to be identified or the amount of time it takes for the official release of an evacuation order to the public. **Table 4-6** summarizes the evacuation time estimates (last vehicle out) for each of the evacuation scenarios included in this assessment.

Table 4-6. Evacuation Time Estimates by Scenario

Criteria	Scenario							
	1	2	3	4	5	6	7	8
Hazard Type	**Wildfire Scenario A (Wildfire from North to South)**				**Wildfire Scenario B (Wildfire from South to North)**			
Study Year	**Baseline (2022)**		**Cumulative (2040)**		**Baseline (2022)**		**Cumulative (2040)**	
Project Conditions	**No Project**	**Project Phase 1[1]**	**No Project**	**Project Build-out[2]**	**No Project**	**Project Phase 1[1]**	**No Project**	**Project Build-out[2]**
Evacuation Time Estimate (hours) – 90% Evacuated	3.5 hours	4 hours	4 hours	5.5 hours	3.5 hours	4 hours	4 hours	5 hours
Evacuation Time Estimate (hours) – 100% Evacuated	4.5 hours	5 hours (+0.5 hours)	5 hours	7.5 hours (+2.5 hours)	4.5 hours	5 hours (+0.5 hours)	5 hours	7 hours (+2 hours)

Notes:

1. Project Phase 1 includes 401 residential estate units, 141 resort residential units, 127 hotel rooms, Middletown off-site employee housing for 221 employees, 610 employees, and 100 visitors.
2. Full Project Build-out: 1,400 residential estate units, 450 resort residential units, 400 hotel rooms, Middletown off-site employee housing for 221 employees, 1,220 employees, and 200 visitors.
3. Evacuation notice time of day (4:00 PM), day of week (Friday), time of year (August), hazard response (100% evacuation) assumed consistent for all scenarios.

Source: Fehr & Peers, 2023.

Key Takeaways

This section summarizes the evacuation assessment approach and evacuation time estimates presented in this report for two wildfire scenarios in South Lake County for the Guenoc Valley Project. Two wildfire scenarios are assessed, the first based on a wildfire progressing from north to south similar to the 2015 Valley Fire and the second based on a wildfire progressing from south to north.

The evacuation assessment approach sections include a description of the evacuation scenarios, evacuation model, and evacuation vehicle trip demand. The discussion of evacuation vehicle trip demand includes evacuation trips generated by the community population groups, evacuation trips generated by the Guenoc Valley Project, background (i.e., through) trips, evacuation departure time distribution, and evacuation departure directional distribution.

The evacuation assessment is conservative in that it is for a summer Friday afternoon (4:00 pm evacuation notice) and assumes 100 percent of Project homes and hotels are occupied; 100 percent of residents, employees and visitors evacuate; and no police resources are available to provide traffic control to manage evacuation traffic. The assessments of evacuation times yield the following results.

Wildfire Scenario A (wildfire from north to south)

- Congestion forms along primary and secondary evacuation routes in all scenarios.
- The segment of SR 29 from Middletown to the south is the most heavily used evacuation route and most congested. The most significant bottleneck is at the Hidden Valley Lake community access points to SR 29 under both no Project and with Project scenarios. Other significant bottlenecks are at the traffic signals along SR 29 at SR 53/Main Street in Lower Lake, at SR 175 in Middletown, and at SR 281 south of Clear Lake Riviera. Under cumulative conditions, the new roundabout that would be constructed as a Project mitigation measure at the SR 29/Butts Canyon Road intersection is heavily congested with evacuation vehicle trips generated by full build-out of the Project.
- The addition of evacuation vehicle trips generated by Phase 1 of the Project, when added to evacuation vehicle trips generated under existing conditions by existing community population groups in South Lake County, would increase total evacuation time by approximately 30 minutes (from about 4.5 hours to about 5 hours) for Wildfire Scenario A.
- The addition of evacuation vehicle trips generated by full build-out of the Project, when added to evacuation vehicle trips generated under future cumulative 2040 conditions by surrounding community population groups in South Lake County, would increase total evacuation time by approximately 2 hours and 30 minutes (from about 5 hours to about 7.5 hours) for Wildfire Scenario A.

Wildfire Scenario B (wildfire from south to north)

- Congestion forms along primary and secondary evacuation routes in all scenarios.
- The segment of SR 29 south of Lower Lake is the most heavily used evacuation route and most congested. The most significant bottleneck is at the Hidden Valley Lake community access points to SR 29 under both no Project and with Project scenarios. Other significant bottlenecks are at the traffic signals along SR 29 at SR 53/Main Street in Lower Lake, at SR 175 in Middletown, and at SR 281 south of Clear Lake Riviera. Under cumulative conditions, the new roundabout that would be constructed as a Project mitigation measure at the SR 29/Butts Canyon Road intersection is heavily congested with evacuation vehicle trips generated by full build-out of the Project.
- The addition of evacuation vehicle trips generated by Phase 1 of the Project, when added to evacuation vehicle trips generated under existing conditions by existing community population groups in South Lake County, would increase total evacuation time by approximately 30 minutes (from about 4.5 hours to about 5 hours) for Wildfire Scenario B.
- The addition of evacuation vehicle trips generated by full build-out of the Project, when added to evacuation vehicle trips generated under future cumulative 2040 conditions by surrounding community population groups in South Lake County, would increase total evacuation time by approximately 2 hours (from about 5 hours to about 7 hours) for Wildfire Scenario B.

5. CEQA Impacts and Mitigation Measures

This section provides a description of potential wildfire risk and evacuation time estimate impacts in the Project area and describes the changes to those conditions that would result from implementation of the proposed Project. This wildfire evacuation impact assessment addresses the Superior Court Ruling on the Guenoc Valley Mixed Use Planned Development Project (Project) Environmental Impact Report (EIR), subsequent CEQA guidance released by the Attorney General, and compliance with CAL FIRE regulations related to wildfire evacuation and emergency access.

The potential wildfire risk and evacuation time impact effects of full build-out of the Project under the proposed General Plan amendment and rezoning of the Guenoc Valley Site are analyzed on a programmatic level. In addition to the program-level analysis, a project-level analysis of the impacts of the first phase (Phase 1) of the proposed Project is provided.

The analysis of wildfire impacts is based upon a review of project plans, maps, Cal Fire data, and other available documents as well as the wildfire risk assessment and evacuation assessment presented in Sections 1 through 4 of this study. The wildfire risk assessment and evacuation assessment conducted in this study was based on consultation with the Lake County Sheriff's Office, CAL FIRE, and Lake County counsel, public works, and community development staff. The impact analysis considers federal, state, and local regulations and guidelines.

Regulatory Framework

This section describes the wildfire and evacuation (emergency access/emergency egress) regulatory framework, which includes federal, state, regional, and county programs and other plans related to the Guenoc Valley Project and the associated EIR.

Federal

National Fire Protection Association 1710: The National Fire Protection Association (NFPA) is the international nonprofit organization devoted to establishing industry standards, known as the NFPA 1710, related to eliminating death, injury, property, or economic loss due to fire, electrical and related hazards. The NFPA recommends that fire departments respond to fire calls within 6 minutes of receiving the request for assistance for 90 percent of incidents. These time recommendations are based on the demands created by a structural fire. It is crucial to attempt to arrive and intervene at a fire scene prior to the fire spreading beyond the room of origin. Total structural destruction typically starts within 8 to 10 minutes after ignition. Response time is generally defined as 1 minute to receive

and dispatch the call, 1 minute to prepare to respond to the fire station or field, and 4 minutes (or less) travel time. (NFPA, 2020.)

State

Senate Bill (SB) 99 (2019)

SB 99 requires review and updating of each local city and county general plan's safety element to include information to identify residential developments in hazard areas that do not have at least two emergency evacuation routes.

Assembly Bill (AB) 747 (2019)

AB 747 requires that general plan safety elements be reviewed and updated to identify evacuation routes and their capacity, safety, and viability under a range of emergency scenarios.

Assembly Bill (AB) 1409 (2021)

AB 1409 requires general plan safety elements to be reviewed and updated to identify evacuation locations.

California Fire Safe Regulations (Public Resources Code Section 4290)

California Department of Forestry and Fire Protection (Cal Fire) is responsible for protecting natural resources from fire on land designated within a State Responsibility Area (SRA). The Guenoc Valley Site is within an SRA, specifically the Sonoma Lake Napa Administrative Unit. All development applications within the SRA must be reviewed by Cal Fire prior to issuance of County permits or entitlements. The Fire Safe Regulations include requirements for on-site water storage and fuel breaks.

Fire Hazard Severity Zones

Public Resources Code Sections 4201-4204 specify that lands within SRAs be classified into fire hazard severity zones. These zones are classified based on fuel loading, slope, fire weather, wind, and other relevant factors.

California Code of Regulations Title 24

California Fire Code

The California Fire Code is Part 9 of the California Code of Regulations (CCR) Title 24 and provides minimum building and fire safety standards for new construction. Standards include fire protection systems, fire and smoke protection, egress, fire resistant materials, and other safety standards.

California Building Code

The California Building Code (CBC) is Part 2 of the CCR Title 24. Specifically, chapter 7 includes regulations for fire and smoke protection. Chapter 7A includes requirements for flame resistant materials and construction methods for wildfire exposure. The requirements in this chapter apply to Wildland-Urban Interface Fire Areas, which are defined as "areas in state designated Fire Hazard Severity Zones or other areas designated by the enforcing agency to be at a significant risk from wildfires."

California Office of Attorney General

On October 10, 2022, the Attorney General's office published *Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act* (AG Guidance). The AG Guidance is designed to help lead agencies comply with CEQA when considering whether to approve projects in wildfire-prone areas. The guidance provides "*suggestions for how best to comply with CEQA when analyzing and mitigating a proposed project's impacts on wildfire ignition risk, emergency access, and evacuation*."

California Department of Transportation

Caltrans manages interregional transportation, including the management and construction of the California highway system. In addition, Caltrans is responsible for the permitting and regulation of state roadways. The Project area includes four roadways that fall under Caltrans' jurisdiction, State Route 29, State Route 53, State Route 175, and State Route 128. Any improvements to these roadways would require Caltrans' approval.

SR 29 South Corridor Engineered Feasibility Study

The SR 29 South Corridor Engineered Feasibility Study (2014) identified a series of planned improvements along SR 29 between the Lake County/Napa County line and Lower Lake. Based on consultation with Rex Jackman (Caltrans District 1 Office Chief of Transportation Planning/South Counties), since the study was completed, a roundabout was installed as planned at the SR 29/Hartmann Road intersection and passing lanes were constructed near Lower Lake. Caltrans is in the early project development stages of designing capacity improvements at the signalized intersection of SR 29/Wardlaw Street intersection.

County

The following plans and studies in Lake County are the applicable adopted emergency response/emergency evacuation plans:

- South Lake County Wildland Fire Preparation and Emergency Plan (2016)
- Lake County Emergency Operations Plan (2020)

The following plans and studies are also relevant to emergency responses and evacuations as well as fire risk reduction strategies in Lake County:

- Lake County Community Wildfire Protection Draft Plan (2022)
- Lake County Regional Transportation Plan/Active Transportation Plan (2022)
- Lake County Local Hazard Mitigation Plan (2018)
- Lake Transit Development Plan & Marketing Plan (2015)
- Valley Fire Post Fire Watershed Emergency Response Team Report (2015)
- Middletown Community Action Plan (2014)
- SR 29 South Corridor Engineered Feasibility Study (2014)
- Lake County General Plan (2008)

Lake County General Plan (2008)

The policies related to wildfire risk and evacuation in the Transportation & Circulation and Health & Safety Elements of the Lake County General Plan are summarized below.

Transportation & Circulation Element

The following policies in the Transportation & Circulation Element are relevant to the wildfire risk and evacuation assessment.

- Policy T-1.1 (Provision of Adequate Road Network): The County shall establish a road network (see Figure 6-1) to accommodate projected growth in traffic volume resulting from residential development, commercial and tourism expansion, and geothermal activity and other industrial development.
- Policy T-1.2 (Compliance with County Road Standards): Roads should be improved and constructed to the design standards recommended by the County Department of Public Works, as shown in Table 6-1, Lake County Road Design and Construction Standards. Road design standards shall be based on the American Association of State Highway and Transportation Officials (AASHTO) standards, and supplemented by California Department of Transportation (Caltrans) and County standards.
- Policy T-1.8 (Level of Service): County maintained roadways should be improved and maintained to provide an adequate peak period Level of Service (LOS) of "C" or better for existing and anticipated traffic volumes if roadway upgrades are feasible, such as roadway widening, addition of lanes via re-striping, and other safety and operational improvements. The County shall allow a limited number of County roadway segments to operate at a level of service of "E" or better where improving the segment to LOS C are deemed infeasible due to cost, negative community and/or environmental impacts, and constructability issues. This "E" level

of service for certain roadways shall not include any State Highway unless approved by Caltrans.

Health & Safety Element (Section 7.7-Urban and Wildland Fire Hazards)

The following policies in the Health & Safety Element are relevant to the wildfire risk assessment.

- Policy HS-7.1 (Consultation with Fire Service Districts): The County shall consult with the appropriate fire service district or California Department of Forestry in areas designated as high and extreme fire hazard, for particular regulations or design requirements prior to issuance of a building permit or approval of subdivisions (refer to Figure 7-3).
- Policy HS-7.2 (Encourage Cluster Development): In areas designated as high or extreme fire hazards, the County should encourage cluster developments to provide for more localized and effective fire protection measures such as consolidations of fuel build-up abatement, firebreak maintenance, firefighting equipment access, and water service provision.
- Policy HS-7.4 (Wildland Fire Management Plans): The County shall require the development of wildland fire management plans for projects adjoining significant areas of open space that may have high fuel loads.
- Policy HS-7.5 (Fuel Breaks): Fuel breaks of at least 30 feet should be maintained around all structures. Additional fuel breaks or fuel modifications up to 100 feet around structures should be required when the fire officials find that extra hazardous conditions exist. Secondary fuel breaks up to 200 feet in width should be required when the fire authority finds that additional precautions are necessary. Fire buffers should be created along heavily traveled roads within high and extreme fire hazard areas by thinning, discing, or controlled burning. Parks, golf courses, utility corridors, roads and greenbelts should be located so they may serve a double function as fuel breaks.
- Policy HS-7.6 (Development Guidelines): The County should consider fire hazards in evaluating development proposals. Within designated areas where population or residential building densities may be inappropriate to the hazards present, measures should be developed and adopted to mitigate risk to life and property loss. Lands designated as having high and extreme wildfire hazards may be developed provided that the following guidelines are satisfied:
- Development should be limited to Rural Residential or Rural lands only; and cluster development is encouraged.
- Developers and/or subsequent owners must assume responsibility for ongoing fire prevention maintenance activities for the project, including; abatement of fuel buildup, fire break maintenance, access provision, and provision of adequate water supply to meet fire flow.

- Separately developed dwellings with an individual private water supply shall provide an acceptable guaranteed minimum supply of water, in addition to the amount required for domestic needs.
- Policy HS-7.7 (Fire Resistant Building Materials): The exterior of residential units should be composed of fire resistant materials and designed to reduce fire vulnerability within high and extreme fire hazard areas.

Health & Safety Element (Section 7.8-Emergency Response)

The following policies in the Health & Safety Element are relevant to the wildfire evacuation assessment.

- Policy HS-8.7 (Emergency Operations Plan): The County shall ensure that the Emergency Operations Plan continues to meet current federal and state emergency requirements through periodic updating.

Middletown Community Action Plan (2014)

The Middletown Area Plan (Area Plan) is a specific plan that guides growth in the Middletown community and surrounding areas. The Area Plan provides guidance about public safety, including wildfires. The Area Plan indicates that wildfires are a significant hazard in the Middletown Planning Area and provides policies to minimize hazards. The relevant policies are as follows.

- Policy 4.3.1a: Coordinate land use planning with needed services, personnel and facilities for fire departments, law enforcement, medical emergencies, and public emergencies
- Policy 4.3.1b: Continue to support and assist in the implementation of adopted emergency preparedness plans and regulations.
- Policy 4.3.1c: Maintain an aggressive fire prevention program.
- Policy 4.3.1d: Residential development in high and very high fire hazard areas shall meet the following fire protection standards unless adequate fire suppression facilities are already available:
    - Adequate fuel breaks and fuel reduction shall be created and maintained.
    - Adequate water storage shall be provided and maintained.
    - Residential access roads shall not exceed slopes that allow safe passage by fully loaded fire equipment, and shall be maintained. Roads and driveways shall meet CAL FIRE standards and be either looped or double-access to provide escape routes in the event of wildland fire emergencies.
    - Development shall be clustered where appropriate to take advantage of fuel breaks and improved access to reduce fire danger.

- Policy 4.3.1e: Homeowners and homeowner's associations are encouraged to work with CAL FIRE, local fire protection districts, the Lake County Sheriff and adjacent property owners to establish and maintain programs for annual vegetation clearing and fuel breaks around the existing subdivisions in efforts to reduce fuel loading.

2009 Lake County Community Wildfire Protection Plan (CWPP) and Draft 2022 CWPP

The 2009 CWPP remains in effect as the Draft 2022 CWPP was released and the subject of an October 5, 2022 public workshop in the Board of Supervisors' chambers but has yet to be adopted[27]. The Draft 2022 Lake County Community Wildfire Protection Plan (CWPP) updates and streamlines the 2009 CWPP in accordance with newer guidelines, provides fire safety information to homeowners, provides information to homeowners to reduce ignitability of their homes, identifies recommended fuel reduction projects throughout Lake County, and identifies fire safety resources and groups throughout Lake County. The Draft 2022 CWPP provides a description of wildfire history in Lake County by decade, noting that the last decade has seen increased fire activity and intensity, as numerous homes have been lost and most residents have needed to evacuate at least once. Communities at highest level of wildfire risk include Cobb, Hidden Valley Lake, Loch Lomond, and Middletown in South Lake County near the proposed Project. The South Lake County Fire Protection District, one of six county Fire Protection Districts, is responsible for serving communities in South Lake County. Four fire stations are located throughout the district in Middletown, Hidden Valley Lake, Cobb and Loch Lomond. CAL FIRE has four stations within Lake County including Middletown Station 31 located in Middletown. The Lake County Sheriff's Office of Emergency Services (OES) is the lead agency for local emergency management efforts for the County of Lake. Emergency notifications are provided via the Everbridge/Nixle platform, the Zonehaven platform, Wireless Emergency Alerts, LakeCoAlerts, and door-to-door notifications during evacuation orders.

Appendix A of the Draft 2022 Lake County CWPP provides a list of fuel-reduction & prevention priorities. Fuel-reduction and prevention treatments identified in Appendix A include shaded fuel break, control burn, prescribed burn, fuel reduction, community education, defensible space assistance, clearance, vegetation management, and post-fire restoration measures. These treatments are identified in several South Lake County communities including Anderson Springs, Cobb, Guenoc Ranch, Harbin Hot Springs, Hidden Valley, Jerusalem Valley, Loch Lomond, and Middletown. Several of the priority treatments have been completed in recent years.

Appendix B of the Draft 2022 Lake County CWPP provides action plan items to address advancing defensible space, reducing fuels, reducing structural ignitability, enhancing fire protection, evacuation planning and emergency preparedness, promoting fire safe education, and facilitating long-term fire safety.

[27] Personal communication with Linda Juntunen, Lake County Fire Safe Council, April 6, 2023, [Personal interview by phone].

South Lake County Wildland Fire Preparation and Emergency Plan (2016)

The South Lake County Wildland Fire Preparation and Emergency Plan (2016) was written by the South Lake County Fire and South Lake Fire Safe Council and includes information for the public about how to prepare for emergency events and what do to during an evacuation. The South Lake County Wildland Fire Preparation and Emergency Plan identifies primary and secondary evacuation routes for South Lake County communities. Primary community evacuation routes include SR 29 and SR 175. Secondary community evacuation routes include Butts Canyon Road, Big Canyon Road, Spruce Grove Road, Loch Lomond Road, Bottle Rock Road, and Seigler Canyon Road. The South Lake County Wildland Fire Preparation and Emergency Plan also identifies temporary assembly zones (or areas) that will usually be those established locations on the emergency plan evacuation map. Assembly zones nearest to the Project site are Middletown High School (20932 Big Canyon Road) and Coyote Valley Elementary School (18950 Coyote Valley Road).

Lake County Emergency Operations Plan (2020)

The Lake County Emergency Operations Plan (2020) contains a Wildland Urban Interface Annex (WUI Annex). The WUI Annex was written by the Lake County Fire Chief's Association to establish priorities, responsibilities, and assign tasks to coordinate response operations during wildfires. According to the WUI Annex, Cal-Fire provides wildland fire suppression, structure protection, and incident management to lands within the State Responsibility Area and has mutual aid agreements with the Lake County Fire Districts and County Government Departments. Lake County Fire Districts provide wildland fire suppression, structure protection, and incident management within designated Local Responsibility Areas. Under federal law, the U.S. Forest Service and the Bureau of Land Management provide wildland fire suppression, structure protection and incident management to designated Federal Lands. The Sheriff's Office Central Dispatch Center answers fire services emergency related requests. The WUI Annex also includes a contingency plan with actions such as notifying emergency response departments of anticipated emergencies, testing the County's emergency alert systems, and pre-establishing human and animal evacuation shelters. Additionally, the WUI Annex outlines the strategies and guiding principles fire fighters should use in the event of a wildfire and includes a structure assessment checklist.

The EOP also incorporates by reference hazard specific annexes including the Wildfire Fire Annex that provides the structure for coordinating interagency support for a local response to an incident. Upon activation of the Annex "contingency plan" for a wildfire by the Lake Operational Area Fire/Rescue Coordinator, tasks include working with Field Response Departments to update evacuation routes and shelter sites, creating an Incident Command Post, and identifying an Incident Commander. One of the actions is to pre-position resources and equipment. The Lake Operational Area Coordinator (Sheriff) will evaluate resources and determine whether mutual aid from any of the sixteen counties in Region II.

Thresholds of Significance

Section 7.7 of the Lake County General Plan Health & Safety Element addresses Urban and Wildland Fire Hazards. The Health & Safety Element includes policies related to new development that call for consultation with fire service districts, encouraging cluster development, requiring development of wildland fire management plans, establishing fuel breaks around structures, implementing wildfire risk mitigation measures (i.e., cluster development, providing ongoing fire prevention maintenance activities, and providing an adequate private water supply), and using fire resistant building materials. The goal of Section 7.8 of the Health & Safety Element is to ensure the maintenance of an emergency operations plan in order to maintain its effectiveness in preparing and responding to a natural or human-made disaster.

Based on consultation with Lake County staff, the following threshold from Appendix G of the *CEQA Statute & Guidelines* is applied in the context of the wildfire risk and evacuation time estimate assessments provided in this study.

- Substantially impair an adopted emergency response plan or emergency evacuation plan.

The analysis and mitigation of impacts is also based on guidance provided by the California Attorney General in *Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects under the California Environmental Quality Act* released on October 10, 2022. This document provides guidance on factors that should be considered in analyzing a project's impacts related to wildfire risk, analyzing a project's impacts related to evacuation and emergency access, and identifying mitigation measures for wildfire risk and evacuation, and emergency access impacts. This includes considering whether the project creates an inconsistency with:

- An adopted emergency operations or evacuation plan;
- A safety element that has been updated per the requirements in Government Code sections 65302(g)(5) and 65302.15 to integrate wildfire and evacuation concerns; or
- Recommendations developed by the California Board of Forestry and Fire Protection regarding the safety of subdivisions pursuant to Public Resources Code section 4290.5.

Impacts and Mitigation Measures

Impact 5-1: Substantially Impact an Adopted Emergency Response Plan or Emergency Evacuation Plan

The Guenoc Valley Project is located in South Lake County. The nearby areas that would be affected by the evacuation of the Project's residents during a wildfire include the South Lake County communities of Middletown, Hidden Valley Lake, Cobb, and Loch Lomond.

The emergency response and evacuation plans in effect in Lake County are the Lake County Community Wildfire Protection Plan, the Lake County Emergency Operations Plan, and the South Lake County Wildland Fire Preparation and Emergency Plan.

CAL FIRE has mapped the moderate, high, and very high Fire Hazard Severity Zones (FHSZs) in Lake County. State Responsibility Areas (SRAs) are recognized by the California State Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency responsible for fire suppression and prevention. The Guenoc Valley Project site is located within an SRA. Within this designation, fire hazard severity zones within the Project site have been mapped by CAL FIRE as very high, high and moderate fire hazard severity. Most of the Project site is located on land designated as very high fire hazard severity.

The South Lake County Wildland Fire Preparation and Emergency Plan identifies primary and secondary evacuation routes for South Lake County communities. Primary community evacuation routes include SR 29 and SR 175. Secondary community evacuation routes include Butts Canyon Road, Big Canyon Road, Spruce Grove Road, Loch Lomond Road, Bottle Rock Road, and Seigler Canyon Road.

For evacuation egress and emergency access purposes, the Project site would have evacuation routes that connect to Butts Canyon Road directly and to SR 29 (via Grange Road). Two evacuation routes would provide access to Butts Canyon Road. The first evacuation route connecting to Butts Canyon Road is a new Primary Access Road that would be located at McCain Canyon, approximately 2.6 miles south of the existing Langtry Winery Entrance. The second evacuation route would connect to Butts Canyon Road at the existing intersection located approximately halfway between the Langtry Winery entrance and the Primary Access Road entrance. The third evacuation route would be via a newly improved road, for evacuation egress and emergency access only, that would connect from the interior of the Project site through an adjacent property (per easement agreement) to SR 29 via Grange Road.

Assessment of Wildfire Risk

The South Lake County Fire Protection District and CAL FIRE would provide emergency wildfire response to the Project site and nearby areas. The Project would construct an Emergency Response

Center within the site that includes a new fire station, emergency helipad, dedicated nighttime water source for aerial firefighting, and a designated meeting and staging area.

General Plan Policy HS-7.4 (Wildland Fire Management Plans) requires development of wildland fire management plans for projects adjoining significant areas of open space that may have high fuel loads. Accordingly, a Wildfire Prevention Plan for the Project has been prepared in collaboration with the County, CAL FIRE, design and engineering teams, and grazing consultants. The Wildfire Prevention Plan, included in **Appendix FIRE** of the 2020 Final Environmental Impact Report**,** includes measures to aid emergency response on the Guenoc Valley Project Site. In the event of a wildfire, the on-site emergency response system would utilize early detection high-definition cameras, an emergency notification siren system, an on-site Emergency Response Center, six designated meeting and staging areas, and emergency helipads. The Emergency Response Center would include a structure to house firefighting equipment, as well as a headquarters space and storage for minor medical supplies.

Additional firefighting resources would be funded by the proposed Project as follows.

- The Applicant shall pay to the South Lake County Fire Protection District ("SLCFPD"), on an annual basis, the amount determined by SLCFPD to be necessary in order to staff and equip the Emergency Response Center for fire services, including wildfire response. This includes added staff during construction that may be housed at existing SLCFPD or CAL FIRE facilities.
- The Guenoc Valley Project Homeowners Association (HOA) will be required by its by-laws to contract with a wildfire expert for the duration of the Project, with costs paid by the HOA. The HOA shall consult with the wildfire expert in its implementation of wildfire prevention measures, including those identified in the Wildfire Prevention Plan.

- The Project's Emergency Response Center will have on-site at least one individual with wildfire expertise related to evacuation and emergency access, the costs for which will be paid by the HOA[28].

The following changes to the Project evaluated in the Final EIR certified in July 2020, that are relevant to this Wildfire Risk and Evacuation Assessment, are part of a revised project description assessed herein.

- Construction of improvements for a third evacuation route to and from the Guenoc Valley Site (evacuation egress and emergency access only) with an all-weather surface that will access SR 29 via Grange Road
- Removal of 64 hilltop residential lots from being closer to the WUI and relocation of those lots to the Project core
- Reservation of the Recreational and Camping Area in the northern portion of the Guenoc Valley Site for recreational and camping uses only, and strict prohibition of open fires within that area

[28] The previously approved entitlements for the Project included an ordinance establishing regulations and development standards for the Guenoc Valley Zoning District and a Development Agreement. Section 1.9(d) of the zoning ordinance required that the Project be made subject to covenants, conditions and restrictions (CC&Rs) prior to the opening of any unit purchase escrow. Section 1.9(e) required the establishment of an owners association to govern the Project and to manage, maintain and operate the shared use areas and shared use facilities of the Project. Similarly, Section 13.2 of the Development Agreement required that as a condition of approval for each Final Map, the Project applicant would be required to make the property included in the map subject to CC&Rs, with a minimum term of 60 years, with 10-year automatic renewals, which would run with the land. Section 13.2 further required that the CC&Rs describe the various relationships among the County, the Developer and its successors, including the owners association(s) and individual property owners regarding payments for funding the owners association obligations under the Project approvals. The CC&Rs would need to be reviewed by the Department of Real Estate (DRE) prior to recordation, and prior to submittal to DRE, the developer would be required to submit a draft build-out budget for the portion of the Project that the developer intends to submit to DRE to the County Community Development Director. The budget would be required to include anticipated costs of and all sources of revenue for (including anticipated monthly owners association dues per unit) the maintenance, repair and operation of all Project infrastructure and other common areas to be owned or maintained by the owners association, and anticipated reserves. The requirement for County review and approval review was intended to ensure that the build-out budget includes funds for the owners association(s) maintenance and repair of the Project Infrastructure and compliance with any terms of the Project Approvals that the owners association(s) assume, including any mitigation measures. Section 13.4 of the Development Agreement required the CC&Rs to expressly provide the County with a third party right to enforce the developer's or its successors' and assigns', including owners associations, obligations. These requirements of the zoning ordinance and Development Agreement would ensure enforceability and funding for all HOA obligations for the life of the Project. Although the County was required to set aside and vacate its approvals related to the Project, including the zoning ordinance and Development Agreement, the applicant is proposing that the County approve a similar zoning ordinance and Development Agreement, including all of the requirements described above. Therefore, it is expected that if approved, the Project would be subject to those requirements.

- Revised roadway plan with new connector roadways and with no dead-end, non-looped road segments that exceed one mile in length
- Revised Roadside Hardscape Design with an area of approximately 10 feet on each side of the roadways improved with hardscape, to the extent that topography feasibly permits

The following is a summary of wildfire risk reduction measures that the proposed Project will undertake in addition to those listed above.

- **Project Density**: Home Ignition Zone (HIZ) measures including home construction to California Building Code Chapter 7A standards, HIZ management and defensible space maintenance for every building through covenants to be paid for by the HOA and supported by resort maintenance staff.
- **Project Location in the Landscape:** consolidated design in valley/commercial core so that structures are away from areas where fire behavior may be most extreme, strategically locating development in relation to landscape fuel break features (intensive grazing, vineyards, golf course, and polo field) with ongoing grazing management, and maintenance of property-wide fire breaks and defensible space along the edge of developed areas in the resort.
- **Water Supply and Infrastructure:** a high-volume water supply through the existing irrigation system that is immediately available for all construction phases and into the future that exceeds the state's Minimum Fire Safe Regulations, a municipal-type fire hydrant system installed with each project phase, all electrical utilities buried underground, and vulnerable water supply and electric utility infrastructure will be placed underground for protection from wildfire damage.
- **Safety Zones and Temporary Refuge Areas:** designating the maintained polo field, golf course, grazed areas, and vineyards as safety zone and temporary refuge area opportunities for evacuation staging, sheltering for hazards where shelter-in-place is recommended, and/or when evacuation routes are temporarily blocked.
- **Construction Safety:** provision of new emergency responders to be housed at the Middletown fire station beginning at the start of construction through a formal agreement with the SLCFPD.
- **Communication, Management, and Maintenance:** provision and maintenance of an on-site early detection system to identify potential fires igniting on-site or in the vicinity, an opt-out phone-based communication system to provide emergency notifications, HOA-funded vegetation and HIZ/defensible space management around homes, and fire tools and fire extinguishers in all homes.

The CWPP is designed in large part to prevent or minimize wildfire emergencies primarily through the institution of fuel-reduction & prevention measures. The CWPP also identifies wildfire resource needs. The 2009 CWPP remains in effect as the Draft 2022 CWPP was released and the subject of an October 5, 2022 public workshop in the Board of Supervisors' chambers but has yet to be adopted.

The 2009 CWPP identifies the need for additional staffing and the addition of two more stations within the South Lake County Fire Protection District. The Draft 2022 CWPP updates and streamlines the 2009 CWPP in accordance with newer guidelines, provides fire safety information to homeowners, provides information to homeowners to reduce ignitability of their homes, identifies recommended fuel reduction projects throughout Lake County, and identifies fire safety resources and groups throughout Lake County. Appendix A of the Lake County CWPP provides a list of fuel-reduction & prevention priorities. Appendix B of the Lake County CWPP provides action plan items to address advancing defensible space, reducing fuels, reducing structural ignitability, enhancing fire protection, evacuation planning and emergency preparedness, promoting fire safe education, and facilitating long-term fire safety. The Project is consistent with the strategies identified in the 2009 CWPP and Draft 2022 CWPP in that it would implement wildfire risk reduction measures summarized above and provide funding and staff to implement measures to address identified needs in the 2009 CWPP (i.e., advancing defensible space, fuel-reduction, water availability, fire protection resources, and identification of evacuation routes) and the Draft 2022 CWPP including the Appendix B action plan categories identified above that were derived from the 2009 CWPP, recent community meetings for the Draft 2022 CWPP, and input from local, state, and federal fire agencies.

The County's Emergency Operations Plan contains a Wildland Urban Interface Annex (WUI Annex). The WUI Annex was written by the Lake County Fire Chief's Association to establish priorities, responsibilities, and assign tasks to coordinate response operations during wildfires. According to the WUI Annex, CAL FIRE provides wildland fire suppression, structure protection, and incident management to lands within State Responsibility Areas (SRAs) and has mutual aid agreements with the Lake County Fire Districts and County Government Departments. The Project would enhance firefighting capabilities in South Lake County by constructing an Emergency Response Center and funding additional firefighting staff on an annual basis, beginning with the start of construction. The Project would be constructed in accordance with federal, state, regional, and local requirements, which are intended to ensure the safety of county residents and structures to the extent feasible. Compliance with these standard regulations would be consistent with the County's Emergency Operations Plan.

Assessment of Emergency Access to the Project

The Proposed Project would construct an Emergency Response Center within the site that includes a new fire station, emergency helipad, dedicated nighttime water source for aerial firefighting, and a designated meeting and staging area.

For emergency access purposes, the Project site would have a total of three evacuation and emergency access routes that connect to Butts Canyon Road and SR 29 (via Grange Road). Two evacuation routes would provide access to Butts Canyon Road: a new Primary Access Road that would be located at McCain Canyon, approximately 2.6 miles south of the existing Langtry Winery Entrance, and a second access at the existing intersection located approximately halfway between

the Langtry Winery entrance and the Primary Access Road entrance. The third evacuation route would be via a newly improved road, for evacuation and emergency ingress and egress only, that would connect from the interior of the Project site through an adjacent property to SR 29 via Grange Road.

Significant efforts have been undertaken by Lake County, the California Department of Transportation (Caltrans), CAL FIRE, and other partner agencies over the past decade to collaborate on planning for improvements to the state highway system and wildfire risk reduction measures in South Lake County. For the state highway system, efforts include the State Route 29 South Corridor Engineered Feasibility Study (2014 joint study by Caltrans District 1 and Lake County/City Area Planning Council) and implementation of the SR 29 Konocti Corridor project (conversion of an eight-mile segment of SR 29 from a two-lane divided highway to a four-lane expressway). For wildfire risk reduction, Lake County is finalizing an update of its Community Wildfire Protection Plan (prepared in collaboration with local fire districts, CAL FIRE, the US Department of the Interior, and the US Forest Service) that identifies wildfire fuel-reduction and prevention, defensible space, and fire protection strategies. The evacuation analysis in this study does not rely on implementation of any of the above strategies, with the exception of Segment 2C of the SR 29 Konocti Corridor expressway project in the cumulative analysis, as either the projects were not fully funded or information was not available about project status at the time of study initiation. The following provides current information.

The SR 29 Konocti Corridor Project (four-lane expressway) is a cooperative effort of Caltrans, the Lake County Area Planning Council (LAPC), and the Federal Highway Administration (FHWA). In total, the project will widen an eight-mile section of SR 29. Segment 2C of the SR 29 Konocti Corridor Project (widening of the westernmost 3.1 mile segment of the project) was completed in June 2023. The Caltrans Milestone Report for Lake County (August 10, 2023)[29] indicates that construction of the remaining Segments 2A and 2B is scheduled for completion in December 2030.

Other improvements identified in the Caltrans Milestone Report along SR 29 in South Lake County include widening of a 1.5 mile segment of SR 29 between Butts Canyon Road and Grange Road to provide wider shoulders (end construction date December 2028), widening and channelizing of a 0.8 mile segment of SR 29 in south Middletown between Central Park Road and Young Street (end construction date January 2029), and widening of a 0.4 mile segment of SR 29 south of Lower Lake to provide left turn channelization at C Street (end construction date December 2027). These are among improvements identified in the State Route 29 South Corridor Engineered Feasibility Study.

Caltrans has indicated recently that it is currently working on an extensive fuel management effort along the state highway system in Lake County that may compliment evacuation planning efforts[30].

[29] Lake County/City Area Planning Council Board Agenda Packet, Agenda Item 9ai, September 13, 2023. https://0m0ea5.p3cdn1.secureserver.net/wp-content/uploads/2023/09/9-13-23-Lake-APC-Packet.pdf

[30] Personal communication with Rex Jackman, Office Chief of Transportation Planning/South Counties – Lake and Mendocino, California Department of Transportation (Caltrans), August 10, 2023 [E-mail].

The Clear Lake Environmental Research Center (CLERC) is coordinating projects throughout Lake County to help combat the impacts of wildfire[31]. CLERC has successfully received a series of community-wide grants for a variety of fire resiliency projects. The 2019 CAL FIRE Fire Prevention Grant and 2021 Forest Health Grant include tree removal and thinning projects in the Cobb Mountain and Boggs Mountain Demonstration State Forest areas where the 2015 Valley Fire started. Using funds from the CAL FIRE Fire Prevention Grant, the South Lake Fire Protection District recently purchased equipment and funded a crew to clear hazard vegetation 100 feet from the centerline in key areas along SR 29, Highway 175, and Butts Canyon Road – key evacuation routes in South Lake County. The Lake County Wildfire Risk Reduction Project – Phase 1 will implement priority actions in the 2022 updated Lake County CWPP including about 45 miles of roadside clearance.

Assessment of Wildfire Evacuation Times for Community Evacuation Routes

An assessment of evacuation times for community evacuation routes in South Lake County was conducted for conditions without and with the proposed Project. Two primary hypothetical wildfire events as summarized below were evaluated based on a review of the South Lake County wildfire history described in ***Section 2: Wildfire and Evacuation History*** and consultation with wildfire experts.

- **Wildfire Scenario A (wildfire from north to south)** is based on a wildfire that starts in Boggs Mountain Demonstration State Forest in the northwest portion of the Evacuation Area and moves to the southeast, similar to the 2015 Valley Fire that was a significant wind-driven weather event that traveled from northwest to southeast from Cobb Mountain into the valleys and communities of Middletown and Hidden Valley Lake.
- **Wildfire Scenario B (wildfire from south to north)** is based on a wildfire that starts on Mt. St. Helena in the southernmost portion of the Evacuation Area and moves to the north. This is somewhat similar to the LNU Lightning Complex fire that affected the southern portion of the Evacuation Area.

The following evacuation study years are evaluated for each of the wildfire hazard scenarios described above.

- Baseline (2022) without Project
- Baseline (2022) plus Guenoc Valley Project Phase 1
- Cumulative (2040) without Project
- Cumulative (2040) plus Guenoc Valley Project Full Build-out

Evacuation time estimates were prepared using the Lake County Area-Wide Microsimulation Model (LAMM) that spans most of Lake County and was originally prepared for the Lake County/City Area Planning Council. The LAMM was prepared using a simulation-based Dynamic Traffic Assignment

[31] https://www.clerc.co/fireandforestry.html

(DTA) package called TransModeler. The LAMM was designed to interface with the Wine Country Interregional Partnership (WCIRP) travel demand model (TDM). The LAMM and WCIRP TDM are built on a shared geographic information system platform. The LAMM includes nearly every street in Lake County and was calibrated and validated based on criteria published by the Federal Highway Administration (FHWA) and Caltrans. The LAMM relies on a series of zones consistent with the WCIRP TDM, trip tables that identify trips between land uses in the origin zones and destination gateways, and the existing road network. LAMM estimates traffic and levels of congestion on 15-minute intervals and, as link congestion builds (i.e., roads fill with cars), it dynamically reassigns traffic to less congested routes if available. This is a dynamic approach to estimating trip assignment and identifying congested locations on the transportation network.

For this evacuation study, the road network in the LAMM was updated to include the roundabout at SR 29 and Hartmann Road that was completed in 2019. Current geometrics and traffic signal phasing/timing data was updated for all signalized intersections in the road network. Turn movement counts collected at 14 intersections on Friday, August 19, 2022 were input into the updated LAMM to confirm that the new model is accurately representing observed field conditions.

One modification to the transportation network was made in the LAMM for the cumulative (2040) analysis. For cumulative (2040) conditions, Segment 2C of the Konocti Corridor (formerly Lake 29 Improvement) was added to the LAMM network. The Konocti Corridor project would ultimately widen SR 29 to a four-lane expressway with access control between the communities of Lower Lake and Kelseyville. Segment 2C, which is currently under construction, is a 3.1-mile segment (from postmile 28.5 to 31.6) from just west of the junction with SR 175 to about one-half mile west of the signalized intersection at SR 281/Red Hills Road.

For both the Phase 1 and Build-out Project scenarios, a roundabout is added to the existing network at the intersection of SR 29 and Butts Canyon Road. The roundabout improvement at this intersection is identified as a Project mitigation measure to be constructed prior to the beginning of Phase 1 construction.

The following are key parameters of the evacuation demand estimates. The forecast occupancy and evacuation levels are conservative based on typical occupancy data for a summer weekend, surveys of prior evacuation behavior, and historic growth levels.

- Evacuation order issued at 4:00 pm on a Friday afternoon in August
- All homes are occupied for both community population groups and Project population groups
- 100 percent of residents for both community population groups and Project population groups in Evacuation Area evacuate
- 80 percent of employees for community population groups and 100 percent of employees for Project population groups are at their place of employment

- 85 percent hotel occupancy for community population groups and 100 percent hotel occupancy for Project population groups
- Forecast annual average growth of about 1.6 percent through the cumulative horizon year of 2040, which is more than double the rate of growth experienced in Lake County over the past decade

Traffic counts obtained for SR 29, the evacuation route with the highest volumes in the Evacuation Area, show that daily volumes are highest on Fridays when compared to Wednesday and Thursday counts. PM peak hour volumes are traditionally the highest hourly volumes of weekdays, and counts conducted at various locations along SR 29 indicate that the highest hourly volumes in the pm peak on a Friday occur between 4:00-5:00 pm, which is why the evacuation assessment is based on an evacuation order at 4:00 pm on a Friday in August when background volumes are at their highest.

The affected community population groups would be permanent residents, employees, and visitors/tourists who would be present during an evacuation in the Evacuation Area. The estimate of evacuation trips for community population groups assumes that 100 percent of all residential units are occupied, 85 percent of hotel units are occupied, and 80 percent of all employees are on-site when the evacuation order occurs on Friday at 4:00 pm. The estimate of evacuation trips for the Project population groups assumes the 100 percent of all Project residential and hotel units are occupied, and that 100 percent of all Project employees are on-site when the evacuation order occurs on Friday at 4:00 PM.

For the 2022 No Project evacuation scenario, the affected community population groups in the Evacuation Area include approximately 4,455 households, 1,214 second homes, 123 hotel rooms, 1,591 employees at work who live and work inside the Evacuation Area, 1,240 employees at work who work inside but live outside the Evacuation Area, and 1,414 employees at work who live inside but work outside the Evacuation Area. These population groups are estimated to generate a total of 13,542 evacuation-related trips.

For the 2040 No Project evacuation scenario, growth in households and employment was forecast based on land use forecasts in the Wine Country Travel Model. An overall growth of 28 percent in households and employment is forecast to occur on the South Lake County communities of Cobb, Hidden Valley Lake, and Middletown from 2022 to 2040.

Phase 1 of the Guenoc Valley Project would include or be assumed to include 401 estate units, 141 resort residential units, 127 hotel rooms, 610 employees, and 100 visitors on a Friday at 4:00 pm. These population groups are estimated to generate a total of 1,609 evacuation trips.

Full build-out of the Guenoc Valley Project would include or be assumed to include 1,400 estate units, 450 resort residential units, 400 hotel rooms, 1,220 employees, and 200 visitors on a Friday at 4:00 pm. These population groups are estimated to generate a total of 4,511 evacuation trips.

The Applicant would provide a weekday shuttle service for employees from the Middletown Housing Site to the Guenoc Valley Site. A parking lot for employees would be located within the Guenoc Valley Site, south of Butts Canyon Road across from the secondary entrance; employees would be shuttled from this parking lot to employment areas within the site. A total of 221 employees would live in the Middletown Housing Site and be shuttled to and from the Guenoc Valley site on a peak day. The applicant would acquire and provide storage for dedicated employee shuttle buses that can shuttle up to 221 employees from the Guenoc Valley Site back to the Middletown Housing Site (i.e., eleven 20-person buses at full occupancy of the Middletown Housing Site) during a full evacuation. The transportation analysis in the Final EIR indicates that up to 45 percent of hotel guests would arrive by shuttle, primarily from airports and other resorts to the south in the Bay Area. These hotel guests would not be able to evacuate from the resort in their own vehicles during an evacuation event and would require transportation assistance from the Project.

"Background" traffic is comprised of through trips on the evacuation routes that do not have an origin or destination in the Evacuation Area. Examples of background traffic on a late Friday afternoon in the summer are recreational trips destined for Lake County and employees returning to homes in communities north of the Evacuation Area from jobs in adjacent Napa or Sonoma Counties. Through trips for the Evacuation Area network were estimated based on daily and peak hour traffic counts collected in 2022 as well as origin-destination matrices extracted from the WCIRP TDM for a 2020 model scenario. To facilitate evacuation on SR 29 during the 2015 Valley Fire evacuation, southbound traffic on SR 29 was stopped at Lower Lake and northbound traffic on SR 29 was stopped at Tubbs Lake in Napa County by California Highway Patrol (CHP) and Napa sheriff deputies, respectively. These road closures, which stopped through traffic in both directions on SR 29, were made about 5 to 5.5 hours after the Valley Fire was initially reported. To provide a conservative assessment of evacuation conditions, this evacuation assessment does not assume closure of SR 29 to through traffic as occurred in the Valley Fire. As such, through traffic would continue to travel on the transportation network throughout the evacuation simulation period.

After determining the evacuation trip demand and associated transportation network, a dynamic traffic assignment with 30-minute intervals was performed that reflected departure times and congestion levels that informed overall evacuation time estimates (ETE). This assessment calculated the evacuation time estimates (last evacuee leaves the Evacuation Area) after an evacuation order was received by the public.

The following is a summary of evacuation time estimates for **Wildfire Scenario A** (Wildfire from North to South).

- Project-related evacuation trips from Phase 1, when added to baseline (2022) conditions, would add approximately 30 minutes (from about 4.5 hours to about 5 hours) in total evacuation time.

- Project-related evacuation trips from full build-out, when added to Cumulative no project (2040) conditions, would add approximately two hours and 30 minutes (from about 5 hours to about 7.5 hours) in total evacuation time.

The following is a summary of evacuation time estimates for **Wildfire Scenario B** (Wildfire from South to North).

- Project-related evacuation trips from Phase 1, when added to baseline (2022) conditions, would add approximately 30 minutes (from about 4 hours to about 4.5 hours) in total evacuation time.
- Project-related evacuation trips from full build-out, when added to Cumulative no project (2040) conditions, would add approximately two hours (from about 5 hours to about 7 hours) in total evacuation time.

Impact Summary

Wildfire Risk

The following summary addresses project density, project location in the landscape, and water supply and infrastructure. The Guenoc Valley Project will implement a comprehensive set of wildfire risk reduction measures, including but not limited to:

- addressing wildfire risk across multiple scales by identifying strategies that reduce risk at the building/lot site level, commercial and residential development nodes, and landscape scale;
- incorporating appropriate land uses to reduce fire behavior and provide for potential firefighter safety zones and temporary areas of refuge for the public, such as strategic placement of the golf course and polo field;
- expansion of vegetation management along roadways and incorporation of a third access route for emergency evacuation and emergency vehicles; and
- implementation of communication and maintenance measures that would occur from Project inception and throughout the duration of the Project.

The Guenoc Valley Project meets and exceeds state minimum requirements for wildfire safety by incorporating the above wildfire risk measures.

The new residential and commercial buildings would be developed in a concentrated pattern and surrounded by vineyards, a golf course, equestrian fields, and ranch agricultural uses that would buffer the developed area of the site from fires approaching the project and buffer the spread of any fires that start within the project site to off-site areas. Recent changes to the project include relocation of 64 hilltop residential lots from being closer to the WUI to a designated area within the project core.

For water supply, the project site has numerous lakes with the largest amount of impounded surface water in the region. A high-volume water supply through the existing irrigation system will be immediately available for all construction phases and will remain to support wildland fire water needs into the future. The presence of this volume of water supply exceeds the state's Minimum Fire Safe Regulations. A municipal-type fire hydrant system that meets the requirements of the California Fire Code will be installed with each new construction phase of the Project.

Impacts related to wildfire risk would be **less-than-significant**.

Emergency Vehicle Access

The following summary addresses emergency vehicle access to the Project and surrounding South Lake County communities.

The combination of the Emergency Response Center that would be constructed on-site as part of the Project with the provision of three emergency access points to the project (two on Butts Canyon Road and one via Grange Road) provides adequate emergency vehicle access to the project site from the closest fire stations. The inbound travel lane on each of these three on-site emergency access routes would be maintained by Project traffic management staff as directed by Emergency Response Center staff for first responders traveling to the project site from external stations. The Emergency Response Center constructed on the project site is located within three miles of all new buildings and would be able to respond to an on-site fire within about six minutes or less. The Southlake County Fire Protection District (Station 63) located in Hidden Valley Lake is located approximately 6 miles from the project site via SR 29 and Grange Road. The CAL FIRE Middletown Fire Station is located approximately 8 miles from the project site via SR 29 and Grange Road or approximately 9 miles from the project via SR 29 and Butts Canyon Road. There are nine fire stations that serve South Lake County communities including four along SR 175 in and near Cobb, two in Middletown, one in Hidden Valley Lake, one in Lower Lake, and the new Emergency Response Center that would be constructed as part of the project in Guenoc Valley. Nine additional fire stations are located in Clearlake, Kelseyville, and Lakeport to the north of the South Lake County communities.

The primary evacuation and emergency access routes for South Lake County are SR 29 and SR 175. Designated secondary routes include Bottleneck Road, Spruce Grove Road, Butts Canyon Road, Big Canyon Road, and Loch Lomond Road. Using funds from the CAL FIRE Fire Prevention Grant, the South Lake Fire Protection District recently purchased equipment and funded a crew to clear hazard vegetation 100 feet from the centerline in key areas along SR 29, Highway 175, and Butts Canyon Road – key evacuation and emergency access routes in South Lake County. The Lake County Wildfire Risk Reduction Project – Phase 1 will implement priority actions in the 2022 updated Lake County CWPP including about 45 miles of additional roadside clearance. These recent and ongoing roadside fuel reduction activities along SR 29, Highway 175 and Butts Canyon Road – in combination with the fact that all on-site roadways within the Project area will exceed the minimum California Fire Safe

Regulations with a 50-foot-wide fuel treatment on each side - will significantly reduce flame intensity along primary emergency vehicle access routes in South Lake County. The Lake County EOP identifies the county's emergency planning, organization, policies, and response to hazard situations associated with large scale events. Wildfire is identified as the highest Level 1 activation level. Directions for a large-scale evacuation are the responsibility of the Operations Section Coordinator and Section, in coordination with the appropriate field Incident Commander(s). The EOP also incorporates by reference hazard specific annexes including the Wildfire Fire Annex that provides the structure for coordinating interagency support for a local response to an incident. Upon activation of the Annex "contingency plan" for a wildfire by the Lake Operational Area Fire/Rescue Coordinator, tasks include working with Field Response Departments to update evacuation routes and shelter sites, creating an Incident Command Post, and identifying an Incident Commander. One of the actions is to pre-position resources and equipment. The Lake Operational Area Coordinator (Sheriff) will evaluate resources and determine whether mutual aid from any of the sixteen counties in Region II. First responders and evacuees usually travel in opposite directions and thus using opposing travel lanes. First responders also typically arrive at a wildfire well before evacuation orders are issued and congestion levels build. The Incident Commander and law enforcement personnel make decisions about evacuation orders and traffic management options such as converting a road to contraflow travel, including consideration of the ability to maintain emergency access for firefighters.

For all of the above reasons, impacts related to emergency vehicle access would be **less-than-significant**.

Evacuation

The following summary addresses whether the project would substantially impair an adopted emergency response plan or emergency evacuation plan, consistency with the County's adopted Safety Element, consistency with recommendations by the California Board of Forestry and Fire Protection regarding the safety of subdivisions pursuant to Public Resources Code section 4290.5, and the project's effect on evacuation of project residents as well as the existing population in surrounding South Lake County communities.

The Lake County Emergency Operations Plan (EOP) contains a Wildland Urban Interface Annex (WUI Annex). The WUI Annex establishes priorities, responsibilities, and assign tasks to coordinate response operations during wildfires. Wildland fire suppression, structure protection, and incident management are the responsibility of CAL FIRE in State Responsibility Areas, Lake County Fire Districts in Local Responsibility Areas, and the U.S. Forest Service and the Bureau of Land Management in designated Federal Lands. The Sheriff's Office manages evacuation notification, evacuation of residents, traffic control, and fire services emergency related requests. The WUI Annex also includes a contingency plan with actions such as notifying emergency response departments of anticipated emergencies, testing the County's emergency alert systems, and pre-establishing human

and animal evacuation shelters. The South Lake County Wildland Fire Preparation and Evacuation Plan describes pre-fire preparation recommendations, identifies primary and secondary evacuation routes, and describes evacuation notification levels. These plans do not provide evacuation traffic management strategies to address the new population that would be added by the Project in the southeast area of South Lake County. As such, the project may substantially impair an adopted emergency response plan by requiring development and documentation of new evacuation strategies.

Section 7.7 of the Lake County General Plan Health & Safety Element addresses Urban and Wildland Fire Hazards. The Health & Safety Element includes policies related to new development that call for consultation with fire service districts, encouraging cluster development, requiring development of wildland fire management plans, establishing fuel breaks around structures, implementing wildfire risk mitigation measures (i.e., cluster development, providing ongoing fire prevention maintenance activities, and providing an adequate private water supply), and using fire resistant building materials. The project design, wildfire prevention plan, and wildfire risk reduction measures are consistent with the relevant wildland fire hazard policies in the County's adopted Health & Safety Element.

Recommendations by the California Board of Forestry and Fire Protection regarding the safety of subdivisions pursuant to Public Resources Code section 4290.5 include creating secondary access to a subdivision, improvements to existing access roads, and other fire safety measures. The Guenoc Valley Project meets and exceeds state minimum requirements for wildfire safety by incorporating a comprehensive set of measures, including but not limited to providing three access and egress routes, building all project access roadways with a 50-foot-wide fuel treatment on each side that exceeds minimum Fire Safe Regulations, building a 25-foot-wide all-weather surface on all roadways, and providing two emergency helipads that will provide aerial support site access points. Recent changes in the project include a revised roadway plan with new connector roadways and with no dead-end, non-looped road segments that exceed one mile in length.

The evacuation time estimates are based on a mandatory evacuation order issued for the Evacuation Area on a typical Friday afternoon (i.e., at approximately 4:00 PM) during the summer season (i.e., August). The assessment assumes 100 percent occupancy of all project uses and all employees located on-site at the time of the evacuation order.

The estimated Phase 1 population of the project on a summer Friday afternoon, assuming 100 percent occupancy of all project uses and all employees on-site, is approximately 2,300 persons upon completion of all Phase 1 development. The existing population of the surrounding South Lake County communities on a typical summer Friday afternoon is approximately 14,800 persons. Under baseline conditions without the added project evacuation trips, estimated evacuation time for 100 percent evacuation of the South Lake County communities total about 4.5 hours for Wildfire Scenarios A and B. Under both Scenarios A and B, the Phase 1 Project evacuation trips are estimated

to add approximately 30 minutes in total evacuation time for 100 percent evacuation of South Lake County when combined with evacuation trips from the surrounding communities.

The estimated 2040 cumulative population of the project on a summer Friday afternoon, assuming 100 percent occupancy of all project uses and all employees on-site, is approximately 6,500 persons upon full build-out of the project. The 2040 population of the surrounding South Lake County communities on a typical summer Friday afternoon is estimated to be approximately 18,900 persons. Under future cumulative 2040 conditions without the added project evacuation trips, estimated evacuation times for 100 percent evacuation of the South Lake County communities are estimated to total about 5 hours for Wildfire Scenarios A and B. Under future cumulative 2040 conditions with Scenarios A and B, the project's Full Build-out evacuation trips are estimated to add approximately 2.5 hours and 2 hours for a 100 percent evacuation, respectively, in total evacuation time in South Lake County when combined with evacuation trips from the surrounding communities. The added evacuation time due to project evacuation trips for a 90 percent evacuation level, which is more representative of the level of residents who have chosen to evacuate in past wildfires, is 1.5 hours for Scenario A and 1 hour for Scenario B.

The added evacuation trips generated by the project and estimated changes in evacuation times caused by the proposed Project would require updates to the current evacuation plans and additional management of use of evacuation routes by community and project-related evacuation trips. Hotel guests arriving via shuttle will need transportation assistance during an evacuation. Thus, implementation of the proposed Project would impair an emergency response or emergency evacuation plan by requiring development and implementation of new evacuation strategies, and **impacts would be significant**.

MITIGATION MEASURES

The following mitigation measures are provided for the Phase 1 project-level impacts and programmatic full build-out impacts.

Phase 1 Project-Level Mitigation Measures

The following mitigation measures address the impacts identified in the project-level analysis of Phase 1 of the proposed Project. Phase 1 would include or be assumed to include 401 residential estate units, 141 resort residential units, 127 hotel rooms, off-site employee housing for 221 employees in Middletown, and an estimated 610 employees and 100 visitors on a Friday at 4:00 pm. The Phase 1 development is estimated to generate a total of approximately 1,610 evacuation trips on a summer Friday afternoon under 100 percent occupancy levels. Under both Scenarios A and B, the Phase 1 Project evacuation trips are estimated to add approximately 30 minutes in total evacuation time to evacuation routes in South Lake County when combined with evacuation trips from the surrounding communities. SR 29 would be the most heavily congested evacuation route during a full evacuation of South Lake County with bottlenecks occurring at the Hidden Valley Lake

community egress roads, at the signalized intersection with SR 52 in Lower Lake, and at the signalized intersection with SR 175 in Middletown.

The purpose of Phase 1 Mitigation Measures 5-1 through 5-4 is to reduce total evacuation times and accommodate evacuees from the proposed Project through implementation of a series of strategies that are summarized as follows.

1. SR 29 Evacuation Traffic Reduction Measure that stops through traffic on SR 29 during a full evacuation of South Lake County by stopping northbound traffic at Tubbs Lane in Napa County and southbound traffic at SR 53 in Lower Lake, thus reducing traffic levels on SR 29 during an evacuation.
2. Hidden Valley Lake Evacuation Traffic Management Measure that reduces evacuation times for Hidden Valley Lake, the most populous area of South Lake County, by using measures employed for the 2015 Valley Fire or comparable alternatives to manage traffic at key intersection bottlenecks on SR 29 at Hidden Valley Lake,
3. Guenoc Valley Project SR 29 Evacuation Traffic Reduction Measure that directs project evacuation trips away from the SR 29 corridor.
4. Traffic Signal Operational Enhancements at SR 29 traffic signals in Lower Lake and Middletown that would redistribute signal green time to the evacuating direction of traffic.
5. Dedicated Project Evacuation Shuttles for Hotel Guests that would access the Project via shuttles, taxis, or other shared ride vehicles.

The first two traffic strategies above were implemented during the 2015 Valley Fire by Lake County Sheriff and California Highway Patrol (CHP) officers, approximately five hours after the fire was originally reported, and proved effective at managing evacuating traffic. They are not assumed to be in place in the evacuation time estimate forecasts for this evacuation assessment.

MM 5-1 **Prepare a South Lake County Evacuation Traffic Management Plan to reduce near-term evacuation times, Incorporate in Updated Lake County Emergency Operations Plan (EOP), and Implement Evacuation Traffic Management Measures**

The applicant shall fund the administrative costs for preparation and adoption of a South Lake County Evacuation Traffic Management Plan, which shall be adopted prior to the issuance of the first certificate of occupancy for Phase 1. Lake County shall be the Lead Agency for adoption of the plan and implementation of the traffic management measures, working in collaboration with other responsible agencies as noted below. The Evacuation Traffic Management Plan strategies, in combination with other mitigation measures described below, shall achieve a 15-minute reduction in total evacuation times for a full evacuation of South Lake County, thereby reducing the 30 minutes in added overall evacuation time due to Phase 1 Project evacuation trips. The Traffic Management Plan shall be subject to the approval of the Lake

County Office of Emergency Services (OES), the Lake County Sheriff, the South Lake County Fire Protection District, Caltrans, and the California Highway Patrol (CHP). The approved version of the South Lake County Evacuation Traffic Management Plan shall be incorporated into an updated version of the Lake County Emergency Operations Plan (Lake County Office of Emergency Services) and the Lake County Community Wildfire Protection Plan (CWPP), with evacuation management strategies and improvement measures to address major bottlenecks in the South Lake County evacuation network, such as the following.

- SR 29 Evacuation Traffic Reduction Measure – at the time of an evacuation order for a full South Lake County evacuation and as determined by the Incident Commander and County Sheriff, CHP and/or other police enforcement personnel shall implement measures to stop through traffic on SR 29 through the evacuation area such as stopping northbound SR 29 traffic at Tubbs Lane in Napa County and southbound SR 29 traffic at SR 53 in Lower Lake, thus reducing traffic levels on SR 29 during an evacuation. This measure was implemented during the 2015 Valley Fire, approximately five hours after the fire was originally reported, and proved effective at relieving evacuation congestion levels. This measure would prevent inbound traffic on SR 29 from accessing the South Lake County evacuation network but would allow outbound evacuating vehicles to exit via SR 29. It would apply similarly for study Scenarios A and B.
- Hidden Valley Lake Evacuation Traffic Management Measure – at the time of an evacuation order for a full South Lake County evacuation and as determined by the Incident Commander and County Sheriff, Lake County Sheriff and/or other police enforcement personnel shall implement traffic management for the Hidden Valley Lake community that addresses bottlenecks at the intersections of SR 29 and Hidden Valley Lake community egress roads. As was the case for the Valley Fire when the Lake County Sheriff directed evacuating vehicles from the northern half of the Hidden Valley Lake community to the north on SR 29 and evacuating vehicles from the southern half of the community to the south on SR 29, the officers would direct Hidden Valley Lake evacuating traffic away from the direction of the wildfire and in a coordinated direction to reduce or avoid conflicting movements at the intersections. This measure would apply similarly for study Scenarios A and B.
- Guenoc Valley Project SR 29 Evacuation Traffic Reduction Measure – at the time of an evacuation order for a full South Lake County evacuation, evacuating project traffic shall be directed to alternate routes to SR 29. Unless precluded by wildfire, evacuating project traffic shall be directed to

the planned project egress intersections on Butts Canyon Road and to the south on Butts Canyon Road. This measure would not apply if Butts Canyon Road were closed due to wildfire. In that event (such as under Scenario B), evacuating project trips would be directed to travel north on Butts Canyon Road (or via Grange Road as needed), south on SR 29 to Middletown, and then north on SR 175 (presuming that SR 29 to the south over Mt. St. Helena was also closed). Additional details are described for this measure in Mitigation Measure 5-2.

- SR 29 Traffic Signal Evacuation Operational Enhancement Measures – a description of the traffic signal evacuation operational enhancement measures described in Mitigation Measure 5-3 shall be included in the Updated Lake County EOP. This measure would apply similarly for study Scenarios A and B.

MM 5-2 Reduce Evacuation Time Impacts on SR 29 Through Guenoc Valley Project SR 29 Traffic Evacuation Reduction Measure

Prior to occupancy of any project uses, the applicant shall install variable message signs at the outbound lanes of the three project egress roads that connect to Butts Canyon Road and Grange Road. Lake County shall be the Lead Agency to oversee installation of the variable message signs within the project site. The variable message signs shall be connected to the on-site Emergency Response Center so that evacuation-related messages can be controlled by fire personnel managing the evacuation. At the time of an evacuation order for a full South Lake County evacuation, evacuating project traffic shall be directed to alternate routes to SR 29. Unless precluded by wildfire, evacuating Project traffic shall be directed to the planned egress intersections on Butts Canyon Road and to the south on Butts Canyon Road. Butts Canyon is a lightly traveled and populated rural road that would provide access to Napa and Solano counites. Traveling to the south on Butts Canyon Road would be the most direct route for evacuating trips from the proposed Project residential units and hotel uses whose primary destination would be to the south. This measure would be implemented by staff in the on-site Emergency Response Center.

A large share of the evacuating trips from the proposed Project residential units and hotel uses would be destined to the south where residents or guests would return to homes in the Bay Area or access airports or hotels. The evacuation time estimates presented earlier in this assessment are based on an equal distribution between SR 29 and Butts Canyon Road of project evacuation trips destined to the south.

Under this measure, all traffic evacuating from the proposed Project via Butts Canyon Road would turn left and travel to the south unless precluded by wildfire. Directing all Project evacuation trips exiting onto Butts Canyon Road to turn left, which is the most immediate evacuation route to the south, would reduce congestion levels on SR 29 south of Butts Canyon Road through Middletown that otherwise would be exacerbated by Project-generated evacuation trips. With implementation of this mitigation measure, the only Project evacuation trips that would use SR 29 would be those with destinations to the north (e.g., Lower Lake, Clear Lake, Kelseyville, etc.), which would be directed to use the Grange Road evacuation route to access SR 29. The total number of Phase 1 Project evacuation trips that would be assigned to Butts Canyon Road with this mitigation measure, under Scenario A (which has the higher share of evacuation trips assigned to the south), would be approximately 1,330 vehicle trips over a four-hour window as shown in Figure 4-3. This measure would not apply if Butts Canyon Road were closed due to wildfire. For this condition that could occur under Scenario B, evacuating project trips would be directed to travel north on Butts Canyon Road (or via Grange Road as needed), south on SR 29 to Middletown, and then north on SR 175 (presuming that SR 29 to the south over Mt. St. Helena was also closed). To facilitate an evacuation under a condition when Butts Canyon Road to the south of the project is closed due to wildfire and project traffic must evacuate to the north on Butts Canyon Road, the roundabout that will be constructed by the project applicant at the SR 29/Butts Canyon Road intersection will include a southbound bypass lane to increase intersection capacity.

MM 5-3 **Implement SR 29 Traffic Signal Evacuation Operational Enhancement Measures**

Prior to issuance of the first certificate of occupancy for any Project uses, the applicant shall design, obtain permits for, and install improvements to the signalized intersection of SR 29/SR 53 intersection in Lower Lake and the two signalized intersections on SR 29 in Middletown (SR 175 and Wardlaw Street). The improvements would be funded by the project applicant who shall obtain permits from Caltrans and/or Lake County. The variable message signs and traffic signal controllers shall be connected to Caltrans and Lake County traffic operations staff so they can be managed remotely during an evacuation. Improvements at the SR 29/SR 53 intersection in Lower Lake shall include extending the length of the northbound left turn pocket by 175 feet to a length of approximately 400 feet which could be accomplished by restriping the existing striped median, installing variable message signs on three approaches (i.e., eastbound, southbound, and westbound), and developing and installing wildfire signal timing plans that can be implemented by County staff during a wildfire that significantly extend maximum green times on the northbound approach. Improvements at the two intersections on SR 29 in

Middletown include developing and installing wildfire signal timing plans that can be implemented by County staff during a wildfire that significantly extend maximum green times on the northbound and/or southbound approaches depending on conditions.

The traffic signals located on SR 29 in Lower Lake at SR 53 and in Middletown at SR 175 and Wardlaw Street are bottlenecks during a wildfire event in South Lake County. These bottlenecks existed in prior wildfire evacuations and would be exacerbated by added Project evacuation trips. This measure would involve preparing and implementing traffic signal timing plans for wildfire events. The traffic signal timing plans for wildfire events would be designed for different scenarios and would significantly extend green times on key approaches. For example, a signal timing plan for a wildfire in South Lake County would significantly extend green time for northbound traffic at the SR 29/SR 53/Main Street intersection in Lower Lake until police resources could arrive at the intersection to manage traffic congestion. This measure would also require extending the length of the northbound left turn pocket (which currently has a storage length of approximately 225 feet) and installing variable message signs on the approaches to the SR 29/SR 53/Main Street intersection in Lower Lake. The variable message signs would be installed on the eastbound, southbound, and westbound approaches to notify drivers that an evacuation notice has been issued for South Lake County and that traveling to southbound SR 29 is prohibited.

The above improvements would be funded by the applicant and implemented by Lake County in collaboration with Caltrans. The implementation of improvements within the Caltrans right-of-way are beyond the control of Lake County and it is possible that permits are not issued for construction.

MM 5-4 Provide Dedicated Project Evacuation Shuttles for Phase 1 Hotel Uses

Prior to the issuance of the first certificate of occupancy for any Project hotel uses, the applicant shall acquire and provide storage for dedicated evacuation shuttle buses that can serve 45 percent of all guests (i.e., six 20-person buses at full occupancy of all Phase 1 hotel uses). Applicant shall identify and provide signage for bus stop evacuation pick-up zones at all hotels, and identify evacuation routes and shelter locations. Applicant shall designate shuttle drivers and provide ongoing training for staff and drivers for the shuttle buses.

The transportation analysis conducted for the Final EIR indicates that 45 percent of hotel guests will arrive by shuttle. These hotel guests would not be able to evacuate from the resort in their own vehicles during an evacuation event and would require transportation assistance from the Project. Phase 1 of the Project would provide 127

hotel rooms. At full occupancy with two guests per room, approximately 114 guests would have traveled to the resort via shuttle. This equates to 0.9 guests arriving via shuttle per room.

The Project shall obtain, maintain, and store dedicated evacuation shuttles for hotel guests, as individual hotel projects are completed, at a rate of 0.9 shuttle bus seats per room. If shuttle buses with a 20-person capacity are acquired, a total of six dedicated evacuation shuttle buses for hotel guests would be provided for the 127 hotel units when all Phase 1 hotels are completed. The Project shall train employees to operate the shuttles and be aware of alternative routes to designated shelter locations.

Full Build-Out Program-Level Mitigation Measures

A subsequent project-level CEQA assessment of full build-out evacuation impacts will be required prior to implementation of development beyond the Phase 1 land use program. The following mitigation measures address the impacts identified in this program-level analysis of full build-out of the proposed Project. The measures are programmatic in nature and may be refined following additional project-level CEQA analysis based on more specific details regarding future Project phases that will be included in application submittals for such phases, evolving evacuation analysis methods, any future changes to roadway infrastructure and/or capacity, and/or new or enhanced evacuation mitigation strategies.

Full build-out of the Project as permitted by the Project's General Plan and Zoning Ordinance amendment is assumed to include up to 1,400 residential estate units, 450 resort residential units, 400 hotel rooms, off-site employee housing for 221 employees in Middletown, and an estimated 1,220 employees and 200 visitors on a Friday at 4:00 pm. Full build-out of the Project would generate a total of approximately 4,500 evacuation trips that would begin within four hours of the evacuation notice on a summer Friday afternoon under 100 percent occupancy levels. The full build-out Project evacuation trips are estimated to add approximately two to two and a half hours to the total evacuation time estimates (ETEs) (i.e., the time until the last evacuee leaves the Evacuation Area) for evacuation routes in the Evacuation Area when combined with evacuation trips from the surrounding communities under cumulative 2040 conditions. As with Phase 1 evacuation conditions, SR 29 would be the most heavily congested evacuation route during a full evacuation of the Evacuation Area, with bottlenecks occurring at the Hidden Valley Lake community egress roads, at the signalized intersection with SR 52 in Lower Lake, and at the signalized intersection with SR 175 in Middletown.

The purpose of Full Build-out Program-Level Mitigation Measures 5-5 through 5-6 is to reduce total evacuation times and accommodate evacuees from the proposed Project through implementation of strategies that are summarized as follows.

1. Evacuation Time Reduction Strategies that reduce overall evacuation time estimate (ETE) for the Evacuation Area.
2. Dedicated Project Evacuation Shuttles for Hotel Guests that would have arrived to the Project via shuttles, taxis, or other shared ride companies.

The total number of evacuation trips generated by the Project at full build-out, with implementation of Mitigation Measure 5-2, would exceed the capacity of Butts Canyon Road as a two-lane facility under Scenario A. With implementation of Mitigation Measure 5-2, which would shift Project evacuation trips that otherwise would be likely to travel southbound on SR 29 to instead travel south via Butts Canyon Road, the total number of Project evacuation trips that would be estimated to travel southbound along Butts Canyon Road would be approximately 3,400 one-way vehicle trips under Scenario A, and about 2,040 one-way vehicle trips under Scenario B over a four-hour window after the 4:00 pm evacuation notice is issued under the Friday afternoon study scenario. This number of trips would exceed the peak hour capacity of the single southbound lane on Butts Canyon Road and cause excessive queuing during the evacuation period under Scenario A (wildfire from north to south). Mitigation Measure 5-2 would not apply if Butts Canyon Road were closed due to wildfire. For this condition that could occur under Scenario B (wildfire from south to north), evacuating project trips would be directed to travel north on Butts Canyon Road (or via Grange Road as needed), south on SR 29 to Middletown, and then north to SR 175 (presuming that SR 29 to the south over Mt. St. Helena was also closed). Under this condition, the number of Project evacuation trips that would travel northbound along Butts Canyon Road would similarly exceed the capacity of a single northbound lane and cause excessive queuing on northbound Butts Canyon Road.

MM 5-5 **Prepare a South Lake County Evacuation Plan to reduce cumulative evacuation times, Incorporate in an Updated Lake County Emergency Operations Plan (EOP), and Implement Evacuation Time Reduction Demand, Supply, and/or Communication Strategies**

As part of the future project-level CEQA evacuation assessment of full build-out of the Project and prior to issuance of the first certificate of occupancy for any uses beyond those included in Phase 1, the Project shall develop evacuation time reduction strategies to reduce forecast evacuation levels in the Evacuation Area, which the Project will be required to implement after occupancy of such uses. The measures would include any combination of demand, supply, and/or communication strategies as described below such that (1) the added evacuation time estimates (ETEs) (i.e., time until the last evacuee leaves the Evacuation Area) due to Project full build-out evacuation trips shall not exceed one hour beyond the total cumulative no project ETEs for a full evacuation of the Evacuation Area under either Scenario A or B, and (2) the estimated number of added Project full build-out evacuation trips on Butts Canyon Road shall not exceed its evacuation capacity.

Prior to issuance of the first certificate of occupancy for any use beyond those included in Phase 1, the applicant shall fund the administrative costs for preparation and adoption of a South Lake County Evacuation Plan (Evacuation Plan) that includes strategies to reduce overall cumulative ETEs for the Evacuation Area as described above, and the Evacuation Plan shall have been approved by the Lake County Office of Emergency Services (OES), the Lake County Sheriff, the South Lake County Fire Protection District, and the California Highway Patrol (CHP). Prior to the approval of the Evacuation Plan, a project-level CEQA analysis shall be conducted that analyzes the impacts of any proposed use beyond those included in Phase 1 on evacuation routes, and confirms that the strategies included in the Evacuation Plan meet the performance standards described above related to added ETEs and the evacuation capacity of Butts Canyon Road. The approved version of the South Lake County Evacuation Plan shall be incorporated into an updated version of the Lake County Emergency Operations Plan (Lake County Office of Emergency Services).

- Demand Strategies – demand-side strategies that may reduce evacuation time estimates (ETEs) and evacuation trips include vehicle reduction and phased evacuation measures. A vehicle reduction strategy may include a combination of land use program reductions and/or measures to increase vehicle occupancy (i.e., additional shuttles). A community-wide policy encouraging households to limit the number of evacuating vehicles to one per household is another demand reduction strategy that could help reduce overall evacuation times. Reduction of the number of housing units shall be implemented as a strategy only if implementation of all other feasible demand-side, supply-side, and communication strategies would not reduce ETEs or exceedance of the capacity of Butts Canyon Road sufficiently to meet the performance standards described above.
- Supply Strategies – supply-side strategies that may reduce ETEs include road lane widening, shoulder widening to provide an additional egress lane, contraflow lane operations, and intersection traffic control measures.
- Communication Strategies – communication strategies that may reduce ETEs include early warning systems, enhanced communication systems, and dynamic route guidance and monitoring.

The above strategies are programmatic in nature and may be refined following the additional project-level CEQA analysis described above based on more specific details regarding future Project phases that will be included in application submittals for such phases, evolving evacuation analysis methods, any future changes to

roadway infrastructure and/or capacity, and/or new or enhanced evacuation mitigation strategies.

The following provides a description of evolving wildfire evacuation strategies and an illustrative combination of strategies to accomplish the stated performance standard. The illustrative combination is described in the chronological order of an evacuation beginning with wildfire detection. New wildfire early detection systems technology including wildfire cameras, smoke sensors, gas sensors, and drones is being developed and employed to provide more time for evacuation notification. Systems have been developed to analyze data collected from detection devices using artificial intelligence and cloud-based tools. Wildfire early detection systems technology is relatively new and data to quantify the effectiveness of the systems on reducing evacuation times based on actual applications is pending.

Enhanced communications systems can take the form of hardened communication systems to maintain power for communications infrastructure like cell towers during wildfire, improved notification systems for evacuation orders, and/or traffic monitoring and wayfinding (i.e., variable message signs) that can be used to provide dynamic traffic guidance to respond to evacuation route bottlenecks and changing conditions. Communications systems have the potential to allow evacuees to begin their evacuation sooner and/or better manage evacuations in progress, but may have varying effects on the amount of added evacuation time from the time of the evacuation order.

An alternative evacuation approach that would be supported by enhanced communication systems is a managed and phased evacuation declaration for South Lake County communities rather than a single mass evacuation as analyzed. Evacuating in phases, based on vulnerability, location, or other factors, could enable subsequent traffic surges on major evacuation routes to be reduced and managed over a longer time frame and could be planned to result in traffic levels that flow more efficiently than when mass evacuations include large areas evacuating simultaneously. Law enforcement personnel and Office of Emergency Services staff would be responsible for ensuring that evacuations are phased appropriately, taking into consideration the vulnerability of communities when making decisions. A phased evacuation approach was applied for the 2015 Valley Fire.

In the event of an evacuation declaration, law enforcement and the on-site Emergency Response Center staff would have the option to conduct a phased evacuation of Guenoc Valley Project evacuees, relocate evacuees within the project, and/or instruct evacuees to shelter at temporary refuge areas such as the maintained polo field, golf course, grazed areas, and vineyards.

Intersection traffic control measures such as installation of traffic signals for emergency traffic management along Butts Canyon Road at Snell Valley Road and at Howell Mountain Road in Pope Valley is a supply strategy that would enhance management of traffic at the two primary cross-streets in the approximately 10-mile section of Butts Canyon Road south of the project.

A supply strategy in South Lake County that would benefit the most congested corridor is the widening of shoulders on SR 29 sufficient to provide shoulder evacuation lanes, perhaps initially in the northbound direction from Hidden Valley Lake to Lower Lake. The State Route 29 South Corridor Engineered Feasibility Study (2014) prepared for Caltrans District 1 and Lake County/City Area Planning Council (Lake APC) called for shoulder widening along segments of SR 29 between Middletown and Lower Lake.

The above early detection, communication, and supply strategies could be applied in combination to reduce overall evacuation time estimates (ETEs), but it is possible that they might not accomplish the ETE reduction performance standard. If those strategies do not achieve the performance standard, the remaining ETE reduction would need to come from demand-side strategies that would include additional shuttles for hotel guests but would primarily involve reducing the number of project evacuation trips by reducing the amount of development that would occur between Phase 1 and full build-out of the Project. This would involve reduction of the 1,400 estate units and estimated 1,220 employees that would generate up to 80 percent of all Project evacuation trips at full build-out.

MM 5-6 **Provide Dedicated Project Evacuation Shuttles for Full Build-out Hotel Uses**

Consistent with Mitigation Measure 5-4, prior to the issuance of the first certificate of occupancy for any new hotel uses beyond those included in Phase 1, the applicant shall acquire and provide storage for dedicated evacuation shuttle buses that can serve 45 percent of all guests. Applicant shall identify and provide signage for bus stop evacuation pick-up zones at all hotels and identify evacuation routes and shelter locations. Applicant shall designate shuttle drivers and provide ongoing training for staff and drivers for the shuttle buses, including information on alternative evacuation routes and shelter locations. If shuttle buses with a 20-person capacity are acquired, a total of up to eighteen dedicated evacuation shuttle buses for hotel guests would be provided for up to 400 hotel units when all hotels are completed.

Significance After Mitigation Measures

The following is a summary of the effect of implementation of the above mitigation measures on impacts related to emergency response or emergency evacuation plans.

Phase 1 Project-Level Mitigation Measures

Under baseline conditions without the added project evacuation trips, estimated total evacuation times for 100 percent evacuation of the South Lake County communities total about 4.5 hours for Wildfire Scenarios A and B. Under both Scenarios A and B, the Phase 1 Project evacuation trips are estimated to add approximately 30 minutes in total evacuation time in South Lake County when combined with evacuation trips from the surrounding communities.

The Phase 1 project-level mitigation measures would reduce impacts associated with impairing the current Lake County Emergency Operations Plan by funding the administrative costs for preparation and adoption of a South Lake County Evacuation Traffic Management Plan, which shall be adopted prior to the issuance of the first certificate of occupancy for Phase 1. The project would construct the new on-site Emergency Operations Center, providing a new fire station that would serve the project site as well as the nearby communities of Hidden Valley Lake and Middletown.

Unless precluded by wildfire, all evacuating project traffic shall be directed to the planned project egress intersections on Butts Canyon Road and then to the south on Butts Canyon Road. Traveling to the south on Butts Canyon Road would be the most direct route for evacuating trips from the proposed Project residential units and hotel uses whose primary destination would be to the south where residents or guests would return to homes in the Bay Area or to access airports or hotels. This mitigation measure would eliminate adding project evacuation trips on SR 29, which is the major evacuation route for existing South Lake County communities.

Additional Phase 1 mitigations include preparing and implementing traffic signal operational improvements at previous evacuation bottleneck locations along SR 29, including a southbound bypass lane in the roundabout that will be constructed by the project applicant at the SR 29/Butts Canyon Road intersection, and providing a fleet of dedicated evacuation shuttles with approximately 114 seats, for the 127 Phase 1 hotel rooms, for use in evacuating hotel guests that initially travel to the site via shuttle, taxi, or other shared ride vehicles.

Recent and ongoing roadside fuel reduction activities along SR 29, Highway 175 and Butts Canyon Road – in combination with the fact that all on-site roadways within the Project area will exceed the minimum California Fire Safe Regulations with a 50-foot-wide fuel treatment on each side - will significantly reduce flame intensity along primary evacuation routes.

Wildfire evacuations occurred in South Lake County communities surrounding the Guenoc Valley Project during the 2020 LNU Lightning Complex Fire, the 2015 Valley Fire, and the 2015 Jerusalem

Fire. Interviews with first responders, combined with reviews of fire and media reports, indicate that no one died in a vehicle attempting to evacuate in Lake County during these fires.

A summary of Phase 1 Project-Level Mitigation Measures is provided below.

- Mitigation Measure 5-1 would require the project applicant to fund the administrative costs for preparation and adoption of a South Lake County Evacuation Traffic Management Plan. The Traffic Management Plan strategies, in combination with other mitigation measures described below, shall be designed to achieve a 15-minute reduction in total evacuation time estimates (ETEs) for a full evacuation of the Evacuation Area, thereby reducing the 30 minutes in added overall ETEs due to Phase 1 project evacuation trips. The South Lake County Evacuation Traffic Management Plan shall be incorporated into an updated version of the Lake County Emergency Operations Plan (Lake County Office of Emergency Services) with evacuation management strategies and improvement measures to address major bottlenecks in the South Lake County evacuation network. The measures shall include an SR 29 Evacuation Traffic Reduction Measure, a Hidden Valley Lake Evacuation Traffic Management Measure, a Guenoc Valley Project SR 29 Evacuation Traffic Reduction Measure, and a SR 29 Traffic Signal Operational Enhancement Measure.
- Mitigation Measure 5-2 would reduce evacuation time impacts on SR 29 through implementation of a Guenoc Valley Project SR 29 Traffic Evacuation Reduction Measure. At the time of an evacuation order for a full evacuation of the Evacuation Area, evacuating project traffic shall be directed to alternate routes to SR 29. Unless precluded by wildfire, evacuating project traffic shall be directed to the planned project egress intersections on Butts Canyon Road and to the south on Butts Canyon Road. Traveling to the south on Butts Canyon Road would be the most direct route for evacuating trips from the proposed Project residential units and hotel uses whose primary destination would be to the south where residents or guests would return to homes in the Bay Area or to access airports or hotels. This measure would be implemented by staff in the on-site Emergency Response Center.
- Mitigation Measure 5-3 would prepare and implement traffic signal operational improvements at evacuation bottleneck locations along SR 29 including implementation of evacuation signal timing plans as well as modifying the striping on the south leg of the SR 29/SR 53 intersection in Lower Lake, that is a bottleneck during evacuations, to extend the length of the northbound left turn lane to provide additional storage through restriping of the striped median. This measure would improve evacuation traffic flows by increasing the percentage of green time allocated at traffic signals to the primary evacuation traffic flow direction during a South Lake County evacuation (i.e., northbound at SR 29/SR 53). A benefit is that the evacuation signal timing plans could be activated by Public Works staff as a quick response measure at the beginning of evacuations when police resources are not available to manage traffic at the signalized intersections.
- Mitigation Measure 5-4 would provide a fleet of dedicated evacuation shuttles with approximately 114 seats, for the 127 Phase 1 hotel rooms, for use in evacuating hotel guests

that initially travel to the site via shuttle, taxi, or other shared ride vehicles. If some of the on-site shuttles are not needed for evacuation of hotel occupancy levels due to less than 100 percent occupancy or other factors, the applicant has indicated they may offer shuttles to first responders for use if needed to evacuate residents in the surrounding communities.

Full Build-Out Program-Level Mitigation Measures

As noted previously, the analysis of full build-out conditions is conducted at a program-level and implementation of any development beyond Phase 1 will require a future project-level CEQA evacuation assessment. Construction of Phase 1 is anticipated to be spread out over approximately 8-10 years, so additional development beyond Phase 1 would occur in 2035 or later.

Under future cumulative 2040 conditions 100 percent evacuation conditions without the added project evacuation trips, estimated evacuation times for 100 percent evacuation of the South Lake County communities are estimated to total about 5 hours for Wildfire Scenarios A and B. Under future cumulative 2040 conditions with Scenarios A and B, the Full Build-out evacuation trips are estimated to add approximately 2.5 hours and 2 hours for a 100 percent evacuation level, respectively, in total evacuation time in South Lake County when combined with evacuation trips from the surrounding communities. The added evacuation time for a 90 percent evacuation level, which is more representative of the level of residents who have participated in evacuations in past wildfires, is 1.5 hours for Scenario A and 1 hour for Scenario B.

The full build-out program-level mitigation measures would reduce impacts associated with impairing the current Lake County Emergency Operations Plan by developing additional evacuation time reduction strategies to reduce forecast evacuation levels in the Evacuation Area, which the Project will be required to implement after occupancy of such uses. The applicant shall fund the administrative costs for preparation and adoption of a South Lake County Evacuation Plan (Evacuation Plan) that includes strategies to reduce overall cumulative evacuation time estimates (ETEs) (i.e., time until the last evacuee leaves the Evacuation Area) for the Evacuation Area such that (1) the added ETEs due to Project full build-out evacuation trips shall not exceed one hour beyond the total cumulative no project ETEs for a full evacuation of the Evacuation Area under either Scenario A or B, and (2) the estimated number of added Project full build-out evacuation trips on Butts Canyon Road shall not exceed its evacuation capacity. The measures would include any combination of demand, supply, and/or communication strategies. Reduction of the number of housing units shall be implemented as a strategy if implementation of all other feasible demand-side, supply-side, and communication strategies would not reduce ETEs or avoid exceedance of the capacity of Butts Canyon Road sufficiently to meet the performance standards described above.

Given that the build-out program-level mitigation measures would not be implemented until 2035 (i.e., after Phase 1 is completed) or later, there may be a number of candidate evacuation strategies that could be available based on developing technologies that are difficult to quantify today.

- A San Francisco company called Pano AI has developed a system that uses panoramic cameras installed on mountaintops and artificial intelligence software to provide early detection of wildfires in remote areas. The South Lake County Fire Protection District has engaged Pano to beta test four camera installations in the peaks around Middletown, including on Mount St. Helena. The ALERT Wildfire initiative developed by academics about eight years ago has expanded to about 850 cameras in California. Drones are also being used for early wildfire detection. The benefit of emerging AI technology is that it would not require human observers to spot fires via the camera feeds.
- The development of autonomous or self-driving vehicles could provide an opportunity for a fleet of specialized vehicles to be used to evacuate vulnerable people during a wildfire. Autonomous vehicles could also improve traffic flow during an evacuation as they would journey closer together at a constant rate of speed.

Finally, Caltrans plans to implement several improvements along SR 29, the primary evacuation corridor serving South Lake County, that are not assumed to be in place in the evacuation assessment as they are either not fully designed or fully funded yet. The most significant example is Phase 2A and 2B of the Konocti Corridor (formerly Lake 29 Improvement) project that will ultimately widen SR 29 to a four-lane expressway with access control between the communities of Lower Lake and Kelseyville. Segment 2C is currently under construction and scheduled to be complete by the end of 2024 according to the Caltrans Milestone Report for Lake County (August 10, 2023). Phase 2A and 2B are not yet fully funded but scheduled for completion by the end of 2030. The SR 29 South Corridor Engineered Feasibility Study (2014) prepared by Caltrans identified a series of planned improvements along SR 29 between the Lake County/Napa County line and Lower Lake. Based on consultation with Rex Jackman (Caltrans District 1 Office Chief of Transportation Planning/South Counties), Caltrans is in the early project development stages of designing capacity improvements at the signalized intersection of SR 29/Wardlaw Street intersection in Middletown. Other improvements identified in the Caltrans Milestone Report along SR 29 in South Lake County include widening of a 1.5 mile segment of SR 29 between Butts Canyon Road and Grange Road to provide wider shoulders (end construction date December 2028), widening and channelizing of a 0.8 mile segment of SR 29 in south Middletown between Central Park Road and Young Street (end construction date January 2029), and widening of a 0.4 mile segment of SR 29 south of Lower Lake to provide left turn channelization at C Street (end construction date December 2027).

- A summary of Full Build-Out Program-Level Mitigation Measures is provided below. Mitigation Measure 5-5 would require development of a South Lake County Evacuation Plan to reduce cumulative evacuation time estimates (ETEs), approval of the plan by local agencies, incorporation of the approved South Lake County Evacuation Plan into an Updated Lake County Emergency Operations Plan (EOP), and implementation of evacuation time reduction demand, supply, and/or communication strategies such that (1) the added evacuation time due to Project full build-out evacuation trips shall not exceed one hour beyond the total cumulative no project ETEs for a full evacuation of the Evacuation Area

under either Scenario A or B, and (2) the estimated number of added Project full build-out evacuation trips on Butts Canyon Road shall not exceed its evacuation capacity.

- Mitigation Measure 5-6 would provide a fleet of dedicated evacuation shuttles with up to 360 seats, for the up to 400 hotel rooms at full build-out of the Project, for use in evacuating hotel guests that initially travel to the site via shuttle, taxi or shared ride vehicles. If some of the on-site shuttles are not needed for evacuation of hotel occupancy levels due to less than 100 percent occupancy or other factors, the applicant has indicated they may offer shuttles to first responders for use if needed to evacuate residents in the surrounding communities.

The Guenoc Valley Project meets and exceeds state minimum requirements for wildfire safety by incorporating a comprehensive set of measures. The *Maha Guenoc Valley Wildfire Prevention Plan (WPP)* describes an integrated approach to wildfire management for the project. This plan includes consideration of the site's wildfire history as well as vegetative, topographic, and climatic wildfire risks. These risk patterns inform a series of wildfire prevention strategies for the project that contribute to a wildfire resilient setting. This includes fire breaks comprised of access roads with a 50' fuel reduction zone on each side, irrigated equestrian fields and golf course greens, and irrigated vineyards. The golf course and polo field provide potential firefighter safety zones and temporary areas of refuge for the public. The ranch has numerous lakes with the largest amount of impounded surface water in the region.

The Project would provide three evacuation routes and a new on-site Emergency Response Center with funding for firefighters. Wildfire prevention infrastructure includes an underground electric network, early wildfire detection system, emergency notification siren system, and helipads. All buildings will be constructed according to California building codes and WUI standards. During construction, the Project will pay for the Lake County Fire Protection District to hire and train new emergency responders.

The mitigation measures require preparation of a South Lake County Evacuation Traffic Management Plan and incorporation into an updated Lake County Emergency Operations Plan (EOP) prior to the issuance of the first certificate of occupancy for Phase 1. The Project would thus not impair implementation of the EOP. Evacuation management strategies and improvement measures are identified as mitigations to address bottlenecks in the evacuation network including an SR 29 evacuation traffic reduction measure to stop through traffic on SR 29 through South Lake County during an evacuation, a roundabout at SR 29 and Butts Canyon Road with a southbound bypass lane, a Hidden Valley Lake evacuation traffic management measure, a Guenoc Valley Project measure to reduce project traffic on SR 29 that serves as the community's primary evacuation route, traffic signal operational upgrades on SR 29, variable message signs on the approaches to the SR 29/SR 53/Main Street intersection in Lower Lake, and dedicated project evacuation shuttles for 45 percent of hotel guests. These measures would be documented in the EOP and reduce the 30 minutes of added evacuation time forecast with Phase 1 of the project.

Since the analysis of full build-out conditions is conducted at a program-level and implementation of any development beyond Phase 1 will require a future project-level CEQA evacuation assessment, the full build-out program-level mitigation measures require performance standards of reducing forecast evacuation levels such that (1) Project full build-out evacuation trips shall not exceed one hour beyond the total cumulative no project ETEs for a full evacuation of the Evacuation Area, and (2) the estimated number of added Project full build-out evacuation trips on Butts Canyon Road shall not exceed its evacuation capacity. If demand, supply, and communication strategies are not identified in the future CEQA document to achieve this performance measure under full build-out conditions, a reduction in the number of housing units to be added beyond Phase 1 shall be implemented. Reducing the number of housing units that can be added beyond Phase 1 would reduce the number of project-related evacuation trips and the associated total evacuation time with the project. Since the estate units would generate the most evacuation trips per unit, reducing the number of estate units would have the greatest impact on reducing project-related evacuation trips.

An alternative build-out evacuation approach that would be supported by enhanced communication systems is a managed and phased evacuation declaration for South Lake County communities rather than a single mass evacuation as analyzed. Evacuating in phases, based on vulnerability, location, or other factors, could enable subsequent traffic surges on major evacuation routes to be reduced and managed over a longer time frame. Perhaps the “worst case” scenario is a wildfire that encroaches upon the Guenoc Valley Project in a short time frame, with Grange Road becoming the only viable exit for Guenoc Valley Project evacuees due to blockages or hazards on Butts Canyon Road. In this scenario, or potentially under other scenarios in order to reduce traffic surges on Butts Canyone, law enforcement and the on-site Emergency Response Center staff would have the option to conduct a phased evacuation of Guenoc Valley Project evacuees, relocate evacuees within the project, and/or instruct evacuees to shelter at temporary refuge areas such as the maintained polo field, golf course, grazed areas, and vineyards.

Implementation of the combination of Mitigation Measures 5-1, 5-2, 5-3, 5-4, 5-5, and 5-6 would result in a **less-than-significant impact** on emergency response or emergency evacuation plans.

Appendix H-2

Wildfire Evacuation Memorandum

FEHR PEERS

Memorandum

Date: February 9, 2024

To: Annalee Sanborn, Acorn Environmental

From: Bob Grandy, Fehr & Peers

Subject: Guenoc Valley Project Wildfire Risk and Evacuation Assessment – Evacuation Vehicle Trip Demand Phase 1 Update

SF23-1343

The purpose of this memorandum is to update the evacuation vehicle trip demand estimate for the Guenoc Valley Project, as documented in the *Guenoc Valley Mixed Use Planned Development Project: Wildfire Risk and Evacuation Assessment* (January 2024), for a minor update in the Phase 1 project description.

Project Description Update

The first phase of development (Phase 1) would include development of seven separate subdivisions throughout the Guenoc Valley Project site. The updated Phase 1 land use program is shown below, with a reduction of 16 residential estate units and an increase of 20 hotel rooms.

- 385 ~~401~~ residential estate units
- 141 resort residential units
- 147 ~~127~~ hotel rooms
- Middletown off-site employee housing for 221 employees
- 610 employees
- 100 visitors

There is no change in the build-out project description.

Phase 1 Evacuation Vehicle Trip Demand Estimate Update

The updated Phase 1 land use program would generate a total of 1,596 evacuation vehicle trips. **Table** identifies the number of evacuation vehicle trips by project population group generated by the updated Phase 1 land use program, with changes from prior values highlighted.

Table 1. Evacuation Trips for Updated Project Phase 1 Population Groups

Group	Units	Quantity	Trips
Estate Units	Dwelling Units	385	659
Resort Residential Units	Dwelling Units	141	141
Hotels	Hotel Rooms	147	103
Employees	Persons	610	610
Visitors	Persons	100	83
			1,596

Source: Fehr & Peers

Conclusion

The original Phase 1 land use program evaluated in *Guenoc Valley Mixed Use Planned Development Project: Wildfire Risk and Evacuation Assessment* (January 2024) was estimated to generate a total of 1,609 evacuation vehicle trips. The updated Phase 1 land use program would generate a total of 1,596 evacuation vehicle trips, approximately 1 percent fewer evacuation vehicle trips. This small change in Phase 1 land use program would not result in a change in evacuation time estimates, impact conclusions, or mitigations as identified in the January 2024 assessment.

Appendix I

Biological Resources Assessment

Project Modifications Biological Resources Assessment

Guenoc Valley Mixed Use Planned Development Project

Lake County, California









Prepared for:

Lotusland Investment Holdings, Inc
22000 Butts Canyon Road #8
Middletown, CA 95461

Prepared by:

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March 2024

WRA#27162

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Definitions

2020 Phase 1 Study Area: The approximately 4,977-acre area analyzed in the February 2020 Biological Resources Assessment prepared by WRA for Phase 1 of the Guenoc Valley Mixed Use Planned Development Project and in the 2020 Final Environmental Impact Report's analysis of impacts of Phase 1 of the Guenoc Valley Mixed Use Development Project. Note that more area was studied in the 2020 BRA than the 2020 Area of Potential Effects (APE)

2020 Project: The Guenoc Valley Mixed Use Planned Development Project as defined in the 2020 FEIR and analyzed in the 2020 Biological Resources Assessments prepared by WRA for the Guenoc Valley Mixed Use Planned Development Project. The 2020 Project APE was 2,958 acres.

Modified Area of Potential Effects (Modified APE): The approximately 2,453-acre area of the Guenoc Valley Mixed Use Planned Development Project after inclusion of the Project Modifications. This Biological Resources Assessment assesses the Modified APE, with particular focus on the 333 acres that are located outside of the 2020 APE.

Project Modifications: The project Applicant has modified the project to include the following:

- A new proposed emergency route called the Grange Road Connector that will connect the Guenoc Valley Site with the County-maintained Grange Road to the north. The Grange Road Connector will be approximately 3.9 miles, with 2.2 miles occurring on the Guenoc Valley Site and 1.7 miles sited on the off-site property to the north;

In addition, the following modifications to the 2020 Project have been incorporated pursuant to a 2022 settlement agreement between the State of California and the project applicant:

- Relocating 25 residential building sites that the 2020 Project would have located on a hilltop near the proposed Equestrian Center and 39 residential building sites that the 2020 Project would have located within the northeastern portion of the Project site such that they would be located further from the wildland/urban interface;
- Reconfiguring the roadway plan so that there are no dead-end, non-looped road segments that exceed 1-mile in length;
- Improving an area of approximately 10 feet on each side of roadways with hardscape, to the extent topography permits.
- Removal of the camping area in the northern portion of the property
- Funding and staffing commitments for the onsite Emergency Response Center; and
- Various renewable energy commitments and greenhouse gas reduction measures that will not change the development footprint.

List of Preparers

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Brian Freiermuth	Associate Wildlife Biologist
Rhiannon Korhummel	Plant Biologist and Wetland Specialist
Michael Rochelle	GIS Analyst

List of Acronyms

APN	Accessor's Parcel Number
BCC	USFWS Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
BRA	Biological Resources Assessment
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality 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
County	Lake County
Corps	U.S. Army Corps of Engineers
CSRL	California Soils Resource Lab
CWA	Clean Water Act
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
Inventory	California Native Plant Society Rare Plant Inventory
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation & Management Act
MBTA	Migratory Bird Treaty Act
MM	Mitigation Measure
NETR	National Environmental Title Research
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NPPA	California Native Plant Protection Act
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
OHWM	Ordinary High Water Mark
Rank	California Rare Plant Ranks
RWQCB	Regional Water Quality Control Board
SC	State Candidate
SFEI	San Francisco Estuary Institute
SSC	Species of Special Concern
SSI	Special-status Invertebrates
SWRCB	State Water Resource Control Board
TOB	Top of Bank
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WRA	WRA, Inc.

1.0 INTRODUCTION

This Biological Resources Assessment evaluates existing biological resources, potential impacts, and mitigation measures for the Project Modifications, which modify the project analyzed in the 2020 Final EIR (AES 2020) for the Guenoc Valley Mixed Use Planned Development Project (the 2020 Project) and the 2020 WRA Biological Resources Assessment for Phase 1 of the Guenoc Valley Planned Use Development Project (the 2020 BRA). The 2020 Project and the Project Modifications are located in Lake County, California (Appendix A – Figure 1). WRA previously conducted biological resource assessments across 4,977 acres for the Phase 1 portion of the original Project; the results are provided in the 2020 BRA. The 2020 APE encompassed 2,958 acres of those 4,977 acres. The Project Modifications result in a current Area of Potential Effects (APE) that is 2,453 acres, approximately 505 acres less than the 2020 Project APE. While the APE has decreased in size, approximately 333 acres of APE is proposed within areas that are located outside of the 2020 APE analyzed in the Final EIR. WRA has conducted biological resource assessments across the Guenoc Valley site since 2020 to provide updated botanical surveys and field assessments of areas that were assessed at a programmatic level within the 2020 Final EIR that are now subject to project-level review, as well as a portion of a newly-proposed emergency access route that has not been subject to previous environmental review. Approximately 55 acres of the Modified APE are desktop assessed and no field work has been conducted in those areas. These areas were outside the 2020 APE and the 2020 Phase 1 Study Area and not included in field assessment between 2020 and 2023.

The Project Modifications are modifications to the 2020 Project in the 2020 APE within the 2020 Phase 1 Study Area assessed in the 2020 BRA; as such, this report is a supplement to the 2020 BRA and the 2020 Final EIR. Table 1 below summarizes survey areas and APE areas.

Table 1. Acreage Summary of Survey and APE Areas

2020 BRA Phase 1 Study Area	2020 APE	Modified APE	Modified APE within 2020 APE	Modified APE outside 2020 APE	Modified APE Desktop Assessed
4,977	2,958	2,453	2,120	333	55

The Project Modifications encompass specific changes aimed at enhancing the wildfire risk reduction measures for the 2020 Project outlined in the 2020 BRA and the 2020 Final EIR. The project Applicant has modified the project to include the following:

- A new proposed emergency route called the Grange Road Connector will connect the Guenoc Valley Site with the County-maintained Grange Road to the north. The Grange Road Connector will be approximately 3.9 miles, with 2.2 miles occurring on the Guenoc Valley Site and 1.7 miles sited on the off-site property to the north;

In addition, the following alterations are in accordance with a settlement agreement reached in 2022 between the State of California and the project applicant.

- Relocating 25 residential building sites that the 2020 Project would have located on a hilltop near the proposed Equestrian Center and 39 residential building sites that the 2020 Project would have located within the northeastern portion of the Project site such that they would be located further from the wildland/urban interface;

- Reconfiguring the roadway plan so that there are no dead-end, non-looped road segments that exceed 1-mile in length;
- Improving an area of approximately 10 feet on each side of roadways with hardscape, to the extent topography permits;
- Removal of the camping area in the northern portion of the property;
- Funding and staffing commitments for the onsite Emergency Response Center; and
- Various renewable energy commitments and greenhouse gas reduction measures that will not change the development footprint.

1.1 Overview and Purpose

This report provides an assessment of biological resources within the Modified APE, focusing on the 333 acres of the Modified APE that were not previously analyzed in the 2020 BRA and 2020 EIR. Approximately 2,216 acres of the 2,453 Modified APE is included in the 2020 Phase 1 Study Area and 236 acres is outside the 2020 Phase 1 Study Area. Due to location of Modified APE in relation to the 2020 APE, 333 acres were not assessed at a project-level in the 2020 EIR; however, portions of these 333 acres were assessed in the 2020 BRA. A complete assessment of biological resources within the original 2020 APE can be found in the 2020 BRA. The purpose of this assessment was to develop and gather information on sensitive land cover types and special-status plant and wildlife species to support an evaluation of the Project Modifications under the California Environmental Quality Act (CEQA). This report describes the results of 2017 through 2023 site visits, which assessed the Modified APE[1] for (1) the presence of sensitive land cover types, special-status plant species, and special-status wildlife species, and (2) the potential to support special-status plant and wildlife species and highlights any new findings not previously observed in the 2020 BRA. This report also reports changes to biological resources in the APE since 2020 due to the 2020 LNU Lightning Complex Fire. Based on the results of the site assessments, potential impacts to sensitive land cover types and special-status species resulting from the Project Modifications were evaluated. If the Project Modifications have the potential to result in significant impacts to these biological resources, measures to avoid, minimize, or mitigate those significant impacts are identified and described.

A biological resources assessment provides general information on the presence, or potential presence, of sensitive species and habitats. Additional focused studies (such as protocol level species surveys or a wetland delineation) may be required to support regulatory permit applications or to implement mitigation measures included in this report. This assessment is based on information available at the time of the study and on-site conditions that were observed on the dates the site was visited. Conclusions are based on currently available information used in combination with the professional judgement of the biologists completing this study.

1.2 Modified APE Description

The Proposed Project is the Guenoc Valley Mixed Use Planned Development Project and includes the development of a master planned mixed-use resort and residential community within a portion of the Guenoc Valley Ranch property. The Project Modifications revise the 2020 Project

[1] Areas not assessed as follows are identified in Section 1.0 above.

analyzed in the 2020 BRA and 2020 Final EIR such that 25 building sites within the Equestrian Center area and 39 building sites within the northeastern portion of the project site would be relocated further from the wildland/urban interface, and various connector roads and road buffers would be added. The Project Modifications include voluntary measures (e.g., the Grange Road Connector) and some contained within a settlement agreement with the State of California, and which are intended to further reduce the wildfire risks associated with the Guenoc Valley Mixed Use Planned Development Project. Project modifications that change the proposed development footprint include: moving 64 residential building sites further from the wildland/urban interface; reconfiguring the roadway plan and adding 'Connector Roads' where necessary so that there are no dead-end, non-looped road segments that exceed 1-mile in length; a new proposed emergency route called the Grange Road Connector; removal of the camping area in the northern portion of the property; and improving an area of approximately 10 feet on each side of roadways with hardscape, to the extent topography permits. Additional Project Modifications such as funding commitments for the proposed onsite emergency center and renewable energy commitments will not change the APE or development footprint or otherwise impact biological resources. The Modified APE is 2,453 acres, of which 333 acres are located outside of the APE analyzed in the 2020 EIR.

1.3 Summary of Results

Eight sensitive terrestrial land communities and 12 aquatic resource types occur in the Modified APE. The same land cover types occur in the 333 acres of the Modified APE and each community and aquatic resource observed in the Modified APE was also observed and discussed under the 2020 BRA; however, some areas of the previously mapped land cover Rock Outcrop now meet the criteria of a new CDFW natural community that is considered sensitive. Development of the Project Modifications is intentionally sited to avoid these sensitive cover types to the greatest extent feasible. Mitigation measures are provided herein to minimize or avoid impacts to sensitive land cover types. The mitigation measures in this report for sensitive land cover types are the same mitigation measures provided in the 2020 Final EIR, with minor updates to reflect the updated regulatory and classification status of a previously-identified habitat type. No new measures are necessary or, therefore, included.

Protocol-level rare plant surveys in the Modified APE conducted during April, May, June, and/or August in 2017 through 2023 resulted in the detection eight CNPS Rank 1B plants, including one state-listed plant, and one federal-listed plant (Appendix B). Similar surveys in the 333 acres resulted in detection of the same eight special-status plants. No additional state- or federal-listed plant species have been observed since 2020 assessment. One additional CNPS Rank 1 plant has been observed since 2020, Porter's navarretia (*Navarretia paradoxinota*). Mitigation measures are provided herein to minimize impacts to special-status plants. The mitigation measures in this report for special-status plants are the same mitigation measures provided in the 2020 Final EIR. No new measures are warranted.

Eight special-status bats, 23 special-status birds, two special-status mammals, one special-status invertebrate, one special-status reptile, and one special-status amphibian, as well as non-status birds with baseline legal protections, have the potential to occur in the Modified APE. No additional special-status species have been observed. One new species has the potential to occur within the Modified APE: Monarch butterfly, which was identified as a Candidate for listing under the Federal Endangered Species Act following publication of the 2020 Final EIR. Although this species was newly identified as having the potential to occur within the Modified APE, no

significant impacts to this species was identified, and no additional mitigation measures are therefore identified. Mitigation measures and best management practices have been developed and provided herein to minimize or avoid impacts to sensitive biological resources that may be significantly impacted by the Proposed Project. The mitigation measures in this report for special-status wildlife are the same mitigation measures provided in the 2020 Final EIR, with minor updates to reflect changed regulatory status of previously analyzed species. No new measures are warranted.

Approximately 55 acres of the Modified APE are desktop assessed. Land cover for these areas were mapped using field assessed land covers immediately adjacent to these areas, topography data, and aerial imagery. No field-based special-status plant or wildlife assessments/surveys have been conducted in these areas. However, habitats in these areas are presumed to be similar in type and quality as other field assessed habitat and are unlikely to support any new/previously undocumented species of special-status plants or wildlife; these areas however may support new populations of previously observed special-status plants. Previously identified mitigation measures from the 2020 BRA and the 2023 Final EIR will be imposed, as applicable, and no new mitigation measures are needed.

Table 2: Summary of Biological Resources Evaluation

CEQA Assessment Category[2] IV – Biological Resources	Biological Resources Considered	Relevant Laws & Regulations	Responsible Regulatory Agency	Summary of Findings & Report Section[3]
Question A. **Special-status Species**	Special-status Plants Special-status Wildlife Designated Critical Habitat	Federal Endangered Species Act CA Endangered Species Act CA Native Plant Protection Act Migratory Bird Treaty Act Bald & Golden Eagle Protection Act	U.S. Fish & Wildlife Service National Marine Fisheries Service CA Department of Fish & Wildlife	Potentially significant impacts were identified, and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 7.2 for more information.**
Question B. **Sensitive natural communities & riparian habitat**	Sensitive Natural Communities Streams, Lakes & Riparian Habitat	CA Fish & Game Code Oak Woodland Conservation Act Porter-Cologne Act Clean Water Act	CA Department of Fish & Wildlife U.S. Army Corps of Engineers U.S. Environmental Protection Agency State Water Resources Control Board Regional Water Quality Control Board	Potentially significant impacts were identified, and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 7.3 for more information.**
Question C. **State and federally protected wetlands**	Wetlands Unvegetated surface waters	Clean Water Act: Sections 404/401 Rivers & Harbors Act: Section 10 Porter-Cologne Act	U.S. Army Corps of Engineers U.S. Environmental Protection Agency State Water Resources Control Board Regional Water Quality Control Board	Potentially significant impacts were identified, and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 7.4 for more information**

[2] *CEQA Questions have been summarized here, see Section 7.0 for details.*
[3] *As given in this report, see Section 7.0 subheadings.*

Table 2: Summary of Biological Resources Evaluation

CEQA Assessment Category[2] IV – Biological Resources	Biological Resources Considered	Relevant Laws & Regulations	Responsible Regulatory Agency	Summary of Findings & Report Section[3]
Question D. **Fish & Wildlife corridors**	Essential Fish Habitat Wildlife Corridors	CA Fish & Game Code Magnuson-Stevens Fishery Conservation & Management Act	CA Department of Fish and Wildlife National Marine Fisheries Service	Potentially significant impacts were not identified, and mitigation measures are deemed unnecessary. **See Section 7.5 for more information**
Question E. **Local policies**	Protected Trees Coastal zone resources Other biological protections	Local Tree Ordinance General Plan (e.g., Stream & Wetland Setbacks) Local ordinances	Local and regional agencies CA Coastal Commission San Francisco Bay Conservation and Development Commission	Potentially significant impacts were identified, and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 7.6 for more information**
Question F. **Local, state, federal conservation plans**	Habitat Conservation Plans Natural Community Conservation Plans	Federal Endangered Species Act Natural Community Conservation Planning Act	U.S. Fish and Wildlife Service CA Department of Fish and Wildlife	Potentially significant impacts were not identified, and mitigation measures are deemed unnecessary. **See Section 7.7 for more information**

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological resources assessment, including applicable laws and regulations that were applied to field investigations and analysis of potential new or increased impacts from the Project Modifications. Table 2 shows the correlation between these regulations and each Biological Resources question in the Environmental Checklist Form (Appendix G) of the CEQA guidelines.

2.1 Federal and State Regulatory Setting

2.1.1 Vegetation and Aquatic Communities

CEQA provides protections for certain vegetation types defined as sensitive by the California Department of Fish and Wildlife (CDFW) and aquatic features protected by laws and regulations administered by the U.S Army Corps of Engineers (Corps), State Water Resources Control Board (SWRCB), and Regional Water Quality Control Boards (RWQCB). The laws and regulations that provide protection for these resources are summarized below.

Sensitive Natural Communities: Sensitive natural communities 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. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFW 2023) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2024a). Natural communities are ranked 1 through 5 in the CNDDB based on NatureServe's (2024) methodology, with those communities 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) must be considered and evaluated under CEQA (California Code of Regulations [CCR] Title 14, Div. 6, Chap. 3, Appendix G). In addition, this general class includes oak woodlands that are protected by local ordinances under the Oak Woodlands Protection Act and Section 21083.4 of California Public Resources Code (CPRC).

Waters of the United States, Including Wetlands: The Corps regulates “Waters of the United States” under Section 404 of the Clean Water Act (CWA). Waters of the United States are defined in the Code of Federal Regulations (CFR) as including the territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, such as tributaries, lakes and ponds, impoundments of waters of the U.S., and wetlands that are hydrologically connected with these navigable features (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Unvegetated waters including lakes, rivers, and streams may also be subject to Section 404 jurisdiction and are characterized by an ordinary high-water mark (OHWM) identified based on field indicators such as the lack of vegetation, sorting of sediments, and other indicators of flowing or standing water. The placement of fill material into Waters of the United States generally requires a permit from the Corps under Section 404 of the CWA.

The Corps also regulates construction in navigable waterways of the U.S. through Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 U.S. Code [USC] 403). Section 10 of the RHA requires Corps approval and a permit for excavation or fill, or alteration or modification of the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States. Section 10 requirements apply only to navigable waters themselves, and are not applicable to tributaries, adjacent wetlands, and similar aquatic features not capable of supporting interstate commerce.

Waters of the State, Including Wetlands: 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 SWRCB and nine RWQCBs protect waters within this broad regulatory scope through many different regulatory programs. Waters of the State in the context of a CEQA Biological Resources evaluation include wetlands and other surface waters protected by the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2019). The SWRCB and RWQCB issue permits for the discharge of fill material into surface waters through the State Water Quality Certification Program, which fulfills requirements of Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Clean Water Act permit are also required to obtain a Water Quality Certification. If a project does not require a federal permit but does involve discharge of dredge or fill material into surface waters of the State, the SWRCB and RWQCB may issue a permit in the form of Waste Discharge Requirements.

Sections 1600-1616 of California Fish and Game Code: Streams and lakes, as habitat for fish and wildlife species, are regulated by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream," which includes creeks and rivers, is defined in the CCR 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). 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 (CDFG 1994). Riparian vegetation has been defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

2.1.2 Special-status Species

Endangered and Threatened Plants, Fish, and Wildlife. Specific species of plants, fish, and wildlife species may be designated as threatened or endangered by the federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by the USFWS and the National Marine Fisheries Service (NMFS). The USFWS and NMFS maintain lists of endangered and threatened plant and

animal species (referred to as "listed species"). "Proposed" or "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from the USFWS or NMFS prior to take of any listed species. “Take” under the ESA is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in take of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federally listed plant species are only protected when take occurs on federal land.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features “essential to the conservation of the species.” Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (CFGC 2050 et seq.) prohibits the take of any plant and animal species that the CFGC determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants on private lands, as well as extending this protection to candidate species that are proposed for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. CDFW may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), as long as the NCCP covers that activity.

Fully Protected Species and Designated Rare Plant Species. This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in CFGC. 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 conservation purposes. The definition of "take" is the same under the California Fish and Game Code and the CESA. By law, CDFW may not issue an Incidental Take Permit for Fully Protected Species. Under the California Native Plant Protection Act (NPPA), CDFW has listed 64 “rare” or “endangered” plant species, and prevents “take”, with few exceptions, of these species. CDFW may authorize take of species protected by the NPPA through the Incidental Take Permit process, or under a NCCP.

Special Protections for Nesting Birds and Bats. The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America’s eagle species [bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*)] that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the

intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given consideration under CEQA.

Essential Fish Habitat. The Magnuson-Stevens Fishery Conservation and Management Act provides for conservation and management of fishery resources in the U.S., administered by NMFS. This Act establishes a national program intended to prevent overfishing, rebuild overfished stocks, ensure conservation, and facilitate long-term protection through the establishment of Essential Fish Habitat (EFH). EFH consists of aquatic areas that contain habitat essential to the long-term survival and health of fisheries, which may include the water column, certain bottom types, vegetation (e.g., eelgrass (*Zostera* spp.)), or complex structures such as oyster beds. Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with NMFS.

Species of Special Concern, Movement Corridors, and Other Special-status Species under CEQA. To address additional species protections afforded under CEQA, CDFW has developed a list of special species as "a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status." This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Special Concern. Not all species identified on the list are considered Species of Special Concern. Plant species on the California Native Plant Society (CNPS) Rare Plant Inventory (Inventory; CNPS 2024a) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3 or 4, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

2.2 Local Plans and Policies

Lake County General Plan. The Lake County General Plan contains policies pertaining to sensitive biological resources, including species, habitat, riparian corridors, and wetlands.

Lake County Code Section 30-21.1 Standard Grading. Standard grading criteria requires grading does not result in the clearing of oak trees to the extent that the clearing may have a significant effect on oak woodlands as defined in Section 21083.4 of the Public Resources Code.

Lake County Zoning Ordinance. Article 37 of the Lake County Zoning Ordinance identifies a "Waterway Combining District" zoning designation that applies to all perennial and intermittent streams, including adjacent wetlands and riparian vegetation. 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.[4]

3.0 ASSESSMENT METHODOLOGY

Approximately 2,216 acres of the Modified APE were surveyed between 2017 and 2019. An additional 181 acres have been surveyed between 2020 and 2023. On various dates from 2017 through 2023, WRA, Inc. (WRA) biologists visited the Modified APE to: map vegetation, aquatic features, and other land cover types; document plant and wildlife species present; and evaluate on-site habitat for the potential to support special-status species, wildlife corridors, and nursery sites as defined by CEQA. As noted in Section 1.0 above, this report is a supplement to the 2020 BRA; for a complete list of surveys conducted by WRA on the site between 2017 and 2019, refer to the 2020 BRA and 2020 EIR. Prior to the site visit, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive land cover types and special-status species, including:

- Soil Survey of Lake County, California (USDA 1989)
- Middletown and Detert Reservoir 7.5-minute U.S. Geological Survey (USGS) quadrangles (USGS 2022)
- Contemporary aerial photographs (Google Earth 1985-2024)
- Historical aerial photographs (NETR 2024)
- National Wetlands Inventory (USFWS 2024a)
- California Aquatic Resources Inventory (SFEI 2024)
- California Natural Diversity Database (CNDDB) (CDFW 2024a)
- Biogeographic Information and Observation System (BIOS) (CDFW 2024b)
- CNPS Inventory (CNPS 2024a)
- Consortium of California Herbaria (CCH1 2024, CCH2 2024)
- USFWS Information for Planning and Consultation (USFWS 2024b)
- eBird Online Database (Cornell Lab of Ornithology 2024)
- California Bird Species of Special Concern in California (Shuford and Gardali 2008)

[4] 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.

- California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- A Manual of California Vegetation, Online Edition (CNPS 2024b)
- California Natural Community List (CDFW 2023)
- Updated database searches (i.e., CNDDB, CNPS) for special-status species focused on the 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 USGS 7.5-minute quadrangles.

Following the remote assessment, WRA biologists completed a field review over the course of many days from 2017 to 2023 to document: (1) land cover types (e.g., vegetation communities, aquatic resources), (2) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, (3) if and what type of aquatic land cover types (e.g., wetlands) are present, (4) if special-status species are present[5], (5) suitable habitat for wildlife corridors and nursery sites.

3.1 Vegetation Communities and Other Land Cover Types

During the site visits, WRA evaluated the species composition and area occupied by distinct vegetation communities, aquatic communities, and other land cover types. Mapping of these classifications utilized a combination of aerial imagery and ground surveys. In most instances, communities are characterized and mapped based on distinct shifts in plant assemblage (vegetation) and follow the California Natural Community List (CDFW 2023) and A Manual of California Vegetation, Online Edition (CNPS 2024b). These resources cannot anticipate every component of every potential vegetation assemblage in California, and so in some cases, WRA biologists described vegetative communities as observed using similar classification nomenclatures as CDFW when a vegetative community did not fit within a described natural community. When undescribed variants are used, it is noted in the description and the closest natural community analog was referred to in order to determine sensitivity of the habitat. Vegetation alliances (natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled [S1/G1], imperiled [S2/G2], or vulnerable [S3/G3]) (CDFW 2023), were evaluated as sensitive as part of this evaluation.

The site was reviewed for the presence of wetlands and other aquatic resources according to the methods described in the Corps Manual (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West* (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* (Lichvar and McColley 2008). Areas meeting these indicators were mapped as aquatic resources and categorized using the vegetation community classification

[5] Due to the timing of the assessment, it may or may not constitute protocol-level species surveys; see Section 5.2 for further discussion regarding if the site assessment would constitute a formal or protocol-level species survey.

methods described above. Aquatic communities which are mapped in the NMFS EFH Mapper (NMFS 2024) or otherwise meet criteria for designation as EFH are indicated as such in the community description below in Section 5.1. The presence of riparian habitat was evaluated based on woody plant species meeting the definition of riparian provided in *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code* (CDFG 1994) and based on best professional judgement of biologists completing the field surveys.

Approximately 55 acres of the Modified APE were analyzed via desktop. These areas are immediately adjacent to field surveyed areas and therefore the data and familiarity from those areas along with topography and aerial imagery was used to map aquatics and land cover types. These areas, as with the totality of impact areas, will be field verified prior to land disturbance.

3.2 Special-status Species

3.2.1 General Assessment

The potential for special-status species to occur within the Modified APE was evaluated by first determining which special-status species occur in the vicinity of the Modified APE through a literature and database review as described above. The presence of suitable habitat for special-status species was evaluated based on physical and biological conditions of the site as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Modified APE was then determined 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 in the recent past.

If a special-status species was observed during the site visit, its presence was recorded and discussed below in Section 5.2. If designated critical habitat is present for a species, the extent of critical habitat present and an evaluation of critical habitat elements is provided as part of the species discussions below.

Approximately 55 acres of the Modified APE are desktop assessed and have had no field-based survey for special-status plants or special-status wildlife. These areas are immediately adjacent

to field assessed areas and conditions are presumed to contain similar habitats and potential special-status species are presumed to be similar. These areas will be field assessed prior to land disturbance and species will be documented.

3.2.2 Special-status Plants

Protocol-level surveys for special-status plants were conducted within the Modified APE on various dates in April, May, June and/or August 2017 through 2023. The surveys were performed in accordance with those methodologies described by resource experts and agencies (CNPS 2001, CDFW 2018). The culmination of all these surveys included the entire Modified APE[6] which was traversed on foot and surveyed for special-status plant species. The assessment was conducted by botanists familiar with the flora of Lake County and surrounding counties.

During the surveys, the Modified APE was traversed on foot using intuitively guided, meandering transects and all plant species observed were documented. 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 and 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.

3.2.3 Special-status Wildlife

A general assessment for special-status wildlife species was conducted within the Modified APE on various dates in 2017 through 2023. Habitats within the Modified APE were assessed for their potential to support special-status wildlife species. Suitable habitats were assessed and surveyed for special-status wildlife presence. No protocol-level field studies have been conducted since 2020; see the 2020 BRA for protocol-level wildlife surveys conducted prior to 2020. An observed wildlife species list was not conducted since 2020; see the 2020 BRA for an observed wildlife species list during assessments prior to 2020.

3.3 Wildlife Corridors and Native Wildlife Nursery Sites

To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), the Mayacamas to Berryessa (M2B) Study, and habitat connectivity data available through the CDFW Biogeographic Information and Observation System (CDFW 2024b). Additionally, aerial imagery (Google Earth 2024) for the local area was referenced to assess if local core habitat areas were present within, or connected to the Modified APE. This assessment was refined based on observations of on-site physical and/or biological conditions, including topographic and vegetative factors that can facilitate wildlife movement, as well as on-site and off-site barriers to connectivity.

The potential presence of native wildlife nursery sites is evaluated as part of the site visit and discussion of individual wildlife species below. Examples of native wildlife nursery sites include nesting sites for native bird species (particularly colonial nesting sites), marine mammal pupping

[6] Excluding the 55 acres that were desktop assessed only.

sites, and colonial roosting sites for other species (such as for monarch butterfly [*Danaus plexippus*]).

3.4 Fire Impacts

To assess biological resources that were impacted by the 2020 LNU Lightning Complex Fire, the CalFire final incident boundary was overlain on the Modified APE. Land cover types and special-status species populations within the fire boundary were identified.

4.0 ECOLOGICAL SETTING

The following sections describes the ecological setting of the Modified APE, with a focus on any new conditions not observed in the 2020 Phase 1 Study Area. For a complete description of the ecological setting of the 2020 APE, refer to the 2020 BRA and 2020 EIR. Additional details of the local setting are below.

4.1 Soils and Topography

The overall topography of the Modified APE has various terrain and includes all slope aspects. Elevations range from approximately 950 to 1005 feet above sea level. Topography remains similar to topography in the original 2020 APE.

According to the *Soil Survey of Lake County* (USDA 1989), the Modified APE is underlain by 16 soil mapping units comprised of 16 parent soil series: *Benridge variant loam, 2 to 15 percent slope*; *Sobrante-Hambright-Guenoc Complex, 30 to 50 percent slope; Henneke-Montara-Rock outcrop complex, 15 to 50 percent slope; Sobrante-Guenoc-Hambright complex, 2 to 15 percent slope; Kelsey fine sandy loam; Perkins gravelly loam, 5 to 9 percent slope; Benridge variant loam, 2 to 15 percent slope; Sobrante-Guenoc-Hambright complex 15 to 30 percent slope; Maxwell clay loam, 0 to 2 percent slope; Still loam, stratified substratum; Maxwell clay loam, 0 to 2 percent slope; Maxwell clay loam, 2 to 8 percent slopes; Riverwash; Millsholm-Bressa loams, 30 to 50 percent slope; Bressa-Millsholm loams, 15 to 30 percent slope; and Yorkville variant clay loam 2 to 8 percent slopes*. Soils within the Modified APE are shown in Appendix A – Figure 3. Each of these mapping units were previously observed and documented in the 2020 BRA and also observed in the 333 acres outside the 2020 APE.

4.2 Climate and Hydrology

The Modified APE 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. The 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.

The Modified APE is located in the Upper Putah (HUC 8: 18020162) regional watershed and in the Bucksnort Creek (HUC 12: 180201620307), Crazy-Creek-Putah Creek (HUC 12:

180201620307), or Butts Creek-Putah Creek (HUC 12: 180201620308) local watershed. The National Wetland Inventory (NWI), California Aquatic Resources Inventory (CARI) and USGS 7.5-minute quadrangle maps depict several aquatic resources in the Modified APE (USFWS 2024; SFEI 2024; USGS 2020). Detailed descriptions of aquatic resources are provided in Section 5.1 below.

4.3 Land Use

The Modified APE 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. The offsite land use on the Comstock Ranch is agricultural/livestock grazing fields and old ranch roads, with several viticultural production areas in the surrounding south. Developed areas include existing ranch roads and areas associated with existing residence and livestock facilities. As is the case with the Guenoc Valley Ranch property, many of the valley bottoms and alluvial positions throughout the region were historically converted for grazing lands, vineyards, or other agricultural uses. No significant differences in land use were observed in the Modified APE, as compared to the 2020 APE and as reported in the 2020 BRA. Much of the vegetation across the property burned during the Valley Fire of 2015 and/or the LNU Lightning Complex Fire of 2020, 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. The 2020 fire occurred from August through October, following the approval of the FEIR in July 2020. Details of fire impacts are provided in Section 5.1.1 below.

5.0 ASSESSMENT RESULTS

The following sections describe the assessment results of the Modified APE with a focus on new conditions not reported in the 2020 BRA. Approximately 2,216 acres of the 2,453 acre Modified APE is included in the 2020 Phase 1 Study Area and surveyed between 2017 and 2019, while approximately 236 acres is outside the 2020 Phase 1 Study Area. Due to location of Modified APE in relation to the 2020 APE, 333 acres were not assessed in the 2020 EIR; however, portions of these 333 acres were assessed in the 2020 BRA. An additional 181 acres have been surveyed between 2020 and 2023. Approximately 55 acres of the Modified APE have not been field assessed; for these areas, desktop assessment for land cover types was conducted. For a complete description of the ecological setting of the 2020 APE, refer to the 2020 BRA and 2020 EIR.

5.1 Vegetation Communities and Other Land Cover

WRA observed 30 land cover types within the Modified APE, including 18 terrestrial types and 12 aquatic resource types. Of the 18 terrestrial land cover types, a total of 10 non-sensitive and eight sensitive terrestrial land cover types are mapped. Land cover mapping conducted in the 333 acres areas not included in the 2020 APE resulted in no new land cover types; all had been previously identified elsewhere in the 2020 Phase 1 Study Area in previous biological surveys and reported in the 2020 BRA. No new land cover types were observed in the Modified APE; however, some areas of the previously mapped land cover Rock Outcrop meet the criteria of a new CDFW natural community that is considered sensitive. See below for further discussion. For a complete

description of the terrestrial land cover types in the Modified APE, refer to the 2020 BRA and 2020 EIR.

Table 3 below summarizes and compares land cover types of Modified APE. The land cover types are illustrated in Appendix A on Figure 4 set (Land Cover), Figure 5 set (Aquatic Resources), and Figure 6 (Fire Impacts).

Table 3: Vegetation Communities and Other Land Cover Types

COVER TYPE	SENSITIVE STATUS	RARITY RANKING	ACRES WITHIN MODIFIED APE	ACRES IN 333 ACRES	ACRES OF MODIFIED APE DESKTOP ASSESSED
TERRESTRIAL / COMMUNITY LAND COVER					
Agriculture	Non-Sensitive	Not Applicable	309.71	36.30	0
California Yerba Santa Scrub	Non-Sensitive	G5 S5	6.02	0	0
Chamise Chaparral[7]	Non-Sensitive	G5 S5	242.46	9.41	8.56
Developed	Non-Sensitive	Not Applicable	69.95	11.89	0.22
Foothill Pine Woodland	Non-Sensitive	G4 S4	126.08	18.52	5.71
Leather Oak Chaparral[8]	Non-Sensitive	G4 S4	169.95	52.25	7.77
Non-native Annual Grasslands	Non-Sensitive	GNA SNA	438.27	77.13	3.11
Rock Outcrop	Non-Sensitive	Not Applicable	1.98	0.02	0
Scrub Oak Chaparral	Non-Sensitive	G4 S4	31.25	1.92	0
Whiteleaf Manzanita Chaparral[9]	Non-Sensitive	G4 S4	61.31	4.29	1.18
Blue Oak Woodland	Sensitive	G4 S4	481.33	57.83	12.54
Blue Oak Savannah	Sensitive	G4 S4	276.17	30.36	5.46
Interior Live Oak Woodland	Sensitive	G4 S4	170.44	15.71	10.64

[7] Although the chamise chaparral alliance is listed as secure at the global (G5) and state (S5) levels, there may be sensitive associations within the alliance present. This was also identified in the 2020 BRA.
[8] 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/Sonoma sage association. This was also identified in the 2020 BRA.
[9] 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. This was also identified in the 2020 BRA.

COVER TYPE	SENSITIVE STATUS	RARITY RANKING	ACRES WITHIN MODIFIED APE	ACRES IN 333 ACRES	ACRES OF MODIFIED APE DESKTOP ASSESSED
Musk Brush Chaparral[10]	Sensitive	Y (G3 S3)	2.84	0.03	0
Purple Needlegrass Grassland[11]	Sensitive	G4G3 S4S3	5.69	0.43	0
Valley Oak Woodland	Sensitive	G3 S3	9.83	0.50	0
Brewer Willow Thicket	Sensitive	G3 S3	1.12	1.10	0
Serpentine Rock Outcrop	Sensitive	G3G2 S3S2	3.92	0.18	0
AQUATIC RESOURCES					
Ponds/Reservoirs	Sensitive	Not Applicable	9.32	0.22	0
Perennial Stream	Sensitive	Not Applicable	6.53	4.72	0.01
Intermittent Stream	Sensitive	Not Applicable	9.73	3.63	0
Ephemeral Stream	Sensitive	Not Applicable	21.05	4.06	0.67
Ephemeral Ditch	Sensitive	Not Applicable	0.78	0.40	0
Seasonal Wetland Depressions	Sensitive	Not Applicable	0.12	0.05	0
Seasonal Wetland Ditches	Sensitive	Not Applicable	0.38	0.21	0
Seasonal Wetland Pond Fringe	Sensitive	Not Applicable	1.06	0	0
Seasonal Wetland Seeps/Swales	Sensitive	Not Applicable	8.81	3.51	0.06
Seasonal Wetland Wet Meadow	Sensitive	Not Applicable	7.92	0.68	0
Stream Fringe/In-Stream Wetland	Sensitive	Not Applicable	4.12	1.69	0
Riparian Woodland	Sensitive	Not Applicable	9.71	2.38	0

[10] This community is not described by Holland (1986), CDFW (2023), or CNPS (2024b), but may be considered part of the leather oak – musk brush provisional association and is being treated as part of the leather oak – musk brush association which is considered sensitive by the CDFW. This was also identified in the 2020 BRA.

[11] 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 (2023) and native grasslands are generally protected under CEQA; therefore, purple needlegrass grasslands are treated as sensitive. This was also identified in the 2020 BRA.

5.1.1 Terrestrial Land Cover

A total of 10 non-sensitive and eight sensitive terrestrial land cover types were observed within the Modified APE; the same land cover types were observed in the 2020 APE. No new terrestrial land cover types are present in the Modified APE than those observed in the 2020 Phase 1 Study Area and the 2020 APE. Quality of habitats observed is similar to those observed in the 2020 APE. The sensitivity ranking for each of the land cover types has not changed since the 2020 BRA, except for Brewer Willow Thicket and areas of rock outcrop that are serpentine.

The 2020 BRA reports the rank of Brewer Willow Thicket as G2 S2; however, the Brewer Willow Thicket community has since been lumped into the *Frangula californica-Rhododendron occidentale-Salix breweri* Shrubland Alliance as an association. The alliance is ranked G3 S3 which is considered sensitive. The association is considered provisional and remains a sensitive community. Therefore, rank and hierarchal placement have changed but the community remains a sensitive community, as reported and analyzed in the 2020 BRA.

A total of 3.92 acres of previously mapped Rock Outcrop are now considered sensitive as these areas are of serpentine rock with sparse vegetation cover that is dominated by serpentine indicator plant species. See below for a full description.

Serpentine Rock Outcrop (*Allium* spp.-*Streptanthus* spp.-*Hesperolinon* spp. Serpentinite Sparsely Vegetated Alliance). CDFW Rank: G3G2 G3S3. This natural community occurs on rocky serpentine slopes, ridges, and outcrops in the California Coast Range, Klamath Mountains, Sierra Nevada Range and foothills, and southern Cascades (CNPS 2024b). Vegetation cover is sparse. Where vegetation is present, plant species are characterized by serpentine indicator species. (CNPS 2024b). Within the Modified APE, three small areas of serpentine rock outcrop are present, including 333 acres outside the 2020 APE. Plant species present include sickle leaf onion (*Allium falcifolium*), golden buckwheat (*Eriogonum luteolum* var. *luteolum*), western flax (*Hesperolinon* spp.) and Sonoma lessingia (*Lessingia ramulosa*).

2020 FIRE AREA

Impacts caused by fire vary greatly, due to many factors. In the area surveyed since the fire, observations of burned habitat include a healthy re-sprout of native plants, minimal area of invasive species dominance, and use by native wildlife. As no comparison studies have been conducted, any shift in natural community types is unknown. However, many of the natural community types of the Guenoc Valley Site are adapted to fire and the existing landscape is a result of pre-historic, historic, and contemporary fire activity.

5.1.2 Aquatic Resources

WRA observed 12 aquatic resource types within the Modified APE (Table 3). Aquatic resource mapping conducted in the 333 acres areas not included in the 2020 APE resulted in no new aquatic resource types. Each of the aquatic resources observed in the Modified APE had been previously identified elsewhere in the 2020 Phase 1 Study Area in previous biological surveys and reported in the 2020 BRA. No new aquatic resources were observed in the Modified APE. To provide a clear crosswalk of these aquatic resources to the broader types described in the 2020 BRA and EIR, the resources are placed within one of the three category types provided in the 2020 BRA: emergent wetlands, ponds and reservoirs, and streams:

EMERGENT WETLANDS

Seasonal Wetland Depressions
Seasonal Wetland Ditches
Seasonal Wetland Pond Fringes
Seasonal Wetland Seeps/Swales
Seasonal Wetland Wet Meadows
Stream Fringe/In-Stream Wetland
Riparian Woodland

PONDS AND RESERVOIRS

Open Water

STREAMS

Ephemeral Ditches
Ephemeral Streams
Intermittent Streams
Perennial Streams

For a complete description of the broader aquatic resource types in the Modified APE, refer to the 2020 BRA and 2020 EIR. For a complete description of the more specific aquatic types in the Modified APE, refer to the January 2020 Aquatic Resources Delineation Report drafted by WRA.

5.2 Special-status Species

5.2.1 Special-status Plants

Based upon a 2024 review of the resource databases listed in Section 3.0, 77 special-status plant species[12] have been documented in the vicinity of the Modified APE. Database results from the same resource databases queried for the 2020 BRA assessments now include eight additional CNPS Rank 4 species; however, as these species are not considered special-status for the purposes of this report, no further assessment is conducted. Another change includes the ranking of one species observed in 2020 BRA assessments, serpentine sunflower (*Helianthus exilis*), which has been re-ranked from CNPS Rank 4.2 to 'Considered But Rejected' (CBR) by CNPS in 2022. Two special-status plants no longer have documented occurrences in the 7.5-minute quads used for the database search, presumably due to CNPS review and edits which indicated those species were erroneously mapped. For thoroughness, while no ultimate change has occurred, an additional species, Napa lomatium (*Lomatium repostum*) was re-ranked from Rank 4 to Rank 1B in 2021 but then returned to Rank 4 in 2023 (CNPS 2024a). Therefore, no new special-status plant species have been documented in the resource databases listed since 2020, and the 77 special-status plant species documented in the 2024 database searches were also identified in

[12] CNPS Rank 3 and 4 species are not considered special-status in this assessment. See Section 7.1 for further discussion on Rank 3 and 4 species.

the 2020 BRA. For a complete description of the special-status plants determined to have potential in the Modified APE within the 2020 APE, refer to the 2020 BRA and 2020 EIR.

The following section reports on the potential for special-status plants to occur in the 333 acres outside the 2020 APE. Of the 77 special-status plants identified in the database search, 57 of these species have the potential to occur in the new acres. Appendix C contains a table summarizing the potential for each species to occur in the new area. The remaining species documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following reasons:

- Hydrologic conditions (e.g., tidal, riverine) necessary to support the special-status plant species are not present in the Modified APE.
- Edaphic (soil) conditions (e.g., volcanic tuff, alkaline) necessary to support the special-status plant species are not present in the Modified APE.
- Topographic conditions (e.g., north-facing slope, montane) necessary to support the special-status plant species are not present in the Modified APE.
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present in the Modified APE.
- Associated natural communities (e.g., vernal pools, conifer forest) necessary to support the special-status plant species are not present in the Modified APE.
- The Modified APE is geographically isolated (e.g., below elevation, coastal environ) from the documented range of the special-status plant species;
- The historical landscape and/or habitat(s) of the Modified APE were not suitable habitat prior to land/type conversion (e.g., reclaimed shoreline) to support the special-status plant species.
- Land use history and contemporary management (e.g., grading, intensive grazing) has degraded the localized habitat necessary to support the special-status plant species.

WRA biologists conducted protocol-level surveys of the Modified APE (including in the 333 acres outside the 2020 APE) in April, May, June, and/or August 2017 through 2023, a period sufficient to identify all 57 special-status plant species with the potential to occur. Each of the 57 plants were also considered to have potential to occur and were surveyed for under the 2020 BRA effort. None of the ranks for any of the species have changed. Eight special-status plants were observed during the surveys of the 333 acres and described below. Table 4 lists species determined to have potential but were not observed. All plant species observed within the surveyed portions of the Guenoc Valley Ranch property since 2017 are included in Appendix B. As the area surveyed encompasses a much larger area than the Modified APE, not all species listed are present in the Modified APE.

Porter's navarretia (*Navarretia paradoxinota*; Rank 1B.3) is the only newly observed special-status plant species within the Modified APE that was not previously observed during the 2020 BRA assessments.

Figure 7 set in Appendix A illustrates locations of populations in the Modified APE. Species with potential habitat and not observed in the Modified APE are summarized below. Refer to the 2020

BRA for a complete description of the special-status plants identified on the rest of the Guenoc Valley Site.

Table 4: Potential Special-status Plants Not Observed

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL HABITAT IN THE NEW ACRES[13]
FORMALLY LISTED PLANTS (FESA, CESA, CNPPA)			
Astragalus claranus	Clara Hunt's milk-vetch	FE, ST, Rank 1B.1	Chaparral, cismontane woodland, valley and foothill grassland
Eryngium constancei	Loch Lomond button-celery	FE, SE, Rank 1B.1	Seasonal wetlands
Gratiola heterosepala	Boggs Lake hedge-hyssop	SE, Rank 1B.2	Seasonal wetlands
Lasthenia burkei	Burke's goldfields	FE, SE, Rank 1B.1	Meadows and seeps
Limnanthes vinculans	Sebastopol meadowfoam	FE, SE, Rank 1B.1	Meadows and seeps, valley and foothill grassland .
Sedella leiocarpa	Lake County stonecrop	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland
OTHER SPECIAL-STATUS PLANTS (CEQA, OTHER)			
Amorpha californica* var. *napensis	Napa false indigo	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland.
Amsinckia lunaris	bent-flowered fiddleneck	Rank 1B.2	Cismontane woodland, valley and foothill grassland
Arctostaphylos manzanita* ssp. *elegans	Konocti manzanita	Rank 1B.3	Chaparral, cismontane woodland

[13] Inclusive of the 333 acres of the Modified APE outside the 2020 APE.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL HABITAT IN THE NEW ACRES[13]
Balsamorhiza macrolepis	big-scale balsamroot	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland
Brasenia schreberi	Watershield	Rank 2B.3	Marshes and swamps (freshwater)
Brodiaea leptandra	narrow-anthered brodiaea	Rank 1B.2	cismontane woodland, valley and foothill grassland
Castilleja rubicundula var. ***rubicundula***	pink creamsacs	Rank 1B.2	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland
Ceanothus confusus	Rincon Ridge ceanothus	Rank 1B.1	Chaparral, cismontane woodland
Ceanothus divergens	Calistoga ceanothus	Rank 1B.2	Chaparral
Ceanothus purpureus	holly-leaved ceanothus	Rank 1B.2	Chaparral, cismontane woodland
Ceanothus sonomensis	Sonoma ceanothus	Rank 1B.2	Chaparral, cismontane woodland
Chlorogalum pomeridianum var. ***minus***	Dwarf soaproot	Rank 1B.2	Chaparral
Cryptantha dissita	serpentine cryptantha	Rank 1B.2	Chaparral
Cryptantha excavata	deep-scarred cryptantha	Rank 1B.1	Cismontane woodland
Downingia willamettensis	Cascade downingia	Rank 2B.2	Cismontane woodland (lake margins), valley and foothill grassland (lake margins), vernal pools

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL HABITAT IN THE NEW ACRES[13]
Eriastrum brandegeeae	Brandegee's eriastrum	Rank 1B.1	Chaparral, cismontane woodland
Eriogonum nervulosum	Snow Mountain buckwheat	Rank 1B.2	Chaparral
Eryngium jepsonii	Jepson's coyote-thistle	Rank 1B.2	Valley and foothill grassland
Fritillaria pluriflora	adobe-lily	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland
Harmonia hallii	Hall's harmonia	Rank 1B.2	Chaparral
Hemizonia congesta* ssp. *congesta	congested-headed hayfield tarplant	Rank 1B.2	Valley and foothill grassland
Hesperolinon adenophyllum	Glandular western flax	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland
Hesperolinon drymarioides	drymaria-like western flax	Rank 1B.2	Chaparral, cismontane woodland
Hesperolinon sharsmithiae	Sharsmith's western flax	Rank 1B.2	Chaparral
Horkelia bolanderi	Bolander's horkelia	Rank 1B.2	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland
Juncus luciensis	Santa Lucia dwarf rush	Rank 1B.2	Chaparral, meadows and seeps
Leptosiphon jepsonii	Jepson's leptosiphon	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL HABITAT IN THE NEW ACRES[13]
Lupinus sericatus	Cobb Mountain lupine	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland
Microseris paludosa	Marsh microseris	Rank 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland
Navarretia leucocephala* ssp. *bakeri	Baker's navarretia	Rank 1B.1	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland
Navarretia rosulata	Marin County navarretia	Rank 1B.2	Chaparral
Penstemon newberryi* var. *sonomensis	Sonoma beardtongue	Rank 1B.3	Chaparral
Potamogeton zosteriformis	eel-grass pondweed	Rank 2B.2	Marshes and swamps
Plagiobothrys hystriculus	bearded popcornflower	Rank 1B.1	Valley and foothill grassland
Sidalcea hickmanii* ssp. *napensis	Napa checkerbloom	Rank 1B.1	Chaparral
Streptanthus brachiatus* ssp. *brachiatus	Socrates Mine jewelflower	Rank 1B.2	Chaparral
Streptanthus brachiatus* ssp. *hoffmanii	Freed's jewelflower	Rank 1B.2	Chaparral, cismontane woodland
Streptanthus morrisonii* ssp. *elatus	Three Peaks jewelflower	Rank 1B.2	Chaparral
Streptanthus morrisonii* ssp. *kruckebergii	Kruckeberg's jewelflower	Rank 1B.2	Cismontane woodland
Streptanthus vernalis	early jewelflower	Rank 1B.2	Chaparral
Stuckenia filiformis* ssp. *alpina	Northern slender pondweed	Rank 2B.2	Marshes and swamps (assorted shallow freshwater)

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL HABITAT IN THE NEW ACRES[13]
Trichostema ruygtii	Napa bluecurls	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland
Viburnum ellipticum	Oval-leaved viburnum	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest

NEWLY OBSERVED SPECIES

The following species had not been previously observed in the 2020 APE and was observed in the Modified APE, including the 333 acres outside the 2020 APE. This species was determined to have potential to occur during the 2020 BRA effort but was not observed in surveys conducted prior to the 2020 BRA.

Porter's navarretia (*Navarretia paradoxinota*). Rank 1B.3. Porter's navarretia is an annual forb in the Phlox family (Polemoniaceae) that blooms May through June. It typically occurs in meadows and seeps at elevations ranging from 540 to 2755 feet elevation (CNPS 2024a). The nearest documented occurrence in the vicinity of the Modified APE is from 2009 on Butts Canyon Road (CDFW 2024a). The most recent documented occurrence in the vicinity of the property is from May 2018 on St. Helena Creek Road in Middletown (CDFW 2024a). Known associated species include buckbrush (*Ceanothus cuneatus*), small tarweed (*Madia exigua*), slender woolly heads (*Psilocarphus tenellus*), hawksbit (*Leontodon saxatilis*), black oak (*Quercus kelloggii*), mountain dandelion (*Agoseris heterophylla*), soft chess (*Bromus hordeaceus*), wild oat (*Avena barbata*), larkspur (*Delphinium* sp.), and yampah (*Periderdia* sp.)(CDFW 2024a).

Surveys conducted since 2020 have identified populations of this species in the Modified APE. Populations of this species are situated in wetlands along Butts Canyon Road and the margins of the pond at central bowl. Approximately 0.24 acre with 577 individuals are present in the Modified APE, 0.04 acres (303 individuals) of which are located in the 333 acres outside the 2020 APE.

OBSERVED POPULATIONS

The following special-status plant species were observed in the Modified APE, including the new 333 acres, and were also observed during the 2020 BRA assessments. Refer to the 2020 BRA for a complete description of the special-status plants.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	MODIFIED APE (acres/numbers)	NEW ACRES (acres/numbers)
Astragalus rattanii* var. *jepsonianus	Jepson's milk-vetch	Rank 1B.2	0.07 acres (184 individuals)	0.07 acres (184 individuals)

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	MODIFIED APE (acres/numbers)	NEW ACRES (acres/numbers)
Erigeron greenei	Greene's narrow-leaved fleabane	Rank 1B.2	3.08 acres (635 individuals)	2.97 acres (285 individuals)
Hesperolinon bicarpellatum	Two carpellate western flax	Rank 1B	48.91 acres (50,277 individuals)	13.87 acres (16,967 individuals)
Hesperolinon didymocarpum	Lake County western flax	SE, Rank 1B.2	4.42 acres (16,863 individuals)	2.52 acres (14,856 individuals)
Layia septentrionalis	Colusa layia	Rank 1B.2	6.45 acres(29,357 individuals)	0.07 acres (370 individuals)
Sidalcea keckii	Keck's checkerbloom	FE, Rank 1B.1	0.05 acres (23 individuals)	0
Streptanthus hesperidis	Green jewelflower	Rank 1B.2.	8.81 acres (2,531 acres)	0.95 acres (370 individuals)

Of note, big-scale balsamroot (*Balsamorhiza macrolepis*; Rank 1B.2) was observed in the 2020 APE but is not within the Modified APE.

5.2.2 Special-status Wildlife

Based upon a review of the resources listed in Section 3.0, it was determined that 62 special-status wildlife species have been documented in one or more of the referenced 7.5-minute quadrangles in the vicinity of the Modified APE (see Section 3.0). Each of these species was also documented and assessed in the 2020 BRA, except for three invertebrates: Monarch butterfly (*Danaus plexippus*), Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*), and California linderiella (*Linderiella occidentalis*). Monarch butterfly is addressed below, and the other two species have no potential to occur and are not discussed further. Appendix C summarizes the potential for each of these species to occur.

Table 5 summarizes the special-status wildlife observed, presumed present, or determined to have potential to occur in the Modified APE, including the 333 acres outside the 2020 APE. Refer to the 2020 BRA for a complete description of the special-status wildlife.

Table 5. Potential Special-Status Wildlife

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
FORMALLY LISTED WILDLIFE (FESA, CESA)			
Bassariscus astutus	Ring-tailed cat (Ringtail)	CFP	**Moderate Potential**. There is a large amount of oak woodland, scrub and chaparral within the Modified APE that provides potentially suitable habitat for this species. Additionally, these densely vegetated areas are directly connected to additional large, undeveloped habitat areas that may provide suitable habitat for the species.
Aquila chrysaetos	Golden eagle	BCC, CFP	**Present**. This species was observed nesting just south of property in 2018 and was documented in the 2020 BRA. Adult and juvenile golden eagles were observed in oak woodland communities within the property. The Modified APE contains suitable open areas with large trees to support nesting and foraging.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Elanus leucurus	White-tailed kite	CFP	**Present**. This species has been observed flying over the Modified APE and this species is known to occur in the region (CDFW 2024a) and was previously observed and documented in the 2020 BRA. The Modified APE provides open foraging habitat for this species and large trees and shrubs that may provide suitable nesting substrates.
Falco peregrinus anatum	American peregrine falcon	FD, SD, CFP, BCC	**High Potential/Unlikely to Nest**. The Modified APE contains open areas and low rocky outcrops that provide potential foraging habitat for this species. However, sheer rocky cliffs with suitable ledges for nesting are absent in the Modified APE and its immediate surroundings.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Haliaeetus leucocephalus	Bald eagle	FD, SE, CFP, BCC	**High Potential/Unlikely to Nest**. Adult and juvenile bald eagles were observed flying and roosting adjacent to multiple reservoirs near the Modified APE and was documented in the 2020 BRA. Bald eagles have been observed nesting around reservoirs. The Modified APE is near these nesting sites and may have line of site to them. Bald eagle is unlikely to nest in the Modified APE but suitable foraging habitat is present.
Agelaius tricolor	Tricolored blackbird	BCC, SSC, ST	**Moderate Potential**. The Modified APE is adjacent to several reservoirs and includes reservoirs containing extensive amounts of emergent vegetation that may support nesting. The species has been documented to nest within 1 mile of the property (CDFW 2024a).
Actinemys marmorata var. marmorata	northwestern pond turtle	FP,SSC	**Moderate Potential**. The species was observed in areas near the Modified APE. For areas near aquatic features (within 300 feet), this species has some potential to be present. This species was observed and documented in the 2020 BRA.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Danaus plexippus	Monarch butterfly	FC, winter roosts are protected by CDFW	**Assumed Present**. This species may be seen migrating across the Modified APE, but the project will not remove roost sites.
OTHER SPECIAL-STATUS WILDLIFE (CEQA, OTHER)			
Antrozous pallidus	Pallid bat	SSC, WBWG	**High Potential**. The Modified APE contains shrubland, forested habitats, and rocky outcroppings, that are typically associated with the species. Stream and grassland bordering open water provide foraging for this species. This species was observed and documented in the 2020 BRA.
Corynorhinus townsendii	Townsend's big-eared bat	SSC, WBWG	**Moderate Potential**. The Modified APE contains trees 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 APE (CDFW 2024a).
Lasionycteris noctivagans	Silver-haired bat	WBWG	**High Potential**. The Modified APE includes woodland, forest, and open habitat suitable for this species. The Modified APE could also support roosting in hollow trees, snags, and rock crevices. This species was observed and documented in the 2020 BRA.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Lasiurus blossevillii	Western red bat	SSC, WBWG	**Moderate Potential**. The Modified APE includes broad-leaved tree species typically associated with this species. Stream channels, open water, and edge habitats provide foraging for this species.
Lasiurus cinereus	Hoary bat	WBWG	**High Potential**. The Modified APE includes forested habitats and habitat mosaics, with oak trees. Grassland bordering open water and edge habitats along forested areas provide foraging for this species.
Myotis evotis	Long-eared myotis	WBWG	**High Potential**. The Modified APE includes shrubland, forested habitats, rocky outcroppings, chaparral, and agricultural areas that are typically associated with the species. Grassland bordering open water and edge habitats along forested areas provide foraging for this species.
Myotis thysanodes	Fringed myotis	WBWG	**Moderate Potential**. The Modified APE includes dry woodland and grassland habitat that could provide suitable foraging for this species. Trees within the APE could also provide suitable roosting habitat for this species.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Myotis volans	Long-legged myotis	WBWG	**Moderate Potential**. The Modified APE contains dry woodland and grassland habitat that could provide suitable foraging for this species. Rock crevices, and trees within the APE could also provide suitable roosting habitat for this species.
Taxidea taxus	American badger	SSC	**Moderate Potential**. The Modified APE includes, and is surrounded by, large expanses of uncultivated open ground with shrubs, grassland, and forest habitat. Burrowing rodents were observed within the APE, which may support a prey base for the species.
Ammodramus savannarum	Grasshopper sparrow	BCC, SSC	**High Potential**. The Modified APE is within this species' breeding range, and includes large areas of grasslands to support foraging and nesting. This species has been documented near the APE (eBird 2024).
Asio otus	Long-eared owl	SSC	**Moderate Potential**. The Modified APE includes oak and riparian habitats adjacent to open lands that could support foraging and nesting.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Athene cunicularia	Burrowing owl	SSC, BCC	**Moderate Potential/Unlikely to Nest**. This species does not breed in Lake County (CDFW 2024a, eBird 2024). This species may occasionally winter within uncanopied grassland areas within the Modified APE with suitable burrows. This species has been documented to winter approximately 7 miles southeast of the parcel (CDFW 2024a). Although burrows suitable for burrowing owl occupation were rarely observed during the site visits, ground squirrels are present within the APE and suitable burrow habitat for owls may arise in the future.
Baeolophus inornatus	Oak titmouse	BCC	**Present/Likely to Nest**. This species has been observed within the woodland communities in the Modified APE and was previously observed and documented in the 2020 BRA. The APE includes woodland and tree cavities suitable for nesting.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Circus cyaneus	Northern harrier	SSC	**Moderate Potential/Unlikely to Nest**. Although this species was observed foraging near the Modified APE, the APE does not contain dense, dry herbaceous vegetation near water that typically supports nesting. This species was observed and documented in the 2020 BRA.
Contopus cooperi	Olive-sided flycatcher	SSC, BCC	**Moderate Potential**. The Modified APE includes woodland habitat that may support nesting.
Falco mexicanus	Prairie falcon	BCC	**Moderate Potential/Unlikely to Nest**. The Modified APE includes open areas and low rocky outcrops that provide potential foraging habitat for this species. However, sheer rocky cliffs with suitable ledges for nesting are absent in the APE and its immediate surroundings.
Icteria virens	Yellow-breasted chat	SSC	**Moderate Potential.** The Modified APE includes areas of dense vegetation adjacent to perennial stream habitat to support nesting, and this species has been documented south of the APE.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Ixobrychus exilis	Least bittern	SSC, BCC	**Moderate Potential.** The Modified APE is adjacent to several deep reservoirs containing extensive emergent vegetation. This species has not been observed in the vicinity of the Modified APE.
Lanius ludovicianus	Loggerhead shrike	BCC, SSC	**Moderate Potential**. The Modified APE includes open areas for foraging as well as suitably dense vegetation in scrub and woodland communities to support nesting. This species has been documented near the APE (eBird 2024), though has not been observed during site visits.
Melanerpes lewis	Lewis's woodpecker	BCC	**High Potential**. The Modified APE contains oak savannah and woodland habitat to support this species, and the APE is within the known breeding range of this species (CDFW 2024a). This species has been documented near the APE (eBird 2024).

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Picoides nuttallii	Nuttall's woodpecker	BCC	**Present**. This species was observed within the woodland communities in the Modified APE and was previously observed and documented in the 2020 BRA. The APE contains woodland and tree cavities suitable for nesting.
Progne subis	Purple martin	SSC	**Moderate Potential**. The Modified APE includes woodlands with snags and cavities to support nesting, and this species has been documented to nest near the APE (CDFW 2024a).
Selasphorus sasin	Allen's hummingbird	BCC	**High Potential**. This species was observed in the Modified APE during site assessments. The APE includes woodland habitat with nectar sources that may support nesting. This species was observed and documented in the 2020 BRA.
Setophaga* [*Dendroica*] *petechia brewsteri	Yellow warbler	SSC, BCC	**High Potential**. This species was observed near Modified APE and includes areas of dense vegetation adjacent to perennial stream habitat to support nesting. This species was observed and documented in the 2020 BRA.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Spinus* [*Carduelis*] *lawrencei	Lawrence's goldfinch	BCC	**Moderate Potential**. The Modified APE includes large amounts of undisturbed oak savannah, which provides breeding habitat for this species, and this species is regularly documented in the region (eBird 2024).
Spizella atrogularis	Black-chinned sparrow	BCC	**High Potential**. The Modified APE is within this species' breeding range, and includes large amounts of dense shrub and chaparral habitats this species requires for nesting (CDFW 2024a, eBird 2024).
Xanthocephalus xanthocephalus	Yellow-headed blackbird	SSC	**Present**. This species was observed nesting in emergent vegetation in the Guenoc Valley Site, directly adjacent to the 2020 Phase 1 Study Area in 2018 and 2019 and was documented in the 2020 BRA. The Modified APE has freshwater emergent vegetation and may support nesting by this species.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL FOR OCCURRENCE IN THE MODIFIED APE
Rana boylii	Foothill yellow-legged frog	SSC	**Moderate Potential**. The species was observed adjacent to portions of the Modified APE, in association with Butts Creek and was documented in the 2020 BRA. Streams with rocky substrate provide potentially suitable habitat for the species, including areas within the Modified APE. This species has also been documented in CNDDB within and in close proximity to the APE (CDFW 2024a).

CHANGES SINCE 2020

Since the 2020 BRA and EIR, changes to special-status wildlife protection have occurred. Monarch butterfly became a candidate for federal listing under the FESA in December 2020, and the northwestern pond turtle (NPT; formerly western pond turtle) was proposed for federal Threatened status on October 3, 2023 (88 FR Vol 190, 68370) with a rule under section 4(d) of the Endangered Species Act. Critical Habitat for NPT has not been designated, nor has a Recovery Plan been completed. A formal issuance of a proposed rule in the federal register states: ESA protections limited to "Procedural protections" and a "conference opinion" can be received and this becomes a Section 7 BO if the species becomes listed (final rule effective) during the project period. The monarch is a candidate which is a species that is considered for listing but not warranted at this time. No proposed rule has been published. No ESA protections for monarchs, although some lead agencies may have guidance or plans for protections. No permits can be received but candidate conservation agreements can be formed. Monarch butterfly did not appear in 2020 database searches and now does and is therefore considered a newly documented potential species and is discussed below.

Monarch butterfly (*Danaus plexippus*). Federal Candidate, winter roosts protected by CDFW. Assumed Present**.** This large, showy butterfly is found throughout the United States, southern Canada, and Central America. It also occurs in parts of South America and other continents. In North America, this species spends spring and summer months breeding and foraging across much of its range. The monarch butterfly generally uses milkweed (*Asclepias spp.*) for both breeding and nectaring, although nectar may also be obtained from a variety of additional plant species. From August to October, monarchs will migrate thousands of miles to winter roost sites located along the California coast and central Mexico. At roost sites, monarchs will congregate in thousands or millions on a tree or group of trees (Opler et al. 2011). Western monarchs prefer overwintering habitat comprised of a relatively dense grove of trees with some understory, located near water and nectar sources and protected from the wind by topographic landforms or trees (Sakai and Calvert 1991). Winter roost sites are often on south, southwest, or west facing slopes which may provide more favorable temperature regimes and wind protection (Leong et al. 2004). Monarch butterflies typically arrive in mid-October to overwintering sites along the California coast and remain until late February or March (Jepsen et al. 2015). Monarchs roost along the coast, which is outside the Modified APE; therefore, there is no potential for roosting. This species may be seen migrating across the Modified APE, but the Project Modifications will not remove roost sites. Host and nectar plants are present in the Modified APE and monarchs may breed in the Modified APE in spring/early summer.

Foothill yellow-legged frog north coast DPS populations in northern California are no longer candidates for state-listing and are only species of special concern (SSC). Two special-status invertebrates (SSI) have been recently documented in the vicinity of the Modified APE and were added to the potentials table; however, the species were considered unlikely to occur in the Modified APE. Crotch bumblebee was removed due to absence of recent and historic occurrences in Lake and Napa Counties (CDFW 2024a).

5.3 Wildlife Corridors and Native Wildlife Nursery Sites

An assessment of publicly available, regional wildlife connectivity studies (CDFW 2024a, M2B 2018) was performed as part of this study. The Mayacamas to Berryessa (M2B) study

(Attachment WILDLIFE in the 2020 FEIR) indicates that a potentially important pathway of transit for wildlife intersects the Modified APE and that the area has relatively high permeability, which makes it suitable for wildlife to use the area for transit between larger habitat nodes (M2B 2018). Additionally, the Modified APE is adjacent to wildlife corridor areas identified in the California Essential Habitat Connectivity and California Bay Area Linkage Network (CDFW 2024b).

In addition to the special-status wildlife species that may occur, non-status wildlife species occur and may use portions of the Modified APE 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 Modified APE, habitats may facilitate wildlife movement. Additionally, the reservoirs within close proximity to the Modified APE are anticipated to attract native wildlife species. The Modified APE contains portions of maintained and un-maintained barbed wire fencing used to contain livestock. Otherwise, no limitations of wildlife movement are present. Within the Modified APE 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 Modified APE are anticipated to attract native wildlife species. Therefore, portions of the Modified APE may occur within one or more wildlife migration corridors. A wildlife corridor assessment was conducted for the 2020 APE and is included as Appendix WILDLIFE in the 2020 Final EIR. As the Modified APE has similar circumstances for wildlife access as the 2020 APE, results of the previous wildlife corridor assessment apply to the Modified APE analyzed in this assessment.

There are no known significant wildlife breeding locations within the Modified APE. However, the Modified APE is likely used incidentally by individuals during migratory or dispersal activities as well as for birthing and rearing of young.

6.0 ANALYTICAL METHODOLOGY AND SIGNIFICANCE THRESHOLD CRITERIA

Pursuant to Appendix G, Section IV of the State CEQA Guidelines, a project would have a significant impact on biological resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or U.S. Fish and Wildlife Service.
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These thresholds were utilized in completing the analysis of the potential impacts of the Project Modifications for CEQA purposes. For the purposes of this analysis, a "substantial adverse effect" is generally interpreted to mean that a potential impact could directly or indirectly affect the resiliency or presence of a local biological community or species population. Potential impacts to natural processes that support biological communities and special-status species populations that can produce similar effects are also considered potentially significant. Impacts to individuals of a species or small areas of existing biological communities may be considered less than significant if those impacts are speculative, beneficial, de minimis, and/or would not affect the resiliency of a local population.

7.0 IMPACTS AND MITIGATION EVALUATION

Using the CEQA analysis methodology outlined in Section 6.0 above, the following section describes potential significant impacts due to implementation of the Proposed Project, as modified, as well as suggested mitigation measures which are expected to reduce impacts to less than significant. Potential impacts of the Original Project were analyzed and mitigated in the 2020 BRA and 2020 EIR; the impact analysis below focuses on whether the Project Modifications would result in new significant impacts or substantially more severe significant impacts compared to what was previously assessed. These mitigation measures are substantively identical to those identified for the 2020 Project in the 2020 BRA and the 2020 Final EIR and would also apply to the Project Modifications[14]. Only minor changes have been made to reflect updates in regulatory status for species or habitats, as appropriate.

7.1 General Avoidance Measures

BIO IMPACT 01: The Project Modifications may inadvertently impact biological resources, including aquatic features, sensitive land cover types, special-status species, and habitat conditions.

The Project Modifications result in an overall smaller APE by approximately 505 acres as compared to the project analyzed in the 2020 BRA and 2020 Final EIR. However, there would still be the potential for similar inadvertent significant impacts to biological resources through construction-related activities, compared to 2020. The following mitigation measures from the 2020 EIR are recommended to reduce inadvertent impacts to sensitive resources during construction.

MM BIO 01a Construction Best Management Practices (2020 EIR MM 3.4-1)

The following general Best Management Practices (BMPs) and avoidance and minimization measures are recommended to avoid accidental impacts:

- Construction and staging areas shall not be larger than necessary and to the degree feasible shall be within areas otherwise scheduled for development. These areas shall be visibly demarcated prior to construction activities to prevent unnecessary impacts. Equipment shall not be kept outside established areas.
- Construction areas shall be kept serviceably clean. Sufficient closed bins shall be provided for trash and debris. Washout, track out, and dust control BMPs shall be implemented as necessary. Construction vehicles and equipment shall be clean and free of mud or vegetation that could introduce plant pathogens or propagules of non-native plants. This includes equipment hauled onto the site.
- Pets shall not be allowed within construction areas.
- Construction activities shall be carried out such that sensitive habitats are avoided. Materials shall not be placed where they may enter sensitive habitat, receiving waters, or a storm drain, or be subject to wind or runoff erosion and dispersion.

[14] References to the "Project" or "Proposed Project" in the mitigation measures should be interpreted as applying to the 2020 Project as modified by the Project Modifications.

- Equipment use shall be limited to the hours from 7:00 a.m. to 7:00 p.m. to the extent possible. Exceptions may be made if approved by the County for situations where a longer construction schedule would alleviate the potential for adverse environmental effects.

MM BIO 01b Worker Environmental Awareness Training (2020 EIR MM 3.4-2)

Construction personnel working on the Proposed Project shall be provided with Environmental Awareness Training tailored to the location they will be working at prior to the commencement of construction work by that personnel. This training shall include materials that describe the sensitive habitats and special-status wildlife species with the potential to occur. Table 6 dictates species for which environmental awareness training shall occur, based on location.

Topics covered shall include relevant biological information on these species, and the appropriate actions that shall be taken in the event of an occurrence. Training shall also include a description of construction best management practices and the importance of environmentally conscious construction. Training materials shall be prepared by a qualified biologist who shall train a member of the contractor's crew to provide follow-up training to newly hired employees during the construction period. The qualified biologist shall attend the Environmental Awareness Training quarterly, at a minimum, to ensure that the training sufficiently covers the necessary materials. These materials may be updated as new information is available. Construction personnel shall sign a training log stating that they have received this training. Copies of this training log shall be maintained on the Guenoc Valley Site and shall be made available to inquiring agencies upon request.

Construction personnel will also be trained to identify nesting bird behavior that indicates construction activities are causing a significant disturbance to nesting birds. This behavior includes vocalizing, making defensive flights at intruders, getting up from a brooding position, or flying off the nest. Should these behaviors be identified, construction workers will be trained to halt work in the vicinity of the nest until a qualified biologist determines a suitable nest buffer.

Should a special-status species be observed by construction personnel, the qualified biologist will verify the observation and report the observation to CNDDB. The qualified biologist shall also report observations of special-status species identified during preconstruction surveys, if any.

Table 6. Special-Status Species to be Included In Environmental Awareness Training

SPECIES[15]	GUENOC VALLEY SITE (ALL PHASES)PLUS GRANGE ROAD CONNECTOR
Pallid bat (*Antrozous pallidus)*	x
Ring-tailed cat *(Bassariscus astutus)*	x

[15] While Monarch butterfly may be observed within the Modified APE, no significant impacts to the species is anticipated as no winter roosts are present and no impacts to winter roosts will occur and is therefore not included in this list.

SPECIES[15]	GUENOC VALLEY SITE (ALL PHASES)PLUS GRANGE ROAD CONNECTOR
Townsend's big-eared bat *(Corynorhinus townsendii)*	x
Western red bat *(Lasiurus blossevillii)*	x
American badger *(Taxidea taxus)*	x
Tricolored blackbird *(Agelaius tricolor)*	x
Grasshopper sparrow *(Ammodramus savannarum)*	x
Golden eagle *(Aquila chrysaetos)*	x
Long-eared owl *(Asio otus)*	x
Burrowing owl (*Athene cunicularia*)	x
Northern harrier (*Circus cyaneus*)	x
Olive-sided flycatcher (*Contopus cooperi*)	x
White-tailed kite (*Elanus leucurus*)	x
American peregrine falcon (*Falco peregrinus anatum*)	x
Bald eagle (*Haliaeetus leucocephalus*)	x
Yellow-breasted chat (*Icteria virens*)	x
Least bittern *(Ixobrychus exilis)*	x
Loggerhead shrike (*Lanius ludovicianus*)	x
Purple martin (*Progne subis*)	x
Yellow warbler (*Setophaga* [*Dendroica*] *petechia brewsteri*)	x
Yellow-headed blackbird (*Xanthocephalus xanthocephalus)*	x
Western pond turtle (*Actinemys marmorata*)	x
Foothill yellow-legged frog (*Rana boylii*)	x

Incorporation of these mitigation measures would reduce the overall potential for construction of the proposed action to result in direct impacts to special-status species, or in indirect habitat loss or degradation that could result in significant impacts to special-status species to **less-than-significant**

7.2 Special-status Species

This section analyzes the potential impacts of the Project Modifications and mitigation for special-status species in reference to the significance threshold outlined in CEQA Appendix G, Part IV (a):

Does the project have the potential to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or U.S. Fish and Wildlife Service?

Potential impacts and mitigation for potentially significant impacts are discussed below.

7.2.1 Special-Status Plant Species

The Project Modifications result in an overall smaller APE by approximately 505 acres as compared to the project analyzed in the 2020 BRA and 2020 Final EIR. Project Modifications occur in habitat types of similar quality to the 2020 project. Only one newly observed special-status plant has been observed since the 2020 BRA, Porters navarretia. All other special-status plants in the Modified APE have been documented and assessed in the 2020 BRA and Final EIR. However, there would still be the potential for similar significant impacts to special-status plants through construction-related activities, compared to 2020. WRA documented 23 CNPS Rank 4 plant species throughout the Guenoc Valley Site during surveys conducted from 2017 through 2023 (Appendix B); while Rank 4 species are not considered threatened or endangered and are not afforded federal, state, or local protections, they will be avoided to the greatest extent feasible.

BIO IMPACT 02: WRA documented eight Rank 1B, including one state-listed and one federal-listed special-status plants in the Modified APE during surveys conducted between 2017 and 2023. Seven of these species have been previously identified on the property during surveys conducted between 2017 and 2019 and impacts to such were previously analyzed and mitigated in the 2020 BRA and 2020 Final EIR. Only one new Rank 1B plant was identified after completion of the 2020 analysis. Additionally, approximately 55 acres of the Modified APE was not field assessed for special-status plants for either spring or both spring and late season. Special-status plants may be impacted through construction-related activities. Removal of special-status plants would constitute a potentially significant impact; however, this impact is not a new impact as special-status plants were assessed and mitigated in the 2020 EIR and the mitigation measures are also applicable to the new plant species to reduce potential impacts to less-than-significant. The following mitigation measures from the 2020 EIR would continue to apply to the Project Modifications and would reduce impacts to special-status plants.

MM BIO 02 Special-Status Plants (2020 EIR MM 3.4-3)

1) Pre-construction botanical surveys of herb-dominated habitats (i.e., grasslands, wetlands) with the potential to support special-status plants shall be conducted within those areas scheduled for groundbreaking during one of the two appropriate identification seasons prior to groundbreaking. Pre-construction surveys of shrub or woodland dominated habitats with the potential to support special-status plants shall be surveyed within one of the four appropriate identification seasons prior to groundbreaking for each specific component of the Proposed Project. 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 groundbreaking. Results of the pre-construction survey shall be maintained on the Guenoc Valley Site and available to agencies upon request.

2) In the event that the results of the pre-construction special-status plant surveys identify the presence of individual special-status plants within areas identified for ground disturbance activities, one of the following measures shall be conducted.
   a) Individual occurrences of special-status plants shall be avoided by a minimum of 20 feet when possible. This buffer shall be demarcated by a qualified biologist with high-visibility fencing. Where ground disturbance would 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 shall be installed between the work area and the 20-foot setback and shall not be removed until the disturbed areas have been revegetated or otherwise stabilized.
      OR
   b) When avoidance of a special-status plant is not feasible, mitigation shall occur through transplanting or compensatory planting of in-kind species. Mitigation for special-status plants shall follow the general outline below.
      i) For compensatory plantings, in-kind species shall be planted at a minimum ratio of 2:1. Monitoring of mitigation activities shall be performed by a qualified biologist for a minimum of three years. The qualified biologist shall prepare an annual report on the progress of mitigation with recommended management actions. Mitigation shall be deemed complete once the qualified biologist has determined that the mitigation has achieved or exceeded 80 percent success following the minimum three years of monitoring. Additional years of monitoring and management shall occur should mitigation fail to meet success criteria.
      ii) Should transplanting of individual plants be considered, the transplanting shall be overseen by a qualified biologist. Plants shall be relocated to suitable habitats and shall be within designated open space as possible. A qualified biologist shall monitor all transplanted individuals for a minimum of three years to ensure successful establishment. The qualified biologist shall prepare an annual report on the success of transplanted plants. Should transplanting fail, compensatory actions shall occur as outlined under (i).
      iii) Consultation with CDFW or USFWS shall occur as necessary, based on regulatory jurisdiction, should a special-status plant that does not have a history of successful transplantation and was not previously identified within the Phase 1 Area of Potential Effects be observed during preconstruction botanical surveys. For species with a demonstrated history of successful transplantation, then mitigation shall follow steps (i) and (ii) above.

Incorporation of this mitigation measure would reduce the overall impact by identification of location and establishment of suitable buffers for avoidance or provide for compensatory mitigation actions for populations that would not be avoided, thereby reducing potential impacts to **less-than-significant.**

7.2.2 Special-status Wildlife Species

The Project Modifications result in an overall smaller APE by approximately 505 acres as compared to the project analyzed in the 2020 BRA and 2020 Final EIR. As described in Section 5.2 above, changes to the status or consideration of special-status wildlife with potential to occur in the Modified APE have occurred since 2020. While monarch is now considered a

candidate for federal listing, no ESA protections apply; therefore, no significant or substantial impacts by the Project Modifications will occur to monarch butterfly. Northwestern pond turtle (NPT) is now proposed for federal listing as Threatened. The species was previously considered special-status in the 2020 BRA and mitigation measures to avoid impacts were provided. See MM08 for further discussion regarding pond turtle. All other special-status wildlife that may occur in the Modified APE have been documented and assessed in the 2020 BRA and Final EIR, have had no tightening in regulatory protection. The 333 acres of the Modified APE provides suitable habitat for special-status wildlife. The added areas include similar habitats of similar quality as the 2020 APE and the Project Modifications are considered to have no significant or substantial changes in impacts from those outlined in the 2020 BRA and Final EIR. However, there would still be the potential for similar significant impacts to special-status wildlife through construction-related activities, compared to 2020.

Thirty-six special-status wildlife species were determined to have potential to occur in or within the vicinity of the Modified APE or are assumed to be present based on existing habitat and/or directly observed. Additionally, the Modified APE has the potential to support nesting birds. Each of these special-status wildlife species were previously identified, presumed present, or presumed to have potential to occur on the project site based on surveys conducted between 2017 and 2019 (except as noted above), and impacts to such were previously analyzed and mitigated in the 2020 BRA and 202 Final EIR. The Modified APE is not located within Critical Habitat as designated by USFWS or NMFS. The following recommendations and potential constraints are provided based on the potential for special-status species and their habitat to occur within the Modified APE. Where applicable, species with similar requirements and guidance are grouped together.

BIO IMPACT 3: American badger is an SSC with moderate potential to occur in the Modified APE. Project Modifications occur in habitat types of similar quality to the 2020 project. Construction activities could impact badgers or badger dens should they occur within the Modified APE or within the immediate vicinity. Destruction of an active birthing den would be a significant impact. The following mitigation measure from the 2020 EIR would continue to apply to the Project Modifications and would reduce impacts to American badger.

MM BIO 3 American Badger (2020 EIR MM 3.4-4)

- No more than 14 days before the start of ground disturbance activities on or within 200 feet of open grassland, a qualified biologist shall conduct pre-construction surveys to determine if American badger dens are present. If no dens are observed, no further mitigation is necessary. If American badger dens are determined to be present, the biologist shall monitor for activity to determine whether the den is active. If the den is determined to be occupied by a female with young, a 50-foot buffer shall be demarcated with high-visibility flagging until the qualified biologist has determined that young have matured and dispersed. No construction activities shall occur within the buffer while the den is actively supporting dependent young.

- If the den is determined to be active, but a female with young is not present, CDFW shall be contacted to determine if burrow exclusion using passive measures such as one-way doors or equivalent may be utilized. Exclusion activities shall be attempted for a minimum of three days to discourage their use prior to any project-related ground disturbances. If the biologist determines that the dens have become inactive as a result of the exclusion methods, dens shall be excavated by hand to prevent them from being re-occupied during construction.

Incorporation of this mitigation measure would require identification of potential dens in pre-construction surveys and appropriate avoidance measures in the event an occupied den is detected, thereby reducing potential impacts to **less-than-significant.**

BIO IMPACT 04: Ringtail is a CFP species with moderate potential to occur in the Modified APE. Project Modifications occur in habitat types of similar quality to the 2020 project. The Modified APE contains suitable habitat for ringtail. Construction activities could impact ringtail or ringtail dens should they occur within the Modified APE or immediate vicinity. Destruction of an active birthing den would constitute a significant impact. The following mitigation measure from the 2020 EIR would continue to apply to the Project Modifications and would reduce impacts to ringtail.

MM BIO 4 Ringtail Impacts (2020 EIR MM 3.4-5)

- No more than 14 days before the start of ground disturbance activities within open grassland, oak woodland, or riparian forest habitat, a qualified biologist shall conduct pre-construction surveys to determine if ringtail dens are present. If no active ringtail dens are observed, no further mitigation shall be recommended. If ringtail dens with young are determined to be present within the work area, the biologist shall establish a clearly marked exclusionary buffer of no less than 50 feet with high-visibility flagging. No ground disturbance shall take place within the buffer until the biologist determines the den no longer supports dependent young.

Incorporation of this mitigation measure would require identification of potential dens in pre-construction surveys and appropriate avoidance measures in the event an occupied den is detected, thereby reducing potential impacts to **less-than-significant**.

BIO IMPACT 05: Three special-status bat species and five non-status bat species have a moderate or high potential to occur within the Modified APE. Project Modifications occur in habitat types of similar quality to the 2020 project. 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), and/or snags. The destruction or injury of special-status bats or loss of a maternity roost would constitute a potentially significant impact 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 mitigation measure from the 2020 EIR would continue to apply to the Project Modifications and would reduce impact to bats.

MM BIO 05: Bat Maternity Roosts and Special-Status Bat Impacts (2020 EIR MM3.4-6)

Pre-construction survey(s) for bat roosts shall be conducted no more than 14 days prior to the start of construction in locations suitable for roosts or tree removal. Surveys of potential bat roost habitat shall concentrate on large trees (DBH >12 inches) specifically looking for relevant bat use features such as loose bark or cavities, broadleaf trees in riparian woodland habitat, buildings, bridges, and cliffs/rocky outcroppings on or within 100 feet of any planned work areas.

Prior to construction on the Middletown Housing Site, foliage suitable for western red bat roosting shall also be surveyed. If no potential bat roosts are observed, no further mitigation shall be necessary. For trees proposed for removal that have been identified as potentially suitable habitat for special-status bat species, the following shall apply:

- Trees proposed for removal that have been identified as potentially suitable special-status bat habitat shall be removed using the two-day phased removal method described below:
    - On day 1, branches and small limbs not containing potential bat roost habitat (cavities, crevices, exfoliating bark, etc.) shall be removed using chainsaws only. The remainder of the tree shall be removed on day 2.
- Removal shall occur during seasonal periods of bat activity. Removal shall occur as possible outside of maternity season. The maternity roosting season for bats is approximately February 1 through September 1 (but varies due to rainfall and temperature). The best time for removal of structures that may support maternity roosting is between February 1 and April 15.

If an active maternity roost is detected, the tree(s) or structures shall be retained until after the young bats are no longer dependent on their parents for care as determined by a qualified biologist. If a special-status bat roost is observed during preconstruction surveys, appropriate avoidance or exclusion measures shall be developed in consultation with CDFW.

Incorporation of this mitigation measure would require identification of potential day or maternity roosts in pre-construction surveys and appropriate avoidance measures in the event an occupied day or maternity roost is detected, thereby reducing potential impacts to **less-than-significant.**

BIO IMPACT 06: Burrowing owl is listed as an SSC by the CDFW. Project Modifications occur in habitat types of similar quality to the 2020 project. While the species was not observed during the site assessment, ground squirrels and potentially suitable habitat are present, and suitable burrows may exist in the future. This species is migratory and may occur in portions of the Modified APE. Construction activities that would remove or destroy burrows and impact grassland habitat containing suitable burrows, may result in a direct impact to burrowing owl, which would constitute a significant impact. The following mitigation measure from the 2020 EIR would continue to apply to the Project Modifications and would reduce impacts to burrowing owl.

MM BIO 06: Burrowing Owls (2020 EIR MM 3.4-9)
A pre-construction survey shall be performed by a qualified biologist prior to the start of ground-disturbing activities where suitable burrowing owl burrows (such as ground squirrel complexes) are present. The survey shall be performed according to the standards set forth by the Staff Report for Burrowing Owl Mitigation (CDFW 2012). Pre-construction surveys shall occur no more than 14 days prior to ground disturbance. Should a burrow be observed in use by a burrowing owl, or if a burrow shows signs of use (pellets, whitewash, feathers), project activities shall be excluded within a 250-foot high-visibility buffer until the qualified biologist determines the owls are no longer present.

For active burrows within an area of impact, passive exclusion techniques, such as one-way doors, may be used to exclude burrowing owls from occupied burrows outside the nesting season or if the qualified biologist determines the burrow does not support an active nest. Once exclusion is completed and the biologist determines that the burrow is not occupied, the burrows shall be collapsed.

Incorporation of this mitigation measure would require identification of potential burrows in pre-construction surveys and appropriate avoidance measures in the event an occupied burrow is detected, thereby reducing potential impacts to **less-than-significant**.

BIO IMPACT 07: Golden eagle, bald eagle, white-tailed kite, and American peregrine falcon nest in the greater area surrounding the Modified APE. Project Modifications occur in habitat types of similar quality to the 2020 project. Though the Modified APE provides foraging habitat for many raptor species, it is unlikely to support nesting for special-status raptors, other than white-tailed kite, golden eagle. Several common raptor species may also forage and nest within the Modified APE. White-tailed kite and raptor nests in general are protected by the MBTA and CFGC. Protective exclusion buffers around active raptor nests can vary greatly and may extend up to 0.25 mile in the case of white-tailed kite and golden eagle.

In addition to the aforementioned raptor species, the site assessment determined that special status bird species Allen's hummingbird, Nuttall's woodpecker, oak titmouse, may be present in the Modified APE. 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 Modified APE. A variety of native bird species protected under the MBTA as well as the CFCG may use the Modified APE 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 activities associated with the Project Modifications.

Initial vegetation removal, clearing, and grubbing activities, along with building removal and demolition of structures, have the potential to affect nesting migratory birds. Adverse effects to nesting birds covered by the CFGC, including active nests, eggs and young, would constitute a potentially significant impact that may occur as a result of these activities. The following mitigation measure from the 2020 EIR would continue to apply to the Project Modifications and would reduce impacts to nesting birds.

MM BIO 07: Nesting Birds (2020 EIR MM 3.4-8)
Should any groundbreaking or construction-related work begin within the general nesting season (February 1 through August 31), a pre-construction nesting bird survey on and within 200 feet of ground-disturbing activities shall be completed by a qualified biologist no more than five days prior to the start of work. If no active nests are observed, no further mitigation shall be recommended.

If active nests are observed during the pre-construction survey, a qualified biologist shall demarcate a protective, high-visibility buffer around the nest. Buffer size shall be determined by the biologist based on species, nest location, planned disturbance footprint, and presence of any visual or auditory buffers. The qualified biologist shall also consider any species-specific plans related to acceptable nest-avoidance measures compared to anticipated disturbance levels of construction. The exclusionary buffer shall remain in place until the chicks have fledged, are feeding independently and are no longer dependent on the nest as determined by a qualified biologist.

Due to the known presence of several nesting raptor species, including eagles, in the vicinity of the Study Area, targeted surveys for active raptor nests shall be conducted. For construction activities planned on the Guenoc Valley Site, Grange Road Connector, Middletown Housing Site, or the Off-Site Infrastructure Improvement Areas within 0.5 miles of a documented eagle or protected falcon species nest, pre-construction surveys shall be conducted in accordance with the most current guidance available from USFWS and CDFW. If a special-status raptor nest is determined to be present on or within 0.5 miles of the work area, consultation with the USFWS and/or CDFW, based on regulatory jurisdiction, shall occur and any measures recommended or required by those agencies shall be incorporated into the project design.

Incorporation of this mitigation measure would require identification of nests in pre-construction surveys and appropriate avoidance measures in the event an occupied nest is detected, thereby reducing potential impacts to **less-than-significant.**

BIO IMPACT 08: This assessment determined that NPT has a moderate potential to occur in the Modified APE. Project Modifications occur in habitat types of similar quality to the 2020 project. Construction in and around suitable habitat has the potential to impact NPT through displacement, direct injury or mortality, or disruption of nesting, foraging and other behaviors. Impact levels to NPT is considered potentially significant. Additionally, nests could be destroyed during earthwork if they are present but not detected and avoided. Due to changes in the regulatory status of NPT since 2020, one additional pre-construction survey is necessary. The

following mitigation measure has been revised from the 2020 EIR and will reduce impacts to NPT.

MM BIO 08: Northwestern Pond Turtle-Construction (2020 EIR MM 3.4-10)
To the extent possible, initial ground disturbance, vegetation clearing, and associated project activities within 300 feet of ponds, reservoirs, or wetted streams where ~~western~~ northwestern pond turtle has been documented or may potentially occupy, as determined by a USFWS-approved qualified biologist shall occur between July 1 and October 31 to avoid the peak nesting season and winter inactivity periods for western pond turtle.

If work must occur within 300 feet of occupied or potentially occupied aquatic habitat between November 1 and June 31, a qualified biologist will conduct a preconstruction survey and identify areas with potential to support nesting or occupation by overwintering turtles, as applicable, depending on the season. These specific areas will be avoided if feasible. If these areas cannot be avoided, a qualified biologist will conduct a pre-construction survey within 48 hours of the start of construction in these identified areas to survey for nests. Any active nests will be flagged and avoided. If nests cannot be avoided, the USFWS-approved qualified biologist will contact the USFWS to determine next steps. Any measures prescribed by USFWS to avoid take of nesting northwestern pond turtle shall be adhered to. ~~Monitor their initial disturbance and relocate any pond turtles or turtle eggs that are uncovered or install an exclusion fence around the area, whichever is determined to be the best option to ensure survival of the turtle via discretion of the qualified biologist. If relocation is deemed appropriate, the qualified biologist will coordinate with CDFW to develop the relocation strategy.~~

During the active period and outside of peak nesting (July 1 to October 31), a pre-construction survey for NPT ~~western pond turtle~~ shall be completed by a qualified biologist 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~~ NPT. If the species is observed, the biologist shall 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 and USFWS if relocation is required. These measures shall be implemented in the following manner:

- If a no-work buffer of 300 feet is feasible, it shall be applied, and no work shall occur within it.
- If a no-work buffer of 300 feet is not feasible, work may occur with an on-site biological monitor, or after the installation of an exclusion fence facilitated by the qualified biologist that encircles areas with potential to support pond turtles or otherwise prevents pond turtles from entering the impact area. Exclusionary fence shall be constructed of silt fence no lower than 24 inches in height and the bottom edge will be buried or otherwise secured to the ground to prevent turtles from crossing under it. A qualified biologist will inspect the exclusion fence after its installation.
- If a pond turtle would be reasonably expected to incur injury from project work, a qualified biologist may relocate a pond turtle after coordinating with CDFW and USFWS.

Incorporation of this mitigation measure would require identification of nests or individuals in pre-construction surveys and appropriate avoidance measures in the event an occupied nest or individual is detected, thereby reducing potential impacts to **less-than-significant.** Additionally, MM BIO-01b Worker Awareness Training reduces potential construction impacts.

BIO IMPACT 09: Work within streams 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. Project Modifications occur in habitat types of similar quality to the 2020 project. 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. Conducting work outside the typical FYLF breeding season away from wetted features allows for the greatest opportunity for avoidance. Construction in and around suitable habitat has the potential to impact FYLF through displacement, direct injury or mortality, or disruption of nesting, foraging and other behaviors. Impact levels to FYLF is considered potentially significant. The following mitigation measure from the 2020 EIR would continue to apply to the Project Modifications and would reduce impacts to FYLF.

MM BIO 09: **Foothill Yellow-Legged Frog Impacts-Construction (2020 EIR MM 3.4-11)** Work within 100 feet of any wetted stream feature or associated riparian area where foothill yellow-legged frog (FYLF) has been documented shall 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. If work must occur between October 31 and June 30, a monitor shall be present, or FYLF shall be excluded from active work areas by an exclusionary fence that is at least 24 inches tall and has a no-climb barrier installed along the top. Prior to commencement of work, a qualified biologist will inspect the fence and work area to ensure proper installation and clearance of FYLF.

Pre-construction surveys for FYLF within any wetted stream feature near a work area shall be conducted by a qualified biologist within 5 days of the onset of construction activities. Surveys shall cover between left and right bankfull at least 500 feet upstream and 500 feet downstream of the work area for presence of all life stages. Surveys shall extend up to 30 feet above bankfull within 100 feet of work areas when suitable, accessible habitat is present. Surveys shall 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 is detected, measures to avoid the species shall be implemented. Such measures may include, but are not limited to, a protective no-work buffer, exclusion fencing, monitoring, and/or coordination with CDFW. These measures shall be implemented in the following manner:

- If a work area is within 100 feet of a perennial or intermittent stream with potential to support FYLF and work must occur between November 1 and March 1, a monitor will be present during work and will ensure that no FYLF are harmed by project work. If FYLF are located during preconstruction surveys within 500 feet of a work area that is within 30 feet of a wetted stream between March 1 and July 1, a monitor will be present during work. If FYLF are located within 100 feet of a work area that is located within 30 feet of a stream between July 1 and November 1, a monitor will be present. Any FYLF detected will be avoided by

construction activities by at least 50 feet unless the monitor is positioned between the FYLF and the construction activity.

- Work areas can optionally be enclosed with an exclusion fence as described above and no monitoring would be required.
- If a FYLF is found to be in a work area and cannot be avoided, the qualified biologist will coordinate with CDFW to develop an acceptable relocation strategy.

Incorporation of this mitigation measure would require identification of nests or individuals in pre-construction surveys and appropriate avoidance measures in the event an occupied nest or individual is detected, thereby reducing potential impacts to **less-than-significant.** Additionally, MM BIO-01b Worker Awareness Training reduces potential construction impacts.

7.3 Sensitive Natural Communities and Land Cover Types

This section addresses the question:

> *b) Does the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or U.S. Fish and Wildlife Service;*

The Modified APE includes eight sensitive communities; each of these were observed in the 333 acres added to the 2020 APE, including blue oak woodland, blue oak savannah, interior live oak woodland, valley oak woodland, purple needlegrass grassland, serpentine rock outcrop, and Brewer willow thicket. Since 2020, one of the previously mapped land cover types, rock outcrop, has since been re-designated as sensitive if the outcrop is serpentine with serpentine indicator plants (CNPS 2024a). Based on this change, 0.18 acre of rock outcrop is now considered sensitive. This community occurs in the Modified APE, including the 333 acres outside the 2020 APE. Project modifications would not constitute a new impact as sensitive natural communities we assessed and mitigated in the 2020 EIR and the mitigation measures (MM BIO 10b and MM BIO 10c) are also applicable to the new community to reduce potential impacts to less-than-significant, when applied to serpentine rock outcrop.

The Modified APE is 505 acres smaller than the 2020 APE, resulting in avoidance of two sensitive natural communities: White Alder Grove and Sargent Cypress Woodland. Project Modifications occur in habitat types of similar quality to the 2020 project.

BIO IMPACT 10: The Project Modifications were designed to reduce impacts to sensitive communities to the extent feasible. However, impacts to these natural communities are anticipated. Each of the sensitive communities were previously mapped on the project site based on surveys conducted between 2017 and 2019 and impacts to such were previously analyzed and mitigated in the 2020 BRA and 2020 Final EIR, except as noted above. The following mitigation measures from the 2020 EIR, as applicable to the Project Modifications, would continue to apply to the Project Modifications and will reduce potential impacts to a level that is **less-than-significant**.

MM BIO 10a: Oak Mitigation Plan (2020 EIR MM 3.4-16)

All project activities shall be subject to compliance with the Oak Mitigation Plan, dated June 2020, included as Appendix OAK to the Final EIR (AES 2020). Prior to approval of final maps, the Applicant shall demonstrate compliance within the Oak Mitigation Plan related to impacts to oaks and oak woodland canopy. Prior to issuance of grading and building permits, the Applicant or applicants for grading and building permits shall demonstrate compliance with the Oak Mitigation Plan related to impacts to oaks, mitigation compliance, building envelope and deed restrictions. The Oak Mitigation Plan for this project addresses impacts to oaks as a result of the Proposed Project. The Oak Mitigation Plan was prepared in accordance with the Lake County General Plan. The Oak Mitigation Plan includes the following:

- Goals of the mitigation plan;
- Method of impact identification appropriate for all phases of construction;
- Discussion on compliance with the Lake County General Plan and 2008 Oak Tree Replacement Plan per the 2009 FEIR;
- Proposed compensatory action suitable to meet mitigation goals;
- Compensatory planting ratios of 2:1 for smaller trees and 5:1 for larger trees;
- Success criteria for mitigation such that compensatory plantings for impacts to individual trees achieve a minimum of 80 percent success rate;
- Preservation for impacts to valley oak woodland, when applied, shall be no less than 3:1 of in-kind habitat type acreage, and 2:1 for all other types of oak woodland;
- A requirement of at least 7 years of monitoring, adaptive management, and reporting throughout the mitigation process; and
- Limitation of the total impact to oak woodlands to 1 acre on residential lots consistent with the design guidelines.

The Oak Mitigation Plan shall be subject to Lake County review and approval prior to ground disturbance.

Oaks present in the Middletown Housing Site and Modified APE shall be avoided. If full avoidance of oaks is not feasible, the measures in the Oak Mitigation Plan prepared for the Guenoc Valley Site shall apply. Replanting for oaks removed on the Middletown Housing Site and/or the Modified APE may occur in the Middletown Housing Site or the Guenoc Valley Site, the Comstock Ranch property or Guenoc Valley Site.

Incorporation of this mitigation measure would reduce the overall impact by identification of location and establishment of suitable buffers for avoidance or provide for compensatory mitigation actions for areas that would not be avoided, thereby reducing potential impacts to **less-than-significant.**

MM BIO 10b: Impacts to Sensitive Habitats (2020 EIR MM 3.4-15)
Sensitive habitats shall be avoided to the maximum extent feasible. In areas where full avoidance of sensitive habitat types is not possible, mitigation shall occur as described below. This mitigation shall be applicable to impacts for purple needlegrass, musk-brush chaparral, white alder grove, Brewer willow thicket, Sargent cypress forest, serpentine rock outcrops, and native grasslands:

1) Preservation of in-kind habitat shall occur at a minimum ratio of 2 acre:1 acre.
2) Areas designated for preservation shall be maximized within identified protection areas,

such as sensitive habitats within Habitat Connectivity Easement Areas. Sensitive habitats within the Open Space Combining District that are not required to mitigate impacts to POU resulting from vineyard development approved in the 2009 FEIR may be used for the purpose of this mitigation.

3) Preservation of in-kind habitat that occurs within residential lots shall occur only within open space prohibited from development (including landscaping and agricultural uses) by the Design Guidelines, or through the establishment of habitat easements within the residential lots. Preservation of sensitive habitat for the purposes of mitigation that occurs within deed-restricted open space shall be identified within the deed restriction and shall prohibit the development of that area identified for preservation. Preservation within deed-restrictions shall be preserved in perpetuity as a condition of the deed.
4) Areas that are preserved for in-kind habitat that occurs outside of residential lots, Habitat Connectivity Easement Areas, and the Open Space Combining District shall be avoided during future phases of development. Should unavoidable impacts to in-kind habitat preservation areas occur during future phases of construction, those impacts shall be subject to additional compensatory actions set forth in this mitigation. Should insufficient habitat occur to offset future impacts, a compensatory habitat restoration, enhancement, and/or creation mitigation measure shall be prepared and approved by the County prior to on the ground impacts of future development phases.
5) Those areas selected for preservation shall be provided on a map to the County and approved by the County.

The Applicant may additionally satisfy the 2:1 mitigation ratio through restoration, creation, and/or enhancement of in-kind habitat. Mitigation performed through restoration, creation, or enhancement shall be monitored for a minimum of three years by a qualified biologist. The biologist shall prepare an annual report on the status of mitigation activities along with adaptive management recommendations as necessary. These reports shall be maintained by the Applicant and available to agencies upon request. Success criteria shall be as follows and shall require additional years of monitoring and management should mitigation fail to meet success criteria:

- Purple needlegrass and native grasslands shall achieve a percent native plant cover that meets or exceeds that of the habitat impacted. Non-sensitive grasslands and herb-dominated habitat types are suitable for restoration and creation activities.
- Musk-brush chaparral shall be restored in non-sensitive suitable habitat. Mitigation shall occur at a 2:1 acre ratio and shall achieve a 75 percent acreage establishment. The monitoring biologist shall consider percent cover, species composition, overall health of plantings, and other indicators when determining success of establishment.
- White alder grove and Brewer willow thicket may be restored along riparian corridors where invasive species or bank stabilization issues have occurred. Mitigation shall occur at a 2:1 acre ratio and shall achieve a 75 percent acreage enhancement. The monitoring biologist shall consider percent cover, species composition, bank stability, overall health of plantings, and other indicators when determining success of establishment.
- Sargent cypress forest shall be enhanced through the removal of competing foothill pines at an acreage ratio of 2:1 once annually for a total of five years and/or Sargent cypress trees shall be replanted at a 2:1 ratio and monitored for a total of five years. Replanting shall achieve a 75 percent success rate.
- Serpentine rock outcrop shall be enhanced through the removal of invasive species at an acreage ratio of 2:1 in similar habitat that has a dominant invasive species relative cover

to achieve a percent native plant cover that meet or exceeds that of the habitat impacted.

MM BIO 10c: Sensitive Habitat Impacts from Wildfire Clearing (2020 EIR MM 3.4-18)
Sensitive habitats included below shall be avoided during removal of dead vegetation and fire fuel load reduction necessary for safety purposes in managing wildfire risk to the degree feasible. The following sensitive habitats shall be addressed in the following manner as it relates to fire management fire breaks, lop and scatter, and masticating outside of development areas:

- Purple needlegrass grasslands – This habitat does not require wildfire risk fuel reduction activities. This habitat shall be avoided to the degree feasible. Equipment and vehicles shall not be used or staged within this habitat type.
- Musk brush chaparral – This habitat does not require wildfire risk fuel reduction activities. This habitat shall be avoided to the degree feasible. Equipment and vehicles shall not be used or staged within this habitat type.
- White alder grove – Due to limited distribution and association with natural riparian fire breaks, this habitat type should not require ongoing wildfire risk fuel reduction activities and shall be avoided as possible. Equipment and vehicles shall not be used or staged within this habitat type. If determined necessary by safety personnel, hand-clearing of dead vegetation may occur.
- Brewer willow thicket - Due to the limited distribution and association with natural riparian fire breaks, this habitat type does not require wildfire risk fuel reduction activities. This habitat shall be avoided to the degree feasible. Equipment and vehicles shall not be used or staged within this habitat type.
- Sargent cypress forest – This habitat may require occasional management for wildfire risk. Due to the sensitive nature of this habitat type, hand tools shall be the only acceptable use of vegetation management. No live Sargent cypress trees shall be felled. Equipment and vehicles shall not be used or staged within this habitat type.
- Serpentine rock outcrop - Due to the limited distribution and low vegetation cover, this habitat type does not require wildfire risk fuel reduction activities. This habitat shall be avoided to the degree feasible. Equipment and vehicles shall not be used or staged within this habitat type.
- Oak woodland - This habitat may require occasional management for wildfire risk. Due to the sensitive nature of this habitat type, hand tools or grazing shall be the only acceptable use of vegetation management. Should impacts to any living oak trees occur, they shall be mitigated for as outlined within the Oak Mitigation Plan. Equipment and vehicles shall not be used or staged within this habitat type.
- Oak savanna – Cover for this habitat type is dominated by non-native annual grasses and would not likely require management for wildfire risk except limited grazing or mowing immediately adjacent to high risk fire areas such as within 50 feet of roads. Equipment use and staging may occur within areas of non-native annual grassland provided that the driplines of oaks are not impacted. Should impacts to any living oak trees occur, mitigation shall occur as outlined within the Oak Mitigation Plan.

Incorporation of these mitigation measures would reduce the overall impact by identification of location and establishment of suitable buffers for avoidance or provide for compensatory

mitigation actions for areas that would not be avoided, thereby reducing potential impacts to **less-than-significant**.

7.4 Aquatic Resources

This section analyzes the Project Modifications' potential impacts and mitigation for wetlands and other areas presumed or determined to be within the jurisdiction of the Corps or BCDC in reference to the significance threshold outlined in CEQA Appendix G, Part IV (c):

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

The Modified APE, including the 333 acres added to the 2020 APE includes 12 aquatic features; including: riparian woodland, ponds/reservoirs, perennial stream, intermittent stream, ephemeral stream, ephemeral ditch, seasonal wetland depressions, seasonal wetland ditches, seasonal wetland pond fringe, seasonal wetland seeps/swales, seasonal wetland wet meadow, and stream fringe/in-stream wetland. The aquatic resources are subcategories of the three aquatic resource types presented in the 2020 Final EIR; no new aquatic resource types occur in the Modified APE. Project Modifications occur in or adjacent to aquatic resources of similar quality to the 2020 project.

BIO IMPACT 11: The Modified APE contains several aquatic features which are variously regulated by the Corps, RWQCB, and/or CDFW. Each of the aquatic resources were previously mapped on the project site based on surveys conducted between 2017 and 2019 and impacts to such were previously analyzed and mitigated in the 2020 BRA and 2020 Final EIR. Project Modifications occur in habitat types of similar quality to the 2020 project. Aquatic feature setbacks, as outlined by the County of Lake (summarized below), have been incorporated into development design for features which will not be directly impacted through project activities. However, as construction activities are planned within aquatic features, direct impacts are expected. Direct impacts to aquatic resources are considered potentially significant. The following mitigation measure from the 2020 EIR would continue to apply to the Project Modifications and would reduce impacts to aquatic resources.

MM BIO 11: **Aquatic Resources Protection and Management (2020 EIR MM 3.4-17)**
Consistent with governing regulations and policies, the following setbacks shall be incorporated into the project design:

- 30 feet from the top of bank of perennial streams;
- 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 ephemeral streams or other bodies of water (including reservoirs and lakes); or
- To the outer extent of a riparian corridor.

No setback is required or recommended for man-made stormwater or irrigation ditches. Should additional analysis of these features performed by a qualified biologist that determines larger setbacks are needed to ensure full protection of habitat based on

factors such as slope, setbacks up to fifty feet may be required as possible and dictated by the conditions observed and analyzed.

The setback distances identified above shall be delineated by a qualified biologist with high visibility fencing or flagging prior to any construction activities occurring within 200 feet of the aquatic habitat features. No construction work or equipment staging shall occur within the setbacks unless a variance or permit is authorized to allow it. Prior to impacts, consultation shall occur with USACE and the RWQCB to determine the extent of federal and state jurisdictional wetlands and waters. A CWA Section 404 permit shall be obtained from USACE for impacts to any identified wetlands and waters subject to CWA jurisdiction, along with RWQCB state water quality certification for such permit under CWA Section 401, as necessary. An LSAA with CDFW shall be entered for those impacts to any identified streams subject to Fish and Game Code Section 1600 jurisdiction. Any necessary permits and approvals shall be obtained prior to the respective impacts for which they are required, and the conditions of permits and approvals acquired for the Proposed Project shall be met. Mitigation shall occur consistent with the necessary permits and approval conditions required for the Proposed Project. Mitigation for direct impacts to aquatic habitats shall occur through a combination of habitat preservation, creation, or restoration/enhancement and shall, at a minimum, include the following:

- Should mitigation for aquatic resources occur through preservation, preservation shall occur at a minimum ratio of 2:1. Areas designated for preservation shall be maximized within the Open Space Combining District or within Habitat Connectivity Easement Areas, and may only occur within residential lots if preservation in perpetuity as a condition of the deed-restricted open space for the lot. Those areas selected for preservation shall be approved by the County and be subject to the compensatory actions set forth in this mitigation and necessary permit or approval conditions should future impacts to preserved habitats be identified.
- When mitigation occurs through the restoration or enhancement of habitat, mitigation shall occur at a minimum ratio of 2:1. Restoration and/or enhancement of habitat shall occur within the Open Space Combining District or within Habitat Connectivity Easement Areas, as possible. Monitoring of mitigation activities shall be performed by a qualified biologist for a minimum of three years consistent with the terms of necessary permits. The qualified biologist shall prepare an annual report on the progress of mitigation with recommended management actions. Mitigation shall be deemed complete once the qualified biologist has determined that the success of restoration or habitat creation activities meets or exceeds 80 percent.
- When mitigation occurs through the creation of habitat, creation shall occur at a minimum ratio of 1:1. A qualified biologist shall monitor habitat creation activities on an annual basis and shall provide an annual report of these monitoring activities along with recommendations in order to ensure success of habitat creation. Following completion of habitat creation activities, a qualified biologist shall prepare an annual report on the progress of mitigation with recommended management actions.

- In cases of conflict between permit terms and measures presented herein, those permit terms and conditions shall supersede those presented within this EIR. Alternative forms of mitigation not detailed above may serve to satisfy mitigating requirements to jurisdictional wetlands and waters as dictated by the appropriate permit(s). Alternative forms of mitigation include purchase of habitat credits from an approved mitigation bank at a ratio not less than 2:1, or payment of in-lieu fees as set by the appropriate agency.

Incorporation of this mitigation measure would reduce impacts through avoidance where possible and construction setbacks to prevent impacts from nearby construction activities. Clearly defined preservation, restoration, and habitat creation mitigation provide for appropriate goals and long-term management to ensure efficacy of mitigation such that impacts would be **less-than-significant**.

7.5 Wildlife Corridors and Native Wildlife Nursery Sites

This section analyzes the Project Modifications' potential impacts and mitigation for habitat corridors and linkages in reference to the significance threshold outlined in CEQA Appendix G, Part IV (d):

> *d) Does the Project have the potential to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;*

In addition to the special-status wildlife species that may occur, non-status wildlife species occur and may use portions of the Modified APE 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. Minimization measures for potential impacts to wildlife corridors were identified in the 2020 Final EIR, including the designation of preservation of open space, establishment of Habitat Connectivity Easements, and design guidelines that clusters development. However, fencing and increase in artificial lighting have potential significant impacts to wildlife corridors. Potential nursery sites include nesting birds or maternity bat roosts. Potential impacts to such places are mitigated under MM BIO 07 (Nesting Birds) and MM BIO 05 (Roosting Bats).

BIO IMPACT 12: Project Modifications occur in habitat types of similar quality to the 2020 project. The use of fencing has the potential to result in wildlife entrapment or exclusion and high levels would restrict wildlife movement or cause habitat fragmentation. Also, an increase in artificial lighting has the potential to impact wildlife movement through stranding, disorienting, attracting or otherwise altering natural dispersal and migratory behavior. Impacts to wildlife movement would constitute a potentially significant impact. The following mitigation measures from the 2020 EIR would continue to apply to the Project Modifications and would reduce impacts to wildlife movement.

MM BIO 12a: Wildlife Movement-Fencing (2020 EIR MM 3.4-19)

Use of fencing shall be minimized throughout the Guenoc Valley Site and shall adhere to those restrictions set forth in the Design Guidelines for all phases of development. Fencing shall not be installed for the purpose of wildlife exclusion except in the case of safety or protection of agricultural resources or residential development areas, and shall be designed to allow for continued movement of non-target species as possible. Unless approved by the Home Owner's Association or for ongoing protection of agricultural resources or property, fencing exceeding six feet in height shall not be used. Fencing materials designed for the purpose of wildlife entrapment or injury shall not be used.

Full perimeter fencing for residential lots exceeding two acres in size shall be prohibited unless consistent with the following wildlife-friendly fencing measures:

- Fencing shall be reasonably visible to travelling wildlife to prevent collision with fencing,
- Fencing shall not include low rails or wires that would prevent smaller dispersing animals from passing,
- Fencing shall not present a top rail clearance exceeding six feet and shall not exceed four feet when possible. Clearance height shall consider the ground slope approaching the fence such that the height of a jump required to clear the fence from the downslope side does not exceed six feet, and
- Materials that entangle or otherwise entrap wildlife, such as loose wire, top or bottom barbed wires, shall be prohibited.

MM BIO 12b: Artificial Lighting Impacts- Construction and Operation (2020 EIR MM 3.4-7)
Lighting fixtures associated with the construction and operation of the Proposed Project shall be designed to ensure maximum efficiency, eliminate direct upward light, and reduce spill consistent with Design Guidelines and shall follow the general principles below:

- Site-wide lighting shall promote dark sky policies;
- Lighting along roadways, pathways, and within parking areas shall only be used to the extent necessary to guide nighttime navigation and ensure safety and security;
- Lighting shall be not be placed or illuminate higher than necessary to provide efficient lighting for its intended purpose;
- Lighting shall be deliberately directed downward and away from sensitive habitat types;
- Nighttime lighting shall also be reduced to the maximum extent feasible by turning off lights from the hours of 11 p.m. to 7 a.m., unless they are essential for safety or security purposes and are properly designed and installed to reduce light spillage. Lights that must be used during these designated nighttime hours shall be dimmed in order to reduce the intensity of light projected by the Proposed Project as possible and shall be minimized as appropriate through motion- sensitive lighting, lower intensity lights, and appropriately programmed timed lights.

Appropriate lighting consistent with these measures and the Proposed Project's Design Guidelines shall be adhered to for all phases of construction at project-related sites.

These mitigation measures allow for minimal use of fencing, preventing complete wildlife barriers except where necessary (i.e., around agriculture), and provide for passageways between developed areas. Additionally, these measures reduce artificial lighting during construction and

development. Incorporation of the mitigation measures would reduce impacts to **less-than-significant**.

7.6 Local Policies and Ordinances

This section analyzes the Project Modifications' potential impacts and mitigation based on conflicts with local policies and ordinances in reference to the significance threshold outlined in CEQA Appendix G, Part IV (e):

> *e) Does the Project have the potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;*

Local plans and policies related to biological resources examined in this analysis are:

- Lake County Code Section 30-21 provides for the protection of oak trees and prohibits activities resulting in the clearing of oak trees such that a significant effect on oak woodland would occur.
- Lake County Zoning Ordinance Article 37 requires minimum setbacks from aquatic resources as defined below:

  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).

Oak trees and aquatic resources have been avoided to the greatest extent feasible during development design. County aquatic setbacks have been incorporated into the development design. Mitigation measures MM Bio 01 and MM Bio 11 reduce potential impacts to aquatic resources to less than significant. Mitigation measure MM Bio 10 reduces potential impacts to oak woodland to less than significant. No significant conflict with local policies or ordinances protecting biological resources shall occur due to incorporation of those measures into the Project Modifications.

7.7 Habitat Conservation Plans

This section analyzes the Project Modifications' potential impacts and mitigation based on conflicts with any adopted local, regional, and state habitat conservation plans in reference to the significance threshold outlined in CEQA Appendix G, Part IV (f):

> *f) Does the Project have the potential to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

The Project Modifications are not in conflict with any local, regional or state habitat conservation plans and therefore will not significantly conflict with any local, regional, or state habitat conservation plans.

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APPENDIX A. FIGURES

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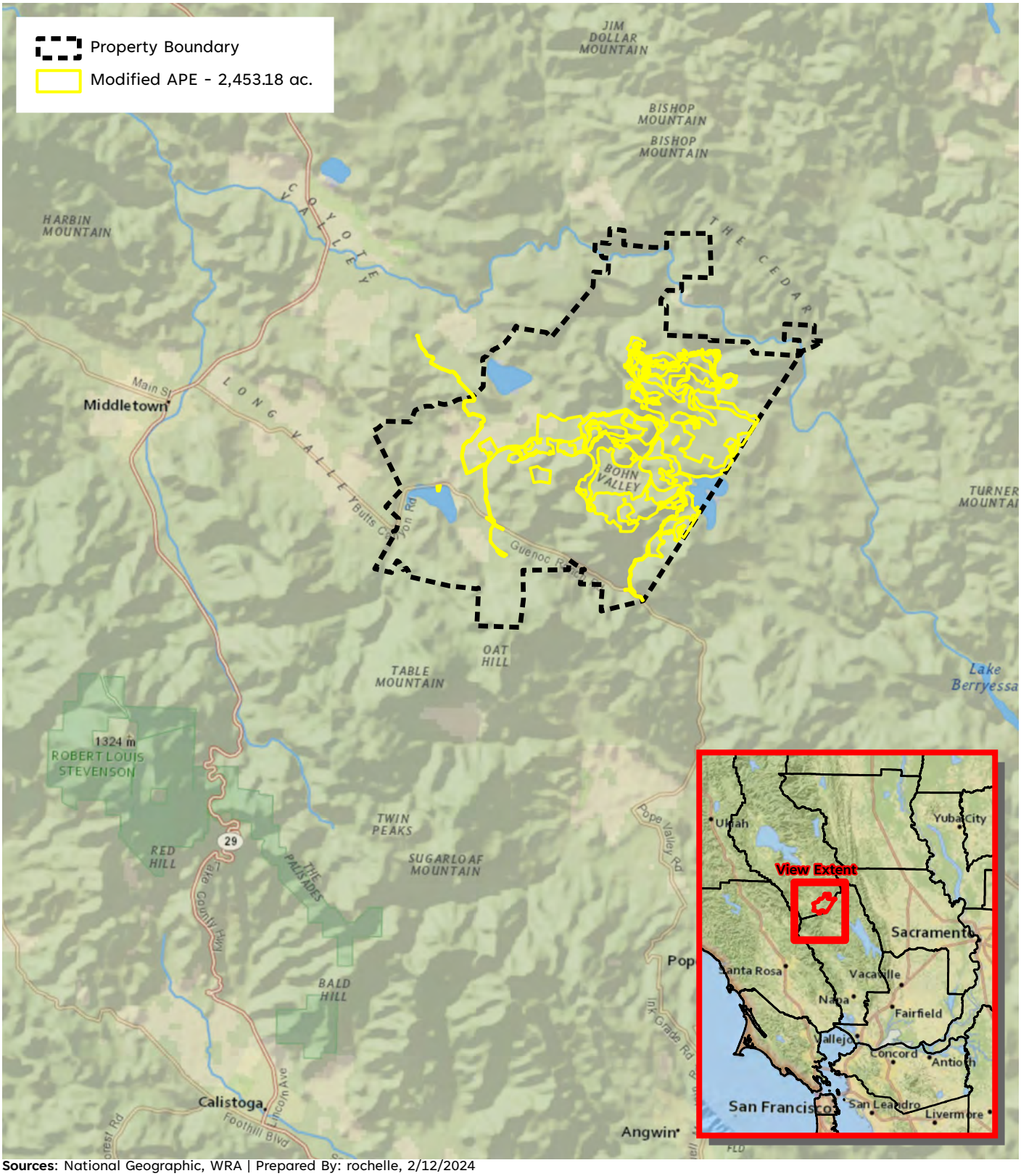

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Sources: National Geographic, WRA | Prepared By: rochelle, 2/12/2024

Figure 1. Modified APE Regional Location Map

2024 Project Modifications
Guenoc Valley Mixed Use
Planned Development Project
Lake County, California

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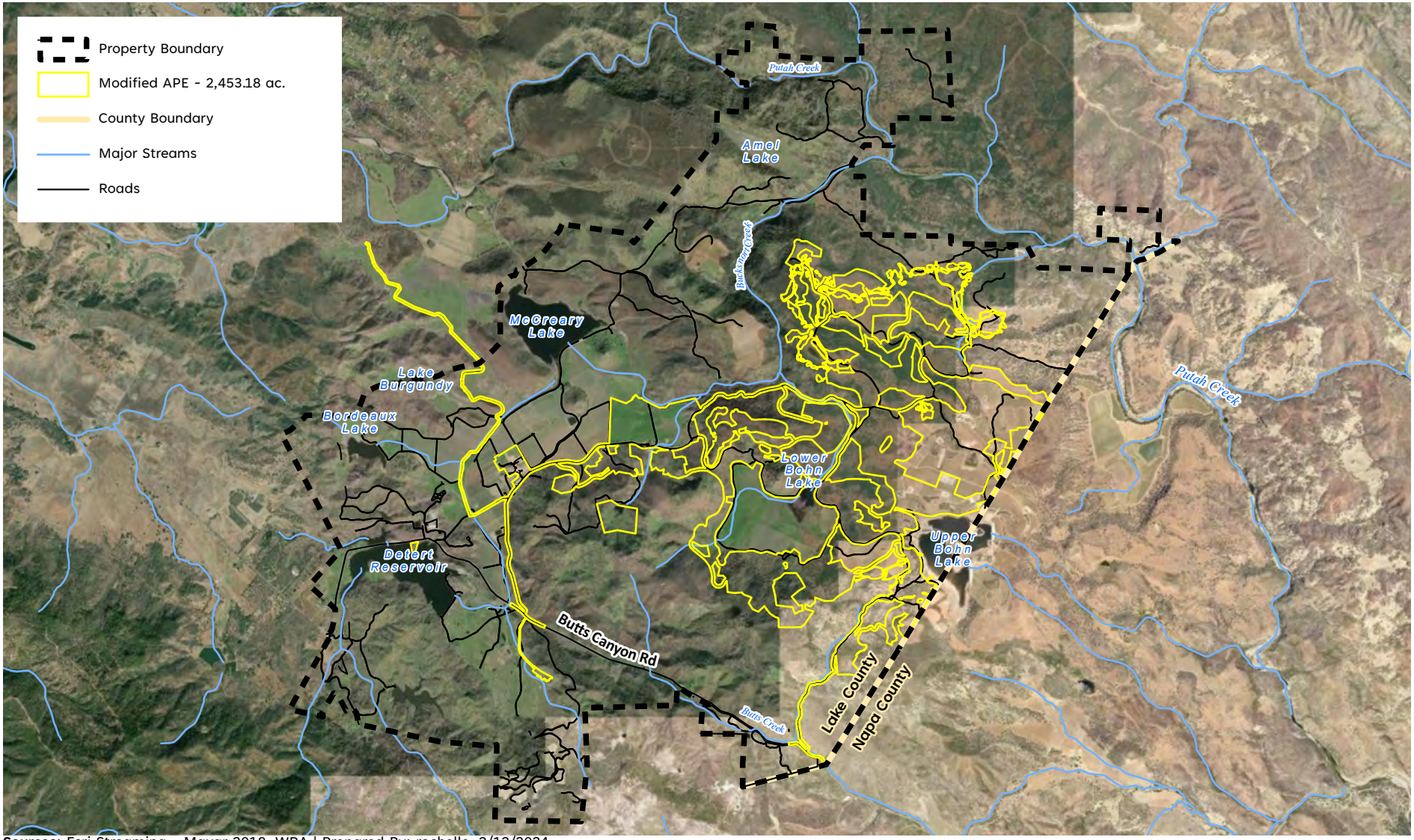
wra Environmental Consultants



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Sources: Esri Streaming - Maxar 2018, WRA | Prepared By: rochelle, 2/12/2024

Figure 2. Modified APE Site Overview

2024 Project Modifications
Guenoc Valley Mixed Use
Planned Development Project
Lake County, California

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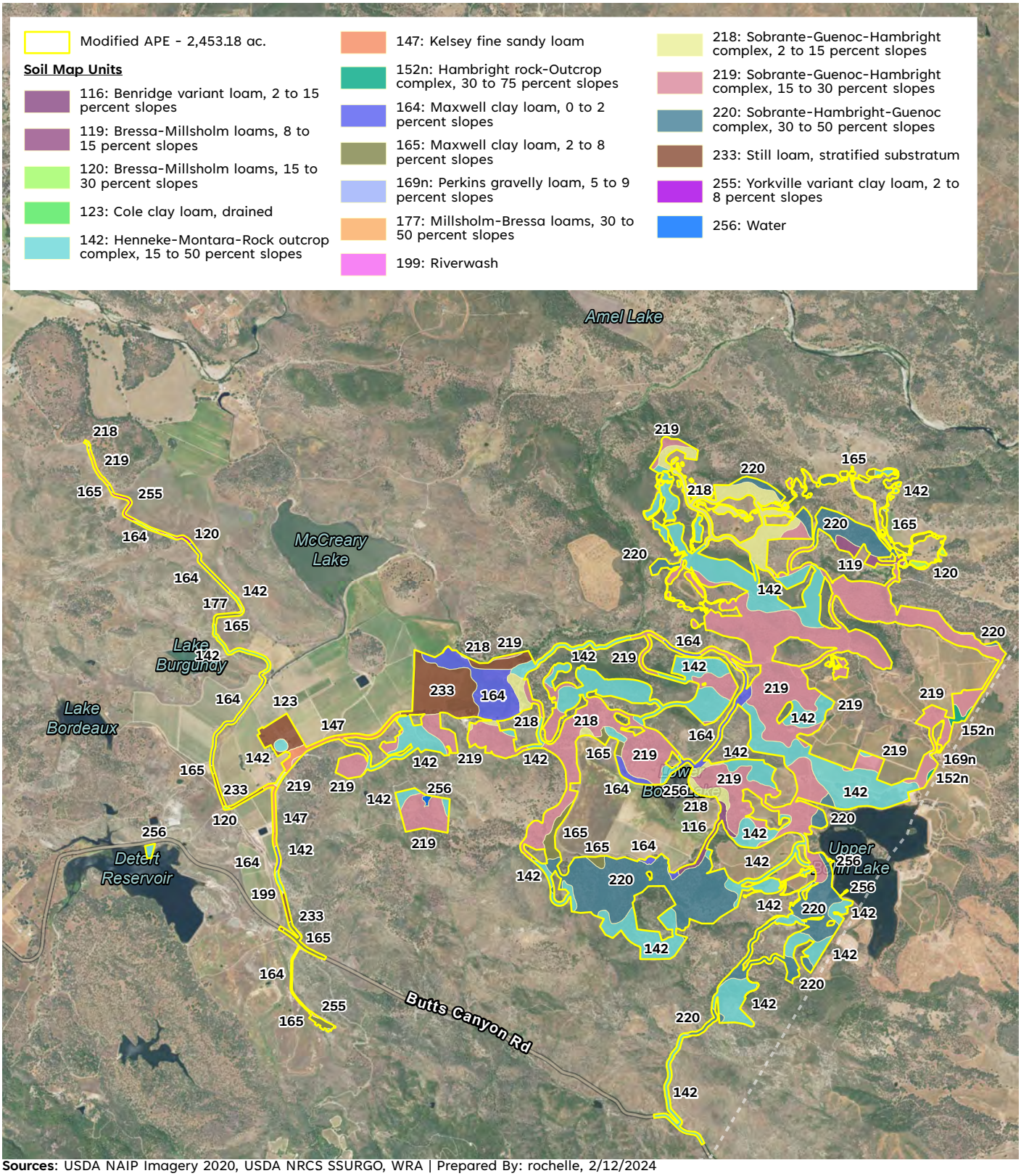

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Sources: USDA NAIP Imagery 2020, USDA NRCS SSURGO, WRA | Prepared By: rochelle, 2/12/2024

Figure 3. Soil Types within the Modified APE

2024 Project Modifications
Guenoc Valley Mixed Use
Planned Development Project
Lake County, California

0 0.5 1 Miles

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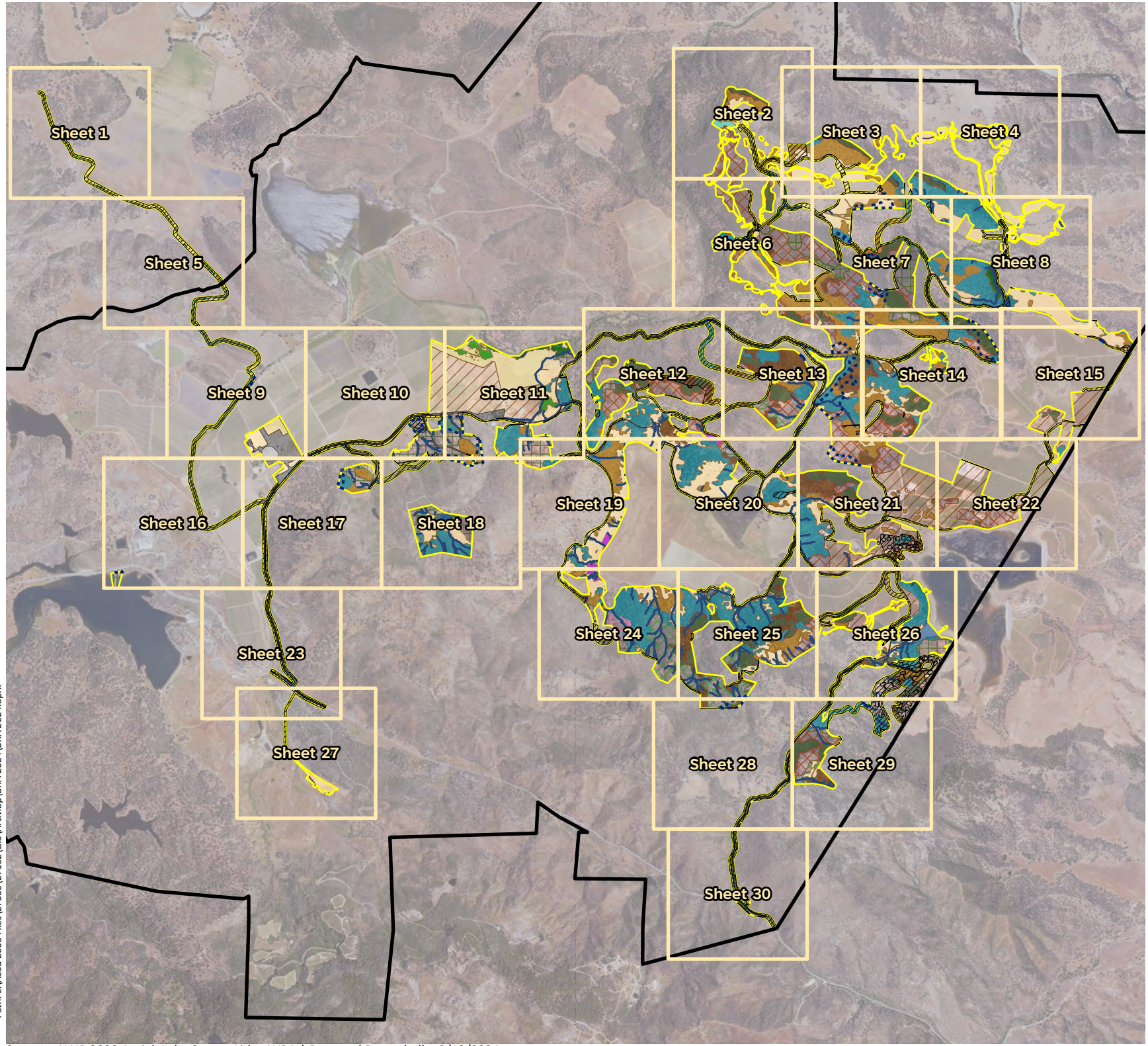

Figure 4-1. Land Cover Types Mapped within the Modified APE (Overview)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Property Boundary
- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Mapbook Grid

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grasssland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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wra Environmental Consultants

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Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 4-2. Land Cover Types Mapped within the Modified APE (Sheet 1)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
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- Emergent Wetlands - 22.41 ac.
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- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

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- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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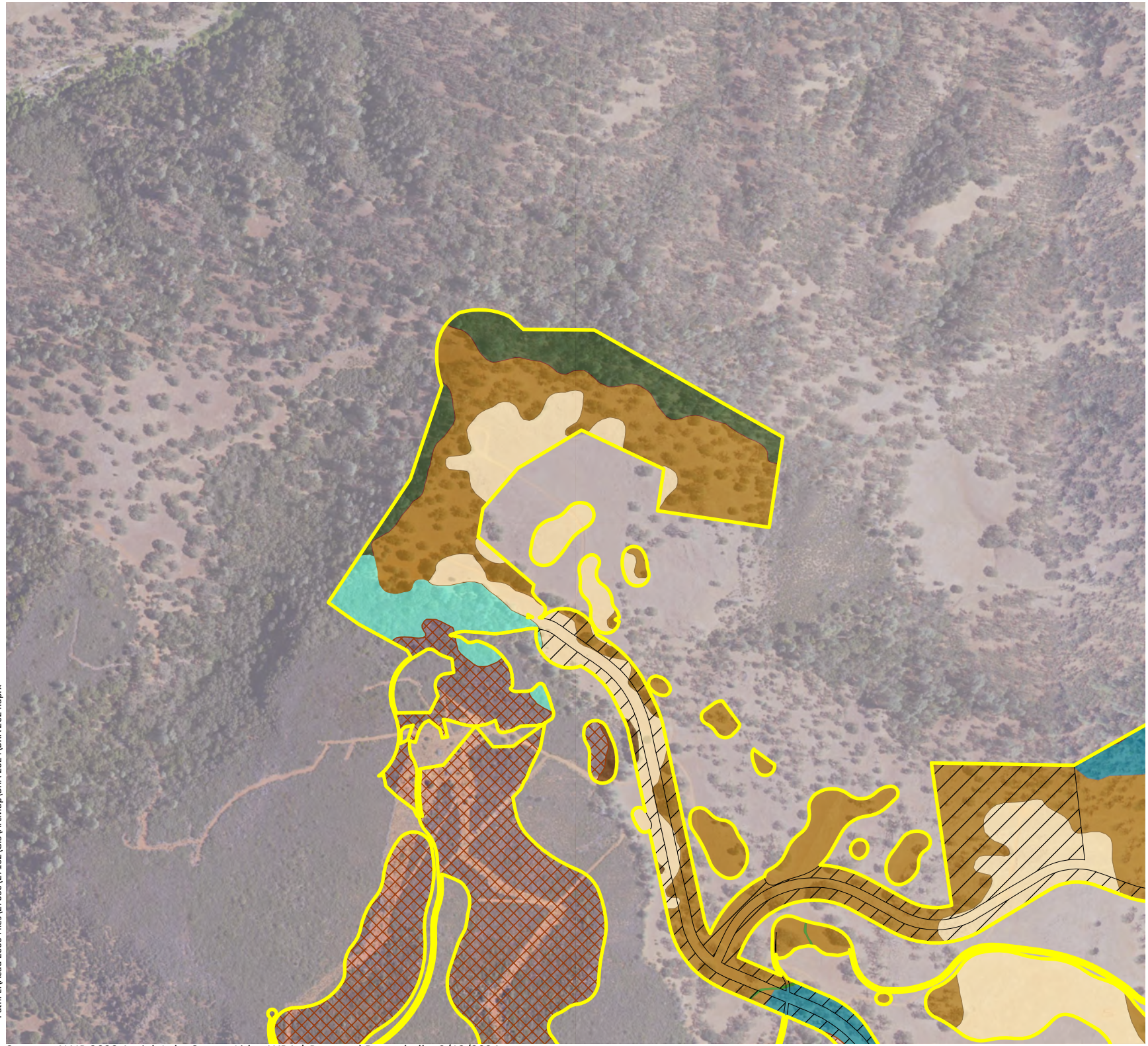
Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

Figure 4-3. Land Cover Types Mapped within the Modified APE (Sheet 2)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California



- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
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Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
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- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

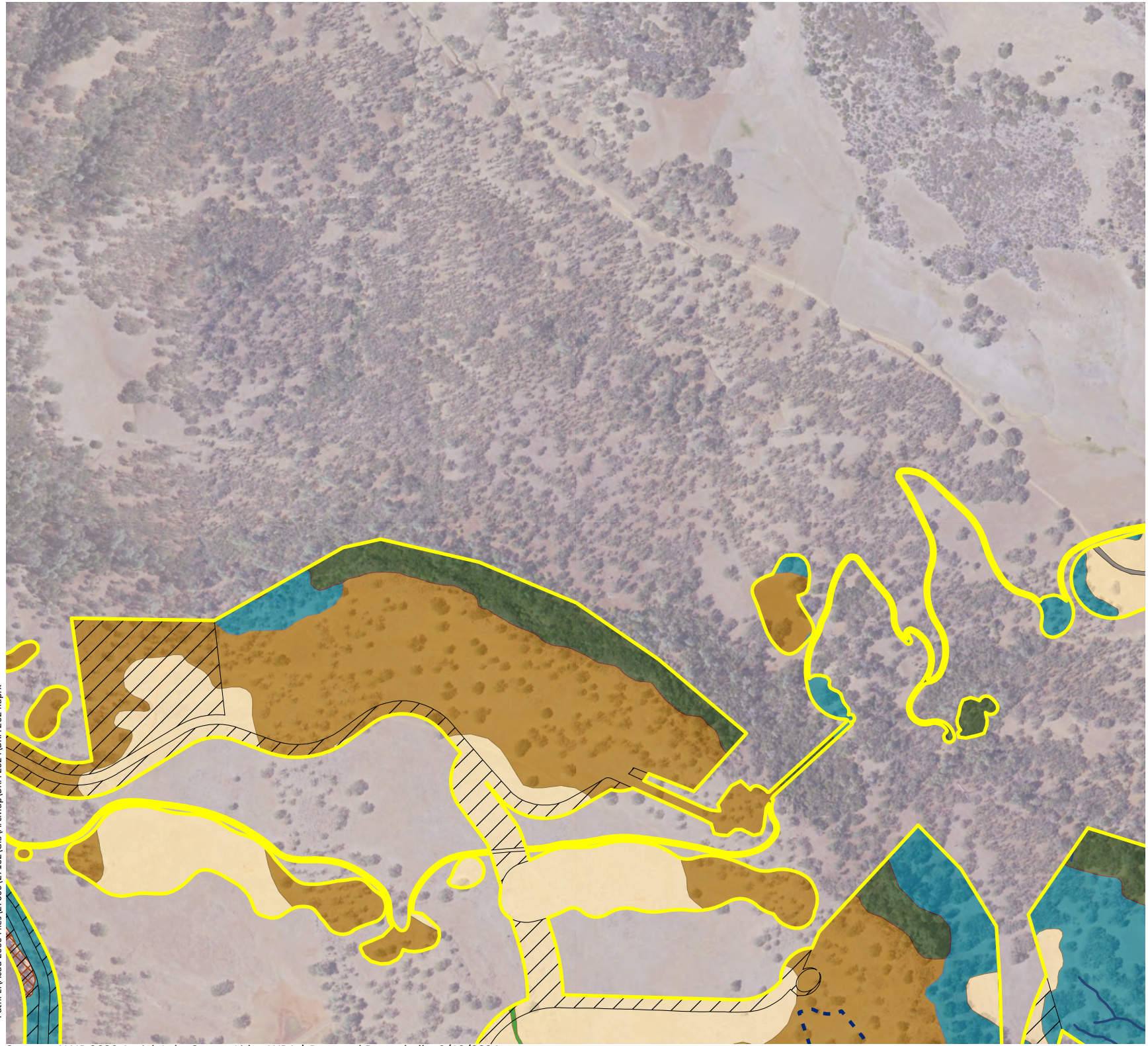

Figure 4-4. Land Cover Types Mapped within the Modified APE (Sheet 3)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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wra Environmental Consultants

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Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 4-5. Land Cover Types Mapped within the Modified APE (Sheet 4)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
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- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 4-6. Land Cover Types Mapped within the Modified APE (Sheet 5)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

0 200 400

Feet

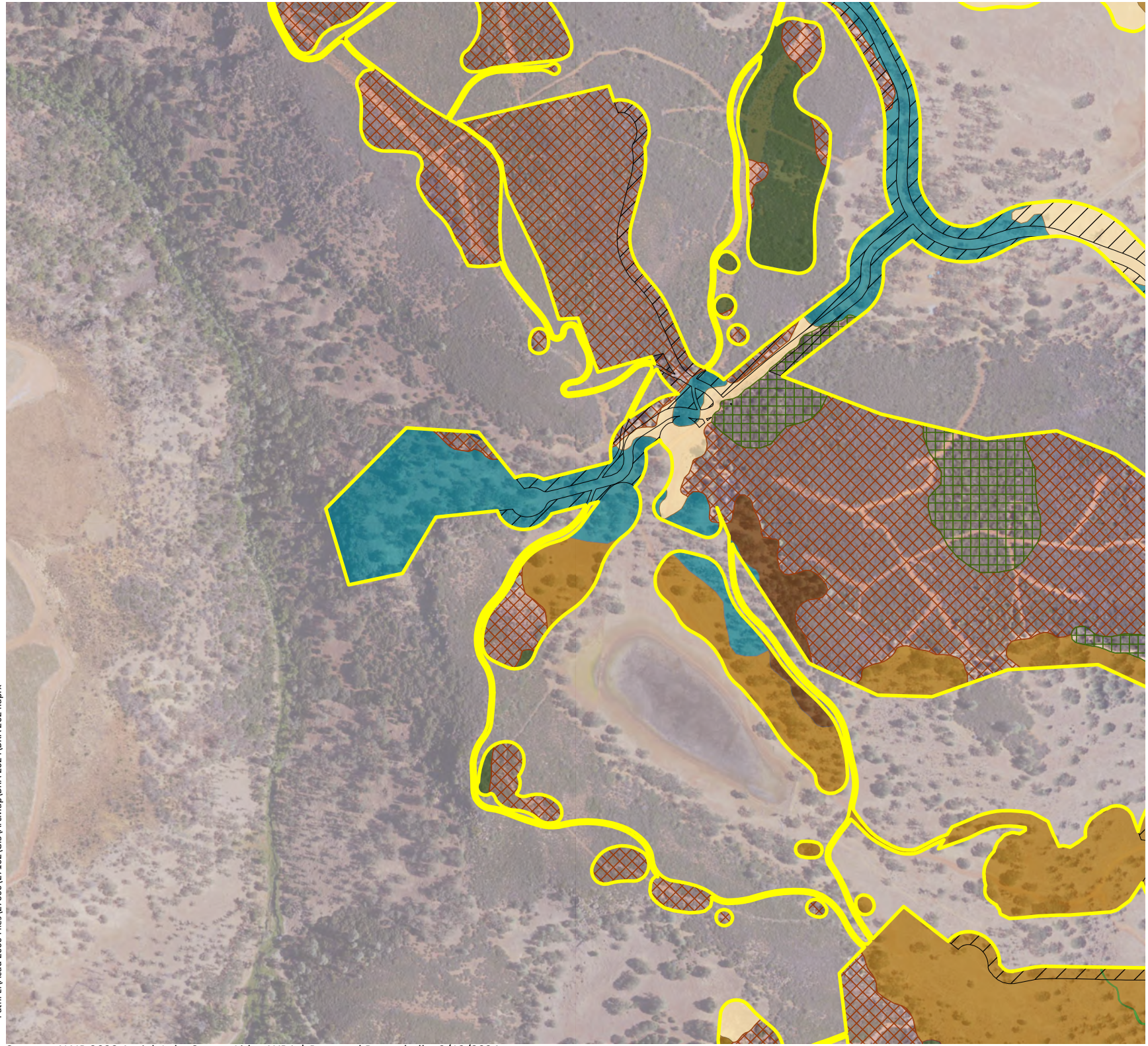
wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

Figure 4-7. Land Cover Types Mapped within the Modified APE (Sheet 6)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California



Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

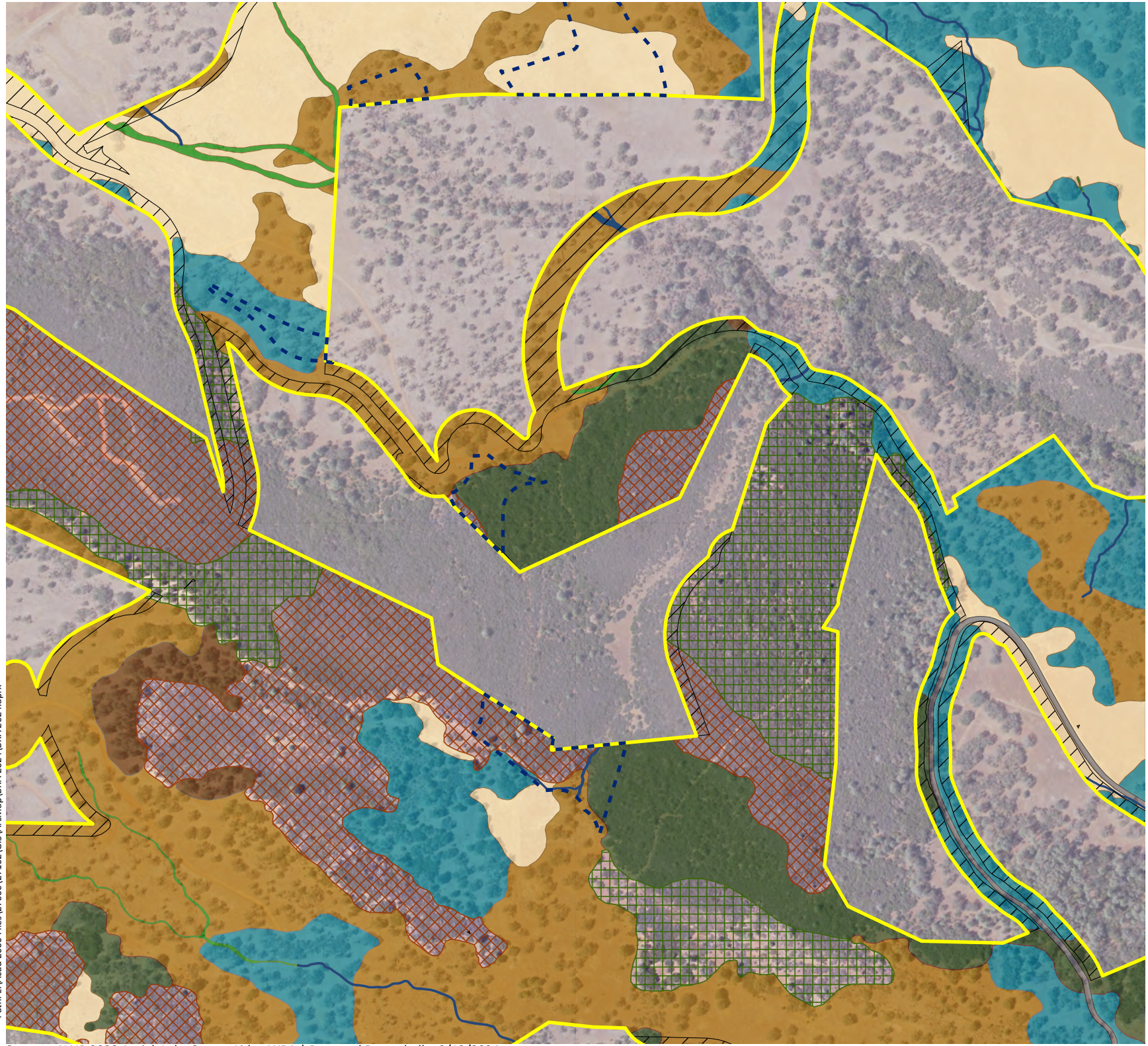

Figure 4-8. Land Cover Types Mapped within the Modified APE (Sheet 7)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
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- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

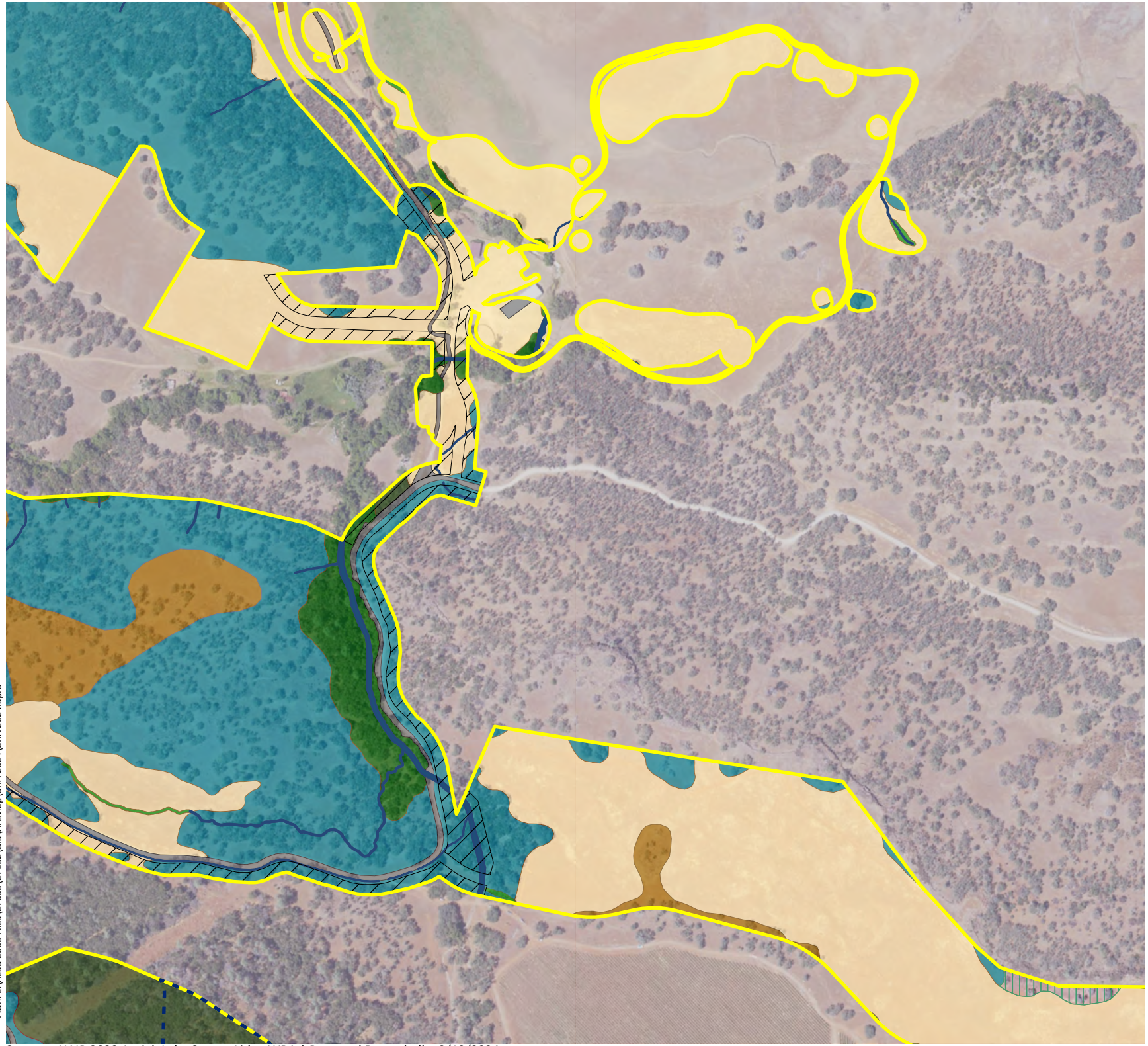

Figure 4-9. Land Cover Types Mapped within the Modified APE (Sheet 8)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
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- Musk Brush Chaparral - 2.84 ac.
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- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

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- Non-native Annual Grasslands - 438.27 ac.
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N

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wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 4-10. Land Cover Types Mapped within the Modified APE (Sheet 9)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

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- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
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- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

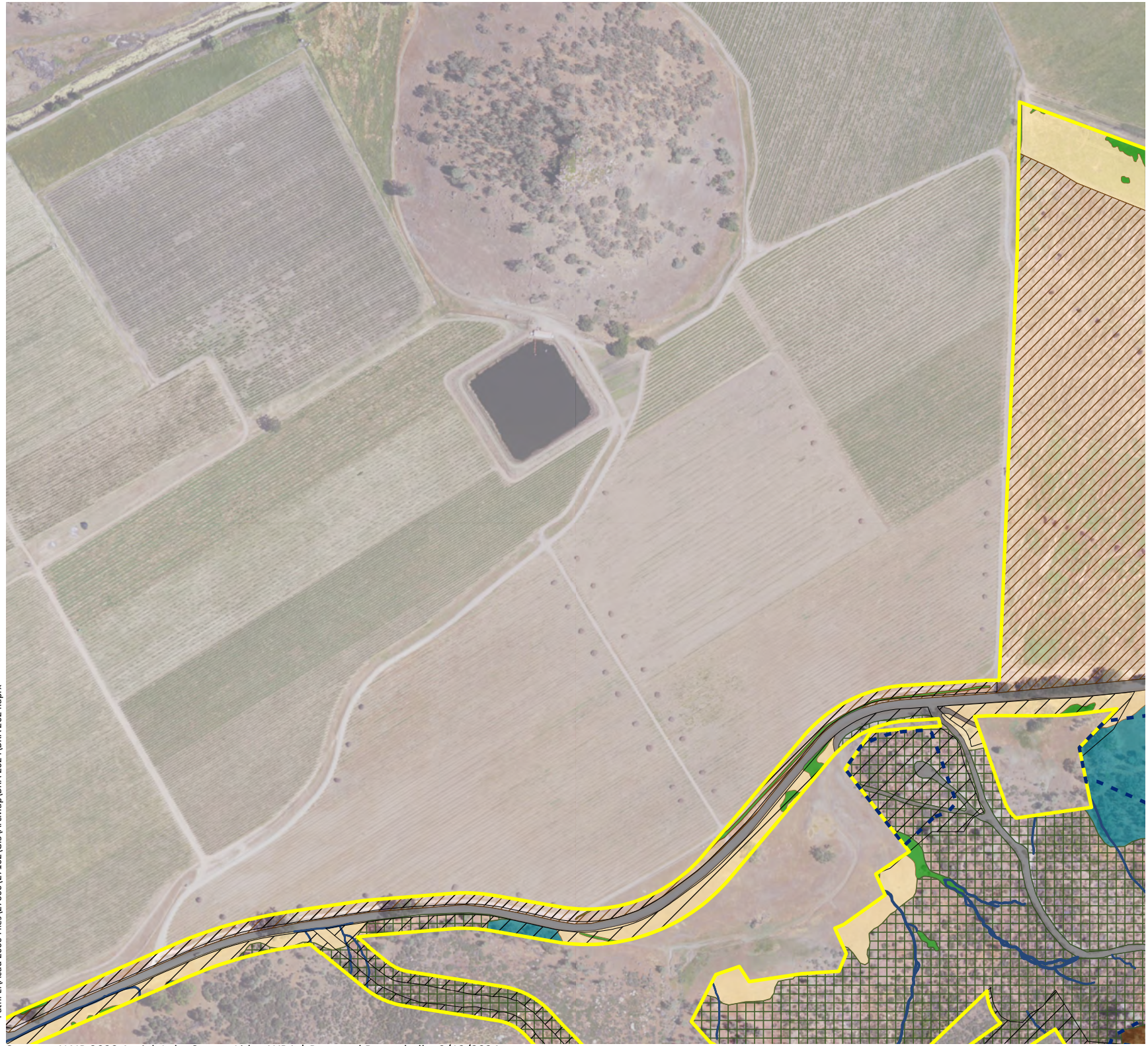

Figure 4-11. Land Cover Types Mapped within the Modified APE (Sheet 10)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
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- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

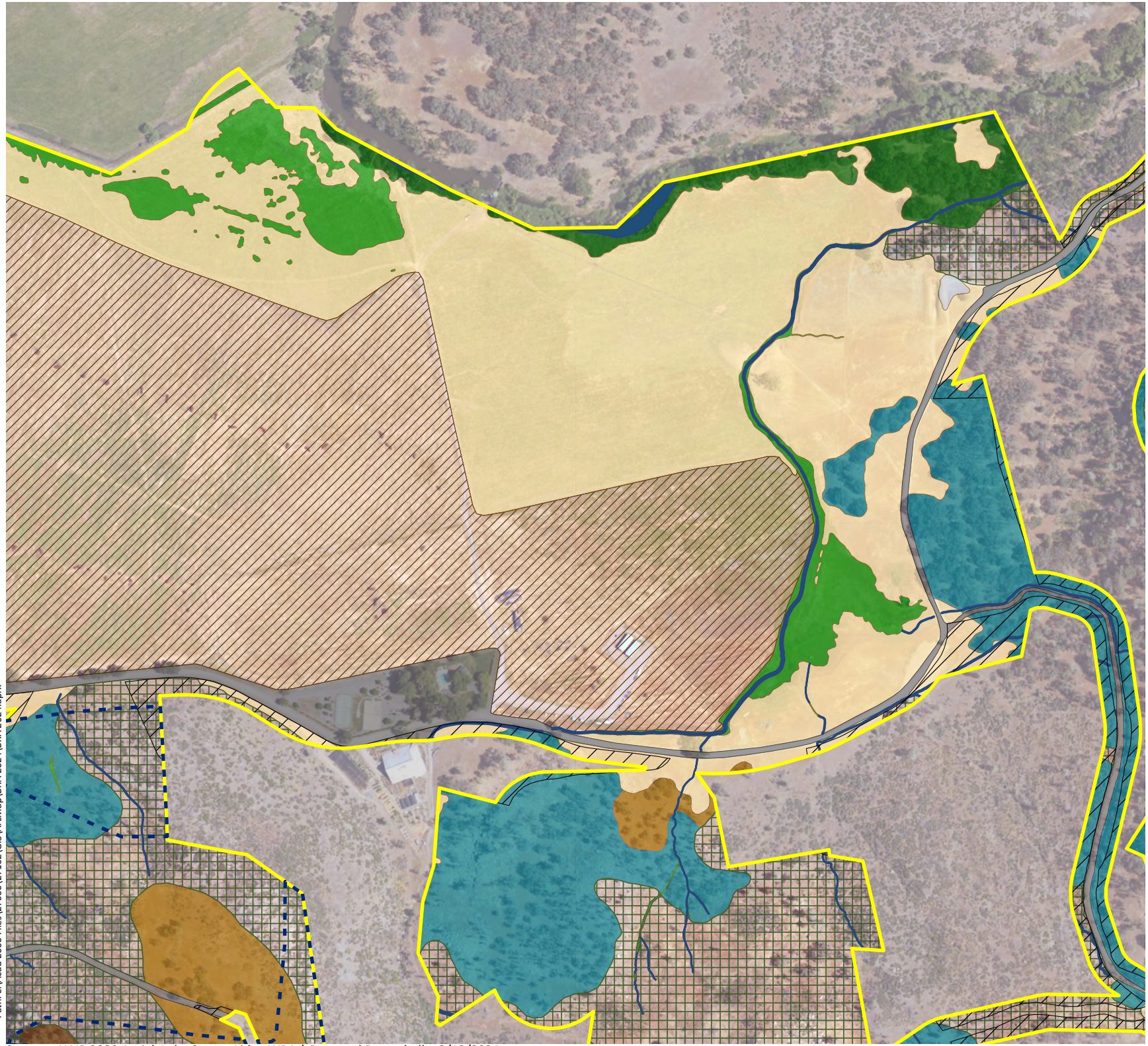

Figure 4-12. Land Cover Types Mapped within the Modified APE (Sheet 11)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
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- Musk Brush Chaparral - 2.84 ac.
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- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
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- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

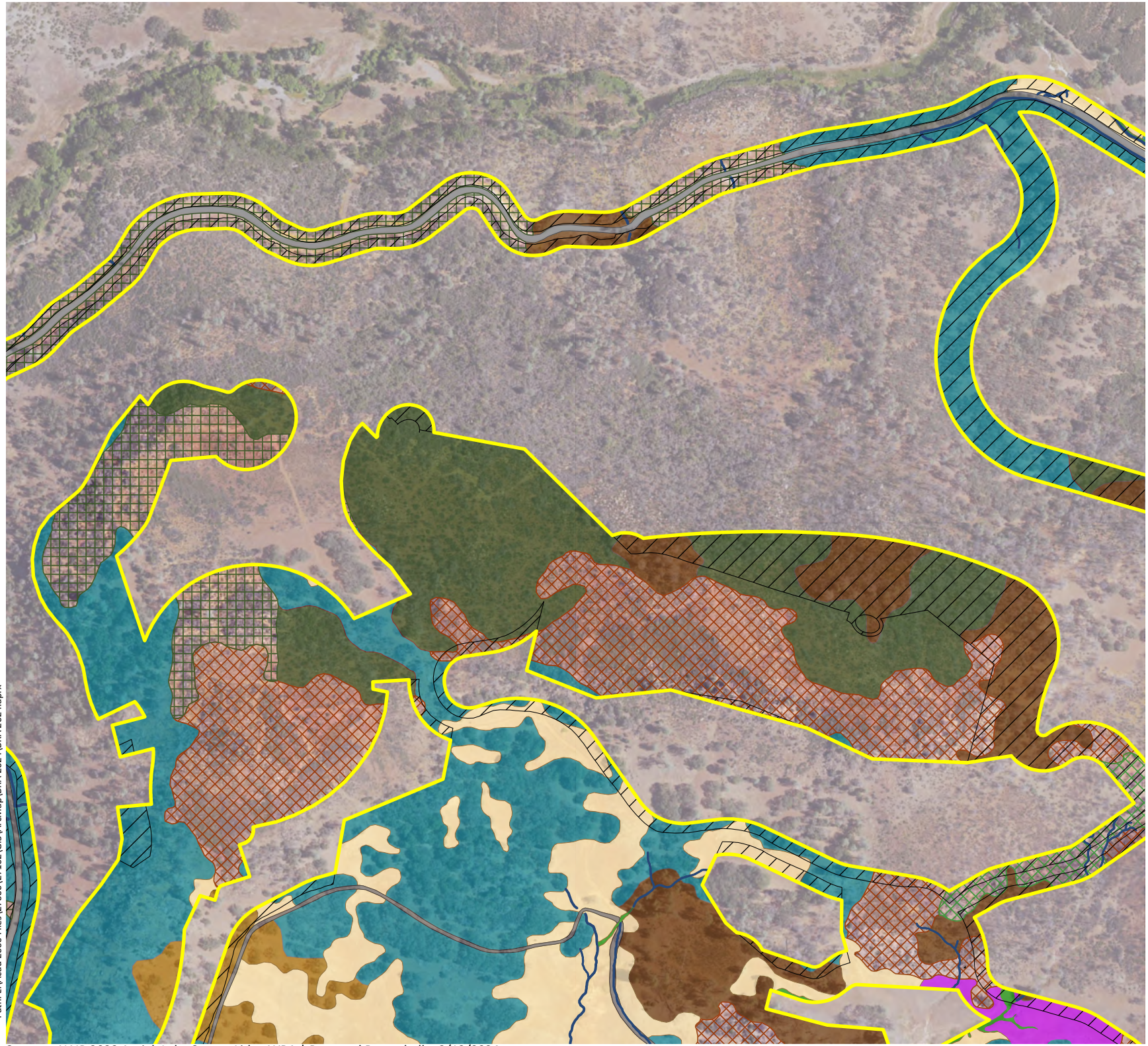

Figure 4-13. Land Cover Types Mapped within the Modified APE (Sheet 12)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
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- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
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- California Yerba Santa Scrub - 6.02 ac.
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- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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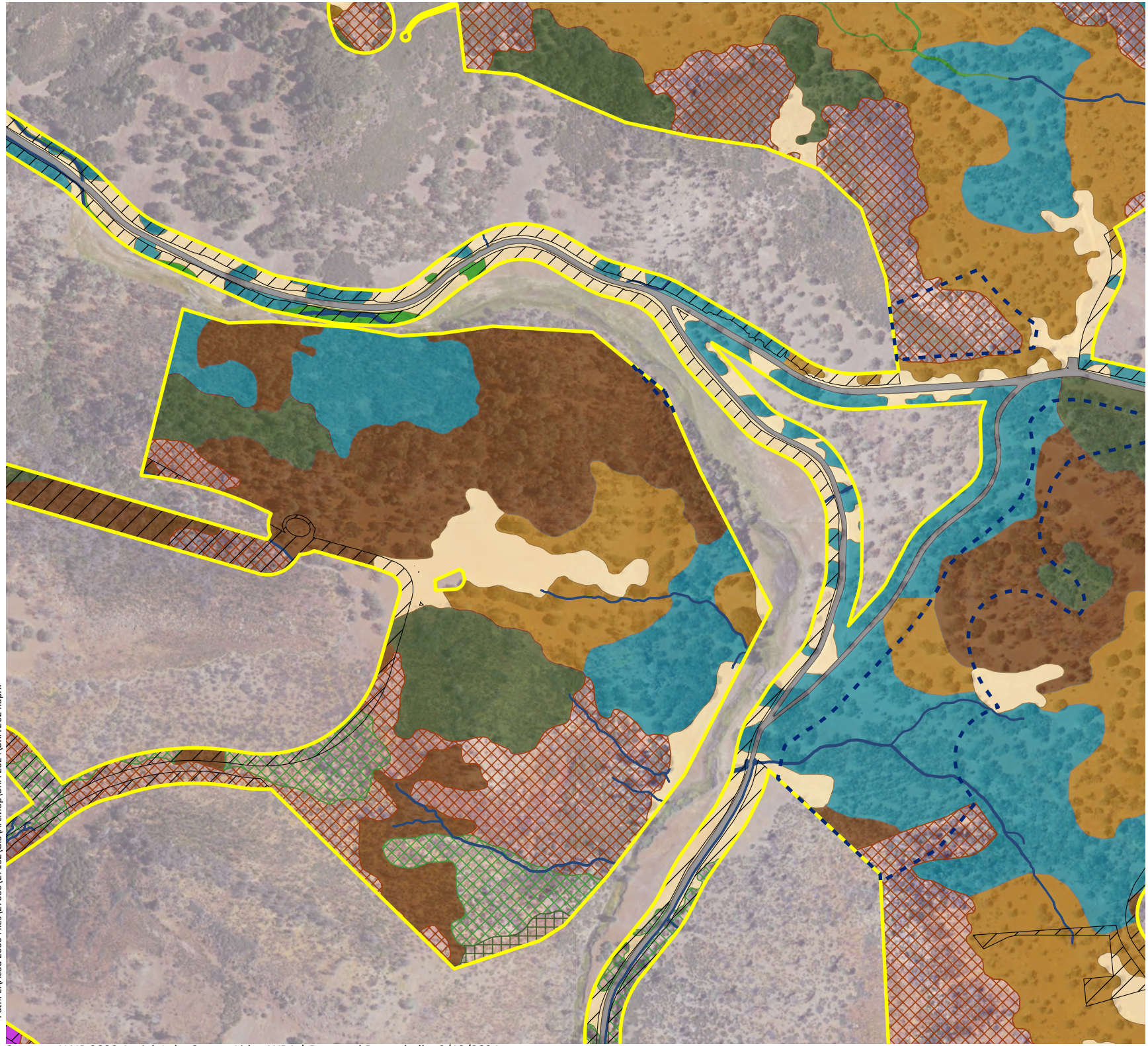
wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

Figure 4-14. Land Cover Types Mapped within the Modified APE (Sheet 13)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California



- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
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Non-Sensitive Land Cover Types

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- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

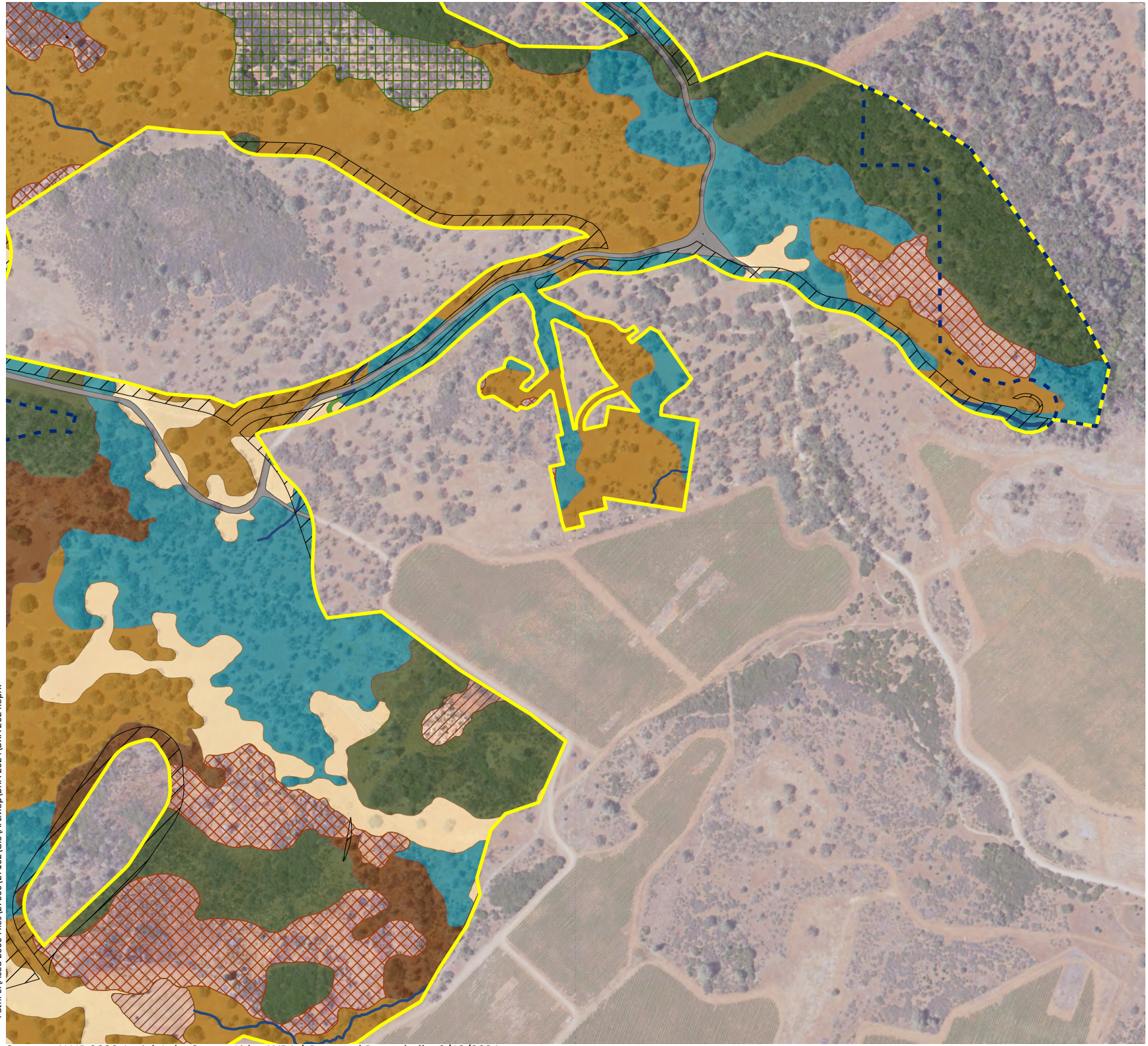

Figure 4-15. Land Cover Types Mapped within the Modified APE (Sheet 14)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

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- Streams - 13.13 ac.

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- Leather Oak Chaparral - 169.95 ac.
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N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

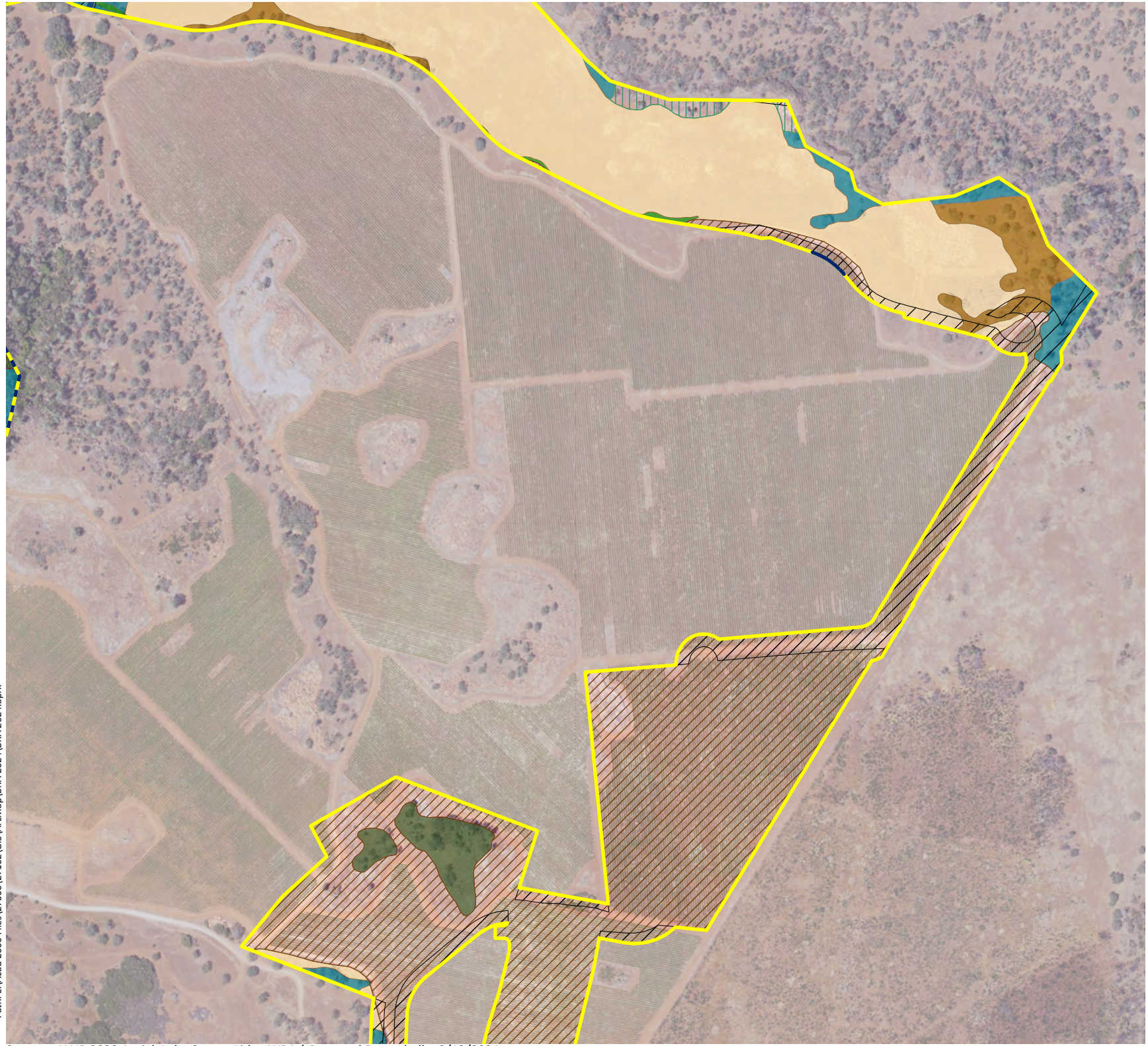

Figure 4-16. Land Cover Types Mapped within the Modified APE (Sheet 15)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

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- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

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- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 4-17. Land Cover Types Mapped within the Modified APE (Sheet 16)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
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- Streams - 13.13 ac.

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- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
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- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 4-18. Land Cover Types Mapped within the Modified APE (Sheet 17)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

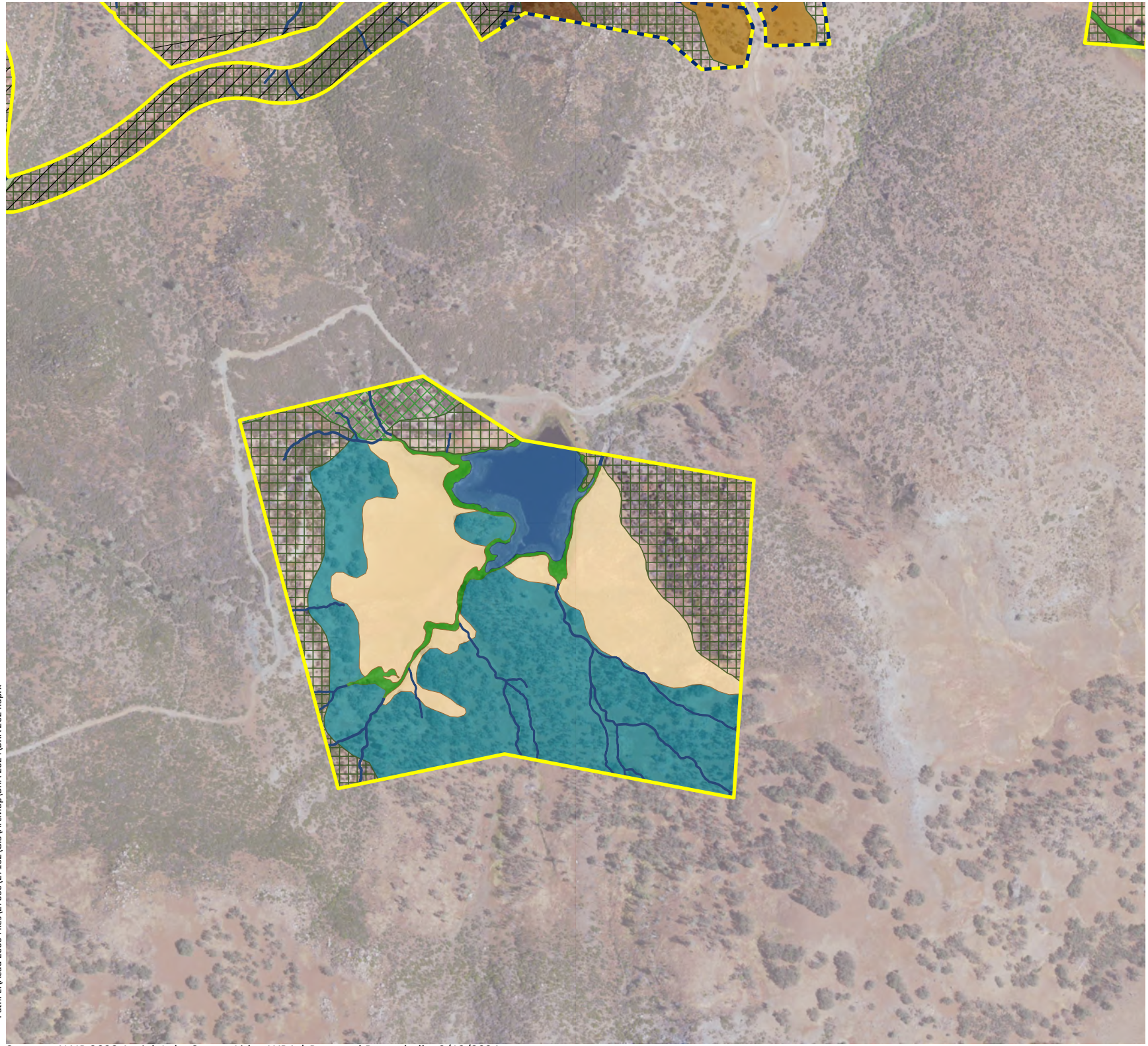

Figure 4-19. Land Cover Types Mapped within the Modified APE (Sheet 18)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
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- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

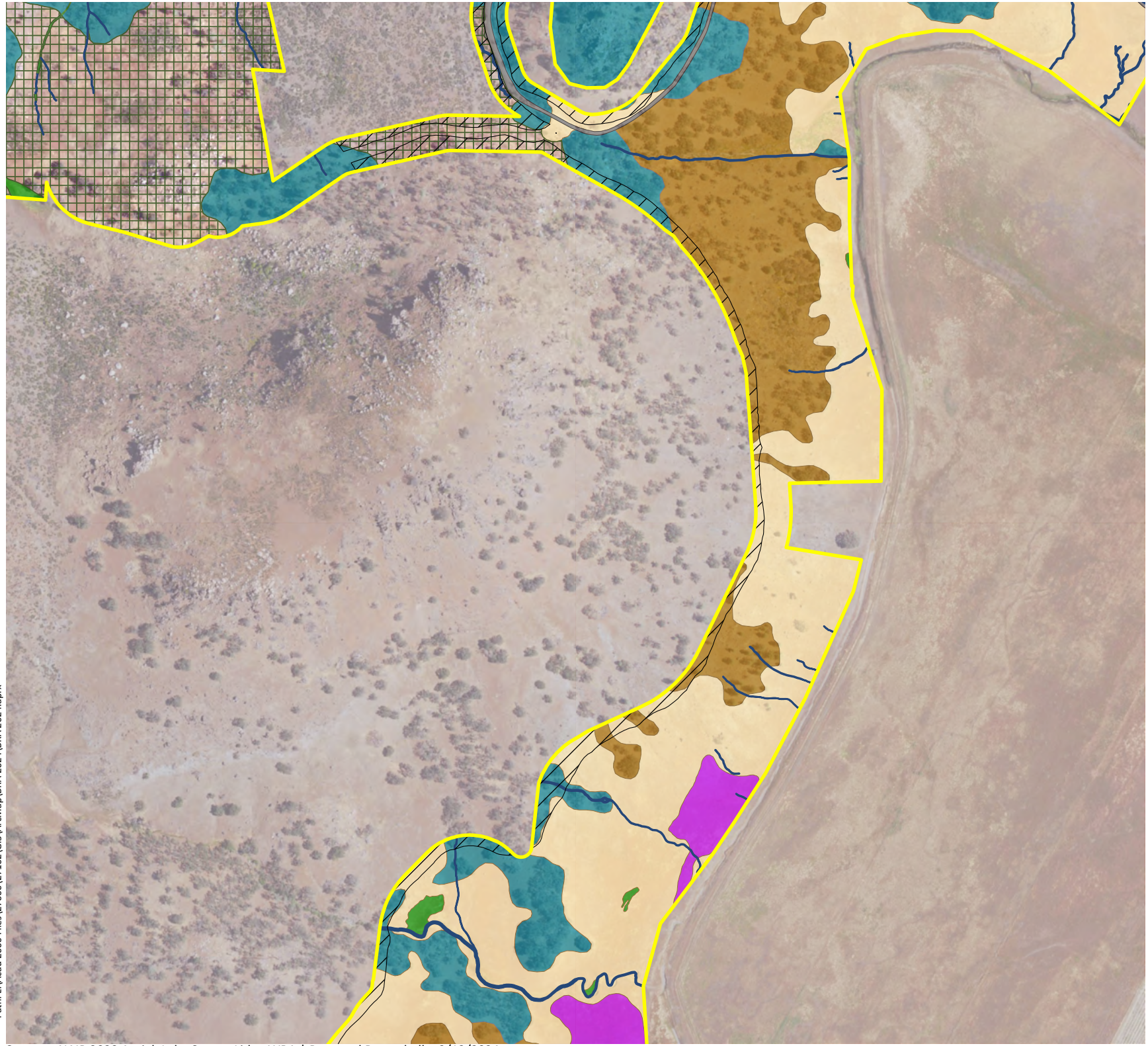

Figure 4-20. Land Cover Types Mapped within the Modified APE (Sheet 19)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 4-21. Land Cover Types Mapped within the Modified APE (Sheet 20)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 4-22. Land Cover Types Mapped within the Modified APE (Sheet 21)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

Figure 4-23. Land Cover Types Mapped within the Modified APE (Sheet 22)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California



- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 4-24. Land Cover Types Mapped within the Modified APE (Sheet 23)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

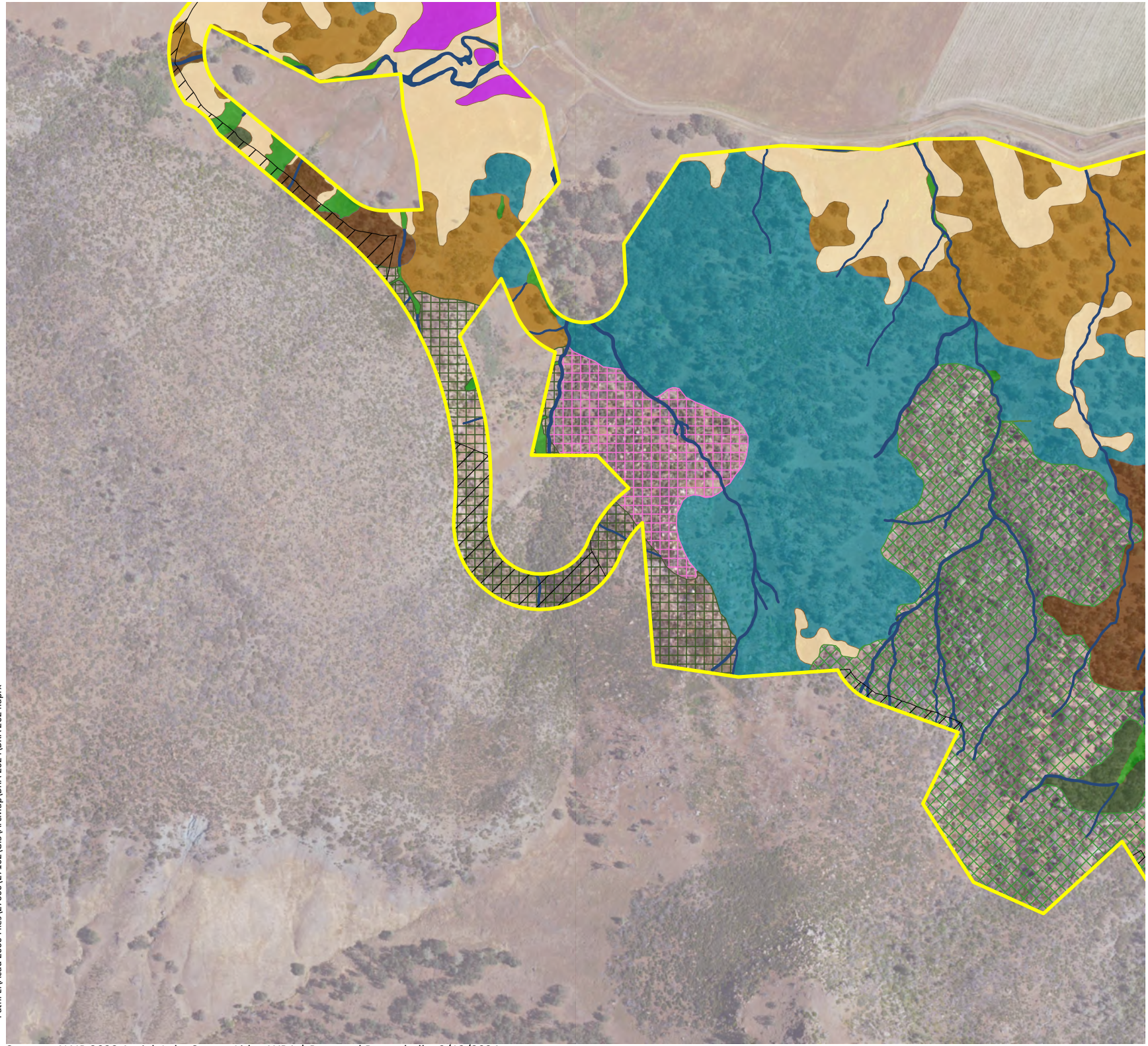

Figure 4-25. Land Cover Types Mapped within the Modified APE (Sheet 24)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

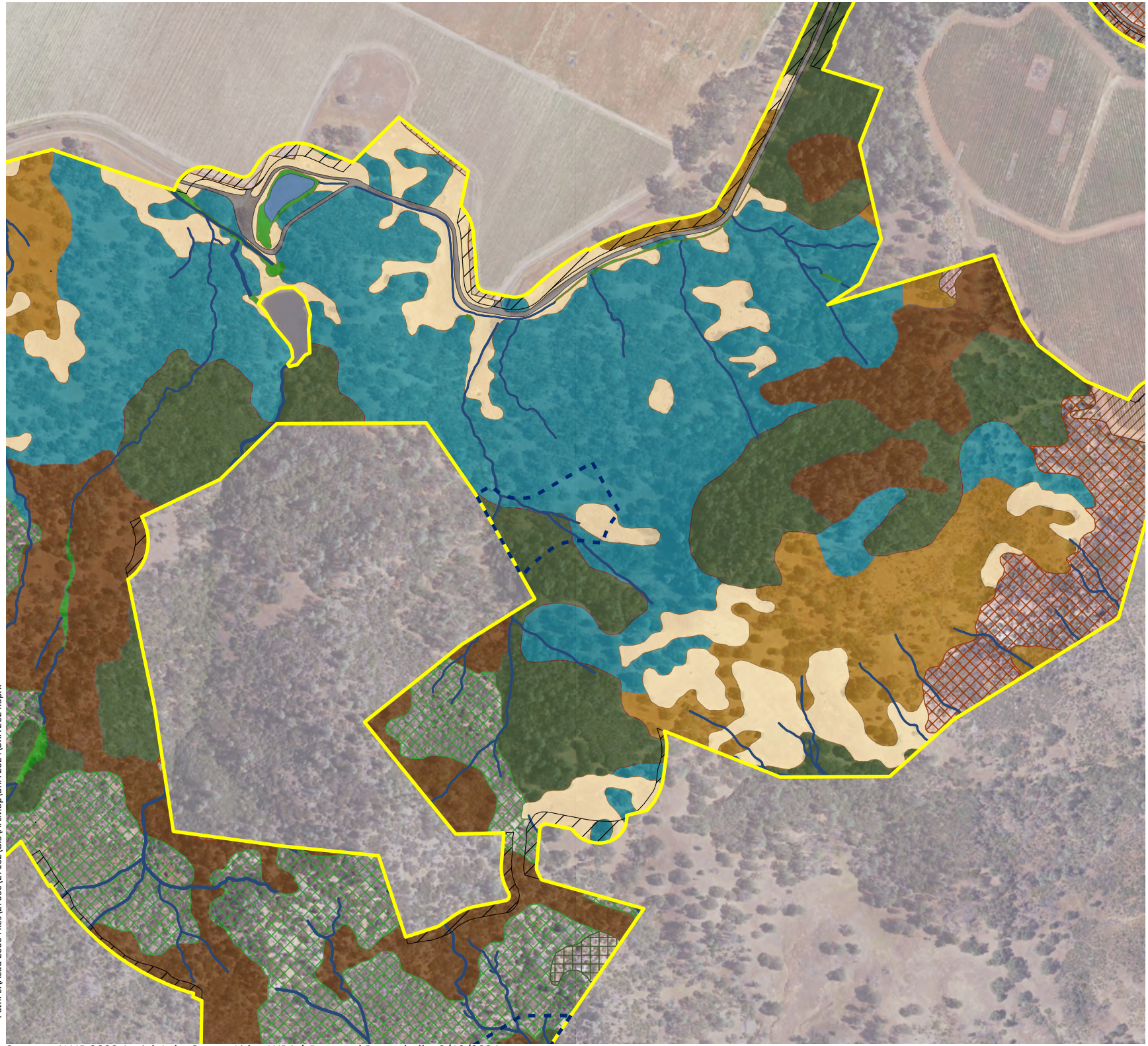

Figure 4-26. Land Cover Types Mapped within the Modified APE (Sheet 25)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

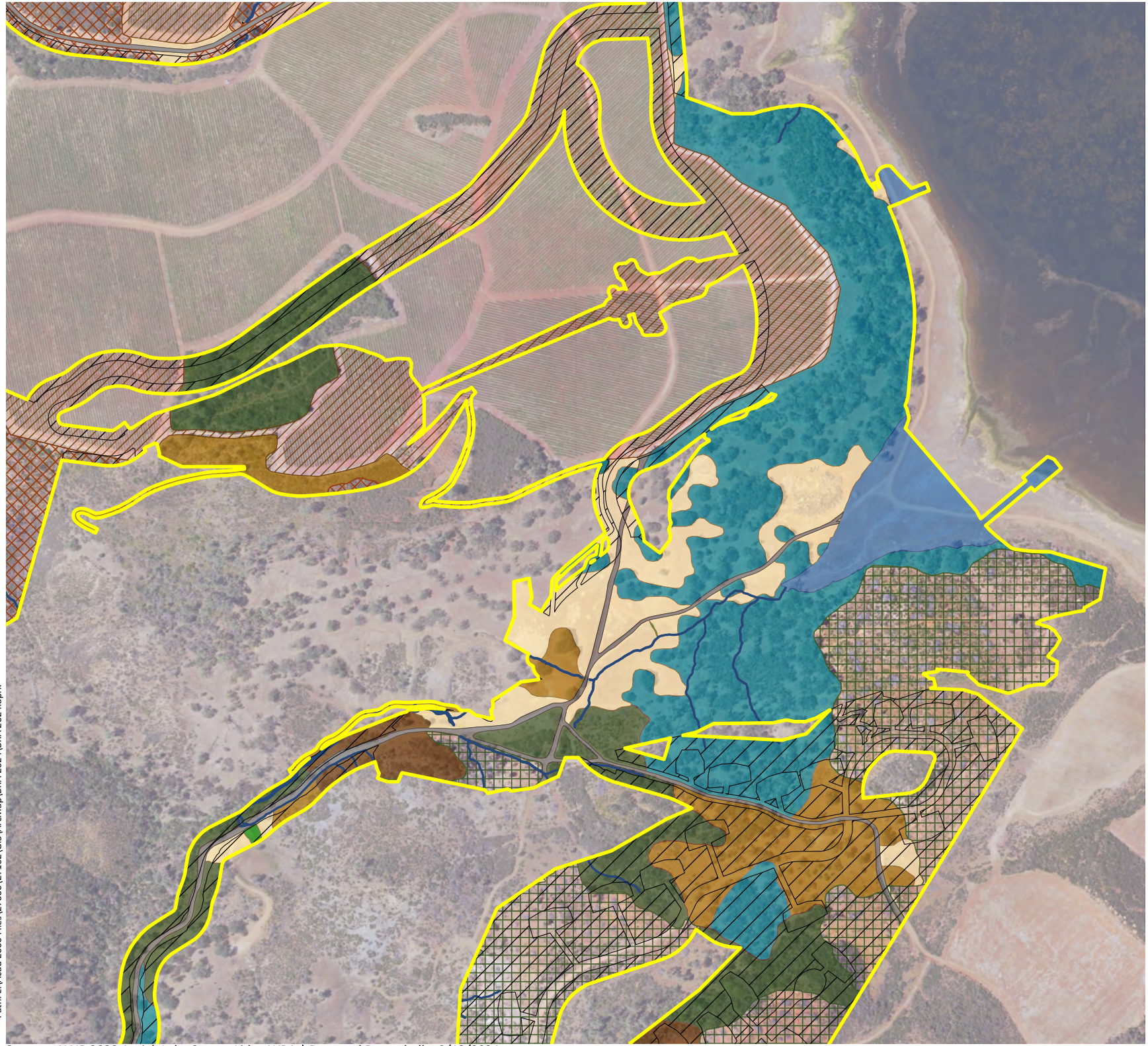

Figure 4-27. Land Cover Types Mapped within the Modified APE (Sheet 26)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

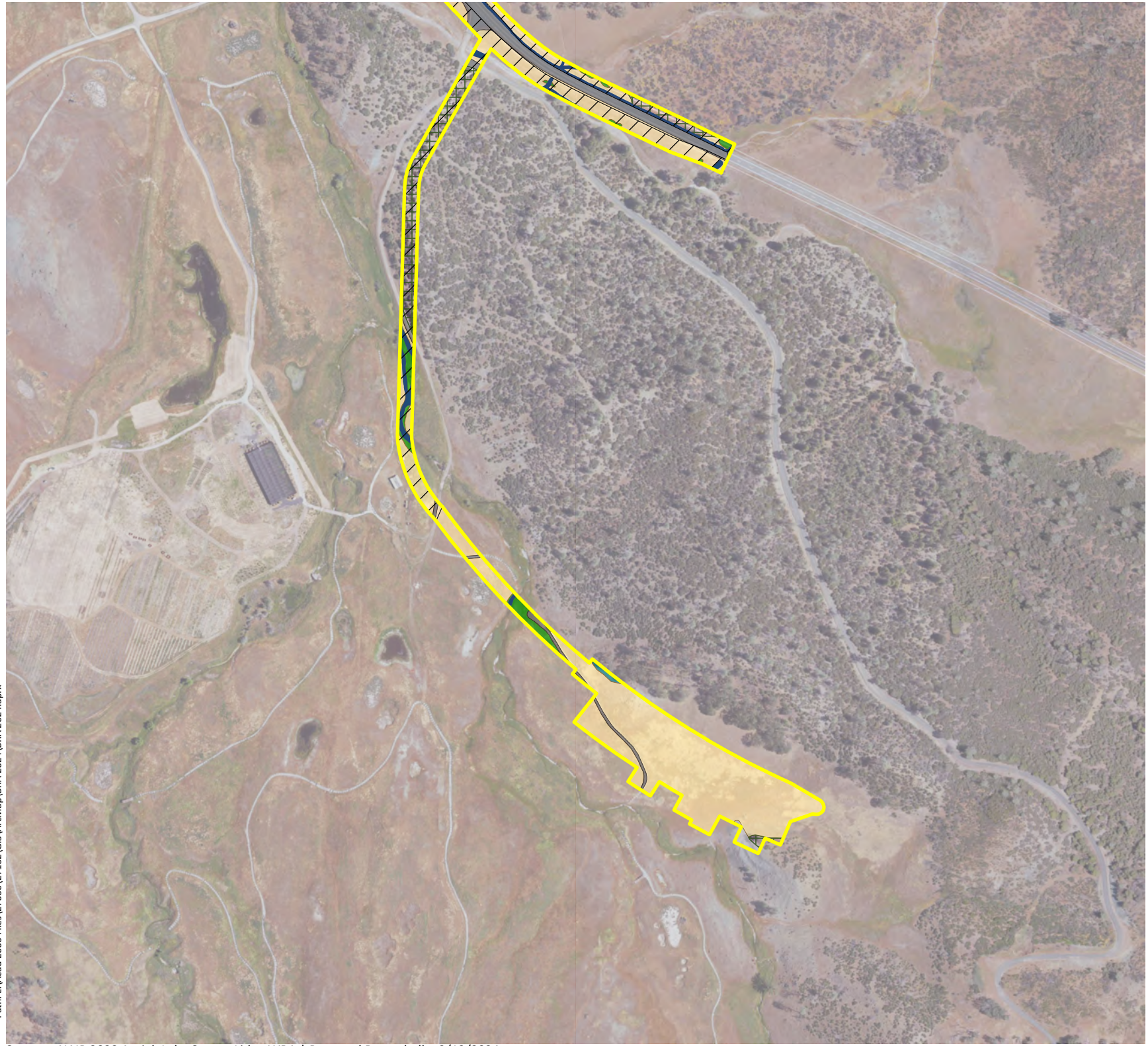

Figure 4-28. Land Cover Types Mapped within the Modified APE (Sheet 27)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

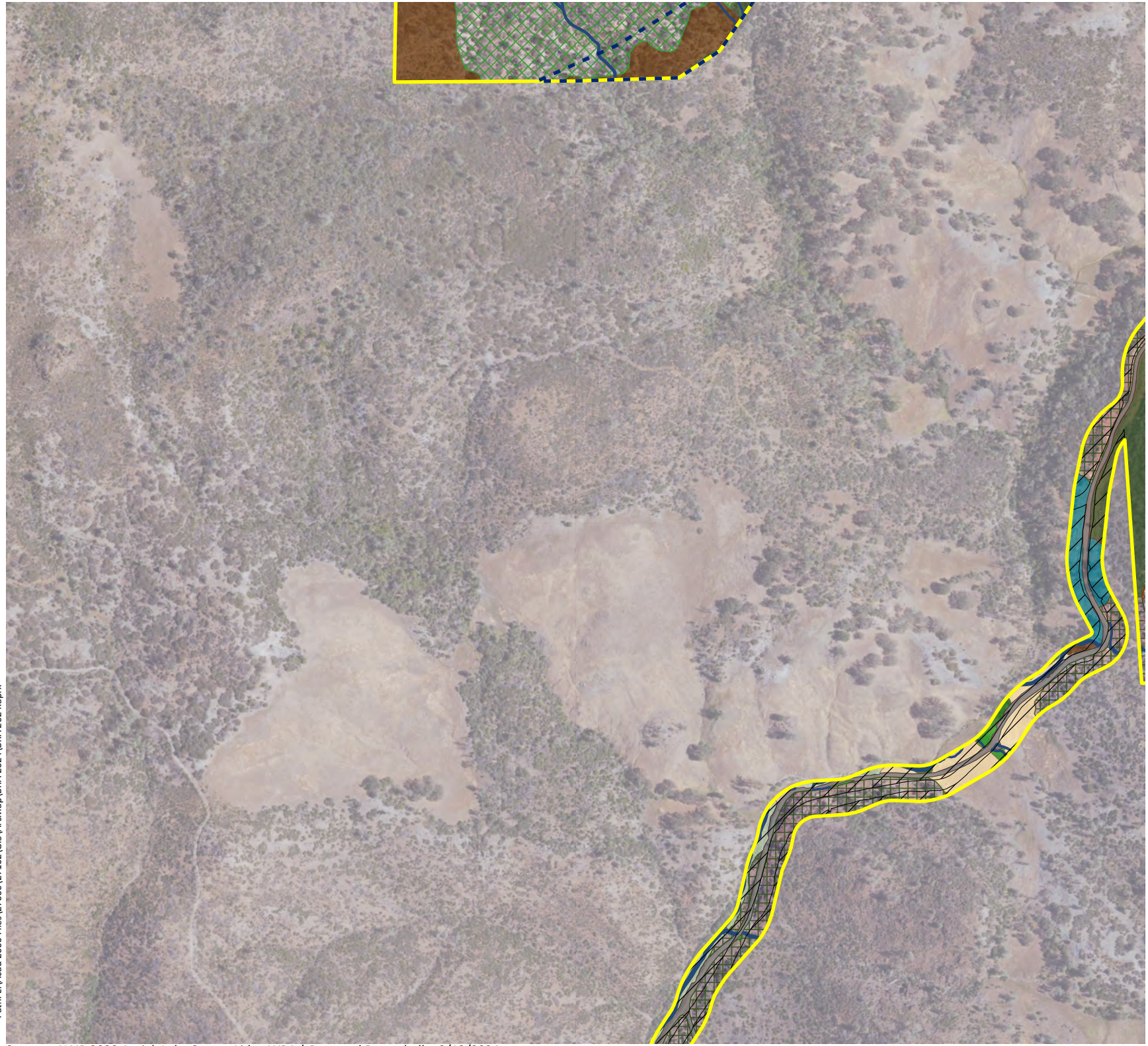

Figure 4-29. Land Cover Types Mapped within the Modified APE (Sheet 28)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

0 200 400
Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

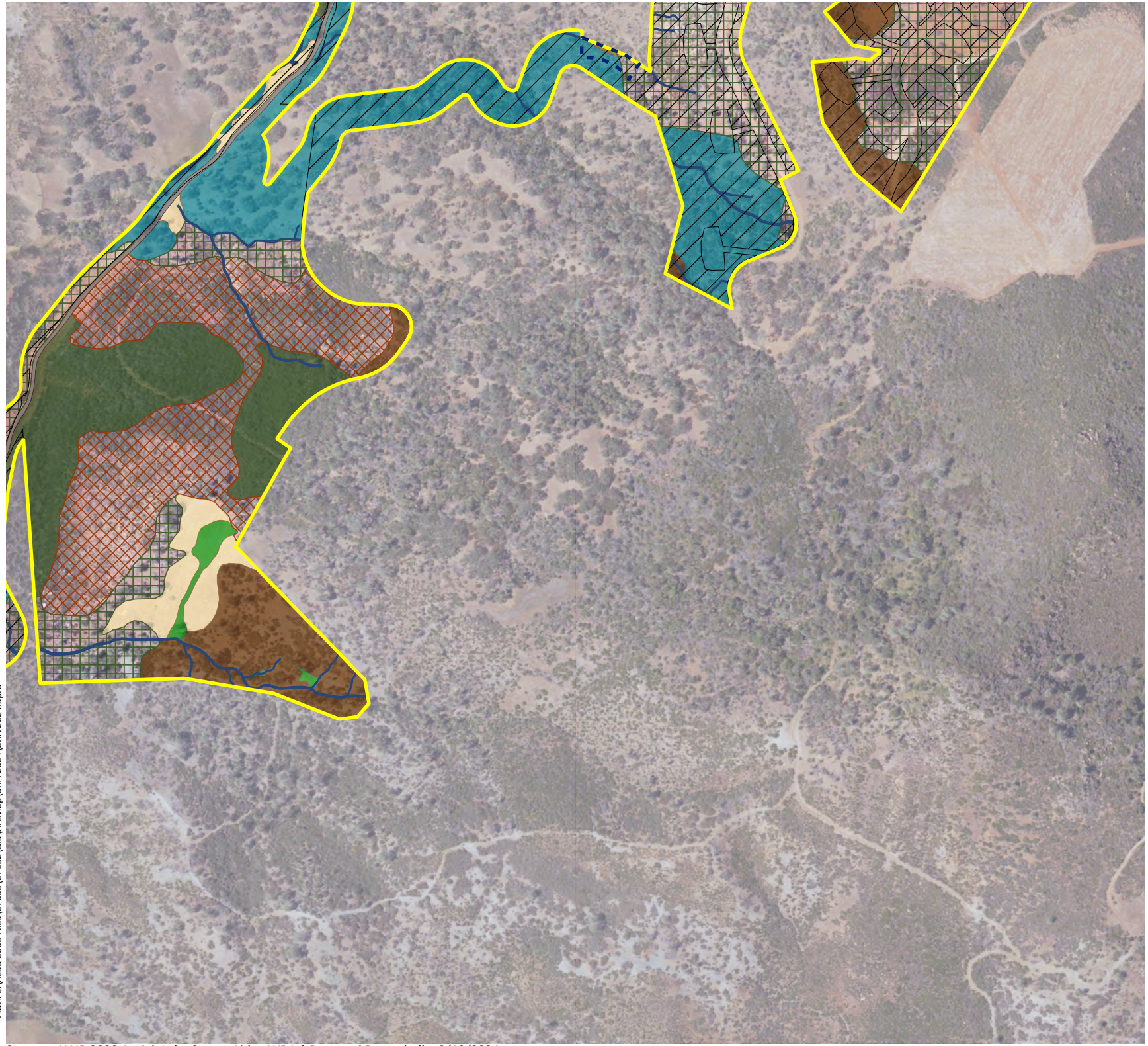

Figure 4-30. Land Cover Types Mapped within the Modified APE (Sheet 29)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

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Feet

wra Environmental Consultants

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Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 4-31. Land Cover Types Mapped within the Modified APE (Sheet 30)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Sensitive Land Cover Types

- Blue Oak Savanna - 276.17 ac.
- Blue Oak Woodland - 481.33 ac.
- Interior Live Oak Woodland - 170.44 ac.
- Valley Oak Woodland - 9.83 ac.
- Musk Brush Chaparral - 2.84 ac.
- Brewer Willow Thickets - 1.12 ac.
- Serpentine Rock Outcrop - 3.92 ac.
- Emergent Wetlands - 22.41 ac.
- Ponds and Reservoirs - 9.32 ac.
- Purple Needlegrass Grassland - 5.69 ac.
- Streams - 13.13 ac.

Non-Sensitive Land Cover Types

- Foothill Pine Woodland - 126.08 ac.
- Chamise Chaparral - 242.46 ac.
- Whiteleaf Manzanita Chaparral - 61.31 ac.
- California Yerba Santa Scrub - 6.02 ac.
- Scrub Oak Chaparral - 31.25 ac.
- Leather Oak Chaparral - 169.95 ac.
- Non-native Annual Grasslands - 438.27 ac.
- Rock Outcrop - 1.98 ac.
- Agriculture - 309.71 ac.
- Developed - 69.95 ac.

N

0 200 400
Feet

wra Environmental Consultants

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Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

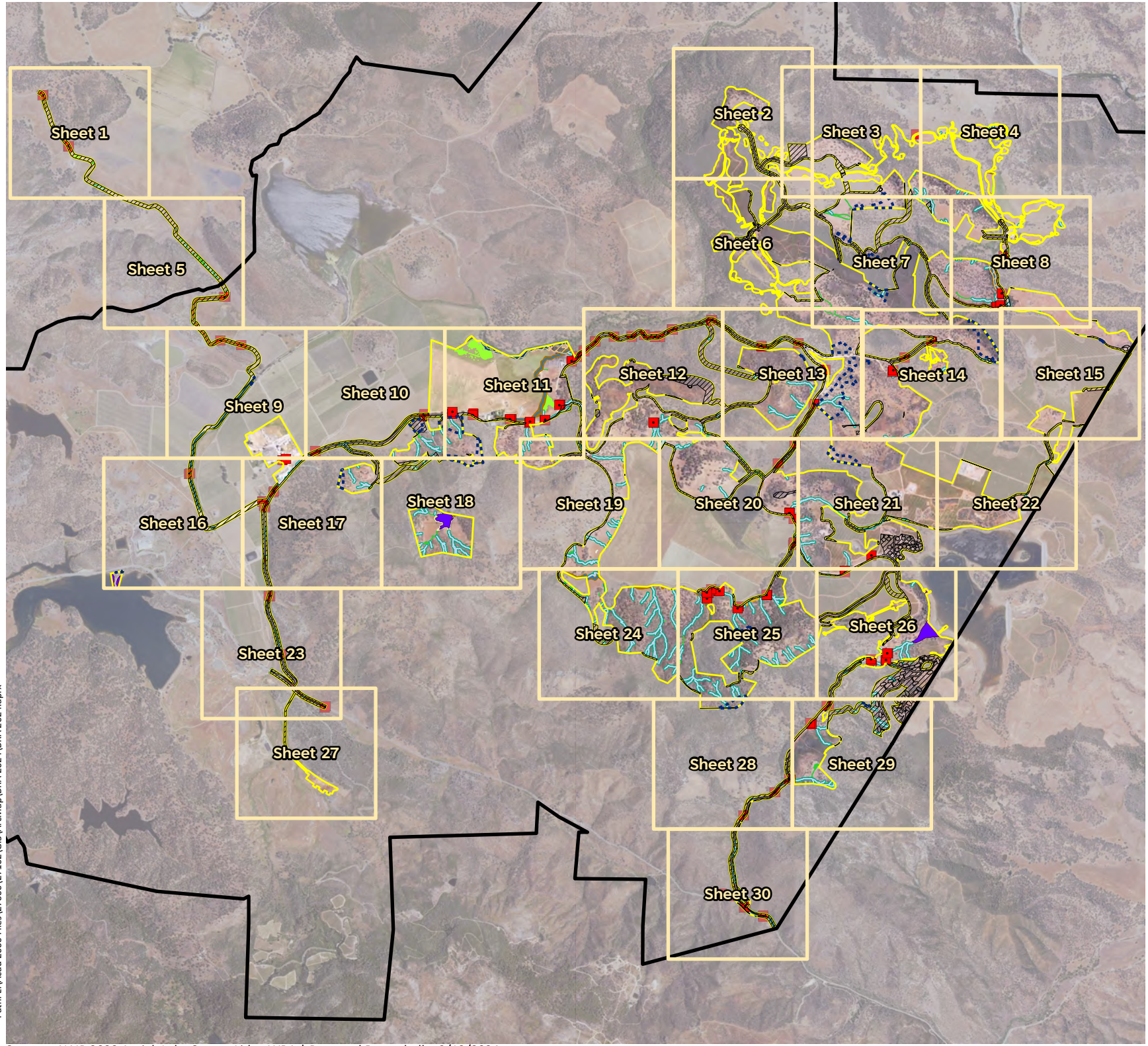

Figure 5-1. Aquatic Resources Mapped within the Modified APE (Overview)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Property Boundary
- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Mapbook Grid
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

0 1,500 3,000

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-2. Aquatic Resources Mapped within the Modified APE (Sheet 1)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

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Feet

wra Environmental Consultants

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Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

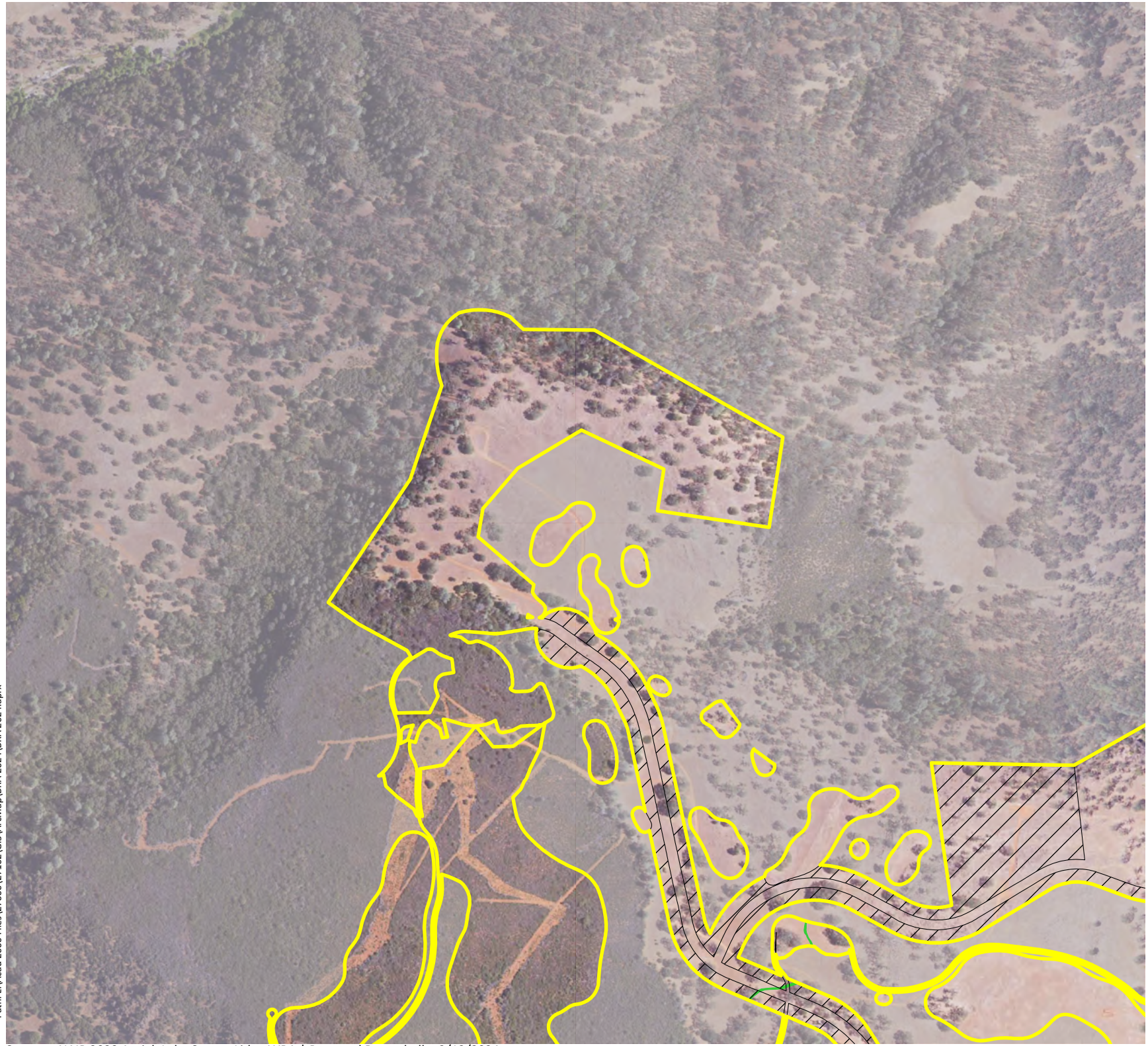

Figure 5-3. Aquatic Resources Mapped within the Modified APE (Sheet 2)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-4. Aquatic Resources Mapped within the Modified APE (Sheet 3)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

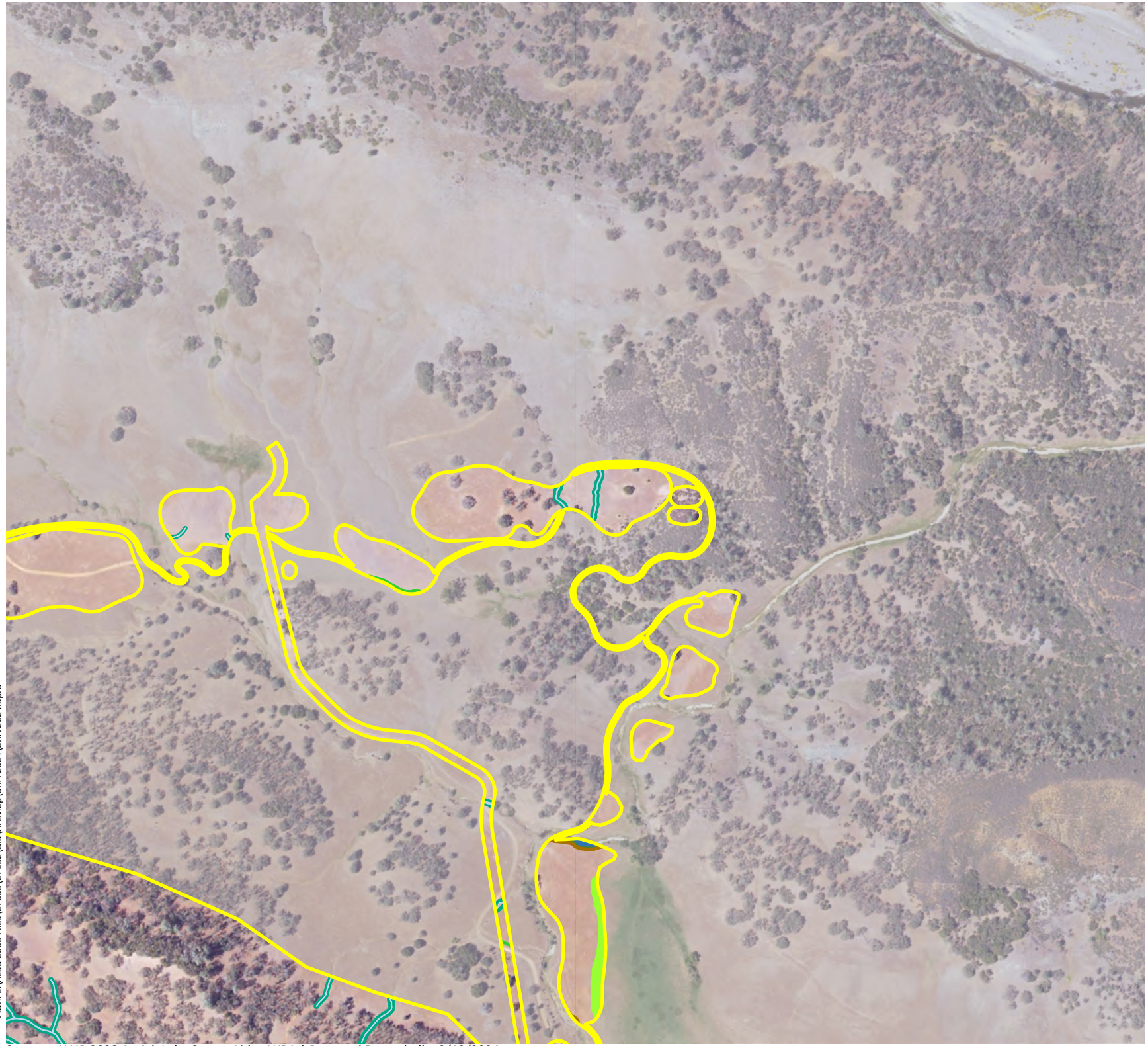

Figure 5-5. Aquatic Resources Mapped within the Modified APE (Sheet 4)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

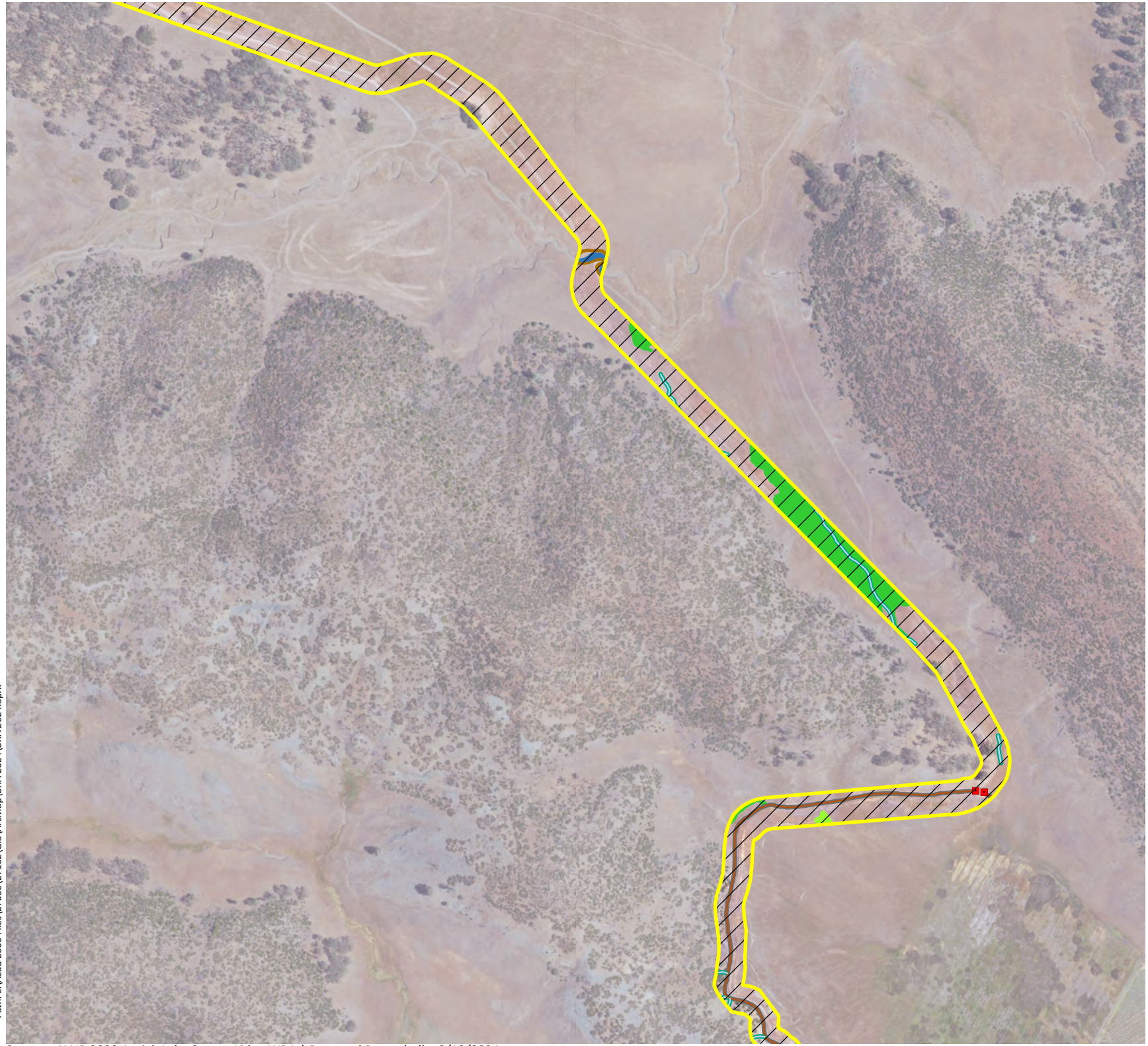

Figure 5-6. Aquatic Resources Mapped within the Modified APE (Sheet 5)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

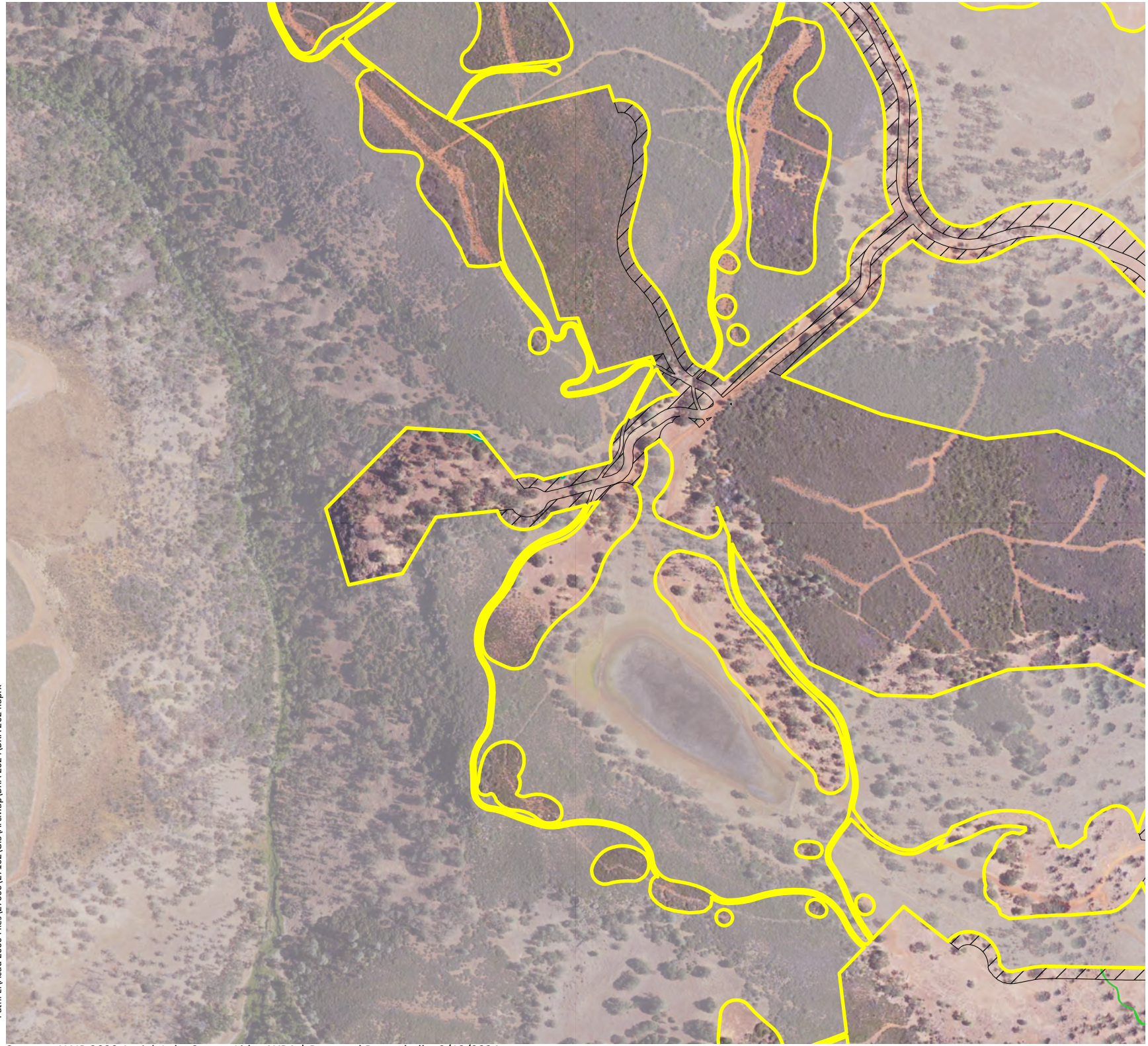

Figure 5-7. Aquatic Resources Mapped within the Modified APE (Sheet 6)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-8. Aquatic Resources Mapped within the Modified APE (Sheet 7)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

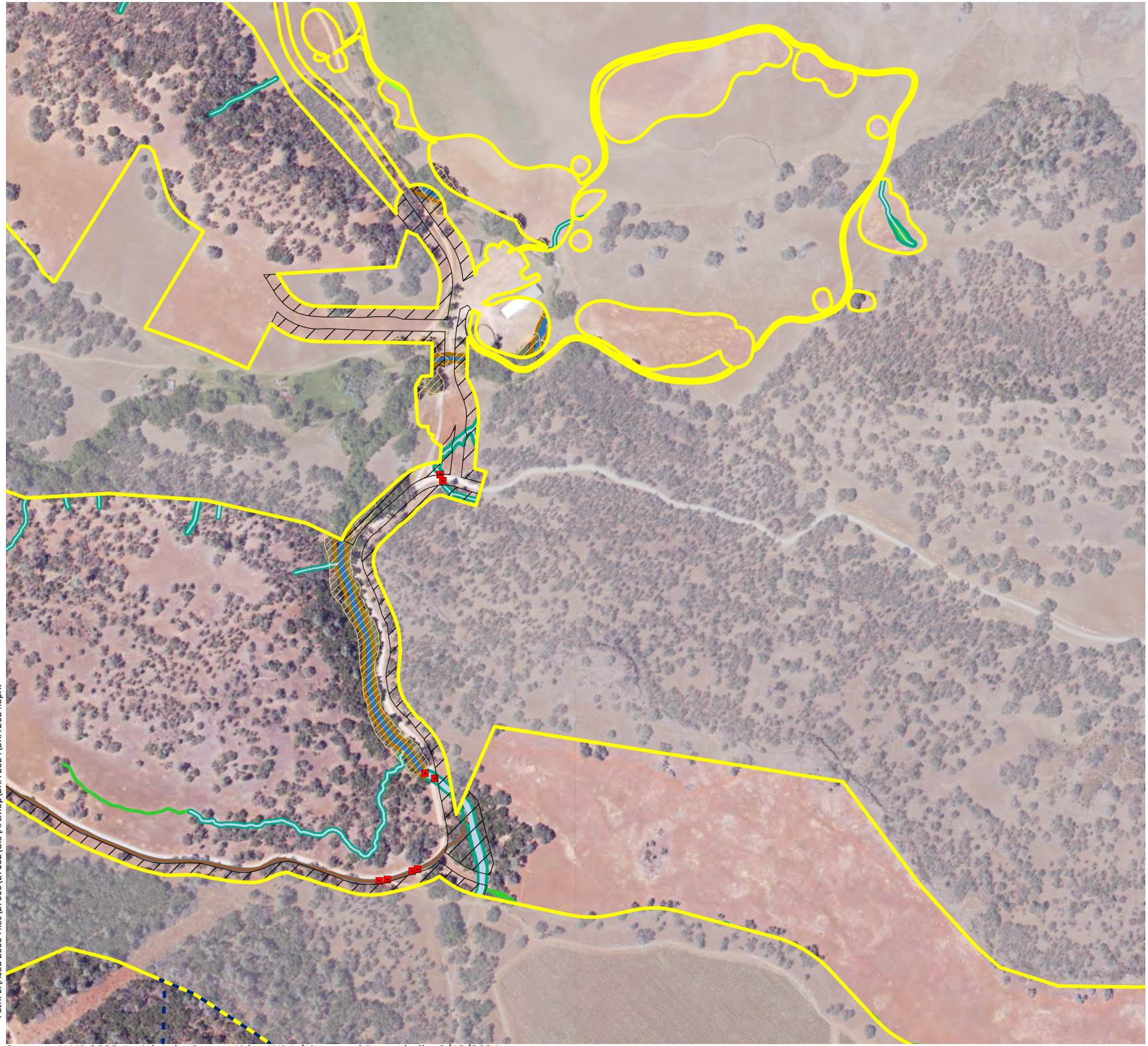

Figure 5-9. Aquatic Resources Mapped within the Modified APE (Sheet 8)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-10. Aquatic Resources Mapped within the Modified APE (Sheet 9)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-11. Aquatic Resources Mapped within the Modified APE (Sheet 10)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-12. Aquatic Resources Mapped within the Modified APE (Sheet 11)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

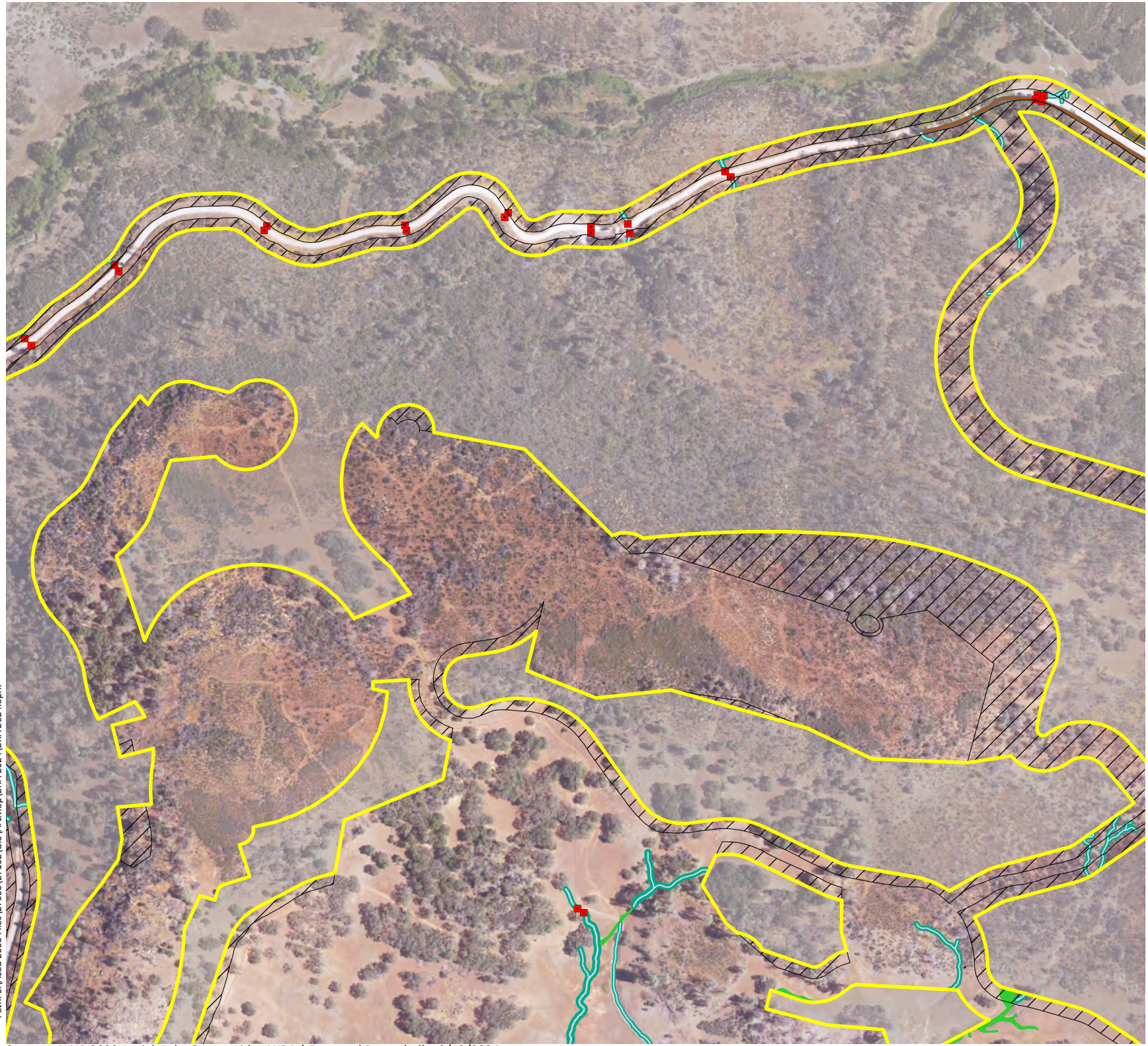

Figure 5-13. Aquatic Resources Mapped within the Modified APE (Sheet 12)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

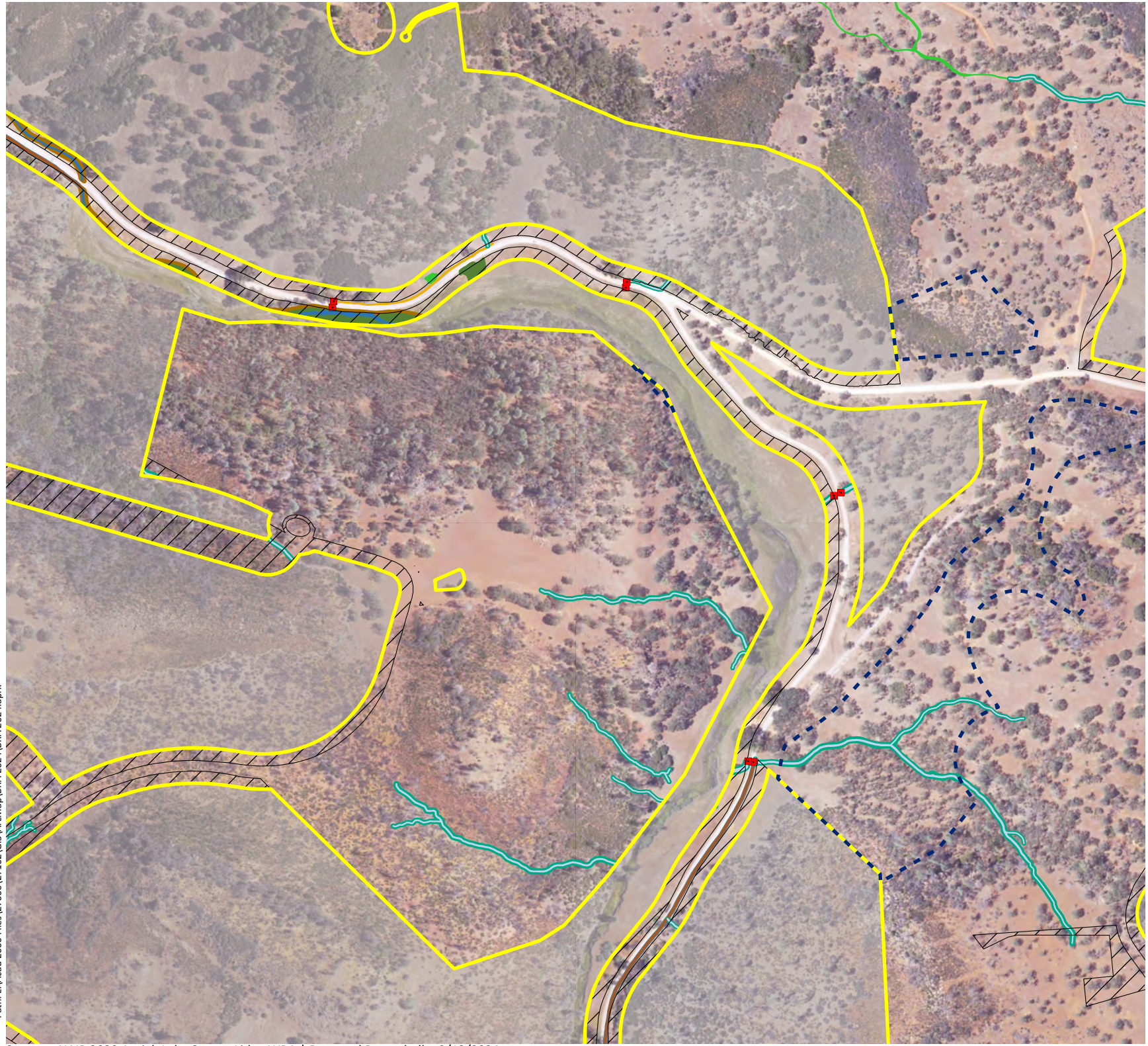

Figure 5-14. Aquatic Resources Mapped within the Modified APE (Sheet 13)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-15. Aquatic Resources Mapped within the Modified APE (Sheet 14)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-16. Aquatic Resources Mapped within the Modified APE (Sheet 15)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-17. Aquatic Resources Mapped within the Modified APE (Sheet 16)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-18. Aquatic Resources Mapped within the Modified APE (Sheet 17)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

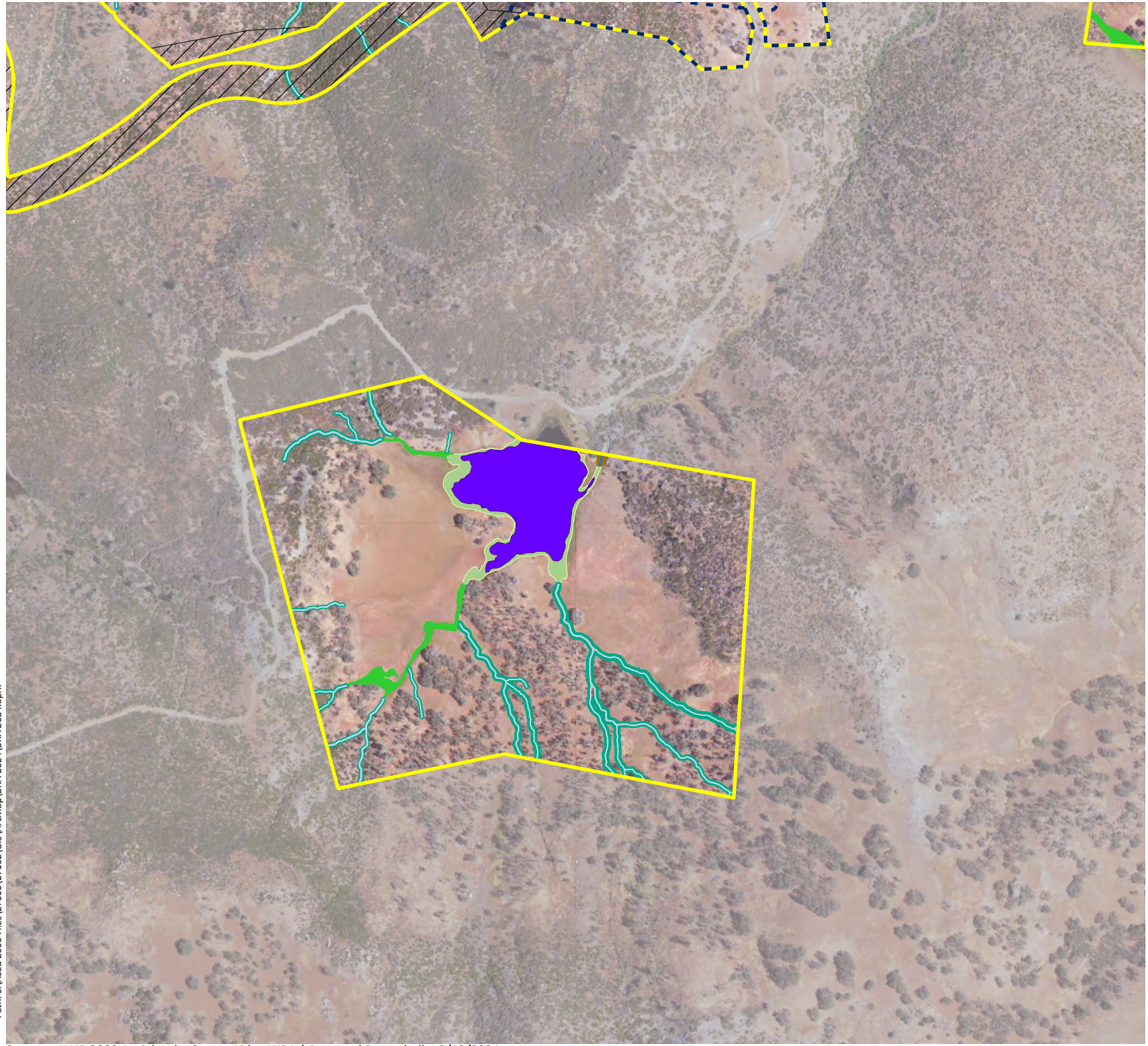

Figure 5-19. Aquatic Resources Mapped within the Modified APE (Sheet 18)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

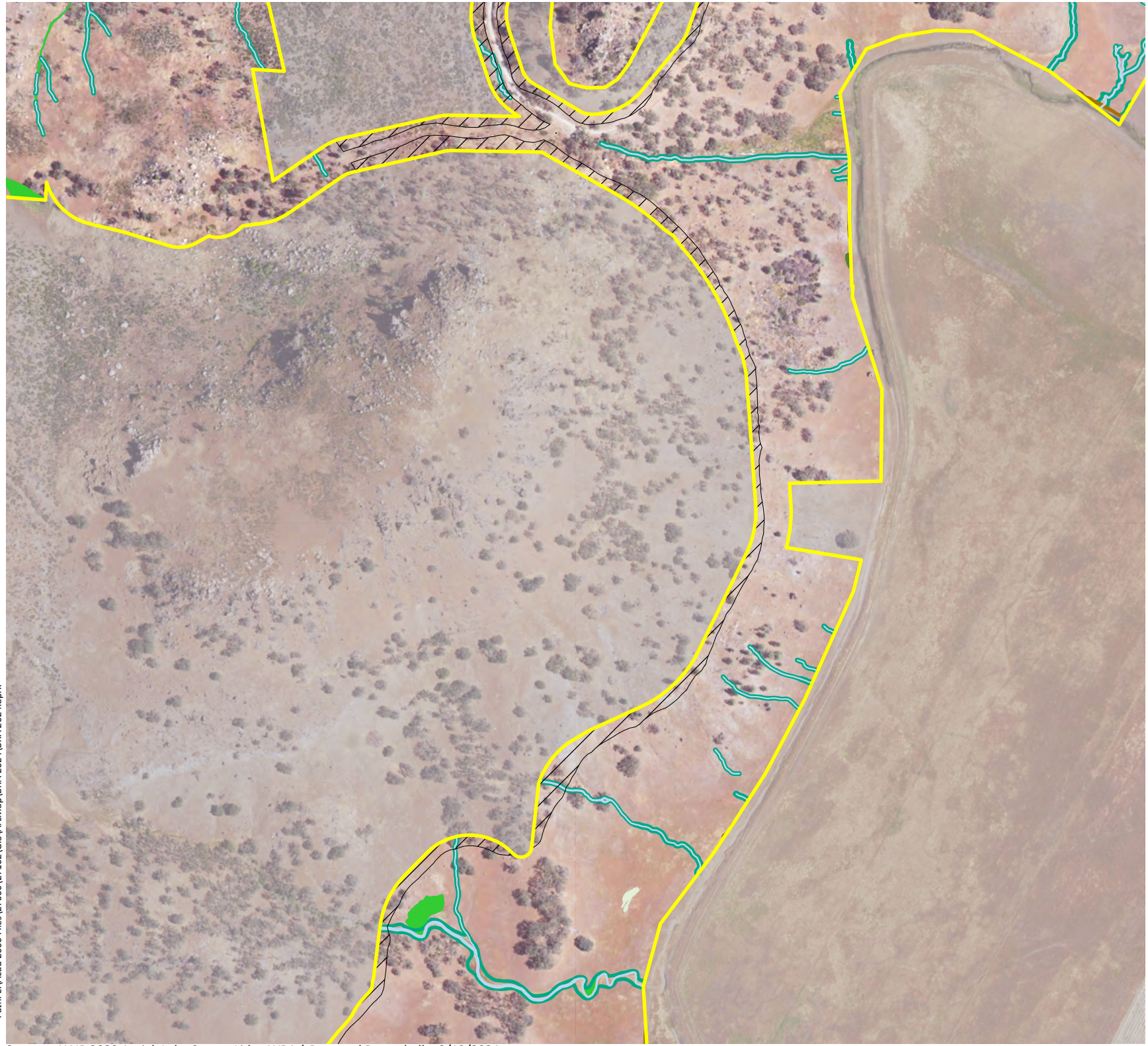

Figure 5-20. Aquatic Resources Mapped within the Modified APE (Sheet 19)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-21. Aquatic Resources Mapped within the Modified APE (Sheet 20)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

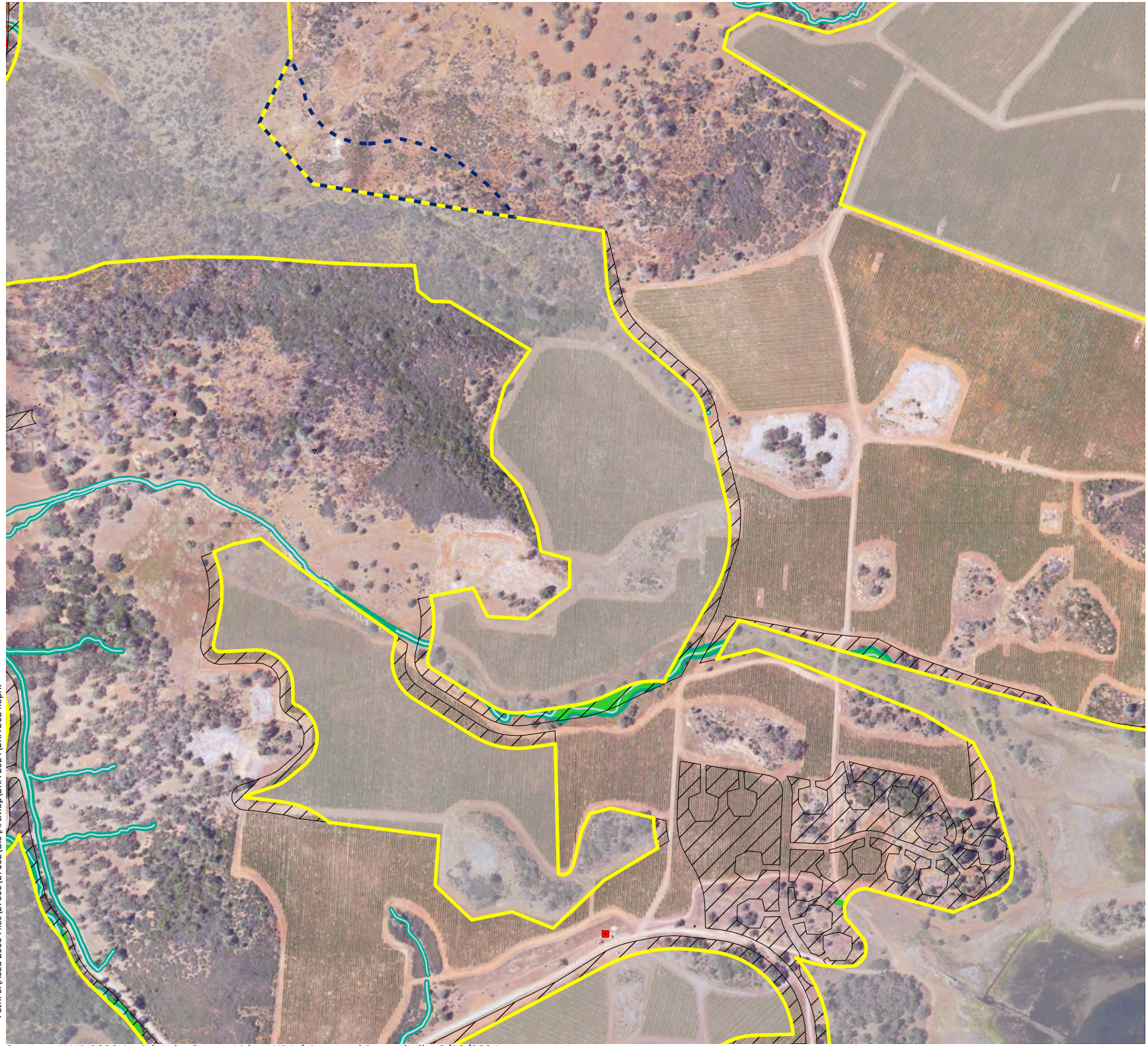

Figure 5-22. Aquatic Resources Mapped within the Modified APE (Sheet 21)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-23. Aquatic Resources Mapped within the Modified APE (Sheet 22)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

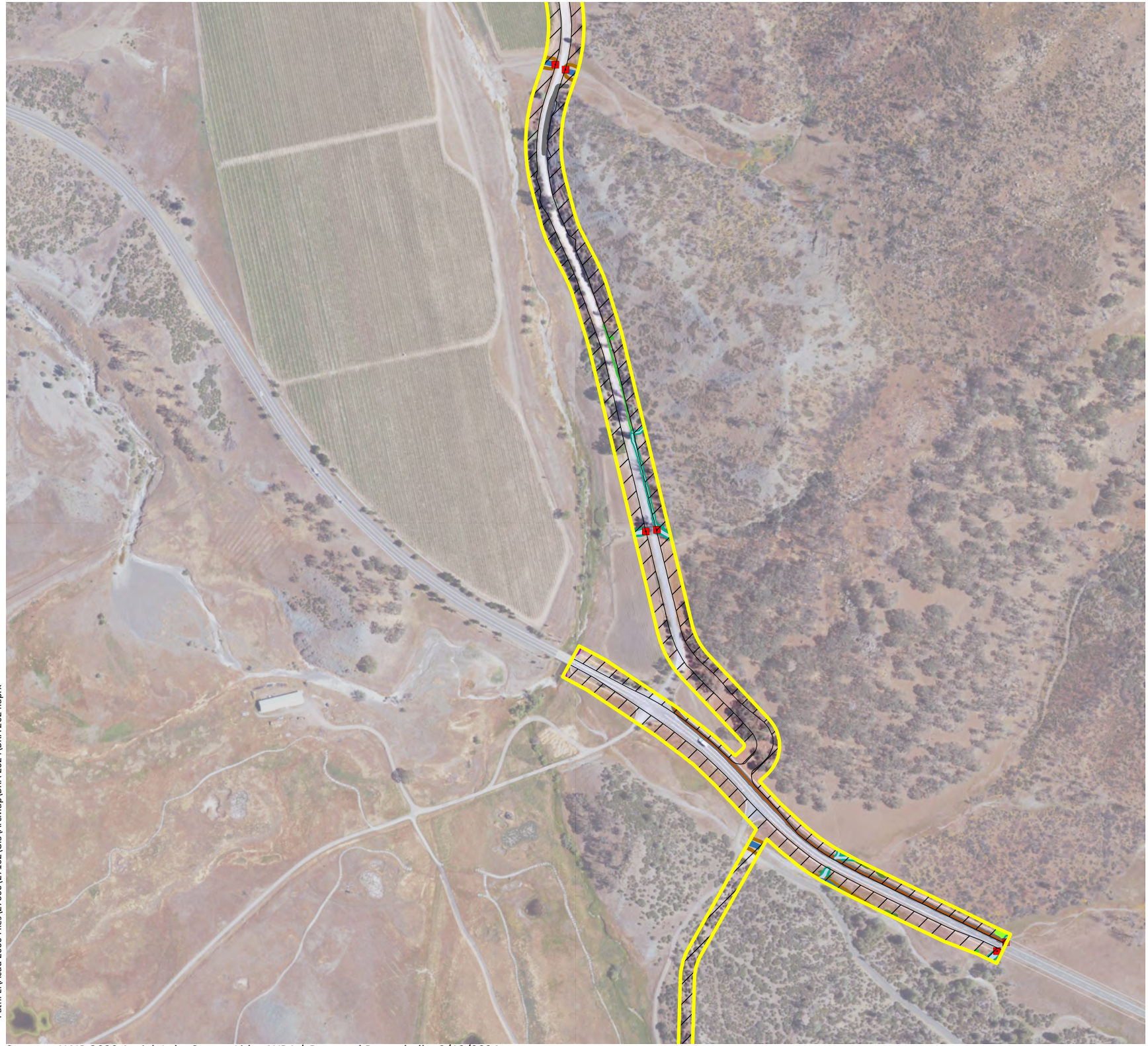

Figure 5-24. Aquatic Resources Mapped within the Modified APE (Sheet 23)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-25. Aquatic Resources Mapped within the Modified APE (Sheet 24)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

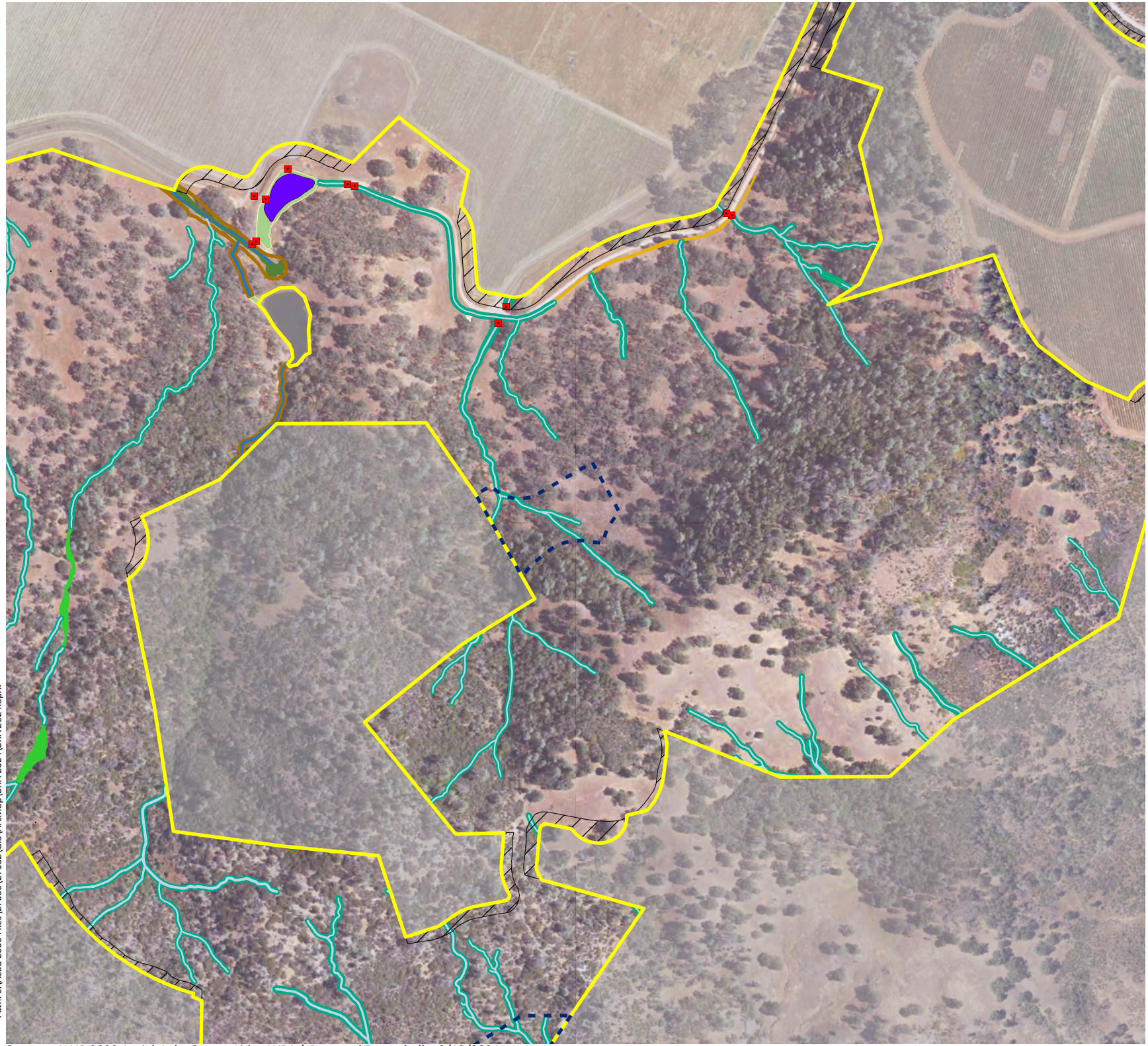

Figure 5-26. Aquatic Resources Mapped within the Modified APE (Sheet 25)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

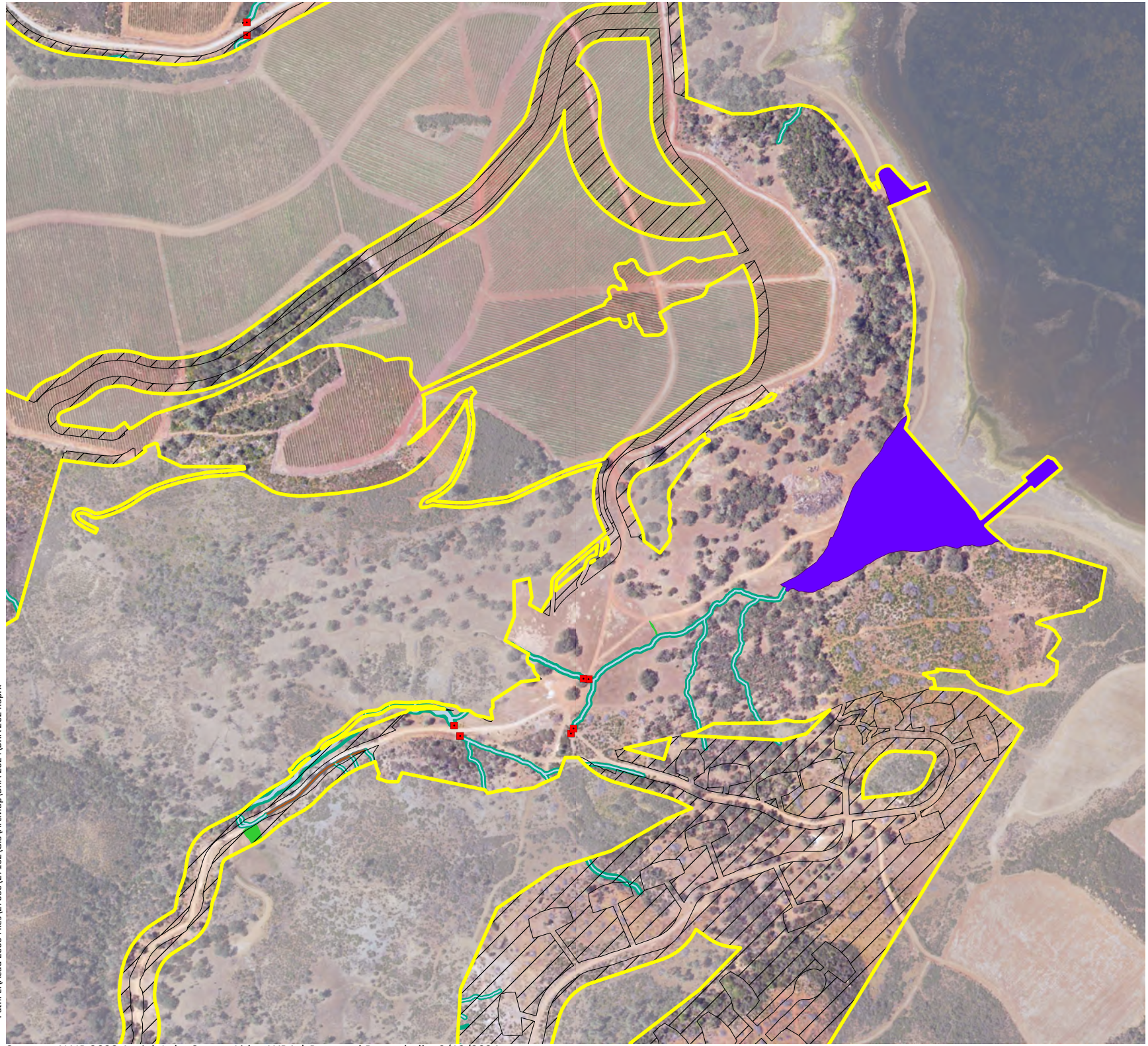

Figure 5-27. Aquatic Resources Mapped within the Modified APE (Sheet 26)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

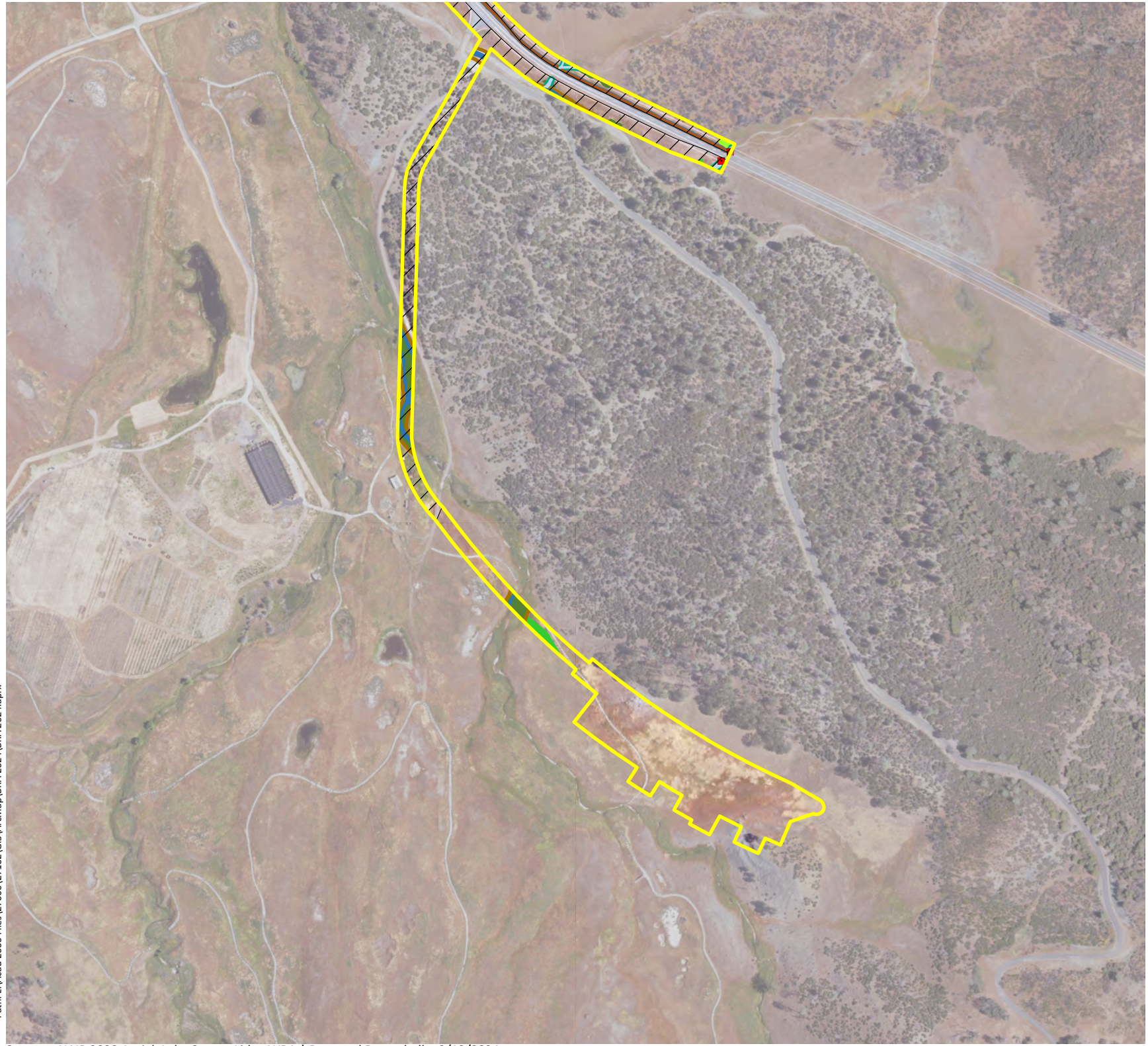

Figure 5-28. Aquatic Resources Mapped within the Modified APE (Sheet 27)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

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Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

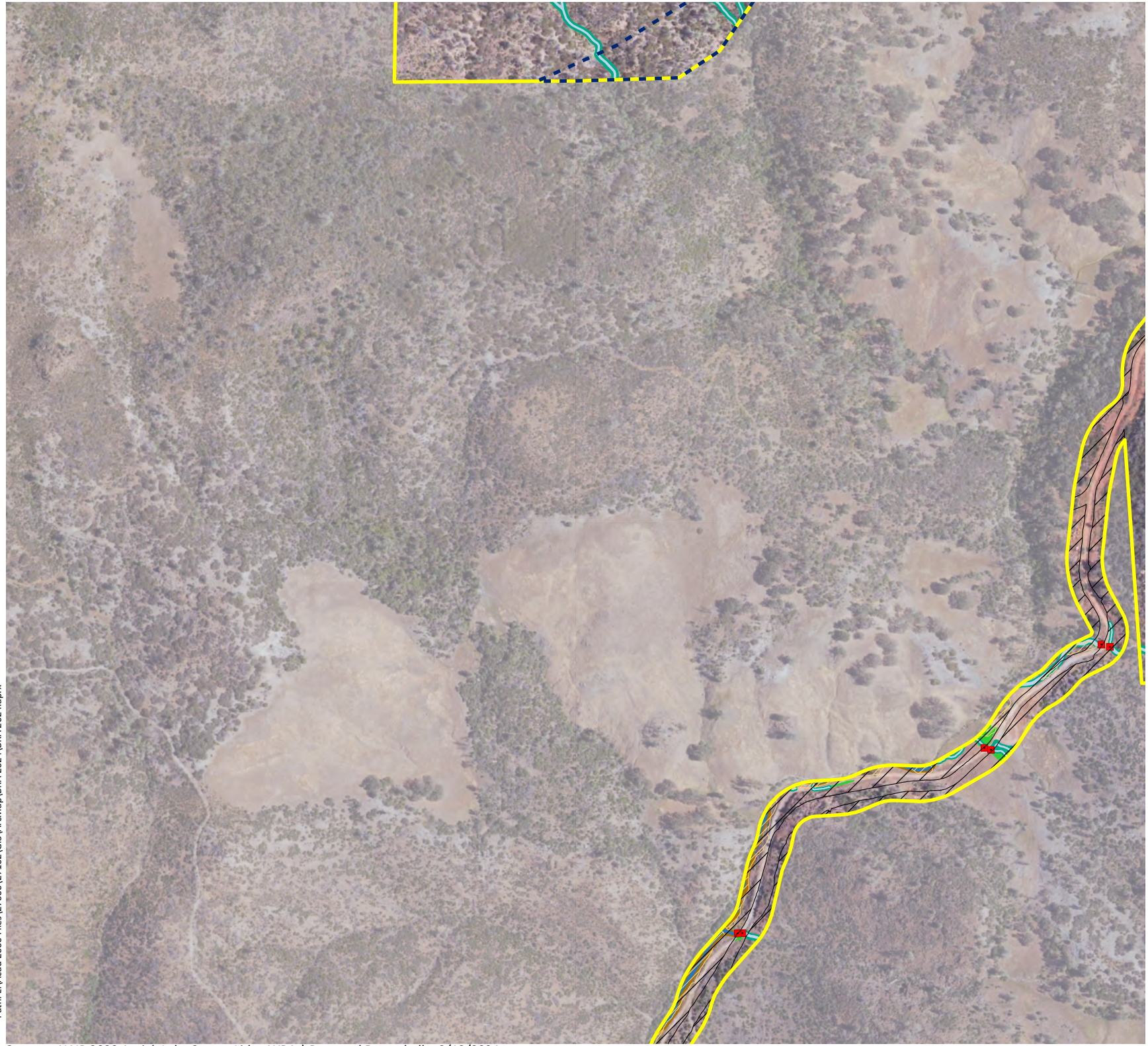


Figure 5-29. Aquatic Resources Mapped within the Modified APE (Sheet 28)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-30. Aquatic Resources Mapped within the Modified APE (Sheet 29)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 5-31. Aquatic Resources Mapped within the Modified APE (Sheet 30)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Culverts
- Riparian Woodland - 9.71 ac. ac.

Non-Wetland Waters (OHWM):

- Ephemeral Ditches - 0.50 ac. & 11,216 LF
- Ephemeral Streams - 6.66 ac. & 102,319 LF
- Intermittent Streams - 2.80 ac. & 13,056 LF
- Perennial Streams - 3.17 ac. & 4,019 LF
- Open Waters - 9.32 ac.

Non-Wetland Waters (TOB)

- Ephemeral Ditch - 0.78 ac. & 11,216 LF
- Ephemeral Stream - 21.05 ac. & 102,319 LF
- Intermittent Stream - 9.73 ac. & 13,056 LF
- Perennial Stream - 6.53 ac. & 4,019 LF

Wetlands:

- Seasonal Wetland Depressions - 0.12 ac.
- Seasonal Wetland Ditches - 0.38 ac.
- Seasonal Wetland Pond Fringes - 1.06 ac.
- Seasonal Wetland Seeps/ Swales - 8.81 ac.
- Seasonal Wetland Wet Meadows - 7.92 ac.
- Stream Fringe/In-Stream Wetlands - 4.12 ac.

N

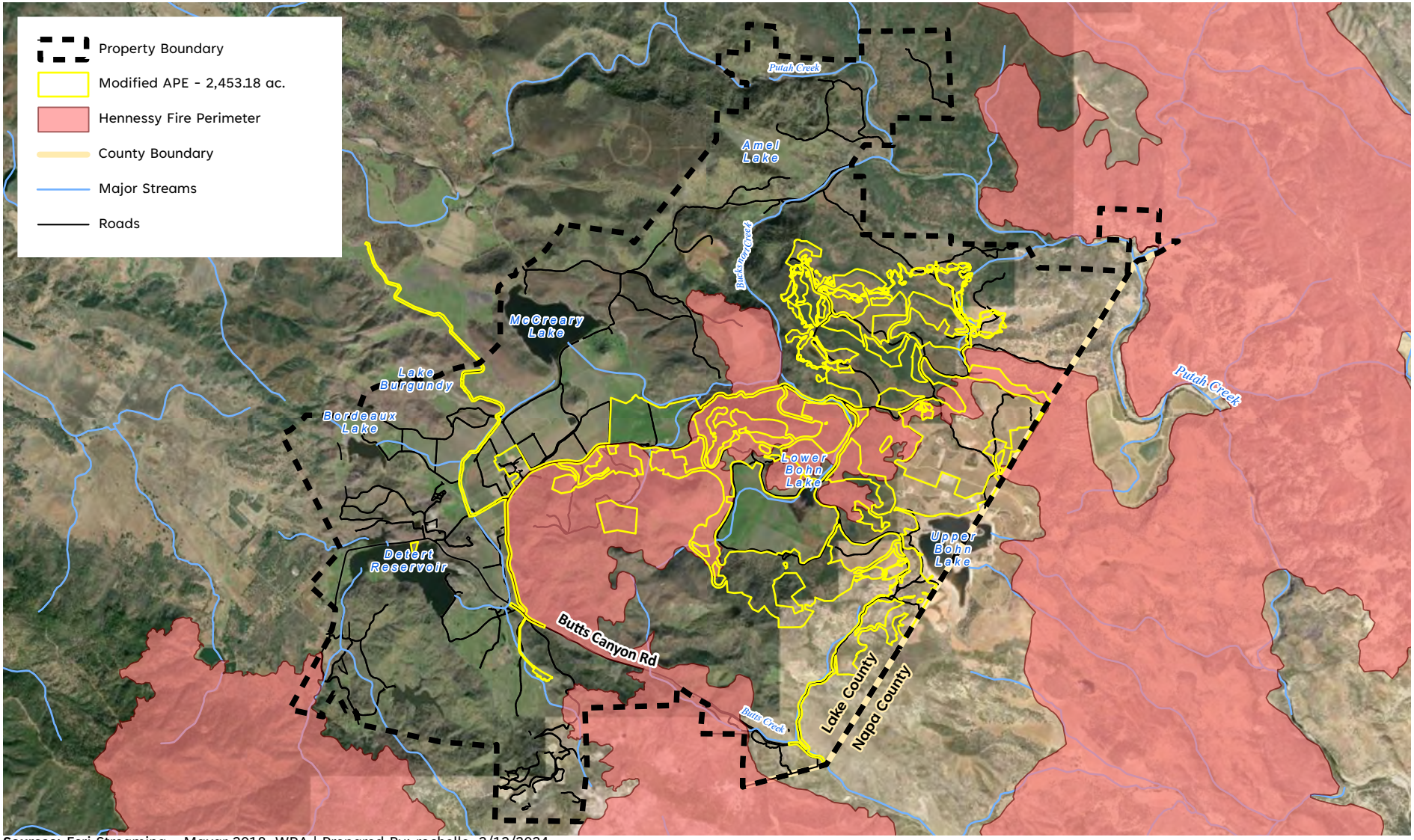
0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: Esri Streaming - Maxar 2018, WRA | Prepared By: rochelle, 2/12/2024

Figure 6. 2020 Hennessy Fire Impacts

2024 Project Modifications
Guenoc Valley Mixed Use
Planned Development Project
Lake County, California

0 1 2 Miles

N

wra Environmental Consultants

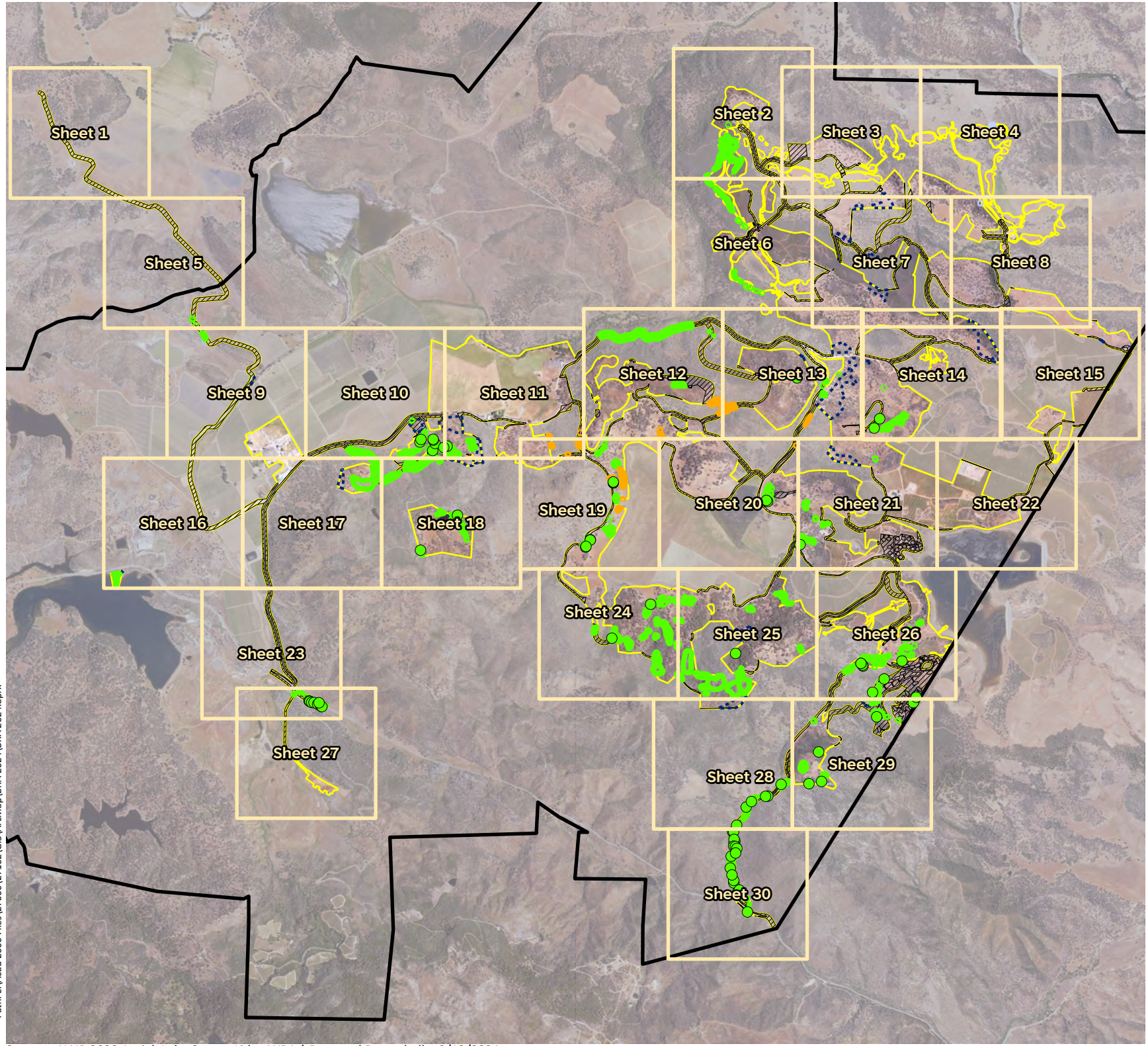


Figure 7-1. Special-Status Plants Mapped within the Modified APE (Overview)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Property Boundary
- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed
- Mapbook Grid

Special-Status Plants

Polygons:

- CNPS Rank 1 Plants
- Federally-Endangered Plants
- State-Endangered Plants

Points:

- CNPS Rank 1 Plants
- Federally-Endangered Plants

N

0 1,500 3,000

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 7-2. Special-Status Plants Mapped within the Modified APE (Sheet 1)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

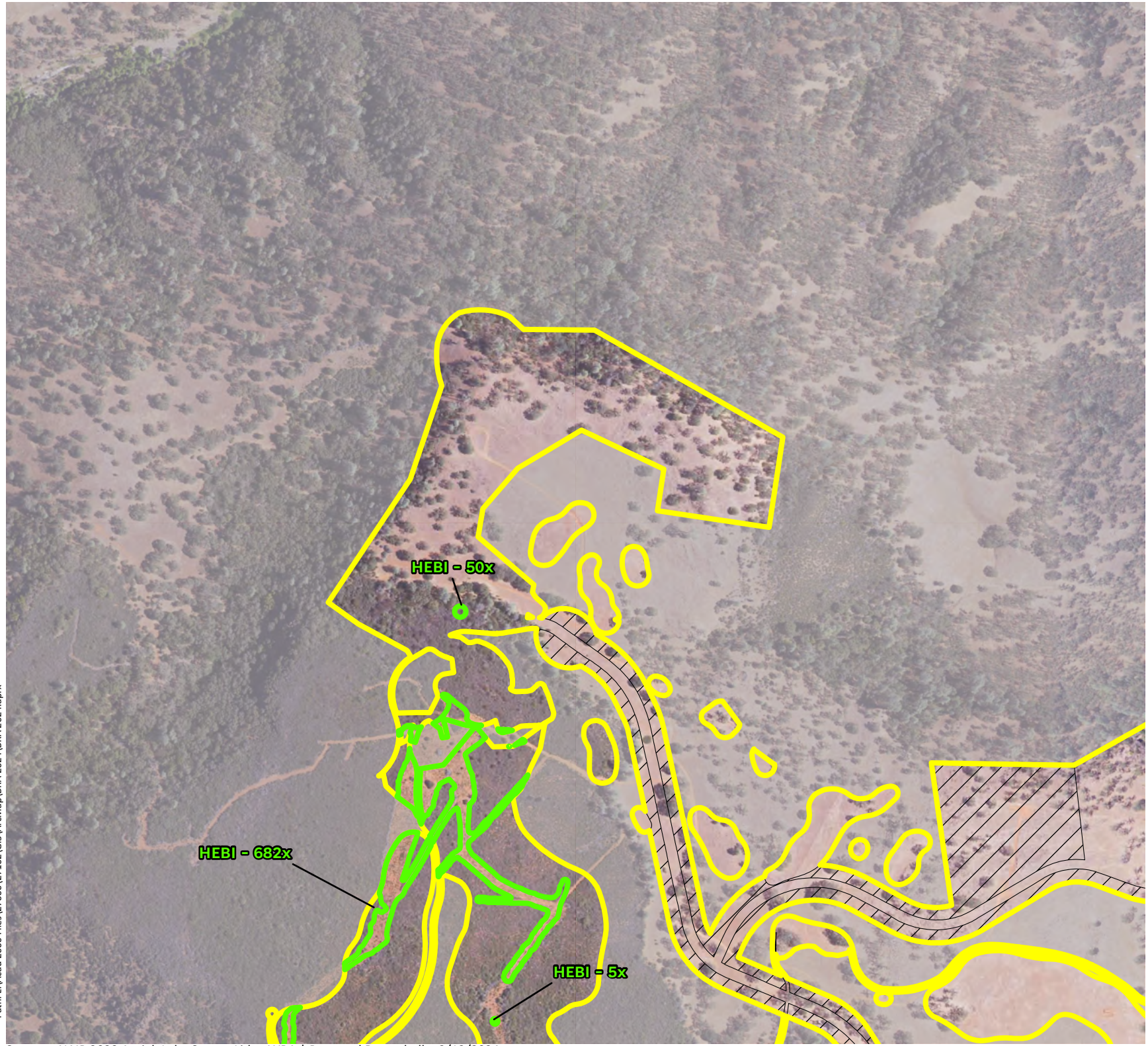


Figure 7-3. Special-Status Plants Mapped within the Modified APE (Sheet 2)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

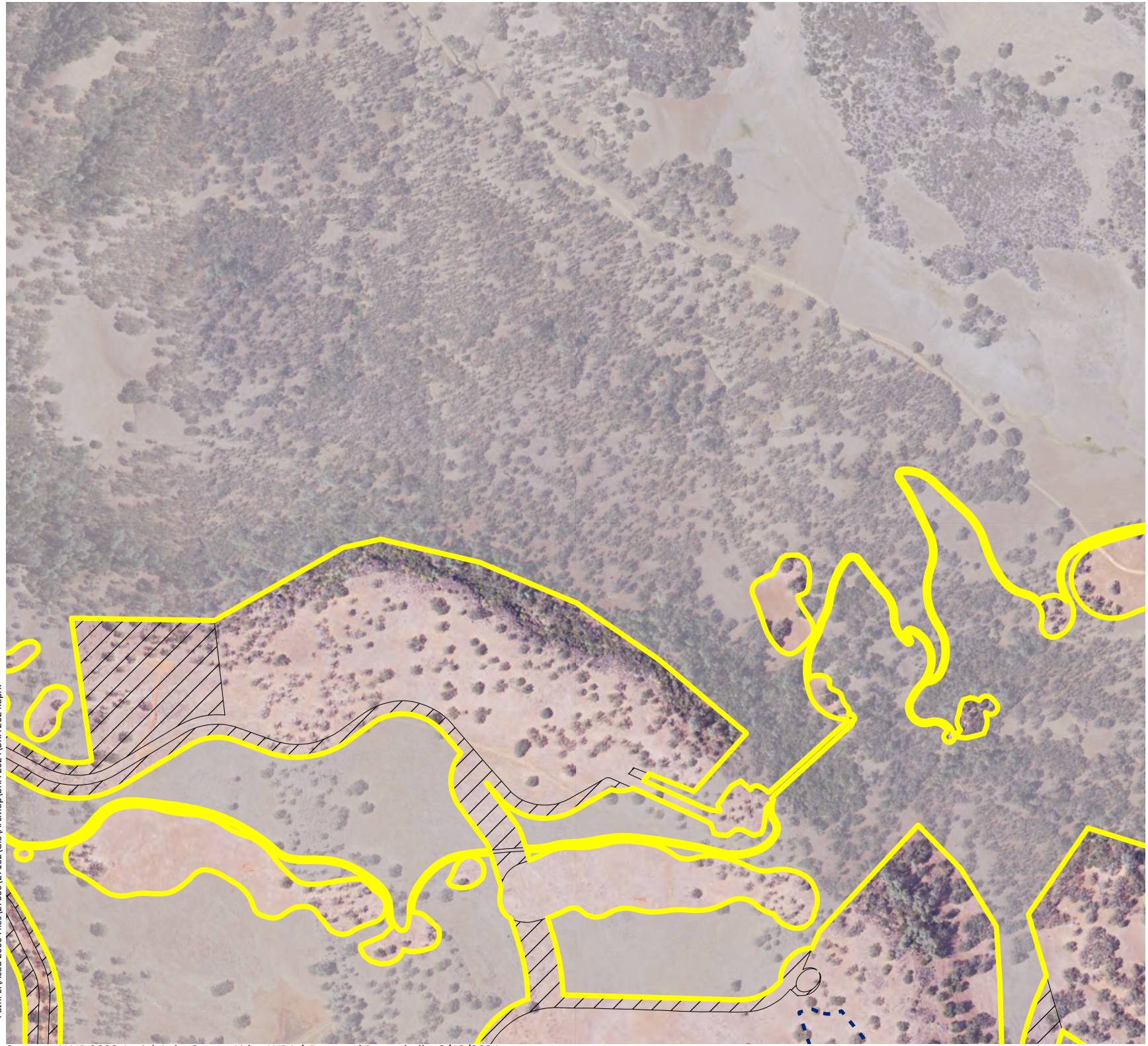
wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

Figure 7-4. Special-Status Plants Mapped within the Modified APE (Sheet 3)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California



Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

Figure 7-5. Special-Status Plants Mapped within the Modified APE (Sheet 4)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California



Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

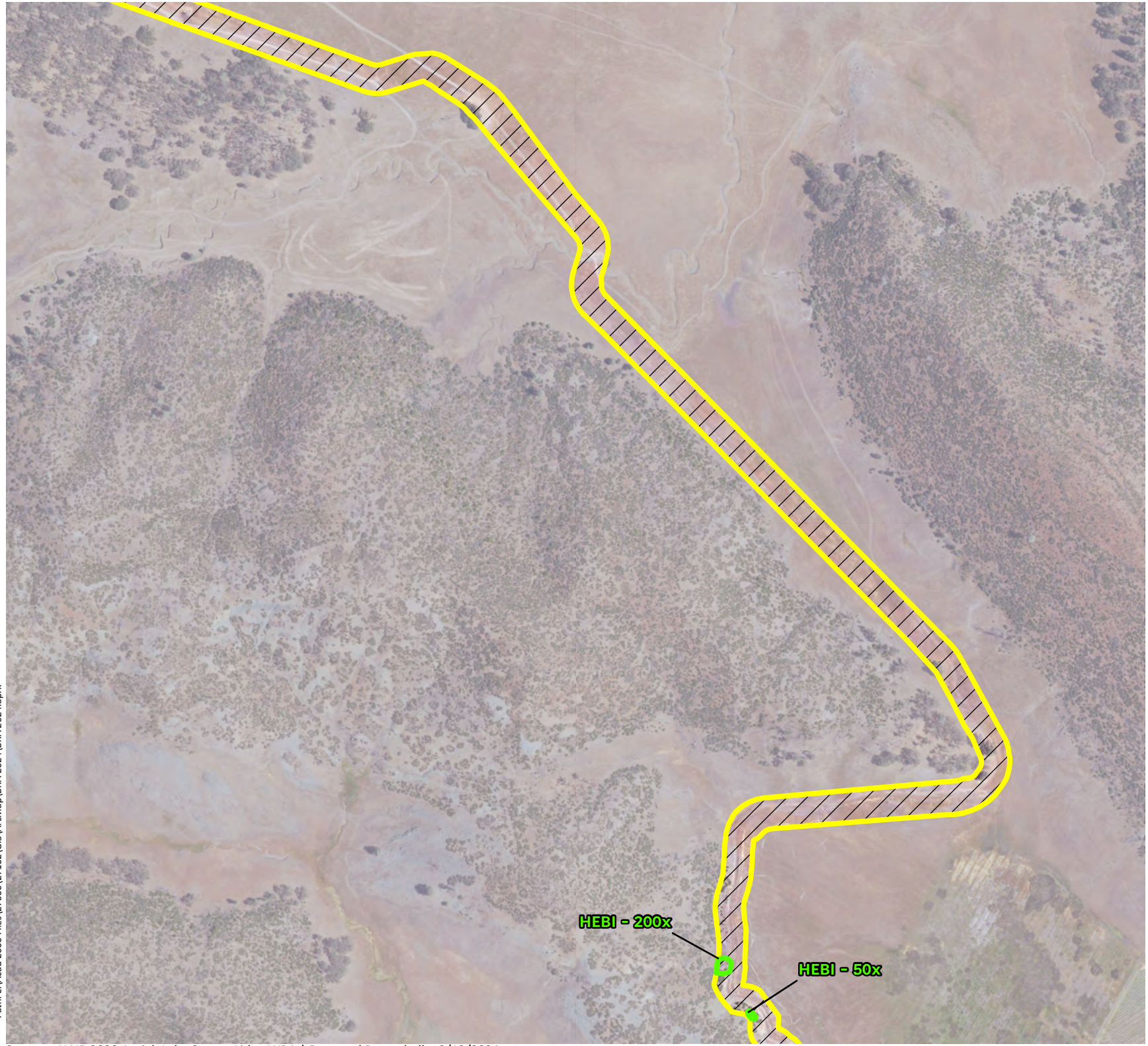
wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

Figure 7-6. Special-Status Plants Mapped within the Modified APE (Sheet 5)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California



Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

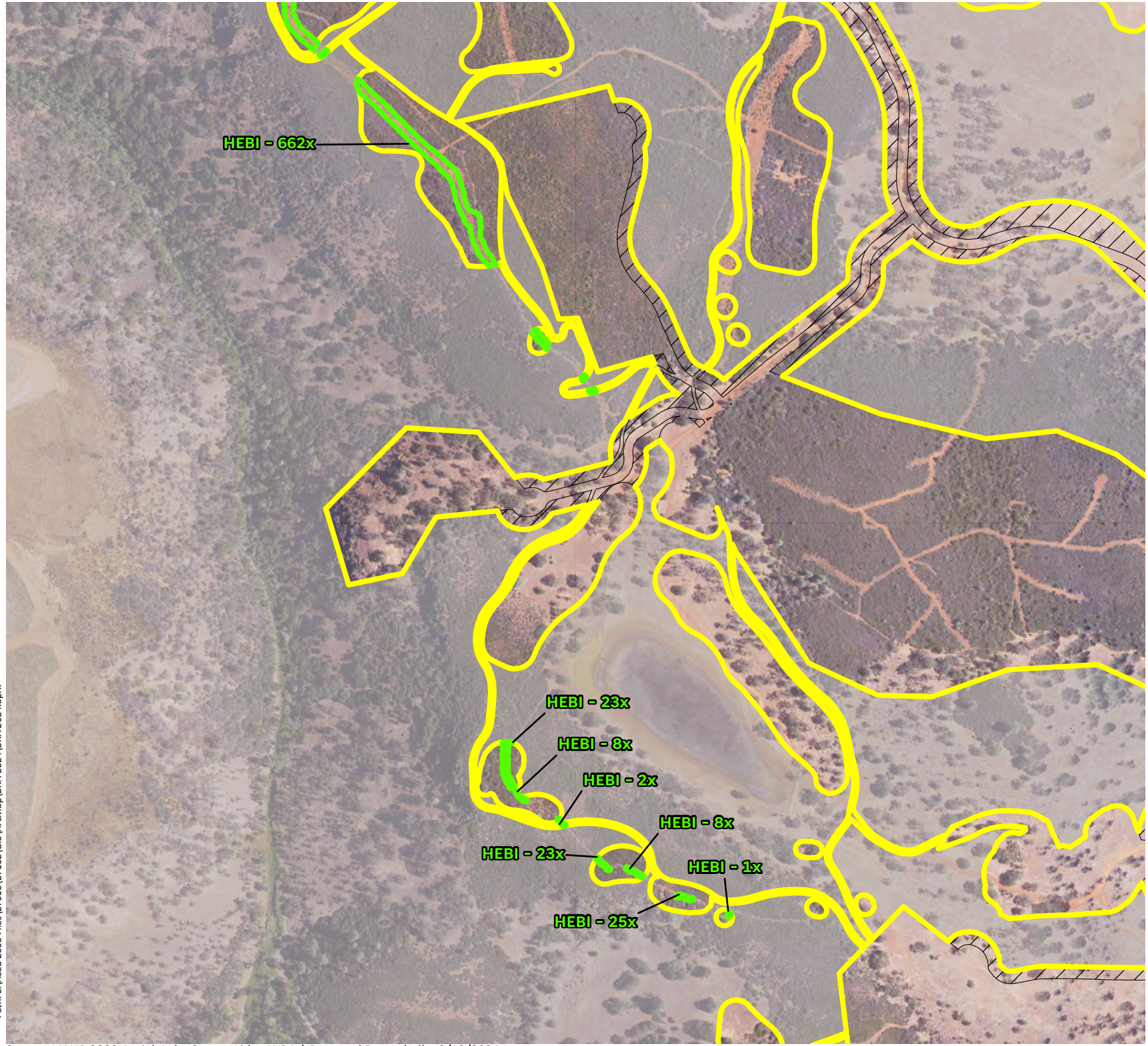


Figure 7-7. Special-Status Plants Mapped within the Modified APE (Sheet 6)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 7-8. Special-Status Plants Mapped within the Modified APE (Sheet 7)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

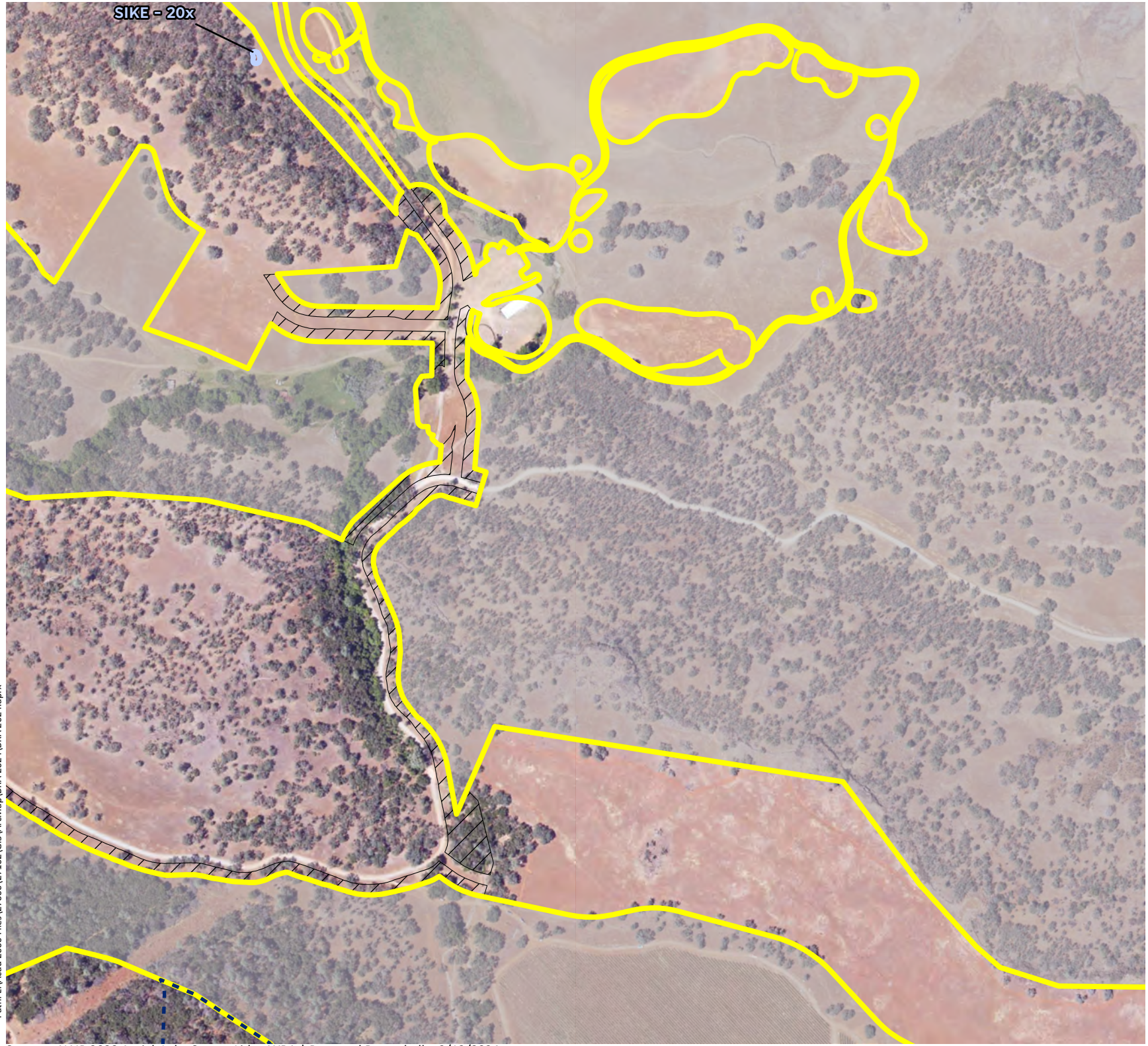


Figure 7-9. Special-Status Plants Mapped within the Modified APE (Sheet 8)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 7-10. Special-Status Plants Mapped within the Modified APE (Sheet 9)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

Figure 7-11. Special-Status Plants Mapped within the Modified APE (Sheet 10)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California



Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

Figure 7-12. Special-Status Plants Mapped within the Modified APE (Sheet 11)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California



Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

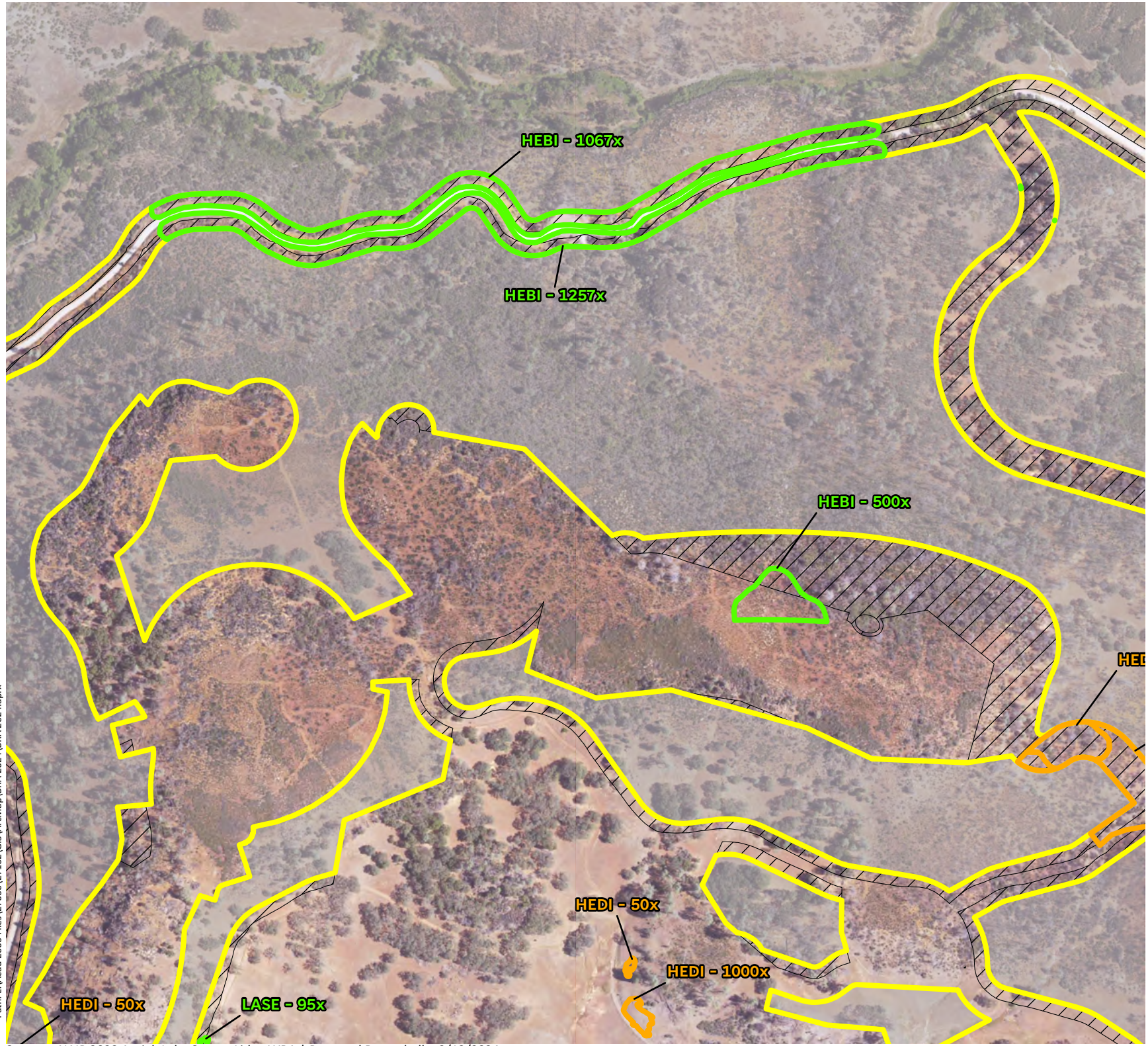


Figure 7-13. Special-Status Plants Mapped within the Modified APE (Sheet 12)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

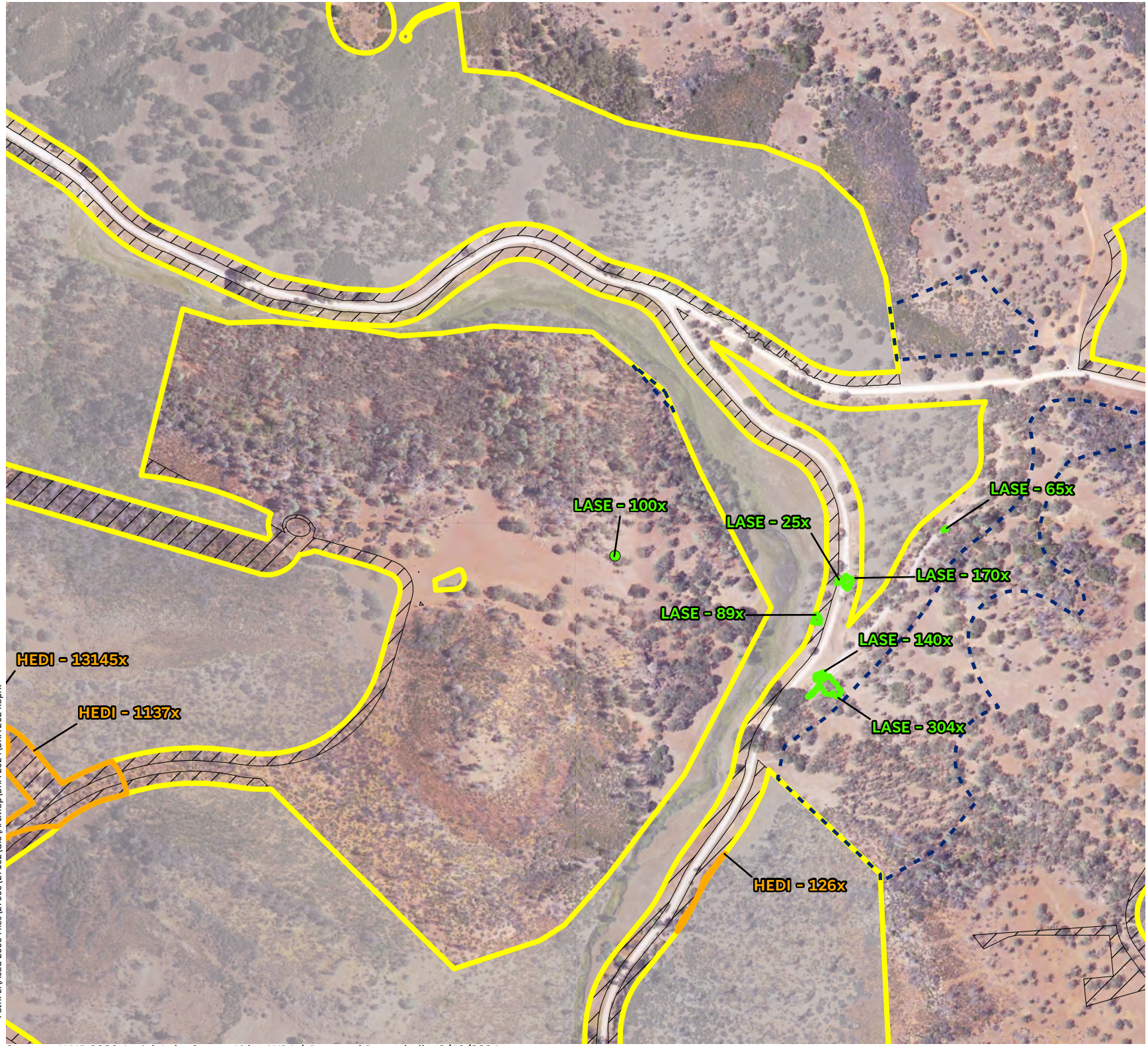


Figure 7-14. Special-Status Plants Mapped within the Modified APE (Sheet 13)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

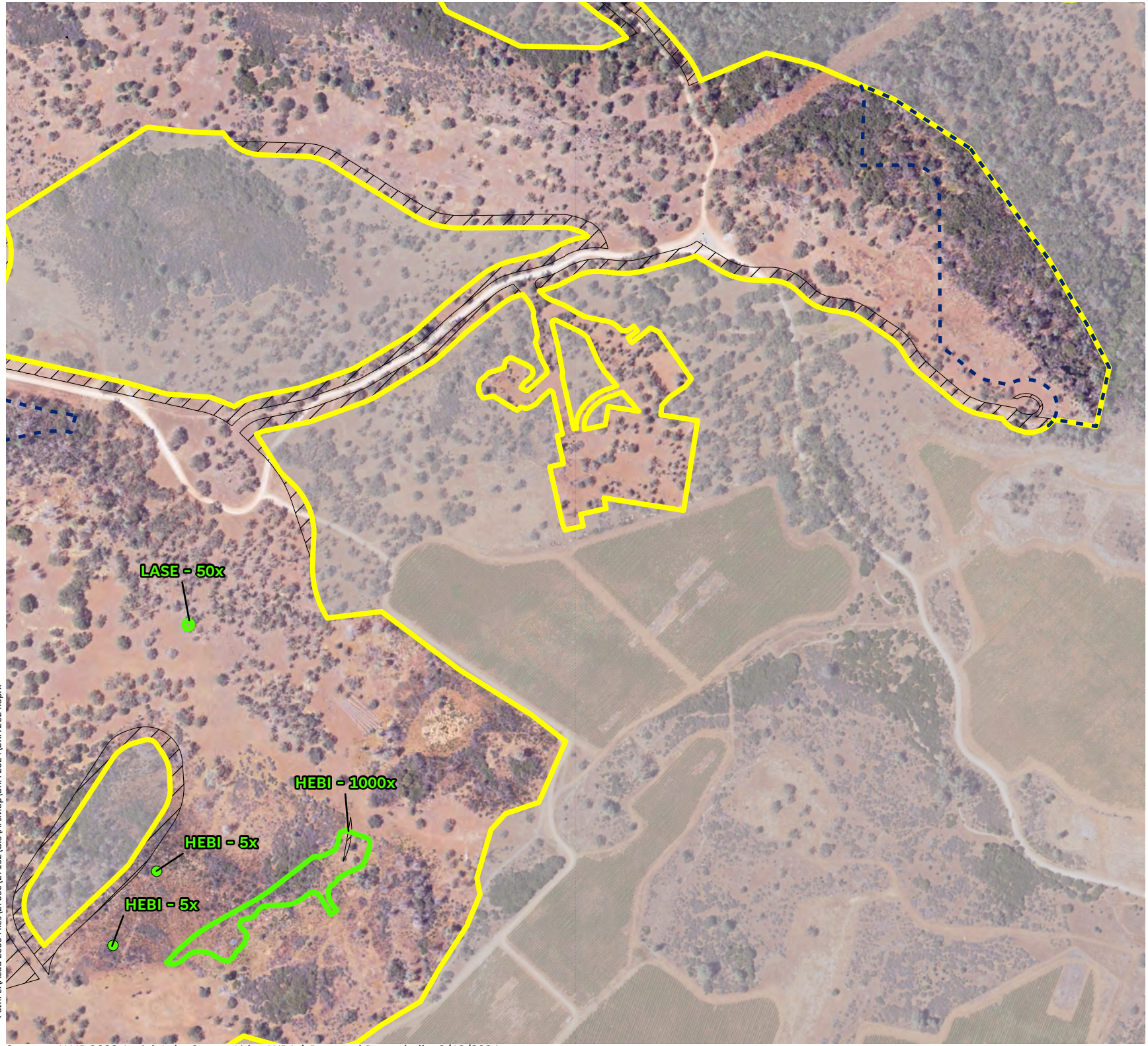


Figure 7-15. Special-Status Plants Mapped within the Modified APE (Sheet 14)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

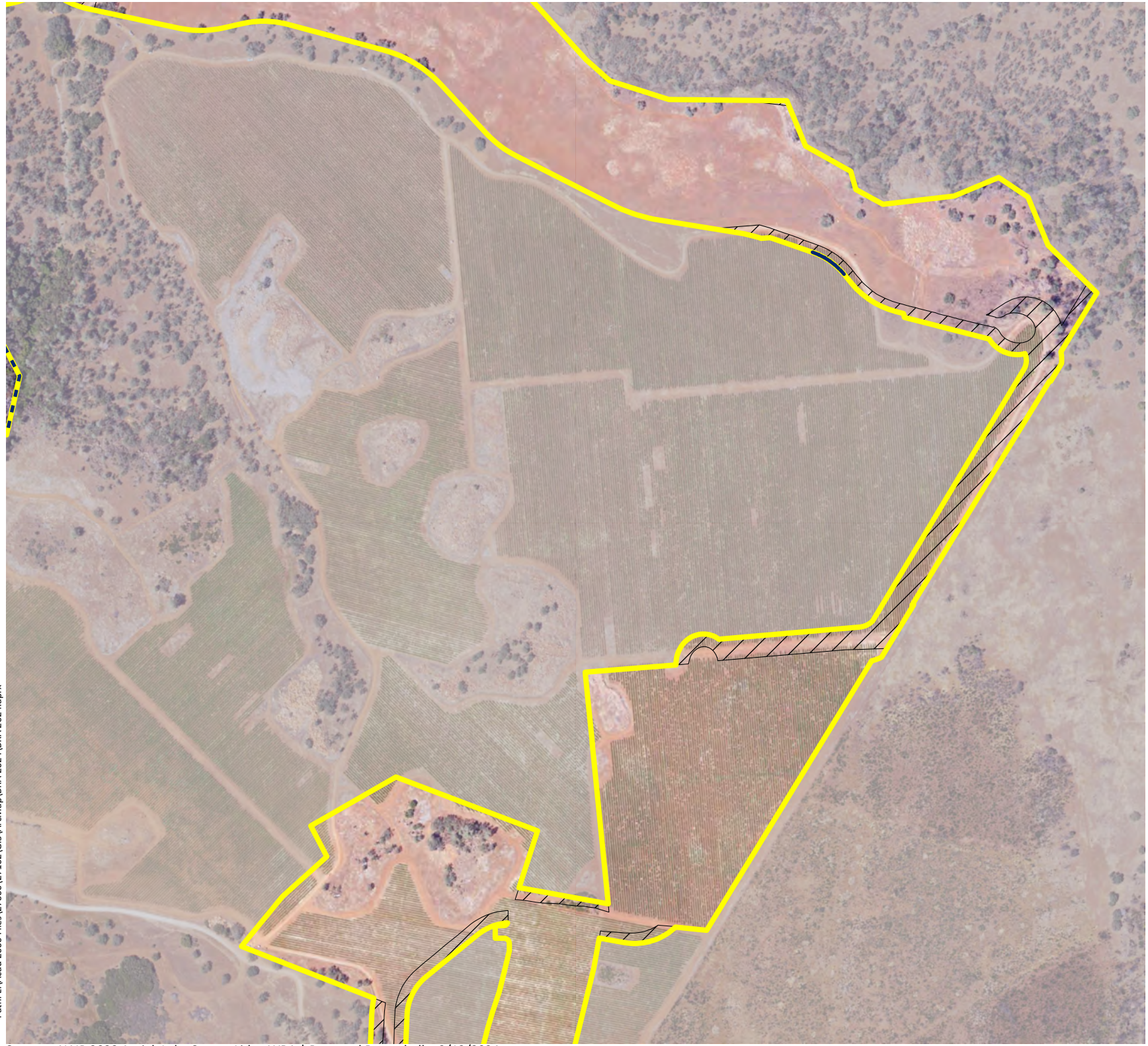


Figure 7-16. Special-Status Plants Mapped within the Modified APE (Sheet 15)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 7-17. Special-Status Plants Mapped within the Modified APE (Sheet 16)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

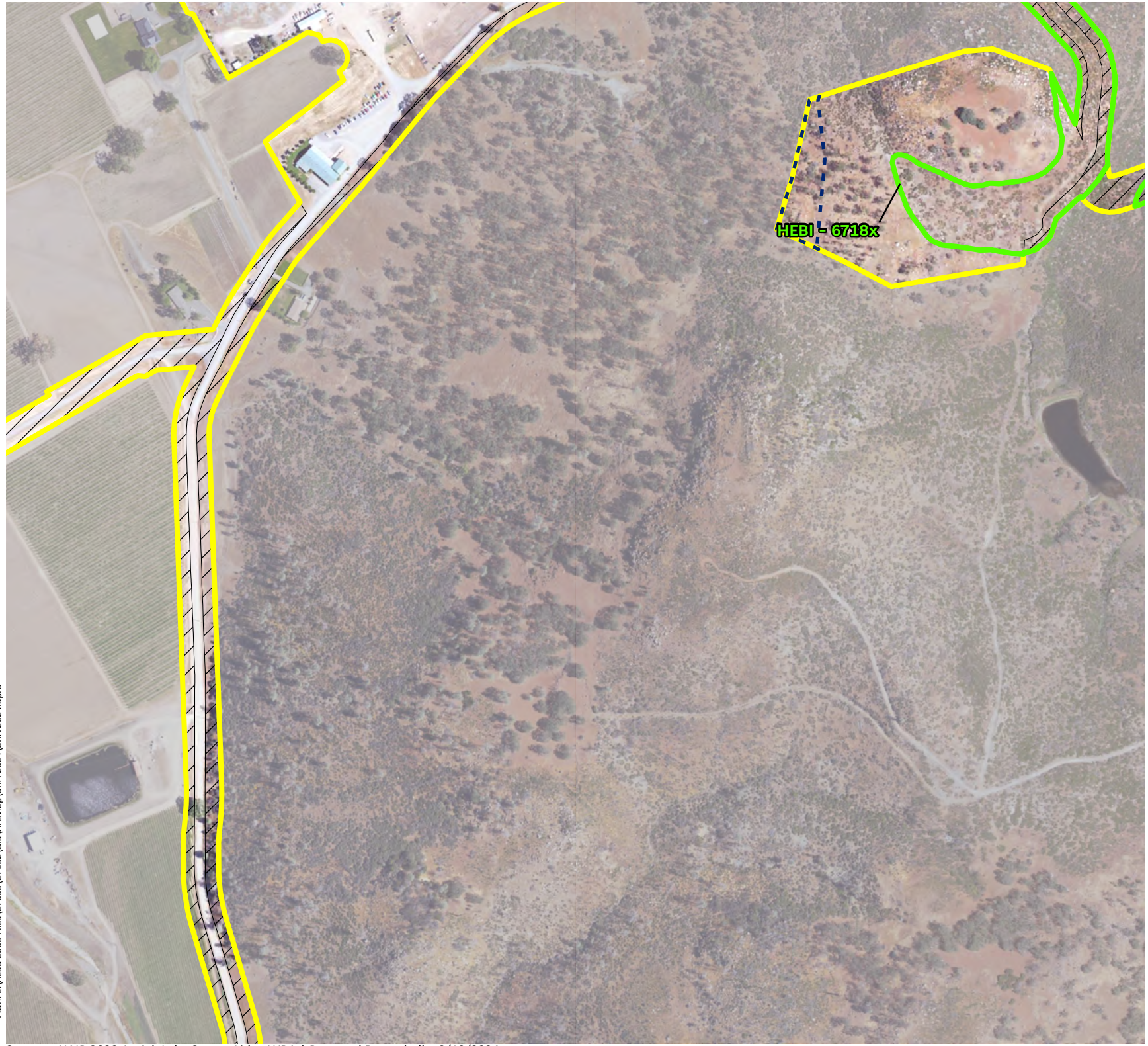


Figure 7-18. Special-Status Plants Mapped within the Modified APE (Sheet 17)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

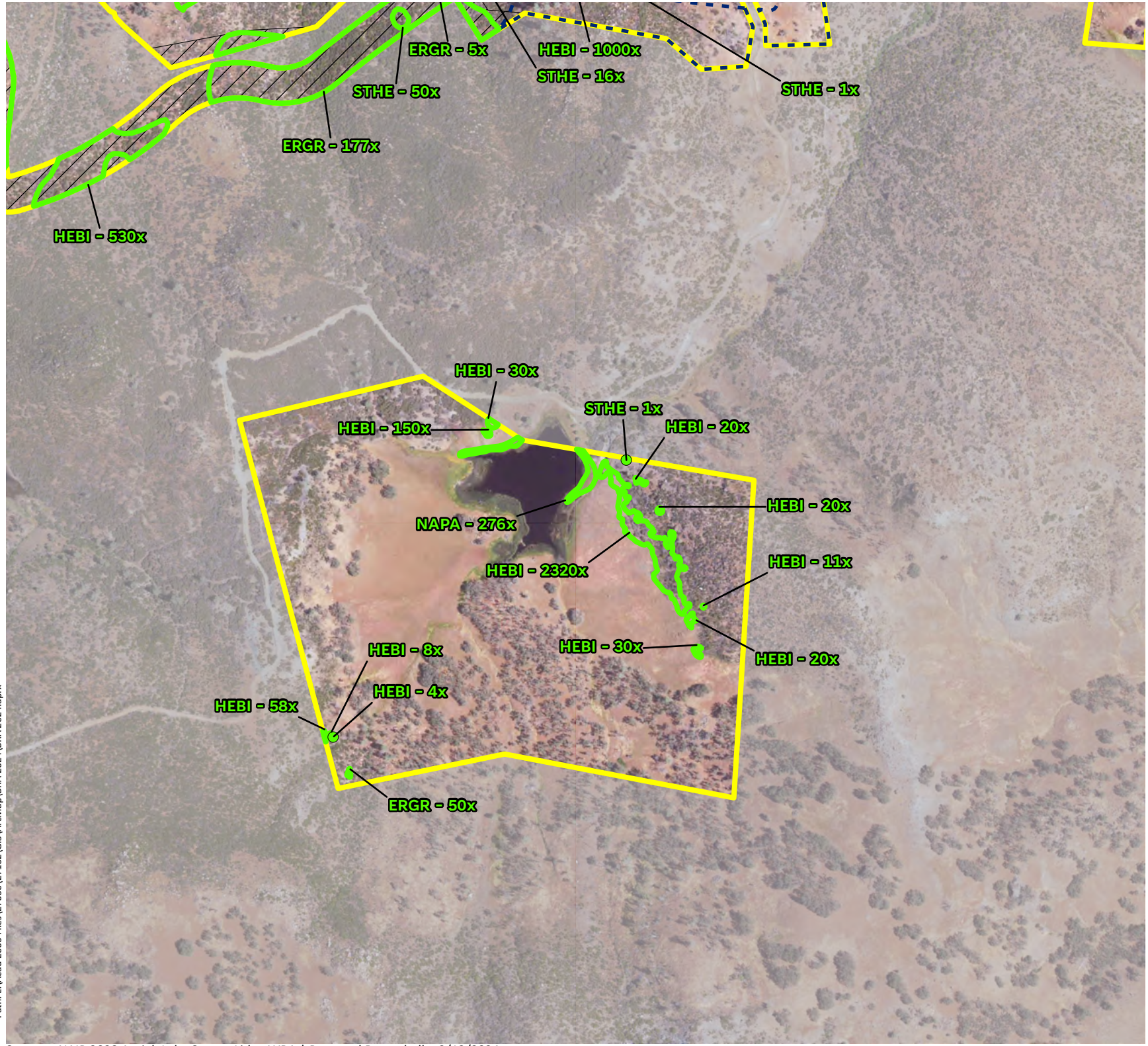


Figure 7-19. Special-Status Plants Mapped within the Modified APE (Sheet 18)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

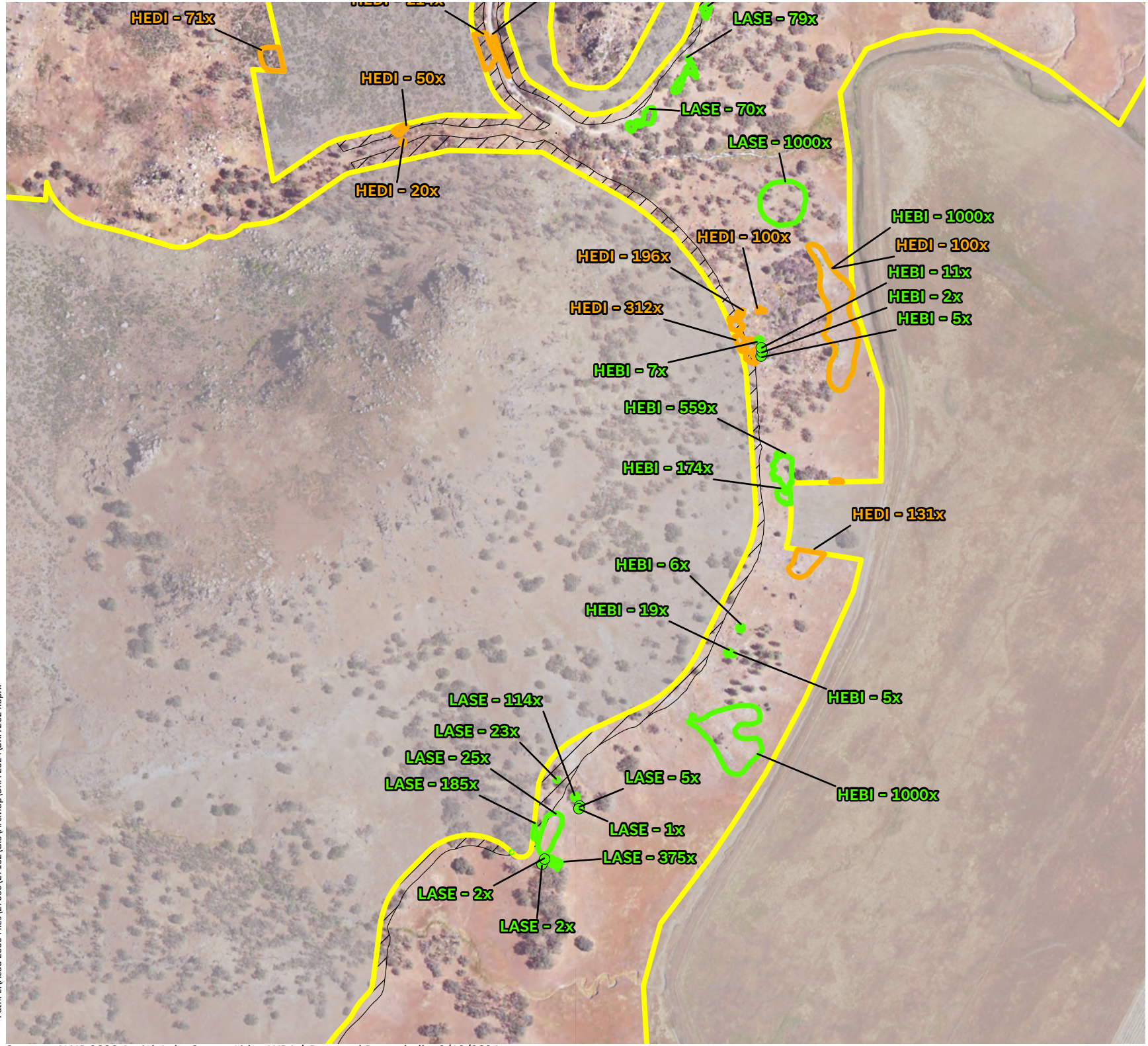


Figure 7-20. Special-Status Plants Mapped within the Modified APE (Sheet 19)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 7-21. Special-Status Plants Mapped within the Modified APE (Sheet 20)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

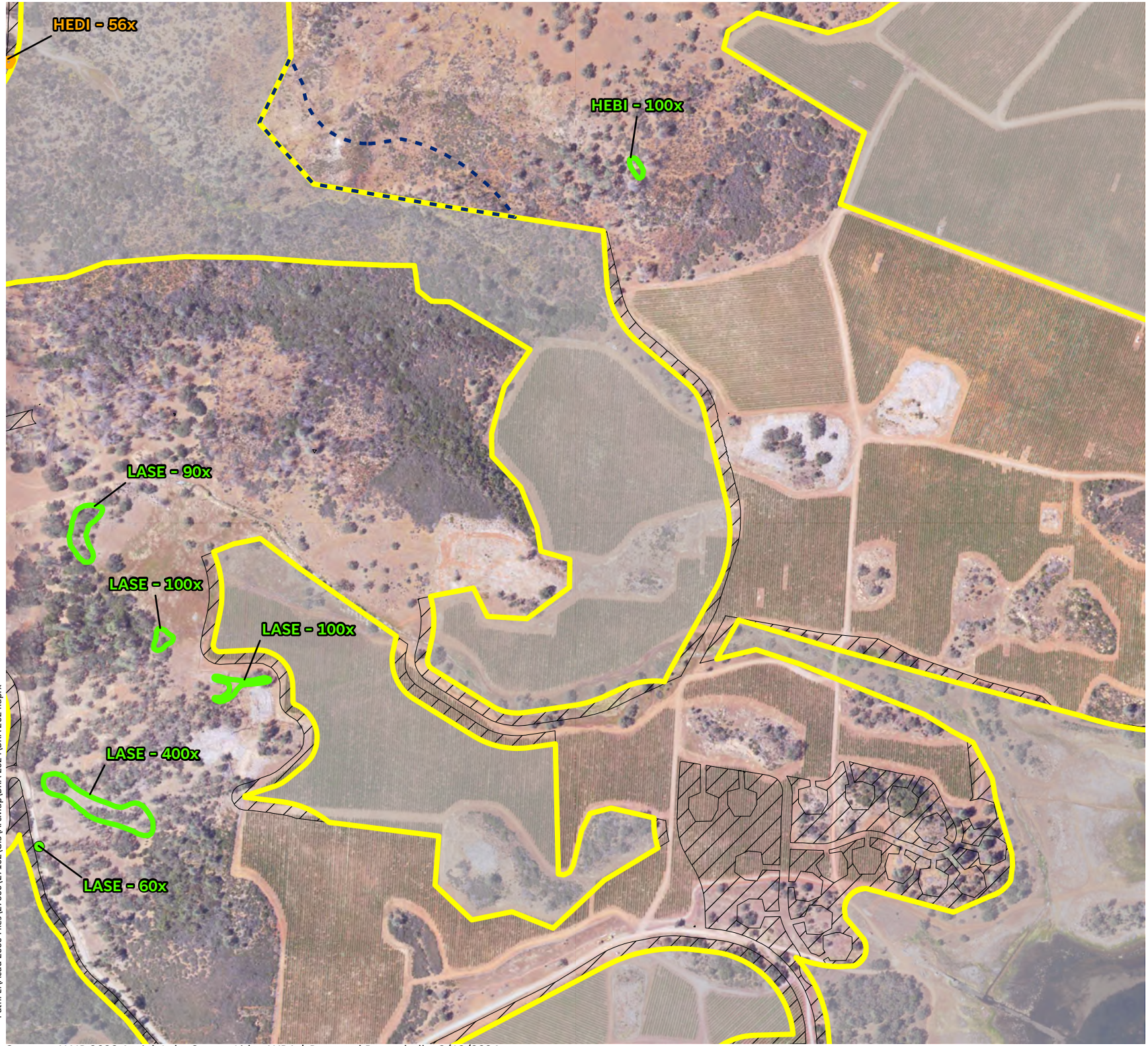


Figure 7-22. Special-Status Plants Mapped within the Modified APE (Sheet 21)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024



Figure 7-23. Special-Status Plants Mapped within the Modified APE (Sheet 22)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

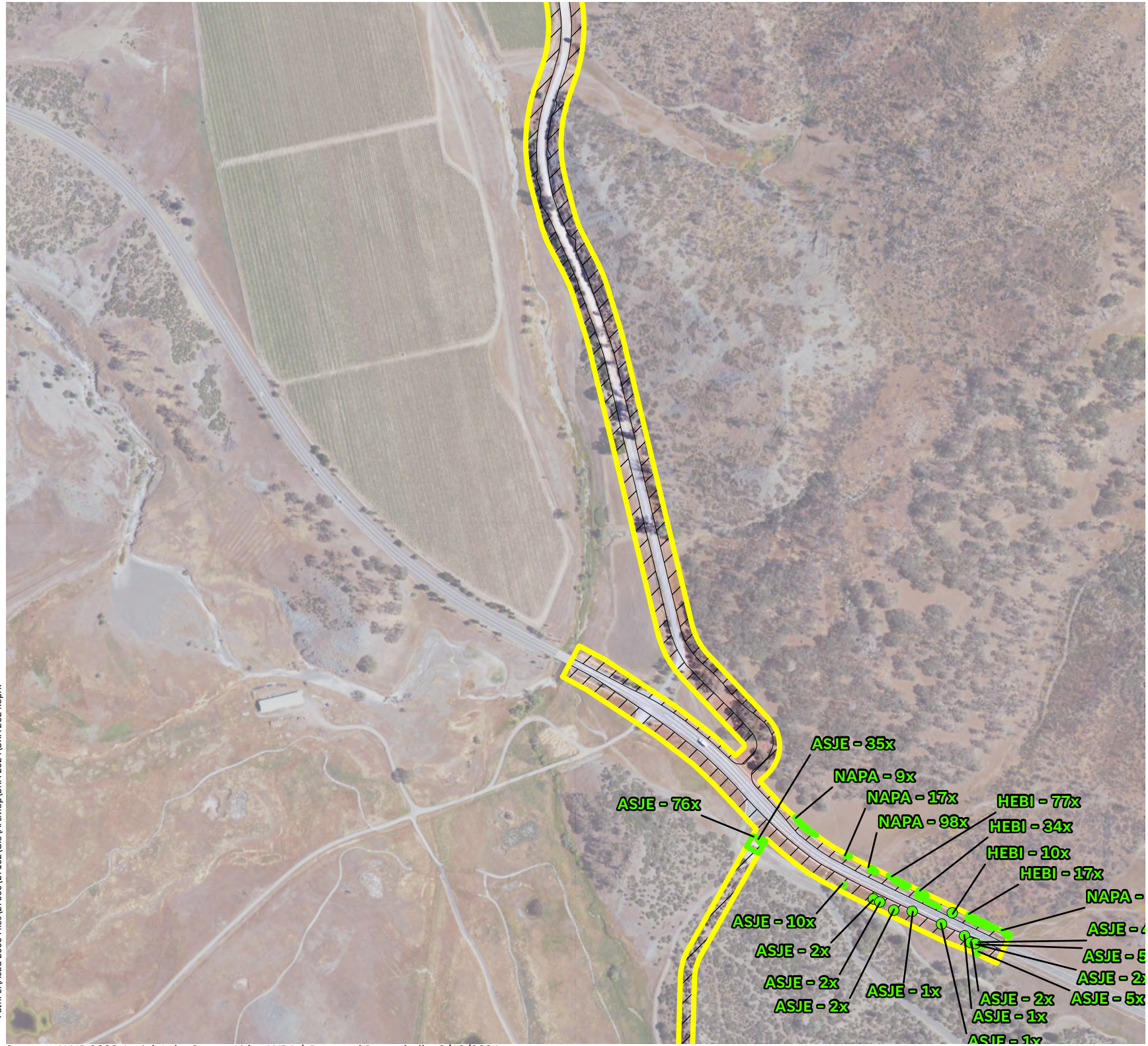


Figure 7-24. Special-Status Plants Mapped within the Modified APE (Sheet 23)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

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HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

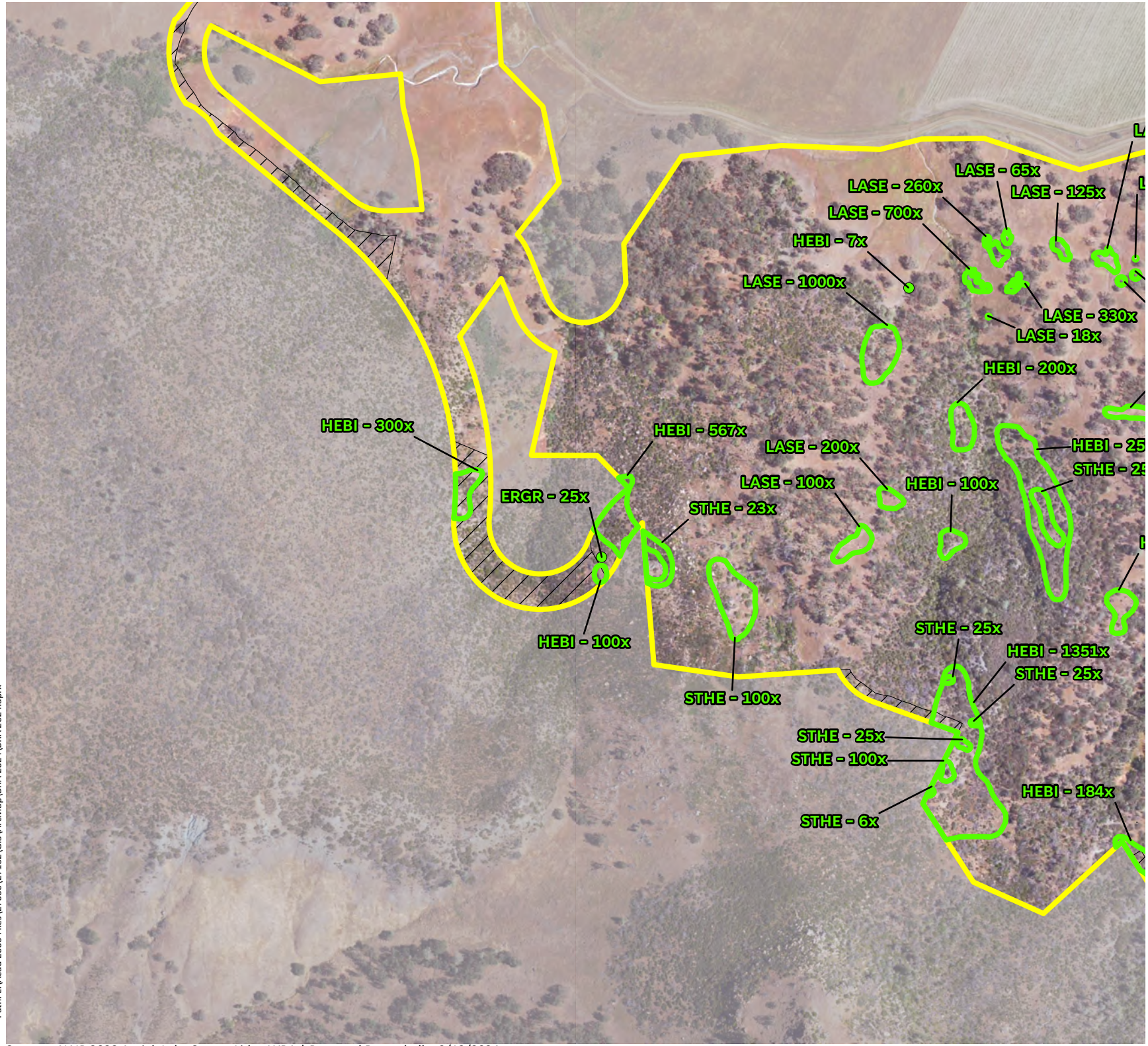

Figure 7-25. Special-Status Plants Mapped within the Modified APE (Sheet 24)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

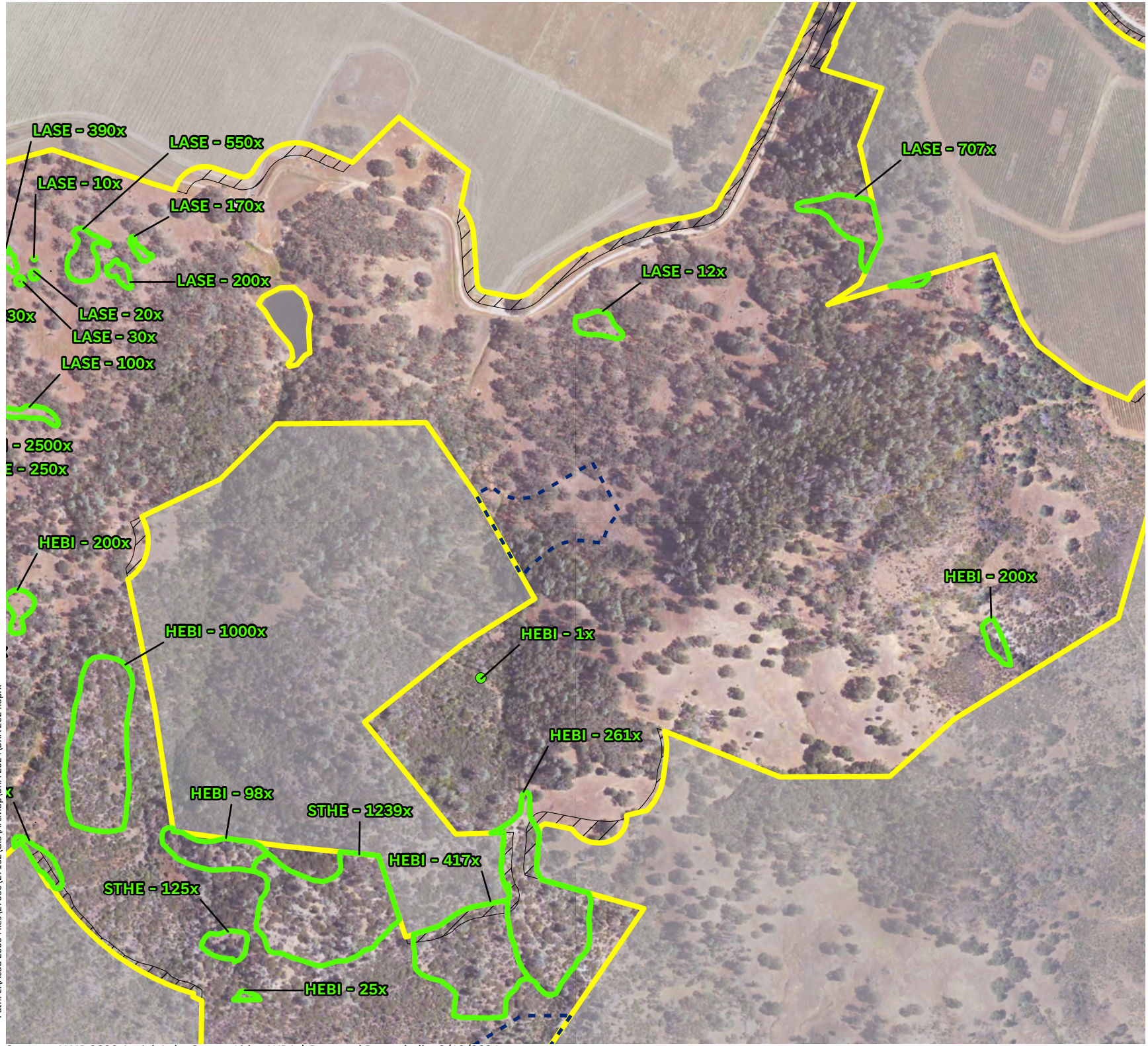

Figure 7-26. Special-Status Plants Mapped within the Modified APE (Sheet 25)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

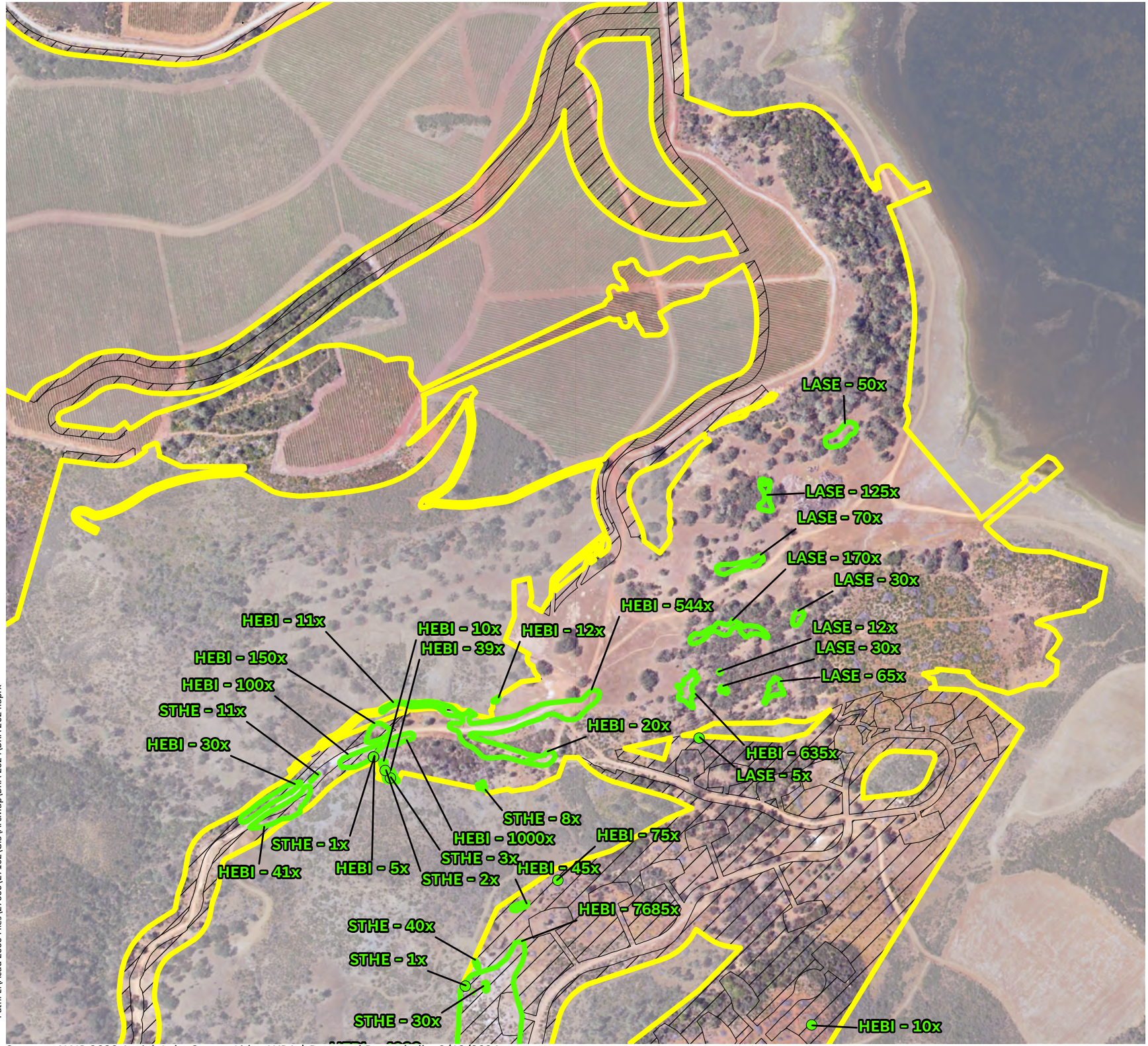

Figure 7-27. Special-Status Plants Mapped within the Modified APE (Sheet 26)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

- Modified APE - 2,453.18 ac.
- Modified APE not within 2020 APE - 332.85 ac.
- Areas Only Desktop Assessed

Special-Status Plants

Polygons:

- CNPS Rank 1 Plants
- Federally-Endangered Plants
- State-Endangered Plants

Points:

- CNPS Rank 1 Plants
- Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

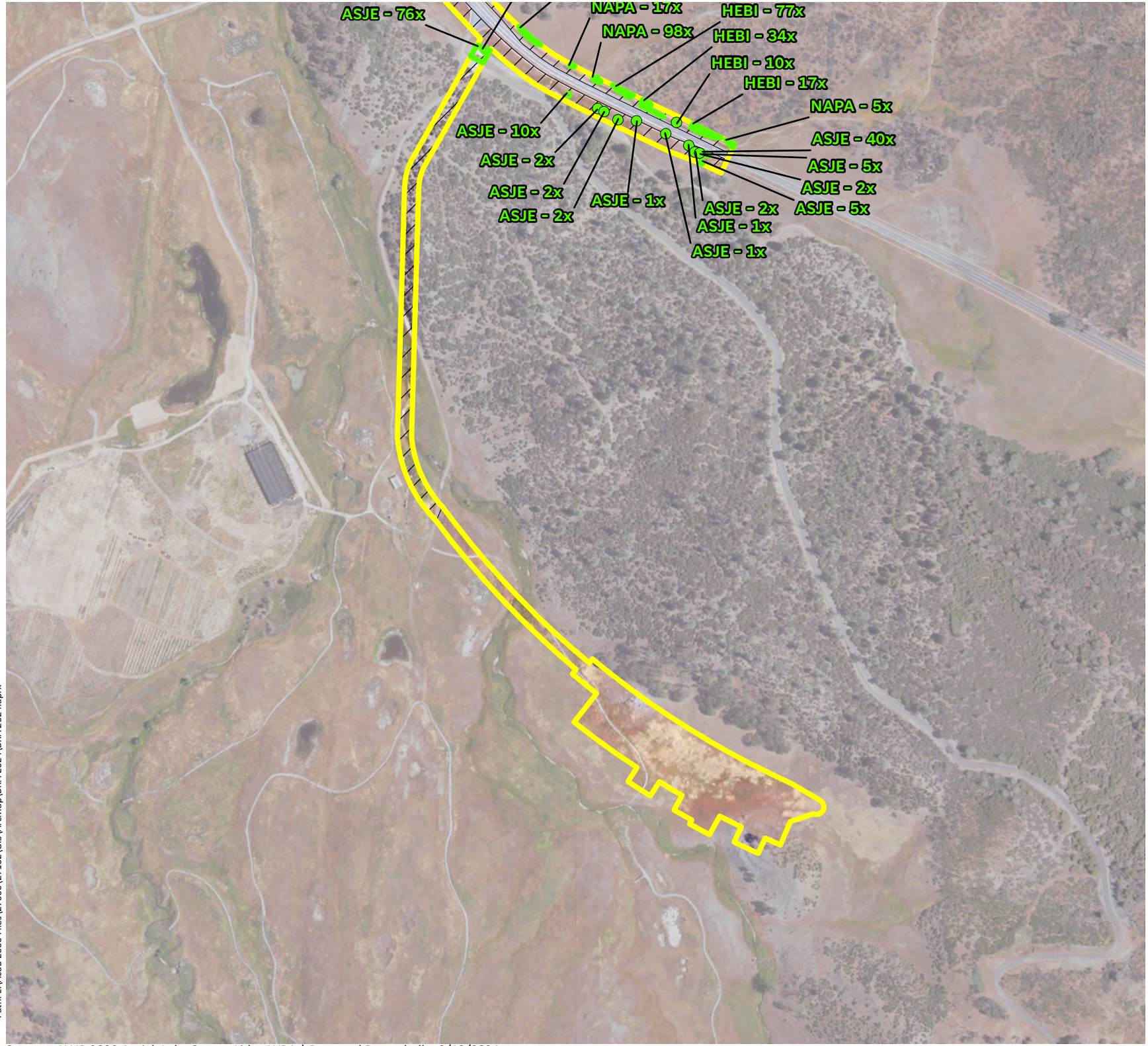

Figure 7-28. Special-Status Plants Mapped within the Modified APE (Sheet 27)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

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HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

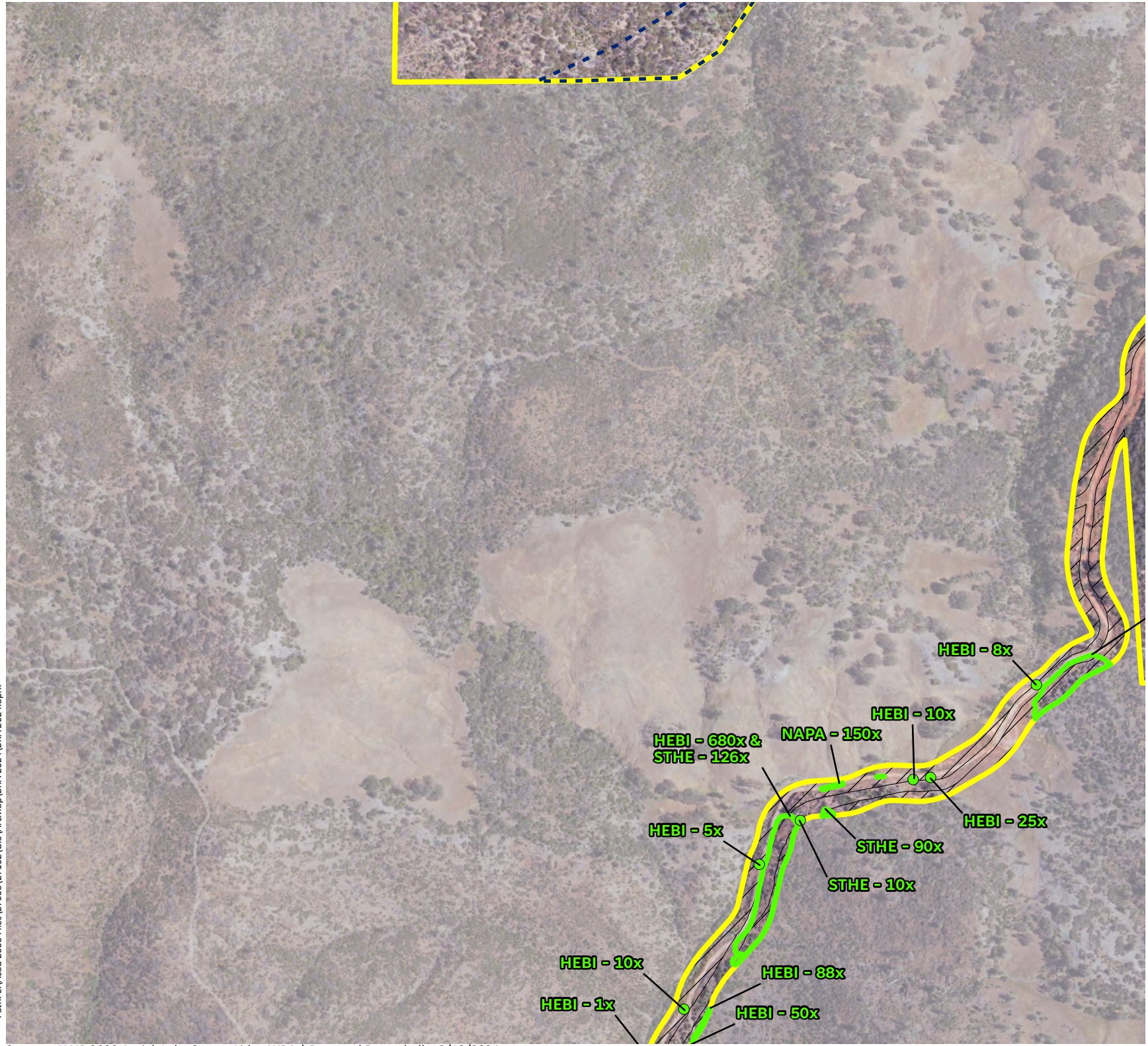

Figure 7-29. Special-Status Plants Mapped within the Modified APE (Sheet 28)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

State-Endangered Plants:

HEDI: Lake County western flax

CNPS Rank 1 Plants:

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HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

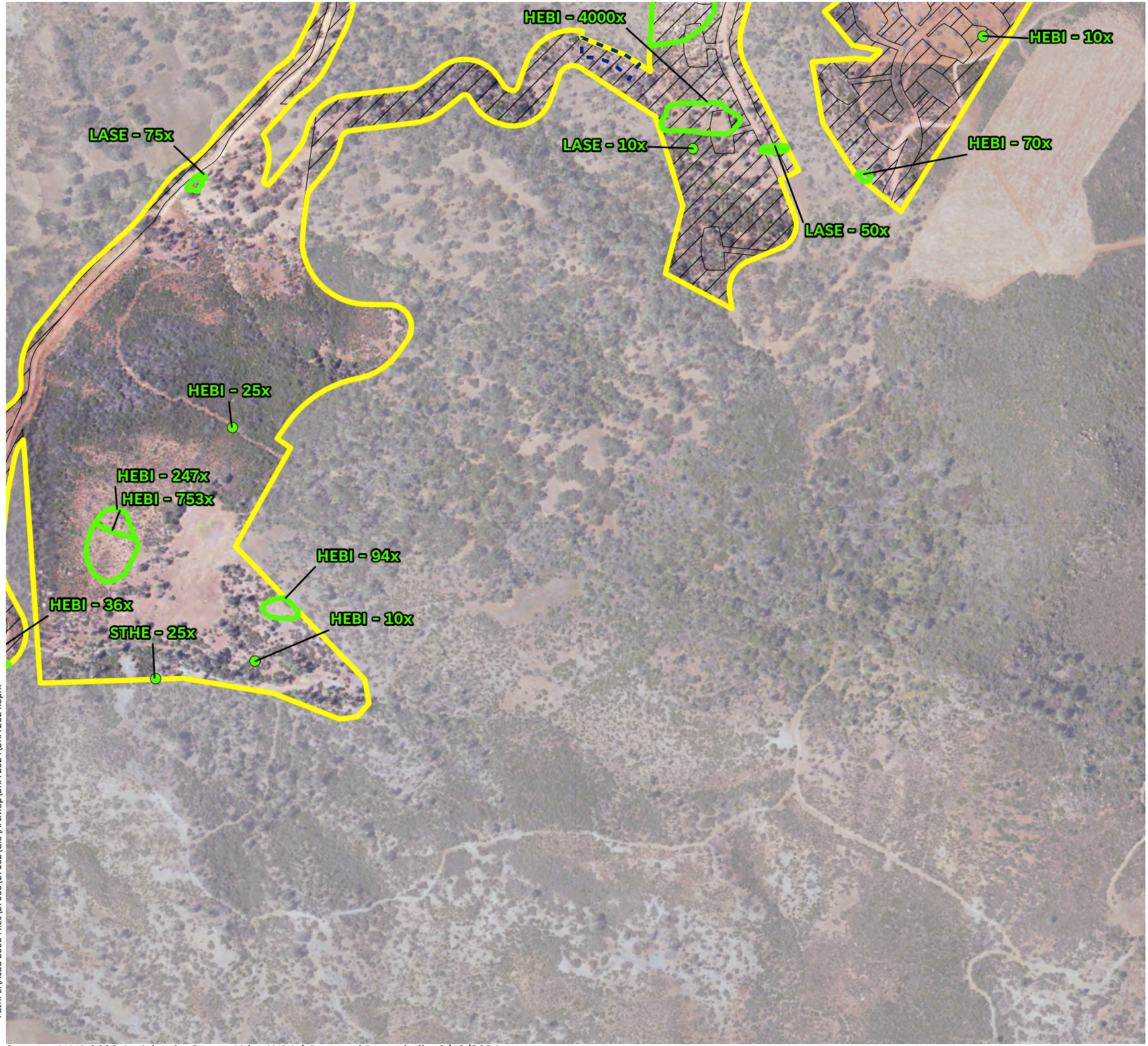

Figure 7-30. Special-Status Plants Mapped within the Modified APE (Sheet 29)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered Plants

Key to Species Codes

Federally-Endangered Plants:

SIKE: Keck's checkerbloom

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LASE: Colusa layia

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STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

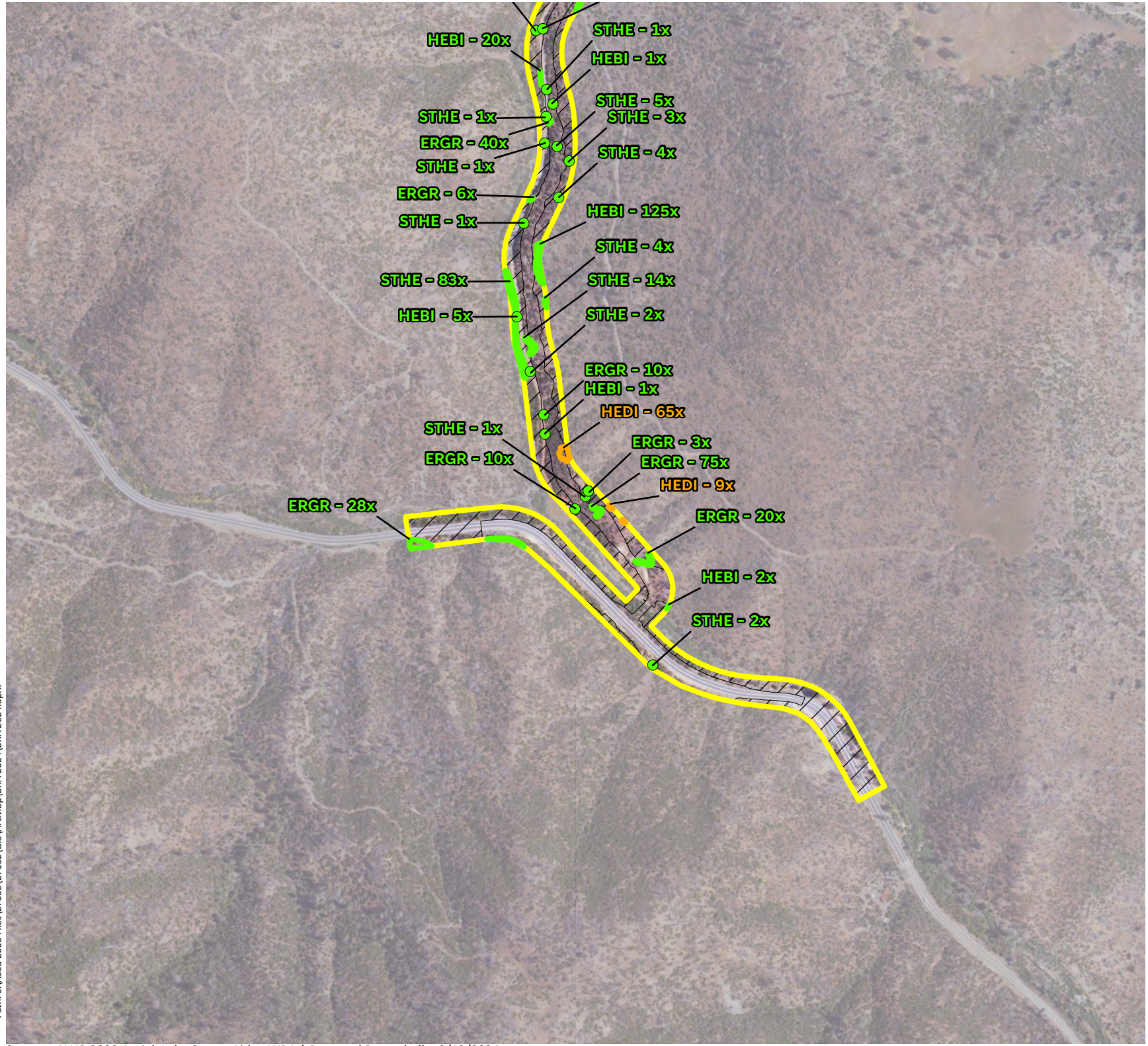

Figure 7-31. Special-Status Plants Mapped within the Modified APE (Sheet 30)

2024 Project Modifications
Guenoc Valley Mixed Use Planned Development Project
Lake County, California

Modified APE - 2,453.18 ac.

Modified APE not within 2020 APE - 332.85 ac.

Areas Only Desktop Assessed

Special-Status Plants

Polygons:

CNPS Rank 1 Plants

Federally-Endangered Plants

State-Endangered Plants

Points:

CNPS Rank 1 Plants

Federally-Endangered 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

ERGR: Greene's narrow-leaved fleabane

HEBI: Two carpellate western flax

LASE: Colusa layia

NAPA: Porter's navarretia

STHE: Green jewelflower

N

0 200 400

Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\27000\27162\GIS\ArcMap\BRA 2024\BRA 2024.aprx

Sources: NAIP 2022 Aerial, Lake County Lidar, WRA | Prepared By: rochelle, 2/12/2024

APPENDIX B. SPECIES OBSERVED IN AND AROUND THE MODIFIED APE

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Appendix B. Plant Species Observed within the Guenoc Valley Ranch Property from 2017 through 2023

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-	-
Adelinia grandis	Pacific Hound's tongue	native	perennial 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
Alisma lanceolatum	Water plantain	non-native	perennial herb (aquatic)	-	-	OBL
Allium amplectens	Narrow leaved onion	native	perennial herb (bulb)	-	-	UPL

Appendix B. Plant Species Observed within the Guenoc Valley Ranch Property from 2017 through 2023

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
Allium falcifolium	Sickle leaf onion	native	perennial herb (bulb)	-	-	-
Allium fimbriatum* var. *fimbriatum	Fringed onion	native	perennial herb (bulb)	-	-	-
Allium serra	Jeweled onion	native	perennial herb (bulb)	-	-	-
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	-	-	-
Angelica californica	California angelica	native	perennial herb	-	-	-
Angelica tomentosa	Woolly angelica	native	perennial herb	-	-	-
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	-	-
Aphanes occidentalis	Ladie's mantle	native	annual, perennial herb	-	-	-
Apiastrum angustifolium	Wild celery	native	annual herb	-	-	UPL
Aphyllon fasciculatum	Clustered broomrape	native	perennial herb (parasitic)	-	-	-

Appendix B. Plant Species Observed within the Guenoc Valley Ranch Property from 2017 through 2023

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
Apocynum cannabinum	Indian hemp	native	perennial herb	-	-	FAC
Aquilegia eximia	Serpentine columbine	native	perennial herb	-	-	OBL
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	-	-	-
Arctostaphylos viscida* ssp. *viscida	Smooth white leaf manzanita	native	tree, shrub	-	-	-
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	-	-	-
Astragalus breweri	Brewer's milk vetch	native	annual herb	Rank 4.2	-	-
Astragalus clevelandii	Cleveland's milk vetch	native	perennial herb	Rank 4.3	-	FAC
Astragalus gambelianus	Gambel's dwarf milk vetch	native	annual herb	-	-	-
Astragalus rattanii* var. *jepsonianus	Jepson's milk vetch	native	annual herb	Rank 1B.2	-	-
Athyrium filix-femina* var. *cyclosorum	Western lady fern	native	fern	-	-	FAC
Athysanus pusillus	Dwarf athysanus	native	annual herb	-	-	-

Appendix B. Plant Species Observed within the Guenoc Valley Ranch Property from 2017 through 2023

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-
Bellardia viscosa	Yellow glandweed	non-native (invasive)	annual herb	-	Limited	FAC
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 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	-	-	-
Bromus madritensis	Foxtail brome	non-native	annual grass	-	-	UPL
Bromus rubens	Red brome	non-native (invasive)	annual grass	-	High	UPL
Bromus sitchensis* var. *carinatus	California brome	native	perennial grass	-	-	-
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	-	-	-

Appendix B. Plant Species Observed within the Guenoc Valley Ranch Property from 2017 through 2023

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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
Calochortus vestae	Yellow mariposa	native	perennial herb	-	-	-
Calycadenia fremontii	Fremont's calycadenia	native	annual herb	-	-	-
Calycadenia pauciflora	Small flowered calycadenia	native	annual herb	-	-	-
Calycanthus occidentalis	Spicebush	native	shrub	-	-	FAC
Calyptridium quadripetalum	Four petaled pussypaws	native	annual herb	Rank 4.3	-	-
Calystegia collina* ssp. *collina	Hillside morning glory	native	perennial herb	-	-	-
Calystegia collina* ssp. *oxyphylla	Mt. Saint Helena morning glory	native	perennial herb (rhizomatous)	Rank 4.2	-	-
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	-	-	-
Capsella bursa-pastoris	Shepherd's purse	non-native	annual herb	-	-	FACU
Cardamine hirsuta	Hairy bitter cress	non-native	annual herb	-	-	FACU
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

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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
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	Woolly paintbrush	native	perennial herb	-	-	-
Castilleja minor	Little paintbrush	native	annual herb	-	-	OBL
Castilleja rubicundula* ssp. *lithospermoides	Cream sacs	native	annual herb	-	-	-
Caulanthus lasiophyllus	California mustard	native	annual herb	-	-	-
Ceanothus cuneatus* var. *cuneatus	Buck brush	native	shrub	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
Ceanothus foliosus* var. *foliosus	Wavy leaved ceanothus	native	shrub	-	-	-
Ceanothus integerrimus* var. *macrothyrsus	Deerbrush	native	shrub	-	-	-
Ceanothus jepsonii	Musk brush	native	shrub	-	-	-
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	-	-	-
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
Cirsium occidentale* var. *venustum	Venus thistle	native	perennial herb	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-
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	-	-	-
Claytonia parviflora* ssp. *parviflora	Miner's lettuce	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	-	-	-
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	-	-
Collomia heterophylla	Varied leaved collomia	native	annual herb	-	-	-
Convolvulus arvensis	Field bindweed	non-native	perennial herb, vine	-	-	-
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	-	-
Cornus nuttallii	Mountain dogwood	native	shrub	-	-	FACU

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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 schoenoides	Swamp grass	non-native	annual grass	-	-	FACW
Cryptantha flaccida	Beaked cryptantha	native	annual herb	-	-	-
Cryptantha hispidula	Napa cryptantha	native	annual herb	-	-	-
Cuscuta brachycalyx	San Joaquin dodder	native	annual herb, vine (parasitic)	-	-	-
Cuscuta californica	California dodder	native	annual herb, vine (parasitic)	-	-	-
Cuscuta howelliana	Boggs Lake dodder	native	vine	-	-	-
Cynodon dactylon	Bermuda grass	non-native (invasive)	perennial grass	-	Moderate	FACU
Cynosurus echinatus	Dogtail grass	non-native (invasive)	annual grass	-	Moderate	-
Cyperus eragrostis	Tall cyperus	native	perennial grasslike herb	-	-	FACW
Cyperus squarrosus	Awned cyperus	native	annual grasslike herb	-	-	OBL
Cytisus scoparius	Scotch broom	non-native (invasive)	shrub	-	High	-
Dactylis glomerata	Orchardgrass	non-native (invasive)	perennial grass	-	Limited	FACU
Damasonium californicum	California damsonium	native	perennial herb (aquatic)	-	-	OBL
Danthonia californica	California oatgrass	native	perennial grass	-	-	FAC

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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
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
Dianthus nudiflorus	Velezia	non-native	annual herb	-	-	-
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
Diplacus kelloggii	Kellogg's monkeyflower	native	annual herb	-	-	-
Diplacus tricolor	Tricolor monkeyflower	native	annual herb	-	-	OBL
Dipterostemon capitatus* ssp. *capitatus	Wild hyacinth	native	perennial herb	-	-	FACU
Downingia concolor* var. *concolor	Spotted throat downingia	native	annual herb	-	-	OBL
Downingia cuspidata	Toothed downingia	native	annual herb	-	-	OBL
Drymocallis glandulosa	Sticky cinquefoil	native	perennial herb	-	-	FAC
Dryopteris arguta	Wood fern	native	fern	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-	-
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	Panicled willow herb	native	annual herb	-	-	FAC
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
Epilobium torreyi	Narrow boisduvalia	native	annual herb	-	-	FACW
Epipactis gigantea	Stream orchid	native	perennial herb	-	-	OBL
Equisetum hyemale* ssp. *affine	Giant scouring rush	native	fern	-	-	FACW
Equisetum laevigatum	Smooth scouring rush	native	fern	-	-	FACW
Ericameria arborescens	Golden fleece	native	shrub	-	-	-
Erigeron canadensis	Horseweed	native	annual herb	-	-	FACU

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-	-
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
Erythronium helenae	St. Helena fawn lily	native	perennial herb (bulb)	Rank 4.2	-	-
Eschscholzia caespitosa	Tufted poppy	native	annual herb	-	-	-
Eschscholzia californica	California poppy	native	annual, perennial herb	-	-	-
Eucalyptus camaldulensis	Red gum	non-native (invasive)	tree	-	Limited	FAC
Euphorbia serpillifolia	Thyme-leafed spurge	native	annual herb	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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
Festuca idahoensis	Blue fescue	native	perennial grass	-	-	FACU
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	-	-	-
Fraxinus dipetala	Two petaled ash	native	tree, shrub	-	-	-
Fraxinus latifolia	Oregon ash	native	tree	-	-	FACW
Fritillaria affinis	Checker lily	native	perennial herb (bulb)	-	-	-
Fritillaria purdyi	Purdy's fritillary	native	perennial herb (bulb)	Rank 4.3	-	-
Fritillaria recurva	Scarlet fritillary	native	perennial herb	-	-	-
Galium andrewsii* ssp. *andrewsii	Phlox leaved bedstraw	native	perennial herb	-	-	-
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	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-	-
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	-	-	-
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
Gratiola ebracteata	Common hedge hyssop	native	annual herb	-	-	OBL
Grindelia hirsutula	Gumweed	native	perennial herb	-	-	FACW
Gruvelia pusilla	Little pectocarya	native	annual herb	-	-	-
Helenium bigelovii	Bigelow's sneezeweed	native	perennial herb	-	-	FACW
Helenium puberulum	Sneezeweed	native	perennial herb	-	-	FACW
Helianthella californica* var. *californica	California helianthella	native	perennial herb	-	-	-
Helianthus exilis	Serpentine sunflower	native	annual herb	-	-	FACU

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-	-
Hemizonia congesta* ssp. *luzulifolia	Woodrush tarweed	native	annual herb	-	-	-
Hesperevax sparsiflora* var. *sparsiflora	Few flowered evax	native	annual herb	-	-	FACU
Hesperocyparis sargentii	Sargent cypress	native	tree, shrub	-	-	-
Hesperolinon bicarpellatum	Two carpellate western flax	native	annual herb	Rank 1B.2	-	-
Hesperolinon californicum	California western flax	native	annual herb	-	-	-
Hesperolinon didymocarpum	Lake County western flax	native	annual herb	SE, Rank 1B.2	-	-
Hesperolinon disjunctum	Coast Range western flax	native	annual herb	-	-	-
Hesperolinon micranthum	Small flower western flax	native	annual herb	-	-	-
Hesperolinon spergulinum	Slender western flax	native	annual herb	-	-	-
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	-
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

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-	-
Isoetes orcuttii	Orcutt's quillwort	native	fern (aquatic)	-	-	OBL
Juglans hindsii	Northern California black walnut	native	tree	-	-	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
Juncus patens	Common rush	native	perennial grasslike herb	-	-	FACW
Juncus phaeocephalus* var. *phaeocephalus	Brown headed rush	native	perennial grasslike herb	-	-	FACW

Appendix B. Plant Species Observed within the Guenoc Valley Ranch Property from 2017 through 2023

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-	-
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	-	-	-
Layia chrysanthemoides	Smooth tidy tips	native	annual herb	-	-	FACW
Layia septentrionalis	Colusa layia	native	annual herb	Rank 1B.2	-	-
Leontodon saxatilis* ssp. *longirostris	Hawkbit	non-native	annual herb	-	-	FACU
Lepechinia calycina	Pitcher sage	native	shrub	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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 aureus	Bristly leptosiphon	native	annual herb	Rank 4.2	-	-
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	-	-	-
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	-	-	-
Lindernia dubia	False pimpernel	native	annual herb	-	-	OBL
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	-	-
Lomatium marginatum* var. *marginatum	Hartweg's lomatium	native	perennial herb	-	-	-
Lomatium marginatum* var. *purpureum	Jepson's lomatium	native	perennial herb	-	-	-
Lomatium repostum	Napa lomatium	native	perennial herb	Rank 4.2	-	-
Lomatium utriculatum	Hog fennel	native	perennial herb	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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 citriodora	Lemon scented tarweed	native	annual herb	-	-	-
Madia elegans	Common madia	native	annual herb	-	-	-
Madia exigua	Small tarweed	native	annual herb	-	-	-
Madia gracilis	Gumweed	native	annual herb	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
Malacothrix floccifera	Woolly malacothrix	native	annual herb	-	-	-
Malva nicaeensis	Bull mallow	non-native	annual herb	-	-	-
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 waterclover	native	fern	-	-	OBL
Matricaria discoidea	Pineapple weed	native	annual herb	-	-	FACU
Medicago polymorpha	Bur clover	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
Monardella villosa* ssp. *villosa	Coyote mint	native	perennial herb	-	-	-
Monardella viridis	Green monardella	native	perennial herb	Rank 4.3	-	-
Montia fontana	Water montia	native	annual herb	-	-	OBL

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
Morus alba	Mulberry	non-native	tree	-	-	FACU
Muhlenbergia rigens	Deergrass	native	perennial grass	-	-	FAC
Myriophyllum sp.	-	-	-	-	-	-
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 heterandra	Tehama navarretia	native	annual herb	Rank 4.3	-	OBL
Navarretia intertexta	Interwoven navarretia	native	annual herb	-	-	FACW
Navarretia jepsonii	Jepson's navarretia	native	annual herb	Rank 4.3	-	FACW
Navarretia leucocephala* ssp. *leucocephala	White headed navarretia	native	annual herb	-	-	OBL
Navarretia mellita	Skunk navarretia	native	annual herb	-	-	FAC
Navarretia paradoxinota	Porter's navarretia	native	annual herb	Rank 1B.3	-	-
Navarretia pubescens	Purple navarretia	native	annual herb	-	-	-
Navarretia squarrosa	Skunkweed	native	annual herb	-	-	FACU
Nemacladus montanus	Mountain nemacladus	native	annual herb	-	-	-
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	-	-	-
Oemleria cerasiformis	Oso berry	native	shrub	-	-	FACU

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
Packera eurycephala* var. *eurycephala	Widehead groundsel	native	perennial herb	-	-	-
Packera greenei	Flame ragwort	native	perennial herb	-	-	-
Paspalum dilatatum	Dallis grass	non-native	perennial grass	-	-	FAC
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	-	-	-
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	-	-	UPL
Phacelia imbricata* var. *imbricata	Imbricate phacelia	native	annual herb	-	-	-
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)	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-	-
Pinus ponderosa* var. *pacifica	Pacific ponderosa pine	native	tree	-	-	FACU
Pinus sabiniana	Foothill pine	native	tree	-	-	-
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	-	-	-
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	-	-	-
Plectritis ciliosa	Long spurred plectritis	native	annual herb	-	-	FACU
Plectritis macrocera	Plectritis	native	annual herb	-	-	FACU

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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
Polygonum aviculare* ssp. *aviculare	Prostrate knotweed	non-native	annual, perennial herb	-	-	FAC
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	Fremont cottonwood	native	tree	-	-	FAC
Portulaca oleracea	Common purslane	non-native	annual herb	-	-	FAC
Potamogeton diversifolius	Rafinesque's pondweed	native	perennial herb (aquatic)	-	-	OBL
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

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	Canyon live oak	native	tree	-	-	-
Quercus douglasii	Blue oak	native	tree	-	-	-
Quercus durata* var. *durata	Leather oak	native	shrub	-	-	-
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
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	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
Rhinotropis californica	Milkwort	native	perennial herb	-	-	-
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	-	-	-
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
Sabulina californica	Sandwort	native	annual herb	-	-	FACU
Sabulina douglasii	Douglas' sandwort	native	annual herb	-	-	-
Salix breweri	Serpentine willow	native	shrub	-	-	FAC
Salix exigua* var. *hindsiana	Sandbar willow	native	tree, shrub	-	-	FACW
Salix gooddingii	Goodding's black willow	native	tree	-	-	FACW
Salix laevigata	Red willow	native	tree	-	-	FACW
Salix lasiolepis	Arroyo willow	native	tree, shrub	-	-	FACW
Salsola sp.	-	-	-	-	-	-
Salvia columbariae	Chia sage	native	annual herb	-	-	-
Salvia sonomensis	Sonoma sage	native	perennial herb	-	-	-
Sambucus mexicana	Blue elderberry	native	shrub	-	-	FACU
Sanicula bipinnata	Poison sanicle	native	perennial herb	-	-	-
Sanicula bipinnatifida	Purple sanicle	native	perennial herb	-	-	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
Sanicula crassicaulis	Pacific sanicle	native	perennial herb	-	-	-
Sanicula tuberosa	Turkey pea	native	perennial herb	-	-	-
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	-	-	-
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	-	-	-
Sidalcea hartwegii	Hartweg's checkerbloom	native	annual herb	-	-	-
Sidalcea hirsuta	Hairy checkerbloom	native	annual herb	-	-	OBL
Sidalcea keckii	Keck's checkerbloom	native	annual herb	FE, Rank 1B.1	-	-
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	-

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Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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
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	-	-	-

Appendix B. Plant Species Observed within the Guenoc Valley Ranch Property from 2017 through 2023

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-	-
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	-	-
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	-
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	-

Appendix B. Plant Species Observed within the Guenoc Valley Ranch Property from 2017 through 2023

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
Trichostema lanceolatum	Vinegarweed	native	annual herb	-	-	FACU
Trichostema laxum	Turpentine weed	native	annual herb	-	-	-
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
Trifolium glomeratum	Clustered clover	non-native	annual herb	-	-	-
Trifolium gracilentum	Pin point clover	native	annual herb	-	-	-
Trifolium hirtum	Rose clover	non-native (invasive)	annual herb	-	Limited	-
Trifolium incarnatum	Crimson clover	non-native	annual herb	-	-	-
Trifolium microcephalum	Small head clover	native	annual herb	-	-	FAC
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	Large variegated clover	native	annual herb	-	-	FAC
Trifolium willdenovii	Tomcat clover	native	annual herb	-	-	FACW

Appendix B. Plant Species Observed within the Guenoc Valley Ranch Property from 2017 through 2023

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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
Triticum aestivum	Common wheat	non-native	annual grass	-	-	-
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
Uropappus lindleyi	Silver puffs	native	annual herb	-	-	-
Urtica dioica* ssp. *holosericea	Stinging nettle	native	perennial herb	-	-	FAC
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

Appendix B. Plant Species Observed within the Guenoc Valley Ranch Property from 2017 through 2023

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL IPC Status[2]	Wetland Status (AW 2020)
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	-	-	-
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	-	-	FACW
Wyethia angustifolia	Narrow leaved mule ears	native	perennial herb	-	-	FACU
Wyethia glabra	Smooth mule ears	native	perennial herb	-	-	-
Wyethia helenioides	Gray mule ears	native	perennial herb	-	-	-
Xanthium orientale	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

Note: All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2024]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2024] or Rare Plant Inventory (CNPS 2024a). Sp.: "species", intended to indicate that the observer was confident in the identity of the genus but uncertain which species.

[1] **California Native Plant Society. 2024a. Rare Plant Inventory (online edition, v9.5). Sacramento, California. Online at: http://rareplants.cnps.org/; most recently accessed: February 2024.**

FE:	Federal Endangered
FT:	Federal Threatened
SE:	State Endangered
ST:	State Threatened
SR:	State Rare
Rank 1A:	Plants presumed extinct in California
Rank 1B:	Plants rare, threatened, or endangered in California and elsewhere

Rank 2:	Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3:	Plants about which we need more information – a review list
Rank 4:	Plants of limited distribution – a watch list

[2] **California Invasive Plant Council. 2024. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: http://www.cal-ipc.org/paf/; most recently accessed: February 2024.**

High:	Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
Moderate:	Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically
Limited:	Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
Assessed:	Assessed by Cal-IPC and determined to not be an existing current threat

[3] **U.S. Army Corps of Engineers. 2020. National Wetland Plant List, version 3.5. Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH. Online at: http://wetland-plants.usace.army.mil/**

OBL:	Almost always found in wetlands
FACW:	Usually found in wetlands
FAC:	Equally found in wetlands and uplands
FACU:	Usually not found in wetlands
UPL:	Almost never found in wetlands
NL:	Not listed, assumed almost never found in wetlands
NI:	No information; not factored during wetland delineation

APPENDIX C. SPECIAL-STATUS SPECIES POTENTIAL TABLE

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Appendix C-1. Potential Special-Status Plant Species Table. 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 2024a, CDFW 2024a).

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
PLANTS				
Napa false indigo *Amorpha californica* var. *napensis*	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland. Elevation ranges from 165 to 6560 feet (50 to 2000 meters). Blooms Apr-Jul.	**Moderate Potential.** Potentially suitable, cool, forested habitat on north-facing slopes and/or along draws exists within the Modified APE, and the species is known from a nearby occurrence.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
bent-flowered fiddleneck *Amsinckia lunaris*	Rank 1B.2	Cismontane woodland, coastal bluff scrub, valley and foothill grassland. Elevation ranges from 10 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	**Moderate Potential.** Potentially suitable grassland, chaparral, and scrub habitats exist within the Modified APE, and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
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 Modified APE, in blue oak woodland. Similar suitable habitat exists in the Modified APE.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
Rincon Ridge manzanita *Arctostaphylos stanfordiana* ssp. *decumbens*	Rank 1B.1	Chaparral, cismontane woodland. Elevation ranges from 245 to 1215 feet (75 to 370 meters). Blooms Feb-Apr(May).	**Unlikely.** The Modified APE lacks potentially suitable habitat for this species and the species is limited to volcanic mudflows in the Mayacama Mountains.	No further actions are recommended for this species.
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 Modified APE 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 Modified APE.	No further actions are recommended for this species.
Clara Hunt's milk-vetch *Astragalus claranus*	FE, ST, Rank 1B.1	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 245 to 900 feet (75 to 275 meters). Blooms Mar-May.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Jepson's milk-vetch *Astragalus rattanii* var. *jepsonianus*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 970 to 2295 feet (295 to 700 meters). Blooms Mar-Jun.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Observed**. See Section 7.2 for recommendations.

SPECIES	CONSERVATION	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
big-scale balsamroot *Balsamorhiza macrolepis*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 150 to 5100 feet (45 to 1555 meters). Blooms Mar-Jun.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Watershield *Brasenia schreberi*	Rank 2B.3	Marshes and swamps (freshwater). Elevation ranges from 0 to 7,220 feet (0 to 2200 meters). Blooms Jun-Sep.	**Moderate Potential.** Potentially suitable lake and reservoir habitat exists within the Modified APE, and the species is known from the region**.**	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
narrow-anthered brodiaea *Brodiaea leptandra*	Rank 1B.2	Broadleafed 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.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Northern meadow sedge *Carex praticola*	Rank 2B.2	Meadows and seeps (mesic). Elevation ranges from 0 to 10,500 feet (0 to 3,200 meters). Blooms May-Jul.	**Unlikely.** Although the Modified APE contains meadows and seeps, there is only one documented occurrence of this species in the region (approximately 6 miles west of the Modified APE), and the identity of this occurrence is uncertain. The Modified APE is otherwise well outside the known region of the species.	No further actions are recommended for this species.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
pink creamsacs *Castilleja rubicundula* var. *rubicundula*	Rank 1B.2	Chaparral, 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 habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Rincon Ridge ceanothus *Ceanothus confusus*	Rank 1B.1	Chaparral, cismontane woodland, closed-cone coniferous forest. Elevation ranges from 245 to 3495 feet (75 to 1065 meters). Blooms Feb-Jun.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Calistoga ceanothus *Ceanothus divergens*	Rank 1B.2	Chaparral. Elevation ranges from 560 to 3115 feet (170 to 950 meters). Blooms Feb-Apr.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
holly-leaved ceanothus *Ceanothus purpureus*	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 395 to 2100 feet (120 to 640 meters). Blooms Feb-Jun.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Sonoma ceanothus *Ceanothus sonomensis*	Rank 1B.2	Chaparral. Elevation ranges from 705 to 2625 feet (215 to 800 meters). Blooms Feb-Apr.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
Dwarf soaproot *Chlorogalum pomeridianum* var. *minus*	Rank 1B.2	Chaparral (serpentine). Elevation ranges from 1,000 to 3,280 feet (305 to 1,000 meters). Blooms May-Aug.	**Moderate Potential.** The Modified APE contains chaparral on serpentine.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
pappose tarplant *Centromadia parryi* ssp. *parryi*	Rank 1B.2	Chaparral, coastal prairie, marshes and swamps, meadows and seeps, valley and foothill grassland. 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 Modified APE.	No further actions are recommended for this species.
serpentine cryptantha *Cryptantha dissita*	Rank 1B.2	Chaparral. Elevation ranges from 1295 to 1905 feet (395 to 580 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
deep-scarred cryptantha *Cryptantha excavata*	Rank 1B.1	Cismontane woodland. Elevation ranges from 330 to 1640 feet (100 to 500 meters). Blooms Apr-May.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Cascade downingia *Downingia willamettensis*	Rank 2B.2	Cismontane woodland (lake margins), valley and foothill grassland (lake margins), vernal pools. Elevation ranges from 50 to 3640 feet (15 to 1110 meters). Blooms Jun-Jul(Sep).	**Moderate Potential.** Potentially suitable lake margin habitat is present within the Modified APE, and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
Brandegee's eriastrum *Eriastrum brandegeeae*	Rank 1B.1	Chaparral, cismontane woodland. Elevation ranges from 1,395 to 2,755 feet (425 to 840 meters). Blooms Apr-Aug.	**Moderate Potential.** Potentially suitable barren, volcanic substrate is present within the Modified APE, and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Greene's narrow-leaved daisy *Erigeron greenei*	Rank 1B.2	Chaparral. Elevation ranges from 260 to 3295 feet (80 to 1005 meters). Blooms May-Sep.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Observed**. See Section 7.2 for recommendations.
Snow Mountain buckwheat *Eriogonum nervulosum*	Rank 1B.2	Chaparral. Elevation ranges from 985 to 6905 feet (300 to 2105 meters). Blooms Jun-Sep.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Loch Lomond button-celery *Eryngium constancei*	FE, SE, Rank 1B.1	Vernal pools. Elevation ranges from 1510 to 2805 feet (460 to 855 meters). Blooms Apr-Jun.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Jepson's coyote-thistle *Eryngium jepsonii*	Rank 1B.2	Valley and foothill grassland, vernal pools. Elevation ranges from 10 to 985 feet (3 to 300 meters). Blooms Apr-Aug.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
San Joaquin spearscale *Extriplex joaquinana*	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland. Elevation ranges from 5 to 2740 feet (1 to 835 meters). Blooms Apr-Oct.	**Unlikely**. The Modified APE lacks potentially suitable alkaline habitat for this species.	No further actions are recommended for this species.
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.** The Modified APE contains suitable habitat and there are numerous occurrences surrounding and within the larger Langtry Farms property.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	SE, Rank 1B.2	Marshes and swamps, vernal pools. Elevation ranges from 35 to 7790 feet (10 to 2375 meters). Blooms Apr-Aug.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Hall's harmonia *Harmonia hallii*	Rank 1B.2	Chaparral. Elevation ranges from 1000 to 3200 feet (305 to 975 meters). Blooms (Mar)Apr-Jun.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
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 habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[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 Modified APE, and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
two-carpellate western flax *Hesperolinon bicarpellatum*	Rank 1B.2	Chaparral. Elevation ranges from 195 to 3295 feet (60 to 1005 meters). Blooms (Apr)May-Jul.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Observed**. See Section 7.2 for recommendations.
Lake County western flax *Hesperolinon didymocarpum*	SE, Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 1085 to 1200 feet (330 to 365 meters). Blooms May-Jul.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Observed**. See Section 7.2 for recommendations.
drymaria-like western flax *Hesperolinon drymarioides*	Rank 1B.2	Chaparral, cismontane woodland, closed-cone coniferous forest, valley and foothill grassland. Elevation ranges from 330 to 3710 feet (100 to 1130 meters). Blooms May-Aug.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further 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 habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[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 Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
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 Modified APE. The native status of the single plant observed is also in doubt. In addition, the Modified APE lacks alkaline substrate.	No further actions are recommended for this species.
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 985 to 6695 feet (300 to 2040 meters). Blooms Apr-Jul.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Burke's goldfields *Lasthenia burkei*	FE, SE, Rank 1B.1	Meadows and seeps, vernal pools. Elevation ranges from 50 to 1970 feet (15 to 600 meters). Blooms Apr-Jun.	**Moderate Potential**. Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
Colusa layia *Layia septentrionalis*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 330 to 3595 feet (100 to 1095 meters). Blooms Apr-May.	**Moderate Potential**. Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Observed**. See Section 7.2 for recommendations.
legenere *Legenere limosa*	Rank 1B.1	Vernal pools. Elevation ranges from 5 to 2885 feet (1 to 880 meters). Blooms Apr-Jun.	**Unlikely.** Suitable vernal pool habitat is absent from the Modified APE.	No further actions are recommended for this species.
Jepson's leptosiphon *Leptosiphon jepsonii*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 330 to 1640 feet (100 to 500 meters). Blooms Mar-May.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Sebastopol meadowfoam *Limnanthes vinculans*	FE, SE, Rank 1B.1	Meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 50 to 1000 feet (15 to 305 meters). Blooms Apr-May.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Cobb Mountain lupine *Lupinus sericatus*	Rank 1B.2	Broadleafed 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 habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[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 Modified APE, and this species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
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 habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
few-flowered navarretia *Navarretia leucocephala* ssp. *pauciflora*	FE, ST, Rank 1B.1	Vernal pools. Elevation ranges from 1310 to 2805 feet (400 to 855 meters). Blooms May-Jun.	**Unlikely.** The Modified APE lacks potentially suitable vernal pool habitat with volcanic ash flow substrate required for this species.	No further actions are recommended for this species.
many-flowered navarretia *Navarretia leucocephala* ssp. *plieantha*	FE, SE, Rank 1B.2	Vernal pools. Elevation ranges from 100 to 3115 feet (30 to 950 meters). Blooms May-Jun.	**Unlikely.** The Modified APE 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 REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
small pincushion navarretia *Navarretia myersii* ssp. *deminuta*	Rank 1B.1	Vernal pools. Elevation ranges from 1165 to 1165 feet (355 to 355 meters). Blooms Apr-May.	**Unlikely.** Suitable vernal pool habitat is absent from the Modified APE.	No further actions are recommended for this species.
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 habitat exists within the Modified APE and the species is known from nearby occurrences.	**Observed**. See Section 7.2 for recommendations.
Marin County navarretia *Navarretia rosulata*	Rank 1B.2	Chaparral, closed-cone coniferous forest. Elevation ranges from 655 to 2085 feet (200 to 635 meters). Blooms May-Jul.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
slender Orcutt grass *Orcuttia tenuis*	FE, SE, Rank 1B.1	Vernal pools. Elevation ranges from 115 to 5775 feet (35 to 1760 meters). Blooms May-Sep (Oct).	**Unlikely.** Suitable vernal pool habitat is absent from the Modified APE.	No further actions are recommended for this species.
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 Modified APE. The nearest occurrence of this species is approximately 10 miles west of the Modified APE.	No further actions are recommended for this species.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
Sonoma beardtongue *Penstemon newberryi* var. *sonomensis*	Rank 1B.3	Chaparral. Elevation ranges from 2295 to 4495 feet (700 to 1370 meters). Blooms Apr-Aug.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
bearded popcornflower *Plagiobothrys hystriculus*	Rank 1B.1	Valley and foothill grassland, vernal pools. Elevation ranges from 0 to 900 feet (0 to 274 meters). Blooms Apr-May.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Calistoga popcornflower *Plagiobothrys strictus*	FE, SE, 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 Modified APE lacks potentially suitable thermal spring habitat required for this species.	No further actions are recommended for this species.
Napa blue grass *Poa napensis*	FE, Rank 1B.1	Meadows and seeps, valley and foothill grassland. Elevation ranges from 330 to 655 feet (100 to 200 meters). Blooms May-Aug.	**Unlikely.** The Modified APE lacks potentially suitable alkaline habitat near thermal springs.	No further actions are recommended for this species.
eel-grass pondweed *Potamogeton zosteriformis*	Rank 2B.2	Marshes and swamps. Elevation ranges from 0 to 6105 feet (0 to 1860 meters). Blooms Jun-Jul.	**Moderate Potential.** Potentially suitable lake and reservoir habitats are present within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[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 Modified APE lacks potentially suitable alkaline habitat for this species.	No further actions are recommended for this species.
Lake County stonecrop *Sedella leiocarpa*	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland, vernal pools. Elevation ranges from 1200 to 2590 feet (365 to 790 meters). Blooms Apr-May.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
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 habitat exists within the Modified APE.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
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).	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE.	**Observed**. See Section 7.2 for recommendations.
marsh checkerbloom *Sidalcea oregana* ssp. *hydrophila*	Rank 1B.2	Meadows and seeps, riparian forest. Elevation ranges from 3610 to 7545 feet (1100 to 2300 meters). Blooms (Jun)Jul-Aug.	**Unlikely**. The Modified APE lacks potentially suitable habitat at known elevation range of the species.	No further actions are recommended for this species.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
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 Modified APE.	No further actions are recommended for this species.
long-styled sand-spurrey *Spergularia macrotheca* var. *longistyla*	Rank 1B.2	Marshes and swamps, meadows and seeps. Elevation ranges from 0 to 835 feet (0 to 255 meters). Blooms Feb-May.	**Unlikely.** The Modified APE lacks potentially suitable alkaline habitat for this species.	No further actions are recommended for this species.
Socrates Mine jewelflower *Streptanthus brachiatus* ssp. *brachiatus*	Rank 1B.2	Chaparral, closed-cone coniferous forest. Elevation ranges from 1790 to 3280 feet (545 to 1000 meters). Blooms May-Jun.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Freed's jewelflower *Streptanthus brachiatus* ssp. *hoffmanii*	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 1610 to 4005 feet (490 to 1220 meters). Blooms May-Jul.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
green jewelflower *Streptanthus hesperidis*	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 425 to 2495 feet (130 to 760 meters). Blooms May-Jul.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Observed**. See Section 7.2 for recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
Three Peaks jewelflower *Streptanthus morrisonii* ssp. *elatus*	Rank 1B.2	Chaparral. Elevation ranges from 295 to 2675 feet (90 to 815 meters). Blooms Jun-Sep.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Kruckeberg's jewelflower *Streptanthus morrisonii* ssp. *kruckebergii*	Rank 1B.2	Cismontane woodland. Elevation ranges from 705 to 3395 feet (215 to 1035 meters). Blooms Apr-Jul.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
early jewelflower *Streptanthus vernalis*	Rank 1B.2	Chaparral, closed-cone coniferous forest. Elevation ranges from 2000 to 2000 feet (610 to 610 meters). Blooms Mar-May.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from nearby occurrences.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Northern slender 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 Modified APE, and this species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.
Napa bluecurls *Trichostema ruygtii*	Rank 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 100 to 2230 feet (30 to 680 meters). Blooms Jun-Oct.	**Moderate Potential.** Potentially suitable habitat exists within the Modified APE and the species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]
saline clover *Trifolium hydrophilum*	Rank 1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun.	**Unlikely.** The Modified APE lacks potentially suitable alkaline habitat for this species.	No further actions are recommended for this species.
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 Modified APE, and this species is known from the region.	**Not Observed**. This species was not observed during seasonally appropriate floristic surveys and is presumed absent. No further recommendations.

[1]Key to Conservation Status:

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)

[2]Potential To Occur in the Modified APE:

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.

SPECIES	CONSERVATION STATUS[1]	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE MODIFIED APE[2]	RESULTS AND RECOMMENDATIONS[3]

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 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. The species was observed onsite or has been recently documented from the site in the CNDDB.

[3]**Results and Recommendations:**
Present: Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.
Assumed Present: Species is assumed to be present on-site based on the presence of key habitat components.
Presumed Absent: Species is presumed to not be present due to a lack of key habitat components.
Not Present: Species is considered not present due to a clear lack of any suitable habitat and/or local range limitations.
Not Observed: Species was not observed during dedicated/formal surveys.
Presence Unknown: Species has the potential to be present, but no dedicated surveys to determine absence/presence were performed**.**

Appendix C-2. Potential Special-Status Wildlife Species Table. 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 (USFWS 2024b, CDFW 2024a).

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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.	**High Potential.** The Modified APE contains shrubland, forested habitats, and rocky outcroppings, that are typically associated with the species. Stream, and grassland boarding open water provide foraging for this species.	See Section 7.2 for further recommendations.
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.** There is a large amount of oak woodland, scrub and chaparral within the Modified APE that provides potentially suitable habitat for this species. Additionally, these densely vegetated areas are directly connected to additional large, undeveloped habitat areas that may provide suitable habitat for the species.	See Section 7.2 for further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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.	**Moderate Potential.** The Modified APE contains trees 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 Modified APE (CDFW 2024a).	See Section 7.2 for further recommendations.
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.	**High Potential.** The Modified APE contains woodland, forest, and open habitat suitable for this species. The Modified APE could also support roosting in hollow trees, snags, and rock crevices in the Modified APE.	See Section 7.2 for further recommendations.
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.** The Modified APE contains broad-leaved tree species typically associated with this species. Stream channel, open water and edge habitats provide foraging for this species.	See Section 7.2 for further recommendations.
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 Modified APE contains forested habitats and habitat mosaics, with oak trees. Grassland bordering open water and edge habitats along forested areas provide foraging for this species.	See Section 7.2 for further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
Fisher, west coast DPS ***Martes pennanti*** **[*M. pennant pacifica*]**	FC, SC (threatened), 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 recommendations.
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 Modified APE contains shrubland, forested habitats, rocky outcroppings, chaparral, and agricultural areas that are typically associated with the species. Grassland bordering open water and edge habitats along forested areas provide foraging for this species.	See Section 7.2 for further recommendations.
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 Modified APE contains dry woodland and grassland habitat that could provide suitable foraging for this species. Trees within the Modified APE could also provide suitable roosting habitat for this species.	See Section 7.2 for further recommendations.
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 Modified APE contains dry woodland and grassland habitat that could provide suitable foraging for this species. Rock crevices, and trees within the Modified APE could also provide suitable roosting habitat for this species.	See Section 7.2 for further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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 Modified APE contains, and is surrounded by, large expanses of uncultivated open ground with shrub, grassland, and forest habitat. Burrowing rodents were observed within the Modified APE, which may support a prey base for the species.	See Section 7.2 for further recommendations.
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.	**Moderate Potential.** The Phase 1 Modified APE 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 2024a).	See Section 7.2 for further recommendations.
Grasshopper sparrow *Ammodramus savannarum*	BCC, 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 Modified APE is within this species' breeding range, and the Modified APE contains large areas of grasslands to support foraging and nesting This species has been documented near the Modified APE (eBird 2024).	See Section 7.2 for further recommendations.
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 Modified APE contains suitable open areas with large trees to support nesting and foraging.	See Section 7.2 for further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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 Modified APE contains some suitable marsh and grassland foraging habitat for this species, which may winter there. However, this species does not breed in Lake County (CDFW 2024a, eBird 2024).	No further recommendations.
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 Modified APE contains oak and riparian habitats adjacent to open lands that could support foraging and nesting.	See Section 7.2 for further recommendations.
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/ Unlikely to Nest.** This species does not breed in Lake County (CDFW 2024a, eBird 2024). This species may occasionally winter within uncanopied grassland areas within the Modified APE with suitable burrows. This species has been documented to winter approximately 7 miles southeast of the Modified APE (CDFW 2024a). Although burrows suitable for burrowing owl occupation were rarely observed during the site visits, ground squirrels are present within the Modified APE and suitable burrow habitat for owls may arise in the future.	See Section 7.2 for further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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/ Likely to Nest.** This species has been observed within the woodland communities near the Modified APE, and the Modified APE contains woodland and tree cavities suitable for nesting.	See Section 7.2 for further 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 Modified APE does not contain the dense coniferous forest this species prefers and is outside of the known breeding range of the species (CDFW 2024a).	No further recommendations.
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.	**Moderate Potential/ Unlikely to Nest.** Although this species was observed foraging near the Modified APE, the Modified APE does not contain dense, dry herbaceous vegetation near water that typically supports nesting.	See Section 7.2 for further recommendations.
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 Modified APE contains woodland habitats that may support nesting.	See Section 7.2 for further recommendations.
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 has been observed flying over the Modified APE and this species is known to the region (CDFW 2024a). The Modified APE provides open foraging habitat for this species and large trees and shrubs that may provide suitable nesting substrates.	See Section 7.2 for further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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/ Unlikely to Nest.** The Modified APE contains open areas and low rocky outcrops that provide potential foraging habitat for this species. However, sheer rocky cliffs with suitable ledges for nesting are absent in the Modified APE and its immediate surroundings.	See Section 7.2 for further recommendations.
American peregrine falcon ***Falco peregrinus anatum***	FD, SD, 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.	**High Potential/ Unlikely to Nest.** The Modified APE contains open areas and low rocky outcrops that provide potential foraging habitat for this species. However, sheer rocky cliffs with suitable ledges for nesting are absent in the Modified APE and its immediate surroundings.	See Section 7.2 for further recommendations.
Bald eagle ***Haliaeetus leucocephalus***	FD, 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.	**High Potential/ Unlikely to Nest.** Adult and juvenile bald eagles were observed flying and roosting adjacent to multiple reservoirs near the Modified APE. Bald eagles have been observed nesting around reservoirs. However, the Modified APEs described herein are not near these nesting sites and/ or do not have line of site to them and work would not have a significant impact on them.	See Section 7.2 for further recommendations.
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.** One region of the Modified APE contains small area of dense vegetation adjacent to perennial stream habitat which may support nesting, and this species has been documented south of the Modified APE.	See Section 7.2 for further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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 Modified APE is adjacent to several deep reservoirs containing extensive emergent vegetation. This species has not been observed in the vicinity of the Modified APE.	See Section 7.2 for further recommendations.
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.	**Moderate Potential.** Some of the Modified APEs provides open areas for foraging as well as suitably dense vegetation in scrub and woodland communities to support nesting. This species has been documented near the Modified APE (eBird 2024), though has not been observed during site visits.	See Section 7.2 for further 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 Modified APE contains oak savannah and woodland habitat to support this species, and the Modified APE is within the known breeding range of this species (CDFW 2024a). This species has been documented near the Modified APE (eBird 2024).	See Section 7.2 for further recommendations.
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 Modified APE does not contain dense canopied-coniferous forest habitat that this species prefers, and this species is not known to inhabit eastern Lake County (CDFW 2024a)	No further recommendations.
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 near the Modified APE, and the Modified APE contains woodland and tree cavities suitable for nesting.	See Section 7.2 for further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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.	**Moderate Potential.** Some of the Modified APEs contains woodlands with snags and cavities to support nesting, and this species has been documented to nest near the Modified APE (CDFW 2024a).	See Section 7.2 for further 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 Modified APE is outside the breeding range for this species. There are no documented sightings of this species within 12 miles of the Modified APE (CDFW 2024a).	No further recommendations.
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.	**High Potential.** This species was observed near the Modified APE during site assessments. The Modified APE contains woodland habitats with nectar sources that may support nesting.	See Section 7.2 for further recommendations.
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.	**High Potential.** This species was observed near the Modified APE. One region of the Modified APE contains small area of dense vegetation adjacent to perennial stream habitat which may support nesting.	See Section 7.2 for further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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 Modified APE contains large amounts of undisturbed oak savannah, which provides breeding habitat for this species, and this species is regularly documented in the region (eBird 2024).	See Section 7.2 for further recommendations.
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 Modified APE is within this species' breeding range, and the Modified APE contains large amounts of dense shrub and chaparral habitats this species requires for nesting (CDFW 2024a, eBird 2024).	See Section 7.2 for further recommendations.
Northern spotted owl ***Strix occidentalis caurina***	FT, SC, 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 Modified APE 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 Modified APE (CDFW 2024a).	No further recommendations.
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 Modified APE in 2018 and 2019. The Modified APE has freshwater emergent vegetation and may support nesting by this species.	See Section 7.2 for further recommendations.
REPTILES AND AMPHIBIANS				

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
Northern pond turtle ***Actinemys marmorata* ssp. *marmorata***	FP, 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.	**Moderate Potential.** The species was observed in areas near the Modified APE. For areas near aquatic features (within 300 feet), this species has some potential to be present.	See Section 7.2 for further recommendations.
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 Modified APE does not contain suitable coniferous forest typical of the species habitat requirements. Streams in the Modified APE are suboptimal to unsuitable for this species with warm summer water temperatures and non-native predatory fish and bullfrogs. The Modified APE is also located outside of the species known range.	No further recommendations.
Foothill yellow-legged frog ***Rana boylii***	SSC	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.	**Moderate Potential.** The species was observed adjacent to portions of the Modified APE, in association with Butts Creek. Streams with rocky substrate provide potentially suitable habitat for the species, including areas within the Modified APE. This species has also been documented in CNDDB within and in close proximity to the Modified APE (CDFW 2024a).	See Section 7.2 for further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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 Modified APE and found no individuals. Aquatic habitat features within the Modified APE are dominated by several non-native predators including bass, sunfish, American bullfrog, and crayfish. There are no CNDDB occurrences of the species within 5-miles of the site. Due to the lack of detections and non-native predator dominated aquatic habitat, it is unlikely that the species would occur within the Modified APE.	No further recommendations.
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 Modified APE does not contain suitable redwood or hardwood forest typical of the species habitat requirements. The Modified APE is also located outside of the species known range.	No further recommendations.
FISH				
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 Modified APE does not contain anadromous aquatic habitat necessary to support this species. The Modified APE 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 Modified APE.	No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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.	**No Potential.** The Modified APE 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 Modified APE. Tule perch is not known in the upper Putah Creek Watershed.	No further recommendations.
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.	**No Potential.** The Modified APE 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 Modified APE.	No further recommendations.
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 Modified APE does not contain anadromous aquatic habitat necessary to support this species. The Modified APE 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 Modified APE.	No further 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 Modified APE 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 Modified APE.	No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
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 Modified APE 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 Modified APE. Roach in the Modified APE are within the range and distribution of Central California roach, which are not a special-status species.	No further recommendations.
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 Modified APE 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 Modified APE.	No further recommendations.
Coho salmon - central CA coast ESU ***Oncorhynchus kisutch***	FE, SE, NMFS	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 Modified APE does not contain anadromous aquatic habitat necessary to support this species. The Modified APE 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 Modified APE.	No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
Steelhead - Central Valley DPS ***Oncorhynchus mykiss***	FT, NMFS	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 Modified APE does not contain anadromous aquatic habitat necessary to support this species. The Modified APE 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 Modified APE. 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 Modified APE. Rainbow trout was observed within Butts Creek. 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 Modified APE.	No further recommendations.
Chinook salmon - California coastal ESU ***Oncorhynchus tshawytscha***	FT, RP, NMFS	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 Modified APE does not contain anadromous aquatic habitat necessary to support this species. The Modified APE 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 Modified APE.	No further recommendations.
INVERTEBRATES				

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
Western bumblebee ***Bombus occidentalis***	SC	Grassland and scrub habitats, and sometimes forested, urban, and agricultural areas, with sufficient flowering resources. Currently restricted to coastal areas and high meadows. Nests in pre-existing cavities, such as abandoned rodent burrows, grass tufts, rock piles, abandoned bird nests, and tree cavities. Queens overwinter in dense duff or leaf litter.	**Unlikely.** This species has undergone significant declines in distribution and abundance in the past 20 years and may be extirpated from the region. This species has not been encountered in the region during recent surveys.	No further recommendations.
Monarch butterfly ***Danaus plexippus***	FC, winter roosts protected by CDFW	Widespread and migratory species. Breeding habitat consists of grassland with spring and summer blooming nectar plants, and host plants (milkweeds). Migratory habitat consists of summer and fall blooming nectar plant, and wind-protected trees. Often migrates along riparian corridors. Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	**Assumed Present/Unlikely to be impacted.** This species may be seen migrating across the Modified APE, but the project will not remove roost sites.	This species may migrate across the Modified APE, but roost sites are unlikely to occur. No further recommendations.
Conservancy fairy shrimp ***Branchinecta conservation***	FE, SSI	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 northwest of the Modified APE, this species has not been documented in Lake County (CDFW 2024a, Erikson and Belk, 1999). Additionally, no vernal pools with soil and/or hydrological characteristics that could support this species were observed within the Modified APE.	No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
Vernal pool fairy shrimp ***Branchinecta lynchi***	FT, SSI	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 Modified APE, this species has not been documented in Lake County (CDFW 2024a, Erikson and Belk, 1999). Additionally, no vernal pools with soil and/or hydrological characteristics that could support this species were observed within the Modified APE.	No further recommendations.
Valley elderberry longhorn beetle ***Desmocerus californicus dimorphus***	FT, SSI, RP	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 Modified APE 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 Modified APE in the Cache Creek watershed (CDFW 2024a.) Given the low dispersal ability of this species, it is unlikely to occur within the Modified APE (Collinge et al. 2001)	No further recommendations.
Ricksecker's water scavenger beetle ***Hydrochara rickseckeri***	SSI	Small aquatic beetle known only from pond habitats scattered around the San Francisco Bay area, including Marin, Sonoma, Alameda, Lake, and Contra Costa counties. Extensive surveys from 1988 failed to locate this species. The locations of existing populations remain unknown (Hafernick 1989).	**Unlikely.** This species' current range is unknown, and has only been found in very few locations, the closest of which is 1.2 miles from the Modified APE is not directly hydrologically connected to the Modified APE (CDFW 2024a).	No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]
California linderiella ***Linderiella occidentalis***	SSI	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and TDS.	**Unlikely.** Although there are vernal pools that are a part of the Lake-Napa Vernal Pool complex about 2 miles north west of the Modified APE, this species has not been documented in Lake County (CDFW 2024a, Erikson and Belk, 1999). Additionally, no vernal pools with soil and/or hydrological characteristics that could support this species were observed within the Modified APE.	No further recommendations.
California freshwater shrimp ***Syncaris pacifica***	FE, SE, SSI	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.	**No Potential.** Although the Modified APE contains perennial streams, this species has not been documented in Lake County and the nearest documented occurrence is over 10 miles southwest of the Modified APE near Calistoga, in a different watershed from the Modified APE (CDFW 2024a).	No further recommendations.

SPECIES	CONSERVATION STATUS[1]	HABITAT	POTENTIAL FOR OCCURRENCE[2]	RECOMMENDATIONS[3]

[1]Key to Conservation Status:

FE	**Federal Endangered**
FD	**Federal Delisted**
FT	**Federal Threatened**
FP	**Federal Proposed**
FC	**Federal Candidate**
BCC	**USFWS Birds of Conservation Concern**
SE	**State Endangered**
ST	**State Threatened**
SC	**State Candidate**
SD	**State Delisted**
SSC	**CDFW Species of Special Concern**
SSI	**CDFW Special-Status Invertebrate**
CFP	**California Fully Protected Animal**
WBWG	**Western Bat Working Group High or Medium Priority Species**
RP	**Recovery Plan**

[2]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.

[3]Results and Recommendations:

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

Assumed Present: Species is assumed to be present on-site based on the presence of key habitat components.

Presumed Absent: Species is presumed to not be present due to a lack of key habitat components.

Not Present: Species is considered not present due to a clear lack of any suitable habitat and/or local range limitations.

Not Observed: Species was not observed during dedicated/formal surveys.

Presence Unknown: Species has the potential to be present, but no dedicated surveys to determine absence/presence were performed**.**

APPENDIX D. 2024 DATABASE RESULTS

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ScientificName	CommonName	Family	Lifeform	CRPR	CRPRChangeDate	GRank	SRank	OtherStatus	CESA	FESA
Amorpha californica var. napensis	Napa false indigo	Fabaceae	perennial deciduous shrub	1B.2		G4T2	S2	SB_CalBG/RSABG	None	None
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2		G3	S3	BLM_S; SB_UCBG; SB_UCSC	None	None
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	Ericaceae	perennial evergreen shrub	1B.3		G5T3	S3	SB_UCSC	None	None
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	Ericaceae	perennial evergreen shrub	1B.1		G3T1	S1	SB_UCSC	None	None
Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	Ericaceae	perennial evergreen shrub	1B.1		G3T2	S2	BLM_S; SB_CalBG/RSABG; SB_USDA	None	None
Astragalus claranus	Clara Hunt's milk-vetch	Fabaceae	annual herb	1B.1		G1	S1	SB_CalBG/RSABG	CE	FE
Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	Fabaceae	annual herb	1B.2		G4T3	S3	BLM_S; SB_UCSC	None	None
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	1B.2		G2	S2	BLM_S; USFS_S	None	None
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	2B.3	6/12/2013 15:14	G5	S3	IUCN_LC	None	None
Brodiaea leptandra	narrow-anthered brodiaea	Themidaceae	perennial bulbiferous herb	1B.2		G3?	S3?	SB_CalBG/RSABG	None	None
Carex praticola	northern meadow sedge	Cyperaceae	perennial herb	2B.2	6/12/2013 15:18	G5	S2		None	None
Castilleja rubicundula var. rubicundula	pink creamsacs	Orobanchaceae	annual herb (hemiparasitic)	1B.2		G5T2	S2	BLM_S; SB_UCSC	None	None
Ceanothus confusus	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	1B.1		G1	S1	BLM_S; SB_SBBG	None	None
Ceanothus divergens	Calistoga ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2		G2	S2	SB_UCSC	None	None
Ceanothus purpureus	holly-leaved ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2		G2	S2	SB_SBBG	None	None
Ceanothus sonomensis	Sonoma ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2		G2	S2	SB_SBBG	None	None
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	1B.2	7/27/2004 0:00	G3T2	S2	BLM_S	None	None
Chlorogalum pomeridianum var. minus	dwarf soaproot	Agavaceae	perennial bulbiferous herb	1B.2		G5T3	S3	BLM_S; SB_SBBG; USFS_S	None	None
Cryptantha dissita	serpentine cryptantha	Boraginaceae	annual herb	1B.2	10/25/2011 16:07	G3	S3	BLM_S	None	None
Cryptantha excavata	deep-scarred cryptantha	Boraginaceae	annual herb	1B.1	4/24/2017 16:45	G1	S1	BLM_S	None	None
Downingia willamettensis	Cascade downingia	Campanulaceae	annual herb	2B.2	9/20/2018 0:00	G4	S2		None	None
Eriastrum brandegeeae	Brandegee's eriastrum	Polemoniaceae	annual herb	1B.1	8/23/2012 0:00	G1Q	S1	BLM_S	None	None
Erigeron greenei	Greene's narrow-leaved daisy	Asteraceae	perennial herb	1B.2		G3	S3		None	None
Eriogonum nervulosum	Snow Mountain buckwheat	Polygonaceae	perennial rhizomatous herb	1B.2		G2	S2	BLM_S; SB_CalBG/RSABG; SB_SBBG; USFS_S	None	None
Eryngium constancei	Loch Lomond button-celery	Apiaceae	annual/perennial herb	1B.1		G1	S1	SB_CalBG/RSABG	CE	FE
Eryngium jepsonii	Jepson's coyote-thistle	Apiaceae	perennial herb	1B.2	9/13/2016 11:00	G2	S2	SB_CalBG/RSABG	None	None
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2		G2	S2	BLM_S; SB_CalBG/RSABG	None	None
Fritillaria pluriflora	adobe-lily	Liliaceae	perennial bulbiferous herb	1B.2		G2G3	S2S3	BLM_S; SB_CalBG/RSABG; SB_UCBG	None	None
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	1B.2		G2	S2	BLM_S	CE	None
Grimmia torenii	Toren's grimmia	Grimmiaceae	moss	1B.3	5/14/2014 17:25	G2	S2	BLM_S	None	None
Harmonia hallii	Hall's harmonia	Asteraceae	annual herb	1B.2		G2?	S2?	BLM_S; SB_CalBG/RSABG	None	None
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Asteraceae	annual herb	1B.2	9/30/2008 13:59	G5T2	S2	SB_UCBG	None	None
Hesperolinon adenophyllum	glandular western flax	Linaceae	annual herb	1B.2		G2G3	S2S3	BLM_S	None	None
Hesperolinon bicarpellatum	two-carpellate western flax	Linaceae	annual herb	1B.2		G2	S2	BLM_S; SB_UCSC	None	None
Hesperolinon didymocarpum	Lake County western flax	Linaceae	annual herb	1B.2		G1	S1	SB_UCSC	CE	None
Hesperolinon drymarioides	drymaria-like western flax	Linaceae	annual herb	1B.2		G2	S2	BLM_S; USFS_S	None	None
Hesperolinon sharsmithiae	Sharsmith's western flax	Linaceae	annual herb	1B.2	12/14/2012 17:53	G2Q	S2	BLM_S; SB_UCSC	None	None
Horkelia bolanderi	Bolander's horkelia	Rosaceae	perennial herb	1B.2		G1	S1	BLM_S	None	None
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	2B.1	6/12/2013 16:33	G3	S3	SB_CalBG/RSABG; SB_SBBG; USFS_S	None	None
Juncus luciensis	Santa Lucia dwarf rush	Juncaceae	annual herb	1B.2	4/30/2009 0:00	G3	S3	BLM_S; USFS_S	None	None
Lasthenia burkei	Burke's goldfields	Asteraceae	annual herb	1B.1		G1	S1	SB_CalBG/RSABG; SB_UCBG	CE	FE
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	1B.2		G2	S2	BLM_S; SB_UCBG	None	None
Legenere limosa	legenere	Campanulaceae	annual herb	1B.1		G2	S2	BLM_S; SB_UCBG	None	None
Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	annual herb	1B.2		G2G3	S2S3	SB_CalBG/RSABG; SB_USDA	None	None
Limnanthes vinculans	Sebastopol meadowfoam	Limnanthaceae	annual herb	1B.1		G1	S1	SB_CalBG/RSABG; SB_UCBG	CE	FE
Lupinus sericatus	Cobb Mountain lupine	Fabaceae	perennial herb	1B.2		G2?	S2?	BLM_S; SB_UCSC	None	None
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	1B.2		G2	S2	BLM_S; SB_SBBG; SB_UCSC	None	None
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	1B.1		G4T2	S2	SB_CalBG/RSABG	None	None
Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Polemoniaceae	annual herb	1B.1		G4T1	S1	BLM_S; SB_CalBG/RSABG	CT	FE
Navarretia leucocephala ssp. plieantha	many-flowered navarretia	Polemoniaceae	annual herb	1B.2		G4T1	S1	SB_CalBG/RSABG	CE	FE
Navarretia myersii ssp. deminuta	small pincushion navarretia	Polemoniaceae	annual herb	1B.1		G2T1	S1		None	None
Navarretia paradoxinota	Porter's navarretia	Polemoniaceae	annual herb	1B.3	4/27/2016 16:54	G2	S2	BLM_S	None	None
Navarretia rosulata	Marin County navarretia	Polemoniaceae	annual herb	1B.2		G2	S2	BLM_S; SB_CalBG/RSABG	None	None
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	1B.1		G2	S2	SB_UCBG	CE	FT
Panicum acuminatum var. thermale	Geysers panicum	Poaceae	annual/perennial herb	1B.2	9/12/2012 15:37	G5T2Q	S2	SB_UCSC	CE	None
Penstemon newberryi var. sonomensis	Sonoma beardtongue	Plantaginaceae	perennial herb	1B.3		G4T3	S3	BLM_S	None	None
Plagiobothrys hystriculus	bearded popcornflower	Boraginaceae	annual herb	1B.1	6/8/2006 17:43	G2	S2		None	None
Plagiobothrys strictus	Calistoga popcornflower	Boraginaceae	annual herb	1B.1		G1	S1	SB_UCBG	CT	FE
Poa napensis	Napa blue grass	Poaceae	perennial herb	1B.1		G1	S1	SB_CalBG/RSABG	CE	FE
Potamogeton zosteriformis	eel-grass pondweed	Potamogetonaceae	annual herb (aquatic)	2B.2	6/12/2013 16:57	G5	S3		None	None
Puccinellia simplex	California alkali grass	Poaceae	annual herb	1B.2	10/15/2015 13:25	G2	S2		None	None
Sedella leiocarpa	Lake County stonecrop	Crassulaceae	annual herb	1B.1		G1	S1		CE	FE
Sidalcea hickmanii ssp. napensis	Napa checkerbloom	Malvaceae	perennial herb	1B.1	4/2/2009 0:00	G3T1	S1	SB_CalBG/RSABG	None	None
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	1B.1		G2	S2	SB_CalBG/RSABG	None	FE
Sidalcea oregana ssp. hydrophila	marsh checkerbloom	Malvaceae	perennial herb	1B.2		G5T2	S2	SB_UCSC	None	None
Sidalcea oregana ssp. valida	Kenwood Marsh checkerbloom	Malvaceae	perennial rhizomatous herb	1B.1		G5T1	S1	SB_CalBG/RSABG; SB_UCBG	CE	FE
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	Caryophyllaceae	perennial herb	1B.2	6/16/2017 16:27	G5T2	S2		None	None
Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	Brassicaceae	perennial herb	1B.2		G2T1	S1	BLM_S	None	None
Streptanthus brachiatus ssp. hoffmanii	Freed's jewelflower	Brassicaceae	perennial herb	1B.2		G2T2	S2	BLM_S	None	None
Streptanthus hesperidis	green jewelflower	Brassicaceae	annual herb	1B.2		G2G3	S2S3	BLM_S; SB_CalBG/RSABG	None	None
Streptanthus morrisonii ssp. elatus	Three Peaks jewelflower	Brassicaceae	perennial herb	1B.2		G2T1	S1	BLM_S	None	None
Streptanthus morrisonii ssp. kruckebergii	Kruckeberg's jewelflower	Brassicaceae	perennial herb	1B.2		G2T1	S1	BLM_S	None	None
Streptanthus vernalis	early jewelflower	Brassicaceae	annual herb	1B.2	2/4/2009 0:00	G1	S1	BLM_S; SB_UCBG	None	None
Stuckenia filiformis ssp. alpina	northern slender pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	2B.2	6/12/2013 17:08	G5T5	S2S3		None	None
Trichostema ruygtii	Napa bluecurls	Lamiaceae	annual herb	1B.2	6/8/2009 0:00	G1G2	S1S2	SB_CalBG/RSABG	None	None
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2		G2	S2		None	None
Viburnum ellipticum	oval-leaved viburnum	Viburnaceae	perennial deciduous shrub	2B.3	6/12/2013 17:12	G4G5	S3?		None	None

CNDDB Plants 2024 Database Results

SciName	ComName	TaxonGrou	ElmCode	TotalOccs	FedList	CalList	GRank	SRank	RPlantRan
Amorpha californica var. napensis	Napa false indigo	Dicots	PDFAB08012	123	None	None	G4T2	S2	1B.2
Amsinckia lunaris	bent-flowered fiddleneck	Dicots	PDBOR01070	93	None	None	G3	S3	1B.2
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	Dicots	PDERI04271	69	None	None	G5T3	S3	1B.3
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	Dicots	PDERI041G4	12	None	None	G3T1	S1	1B.1
Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	Dicots	PDERI041G2	13	None	None	G3T2	S2	1B.1
Astragalus claranus	Clara Hunt's milk-vetch	Dicots	PDFAB0F240	6	Endangered	Endangere	G1	S1	1B.1
Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	Dicots	PDFAB0F7E1	53	None	None	G4T3	S3	1B.2
Balsamorhiza macrolepis	big-scale balsamroot	Dicots	PDAST11061	51	None	None	G2	S2	1B.2
Brasenia schreberi	watershield	Dicots	PDCAB01010	43	None	None	G5	S3	2B.3
Brodiaea leptandra	narrow-anthered brodiaea	Monocots	PMLIL0C022	39	None	None	G3?	S3?	1B.2
Carex praticola	northern meadow sedge	Monocots	PMCYP03B20	14	None	None	G5	S2	2B.2
Castilleja rubicundula var. rubicundula	pink creamsacs	Dicots	PDSCR0D482	42	None	None	G5T2	S2	1B.2
Ceanothus confusus	Rincon Ridge ceanothus	Dicots	PDRHA04220	33	None	None	G1	S1	1B.1
Ceanothus divergens	Calistoga ceanothus	Dicots	PDRHA04240	26	None	None	G2	S2	1B.2
Ceanothus purpureus	holly-leaved ceanothus	Dicots	PDRHA04160	43	None	None	G2	S2	1B.2
Ceanothus sonomensis	Sonoma ceanothus	Dicots	PDRHA04420	30	None	None	G2	S2	1B.2
Centromadia parryi ssp. parryi	pappose tarplant	Dicots	PDAST4R0P2	39	None	None	G3T2	S2	1B.2
Chlorogalum pomeridianum var. minus	dwarf soaproot	Monocots	PMLIL0G042	31	None	None	G5T3	S3	1B.2
Cryptantha dissita	serpentine cryptantha	Dicots	PDBOR0A0H2	23	None	None	G3	S3	1B.2
Cryptantha excavata	deep-scarred cryptantha	Dicots	PDBOR0A0W0	5	None	None	G1	S1	1B.1
Downingia willamettensis	Cascade downingia	Dicots	PDCAM060E0	8	None	None	G4	S2	2B.2
Eriastrum brandegeeae	Brandegee's eriastrum	Dicots	PDPLM030H0	6	None	None	G1Q	S1	1B.1
Erigeron greenei	Greene's narrow-leaved daisy	Dicots	PDAST3M5G0	20	None	None	G3	S3	1B.2
Eriogonum nervulosum	Snow Mountain buckwheat	Dicots	PDPGN08440	9	None	None	G2	S2	1B.2
Eryngium constancei	Loch Lomond button-celery	Dicots	PDAPI0Z0W0	4	Endangered	Endangere	G1	S1	1B.1
Eryngium jepsonii	Jepson's coyote-thistle	Dicots	PDAPI0Z130	19	None	None	G2	S2	1B.2
Extriplex joaquinana	San Joaquin spearscale	Dicots	PDCHE041F3	127	None	None	G2	S2	1B.2
Fritillaria pluriflora	adobe-lily	Monocots	PMLIL0V0F0	114	None	None	G2G3	S2S3	1B.2
Gratiola heterosepala	Boggs Lake hedge-hyssop	Dicots	PDSCR0R060	99	None	Endangere	G2	S2	1B.2
Grimmia torenii	Toren's grimmia	Bryophytes	NBMUS32330	13	None	None	G2	S2	1B.3
Harmonia hallii	Hall's harmonia	Dicots	PDAST650A0	23	None	None	G2?	S2?	1B.2
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Dicots	PDAST4R0W1	52	None	None	G5T2	S2	1B.2
Hesperolinon adenophyllum	glandular western flax	Dicots	PDLIN01010	48	None	None	G2G3	S2S3	1B.2
Hesperolinon bicarpellatum	two-carpellate western flax	Dicots	PDLIN01020	25	None	None	G2	S2	1B.2
Hesperolinon didymocarpum	Lake County western flax	Dicots	PDLIN01070	6	None	Endangere	G1	S1	1B.2
Hesperolinon drymarioides	drymaria-like western flax	Dicots	PDLIN01090	24	None	None	G2	S2	1B.2
Hesperolinon sharsmithiae	Sharsmith's western flax	Dicots	PDLIN010E0	32	None	None	G2Q	S2	1B.2
Horkelia bolanderi	Bolander's horkelia	Dicots	PDROS0W011	13	None	None	G1	S1	1B.2
Imperata brevifolia	California satintail	Monocots	PMPOA3D020	32	None	None	G3	S3	2B.1
Juncus luciensis	Santa Lucia dwarf rush	Monocots	PMJUN013J0	37	None	None	G3	S3	1B.2
Lasthenia burkei	Burke's goldfields	Dicots	PDAST5L010	36	Endangered	Endangere	G1	S1	1B.1
Layia septentrionalis	Colusa layia	Dicots	PDAST5N0F0	69	None	None	G2	S2	1B.2
Legenere limosa	legenere	Dicots	PDCAM0C010	83	None	None	G2	S2	1B.1
Leptosiphon jepsonii	Jepson's leptosiphon	Dicots	PDPLM09140	51	None	None	G2G3	S2S3	1B.2
Limnanthes vinculans	Sebastopol meadowfoam	Dicots	PDLIM02090	46	Endangered	Endangere	G1	S1	1B.1
Lupinus sericatus	Cobb Mountain lupine	Dicots	PDFAB2B3J0	46	None	None	G2?	S2?	1B.2
Microseris paludosa	marsh microseris	Dicots	PDAST6E0D0	38	None	None	G2	S2	1B.2
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Dicots	PDPLM0C0E1	64	None	None	G4T2	S2	1B.1
Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Dicots	PDPLM0C0E4	10	Endangered	Threatene	G4T1	S1	1B.1
Navarretia leucocephala ssp. plieantha	many-flowered navarretia	Dicots	PDPLM0C0E5	8	Endangered	Endangere	G4T1	S1	1B.2
Navarretia myersii ssp. deminuta	small pincushion navarretia	Dicots	PDPLM0C0X2	1	None	None	G2T1	S1	1B.1
Navarretia paradoxinota	Porter's navarretia	Dicots	PDPLM0C160	9	None	None	G2	S2	1B.3
Navarretia rosulata	Marin County navarretia	Dicots	PDPLM0C0Z0	15	None	None	G2	S2	1B.2
Orcuttia tenuis	slender Orcutt grass	Monocots	PMPOA4G050	100	Threatened	Endangere	G2	S2	1B.1
Panicum acuminatum var. thermale	Geysers panicum	Monocots	PMPOA24028	11	None	Endangere	G5T2Q	S2	1B.2
Penstemon newberryi var. sonomensis	Sonoma beardtongue	Dicots	PDSCR1L483	15	None	None	G4T3	S3	1B.3
Plagiobothrys hystriculus	bearded popcornflower	Dicots	PDBOR0V0H0	15	None	None	G2	S2	1B.1
Plagiobothrys strictus	Calistoga popcornflower	Dicots	PDBOR0V120	3	Endangered	Threatene	G1	S1	1B.1
Poa napensis	Napa blue grass	Monocots	PMPOA4Z1R0	2	Endangered	Endangere	G1	S1	1B.1
Potamogeton zosteriformis	eel-grass pondweed	Monocots	PMPOT03160	20	None	None	G5	S3	2B.2
Puccinellia simplex	California alkali grass	Monocots	PMPOA53110	80	None	None	G2	S2	1B.2
Sedella leiocarpa	Lake County stonecrop	Dicots	PDCRA0F020	5	Endangered	Endangere	G1	S1	1B.1
Sidalcea hickmanii ssp. napensis	Napa checkerbloom	Dicots	PDMAL110A6	2	None	None	G3T1	S1	1B.1
Sidalcea keckii	Keck's checkerbloom	Dicots	PDMAL110D0	50	Endangered	None	G2	S2	1B.1
Sidalcea oregana ssp. hydrophila	marsh checkerbloom	Dicots	PDMAL110K2	35	None	None	G5T2	S2	1B.2
Sidalcea oregana ssp. valida	Kenwood Marsh checkerbloom	Dicots	PDMAL110K5	2	Endangered	Endangere	G5T1	S1	1B.1
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	Dicots	PDCAR0W062	22	None	None	G5T2	S2	1B.2
Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	Dicots	PDBRA2G072	10	None	None	G2T1	S1	1B.2
Streptanthus brachiatus ssp. hoffmanii	Freed's jewelflower	Dicots	PDBRA2G071	13	None	None	G2T2	S2	1B.2
Streptanthus hesperidis	green jewelflower	Dicots	PDBRA2G510	35	None	None	G2G3	S2S3	1B.2
Streptanthus morrisonii ssp. elatus	Three Peaks jewelflower	Dicots	PDBRA2G0S1	7	None	None	G2T1	S1	1B.2
Streptanthus morrisonii ssp. kruckebergii	Kruckeberg's jewelflower	Dicots	PDBRA2G0S4	5	None	None	G2T1	S1	1B.2

Streptanthus vernalis	early jewelflower	Dicots	PDBRA2G120	1	None	None	G1	S1	1B.2
Stuckenia filiformis ssp. alpina	northern slender pondweed	Monocots	PMPOT03091	21	None	None	G5T5	S2S3	2B.2
Trichostema ruygtii	Napa bluecurls	Dicots	PDLAM220H0	19	None	None	G1G2	S2	1B.2
Trifolium hydrophilum	saline clover	Dicots	PDFAB400R5	56	None	None	G2	S2	1B.2
Viburnum ellipticum	oval-leaved viburnum	Dicots	PDCPR07080	39	None	None	G4G5	S3?	2B.3

SciName	ComName	TaxonGroup	ElmCode	TotalOccs	FedList	CalList	GRank	SRank	OthrStatus
Accipiter striatus	sharp-shinned hawk	Birds	ABNKC12020	22	None	None	G5	S4	CDFW_WL-Watch List | IUCN_LC-Least Concern
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	960	None	Threatened	G1G2	S2	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_EN-Endangered | USFWS_BCC-Birds of Conservation Concern
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	None	None	G4	S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive
Aquila chrysaetos	golden eagle	Birds	ABNKC22010	332	None	None	G5	S3	BLM_S-Sensitive | CDF_S-Sensitive | CDFW_FP-Fully Protected | CDFW_WL-Watch List | IUCN_LC-Least Concern
Archoplites interruptus	Sacramento perch	Fish	AFCQB07010	5	None	None	G1	S1	AFS_TH-Threatened | CDFW_SSC-Species of Special Concern | IUCN_EN-Endangered
Athene cunicularia	burrowing owl	Birds	ABNSB10010	2017	None	None	G4	S2	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern
Bombus caliginosus	obscure bumble bee	Insects	IIHYM24380	181	None	None	G2G3	S1S2	IUCN_VU-Vulnerable
Bombus occidentalis	western bumble bee	Insects	IIHYM24252	306	None	Candidate Endangered	G3	S1	IUCN_VU-Vulnerable | USFS_S-Sensitive
Bombus pensylvanicus	American bumble bee	Insects	IIHYM24260	320	None	None	G3G4	S2	IUCN_VU-Vulnerable
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	ABNRB02022	165	Threatened	Endangered	G5T2T3	S1	BLM_S-Sensitive | USFS_S-Sensitive
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	None	None	G4	S2	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	Threatened	None	G3T3	S3	
Dicamptodon ensatus	California giant salamander	Amphibians	AAAAH01020	234	None	None	G2G3	S2S3	CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened
Dubiraphia brunnescens	brownish dubiraphian riffle beetle	Insects	IICOL5A010	1	None	None	G1	S1	
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1559	Proposed Threatened	None	G3G4	S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable | USFS_S-Sensitive
Erethizon dorsatum	North American porcupine	Mammals	AMAFJ01010	523	None	None	G5	S3	IUCN_LC-Least Concern
Falco mexicanus	prairie falcon	Birds	ABNKD06090	451	None	None	G5	S4	CDFW_WL-Watch List | IUCN_LC-Least Concern
Falco peregrinus anatum	American peregrine falcon	Birds	ABNKD06071	75	Delisted	Delisted	G4T4	S3S4	CDF_S-Sensitive
Gonidea angulata	western ridged mussel	Mollusks	IMBIV19010	158	None	None	G3	S2	IUCN_VU-Vulnerable
Haliaeetus leucocephalus	bald eagle	Birds	ABNKC10010	333	Delisted	Endangered	G5	S3	BLM_S-Sensitive | CDF_S-Sensitive | CDFW_FP-Fully Protected | IUCN_LC-Least Concern | USFS_S-Sensitive
Hedychridium milleri	Borax Lake cuckoo wasp	Insects	IIHYM68020	1	None	None	G1	S1	
Hesperoleucus venustus navarroensis	northern coastal roach	Fish	AFCJB19031	4	None	None	GNRT3	S3	CDFW_SSC-Species of Special Concern
Hydrochara rickseckeri	Ricksecker's water scavenger beetle	Insects	IICOL5V010	13	None	None	G2?	S2?	
Hysterocarpus traskii lagunae	Clear Lake tule perch	Fish	AFCQK02013	3	None	None	G5T3	S3	CDFW_SSC-Species of Special Concern
Hysterocarpus traskii pomo	Russian River tule perch	Fish	AFCQK02011	4	None	None	G5T4	S4	AFS_VU-Vulnerable | CDFW_SSC-Species of Special Concern
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	139	None	None	G3G4	S3S4	IUCN_LC-Least Concern
Lasiurus cinereus	hoary bat	Mammals	AMACC05032	238	None	None	G3G4	S4	IUCN_LC-Least Concern
Lasiurus frantzii	western red bat	Mammals	AMACC05080	128	None	None	G4	S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern
Lavinia exilicauda chi	Clear Lake hitch	Fish	AFCJB19011	4	None	Threatened	G4T1	S1	AFS_VU-Vulnerable | USFS_S-Sensitive
Lytta molesta	molestan blister beetle	Insects	IICOL4C030	17	None	None	G2	S2	
Myotis evotis	long-eared myotis	Mammals	AMACC01070	139	None	None	G5	S3	BLM_S-Sensitive | IUCN_LC-Least Concern
Myotis thysanodes	fringed myotis	Mammals	AMACC01090	86	None	None	G4	S3	BLM_S-Sensitive | IUCN_LC-Least Concern | USFS_S-Sensitive
Myotis yumanensis	Yuma myotis	Mammals	AMACC01020	265	None	None	G5	S4	BLM_S-Sensitive | IUCN_LC-Least Concern
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	Fish	AFCHA02034	23	Endangered	Endangered	G5T2Q	S2	AFS_EN-Endangered
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Fish	AFCHA0209G	44	Threatened	None	G5T3Q	S3	AFS_TH-Threatened
Pandion haliaetus	osprey	Birds	ABNKC01010	504	None	None	G5	S4	CDF_S-Sensitive | CDFW_WL-Watch List | IUCN_LC-Least Concern
Pekania pennanti	Fisher	Mammals	AMAJF01020	555	None	None	G5	S2S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive
Progne subis	purple martin	Birds	ABPAU01010	71	None	None	G5	S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern
Pyrgulopsis ventricosa	Clear Lake pyrg	Mollusks	IMGASJ0F40	2	None	None	G1	S1	IUCN_CR-Critically Endangered
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	Amphibians	AAABH01051	1608	None	None	G3T4	S4	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | USFS_S-Sensitive
Rana draytonii	California red-legged frog	Amphibians	AAABH01022	1764	Threatened	None	G2G3	S2S3	CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable
Saldula usingeri	Wilbur Springs shorebug	Insects	IIHEM07010	4	None	None	G2	S2	
Stygobromus cherylae	Barr's amphipod	Crustaceans	ICMAL05D60	1	None	None	G1	S1	
Syncaris pacifica	California freshwater shrimp	Crustaceans	ICMAL27010	20	Endangered	Endangered	G2	S2	IUCN_EN-Endangered
Taricha rivularis	red-bellied newt	Amphibians	AAAAF02020	136	None	None	G2	S2	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern
Taxidea taxus	American badger	Mammals	AMAJF04010	645	None	None	G5	S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern
Trachykele hartmani	serpentine cypress wood-boring beetle	Insects	IICOLX6010	3	None	None	G1	S1	
Vandykea tuberculata	serpentine cypress long-horned beetle	Insects	IICOLX7010	2	None	None	G1	S2	

Appendix J

Updated Oak Mitigation Plan

OAK MITIGATION PLAN

Guenoc Valley Mixed Use Planned Development Project



March 2024

acorn environmental

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Attachment A MAHA Guenoc Valley Oak Preservation Plan

Preface

This Oak Mitigation Plan (Plan) was originally prepared by Analytical Environmental Services, dated June of 2020. The Plan was originally attached as Appendix OAK in Volume III of the Final Environmental Impact Report (Final EIR) for the Guenoc Valley Mixed Use Planed Development Project (Proposed Project). As a result of project litigation, on February 25, 2022 the Lake County Superior Court entered judgment requiring the County set aside its certification of the Final EIR and the Oak Mitigation Plan was never formally adopted. Subsequently, the project Applicant voluntarily entered into a Settlement Agreement that included several project modifications that would change the precise location of project impacts.

A Partially Revised Environmental Impact Report (PREIR) has been prepared to assess the Project Modifications. Therefore, this report is being prepared by Acorn Environmental in order to capture project updates and to provide an updated inventory of oak impact and mitigation acreages. Acorn Environmental is updating this Plan only to reflect modifications to the Proposed Project, and is not making technical updates to the methodology, success criteria, or other mitigation strategy aspects. Updates to this Plan are presented in underline/~~strikeout~~.

Section 1 | Introduction

The Guenoc Valley District (GVD) is a proposed rezoning and planned development project located in southern Lake County within an approximately 16,000-acre boundary (Guenoc Valley Site), (**Figure 1** ~~and **Figure 2**~~). The first phase of planned development includes luxury resorts and a master-planned residential community to be sited in clusters (Phase 1). The GVD incorporates low impact designs that prioritize large residential parcels with low density and clustered development, preserving surrounding open space and agricultural cultivation. The plan to develop a portion of the GVD will be accompanied by this Oak Mitigation Plan.

This Oak Mitigation Plan (Plan) addresses development for both Phase 1, which is under project-level environmental review, as well development of future phases, which are under programmatic-level review in the same EIR (Proposed Project). This Plan addresses the impacts to oaks resulting from the Proposed Project as analyzed in the EIR and modified in the PREIR, defines specific impacts in the Phase One development, and outlines a system of impact identification and mitigation that can be applied consistently to all phases of development. Therefore, mitigation measures applied in Phase One as they relate to oaks will also apply to future phases.

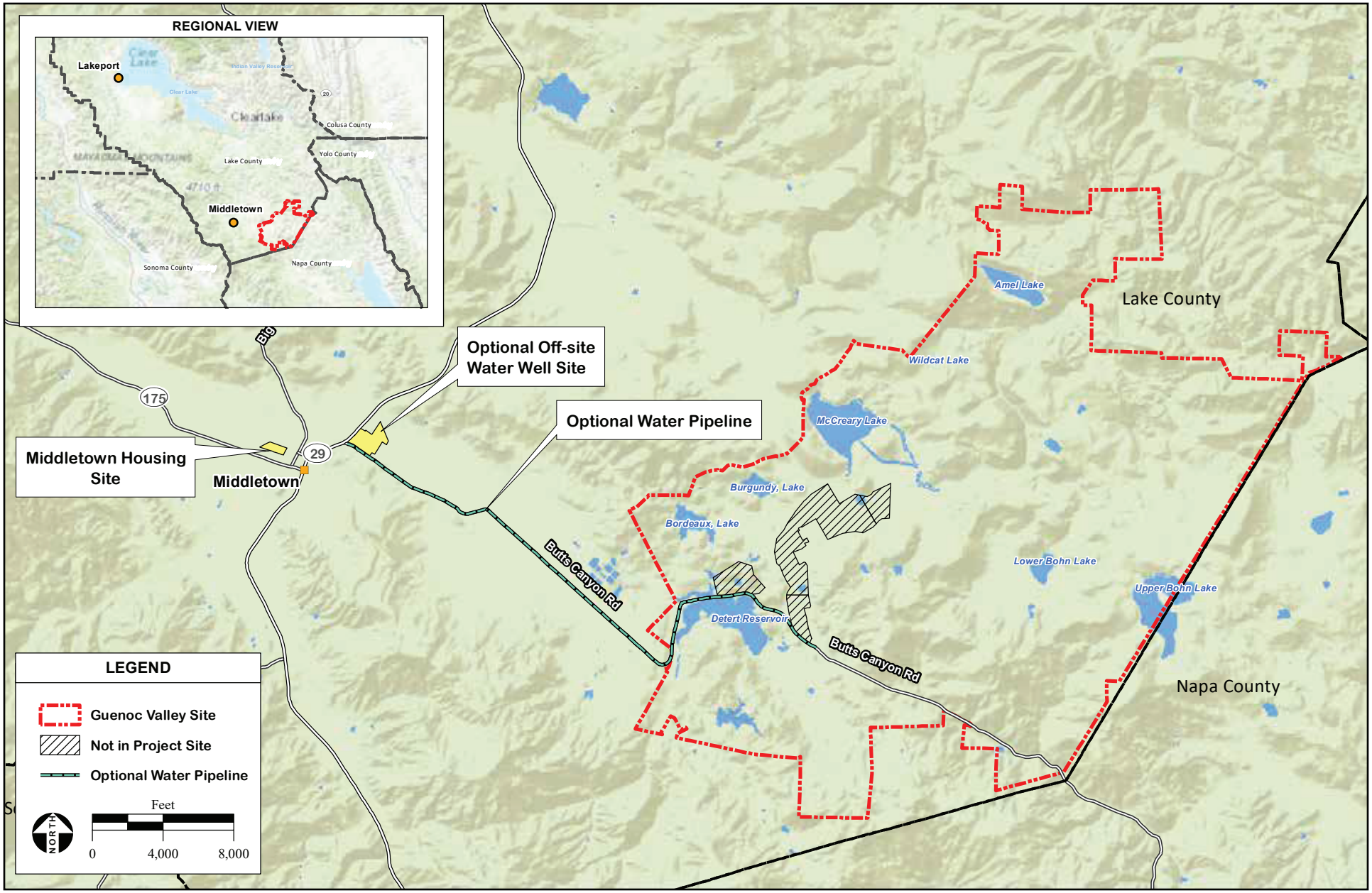
A portion of the Guenoc Valley Ranch was evaluated for environmental impacts related to planned water diversion and use of surface water for land conversion to vineyard. The appropriation and use of water and conversion of land to vineyard was approved by the State Water Board based on an EIR completed in March of 2009 (AES, 2009; FEIR). Development of these approved acreages is still in progress. An Oak Tree Replacement Plan was completed in September of 2008 to mitigate for impacts to oaks within the Places of Use (POUs), where surface water was approved for use, identified in the 2009 FEIR (AES, 2008). The previous Oak Mitigation Plan continues to apply to the development of vineyards and use of water approved under the 2009 EIR.

1.1 PROJECT LOCATION

The Guenoc Valley Site is located approximately three miles east of the town of Middletown and is accessible via Butts Canyon Road (**Figure 1** ~~and **Figure 2**~~). Long Valley and Coyote Valley occur to the west of the Ranch, and the Cedars Mountains occur to the north. Terrain varies from areas of level valley to areas of steep, rocky terrain. Several vegetative communities exist within the Ranch including; agriculture, annual grassland, oak woodland, pine-oak woodland, cypress forest, mixed conifer forest, and chaparral. Aquatic habitats include ephemeral drainages, perennial streams, seasonal wetlands, groundwater seeps, freshwater marsh, and manmade ponds and reservoirs. Climate of the area consists of hot dry summers and cool, moist winters. Annual precipitation averages approximately 44.1 inches, with zero to insignificant snowfall (WRCC, 2016).

1.2 EXISTING USES

The current land uses within the Guenoc Valley Site are a mixture of agriculture, recreation, and open space. These land uses utilize existing water rights, which allow for irrigated pastures, dry land grazing and open space, vineyards, golf courses, and water bodies (reservoirs). The main reservoirs on the Guenoc Valley Site and connected reservoirs provide approximately 10,390 acre feet of water storage. The agricultural activities include cattle and sheep grazing and vineyards.



Source: WRA Environmental, 8/2019; Lotusland Investment Holdings, Inc. 7/2019; USGS, 2019; AES, 2/12/2020

FIGURE 1

REGIONAL LOCATION

The Guenoc Valley Site is currently farmed with 1,266 ~~990~~ acres of vineyards, and an additional 694 ~~970~~ acres of vineyard is anticipated and allowed pursuant to previous entitlements. The entitlement for water appropriation for use in vineyard irrigation, and the cultivation of land to vineyard was authorized by the Division of Water Rights following the Guenoc Ranch Water Rights Final EIR (AES, 2009). No additional vineyard area is proposed with the GVD or Phase 1, and approximately 1,700 acres of previously-approved vineyard will be placed under an Agricultural Preserve Combing Zoning district. Impacts to oaks resulting from the planting of the existing and expanded vineyards were mitigated for through provisions in the 2009 Water Rights FEIR (AES, 2009).

1.3 PROJECT DESCRIPTION

Development plans for Phase 1 are comprised of multiple resort communities including residential parcels, boutique hotels, an equestrian center, golf course, and other recreational attractions and associated roadways and supporting facilities. The Phase 1 would result in the development of the following: ~~six resort communities described in the Specific Plan of Development (SPOD; MAHA, 2019):~~

1. Equestrian Center Community - This community includes a clubhouse, stables, paddocks, manmade lake, and several riding arenas and polo fields. Residential parcels will also be located within this community.
2. Maha Farm Community - This community is designed around the existing agricultural history of the Ranch by establishing residential parcels with potential for vineyard or other agricultural development. Maha Farms also includes sales centers, a hotel, wineries, barns, and other supporting infrastructure.
3. Dennison Golf Estates ~~Red Hills Estates~~ Community - This community includes ~~the Red Hill~~ a hotel, residential parcels, and an 18-hole golf course with clubhouse.
4. Bohn Ridge Resort Community - This community consists of the Bohn Ridge hotel and surrounding residential parcels.
5. Grange Road Connector: The Grange Road Connector is an emergency-only use roadway that provides emergency ingress and egress to the Guenoc Valley Site. A portion of the Grange Road Connector falls within the Guenoc Valley Site while the balance connects to Grange Road via a portion of land adjacent to but outside of the Guenoc Valley Site.
6. ~~Spa Community - This community consists of a few residential parcels, a walking path, and the main spa building.~~
7. ~~Resort at Trout Flat Community - This community includes residential parcels, resort cottages, and a hotel.~~
8. ~~Camping Area: This area includes semi-permanent tent structures to provide short-term guests with high-end "glamping" recreational opportunities that are set back from the larger resort communities.~~

These communities plus supporting infrastructure and workforce housing are included within the Proposed Project. Phase 1 of the Proposed Project will result in multiple hotels, resort residential units near hotels, residential estate villa units, short term staff hotel rooms, ~~campsites,~~ and workforce housing units (i.e. bedrooms). Future phases and the approval of the GVD anticipates ~~up~~ additional hotel units, resort residential units, residential estate units, and additional supporting workforce housing units/bedrooms. A map outlining the different resort communities shown with identified oak habitat impacts is presented in **Attachment A**. Future phases of development are anticipated to include additional hotel units, resort residential units, residential estate units, and supporting workforce housing units. All phases and all aspects of development will occur entirely within Lake County.

Section 2 | Impacts to Oaks

Oak woodland habitat is a unique component of California's natural heritage. Oak trees serve several important ecological functions including temperature moderation, reduction of soil erosion, facilitation of nutrient cycling, and maintenance of water quality. Oak woodlands also have inherent aesthetic value, are a characteristic feature of the state, and have cultural significance to Native Americans. In addition, oak woodlands provide essential habitat and/or food for many wildlife species including insects, invertebrates, amphibians, reptiles, birds, and mammals.

2.1 IMPACT MINIMIZATION MEASURES

Minimization measures are included as part of the project design where possible in order to minimize oak impacts. Minimization measures include maximum avoidance of oak woodland and individual oaks, maximum avoidance of sensitive habitat that supports oaks and oak dispersal, and incorporation of oaks into landscape design.

Following the sale of a residential lot, a development plan for that lot will follow the general outline described below:

- Residential lots larger than two acres that are entirely within oak woodland habitat will be restricted to a one-acre maximum buildable area. This buildable area is designed to provide footprint size and location guidance to avoid impacts to oaks within residential lots.
- For residential lots in which a significant impact to canopy cover is unavoidable, the impact will be analyzed for the grading, driveways, and building areas, not to exceed 1.5 acres. Mitigation for this type of impact will occur through recordation of same-species oak woodland in long term preservation prior to the issuance of building or grading permits.
- For impacts in which cover is sparse, or significant woodland impacts can be avoided, an exact tree removal and size inventory will be required prior to a building or grading permit. The mitigation will include transplanting, compensatory planting, and/or enhancement as described below.
- These methods will be applied to residential lots developed as a result of either Phase 1 or future phases of development.

In addition to the general impact minimization measures, development of commercial lots has followed the general outline below:

- The footprint of development was reduced to only that area required for the function and design of a commercial lot.
- Placement of structures maximized avoidance oak woodlands.
- Individual oaks will be preserved or transplanted through intentional landscaping or design.
- For commercial lots in which a significant impact to canopy cover is anticipated, the impact will be analyzed for as the greatest maximum potential impact and mitigated through oak woodland preservation prior to impacts.
- For impacts in which cover is sparse, or significant woodland impacts can be avoided, an exact tree count and size inventory will be required followed by mitigation through transplanting, compensatory planting, and/or enhancement as described below.

2.2 OAK IMPACTS BY HABITAT TYPE

Approximately 5,640.7 ~~5,691.8~~ acres of the Guenoc Valley Site plus the Grange Road Connector have been identified as oak woodland. A total of 1,215.2 ~~1,238.7~~ acres of oak woodland is defined as oak savanna for the purposes of this report. Oak savanna is a sub-type of oak woodland consisting of an oak canopy cover of 10 to 60 percent and was generally observed with less than 2/3 of canopies touching (WRA, 2020a; WRA 2020b; WRA, 2024). **Table 1** provides a summary breakdown of oak habitats impacted by Phase 1.

Infrastructure impacts were calculated based on linear impact features such as roadways along with a thirty-foot grading buffer on each side, with the exception of the Grange Road Connector, which may have a more narrow footprint. Acreages were calculated for illustrative purposes to show the scale of potential impacts. Because of the ability to design around specific oak trees, roadway impacts will be addressed on a tree-by-tree basis and will likely be much lower that presented in **Table 1**. Maximum potential impacts for residential lots are based on the 1.5-acre allowable development area set by the GVD for a given parcel and a 1.0-acre lot development restriction on a parcel that lies entirely within oak woodland habitat, which will be recorded with the parcel's final map. Maximum potential impacts for commercial lots are based on the maximum development footprint as proposed in the Specific Plan of Development (SPOD) for the intended use of the lot positioned to minimize potential impacts to oaks and includes the building footprint as well as the grading extent area.

Vegetative cover in oak savanna habitat is typically dominated by non-native annual grasses with interspersed individual oaks. Oak savanna impacts described in **Table 1** are based on the total acreage of oak savanna rather than representative acreage based on percent cover of oaks. Similar to roadway impacts, because of the low density of trees and the ability to avoid them, oak savanna impacts may be measured on a tree-by-tree basis for the purpose of mitigation.

Table 1: Oak Habitat and Potential Phase I Impacts

Habitat Type	Acres on Guenoc Valley Site plus Grange Road Connector*	Maximum Roadway Impacts	Maximum Residential Impacts	Maximum Commercial Impacts	Maximum Potential Impacts
Interior Live Oak Woodland	749.7 ~~756.5~~	18.0 ~~19.0~~	32.0 ~~31.0~~	26.0 ~~22.0~~	76.0 ~~72.0~~
Valley Oak Woodland	48.7 ~~49.3~~	1.0	0.0	1.0	2.0
Blue Oak Woodland	3,454.5 ~~3,472.4~~	73.0 ~~91.0~~	92.0 ~~97.0~~	61.0 ~~69.0~~	226.0 ~~257.0~~
Mixed Oak Woodland	172.6 ~~174.9~~	0.0	0.0	0.0	0.0
Blue Oak Savanna	1,215.2 ~~1,238.7~~	45.0 ~~50.0~~	57.0 ~~52.0~~	39.0 ~~44.0~~	141.0 ~~146.0~~
Total	**5,640.7 ~~5,691.8~~**	**137.0 ~~161.0~~**	**181.0 ~~180.0~~**	**127.0 ~~136.0~~**	**445.0 ~~477.0~~**

Source: WRA, 2020a; WRA 2020b; WRA, 2024b; **Attachment A**

*For the purposes of this report, acreages calculated as Guenoc Valley Site plus Grange Road Connector include the Guenoc Valley Site plus the portion of the Grange Road Connector outside of the Guenoc Valley Site in order to prevent double-counting of acreages.

2.2.1 Oak Woodland

The project site (which includes the Guenoc Valley Site plus the Grange Road Connector for purposes of this report) contains interior live oak woodland, valley oak woodland, blue oak woodland, and mixed oak woodland. This habitat type was identified in several ~~a~~ Biological Resource Analysis reports performed by WRA Inc. (BRA; WRA, ~~2019~~ 2020a, 2020b, and 2024). Oak habitat identified was overlaid on a georeferenced map of the Phase One development in order to determine potential impacts. Identification of oak woodland impacts from future development phases will be performed in a similar fashion. A maximum of approximately 212 ~~220~~ acres (**Table 1**) of oak woodland habitat has the potential to be impacted by residential and commercial development. Potential impacts from future development will be assessed in a similar fashion. Roadway impacts of approximately 92 ~~111~~ acres of oak woodland along 11 ~~7.5~~ miles of roadway will be defined through tree counts as specified in detail in **Section 3.0** as impacts to individual oaks may be avoided.

2.2.2 Blue Oak Savanna

The project site includes 1,215 acres of blue oak savanna where oak trees occur, but in lower density than in oak woodlands described above. This habitat type was identified by areas of lower-density oak presence interspersed within a grasslands-type setting that was verified through aerial imagery, biological surveys, and GIS mapping overlaid with the development footprint. Specifically, an oak savanna is identified as a subset of oak woodland with 10 to 60 percent total canopy cover and generally has less than 2/3 of the canopies touching (WRA, 2020a; WRA, 2020b; WRA, 2024). Identification of oak savanna impacts from future development phases will be performed in a similar fashion. The Proposed Project has the potential to impact up to 96 acres of oak savanna within commercial and residential development as well as approximately 50 acres of oak savanna along 11 ~~4.5~~ miles of roadway. However, the majority of this habitat type is dominated by herbaceous cover and the impacts to individual oaks may be avoided. Therefore, impacts to oak savanna may be defined through tree counts or through acreage impacted as specified in **Section 3.0**.

2.2.3 Mixed Oak Woodland

The project site includes approximately 173 ~~175~~ acres of mixed oak woodland. Mixed oak woodland is comprised of multiple co-dominate oak species and, in some cases, non-oak species. This habitat type was identified by areas with mixed oak species interspersed within a larger canopy co-dominated by other tree species. Mixed oak habitat mapping was verified through aerial imagery, biological surveys, and GIS mapping overlaid with the development footprint. There are no anticipated impacts to mixed oak woodland during Phase 1 of construction. Potential impacts from future development will be assessed in a similar fashion. Depending on the canopy cover of sensitive oaks within mixed oak woodlands, potential impacts may be measured based on acreage or on a tree-by-tree basis.

2.2.4 Oaks Occurring Outside of Mapped Oak Habitat

Because of the continuous nature of habitat types on the Ranch, it is likely that the Proposed Project will result in impacts to individual oak trees present within habitat types for which they are not a dominant species. Individual oaks, specifically blue oaks, have occasionally been observed on the project site within other habitat types such as foothill pine woodland. While an acreage cannot be assigned to oaks potentially occurring throughout the project site, these impacts are to be mitigated for on a tree-by-tree basis as defined in **Section 3.0**.

Section 3 | Proposed Oak Mitigation Plan

3.1 MITIGATION GOALS AND OBJECTIVES

Oak habitat on site will be avoided to the maximum extent possible to preserve the aesthetic, ecological, and cultural benefits provided by oaks. Acreages calculated in **Table 1** are based on the reduced impacts as a result of avoidance measures outlined in **Section 2.1**.

The goal of this Plan is to replace the function and value of impacted oak habitat as a result of the Proposed Project. The impacts from the Proposed Project will be fully mitigated in compliance with the 2009 Water Rights EIR, 2008 Oak Tree Replacement Plan, and Lake County General Plan. Success metrics will be utilized to meet mitigation criteria and ensure long-term success of the oak mitigation. Proposed mitigation is comprised of protecting existing oak woodlands as possible and creating or enhancing habitat in suitable locations. These mitigation methods are described in detail below.

3.2 OAK MITIGATION RECCOMENDATIONS BY IMPACT TYPE

As described in **Section 2.1**, the Proposed Project has the potential to impact oak woodland, oak savanna, and individual oak trees. Impacts to these habitat types can be further described by the level of impact. Therefore, mitigation is best determined through an analysis of the habitat types and the level of impact. **Table 2** provides a mitigation matrix summary following the methods described below.

3.2.1 Impacts to Oak Woodland with Significant Loss of Canopy Cover

While impact minimization measures have been incorporated as part of the Proposed Project (**Section 2.1**), the Proposed Project has the potential to impact oak woodland such that a significant loss of canopy cover may occur. In this circumstance, suitable mitigation will occur through preservation of in-kind habitat at a ratio of 3 acres preserved to 1 acre of impacts to valley oak woodland, and 2 acres preserved to 1 acre of impacts for all other oak woodland types. These methods apply to residential and commercial lot development for which a qualified biologist has determined that a significant loss of cover has occurred. This method of mitigation is suitable for Phase One and future phases of development. A qualified biologist will work with the Applicant in cases of impacts to oak savanna to determine if mitigation will occur though acreage preservation or a tree-by-tree count and replanting.

3.2.2 Impacts to Oak Woodland without Significant Loss of Canopy Cover

Due to impact minimization measures presented in **Section 2.1**, the Proposed Project will likely have impacts on individual oak trees within oak woodland habitat such that the overall character and quality of the habitat is not significantly impacted. Consistent with the Biological Resources Assessment of the Guenoc Valley Site, impacts that result in a reduction in woodland canopy cover to 60 percent or less and less than 2/3 of the canopies touching would be considered conversion of habitat from oak woodland to oak savanna. In circumstances where removal of trees does not convert oak woodland to oak savanna, the following mitigation is recommended:

- For oaks removed with a diameter at breast height (dbh) between 3 inches and 15 inches, full transplant or replanting at a 2:1 ratio as detailed in **Section 4.0**.
- For oaks removed with a diameter at breast height of 15 inches or greater, transplantation or replanting at a 5:1 ratio as detailed in **Section 4.0**.
- For oaks that are transplanted, they will be monitored for the success of transplanting as described under **Section 5.0** and replaced via replanting ratios described above should the transplanting fail.
- Locations of removed oaks will be documented such that oaks removed within a POU will result in compensatory plantings within POU consistent with the 2009 Water Rights EIR. The Phase I of the GVD proposes approximately 32 acres of potential impact to oaks within the POU, which will be mitigated in accordance with the 2009 Water Rights EIR requirement for like compensation within POU. In addition to this existing requirement, the 32 acres will also comply with this Oak Mitigation Plan as summarized in **Table 2** below.

These methods apply to oaks impacted by infrastructure and fire-protection vegetation management. These methods also apply to residential and commercial lot development for which a qualified biologist has determined that a significant loss of cover has not occurred. This method of mitigation is suitable for Phase 1 and future phases of development.

Table 2: Summary Matrix of Recommended Oak Mitigation

Habitat Type	Habitat Impact Type	Mitigation Recommended
Interior Live Oak Woodland	Significant loss of oak canopy cover	Preservation of interior live oak woodland at a 2:1 ratio
	No significant loss of canopy cover	Exact tree count followed by replanting interior live oak at the following ratios: ▪ 2:1 for dbh 3”-15” ▪ 5:1 for dbh > 15” Transplanted trees that fail are subject to these replanting ratios.
Valley Oak Woodland	Significant loss of oak canopy cover	Preservation of valley oak woodland at a 3:1 ratio
	No significant loss of canopy cover	Exact tree count followed by replanting of valley oak at the following ratios: ▪ 2:1 for dbh 3”-15” ▪ 5:1 for dbh > 15” Transplanted trees that fail are subject to these replanting ratios.
Blue Oak Woodland	Significant loss of oak canopy cover	Preservation of blue oak woodland at a 2:1 ratio
	No significant loss of canopy cover	Exact tree count followed by replanting of blue oak at the following ratios: ▪ 2:1 for dbh 3”-15” ▪ 5:1 for dbh > 15” Transplanted trees that fail are subject to these replanting ratios.
Mixed Oak Woodland	Significant loss of oak canopy cover	Preservation of mixed oak woodland at a 2:1 ratio

	No significant loss of canopy cover	Exact tree count followed by replanting mixed oak at the following ratios: ▪ 2:1 for dbh 3”-15” ▪ 5:1 for dbh > 15” Transplanted trees that fail are subject to these replanting ratios.
Blue Oak Savanna	Any impact	Exact tree count followed by replanting blue oak at the following ratios: ▪ 2:1 for dbh 3”-15” ▪ 5:1 for dbh < 15” Transplanted trees that fail are subject to these replanting ratios. OR Preservation of oak savanna at a 2:1 ratio
Individual Oak	Any impact	Exact tree count followed by replanting in-kind oak at the following ratios: ▪ 2:1 for dbh 3”-15” ▪ 5:1 for dbh < 15” Transplanted trees that fail are subject to these replanting ratios.

3.2.3 Impacts to Oak Savanna

Impacts to oak savanna may be mitigated for through in-kind preservation at a 2:1 ratio, or through an exact tree count and replacement plantings. This method of mitigation is suitable for Phase One and future phases of development.

3.2.4 Impacts to Individual Oaks

Impacts to oaks that occur outside of habitat mapped as oak woodland or oak savanna will be handled in the same manner as impacts to oak woodland without significant loss of canopy cover. This method of mitigation is suitable for Phase One and future phases of development.

Section 4 | Oak Mitigation

Detailed tree counts will be maintained as necessary in order to ensure full mitigation within the appropriate area of the Guenoc Valley Site.

4.1 OAK WOODLAND PRESERVATION

A significant portion of oak woodland within the development area is avoided through residential development restriction or project design. The area of potential oak woodland preservation was identified based on the type and quality of habitat impacted by the Proposed Project. **Attachment A** shows potential oak impacts resulting from Phase 1 and illustrates the existing and proposed preservation areas under Phase 1. Of the oak preservation presented in **Attachment A**, a total of 464 acres are preserved within Lake County and located within the POU pursuant to the 2009 Guenoc Valley Water Rights FEIR (AES, 2009). In addition to the 464 acres of oak woodlands required to be preserved within Lake County and located within the POU, 871 ~~853~~ acres of oak woodlands are in long term preservation within the Preserved Open Space Area, which will be in long-term management, for a total of 1,335 ~~1,317~~ acres of existing preserved oak woodlands. Additionally, based on a preservation ratio of 3 acres to 1 acre impacted for valley oak woodland and 2 acres to 1 acre impacted for other oak woodland, additional acres of oak woodland would be preserved through restrictions on residential lot development and avoidance of woodland within commercial lots. The total area of existing and proposed oak preservation within the Guenoc Valley Site following Phase 1 development would be 1,952 ~~1,633~~ acres. **Table 3** shows a summary of proposed oak preservation areas related to Phase 1 impacts.

Table 3: Phase I Maximum Oak Woodland Preservation Requirements Following Impact Minimization

Habitat Type	Maximum Acres of Significant Cover Loss	Maximum Acres Required for Preservation
Interior Live Oak	58 ~~53~~	116 ~~106~~
Valley Oak	1	3
Blue Oak	153 ~~166~~	306 ~~332~~
Mixed Oak	0	0
Oak Savanna	96	192
Total	**308 ~~316~~**	**617 ~~633~~**

Acres of oak woodland preservation will be protected prior to the issuance of a building or grading permit of a commercial property or the recordation of the final map prior to the sale of a residential parcel. This Oak Mitigation Plan will serve as an agreement between the property-holder of the Guenoc Valley Site and Lake County, restricting future development on the identified oak woodland preservation areas. Any future modification of such preservation areas would require additional identification of oak preservation such that acreage of preserved oak woodland by species is not lost. Since these conservation areas will be filed as a deed restriction and recorded as a development restriction on the title, a formal conservation easement filed with Lake County is not necessary.

4.2 OAK TREE PLANTING

Because exact tree counts are dependent upon final development plans, this section serves to outline a method for determining suitable oak planting locations. Suitable oak habitat replacement or preservation should be of similar quality to support successful oak establishment.

Additionally, locations for mitigation plantings should consider practicality of planting and maintenance based on the location. Oaks may be planted in suitable habitat where oaks ~~to~~ do not substantially occur, or where cover is low. These locations also considered surrounding land use and targeted those areas most likely to be preserved throughout all phases of development. Potential locations were selected for plantings based on suitable supporting habitat, continuity of the landscape, and other metrics that would increase the success and functionality of mitigation plantings. Selection also considered the accessibility of the location for the purpose of planting, maintenance, and monitoring. Habitat of similar quality and practicality for mitigation plantings may be utilized.

A qualified biologist will confirm the tree removal count and the required number of compensatory plantings for a development area. Tree counts and planting locations will be carefully documented in order to ensure compliance with this Plan. Oak plantings will be initiated no later than the suitable planting season following oak removal for which a parcel or area of development has been impacted. Oak seedlings will be planted with the intent of replacing not only the trees themselves, but restoring the functionality of the habitat impacted by the Proposed Project.

4.2.1 Source and Size of Mitigation Plantings

Oak planting required for mitigation may be obtained from a variety of sources. An on-site nursery currently produces seedlings from acorns collected on site and could be used to provide for a portion of plantings. Direct plantings of acorns and seedlings collected on site may also occur. Each individual oak planting, whether it be sourced from the nursery or planted directly, will count as one individual for the sake of tree replacement mitigation ratios, and subject to the monitoring requirements outlined in **Section 5.0**. Should needs exceed the on-site production of acorns and seedlings, locally sourced nurseries within 200 miles of the project site may be used to provide seedlings.

4.2.2 Transplanting of Oak Trees

When possible, transplanting of trees removed during development will also be used in oak woodland creation areas. Due to the value of mature trees, preferential selection for transplanting should be given to those trees with a dbh equal to or greater than 15” when possible. If the tree planned to be removed is successfully transplanted, then there is no additional required mitigation. Transplanted trees will be monitored as outlined in **Section 5.0**. Should a transplanted tree fail, replanting as outlined in **Section 2.2** will occur. The following outlines the methods used for transplanting of oaks previously performed on the Guenoc Valley Site to be used for oaks transplanted through construction of the Proposed Project:

- Select tree to be salvaged / transplanted;
- Evaluated current health of selected tree taking into consideration age, vigor, presence of sickness, fungus, pest/disease;
- Evaluate the type and conditions of the soil where the tree is growing (sandy, rocky, clay, etc.). Root pruning and transplant methods will vary based on these conditions;

- Evaluate labor and machinery available to transplant. Size of root ball, root-pruning methodology and system of containerization will vary based on these variables;
- Determine root ball dimensions based on size of tree, conditions of soil, and target final weight of root ball/tree;
- Initiate exploratory digging around root ball perimeter. This exploratory dig will reveal extent of lateral root system and soil profile;
- Once root ball perimeter is determined and marked, initial digging is initiated around all or a portion of the root ball;
- Depending on the species and its root system, often main lateral roots are left intact to a) minimize shock to the tree and b) to maintain tree stability, so it does not fall down;
- Ideally perform initial root ball digging during the dormant season;
- Once the first stage of root ball digging is complete, the ball is wrapped tightly in heavy duty black plastic, or a layer of burlap followed by then black plastic. The purpose of this is to retain humidity within the root ball while reducing direct sunlight on the exposed roots;
- Depending on the tree species, the tree will often be left for a matter of months or even up to a year following the initial root prune. The purpose of this is to allow the tree to recover from the shock of root pruning prior to cutting main lateral roots and lifting the tree;
- During this rest period the tree is regularly monitored for overall health and to ensure adequate moisture, etc.;
- The following stage involves gradual cutting of lateral roots, finalized shaping of the root ball and in many cases, construction of a box or container around the root ball. Very heavy trees will often be lifted from this box;
- Once the tree is containerized, the tree is ready to be lifted. Ideally this will occur during or just prior to a dormant season (typically fall or winter), although this is not always possible;
- Lifting / transplant methods vary from species to species and are also dependent on soil type, proximity of tree to final planting location, and the type of machinery being used to transplant. In the case of blue oaks, a large articulating forklift is used to lift the tree from the bottom of the box. The tree is then transported by the articulating forklift to its designated staging area or final planting location; and
- Following tree extraction and relocation, the tree hole is backfilled, and erosion control measures are implemented.

4.2.3 Planting Specifications

There are several methods to increase the success of direct acorn plantings. The following specifications are to be followed for the collection and direct plantings of acorns:

- Collection of acorns for planting should occur within the same year that tree planting would occur. Acorns are ready to pick from trees when the acorn cap can be easily separated from the acorn without tearing the seed coat.
- If unable to plant acorns immediately, acorn caps should be removed, and acorns will be stored under cool moist conditions until ready to be planted.
- Three to four acorns will be planted two to four inches deep on their side approximately three inches apart in order to maximize the germination success of at least one seedling.
- Organic mulch may be applied after planting, extending to a three to four-foot radius, and to a height of two to three inches over the top of the soil. Water following the planting.

The following planting specifications will be followed to increase the success rate for seedlings and transplanted trees:

- Should needs exceed the production capabilities of the on-site nursery, seedlings are to be sourced from a nursery that is growing trees from locally sourced acorns.
- Organic mulch will be applied after planting, extending to a three to four-foot radius and to a height of two to three inches over the top of the soil. Water following planting.
- Seedlings planted from starter pots are to be planted in holes dug slightly deeper than pot height and twice the width. Holes should be dug by hand when possible with smooth edges loosened to promote root growth.
- Any trees that are staked should be done so such that the straps are loose enough to allow for natural bending and movement of the tree while being tight enough to protect the tree from structurally damaging movements such as high-wind storms. Stakes should be removed following successful establishment.

Oak woodland planting areas should be planted with irregular spacing and clumps of trees to reflect the natural and aesthetic qualities of the existing oak woodlands.

4.2.4 Methods of Irrigation

Irrigation methods will vary based on the locations of the planting sites within the mitigation areas. Some planting sites may not need supplemental irrigation if there is a sufficient source of groundwater. If tree planting takes place during the rainy season, supplemental irrigation is not anticipated to be necessary during the first year. Irrigation methods for mitigation areas planted in the dry season will likely include the installation of temporary drip irrigation systems. Tree plantings will be irrigated in the absence of enough groundwater during the dry season in their first two years of growth in order to promote seedling survival. The plantings should not need to be irrigated during the wet season.

4.2.5 Planting Schedule

Acorn and seedling planting will be conducted between the months November and December, pending availability of seedlings or acorns. Planting during the fall will facilitate establishment of the planted acorns and seedlings during the rainy season. Plantings should begin no later than the first suitable planting season following oak tree removal for the Proposed Project.

4.2.6 Seedling Protection

In areas that have issues with herbivory, seedlings or acorn planting sites will be provided with adequate protection from damage to increase survival rates. These protections usually consist of tree shelters, or small wire mesh cages covering the seedling to reduce the likelihood that deer or other herbivores will consume the young trees. Mesh should be of an appropriate size to prevent entrapment of songbirds.

4.3 OAK HABTIAT ENHANCEMENT

These areas may be used for tree-by-tree mitigation or restoration activities and will follow the specific planting instructions above. Oak habitat enhancement may occur in areas of oak savanna and pine-oak woodland but may include the enhancement of other mixed-oak habitat.

4.4 MITIGATION AREA MAINTENANCE

Maintenance of the mitigation areas will consist of weed removal, removal of trash and litter, inspection of tree shelters and wire mesh, fencing (as needed), irrigation systems, tree stakes, and inspection for evidence of vandalism or other uses conflicting with the goals of this Plan.

4.4.1 Weed Control

Three primary techniques are available for weed control maintenance activities in the oak planting areas: mowing, hand weeding, and herbicide application. Mowing and/or hand weeding are the preferred methods of weed control. If herbicides are used, they will be applied only by licensed personnel in strict accordance with the manufacturer's regulations. No herbicide should contact the leaves or stems of the oak trees. Herbicide use will be as restricted as possible; spot applications are preferred, and extreme care should be taken when applying herbicides in the vicinity of open water, wetlands, existing native vegetation, and revegetation plantings. No weed control is necessary in the oak preservation areas.

4.4.2 Removal of Trash and Litter

Trash and litter, which may blow into the mitigation areas, will be removed periodically. Any trash observed within the mitigation areas during the monitoring visits will be reported and/or removed.

4.4.3 Other Inspections

Planting equipment such as tree shelters, wire mesh, fencing, irrigation systems, or tree stakes if used, will be inspected during quarterly monitoring visits by a qualified biologist described in **Section 5.0** below. Instructions to correct any defects will be included in the biological monitoring reports. Evidence of any uses conflicting with the goals of this tree mitigation plan will be included in the monitoring reports.

4.4.4 Maintenance Schedule

The oak planting mitigation sites will be visited by the Ranch staff at least twice monthly during the first six months to assess the effectiveness of the irrigation system (if applicable) and to inspect any tree shelters, wire mesh, fencing, or tree stakes used. Quarterly visits, as described in **Section 4.3**, will also ensure that plantings and irrigation are functioning as designed. These quarterly visits will be performed by a qualified biologist throughout the remainder of the seven-year monitoring period, described further in **Section 5.0** below.

Section 5 | Monitoring Plan

5.1 DATA COLLECTION

Mitigation sites will be inspected by a qualified biologist or certified arborist for seven years after planting. Monitoring site visits will involve assessing the status of the replacement plantings, determining the need for irrigation, identifying weeds for removal, and assessing the overall integrity and success of the mitigation sites.

Monitoring reports will, at a minimum, include the following metrics of successful oak establishment: survival rates, overall health, dbh of mitigation plantings, and the status of competing woody vegetation. Criteria described below will apply to both Phase 1 and future phases of development.

5.2 SUCCESS CRITERIA

5.2.1 Oak Preservation Areas

The oak preservation areas do not have success criteria. Because the oak preservation areas are ecologically functional oak woodlands, these areas need only to be protected from future development in order to offset the impacts to oak woodlands elsewhere on the property.

5.2.2 Oak Habitat Planting Areas

The oak replanting mitigation will be considered successful when, after seven years, the tree plantings have achieved an 80 percent success rate. If additional plantings are necessary to increase the total plantings to meet the 80 percent survival rate, these seedlings will be monitored for a full seven years to ensure success of those additional plantings. Transplanted trees shall be monitored for a minimum of three years. A high level of replanting success is anticipated with the use of protective measures, along with placement of the plantings in appropriate habitat.

5.2.3 Oak Habitat Enhancement Areas

Oak woodland enhancement areas are deemed successful when, after seven years, the tree plantings have achieved an 80 percent success rate. If additional plantings are necessary to increase the total plantings to meet the 80 percent survival rate, these seedlings will be monitored for a full seven years to ensure success of those additional plantings. A high level of replanting success is anticipated with the use of protective measures, along with placement of the plantings in appropriate habitat.

5.3 REPORTING

A qualified biologist or certified arborist will inspect the site during planting to ensure that it is completed in compliance with this plan and to create a baseline of the locations for future inspections. Due to the size of the property, the projected development timeline, and the associated mitigation plan, restoration areas may be broken into Mitigation Units. Each Mitigation Unit will be mapped with an approximate tree count and submitted to Lake County immediately following mitigation plantings. A total of seven annual reports will be completed for each Mitigation Unit, with additional reports as necessary until all success

criteria are met. Annual reports will include the quarterly report along with an analysis on the projected success of mitigation and any adaptive management recommendations.

The first annual inspection will occur approximately one year after installation and will include a report documenting the results of the monitoring efforts. Annual reports will be submitted to the Lake County within six months of the monitoring event for a total of seven years, starting the year following the initial planting. This reporting scheme will be followed such that all mitigation plantings on the Ranch associated with Phase 1 and future phases of development receive a full seven years of mitigation monitoring in order to reach success criteria, with additional mitigation and monitoring as needed to meet success criteria. Should adaptive management recommendations and supplemental plantings occur, the annual report will include the notice of new plantings needed to replace failed trees, along with documentation (summary data and photos) to illustrate the condition and location of plantings. The report should include the success of natural revegetation, establishment, survival, and height of replacement tree plantings, and the status of the oak improvement area's competing woody vegetation.

5.4 SCHEDULE

Oak plantings may occur during the appropriate planting season prior to the development of the Proposed Project and must be initiated no more than one planting season following tree removal. The first annual monitoring of the mitigation sites will be conducted the year following the initial planting, with a total of seven yearly monitoring reports.

5.5 ADAPTIVE MANAGEMENT

If trees planted in the mitigation areas are deemed to be performing poorly, a contingency plan may be submitted to Lake County requesting modifications to this Plan. Modifications may only be requested related to the location and management of mitigation plantings and will not result in the reduction of plantings or success criteria described herein.

Section 6 | Completion of Mitigation

Once the minimum seven-year monitoring period is completed and success criteria met for all mitigations, Lake County will be informed that the mitigation requirements have been completed. A qualified biologist will prepare the Notice of Completion of mitigation activities and will include the final annual report for each mitigation unit detailing the achievement of success criteria. Therefore, completion of mitigation activities will include the following reports and documentation:

- Mapping submitted to and approved by Lake County detailing all oak woodland preservation locations;
- Mapping submitted to and approved by Lake County detailing potential oak planting locations;
- Maps submitted to Lake County detailing Mitigation Units as they are designated;
- A minimum total of seven annual reports for each Mitigation Unit submitted to Lake County;
- The first annual report will document the specific planting details such as location of plantings, species, number of trees, and other important tracking information.
- Additional annual reports may be necessary if additional supplemental plantings occur.
- A request may be sent to Lake County to amend mitigation planting location(s) and monitoring activities based on tree performance and subject to County approval.
- A Notice of Completion of mitigation activities submitted to Lake County; and
- A final site visit with the County, if requested by the County.

Lake County may require a site visit to confirm that the success criteria have been met and that the required mitigation has been completed. The landowner will retain the oak mitigation areas and will not use them in a way that significantly degrades the ecological value of the mitigation area without notice to and approval by the County. With prior notification, the property may be periodically inspected by the County to ensure compliance with this Plan.

6.1 ASSURANCE OF MITIGATION PERMANENCE

This document will serve as an assurance that the mitigation measures will be performed as described. Any future development of this property within Lake County will be bound to this agreement. Future development on the Ranch in Lake County occupied by oak trees, specifically the areas of oak replanting and oak woodland preservation covered in this document, will require consent from Lake County. The landowner agrees to the mitigation and reporting requirements described in **Sections 3.0**, **4.0**, and **5.0**, and acknowledges that the completion of the mitigation described in **Section 6.0** does not permit the cutting or development of the oak mitigation areas.

Further development or cutting of oaks on this property beyond the Phase 1 and future phases of development plans outlined here would require consent from Lake County and consistency with this Oak Mitigation Plan. Future development plans would be contingent on the continued protection and upkeep of the oak preservation and oak replanting areas. The applicant consents to not implement any activity on the property that may result in an impact to oak woodland habitat or is inconsistent with this Plan without first consulting with the County. Therefore, modification of development plans not specifically authorized by this Plan will occur only with the understanding and required approvals by Lake County.

Section 7 | References

Analytical Environmental Services (AES). 2008. Langtry Farms Water Rights Modification Project Oak Tree Replacement Plan.

Analytical Environmental Services (AES). 2009. Guenoc Water Rights Modification Project Final Environmental Impact Report.

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WRA, Inc. (WRA), 2020a. Biological Resources Assessment for MAHA Resort and Guenoc Valley Development, Phase 1 Lake County, California.

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Attachment A

MAHA Guenoc Valley Oak Preservation Plan

GUENOC VALLEY PROJECT
OAK PRESERVATION PLAN

Updated March 1, 2024

The Guenoc Valley Project Oak Preservation Plan assumes that Blue Oak Woodlands, Blue Oak Savanna, Interior Live Oak Woodlands, and Mixed Oak Woodlands will be mitigated based on a ratio of 1 acre impacted to 2 acres preserved and the Valley Oak Woodlands will be mitigated based on a ratio of 1 acre impacted to 3 acres preserved.

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OVERALL ESTIMATES

EXISTING OAK WOODLAND COVERAGE (PG 2)

Oak Communities	Blue Oak Woodland	Blue Oak Savanna	Interior Live Oak Woodland	Mixed Oak Woodland	Valley Oak Woodland	TOTAL
Area (AC)	**3,475 AC**	**1,238 AC**	**757 AC**	**175 AC**	**49 AC**	**5,694 AC**

Total Project Site Area: **16,025 AC**

OAK WOODLANDS IMPACT & PRESERVATION (PG 3 & 4)

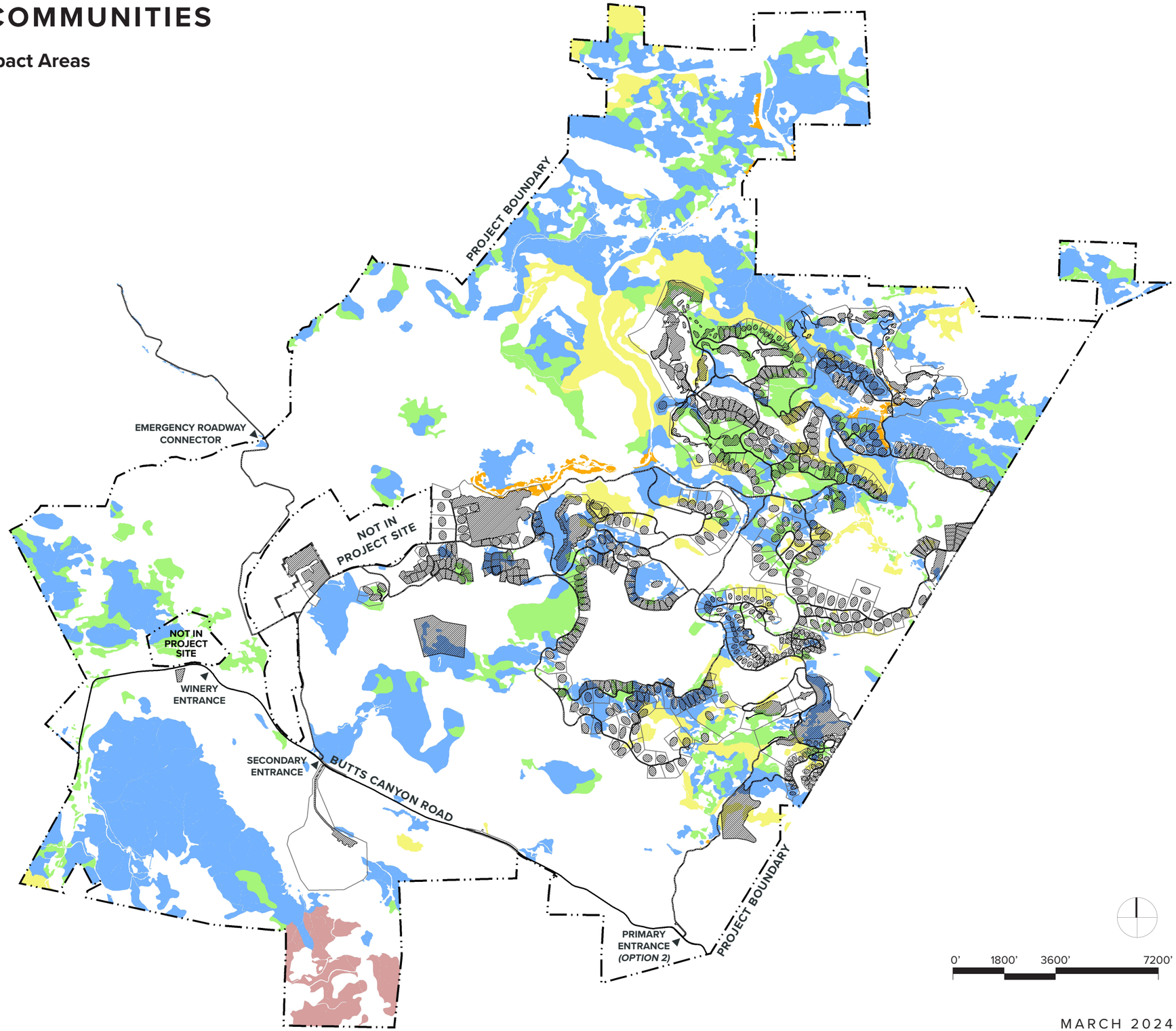
	OAK WOODLANDS GREATEST POTENTIAL IMPACT			**OAK WOODLANDS AREA RATIO PRESERVATION**			
	Potential Project Impact to Blue Oak Woodland, Blue Oak Savanna, and Interior Live Oak Woodland	*Potential Project Impact to* Valley Oak Woodland	**TOTAL**	*Required Deed-Restricted Preservation Ratios*	Proposed Deed-Restricted Oak Woodlands Preservation Areas	Existing Oak Woodlands Preservation Areas[2]	Total Preservation Areas
Roadways[1]	—	—	**137 AC / 11 MI**	—	—	—	—
Residential Estate and Resort Residential Parcels	181 AC	0 AC	**181 AC**	*362 AC*	308 AC	188 AC	**496 AC**
Commercial, Facility, and Golf Parcels	126 AC	1 AC	**127 AC**	*255 AC*	158 AC	93 AC	**251 AC**
Rural Landscapes	0 AC	0 AC	**0 AC**	*0 AC*	151 AC	183 AC	**334 AC**
Designated Open Space	0 AC	0 AC	**0 AC**	*0 AC*	0 AC	871 AC	**871 AC**
TOTAL	**307 AC**	**1 AC**	**308 AC**	***617 AC***	**617 AC**	**1,335 AC**	**1,952 AC**

[1] The approximately 11 miles and 137 acres of roadway development impacting oak woodlands will avoid trees with minor realignments and therefore are proposed to be mitigated with tree-by-tree replacement ratios as described in the Oak Mitigation Plan (OMP). Tree-by-tree replacement areas will happen pursuant to the OMP. Therefore, these impacts are not reflected in the TOTAL impact area in this table nor on the "Project Preservation of Oak Woodlands" plan on page 4.

[2] Along with the demonstrated Guenoc Valley Project oak impact areas, preservation ratios, and preservation areas, this plan demonstrates existing entitlement oak preservation obligations. Please see the OMP for further information.

EXISTING OAK WOODLANDS COMMUNITIES

- **Greatest Potential Project Development Impact Areas**
- **Blue Oak Woodland** (3,475 AC)
- **Blue Oak Savanna** (1,238 AC)
- **Interior Live Oak Woodland** (757 AC)
- **Valley Oak Woodland** (49 AC)
- **Mixed Oak Woodland** (175 AC)



PROJECT IMPACTS TO OAK WOODLANDS

	Greatest Potential Impact to Oak Woodlands				Total Impact Areas
	Blue Oak Woodland	Blue Oak Savanna	Interior Live Oak Woodland	Valley Oak Woodland	
Roadways *(see note)*	—	—	—	—	**137 AC / 11 MI**
Resort Residential & Residential Estate Parcels	92 AC	57 AC	32 AC	0 AC	**181 AC**
Commercial, Facility, and Golf Parcels	61 AC	39 AC	26 AC	1 AC	**127 AC**
Rural Landscapes	0 AC	0 AC	0 AC	0 AC	**0 AC**
Designated Open Space	0 AC	0 AC	0 AC	0 AC	**0 AC**
TOTAL	**153 AC**	**96 AC**	**58 AC**	**1 AC**	**308 AC**

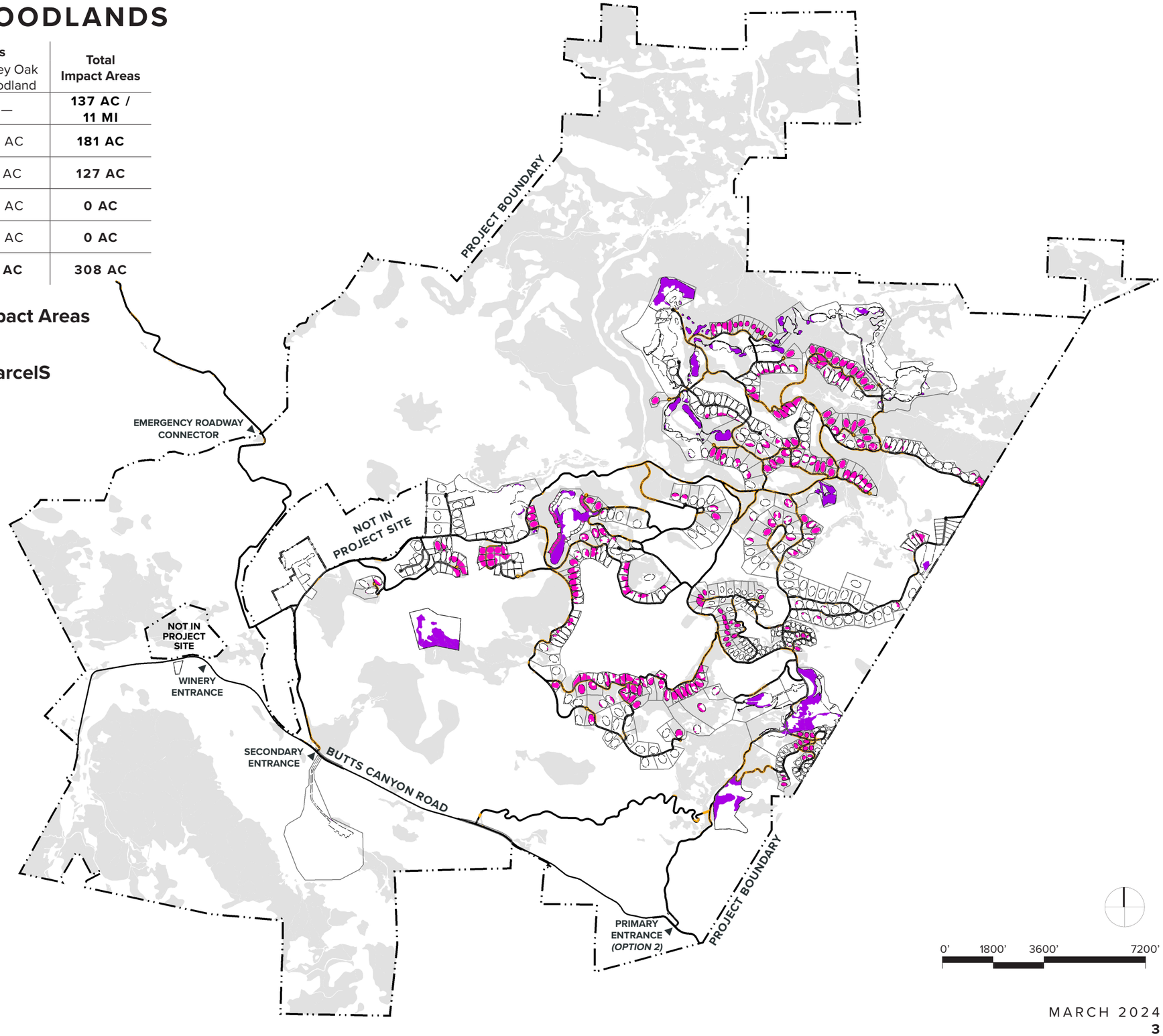
Greatest Potential Project Development Impact Areas

Oak Wooodlands Potentially Impacted in **in Residential Estate & Resort Residential ParcelS**

Oak Wooodlands Potentially Impacted in **in Commercial, Facility, and Golf Parcels**

Oak Wooodlands Potentially Impacted by **by Roadway Development**

Oak Woodlands



NOTE: This graphic identifies impacts to all types of oak woodlands. Oak woodlands impacted within parcels will be mitigated with an acreage replacement ratio; please see page 4 (“Potential Project Preservation of Oak Woodlands”), which demonstrates areas for oak woodlands preservation to mitigate for these impacts and to also fulfill previous EIR preservation obligations. Oak woodlands impacted by roadways will be mitigated with tree-by-tree replacement ratios; tree-by-tree replacement areas will be identified on an ongoing and as-needed basis (see additional notes on roadway impact estimates on the cover page). Please see the Oak Mitigation Plan for further information.

PROJECT AREA PRESERVATION OF OAK WOODLANDS

	Proposed Deed-Restricted Oak Woodlands Preservation Areas					Existing Oak Woodlands Preservation Areas	Total Preservation Areas
	Blue Oak Woodland	Blue Oak Savanna	Interior Live Oak Woodland	Valley Oak Woodland	Total		
Resort Residential & Residential Estate Parcels	161 AC	77 AC	68 AC	2 AC	308 AC	188 AC	**496 AC**
Commercial, Facility, and Golf Parcels	88 AC	43 AC	26 AC	1 AC	158 AC	93 AC	**251 AC**
Rural Landscapes	57 AC	72 AC	22 AC	0 AC	151 AC	183 AC	**334 AC**
Designated Open Space	0 AC	0 AC	0 AC	0 AC	0 AC	871 AC	**871 AC**
TOTAL	**306 AC**	**192 AC**	**116 AC**	**3 AC**	**617 AC**	**1,335 AC**	**1,952 AC**

Greatest Potential Project Development Impact Areas

Oak Woodlands

Designated Open Space

Proposed Deed-Restricted Oak Woodlands Preservation

In Resort Residential & Residential Estate Parcels

In Commercial, Facility, and Golf Parcels

In Rural Landscapes

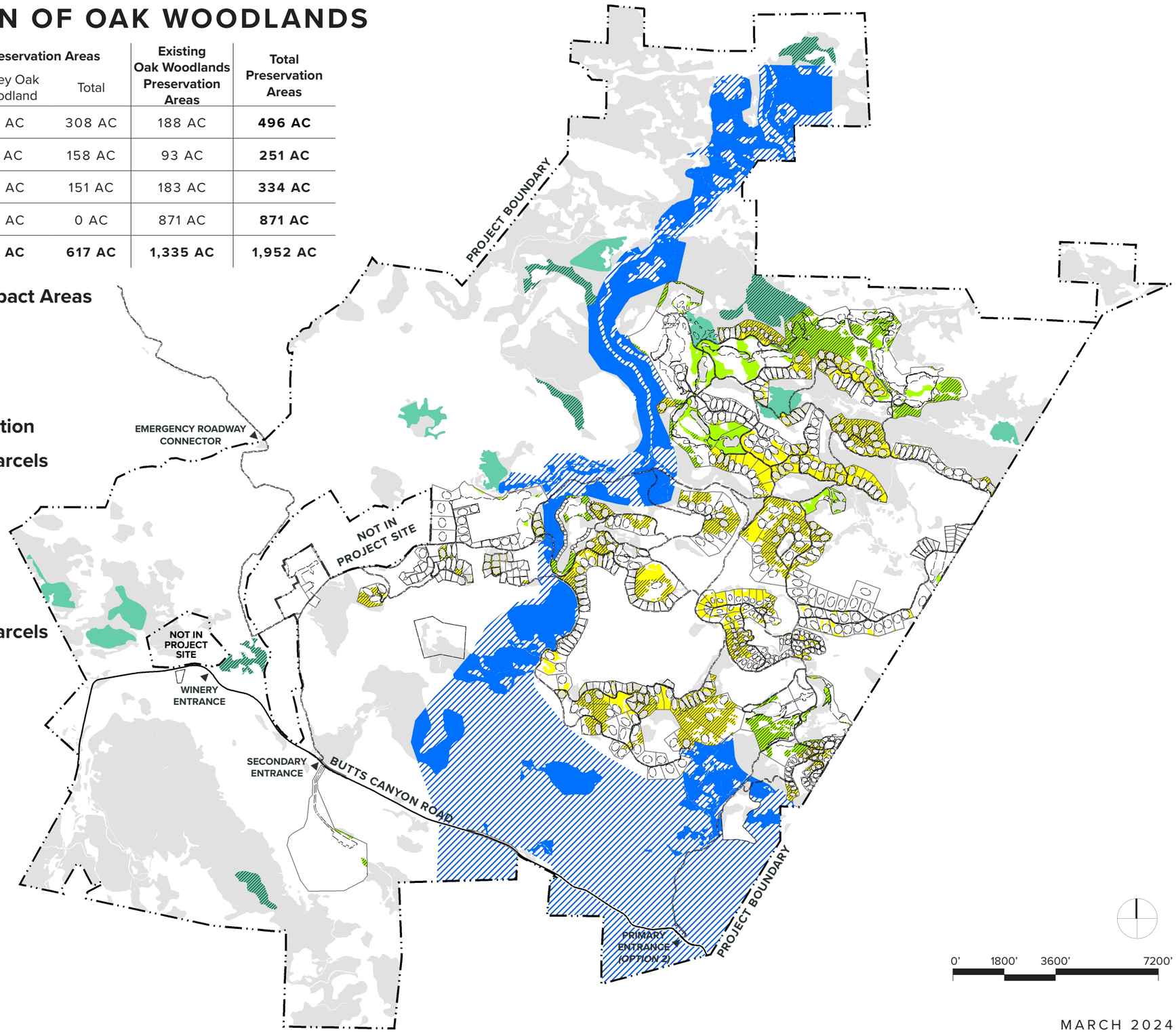
Existing Oak Woodlands Preservation

In Resort Residential & Residential Estate Parcels

In Commercial, Facility, and Golf Parcels

In Rural Landscapes

In Designated Open Space



NOTE: Along with the demonstrated Guenoc Valley Project oak preservation areas, this plan demonstrates existing entitlement oak preservation obligations. Please see the OMP for further information.

Appendix K

Cultural Reports

(Confidential/Bound Separately)

Appendix L

Stormwater Technical Memorandum

SHERWOOD
DESIGN ENGINEERS

2548 MISSION STREET, SAN FRANCISCO, CA 94110
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Memorandum

May 22, 2024

To: Laura Hall (Lake County)
Cc: Kevin Case (Mahaman Development), Ryan Sawyer (Acorn Environmental)
From: Cody Anderson, P.E.
Project Number and Name: 18-016.1 Maha Guenoc Valley

RE: Additional 10-Foot Roadway Hardscape

Laura,

1.0 EXECUTIVE SUMMARY

This memorandum confirms that the Draft Partially Revised Environmental Impact Report (PREIR) accounts for the additional 10 feet of hardscape on each of the project roads required by the Settlement Agreement in terms of surface water runoff, groundwater recharge, and potential water quality impacts. The additional 10 feet of hardscape on each side of the roads is offset by decreases in impervious surfaces elsewhere on the property, such that the overall impervious area will be 213 acres less than the Original Project. The 10 feet of hardscape will not increase potential impacts above what was analyzed in the 2020 EIR but will increase impervious surfaces beyond what exists on the property today; these increases will continue to be mitigated through stormwater management strategies which will be fully addressed during the ministerial Building Permit approvals process. These strategies, which are consistent with State Water Resources Control Board requirements for post-construction stormwater management, provide water quality treatment prior to release into the natural drainage pattern, allowing for infiltration and recharge of groundwater and existing drainages.

2.0 DETAILS

Project Modifications analyzed in the PREIR include adding approximately 10 feet of hardscape (decomposed granite) on each side of the proposed roadways to increase wildfire protection. The overall grading area associated with the Modified Project will be reduced due to the reconfiguration of parcels, including elimination of the camping area and overall reduction in the linear miles of roadways and utilities previously required for connection to relatively remote parcels. The PREIR uses the term ‘development area’ to describe the built components proposed for resort, residential, and roadway uses. The 1,202-acre development area encompasses and slightly overstates the proposed impervious surfaces, as in addition to paved roadways, buildings, and other impervious materials it also includes landscaping around buildings which is typically considered permeable. The additional 10 feet of hardscape is included in the measured 1,202-acre development area. Because the overall development area associated with the Modified Project decreased by 213 acres compared to the Original Project, the total impervious area associated with the project will be less than what was analyzed in the 2020 EIR even with inclusion of the 10 feet of hardscape along roadways.

While the overall impervious area is decreasing across the property, localized increases in partially impervious area along these roadways will generate additional stormwater runoff. Consistent with the design strategies already in place for area roadways, the stormwater runoff will be mitigated through Best Management Practices (BMPs) in accordance with the stormwater management strategies included in the Development Agreement. These BMPs will be fully designed, engineered, and documented in accordance with Post-Construction Stormwater Management requirements during each relevant Building Permit application.

The stormwater BMPs selected will collect runoff immediately adjacent to the roadway hardscape and routed to BMPs sized to treat the contributing run-on area, or the equivalent native ground area, allowing for infiltration through soils and landscaping to remove contaminants prior to reaching the groundwater table below or flowing to downstream receiving waters. Each BMP is designed to be context specific for the roadway, adjacent topography, and soil conditions.

3.0 CONCLUSIONS

No adverse impacts to surface water runoff, groundwater recharge, or water quality are anticipated as a result of the 10-foot hardscape additions adjacent to roadways.

Regards,



Cody Anderson, PE
Managing Principal