

DRAFT ENVIRONMENTAL IMPACT REPORT

GUENOC VALLEY MIXED USE PLANNED DEVELOPMENT PROJECT

FEBRUARY 2020

LEAD AGENCY:

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

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255 N Forbes St # 330
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APPENDICES

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Appendix BRA2	Future Phases Biological Resources Assessment
Appendix BRA – Middletown	Middletown Housing Site Biological Resources Assessment
Appendix CCWD –	Callayomi County Water District Will Serve Letter
Appendix CP	Construction Implementation Plan
Appendix CULT	Cultural Resources Study Information (confidential information removed)
Appendix DG	Draft Design Guidelines
Appendix EDR	EDR Report
Appendix ELEC	Electrical System Feasibility Report
Appendix FIRE	Guenoc Valley Wildfire Prevention Plan
Appendix GEOTECH	Preliminary Geotechnical Study Report
Appendix GPCT	General Plan Consistency Table
Appendix GRADING	Earthwork plan
Appendix GVD	Proposed Guenoc Valley District (GVD) Zoning District
Appendix IS	Initial Study
Appendix NOISE	Traffic Noise Memorandum
Appendix NOP	NOP Comment Letters
Appendix OAK	Oak Mitigation Plan
Appendix OSPP	Amendment to Open Space Preservation Plan
Appendix SCA	Middletown Sewer Capacity Analysis
Appendix SPOD	Specific Plan of Development for Phase 1
Appendix STORMMID	Stormwater Design Report Middletown
Appendix SW	Stormwater Design Report
Appendix TIA	Traffic Impact Analysis
Appendix WATER	Water Demand Technical Memo and Water Infrastructure Plan
Appendix WD	Aquatic Resource Delineation Report – Guenoc Valley Site
Appendix WD-Middletown	Wetland Delineation Middletown Housing Site
Appendix WSA	Water Supply Assessment
Appendix WW	Wastewater Feasibility Study

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

INTRODUCTION

This chapter provides a summary of the Guenoc Valley Mixed-Use Planned Development Project (Proposed Project) and environmental impacts that would result from project implementation. This chapter also includes a table summarizing the impacts of the Proposed Project and mitigation measures that have been identified to reduce potentially significant environmental impacts to less than significant levels.

PROJECT UNDER REVIEW

The Proposed 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. The Proposed Project includes:

- General Plan & Zoning Ordinance Amendment that would introduce a new zoning district and rezone the entire Guenoc Valley Site to Guenoc Valley District ("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 (GPOD) and Specific Plan of Development (SPOD; UP 18-01; Appendix A) and Phased Tentative Subdivision Maps that would allow for the development of five 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).
- 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 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.

PROJECT LOCATION

The Guenoc Valley Site, Middletown Housing Site, and Off-Site Improvements are all located entirely within unincorporated Lake County.

- **Guenoc Valley Site:** The Guenoc Valley Site (project site) consists of approximately 16,000 acres located in the southeast portion of unincorporated Lake County (County; **Figure 2-1**). 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.

- **Middletown Housing Site:** The Middletown Housing Site is an approximately 12.75-acre site located at 21000 Santa Clara in Middletown (APN 014-380-09).
- **Off-Site Water Well And Water Supply Pipeline Location**: The Off-Site Well Site is just outside the Middletown community, located on the southeast corner of SR 29 and Butts Canyon Road, within the parcel numbers 014-430-13 and 014-430-12. A water supply pipeline would extend approximately six miles from the Off-Site Well Site within the public right-of-way along Butts Canyon Road to a point of connection within the Guenoc Valley Site.

ISSUES TO BE RESOLVED AND AREAS OF CONTROVERSY

NOTICE OF PREPARATION AND SCOPING

In accordance with CEQA *Guidelines* Section 15082, the County (Lead Agency) circulated a Notice of Preparation (NOP) for this EIR on April 23, 2019. Presented in **Appendix NOP**, the NOP established a 30-day review period that ended on May 23, 2019. The NOP was circulated through the State Clearinghouse, to the public, local, state, and federal agencies, and other known interested parties in an effort to disclose that the Proposed Project could have significant effects on the environment and to solicit written comments concerning the Proposed Project. Two public scoping meetings were held on May 15th to allow a public presentation of the project and provide an opportunity for oral comments to be submitted. The scoping meetings were held at the County of Lake Board of Supervisors Chambers in the morning and at the Middletown Library in the evening. These letters are included in **Appendix NOP**.

AREAS OF CONTROVERSY

The environmental issues below were identified during the scoping process and are discussed in more detail in **Section 1.0**:

- Project Description
- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Wildfire
- Hydrology and Water Quality
- Land Use
- Noise and Vibration
- Transportation and Circulation
- Recreation
- Utilities
- Public Services
- Population and Housing
- Energy

SCOPE OF THE EIR

In accordance with CEQA *Guidelines* Section 15063, an Initial Study (IS; **Appendix IS**) was prepared and used in conjunction with comments received during scoping to focus the EIR on effects determined to be potentially significant. The following environmental resources were determined to have the potential to be significantly affected by the Proposed Project, and have therefore been addressed in detail in this Draft EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Geology and Soils
- Energy
- Hydrology and Water Quality
- Noise
- Recreation
- Utilities/Service Systems
- Agriculture and Forestry Resources
- Cultural Resources
- Land Use
- Population and Housing
- Transportation and Traffic
- Wildfire
- Greenhouse Gases Emissions
- Hazards and Hazardous Materials
- Noise

The following issues were identified through the IS as being not significant, less than significant, or less than significant with mitigation:

- Mineral Resources

ALTERNATIVES TO THE PROPOSED PROJECT

CEQA *Guidelines* Sections 15126 and 15126.6 require an EIR to consider a reasonable range of alternatives that could feasibly attain the basic objectives of the Proposed Project. This Draft EIR evaluates two development alternatives in addition to the No Project Alternative. Descriptions for each of the alternatives are provided below. **Section 5.0** provides additional information and analysis of the project alternatives as well as a discussion of alternatives that were eliminated from consideration, including an all residential alternative, a no residential alternative, and an existing zoning alternative.

ALTERNATIVE A – NO PROJECT

As required by CEQA Guidelines Section 15126.6(e), a No Project Alternative has been evaluated. The evaluation of the No Project Alternative allows decision makers to compare the impacts of the Proposed Project against no development of the project. According to the CEQA Guidelines Section 15126.6(e)(2), the No Project Alternative shall discuss what would reasonably be expected to occur if the project were not approved. For purposes of this EIR, the No Project/No Development consists of existing conditions, with no future development on the Guenoc Valley Site. Under this alternative, existing County land use and zoning designations for the project site would remain in effect, and no development would occur. On-going agricultural activities and previously approved vineyard development would continue. The project site would remain as described in the baseline conditions setting under each issue area discussed in **Section 4.0**.

ALTERNATIVE B – REDUCED INTENSITY, SIMILAR DEVELOPMENT FOOTPRINT

Under the Reduced Density, Similar Development Footprint Alternative (Alternative B), open space would remain the same as the Proposed Project, but residential densities would be reduced by approximately 20 percent to 1,100 units. It is assumed that this reduction would occur over both Phase 1 and future phases. As a result, the number of units and population associated with this alternative would be less than under the Proposed Project. The acreage of all other uses, including roads, agriculture, resort structures, and recreational and supporting facilities would be identical to the Proposed Project. Alternative B would result in lesser significant impacts than the Proposed Project with respect to air quality, greenhouse gas emissions and climate change, population and housing, public services, transportation and traffic, utilities, and energy.

ALTERNATIVE C – HIGH DENSITY, COMPACT DEVELOPMENT FOOTPRINT

Under the High Density/Compact Development Alternative (Alternative C), open space would be increased, and development areas would decrease, however, the overall number of residential units would remain the same. This would result in an increase of project density within a smaller site footprint. Both the Phase 1 and future phase development footprint would be reduced to the area of the lots within the proposed Maha Farm and Bohn Ridge planning areas. All of the 400 hotel units would be combined into one large hotel and the 1,400 residential estates and 450 resort residential units would have significantly reduced lot sizes. This would reduce the average lot size from 4.8 acres to 0.8 acres. Open space areas would increase proportionally. Many of the resort amenities would be reduced; however, the golf course would remain in its proposed location. Alternative C would result in lesser significant impacts than the Proposed Project with respect to aesthetics, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, and hydrology and water quality.

SUMMARY TABLE

Table ES-1 presents a summary of project impacts and proposed mitigation measures that would further avoid or minimize potential impacts. 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 3.0**.

Acronyms used within **Table ES-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 MIGITATION MEASURES
BI = Beneficial Impact, NI = No Impact, LTS = Less than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
3.1	**Aesthetics**									
3.1-1	Substantially degrade a scenic vista or the existing visual character or quality of public views of the site and its surroundings. If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.	PS	PS	LTS	N/A	None Required	SU	SU	LTS	N/A
3.1-2	New Sources of Light or glare.	LTS	LTS	PS	N/A	MM 3.1-1 Off-Site Workforce Housing Lighting Design	N/A	N/A	LTS	N/A
3.1-3	Cumulative Aesthetic Impacts.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.2	**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.	LTS	LTS	LTS	NI	None Required	N/A	N/A	N/A	N/A
3.2-2	Create land use conflicts or be incompatible with existing or proposed adjacent land uses.	PS	PS	LTS	LTS	MM 3.2-1 Right-to-Farm Disclosure	LTS	LTS	N/A	N/A
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.	S	PS	LTS	NI	MM 3.2-2 Agricultural Conservation	SU	SU	N/A	N/A
3.2-4	Conflict with existing zoning for agricultural use.	LTS	LTS	NI	NI	None Required	LTS	LTS	N/A	N/A

Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
3.2-5	Result in the loss of forest land or conversion of forest land to non-forest use.	NI	LTS	LTS	NI	None Required	N/A	N/A	N/A	N/A
3.2-6	Cumulative Land Use and Agricultural Impacts.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.3	**Air Quality**									
3.3-1	Conflict with or obstruct implementation of the applicable air quality plan.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	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.	PS	PS	PS	PS	MM 3.3-1 Measures to Reduce Short-term Construction Related Emissions	LTS	LTS	LTS	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.	PS	PS	PS	PS	MM 3.3-2 Project Measures to Reduce Operational Emissions	LTS	LTS	LTS	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.	LTS	LTS	LTS	LTS	None Required	LTS	LTS	LTS	LTS
3.3-5	Expose sensitive receptors to substantial pollutant concentrations.	PS	PS	PS	PS	MM 3.3-1 Measures to Reduce Short-term Construction Related Emissions	LTS	LTS	LTS	LTS

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
3.3-6	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	PS	PS	PS	PS	MM 3.3-1 Measures to Reduce Short-term Construction Related Emissions	LTS	LTS	LTS	LTS
3.4	**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.	S	S	S	S	MM 3.4-1: Construction Best Management Practices MM 3.4-2: Worker 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 – Construction and Operation MM 3.4-8: Special-Status Birds - Nesting MM 3.4-9: Special-Status Birds – Burrowing Owl MM 3.4-10: Western 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	LTS	LTS	LTS	LTS

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
						MM 3.4-14: Future Phases Biological Review MM 3.9-1: Storm Water Pollution Prevention Plan MM 3.9-2: Aggregate/Concrete Monitoring and Reporting Program 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.	S	S	S	NI	MM 3.4-1: Construction Best Management Practices MM 3.4-14: Future Phases Biological Review MM 3.4-15: Impacts 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 3.9-1: Storm Water Pollution Prevention Plan MM 3.9-2: Aggregate/Concrete Monitoring and Reporting Program	LTS	LTS	LTS	N/A
3.4-3	Substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological modification, or other means.	S	S	LTS	LTS	MM 3.4-1: Construction Best Management Practices MM 3.4-17: Aquatic Resources Protection and Management MM 3.9-1: Storm Water Pollution Prevention Plan	LTS	LTS	N/A	N/A

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
						MM 3.9-2: Aggregate/Concrete Monitoring and Reporting Program				
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.	S	S	LTS	NI	MM 3.4-7: Artificial Lighting Impacts – Construction and Operation MM 3.4-14: Future Phases Biological Review MM 3.4-19: Wildlife Movement - Fencing MM 3.4-20: Wildlife Movement – Future Phases	LTS	LTS	N/A	N/A
3.4-5	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	S	S	S	NI	MM 3.4-14: Future Phases Biological Review MM 3.4-16: Oak Mitigation Plan	LTS	LTS	NI	N/A
3.4-6	Conflict with the provisions of an adopted habitat conservation plan (hcp), natural community conservation plan, or other approved local, regional, or state habitat conservation plan.	S	S	NI	NI	MM 3.4-14: Future Phases Biological Review MM 3.4-16: Oak Mitigation Plan	LTS	LTS	N/A	N/A
3.4-7	Cumulative impacts to biological resources.	S	S	LTS	LTS	MM 3.4-1: Construction Best Management Practices MM 3.4-2: Worker 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	LTS	LTS	N/A	N/A

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Environmental Impact	Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
	Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
					MM 3.4-6: Bat Maternity Roosts and Special-Status Bat Impacts				
					MM 3.4-7: Artificial Lighting Impacts – Construction and Operation				
					MM 3.4-8: Special-Status Birds - Nesting				
					MM 3.4-9: Special-Status Birds – Burrowing Owl				
					MM 3.4-10: Western 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 3.4-14: Future Phases Biological Review				
					MM 3.4-15: Impacts 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				

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
3.5	**Cultural Resources**									
3.5-1	Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5.	PS	PS	NI	NI	MM 3.5-1 Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation	LTS	LTS	N/A	N/A
3.5-2	Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.	PS	PS	PS	PS	MM 3.5-1 Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring MM 3.5-3: Future Phase Investigations	LTS	LTS	LTS	LTS
3.5-3	Disturb any human remains, including those interred outside of formal cemeteries.	PS	PS	PS	PS	MM 3.5-1 Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-4: Cease Work, Contact County Coroner	LTS	LTS	LTS	LTS
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.	PS	PS	PS	PS	MM 3.5-1 Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring MM 3.5-3: Future Phase Investigations	LTS	LTS	LTS	LTS
3.5-5	Cumulative impacts to cultural resources and tribal cultural resources.	PS	PS	PS	PS	MM 3.5-1 Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring	LTS	LTS	LTS	LTS

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
						MM 3.5-3: Future Phase Investigations MM 3.5-4: Cease Work, Contact County Coroner				
3.6	**Geology and Soils**									
3.6-1	Directly or indirectly cause potential substantial risk of loss, injury, or death due to seismic related hazards.	PS	PS	PS	LTS	MM 3.6-1: Final Design-Level Geotechnical Report(s)	LTS	LTS	LTS	N/A
3.6-2	Substantial soil erosion or loss of topsoil.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.6-3	Development on expansive soils or on unstable soils.	PS	PS	PS	LTS	MM 3.6-1: Final Design-Level Geotechnical Report(s)	LTS	LTS	LTS	N/A
3.6-4	Have soils inadequate to support septic or alternative wastewater systems.	LTS	LTS	NI	N/A	None Required	N/A	N/A	N/A	N/A
3.6-5	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	PS	PS	PS	PS	MM 3.6-2: Worker Training, Cease Work, and Consult with Qualified Paleontologist	LTS	LTS	LTS	N/A
3.6-6	Cumulative geology and soils impacts.	PS	PS	PS	PS	MM 3.6-1: Final Design-Level Geotechnical Report(s) MM 3.6-2: Worker Training, Cease Work, and Consult with Qualified Paleontologist	LTS	LTS	LTS	LTS
3.7	**Greenhouse Gas Emissions**									
3.7-1	Generate greenhouse gas emissions either directly or indirectly, that may have a significant impact on the environment.	PS	PS	PS	PS	MM 3.7-1: Operational GHG Emissions	SU	SU	SU	SU
3.7-2	Conflict with an applicable plan, policy, or regulation	PS	PS	PS	PS	MM 3.7-1: Operational GHG Emissions	SU	SU	SU	SU

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
	adopted for the purpose of reducing the emissions of greenhouse gases.									
3.8	**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.	PS	PS	LTS	LTS	MM 3.8-1: Hazardous Materials Best Management Practices	LTS	LTS	N/A	N/A
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.	PS	PS	PS	PS	MM 3.8-2: Prepare a Hazardous Materials Contingency Plan MM 3.8-3: Minimize Potential for Accidental Release of Hazardous Materials during Demolition MM 3.8-4: Reporting Geothermal Wells MM 3.8-5: Asbestos Dust Mitigation Plan MM 3.8-6: Conduct Shallow Groundwater Characterization Plan for Construction of Off-Site Water Pipeline	LTS	LTS	LTS	LTS
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.	N/A	N/A	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.8-4	Potential for cumulative effects associated with hazards and hazardous materials.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
3.9	**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.	PS	PS	PS	PS	MM 3.9-1: Storm Water Pollution Prevention Plan MM: 3.9-2 Aggregate/ Concrete Monitoring and Reporting Program	LTS	LTS	LTS	LTS
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.	PS	LTS	LTS	PS	MM 3.9-3: Off-Site Groundwater Well Safe Yield Analysis and Monitoring	LTS	N/A	N/A	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.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.9-4	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	PS	PS	LTS	PS	MM 3.9-4: Floodplain Analysis MM 3.9-5: Inundation Mapping MM 3.9-6: Incorporation of Floodplains and Dam Inundation Zones in Site Plans	LTS	LTS	N/A	LTS
3.9-5	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
3.9-6	Cumulative hydrology and water quality impacts.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.10	**NOISE**									
3.10-1	Construction activities could generate substantial temporary increases in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	PS	PS	PS	S	MM 3.10-1: Restrict Construction Times in Areas in Proximity to Sensitive Receptors MM 3.10-2: Construction Noise Reduction	LTS	LTS	LTS	LTS
3.10-2	Operational activities could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	LTS	PS	LTS	LTS	MM 3.10-3: Future Phases Noise Control	N/A	LTS	N/A	N/A
3.10-3	Traffic noise could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	S	N/A	N/A	N/A	None Required	SU	N/A	SU	N/A

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
3.10-4	Expose people residing in or working in the project area to excessive noise levels as a result of being located in the vicinity of a private airstrip or airport land use plan.	PS	PS	NI	N/A	MM 3.10-4: Restrict Aircraft and Non-Emergency Helicopter Flight Times	LTS	LTS	N/A	N/A
3.10-5	Cumulative traffic noise could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	S	S	S	N/A	None Available	SU	SU	SU	N/A
3.11	**Population and Housing**									
3.11-1	Induce substantial unplanned population growth.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.11-2	Potential for cumulative effects associated with population and housing.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.12	**Public Services**									
3.12-1	Result in substantial adverse physical impacts associated with the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
	objectives for police protection.									
3.12-2	Cumulative increased demand for police protection services.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.12-3	Result in substantial adverse physical impacts associated with the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.12-4	Cumulative increased demand for fire protection services.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.12-5	Result in substantial adverse physical impacts associated with the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for schools.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.12-6	Cumulative increased demand for school services.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
3.12-7	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated or include recreational facilities that might have an adverse physical effect on the environment.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.12-8	Cumulative increased demand for parks and recreation.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.13	**Transportation**									
3.13-1	Conflict with program, plan, ordinance, or policy addressing roadways during construction.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.13-2	Conflict with program, plan, ordinance or policy addressing roadways during operation assuming future baseline plus project conditions.	PS	PS	PS	PS	MM 3.13-1: Implement Improvements at SR-29 and Butts Canyon Road	LTS	LTS	LTS	LTS
3.13-3	Conflict with program, plan, ordinance or policy addressing transit during operation.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.13-4	Conflict with program, plan, ordinance or policy addressing bicycle, or pedestrian facilities during operation.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
3.13-5	Conflict or be inconsistent with CEQA guidelines § 15064.3, subdivision (b).	PS	PS	PS	PS	MM 3.13-4: Implement a Transportation Demand Management (TDM) Program	SU	SU	SU	SU
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).	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.13-7	Result in inadequate emergency access.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.13-8	Conflict with program, plan, ordinance or policy addressing roadways during under cumulative conditions.	PS	PS	N/A	N/A	MM 3.13-1: Implement Improvements at SR-29 and Butts Canyon Road MM 3.13-2: Pay Fair Share towards Lake County Intersection Improvements MM 3.13-3: Conduct Traffic Study and Implement Mitigation for Future Phases	LTS	SU	N/A	N/A
3.14	**Utilities**									
3.14-1	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage facilities, the construction or relocation of which could cause significant environmental effects.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A
3.14-2	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
	normal, dry and multiple dry years.									
3.14-3	Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.14-4	Cumulative water, wastewater, and storm water drainage impacts.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.14-5	Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.14-6	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.14-7	Cumulative solid waste impacts.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.14-8	Require or result in the relocation or construction of new or expanded electric power, natural gas, or telecommunications facilities, the construction or relocation	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
	of which could cause significant environmental effect.									
3.14-9	Cumulative Electricity, Natural Gas, and Telecommunication Services Impacts.	LTS	LTS	LTS	N/A	None Required	N/A	N/A	N/A	N/A
3.15	**Energy**									
3.15-1	Significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during construction.	PS	PS	N/A	N/A	MM 3.3-1: Measures to Reduce Short-term Construction Related Emissions MM 3.7-1: Operational GHG Emissions	LTS	LTS	N/A	N/A
3.15-2	Significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during operation.	PS	PS	N/A	N/A	MM 3.7-1: Operational GHG Emissions MM 3.13-4: Implement a Transportation Demand Management (TDM) Program	LTS	LTS	N/A	N/A
3.15-3	Conflict with a state or local plan for renewable energy or energy efficiency.	LTS	LTS	N/A	N/A	None Required	N/A	N/A	N/A	N/A
3.15-4	Cumulative impacts due to increased energy use.	LTS	LTS	N/A	N/A	None Required	N/A	N/A	N/A	N/A
3.16	**Wildfire**									
3.16-1	Substantially impact an adopted emergency response plan or emergency evacuation plan.	LTS	LTS	LTS	NI	None Required	N/A	N/A	N/A	N/A
3.16-2	Exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from wildfire	LTS	LTS	LTS	NI	None Required	N/A	N/A	N/A	N/A

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Environmental Impact		Level of Significance Before Mitigation				Mitigation Measure	Level of Significance After Mitigation			
		Guenoc Valley Site		Other Phase 1 Areas			Guenoc Valley Site		Other Phase 1 Areas	
		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure		Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
	or the uncontrolled spread of wildfire.									
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.	PS	PS	PS	PS	MM 3.16-1: Fire Prevention during Construction	LTS	LTS	LTS	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.	PS	PS	PS	N/A	MM 3.16-2: Post Wildfire Emergency Response	LTS	LTS	LTS	N/A
3.16-5	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	PS	PS	PS	N/A	MM 3.16-2: Post Wildfire Emergency Response	LTS	LTS	LTS	N/A
3.16-6	Cumulative impacts.	LTS	LTS	LTS	LTS	None Required	N/A	N/A	N/A	N/A

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SECTION 1.0

INTRODUCTION

1.0 INTRODUCTION

The County of Lake (County) has prepared this Draft Environmental Impact Report (EIR) to provide the general public and interested public agencies with information about the potential environmental impacts of the Guenoc Valley Mixed-Use Planned Development Project (Proposed Project). This Draft EIR was prepared in compliance with the California Environmental Quality Act (CEQA, Public Resources Code [PRC] §§21000-21178), and the CEQA *Guidelines* (California Code of Regulations [CCR], Title 14).

The Proposed Project includes a General Plan amendment to designate the 16,000-acre Guenoc Valley Site as Resort Commercial and rezone it to Guenoc Valley District (GVD), pursuant to the Middletown Area Plan Policy 6.3.1b. These amendments, if approved, 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 within the zoning district. The Draft EIR analyzes the effects of the proposed General Plan amendment and rezoning of the Guenoc Valley Site to GVD on a programmatic level.

In addition to the program level analysis, the Draft EIR provides a project level analysis of the impacts of the first phase (Phase 1) of the Proposed Project. Phase 1 proposes a phased subdivision and related entitlements to allow at full buildout up to 401 residential estates, 141 resort residential units, and 177 hotel units and accessory resort and commercial uses within the Guenoc Valley Site. In addition, Phase 1 includes a subdivision and rezone of the Middletown Housing Site to accommodate workforce housing, including 21 single family residences with optional accessory dwelling units, 29 duplex units in 15 structures, and a community clubhouse and associated infrastructure. Off-site infrastructure improvements under the Proposed Project include a proposed water supply well on the Off-site Well Site and pipeline located adjacent to and within Butts Canyon Road, along with intersection and electrical improvements.

1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

As described in CEQA *Guidelines* Section 15121(a), an EIR is an informational document that assesses potential environmental impacts of a proposed project, as well as identifies mitigation measures and alternatives to the proposed project that could reduce or avoid adverse environmental impacts. As the CEQA Lead Agency for this project, the County is required to consider the information in the EIR along with any other available information in deciding whether to approve the project. The County has prepared this EIR for the following purposes:

- To satisfy the requirements of the CEQA, and the CEQA Guidelines;
- To inform the general public, the local community, responsible agencies, other interested public agencies, and the County's decision makers regarding the potential environmental effects resulting from implementation of the Proposed Project, as well as possible measures to mitigate significant effects, and alternatives to the Proposed Project;
- To enable the County to consider environmental consequences when deciding whether to approve the Proposed Project; and
- For use by responsible agencies (described in **Section 1.3.1**) in support of requested permits and approvals.

In summary, the EIR is an informational document used in the planning and decision-making process. It is not the intent of an EIR to recommend either approval or denial of a project.

1.2 TYPE OF EIR

The CEQA Guidelines define a project EIR as "focusing primarily on the changes in the environment that would result from the development project" (CEQA Guidelines § 15161). As further stated in Section 15161, a project-specific EIR "shall examine all phases of the project including planning, construction, and operation." A project-specific analysis has been prepared for Phase 1 of the Proposed Project because the proposed SPOD (**Appendix SPOD**) and associated studies and reports, contain the information necessary to perform such an analysis.

By contrast, CEQA Guidelines Section 15168(a) define a program EIR as follows:

> A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:
>
> - Geographically;
> - As logical parts in the chain of contemplated actions;
> - In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or
> - As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in several different ways.

Program EIRs typically evaluate broad-scale impacts of a plan, program, or series of actions that can be characterized as one large project. The proposed GVD zoning designation proposed for the Guenoc Valley Site would allow the development of additional uses beyond those proposed within the SPOD for Phase 1, including but not limited to additional hotel units, additional residential units and additional resort amenities.

Because the site plans for the future phases of the Proposed Project have not been developed, this EIR provides a program level of analysis of future development that could foreseeably occur under the proposed GVD zoning district. The Project-level and Program-level analyses combined in this EIR will ensure that the effects of developing both Phase 1 and future phases are not segmented. For general and specific development plans associated with future phases, additional approvals would be required, and project-level environmental review would be performed based on specific development plans. It is expected that CEQA compliance documentation for future phases of development will "tier" off this document. The CEQA Guidelines define tiering as covering "general matters and environmental effects in an environmental impact report prepared for a policy, plan, program or ordinance followed by narrower or site-specific environmental impact reports which incorporate by reference the discussion in any prior environmental impact report and which concentrate on the environmental effects which are capable of being mitigated or were not analyzed as significant effects on the environment in the prior environmental impact report."

1.3 EIR PROCESS

1.3.1 LEAD AGENCY

In accordance with CEQA *Guidelines* Sections 15050 and 15367, the County has been designated the "Lead Agency," which is defined as the "public agency which has the principal responsibility for carrying out or disapproving a project." The Lead Agency is also responsible for determining the scope of the environmental analysis, preparing the EIR, and responding to comments received on the Draft EIR. Prior to making a decision whether to approve a project, the Lead Agency is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the Lead Agency.

Known Responsible and Trustee Agencies

"Responsible agency" means a public agency that proposes to carry out or approve a project for which a lead agency is preparing or has prepared an EIR or Negative Declaration. For the purpose of CEQA, the term responsible agency includes all California public agencies other than the lead agency that have discretionary approval power over the project or an aspect of the project. The following agencies are identified as potential responsible agencies:

- California Department of Fish and Wildlife
- State Water Resources Control Board Division of Drinking Water
- Central Valley Regional Water Quality Control Board
- California Public Utilities Commission
- Lake County Local Agency Formation Commission (LAFCO)

"Trustee agency" means a state agency having jurisdiction by law over natural resources affected by a project, which are held in trust for the people of the state of California. The only known trustee agency is the California Department of Fish and Wildlife (CDFW).

CEQA also requires coordination with federal agencies, including but not limited to the United States Army Corps of Engineers (USACE), which may be involved in federal permitting necessary for the project site to develop. These federal agencies will be responsible for satisfying NEPA – the federal counterpart to CEQA – in connection with the requested regulatory approvals associated with the Proposed Project.

1.3.2 NOTICE OF PREPARATION AND SCOPING

In accordance with CEQA *Guidelines* Section 15082, a Notice of Preparation (NOP) was circulated to the public, local, state and federal agencies, and other known interested parties for a 30-day public and agency review period on April 23, 2019 (included as **Appendix NOP**). The purpose of the NOP was to provide notification that an EIR for the Proposed Project was being prepared and to solicit public input on the scope and content of the document.

Pursuant to CEQA *Guidelines* Section 15082 the Lead Agency held two scoping meetings for the EIR on May 15, 2019, one in the morning at the County of Lake Board of Supervisors Chambers, and the other in the evening at the Middletown Library. Agencies and members of the public were invited to attend and

provide input on the scope of the EIR. Comments from agencies and the public provided at the scoping meetings and in written comments submitted in response to the NOP are included within **Appendix NOP**. Issues raised during the scoping process are summarized in **Section 1.5**.

1.3.3 DRAFT EIR AND PUBLIC REVIEW

This Draft EIR is being circulated for public review and comment for a period of 45 days. During this period, the general public, organizations, and agencies can submit comments to the Lead Agency on the Draft EIR's accuracy and completeness. Release of the Draft EIR marks the beginning of a 45-day public review period pursuant to CEQA *Guidelines* Section 15105. The public can review the Draft EIR at the County's website at:

www.lakecountyca.gov/Government/Directory/Community_Development/Planning/GuenocValley.htm,

or at 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 Draft EIR should be mailed or emailed to:

Mark Roberts
Principal Planner
255 N. Forbes Street
Lakeport, CA 95453
guenocvalleycomments@lakecountyca.gov

1.3.4 FINAL EIR AND EIR CERTIFICATION

Upon completion of the public review period, a Final EIR will be prepared that will include written comments on the Draft EIR received during the public review period and the County's responses to those comments. The Final EIR will also include the Mitigation Monitoring and Reporting Plan (MMRP) prepared in accordance with Section 21081.6 of the Public Resource Code. The Final EIR will address any revisions to the Draft EIR made in response to public comments. The Draft EIR and Final EIR together will comprise the EIR for the Proposed Project. Before the County can approve the project, it must first certify that the EIR has been completed in compliance with CEQA, that the County Board of Supervisors has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the County. The County Board of Supervisors also will be required to adopt Findings of Fact, and for any impacts determined to be significant and unavoidable, adopt a Statement of Overriding Considerations.

1.4 PREVIOUS ENVIRONMENTAL REVIEW AND INCORPORATION BY REFERENCE

State CEQA Guidelines Section 15150 allows for incorporation by reference of "all or portions of another document which is a matter of public record or is generally available to the public." Incorporation by reference is used principally as a means of reducing the size of EIRs. This EIR relies, in part, on information previously prepared by the County, and SWRCB Division of Water Rights for areas within the project vicinity or infrastructure improvements necessary to serve the Guenoc Valley Site and Middletown Housing Site.

The documents listed below are incorporated by reference, as source documents for this EIR. Pursuant to CEQA Guidelines Section 15150 (e) and (f), these documents were used primarily to describe the environmental setting, provide general background material, or communicate descriptive technical material. These documents are available for public review and inspection during normal business hours (8 a.m. to 5 p.m. Monday through Thursday) at the County of Lake, 255 N. Forbes Street, Lakeport, CA 95453, and online at:
www.lakecountyca.gov/Government/Directory/Community_Development/Planning/GuenocValley.htm.

- Middletown Area Plan Environmental Impact Report (EIR; August 2010; SCH # 2009102061)

  Approval of the 2010 Middletown Area Plan resulted in a general plan and rezone amendment for the Middletown planning area, as required by the Lake County General Plan. The Middletown Planning Area is one of the 8 designated planning areas in the Lake County General Plan. The Middletown Area Plan addresses natural resources, public safety and community development and provides comprehensive text and policies to guide land use and development decisions in the Middletown planning area through the year 2030. The plan specifically includes the Guenoc Valley Site as the "Langtry/Guenoc Special Study Area" and indicates that future development should support a mix of agricultural, winery, resort, commercial, and residential uses. Please refer to **Section 2.3.2** for more detailed information about the Middletown Area Plan. The Middletown Area Plan EIR was certified on August 17, 2010. The 2010 EIR analyzed impacts related to development proposed within the Middletown Area Plan, including the Guenoc/Langtry Special Study Area. This EIR incorporates by reference information provided in the 2010 EIR that remains up to date and is relevant for the analysis. In particular, this EIR incorporates the analysis within the 2010 EIR of the environmental consequences related to development of the Guenoc/Langtry Special Study Area and Middletown Housing Site, as well as the analysis of growth within the Middletown Area Plan.

- Guenoc Water Rights Modification Project (March 2009, SCH# 2003042171)

  The Guenoc Water Rights Modification Project consisted of modifications to the surface water rights for the 22,000 acre Guenoc Ranch (which encompasses the 16,000-acre Guenoc Valley Site in Lake County). After the incorporation of mitigation measures from the EIR, including preservation of a minimum area of oak woodlands, and avoidance of wetlands and slopes greater than 30%, the Water Rights Modification Project allows for the irrigation use of an approximately 10,390 acre-foot

surface water allocation within the 6,847 acre place of use boundary within the Guenoc Ranch (the "mitigated" place of use boundary is 4,092 acres). This EIR incorporates pertinent information provided in the Water Rights EIR that is relevant to the analysis of the Proposed Project. In particular, this EIR incorporates by reference the analysis of effects associated with surface water diversions from Putah Creek, and the beneficial use of surface water from Detert and Upper Bohn Reservoirs within the approved place of use to meet project-related water demands (see **Section 2.5.1.5**).

- Stonebrook Meadows Subdivision Mitigated Negative Declaration (MND; August 2006) and updated Initial Study Checklist (February 2016)

  In 2005, the County received an application for the Stonebrook Meadows Subdivision project, which consisted of a tentative subdivision map to divide the approximately 13.65-acre Middletown Housing Site into 50 lots. The Lake County Planning Commission signed a Mitigated Negative Declaration for the Stonebrook Meadows Subdivision on August 11, 2006. In 2016, the County prepared an update to the initial study (IS) checklist to address the passage of time, changes in background conditions and minor changes to the project. The 2016 updated project application proposed 49 single-family residential lots (instead of 50 lots) and included a major use permit, new road and utility construction, and approval of annexation into the Callayomi County Water District. The County found that with mitigation, there would not be a significant effect on the environment. This EIR incorporates pertinent information provided in the MND and updated 2016 IS Checklist that remains up to date and is relevant. In particular, this EIR incorporates by reference the analysis of the environmental consequences related to development of a 50-unit subdivision within the Middletown Housing Site.

1.5 ISSUES AND CONCERNS RAISED DURING SCOPING

Listed below is a summary of issues and concerns raised during the scoping process.

1.5.1 PROJECT DESCRIPTION

The County of Napa requested that the project description in the EIR address the following areas:

- Describe the scope of the anticipated policy and exhibit/map amendments to the Lake County General Plan;
- Detail the total improvements and subdivisions boundaries occurring within Napa County and/or the extent of setbacks proposed from the Napa County boundary;
- Within Napa County, describe all the off-site improvements that may occur;
- Describe the improvements and recreation activities proposed for the Upper Bohn Reservoir that would occur in Napa County; and
- Describe the extent of the proposed improvements for water and wastewater that would occur in Napa County or design features that could preclude connectivity with the applicant's Napa County developments.

Other commenters requested to know if guest helicopter pads are part of the Proposed Project. The Sierra Club Lake Group requested that the components of the project that are analyzed at a project-level and

program-level analysis within the EIR be clearly defined. Lake County LAFCo requested to be mentioned regarding the formation of service districts.

*A description of the Proposed Project, including the details requested above is provided in **Section 2.0**, **Project Description**, of the Draft EIR. It should be noted that no project components or related improvements would occur within Napa County.*

1.5.2 AESTHETICS

The Redbud Audubon Society, Lake County Rural Arts Initiative, and private residents of Lake County requested that the EIR address the Lake County Board of Supervisors approved resolution in support of lighting ordinances consistent with the Dark Sky Certification as a Dark Sky Community for Lake County. Should the Proposed Project cause light pollution, Lake County residents requested that mitigation measures should be implemented to alleviate this.

*The proposed lighting plan is described in **Section 2.0**, **Project Description,** and impacts and mitigation measures associated with lighting are addressed in **Section 3.1**, **Aesthetics**, of the Draft EIR.*

1.5.3 AIR QUALITY

The County of Napa requested that the EIR address the air quality changes within Napa County, and that the analysis should consider both the Bay Area Air Quality Management District (the district Napa County is within) and Lake County Air Quality Management District thresholds.

*This comment is addressed in **Section 3.3**, **Air Quality**, of the Draft EIR.*

1.5.4 BIOLOGICAL RESOURCES

The County of Napa requested that the EIR examine the Proposed Project's possible impacts to biological resources within Napa County, such as the wildlife corridors between Lake County and Napa County.

The Redbud Audubon Society and the Sierra Club Lake Group requested that the EIR examine the Proposed Project's impacts on wildlife habitat connectivity, such as wildlife corridors and passages. The Redbud Audubon Society also states that the 5-acre units described during the scoping meeting would be detrimental to habitat connectivity as numerous fenced-off areas could affect continuity. The Redbud Audubon Society recommended that the Proposed Project's residential communities be designed in a nature-friendly fashion. Lake County Land Trust also requested that the EIR examine the Proposed Project's impacts on wildlife connectivity and corridors due to the connection between the Mayacamas Mountains and the Berryessa Snow Mountain National Monument.

The Redbud Audubon Society requested that the EIR address the impacts that the Proposed Project's grazing management will have on local wildlife, specifically predators of grazing animals (e.g. cougars). The Redbud Audubon Society also stated that grazing animals may consume any vegetation in their grazing area. Lastly, the Redbud Audubon Society requested to know if a survey of the Native California Bunch

grasses had been conducted as the project area may be conducive to this species (**Appendix NOP**). One resident of Lake County inquired if oak trees will be planted as part of the Proposed Project.

*These comments are addressed in **Section 3.4**, **Biological Resources**, of the Draft EIR.*

1.5.5 CULTURAL RESOURCES

The County of Napa requested the EIR address the potential impacts to cultural resources within Napa County that are in close proximity to the project site. Middletown Rancheria noted that the Guenoc Valley Site may contain significant cultural and sacred resources and requested adequate assessment of the potential for cumulative impacts.

*Effects to cultural resources are addressed in **Section 3.5**, **Cultural Resources**, of the Draft EIR. It should be noted that no cultural resources within Napa County will be affected by the Proposed Project.*

1.5.6 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

The Sierra Club Lake Group and the Redbud Audubon Society requested that the EIR address the impacts that the Proposed Project may have on climate change. The groups requested details regarding the energy use and carbon dioxide releases that will occur as a result of the Proposed Project during construction and operation, including operation impacts in the future.

*The comments concerning greenhouse gases are addressed in **Section 3.7**, **Greenhouse Gas Emissions and Climate Change**, of the Draft EIR. Comments concerning energy usage are addressed in **Section 3.15**, **Energy**, of the Draft EIR.*

1.5.7 HAZARDS AND WILDFIRE

The County of Napa requested that the findings in the IS be reassessed regarding Lake County's Emergency operations and local hazard mitigation plans. The IS determined that the Proposed Project would not prevent the implementation of these plans, but Napa County commented that the Proposed Project's size and remote location would affect these plans. Napa County also requested the EIR specify what components of the Proposed Project's fire management plan will be located in Napa County and/or result in changes to the physical environment in Napa County.

Representatives from the Middletown Rancheria requested to know more details about the Proposed Project's fire plan, including emergency exits from the project area. The representatives mentioned that Twin Pine Casino acted as an emergency hub during the Lake County fires since the casino resort was the only building with power due to its emergency generators. Additionally, Lake County LAFCo commented that Lake County has a Countywide CSA for road maintenance and that it is a concern that the development is within a high fire hazard area.

The California Department of Conservation (CDC) stated that 23 plugged and abandoned shallow temperature gradient geothermal wells are documented within the Proposed Project's boundary.

Significant and potentially dangerous issues may be associated with development near the wells. The CDC suggested certain procedures be followed in the event of discovery of an unknown geothermal well during construction.

> *Comments concerning Lake County's Emergency operations and the project fire plan are addressed in* ***Section 3.16, Wildfire****, of the Draft EIR. Comments concerning geothermal wells are addressed in* ***Section 3.8, Hazards and Hazardous Materials*** *and* ***Section 3.9 Hydrology*** *of the Draft EIR.*

1.5.8 HYDROLOGY AND WATER QUALITY

The Callayomi County Water District (CCWD) provided comments related to water supply service to the Middletown Housing Site. It stated that it opposes any new public drinking water wells that may have the potential to affect the CCWD's current and future water sources. Secondly, the CCWD anticipates that the SWRCB Division of Drinking Water will recommend that the Middletown Housing Site connect to the CCWD public water system. If the developer intends on connecting to the CCWD system, the Middletown Housing Site would need to be annexed into the district. The CCWD states that it would then provide a "Will Serve Letter" if the water system components installed by the developer meet CCWD standards and if there is sufficient capacity.

The County of Napa requested the EIR assess potential impacts to surface and groundwater resources and water quality within Napa County. Furthermore, the County stated that the EIR should evaluate the Proposed Project's potential impacts to the water quality and quantity in Berryessa Estates Subdivision approximately 3.5 miles from the Guenoc Valley Site.

The State Water Resources Control Board, Division of Drinking Water, stated that the Proposed Project will require a domestic water supply permit for the proposed new private water system. Furthermore, the applicant will need to comply with the California Health and Safety Code, including submittal of a preliminary technical report no later than seven days after the submission of an application to the county for a building permit for any water-related improvement. This preliminary technical report will require the Applicant to communicate with Lake County LAFCO and request water services from all public water systems with a 3-mile radius to determine if water could be provided by an existing utility.

The County of Lake expressed that projects of four single-family equivalent units or more must submit a capacity analysis to Lake County for review. A licensed civil engineer should prepare the capacity analysis and examine the water distribution, storage and treatment as is applicable to the project area in order to identify deficiencies in the systems—if any. Finally, any connection to Lake County maintained water and/or sewer systems will be made in accordance with the rules, regulations policies, procedures and ordinances in effect at the time of connection application (**Appendix NOP**).

Other commenters requested to know the types of wells that would be installed for the Proposed Project.

A resident of Lake County stated that the optional off-site well would impact the Middletown Aquifer because it is located approximately 2 miles from a geothermal waste site that purportedly has contaminated the groundwater. The resident requested that the EIR assess the potential for the optional off-site well to cause

contaminated groundwater to migrate to nearby private wells. Furthermore, another resident of Lake County inquired into whether a general hydrological study will be conducted for the EIR.

*Impacts associated with water quality, groundwater supply, and hydrology are addressed in **Section 3.9**, **Hydrology and Water Quality**, of the Draft EIR. Effects associated with public utilities and capacity are addressed within **Section 3.14, Utilities**, of the Draft EIR, and within **Appendix WSA,** Water Supply Assessment. A water infrastructure report (**Appendix Water**) addresses water distribution, storage and treatment. Appropriate mitigation has been recommended, where necessary to reduce any potentially significant effects to less than significant levels.*

1.5.9 LAND USE

The California Department of Conservation (DOC) requested that the EIR address the type, amount, and location of farmland being converted directly and indirectly from the Proposed Project, along with the impacts to current and future agricultural operations in the vicinity of the Proposed Project. Specifically, the DOC mentioned land-use conflicts, increases in land values and taxes, and loss of agriculture support infrastructure, such as processing facilities. The EIR should address incremental impacts leading to cumulative impacts on agricultural land, including impacts from the Proposed Project as well as impacts from past, current and likely future projects. For all of the above-mentioned impacts, mitigation measures should be proposed for impacted agricultural lands within the project boundary.

The County of Napa requested that the EIR address the frequency and characteristics of overflights occurring within Napa County as a result of the Proposed Project's float plane dock and helipads. Napa County stated that the Proposed Project's float plane dock would have to be evaluated by Lake County Airport Land Use Commission, as according to the State Aeronautic Act. Napa County also stated that any project improvements or uses occurring within Napa would be subject to Napa County jurisdiction.

The Sierra Club Lake Group requested that the EIR include a clear definition of open space and details about the calculation of current and proposed vineyards and "managed grazing" areas. Furthermore, the Sierra Club Lake Group questioned the applicability of the proposed off-site workforce housing with the standards of the Middletown Area Plan. According to the Sierra Club Lake Group, the proposed off-site workforce housing of co-living facilities does not correspond with any residential category in the Lake County General Plan or the Middletown Area Plan (**Appendix NOP**).

The Redbud Audubon Society indicated that 2,000 acres of open space was small in relation to the size of the project site, and requested that additional open space areas be considered.

*These comments are addressed in **Section 2.0, Project Description**, and **Section 3.2**, **Land Use and Agriculture**, of the Draft EIR.*

1.5.10 NOISE AND VIBRATION

The County of Napa requested that the EIR analyze the potential noise impacts to sensitive noise receptors in Napa County, including wildlife. The County specifically inquired about noise generated from overflights in Napa County that result from the Proposed Project's floatplane dock and helipads (**Appendix NOP**).

*These comments are addressed in **Section 3.10, Noise**, of the Draft EIR.*

1.5.11 TRANSPORTATION AND CIRCULATION

The County of Napa requested that the EIR assess the potential impacts to traffic within Napa County for both direct and cumulative impacts. The project could potentially increase the traffic generation to Butts Canyon Road and its street networks within Pope Valley, and State Route 29 and its street network near Calistoga. Napa County has stated that traffic modeling done in Napa County should rely on the regionally compliant Solano-Napa Travel Demand Model (**Appendix NOP**).

The County of Lake, Department of Public Works, requested that a traffic impact analysis specifically examine how the Proposed Project will impact the safety, capacity and maintenance of Butts Canyon Road and Santa Clara Road. The Department of Public Works has stated that three segments along Butts Canyon Road exceed the average collision rates to similar roads statewide. Furthermore, the Department recommended a walkability analysis to identify improvements needed for residents of the Proposed Project's off-site workforce housing to walk or bike to businesses and schools within the Middletown area. The Department also recommends consideration of non-regulatory traffic control measures (e.g. roundabouts) instead of regulatory signs and/or traffic signals.

The California Department of Transportation (Caltrans) requested that the Traffic Impact Analysis specifically include the intersections of State Route 29 with Grange Road, Butts Canyon Road, Wardlaw Street and State Route 175, and an overall vehicle miles traveled (VMT). Furthermore, Caltrans recommends that the traffic analysis evaluate the VMT per capita of the region (Lake County or Middletown) and the VMT per capita generated by the development. If the Proposed Project does not help to achieve the Statewide goal of a 15% reduction in VMT, Caltrans recommends including mitigation measures in the EIR to reduce VMT (e.g. shuttle service) (**Appendix NOP**) .

Other commenters requested to know what the impacts to traffic would be from the Proposed Project.

The Sierra Club Lake Group stated that the construction and operation of the Proposed Project will have effects that extend beyond the immediate vicinity of Middletown and to the SR-29 segment that crosses Mt. St. Helena. The Sierra Club Lake Group commented that this segment appears to be at maximum capacity for vehicle traffic during commute hours.

*These comments are addressed in **Section 3.13**, **Transportation and Traffic**, and **Appendix TIA**, Traffic Impact Analysis, of the Draft EIR.*

1.5.12 RECREATION

The Sierra Club Lake Group requested that the EIR use different language than the NOP for "wilderness." This term has specific meaning in state and federal laws, and the Sierra Club Lake Group recommended utilizing "natural recreation area" or another term in order to avoid confusion. The Sierra Club Lake Group also recommended that it be determined whether the Proposed Project will include one or two golf courses and that appropriate analysis be conducted. Lastly, the Sierra Club Lake Group requested that the Proposed Project explore the possibility of recreational collaboration with the Bureau of Land Management (BML) regarding the Berryessa Snow Mountain National Monument, which is adjacent to the project site (**Appendix NOP**).

These comments are addressed in Section 2.0, Project Description. The term "Wilderness" has been removed from the title of the Camping Area. Phase 1 of the Proposed Project would only include one golf course; however, in accordance with the permitted uses table of the GVD, the former golf course could be restored as part of a future phase (resulting in a total of two golf courses within the Guenoc Valley Site). The effects of the proposed golf course development are analyzed throughout Section 3.0 of the Draft EIR. Phase 1 does not propose an off-site connection to trails within the Berryessa Snow Mountain National Monument, due to distance from the Guenoc Valley Site and the existence of intervening landowners not associated with this Project.

1.5.13 UTILITIES

The County of Napa requested that the EIR assess the Proposed Project's impacts to utilities in Napa County, including required improvements and natural gas service to the project site. One resident of Lake County requested to know whether the Proposed Project would be creating its own utility district due to the self-sufficiency outlined in the IS.

*These comments are addressed in **Section 3.14 Utilities.***

1.5.14 PUBLIC SERVICES

The County of Napa requested that the EIR consider the impacts of the Proposed Project on Napa County public services, including emergency services. Napa County noted that during the Butts Fire (2018) and Valley Fire (2014), Lake County emergency services were overwhelmed and Napa County had to declare a state of emergency due to the hundreds of Lake County residents that fled to Napa County to shelter at the Calistoga Fairgrounds. Other commenters requested that the EIR describe the security that will be utilized in the Proposed Project.

*These comments are addressed in **Section 3.12 Public Services** and details regarding fire management are located within **Section 3.16 Wildfire**. Security measures of the Proposed Project include an on-site emergency response facility, appropriate site lighting, and fencing of construction areas, as described in Section 2.0, Project Description. The environmental impacts of the implementation of these measures are analyzed throughout **Section 3.0, Environmental Analysis**, of the Draft EIR.*

1.5.15 POPULATION AND HOUSING

The County of Napa requested that the EIR assess the Proposed Project's potential impacts to housing and growth within Napa County. The Sierra Club Lake Group stated that the application for the Proposed Project requests 1,400–1,900 residential units, yet the Middletown Area Plan designates the Guenoc Valley Area to allow up to 800 residential units. The Sierra Club Lake Group requested that the EIR justify this variation from the Area Plan. A resident of Lake County requested to know the justification for having off-site workforce housing in the Proposed Project.

*These comments are addressed in **Section 3.11**, **Population and Housing**, of the Draft EIR.*

1.5.16 ENERGY

The Sierra Club Lake Group supports the Proposed Project's alternative energy production. However, the Sierra Club Lake Group recommends integrating the energy production infrastructure into the general construction, such as rooftop and parking shade structures. A resident of Lake County requested that the EIR describe the planned solar energy development in the Proposed Project, especially whether the solar energy development would entirely supply the Proposed Project needs or not.

*These comments are address in **Section 3.15**, **Energy**, of the Draft EIR.*

1.5.17 ADDITIONAL COMMENTS

Some residents of Lake County inquired to know if the Proposed Project would be accessible (e.g. camping area) and affordable to residents of Lake County. Other residents expressed skepticism about the affordability of the Proposed Development for Lake County residents even if the facilities are open to the general public. Lake County Rural Arts Initiative noted that they hope the development will engage in supporting Lake County arts and culture. Furthermore, one resident requested to know the impacts of the Proposed Development on small businesses in the area, such as commerce between the Proposed Project and small businesses.

A resident of Lake County requested to know why the Proposed Project does not include cannabis cultivation since Lake County is part of the Green Triangle. However, another resident of Lake County commented that cannabis cultivation would be detrimental to the Lake County Area.

These comments are beyond the scope of CEQA and are not addressed in this Draft EIR.

1.6 SCOPE OF THE EIR

In accordance with CEQA *Guidelines* Section 15063, an IS**,** in conjunction with comments received during scoping (**Appendix NOP**), was used to focus the EIR on effects determined to be potentially significant. The following environmental resources were determined to have the potential to be significantly affected by the Proposed Project and have therefore been addressed in detail in this Draft EIR:

- Aesthetics
- Agriculture and Forestry

- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gases and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use / Planning
- Noise and Vibration
- Population / Housing
- Public Services
- Recreation
- Transportation and Circulation
- Utilities / Service Systems
- Wildfire

Potential impacts associated with Mineral Resources were identified through the IS as not significant and less than significant and therefore are not addressed in this Draft EIR.

1.7 TERMINOLOGY USED IN THE EIR

This EIR uses the following terminology to describe environmental effects of the Proposed Project and Alternatives:

- **Significance Criteria:** A set of criteria used by the Lead Agency to determine at what level or "threshold" an impact would be considered significant. Significance criteria used in this Draft EIR include factual or scientific information; regulatory standards of local, state, and federal agencies; and/or guiding and implementing goals and policies identified in local plans.
- **Less-Than-Significant Impact:** A less than significant impact would cause no substantial change in the environment (no mitigation required).
- **Less-Than-Significant Level:** The level below which an impact would cause no substantial change in the environment (no mitigation required).
- **Potentially Significant Impact:** A potentially significant impact may cause a substantial change in the environment; however, it is not certain that effects would exceed specified significance criteria. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact. Mitigation measures and/or project alternatives are identified to reduce project effects to the environment.
- **Significant Impact:** A significant impact would cause a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of effects using specified significance criteria. Mitigation measures and/or project alternatives are identified to reduce or avoid project effects to the environment.
- **Significant and Unavoidable Impact:** A significant and unavoidable impact would result in a substantial change in the environment that cannot be avoided or mitigated to a less-than-significant level if the project is implemented.
- **Cumulative Significant Impact:** A cumulative significant impact would result in a substantial change in the environment from effects of the project as well as surrounding projects and

reasonably foreseeable development in the surrounding area. To be considered significant a project's impact must be a cumulatively considerable contribution to a substantial change in the environment.

- **Mitigation**: Mitigation includes measures recommended in the Draft EIR and imposed as conditions of approval by the Lead Agency that:
    - avoid the impact altogether by not taking a certain action or parts of an action;
    - minimize impacts by limiting the degree or magnitude of the action and its implementation;
    - rectify the impact by repairing, rehabilitating, or restoring the affected environment;
    - reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; and
    - compensate for the impact by replacing or providing substitute resources or environments.

1.8 REPORT ORGANIZATION

The Draft EIR is split into eight sections, each of which are described briefly below.

- **Section 1.0**, **Introduction** – Provides an introduction and overview of the EIR, describes the review and certification process, lists documents incorporated by reference, describes issues raised in scoping, describes the scope of the analysis in the EIR, and defines the evaluation terminology.
- **Section 2.0**, **Project Description** – Provides a detailed description of the Proposed Project, including its location, background information, major objectives, technical characteristics, and required approvals.
- **Section 3.0**, **Environmental Analysis** – Describes the baseline environmental setting and provides an assessment of impacts for each issue area presented in **Section 1.6** Each section is divided into four sub-sections: Introduction, Existing Environmental Setting, Regulatory Background, and Impacts and Mitigation Measures.
- **Section 4.0**, **Other CEQA Considerations** – Provides discussions required by CEQA regarding impacts that would result from the Proposed Project, including a summary of cumulative impacts, secondary impacts, including potential impacts resulting from growth inducement, and significant irreversible changes to the environment.
- **Section 5.0**, **Analysis of Alternatives** – Describes and compares alternatives to the Proposed Project and associated environmental consequences.
- **Section 6.0**, **Report Preparation** – Lists report authors and agencies consulted for technical assistance in the preparation and review of the EIR.
- **Section 7.0**, **References** – Provides bibliographic information for all references and resources cited.

- **Section 8.0**, **Acronyms** – Provides a list of definitions for all acronyms used in the EIR.
- **Appendices** – Includes various documents and data directly related to the analysis presented in the Draft EIR.

SECTION 2.0

PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

2.1 PROJECT SUMMARY

The Guenoc Valley Mixed Use Planned Development Project (Proposed 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. **Figure 2-1** illustrates the regional location of the Guenoc Valley Site, Middletown Housing Site, and off-site water supply well and pipeline. This Environmental Impact Report (EIR) examines the potential significant environmental effects ("impacts") of the Proposed Project, including requested approvals by Lake County and other responsible agencies. A complete list of requested agency approvals is provided in **Section 2.7**, and would result in:

Program-level review

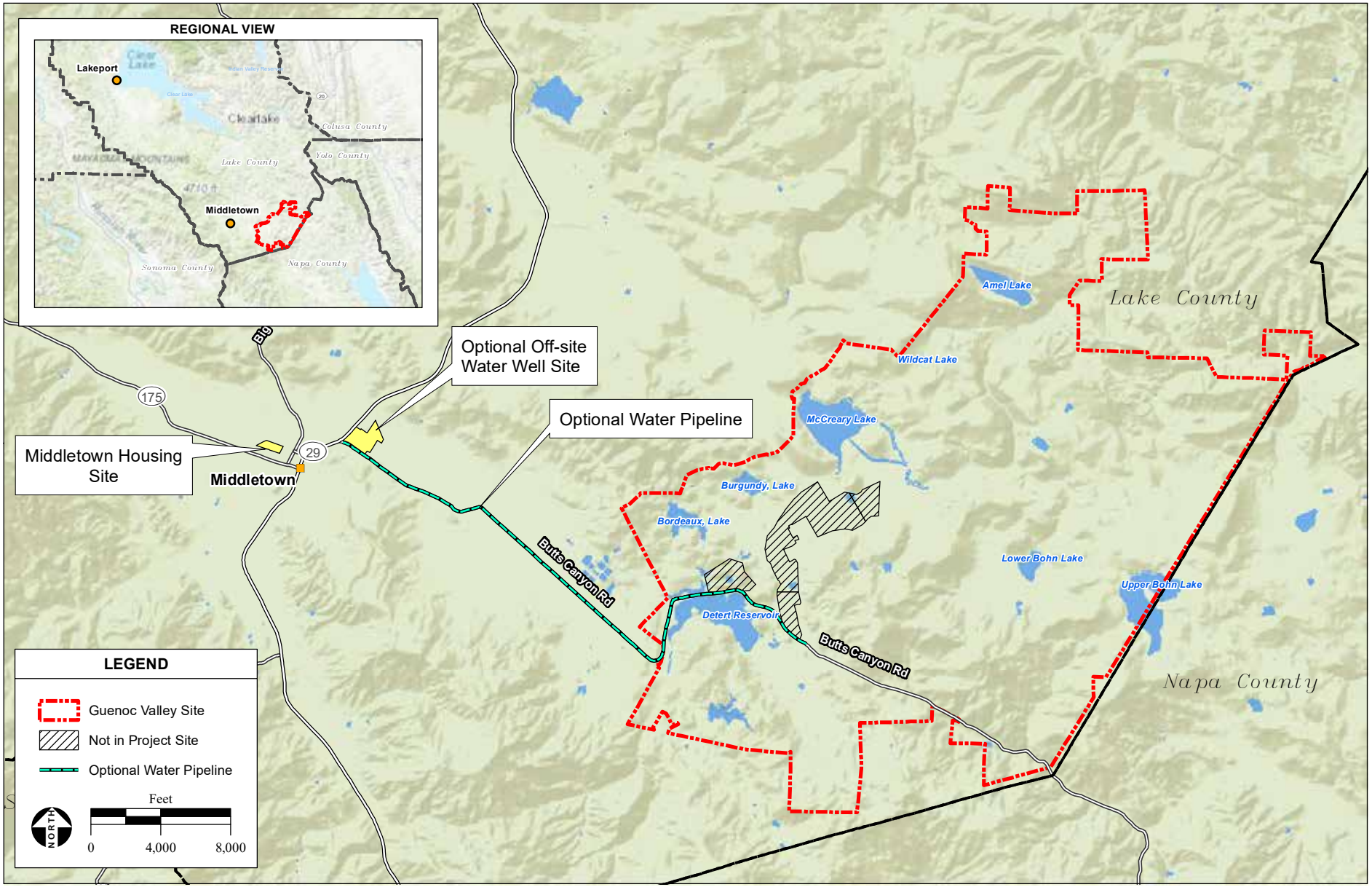
- General Plan & Zoning Ordinance Amendment (AM 18-04) that would introduce a new zoning district and rezone the Guenoc Valley Site to Guenoc Valley District ("GVD"), which would permit the development of up to 850 hotel and resort residential units, 1,400 residential estates, workforce housing, resort 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.

Project-level review

- Approval of entitlements for the first phase of development (Phase 1), including a Use Permit for the General Plan of Development (GPOD) and Specific Plan of Development (SPOD; UP 18-01; **Appendix SPOD**) and Phased Tentative Subdivision Maps that would allow for the development of seven separate subdivisions with approximately 401 residential estate units 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).
- Approval of entitlements for the proposed Workforce Housing in Middletown, including a rezone, tentative subdivision map for 50 units and a use permit for a community center. Rezone of approximately 3.5 acres in the center of the Middletown Housing Site from Single Family Residential to Two-Family Residential.
- Conceptual Grading Permit to allow for development of off-site water supply well and pipeline to the Detert Reservoir within the Guenoc Valley Site in Butts Canyon Road.
- Map Amendment to the Middletown Area Plan Special Study Area Number 3.

2.2 PROJECT LOCATION AND SETTING

The Guenoc Valley Site, Middletown Housing Site, and Off-Site Improvements are all located entirely within unincorporated Lake County. Lake County is located within the Coast Ranges Geomorphic Province of Northern California. The region consists of mountains, rolling hills, valleys, and lakes. Clear Lake is approximately 13.5 miles northwest of the Guenoc Valley Site and Lake Berryessa is approximately 10



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

Figure 2-1
Regional Location

miles southeast. 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).

2.2.1 GUENOC VALLEY SITE (PROJECT SITE)

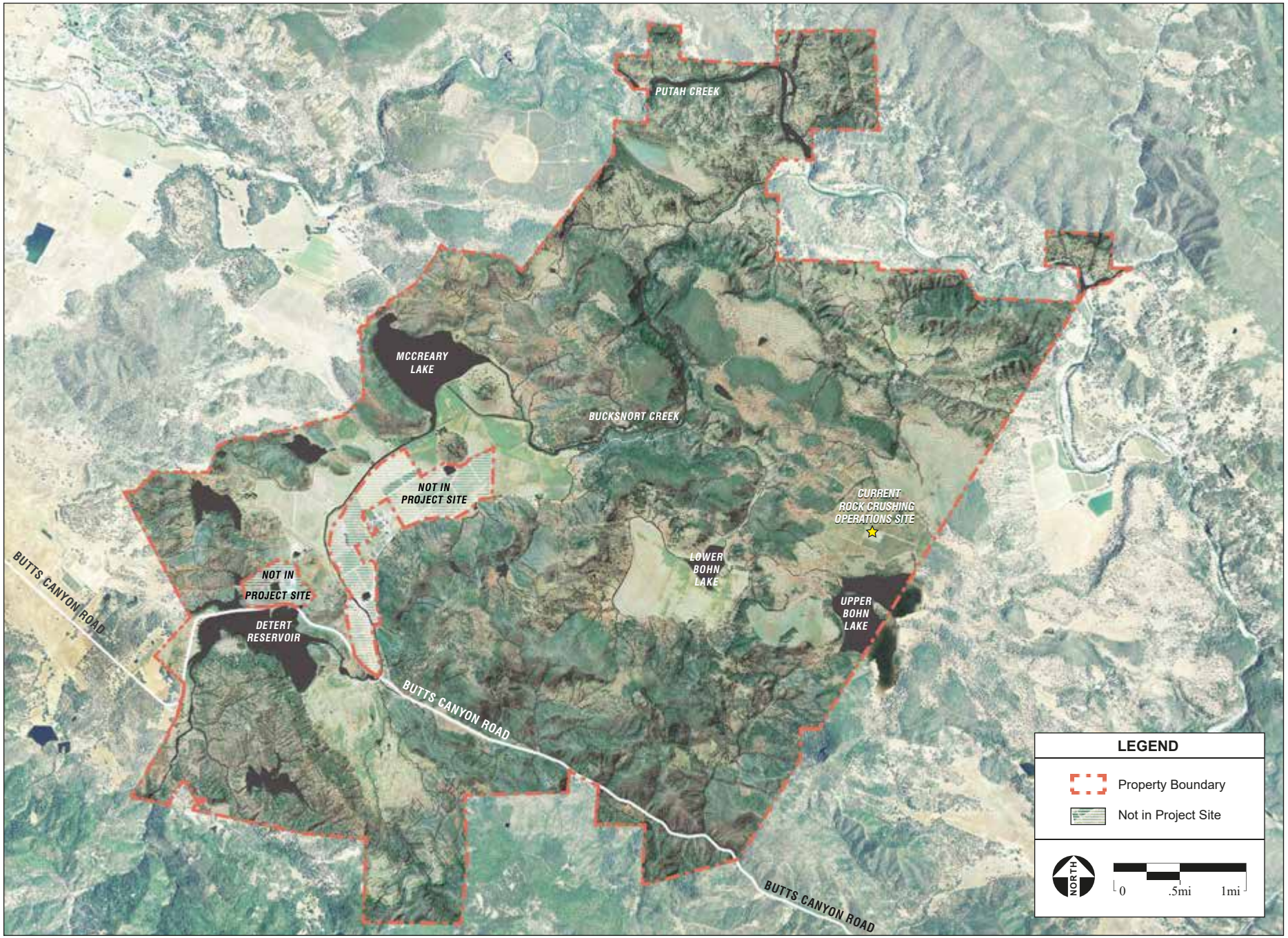
The Guenoc Valley Site (also referred to as "project site" throughout this EIR) is comprised of 49 parcels totaling approximately 16,000 acres (25 square miles) in southeast Lake County, located on the corners of four United States Geological Survey (USGS) 7.5-minute topographic quadrangles: Detert Reservoir, Aetna Springs, Jericho Valley, and Middletown. The Guenoc Valley Site is irregular in shape and measures approximately 6 miles long (north-south) and 6 miles wide (east-west). 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 site is located on both sides 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.. Access is provided by SR 29 via Butts Canyon Road to the northwest. The location of the site is shown in **Figure 2-1** and an aerial photograph of the site and vicinity is provided in **Figure 2-2**.

Napa County borders the site to the south and east, and Yolo County is approximately five miles northeast of the closest edge of the Guenoc Valley Site boundary. The town of Middletown is approximately 3 miles to the west, and the Hidden Valley Lake Community is approximately one mile north. The closest city is the City of Clearlake, roughly 25 miles away. Sacramento and San Francisco are approximately 85 and 95 miles from the site, respectively.

The site is within Guenoc Valley, which is comprised of an alluvial fan surrounded by rocky ridges and volcanic rock. Site elevations range from 625-1,950 feet above mean sea level (amsl). The topography of the site consists mostly of rolling terrain and elevations ranging between 600 feet and 1,920 feet above mean sea level. Undeveloped portions of the Guenoc Valley Site include annual grassland and various types of chaparral, conifer, pine, woodland, and hardwood. Major ponds and reservoirs wholly within the project site include Amel Lake, McCreary Lake, Lower Bohn Lake, Lake Burgundy, Lake Bordeaux, and Detert Reservoir. The western portion of Upper Bohn Lake is also within the Guenoc Valley Site. Additionally, Putah Creek, Butcherknife Creek, Bucksnort Creek, and Cassidy Creek flow east to west throughout the project site.

Historic Ranch Ownership and Management

The Guenoc Valley area is known for containing the 19th century estate of the famous actress Lillie Langtry, who purchased a portion of the property in 1888 and developed a farmstead with an equestrian center and winery (although not in the project site). The entire Guenoc Ranch Property encompasses approximately 22,000 acres and extends into Napa County. The Guenoc Valley Site is located solely within the Lake County portion of Guenoc Ranch. In 2015, portions of the ranch were burned in the Valley Fire, and the property (aside from parcels containing the Langtry winery and Lillie Langtry's estate) was sold in 2016 to the current ownership. Lotusland Investment Holdings, Inc. (Applicant) now manages the project site. Portions of the ranch are leased to other parties for agricultural use under long-term leases. In addition to



SOURCE: SWA Group, 10/2019; AES, 1/21/2020

Figure 2-2
Guenoc Valley Site and Vicinity

managing the 16,000 acre project site, Lotusland Investment Holdings also manages the adjacent 6,000 acres within Napa County, of which portions are within a long term lease for vineyard agriculture , as well as the Middletown Housing Site, and the Off-Site Well Site.

Existing Uses

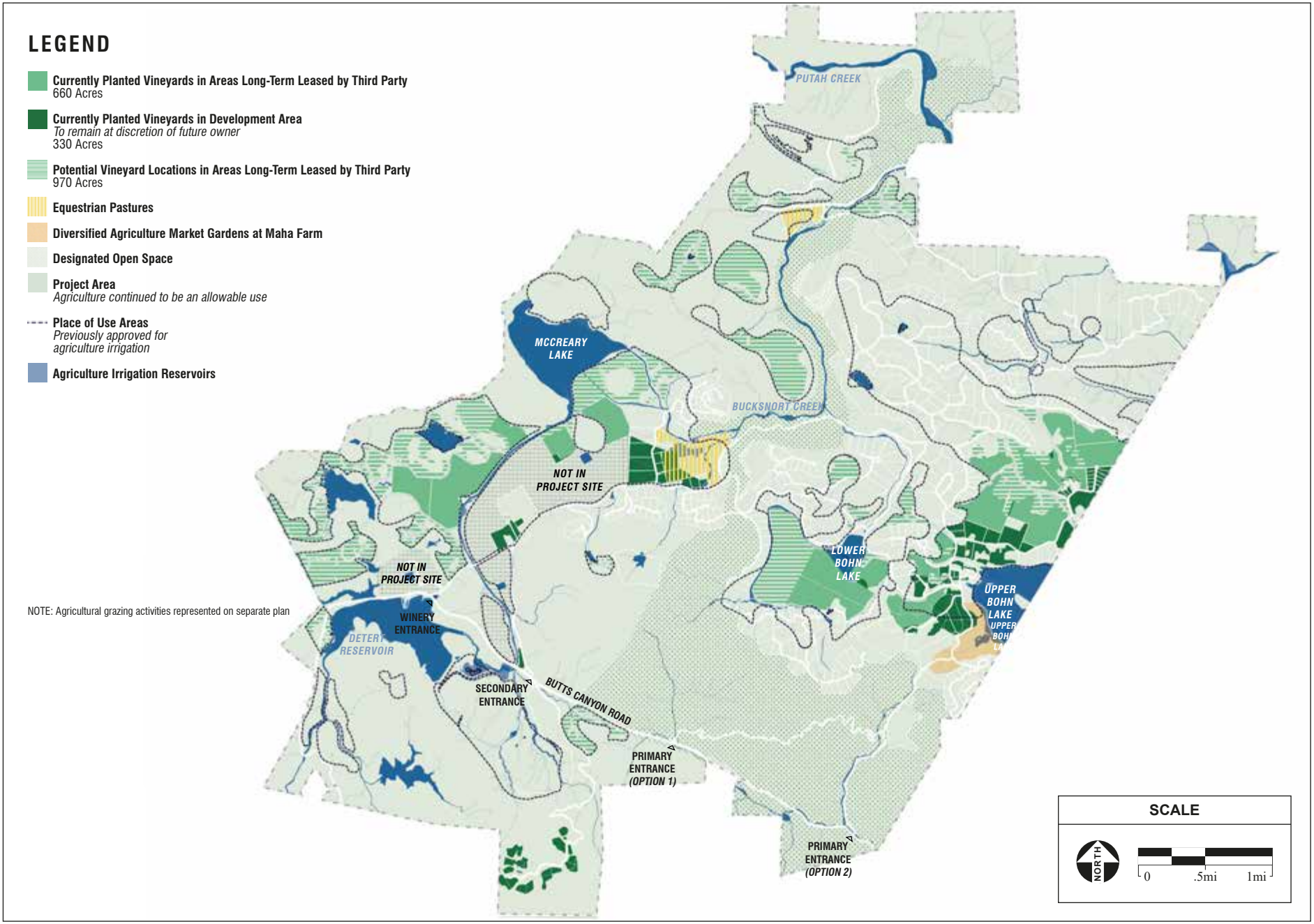
The current land uses within the Guenoc Valley Site are a mix of agriculture, recreation, and open space as shown on **Figure 2-2**. These land uses specifically utilize water rights, which allow for irrigated pastures, dry land grazing/open space, vineyards, non-operational golf course, ranch center, and water bodies. The main water bodies include Upper Bohn Reservoir, Lower Bohn Reservoir, McCreary Lake, Burgundy Lake, Bordeaux Lake, and Detert Reservoir, which provide approximately (+/-) 9,700 acre-feet of storage (Maha Guenoc Valley, 2018). An older ranch home, known as the Gebhard Lodge, located to the northeast of the ranch center, is used as a guesthouse and hunting lodge as it has been used for the past 100 years. The majority of the Guenoc Valley Site is actively used for cattle and sheep grazing. Livestock pastures currently utilized on the site are shown on page 20 of the SPOD (**Appendix A**). Approximately 990 acres of the site has been planted in vineyards, and an additional 970 acres of the site has been leased for potential vineyard expansion. Existing and potential vineyard expansion areas are shown on **Figure 2-3**. No additional vineyards are proposed under the Proposed Project.

Existing General Plan Designations and Zoning

The Guenoc Valley Site has historically been used for agricultural and grazing activities. The Lake County General Plan currently designates the site as Rural Lands, Rural Residential, Agriculture, and Resource Conservation. The Middletown Area Plan (Area Plan), adopted in 2010, designates much of the site as the Guenoc Valley Special Study Area (Special Study Area). The Area Plan identifies future uses of the Special Study Area as resort/commercial with the potential development of up to 800 residential units in addition to resort uses. Zoning designations on the site include Rural Lands, Agriculture, and Rural Residential as well as the Floodway Fringe, Scenic, Waterway, and Wetlands Combining Districts. Details regarding proposed general plan and Middletown area plan amendments are provided in **Section 2.7.1 Lead Agency Approvals**. Additional information regarding land use designations and zoning is provided in **Section 3.2 Land Use and Agriculture**.

Farmland Classification

The California Department of Conservation (DOC) classifies portions of the Guenoc Valley Site as *Prime Farmland, Unique Farmland, Grazing Land,* and *Farmland of Local Importance*. The existing abandoned golf course is designated *Urban and Built-up Land*. More information related to the Farmland Classifications of the Guenoc Valley Site is provided in **Section 3.2 Land Use and Agriculture**.



SOURCE: SWA Group, 2/2020; AES, 2/6/2020

Figure 2-3
Agricultural Uses

Surrounding Land Uses

The Guenoc Valley Site is bordered by rural and agricultural lands. Approximately 5 miles of the eastern boundary of the Guenoc Valley Site borders Napa County. The adjacent lands in Napa County are a mix of dry land grazing, vineyards, and irrigated pastures. Land to the north and west of the Guenoc Valley is located in Lake County. This surrounding land is mostly rural and agricultural lands with limited development. The Cedars Mountains border the northeast side of the Guenoc Valley Site and a previous U.S. Coast Guard LORAN station military reservation to the northwest. The closest edge of the Hidden Valley Lake Community is approximately one mile northwest of the Guenoc Valley Site boundary and the Middletown Community is approximately three miles west.

2.2.2 AREAS NOT IN PROJECT SITE

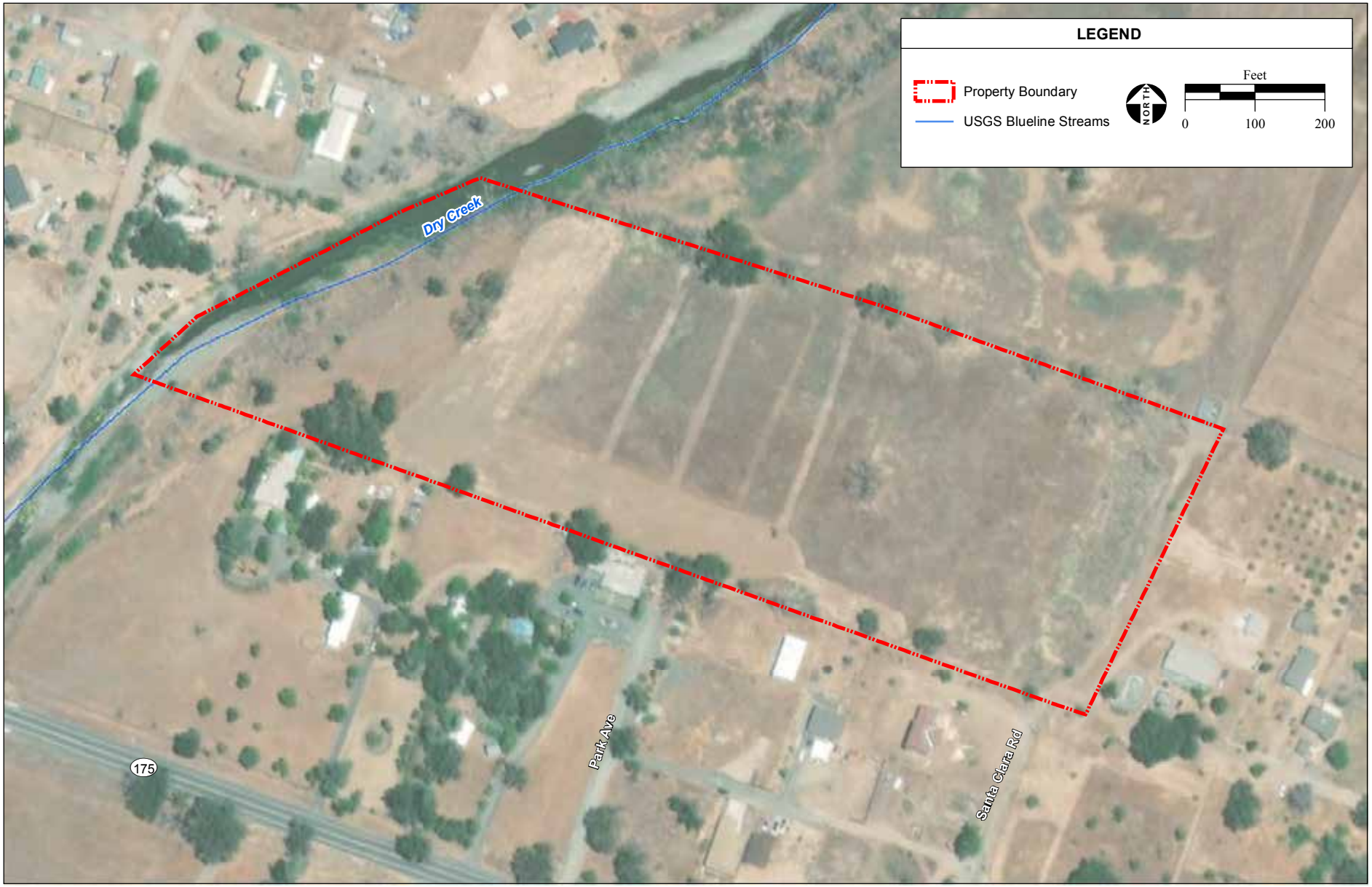
The existing Foley Family Farms, Langtry winery and vineyards, as well the Lillie Langtry's ranch estate are located within the exterior boundaries of the Guenoc Valley Site. These areas are under separate ownership, and are not included within the Proposed Project or the Guenoc Valley Site as analyzed within this EIR. As shown in **Figure 2-2**, total excluded area within the exterior boundaries of the project site is approximately 502 acres.

2.2.3 MIDDLETOWN HOUSING SITE

The Middletown Housing Site is an approximately 12.75-acre site located at 21000 Santa Clara in Middletown (APN 014-380-09). This site is currently undeveloped and is surrounded by medium density residential and commercial uses to the east and south. Dry Creek and an undeveloped area border the site to the north and west. The Middletown Housing Site is accessed directly via eastbound Santa Clara Road from SR 175N, one-third of a mile from its intersection with SR 29 (see **Figure 2-4**). Elevation ranges from approximately 1,095 feet amsl on the western portion of the site to 1,100 feet amsl on the eastern portion. As identified on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), effective September 29, 2005, the Middletown Housing Site is located in Zone AO, a 1% Annual Chance Flood Hazard zone with a 2-feet base flood elevation (FEMA, 2005). A 1% Annual Chance Flood Hazard Zone is the 100-year flood zone. Dry Creek borders the western edge of the site, and thus a small portion of the Middletown Housing Site is classified as AE, a Regulatory Floodway (refer to **Figure 2-4**). As described in **Section 1.4**, this site had a previously approved Tentative Subdivision Map to allow 50 new residential parcels and road and utility improvements, similar to what would be requested under the Proposed Project. The Tentative Subdivision Map expired in 2015 (Lake County, 2016a).

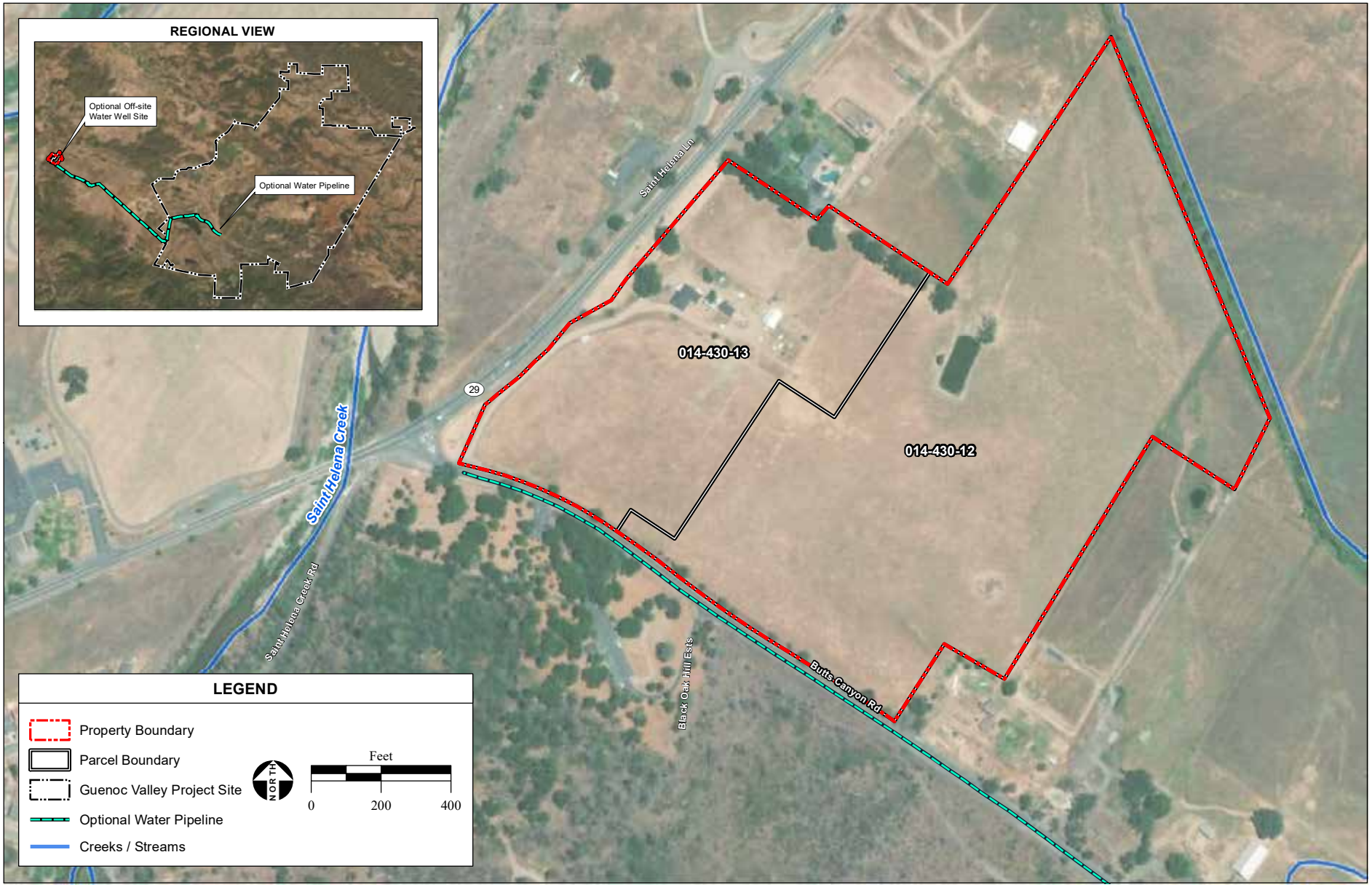
2.2.4 OFF-SITE WELL SITE AND WATER SUPPLY PIPELINE LOCATION

A new off-site well may be established on the Off-Site Well Site in the Collayomi Valley Aquifer located near the intersection of Butts Canyon and SR 29 (see **Figure 2-5**) to provide water supply for the Proposed Project. The Off-Site Well Site is just outside the Middletown community, located on the southeast corner of SR 29 and Butts Canyon Road , within the parcel numbers 014-430-13 and 014-430-12, within the parcel numbers 014-430-13 and 014-430-12. The majority of the property is relatively flat undeveloped grassland and is currently used for pasture. The Off-Site Well Site also includes one house, shed, dirt road, and an irrigation pond. There is one domestic well on the property used by the house for



SOURCE: Verse Design, 8/15/19; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/3/2020

Figure 2-4
Middletown Housing Site and Vicinity



SOURCE: DigitalGlobe Aerial Photograph, 11/2018; WRA Environmental, 8/2019; FEMA FIRM effective 9/2005; Lotusland Investment Holdings, Inc. 7/2019; USGS, 2019; Lake County GIS, 2019; AES, 2/12/2020

Figure 2-5
Off-site Well Site and Vicinity

residential purposes. There is an existing high-capacity well just outside the property boundary in marginal condition (**Appendix WATER**). The well is on the Middletown Mansion property, which is an event center, but the well is within an easement that gives the Applicant rights to use the well. The existing well may be improved to current standards or a new well may be constructed on the property. Surrounding land uses consist of rural residential properties and agricultural use. Saint Helena Creek is approximately 400 feet from the western edge of the well site, on the opposite side of SR 29. The well site is approximately 4 miles away along Butts Canyon Road to the closest edge of the Guenoc Valley Site boundary. A water supply pipeline would extend approximately six miles from the Off-Site Well Site within the public right-of-way along Butts Canyon Road to a point of connection within the Guenoc Valley Site (refer to **Section 2.5.2.5**).

2.3 BACKGROUND

The Proposed Project has been designed to align with the objectives of the Middletown Area Plan Special Study Area, and existing County planning documents. The following planning and previous environmental review documents provide a regional context and background information for the Proposed Project.

2.3.1 COUNTY ECONOMIC DEVELOPMENT PLAN

The Lake County Economic Development Plan 2016 outlines where Lake County should focus efforts to maintain a resilient economy and rebuild due to the devastating wild fires of 2015. In 2015, Lake County suffered three separate wildfires that burned approximately 171,000 acres of wild land, forest, and residential property, and resulted in the cumulative loss of 1,329 homes and damage of over 70 commercial properties. The Economic Development Plan specifically identifies the need to develop more tourist destinations, lodging, and agritourism- all of which are included in the Proposed Project plans.

2.3.2 COUNTY GENERAL PLAN

The Lake County 2008 General Plan (General Plan) was developed to provide a framework for sustainable management of natural and man-made infrastructure and to assist with decision making regarding land and resource use. The General Plan contains the following elements (sections): Land Use, Housing, Public Facilities and Services, Transportation and Circulation, Health and Safety, Noise, Open Space, Conservation and Recreation, Geothermal Resources, Water Resources, Agricultural Resources, and Aggregate Resources Management. Each element contains goals, policies, and implementation programs. No area plan, zoning, or public works project may be approved unless the County finds that it is consistent with the General Plan. The Proposed Project development plans align with the policy of the Lake County General Plan to encourage development of resorts with more commercial uses than residential.

2.3.3 MIDDLETOWN AREA PLAN

Area plans are supplements to the General Plan and provide guidance for long term growth and development. The plans are consistent with the goals of the General Plan. The Guenoc Valley Site and Middletown Housing Site are located within the boundaries of Middletown Planning Area. The Area Plan highlights the Guenoc Valley Special Study Area as an appropriate site for mixed-use development and provides specific policies related to development of the site in Section 6.3: Special Study Area Langtry/Guenoc. The Proposed Project would carry out the goals of the Middletown Area Plan by including

resort activities, agricultural production, land stewardship, landscape preservation, outdoor recreational activities, and respect for cultural heritage and social cohesion of the project.

2.3.4 PREVIOUS ENVIRONMENTAL ANALYSIS - GUENOC WATER RIGHTS MODIFICATION PROJECT

The Guenoc Water Rights Modification Project Final EIR was published in 2009. This document analyzes the environmental effects of changing water rights permits for both Lake & Napa Co. portions of the Guenoc Ranch Property to allow for more surface water-irrigated agricultural land. The existing Places of Use (POU) for surface water was 1,819 acres at the time and the applicant proposed to increase the POU by 5,028 acres (permit 16860C). Mitigation-based reductions in the POU were adopted to avoid sensitive areas including wetlands, Waters of the U.S., slopes greater than 30 percent, and oak woodlands. After the reductions, the resulting area available for irrigated agriculture was 2,765 acres. The State Water Resources Control Board (SWRCB) was the lead agency of the project and in 2012 officially approved the 2,765-acre addition to the POU with mitigation. Mitigation associated with the Water Rights Modification Project included an acre-for-acre open space corridor on the property (2,765 acres) and 1,089 acres of oak woodland preservation area. These mitigation requirements were outlined in detail within the 2008 Open Space Preservation Plan (Appendix H of the 2008 FEIR), and the Tree Replacement Plan (Appendix G of the 2008 FEIR).

The Water Rights Modification Project included points of diversion and rediversion and an extension of time to meet the water demand of the new POU. The new permitted diversion from Putah Creek is 1,660 acre-feet (AF) of water, to be stored in Upper Bohn Reservoir. In order to store the additional water, Upper Bohn Reservoir needed to be enlarged and required a new pipeline to move the water from Putah Creek to the reservoir. This construction has already begun and is anticipated to complete by the end of 2019. The reservoir will be raised around 4.5 feet in height to hold the total 1,660 AF of water. As a result, new vineyards on the Guenoc Valley Site are currently being developed within the POU (see **Figure 2-3**). The surface water uses allowed in the POU include: domestic, irrigation, frost protection, heat control, industrial, fire protection, and recreation (SWRCB, 2009).

2.4 PROJECT OBJECTIVES

The Applicant has identified the following project objectives:

- Develop a luxury international destination resort that generates financial profits for the investor.
- Propose a mix of resort, agriculture, and residential uses consistent with the Lake County General Plan policies, Zoning regulations, Middletown Area Plan, and economic development goals and policies.
- Become a “model project” of wildfire mitigation through innovative landscape management, dual purpose fire access roads, emergency action management, and animal husbandry practices with the intention to reduce the risk of fire.
- Meet Middletown Area Plan objectives by incorporating smart growth principles and low density development strategies while providing high end luxury accommodations and services.

- Provide sufficient workforce housing options and educational training programs to expand the existing high-end hospitality and construction employment opportunities within Lake County.
- Achieve a balance between the low densities consistent with a luxury resort and the project size required to be financially viable.
- Provide sufficient resort amenities to attract a diverse range of guests and residents.
- Propose a development project that is sustainable with landscape stewardship practices including native plants, mindful grading, green roofs, on-site water treatment and reuse, locally grown food and animal products, alternative energy production, and open space preservation.
- Plan for long term growth of the County with a significant fiscal contribution toward the County's community goals of new economic, employment, and housing opportunities.
- Ensure consistent and reliable electrical energy.

2.5 PROPOSED PROJECT

The Proposed Project consists of the rezoning of the Guenoc Valley Site to allow mixed use resort and residential development, workforce housing at the Middletown Housing Site, and associated infrastructure including various off-site improvements.

The Applicant proposes to develop a portion of the project site into a luxury resort, consisting of hotels, retail and commercial uses, residential housing, and outdoor recreation amenities, including a golf course and equestrian facilities, with a commitment to the rural landscape while maintaining the natural setting and longstanding agricultural traditions of the ranch. The Proposed Project incorporates low impact development and open space preservation with an integrative animal husbandry element for fuel reduction management.

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. **Table 2-1** provides a breakdown of the permitted uses within the Guenoc Valley Site under the proposed new GVD zoning designation, and identifies land uses proposed for Phase 1 and remaining uses that could be developed under future phases. While the proposed land uses and site plans for Phase 1 are defined in detail within the proposed SPOD (**Appendix A**), 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. Therefore, this EIR provides a project-level analysis for Phase 1 and a program-level analysis of future phases. Future phases of the project will be subject to additional environmental review in compliance with the California Environmental Quality Act (CEQA).

2.5.1 CHANGES TO THE PROJECT SINCE CIRCULATION OF THE NOTICE OF PREPARATION

Minor changes have been made to the Proposed Project since the circulation of the Notice of Preparation (NOP). The number of proposed residential units and hotel units decreased in Phase 1 and increased for Future Phases but the overall permitted residential units within the GVD remains the same. The overall area of agricultural production facilities has increased. The average lot size for the proposed residential

estate villas has increased, increasing the proposed residential lot area. There have been a number of minor changes to the proposed lot layouts and roadways under Phase 1 to avoid cultural and biological resources. Additional detail has been developed regarding the proposed lagoon at the Maha Farm Resort Community and a reservoir at the Equestrian Center Resort Community. Additionally, an alternative primary road option has been proposed.

TABLE 2-1
PRIMARY PERMITTED USES

Uses	Characteristics	Total Permitted Uses with GVD (Units or Approximate Acreage)	Phase 1 (Project Level Analysis)	Future Phases (Program Level Analysis)
1. Resort Facilities*				
1.1 Hotels Units**	Hotel units are attached or detached hotel rooms without kitchens and include normal uses and structures related to the operation of a hotel. The combination of hotel units are spread out between five boutique hotels (Farmstead, Bohn Ridge, Trout Flat, Red Hill, and Equestrian Lodge) in addition to the camping area and overnight staff accommodations referred to as the staff hotel or the Entourage Hotel.	400 units	(+/-) 127 resort units (area included in commercial square footage) (+/-) 50 temporary workforce units (+/-) 20 camp sites	(+/-) 200 units
1.2 Resort Residential Units**	Attached or detached units with kitchens; fractional or whole ownership*	450 units	(+/-) 141 units (98 acres)	(+/-) 300 units
2. Residential Development				
2.1 Residential Estate Villas*	Whole ownership units intended for sale and subject to GVD Design/Development standards*	1,400 units	(+/-) 401 units (2,058 acres)	(+/-) 1000 units
2.2 Workforce Co-housing	Mixed unit types to accommodate essential employees for the various resorts and commercial uses; off-site locations being considered. Work force housing units are defined as a 400 square foot bedroom and bathroom unit with shared cooking and resting areas, referenced as co-housing unit.	500 co-housing units (bedrooms)	(+/-) 100 bedrooms	(+/-) 400 bedrooms
3. Resort Amenities***				
3.1 Outdoor Entertainment	Includes but not limited to outdoor events such as sports events, conference centers, amphitheater, amplified music, etc.	55 acres	1 acre	54 acres

Uses	Characteristics	Total Permitted Uses with GVD (Units or Approximate Acreage)	Phase 1 (Project Level Analysis)	Future Phases (Program Level Analysis)
3.2 Spa and Wellness Area	Offering wide range of health and beauty services and accompanying amenities such as gym & yoga rooms, restrooms/showers, food services, and treatment rooms.	40 acres	27 acres	13 acres
3.3 Sports and Recreation	Includes but not limited to outdoor recreation areas such as: soccer, rugby, field hockey, football fields; tennis, bocce, basketball, badminton court, swimming pools and recreational surf complex. Indoor facilities include circuit training, organized classes, indoor courts, rock climbing, etc.	300 acres	5 acres	295 acres
3.4 Equestrian Area	Indoor and outdoor arena, stables, polo club, polo fields, clubhouse, spectator area.	200 acres	110 acres	90 acres
3.5 Golf	Development of a new non-returning course and practice facility, clubhouses, storage and service areas, restrooms, and the potential to reconstruct the previous golf course (future phase).	616 acres	441 acres	175 acres
3.6 Camping Area	Includes semi-permanent tents for high end glamping opportunities and surrounding outdoor recreational facilities such as but not limited to designated skeet shooting area, hunting, off road courses, fishing, etc.	45 acres	29 acres	16 acres
3.7 Commercial & Retail	Includes but not limited to coffee shops, butcher shop, creamery, florist, fishmonger, art displays, bakery, newsagent or stand, post office, deli, wine store, restaurant(s), accessory retail stores, recording studio, car parking, public restrooms, open air markets, artisan workshops, gardens, pavilions, bowling, theater, educational facilities such as a culinary school, etc.	45 acres	30 acres	15 acres

Uses	Characteristics	Total Permitted Uses with GVD (Units or Approximate Acreage)	Phase 1 (Project Level Analysis)	Future Phases (Program Level Analysis)
4. Agriculture				
4.1 Agricultural Production Facilities	Wineries to allow production supported by accessory facilities Two boutique wineries with tasting rooms and accessory uses including caves for barrel storage, commercial kitchens.	57 acres (up to 850,000 gallons per year of production)	41 acres (150,000 gallon per year total production)	16 acres (700,000 gallons per year of production)
4.2 Accessory to Agricultural Production	Diversified agricultural production facilities included but not limited to herbal distillery, fruit dehydrations, jams and jellies production, creamery, aquaponics agriculture, tallow candles, flower arranging, and honey.	50 acres	34 acre	16 acres
4.3 Accessory to Livestock and Farm Management	Includes but not limited to barns, equipment storage facilities, fencing, etc.	50 acres	34 acre	16 acres
5. Essential Accessory Uses				
5.1 Back of House Facilities	Centralized shipping/receiving center, staff support services, centralized laundry facility, private entrance, staff parking, restrooms, maintenance and service areas, security,.	75 acres	55 acres	20 acres
5.2 Fire Station and Emergency Response Center	Emergency Medical Professional (EMT) office to expand into a nurse station, emergency command center, kitchen, restrooms, service rooms, on-site emergency response vehicle storage, and overnight Entourage Units.	25 acres	18 acres	7 acres
5.3 Alternative Energy Production	Alternative energy sector for solar, wind, and geothermal resources	50 acres	50 acres	-
5.4 Float Plane Dock	Allowance for float plane landings on Detert Reservoir; welcome center; transportation services, refueling services	3 acres	3 acres	-

Uses	Characteristics	Total Permitted Uses with GVD (Units or Approximate Acreage)	Phase 1 (Project Level Analysis)	Future Phases (Program Level Analysis)
5.5 Helipads	For medical emergencies there will be a heliport landing center to be located next to the emergency response center, additional locations for guest arrivals and departure will be located proximal to the float plane dock and dedicated welcome kiosk.	2 acres	1 acre	1 acre

* All short term rentals under 30 days subject to the payment of Transient Occupancy Tax (TOT).
** Resort Hotel Units may be transferred to Resort Residential Unit allocations and vice versa.
*** Ability to swap Resort Amenities acreage between uses.
SOURCE: **Appendix GVD**

2.5.2 PHASE 1 – PROJECT LEVEL ANALYSIS

2.5.2.1 Proposed Land Uses

Phase 1 includes the development of a mixed use project, within a combined 1,415 acre footprint dispersed throughout the site, consisting of: i) five boutique hotels with a combined total of 127 hotel units and 141 resort residential units; ii) 401 residential estate villas; iii) up to 100 workforce co-housing bedroom units; iv) resort amenities, including but not limited to outdoor entertainment area, spa and wellness amenities, sports fields, equestrian areas, a new golf course and practice facility, camping area and commercial and retail facilities; v) agricultural production and support facilities; vi) essential accessory facilities, including back of house facilities, 50 temporary workforce hotel units (Entourage Hotel), emergency response and fire center, float plane dock, helipads; and vii) accessory uses / supporting infrastructure. A site plan for Phase 1 is included as **Figure 2-6**. **Table 2-2** provides a breakdown of land use acreages for the Phase 1 parcels and also the acreage of the potential development "footprint" area. The Phase 1 potential development footprint 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 (**Appendix DG**). The potential development footprint 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 FIRE**. The area of potential effects 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. **Figures 2-6a-k** illustrate the boundaries of the APE.

TABLE 2-2
PHASE 1 LAND USE SUMMARY

Proposed Land Use	Acreage (total area of lot)	Total Potential Development Area Acreage[1]
Commercial Resort Parcels	604	244
Resort Residential Parcels	98	48
Residential Estate Parcels	2,048	602
Golf Course Parcels	441	90[2]
Accessory Uses Parcels	371	172
Roads	259	259
Sub-total	3,821	1,415
Designated Open Space Combining District	2,765	-
Designated Agricultural Preserve Combining District	1,983[3]	-
Other Undeveloped Land	7,386	-
Sub-total	12,134	-
Total	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

Source: SWA Group, 2019

LEGEND

PARCELS & AREAS

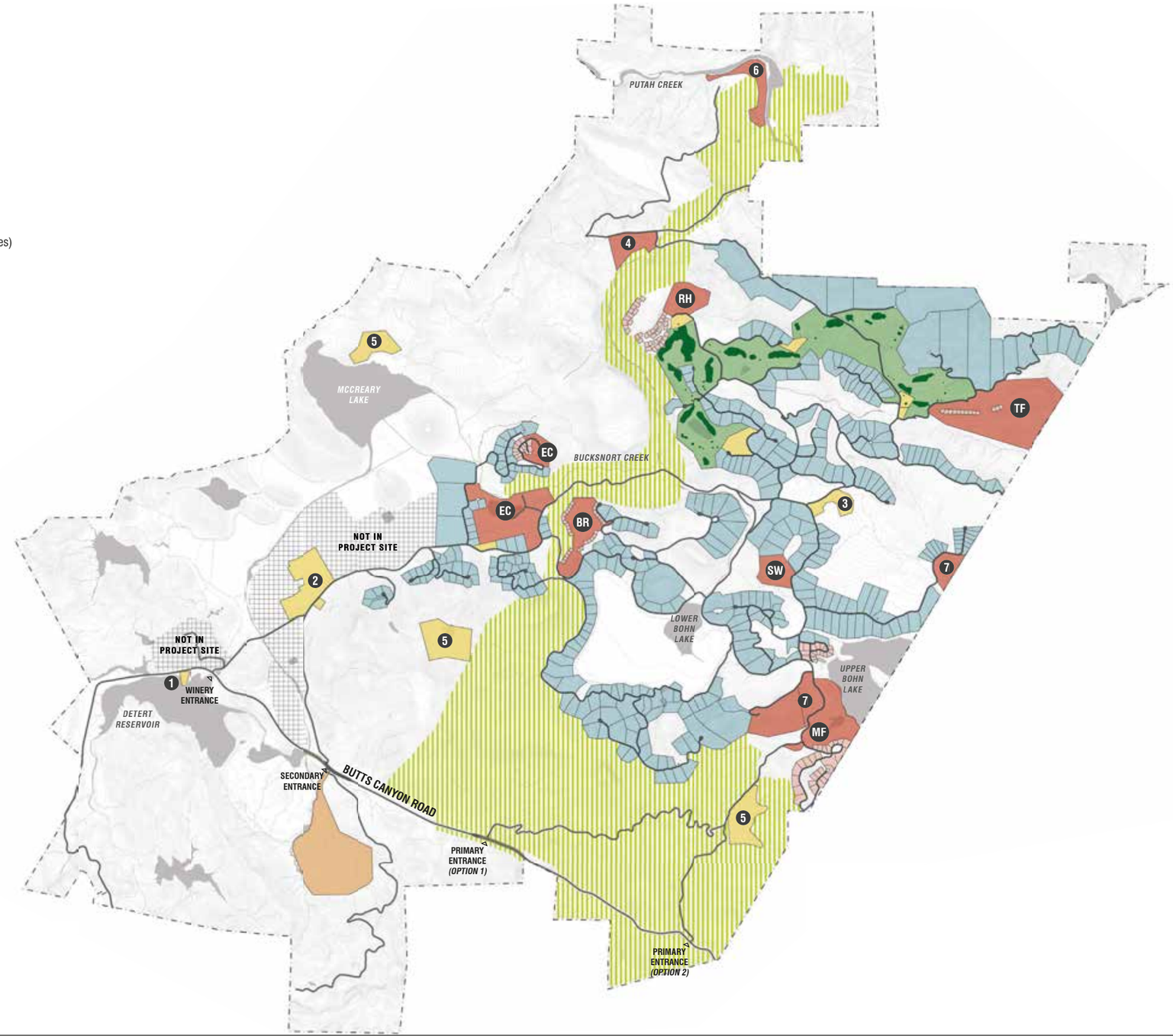
- Resort Parcels
  - *Equestrian Fields*
- Resort Residential Parcels
- Residential Estate Parcels
- Golf Course Parcel
  - *Golf Course Greens*
- On-Site Workforce Housing Parcel
- Supporting Facilities (Including Water, Wastewater, Electric Facilities)
- Designated Open Space

MAIN RESORTS

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

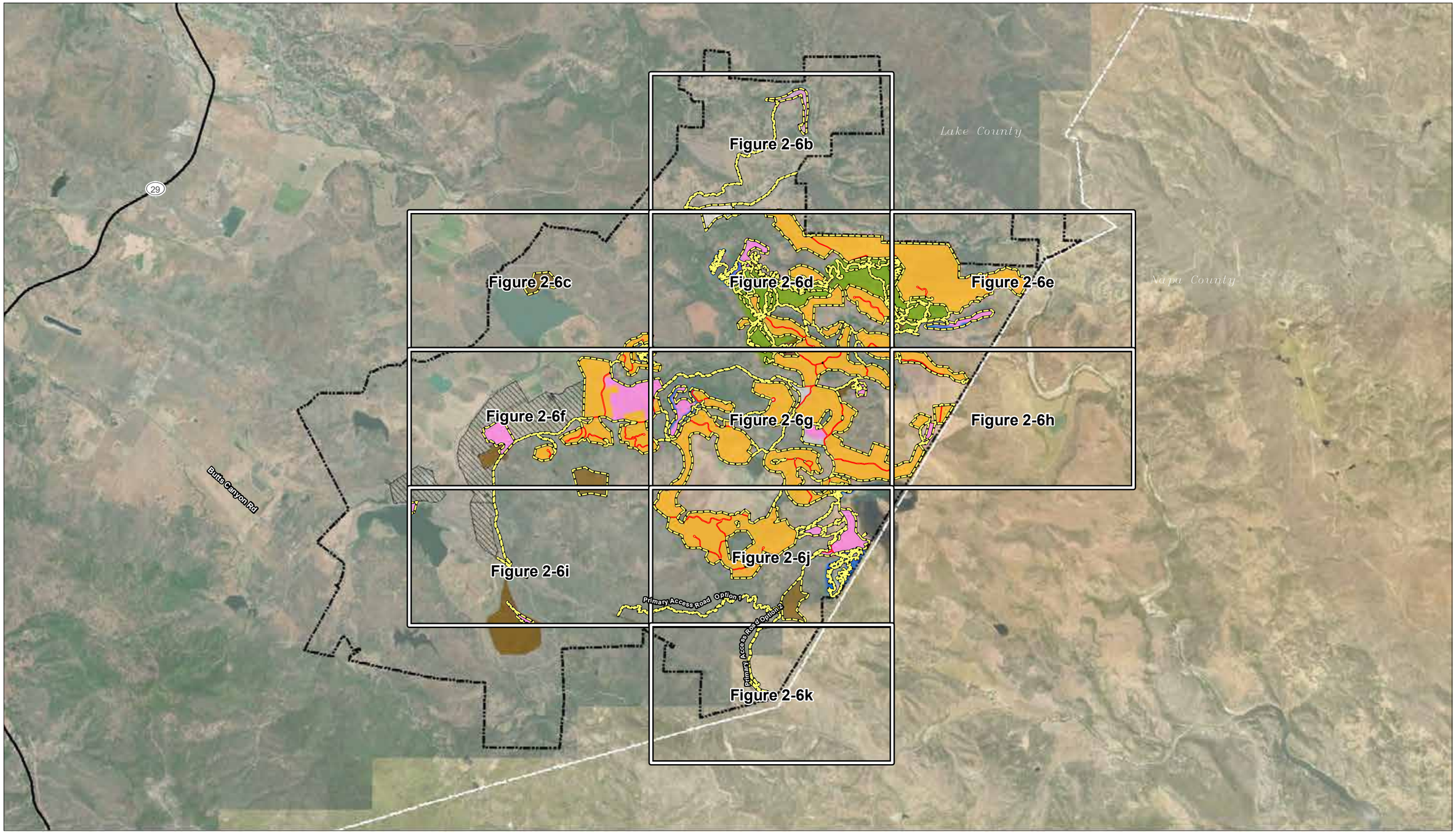
FEATURES

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



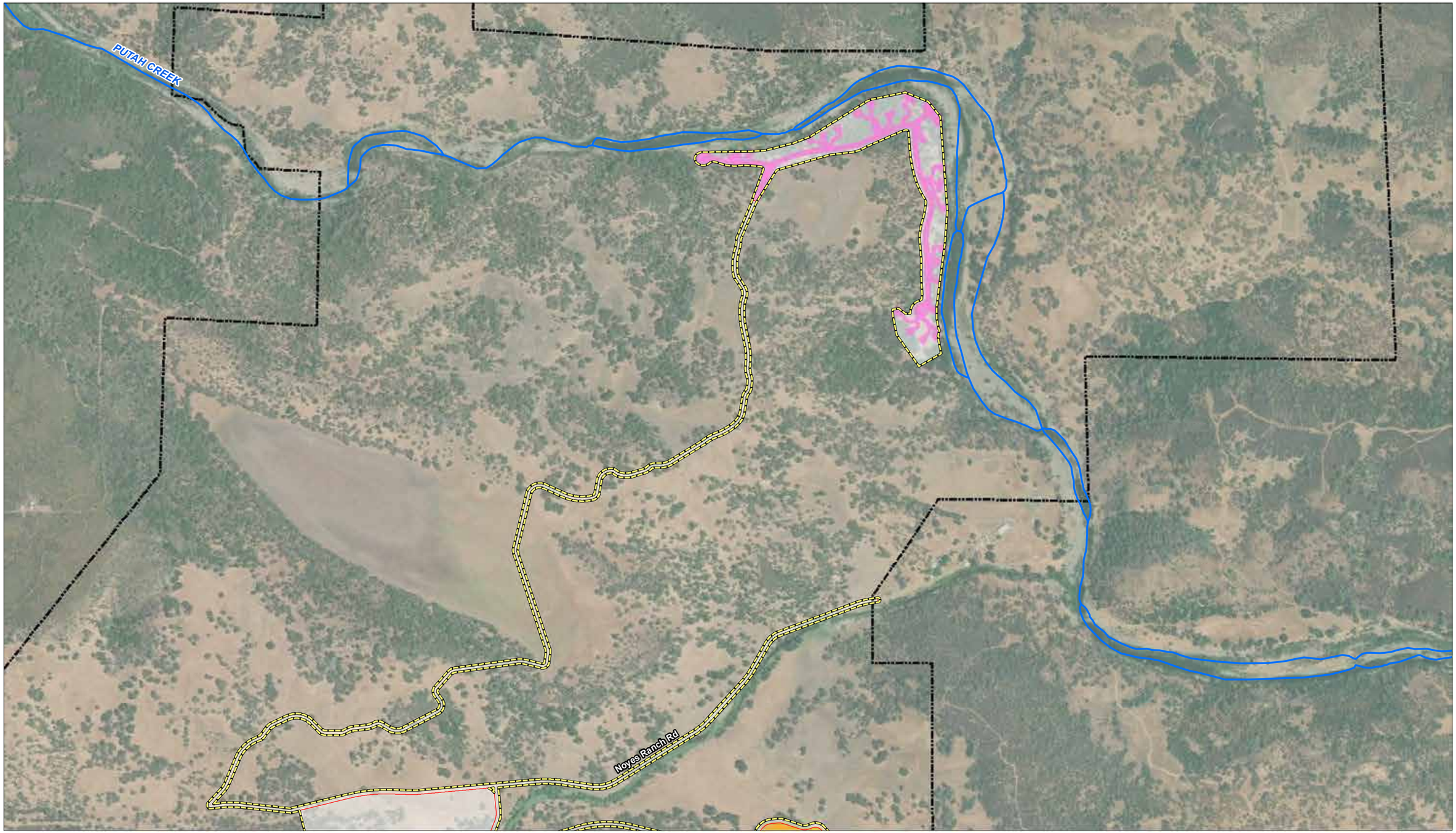
SOURCE: SWA Group, 10/2019; AES, 10/16/2019

Figure 2-6
Phase 1 Site Plan



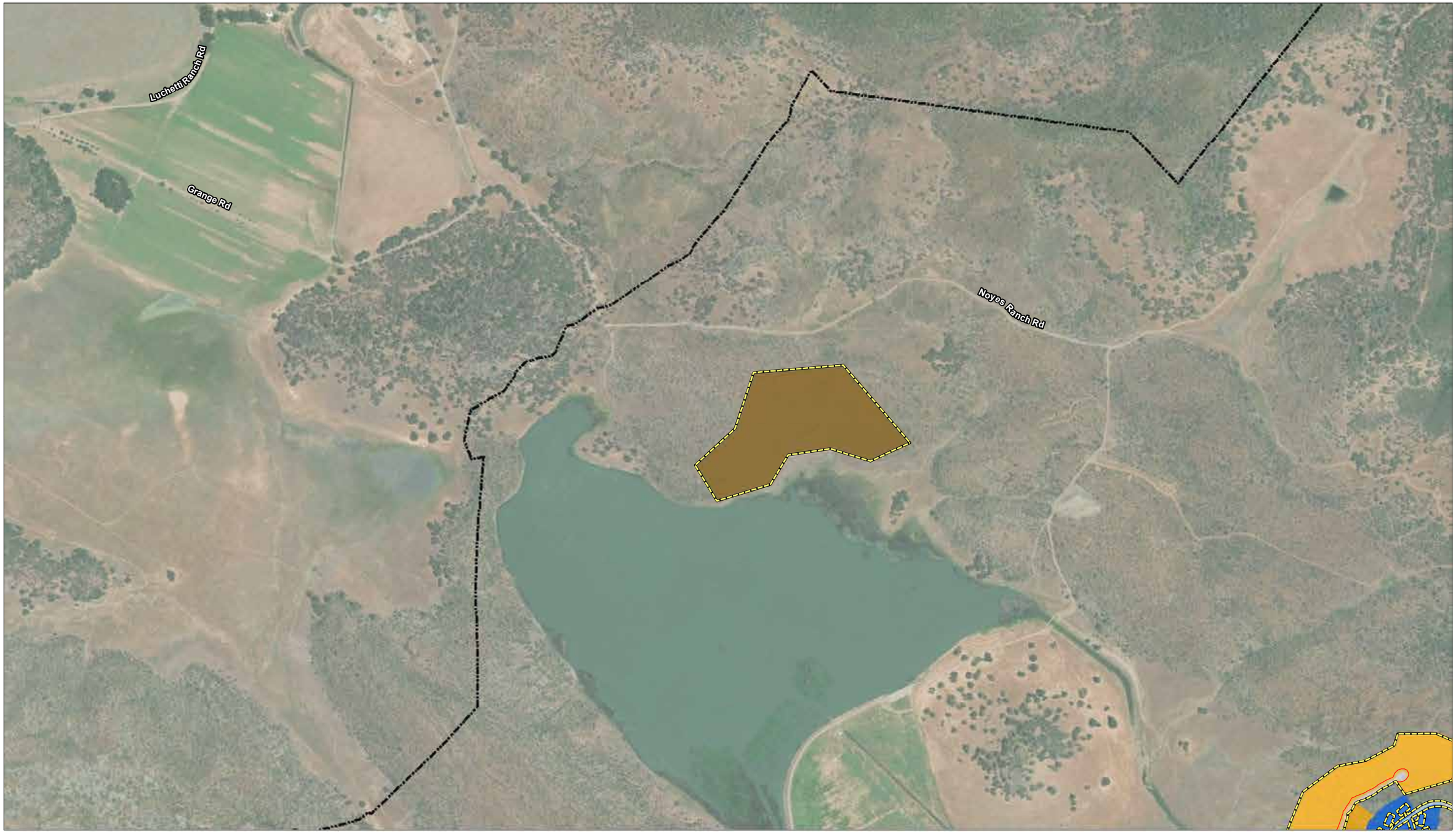
SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

Figure 2-6a
Guenoc Valley Site Phase 1 Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

Figure 2-6b
Guenoc Valley Site Phase 1 Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

Figure 2-6c
Guenoc Valley Site Phase 1 Area of Potential Effects

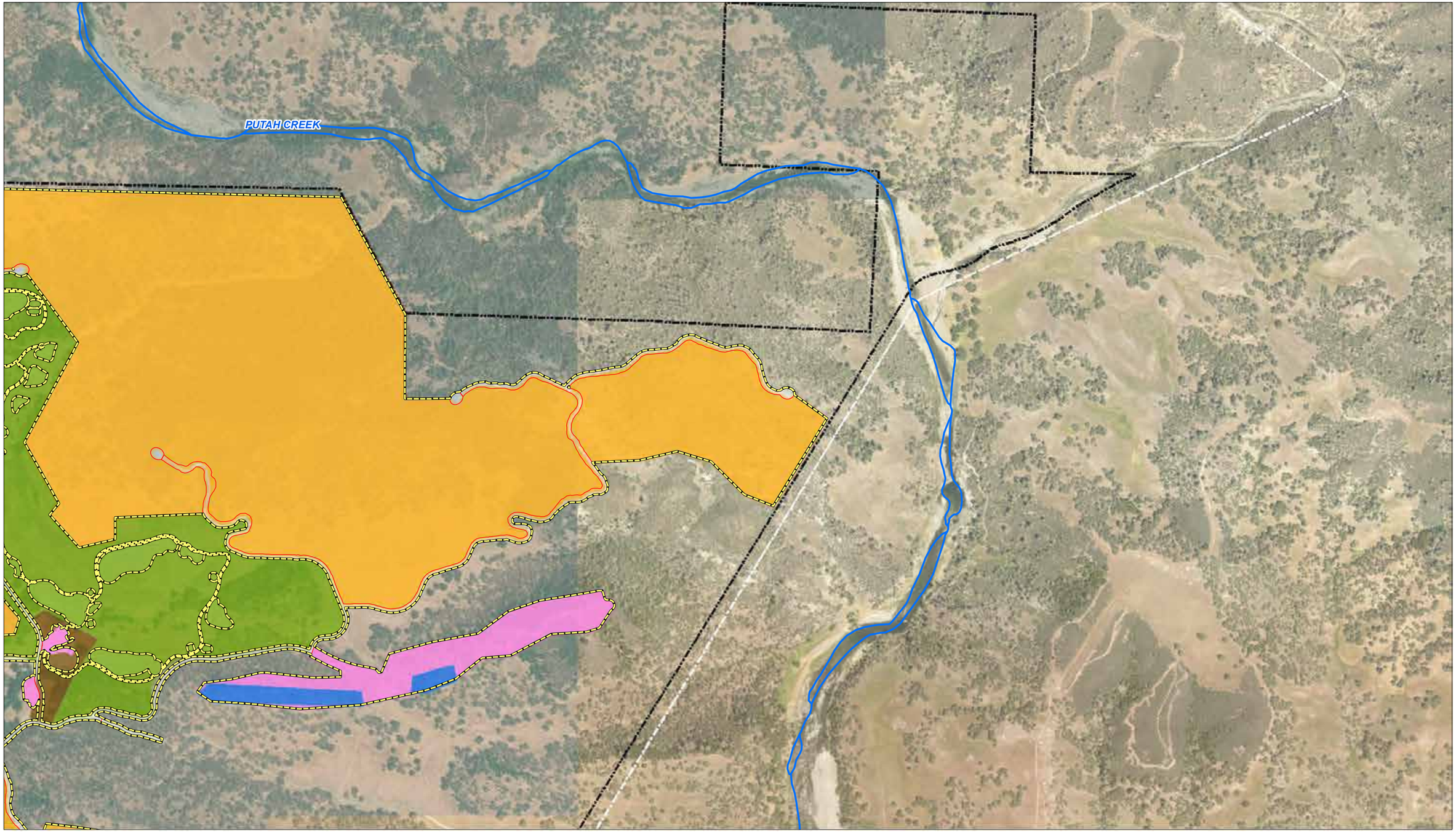
Property Boundary
Not in Project Site
Phase 1 Area of Potential Effects
Roadway Grading
Commercial Development
Residential Development
Resort Residential Development
Golf Course
Facilities

NORTH

Feet
0 420 840

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

Figure 2-6d
Guenoc Valley Site Phase 1 Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

Figure 2-6e
Guenoc Valley Site Phase 1 Area of Potential Effects

Property Boundary | Not in Project Site | Phase 1 Area of Potential Effects | Roadway Grading | Commercial Development | Residential Development | Resort Residential Development | Golf Course | Facilities

NORTH

Feet

0 420 840

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

Figure 2-6f

Guenoc Valley Site Phase 1 Area of Potential Effects

Property Boundary | Not in Project Site | Phase 1 Area of Potential Effects | Roadway Grading | Commercial Development | Residential Development | Resort Residential Development | Golf Course | Facilities

NORTH

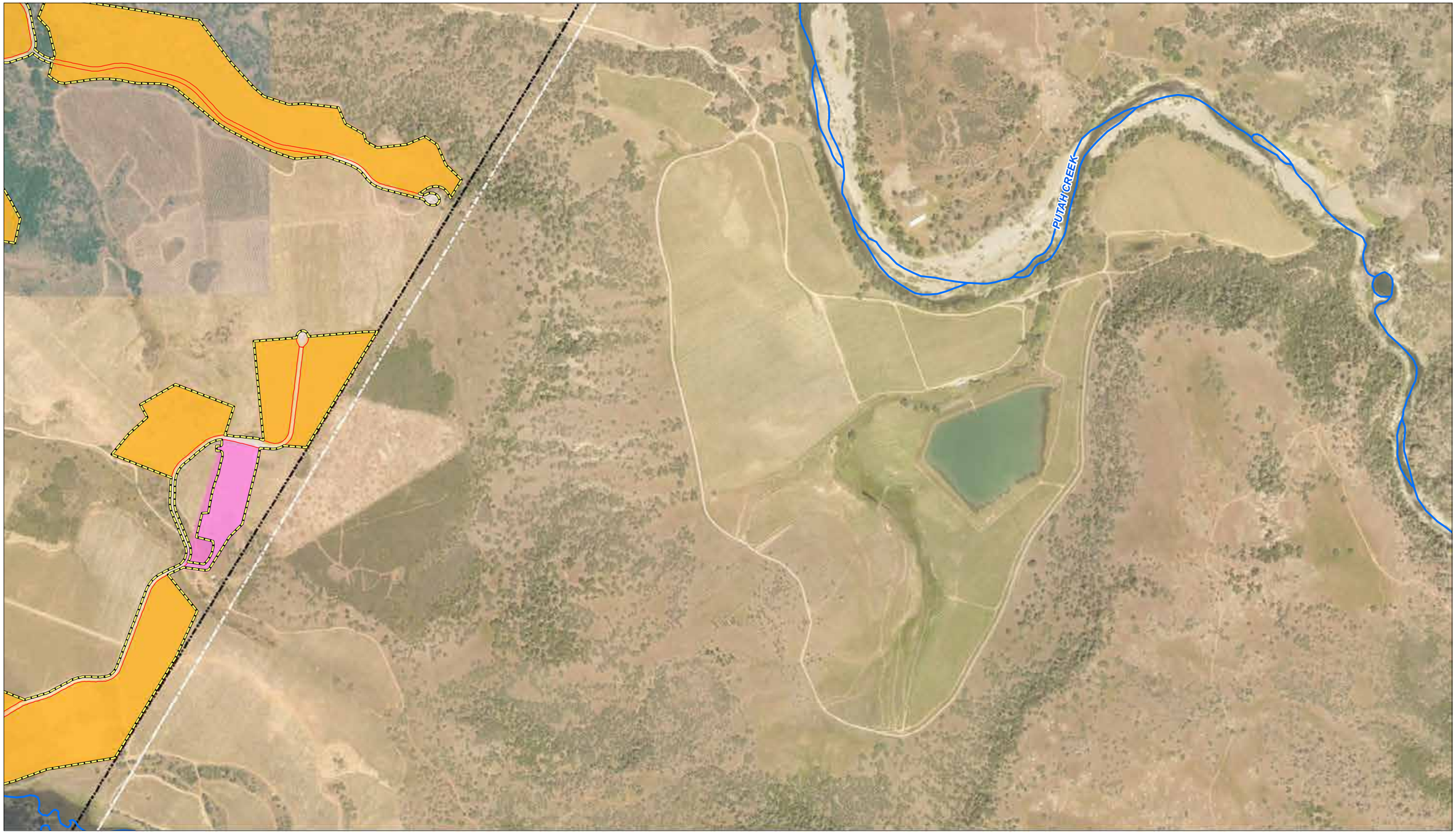
Feet

0 420 840

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

Figure 2-6g

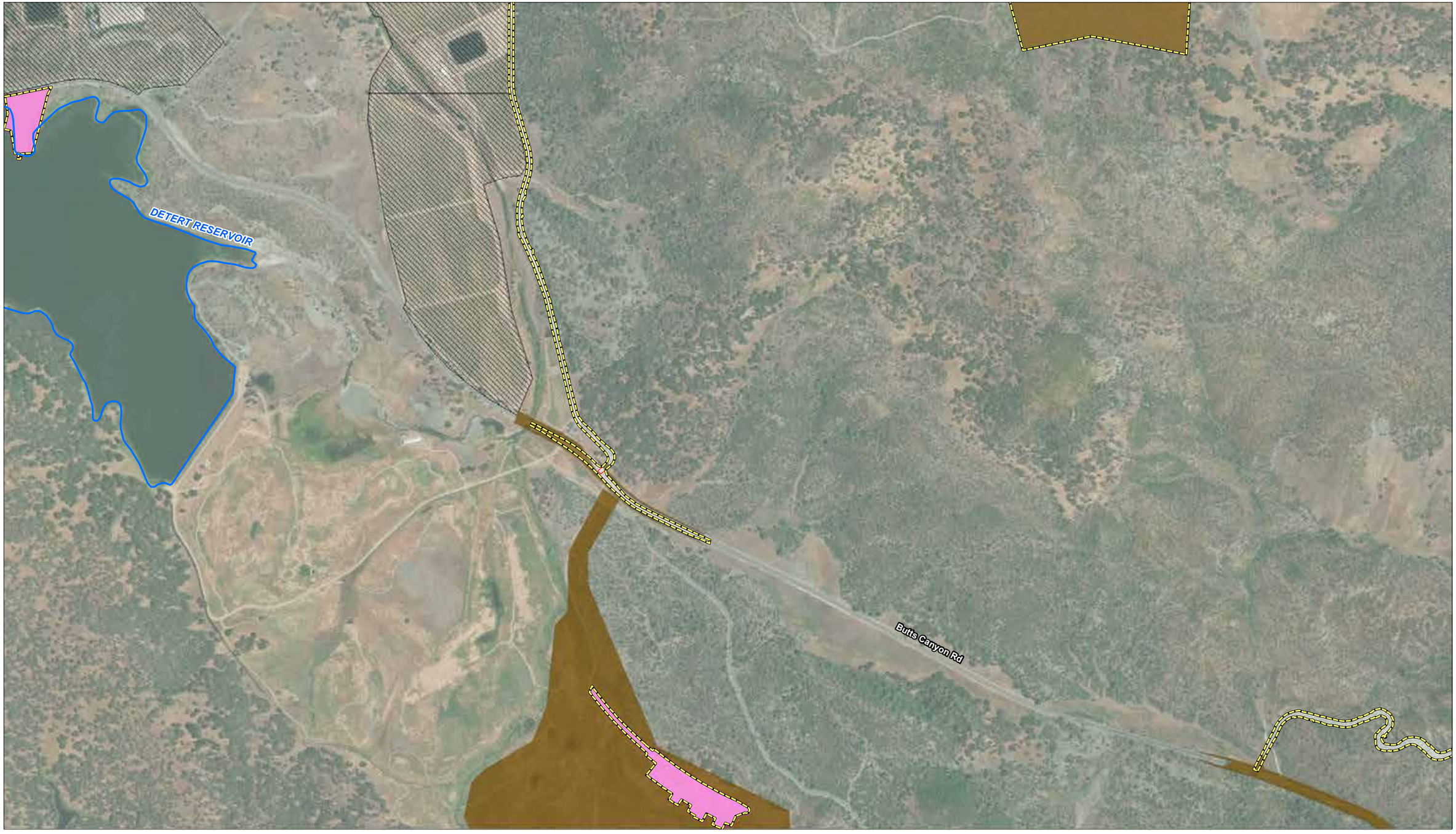
Guenoc Valley Site Phase 1 Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

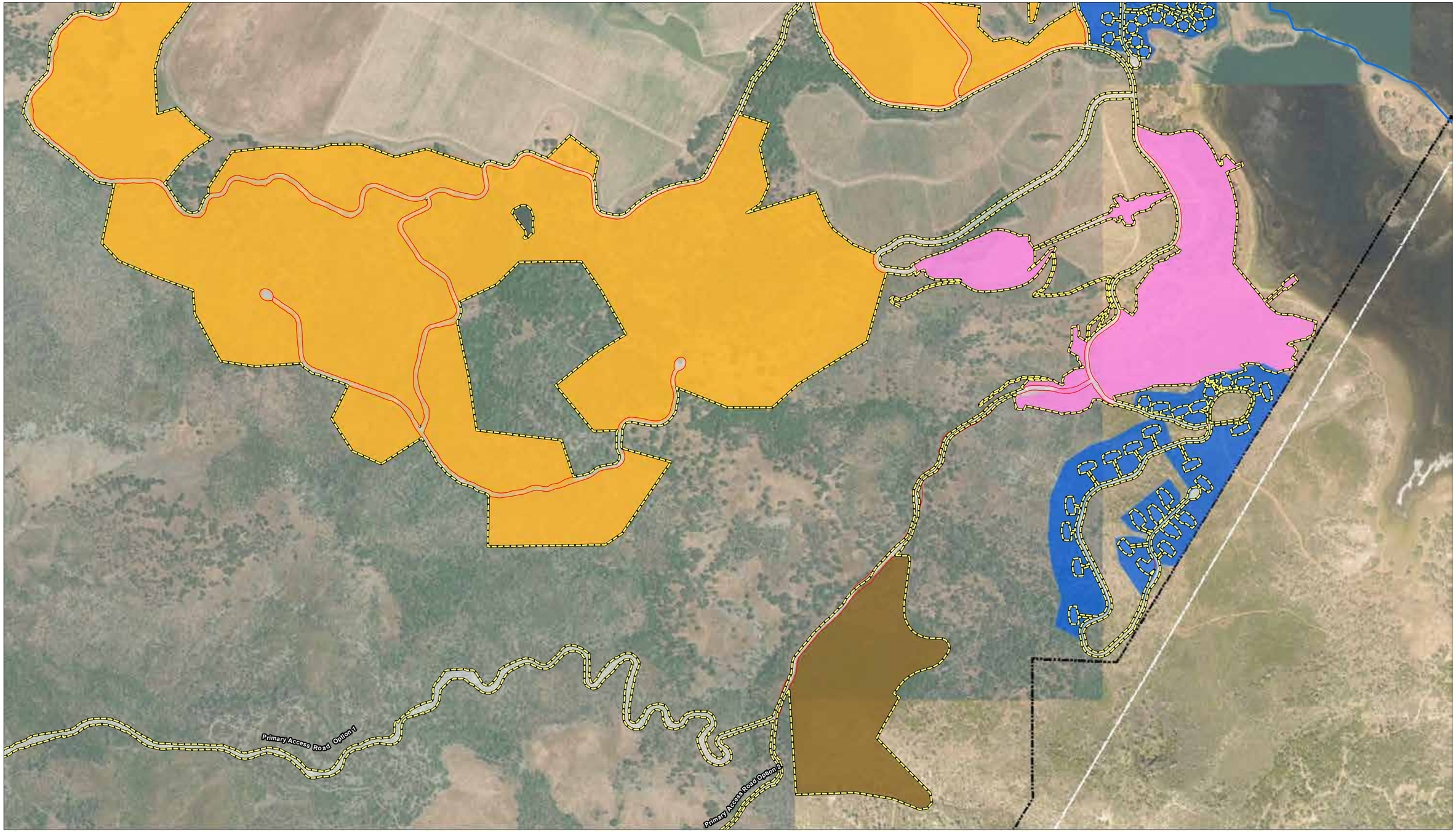
Figure 2-6h

Guenoc Valley Site Phase 1 Area of Potential Effects



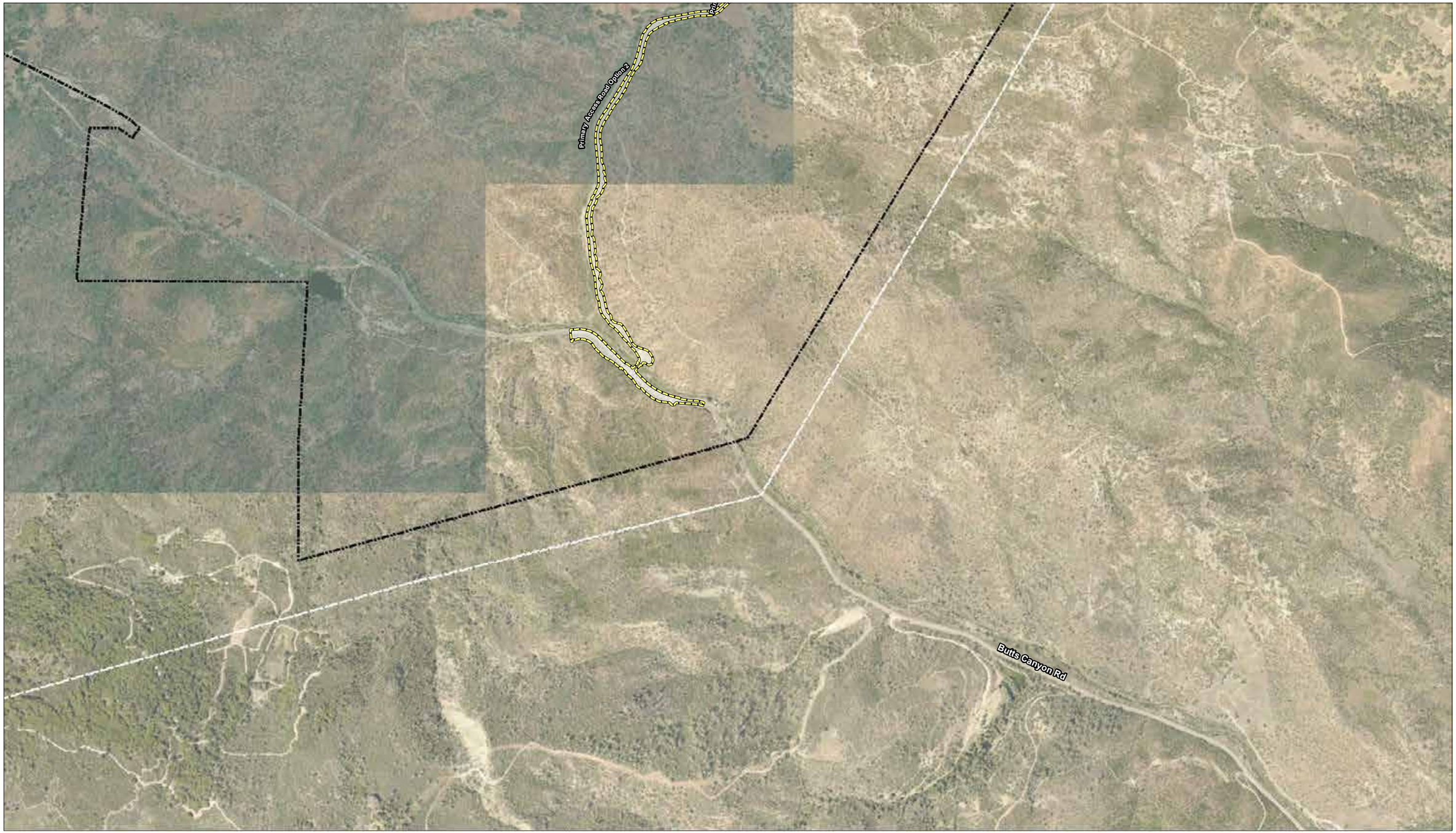
SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

Figure 2-6i
Guenoc Valley Site Phase 1 Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

Figure 2-6j
Guenoc Valley Site Phase 1 Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/4/2020

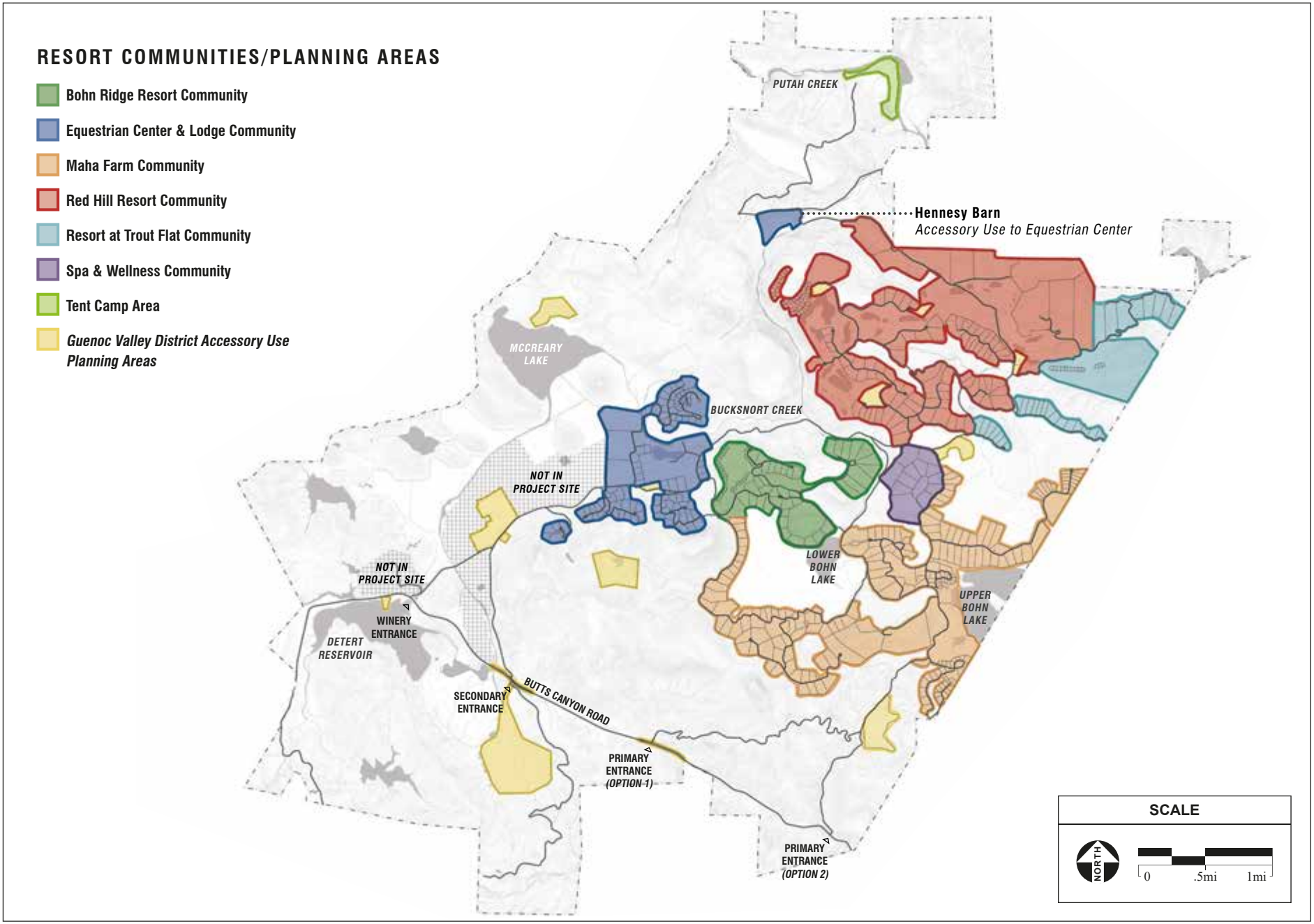
Figure 2-6k
Guenoc Valley Site Phase 1 Area of Potential Effects

The project is organized into individual, clustered resort communities that preserve surrounding open space and agricultural cultivation. As illustrated in **Figure 2-7**, there are eight general planning areas within the resort: Maha Farm/Sales Center, Bohn Ridge Resort, Red Hill Estates, Resort at Trout Flat, Equestrian Center, Camping Area, Spa and Wellness Center, and Accessory Uses (supporting facilities). Each of these planning areas are summarized in **Table 2-3** and described in detail below. With the exception of the Camping Area, and Accessory Uses/Supporting Facilities, each planning area generally consists of clusters of residential housing around the hotels, surrounded by open space, the existing vineyards, and outdoor recreation facilities.

TABLE 2-3
PHASE 1 PLANNING AREAS WITHIN GUENOC VALLEY SITE

Name	Characteristics	Hotel Units	Resort Resident Units	Residential Estates	Workforce Co-Housing
Maha Farm & Sales Center	Central resort reception area, administration, and event location. Includes a marketplace, two wineries, gardens and resident clubhouse. Hotel units consist of cottages, with resort residential and villas surrounding existing vineyard and agricultural areas.	48	45	145	-
Bohn Ridge Resort	Includes a reception, administration, hotel rooms, restaurants, yoga center, pool, changing rooms, gardens with resort residential and residential estates surrounding the hotel	31	30	39	-
Resort at Trout Flat	Luxury hotel rooms and accessory buildings surrounded by resort residential units and residential estates	12	13	29	-
Spa and Wellness	Residential estates surrounding the spa and wellness center	-	-	11	-
Red Hill Resort	Includes multiple restaurants with resort residential units and villas accessing the golf course	30	40	89	-
Equestrian Center and Lodge	Includes entertainment areas with residential estates for sale that include access to the equestrian support and facilities	6	13	88	-
Camping Area	Includes semi-permanent tents for camping surrounding outdoor, open space recreation opportunities	20	-	-	-

Name	Characteristics	Hotel Units	Resort Resident Units	Residential Estates	Workforce Co-Housing
Accessory Uses - Entourage Hotel, emergency response and fire center, Back of House, Workforce Housing, Utilities	Includes the Entourage Hotel for short-term staff housing, the emergency response and fire center, back of house facilities, permanent workforce housing, and utilities	50	-	-	100 (35 standard units)-
	Totals	197 – total 127 – resort 50 – temp. workforce 20 – camp sites	141	401	100
Source: Maha, 2019					



SOURCE: SWA Group, 2/2020; AES, 2/6/2020

Figure 2-7
Resort Communities

Resort Community Planning Areas - Phase I

Each of the five resort community planning areas would include a hotel, resort residential units, and residential estates. Resort residential units may be attached or detached units that would be available for rent, or purchase through third parties. All resort residential lots range in size from approximately 0.3 to 1.5 acres. Residential estates would be privately owned, single-family units on individual larger parcels. These lots vary in size depending on the resort community. Although these estate lots are typically larger than two acres, they have a limited development footprint of no more than 1.5 acres, unless they are within oak woodlands which limits development to one acre per lot. Many of the estates are anticipated to be second homes, or vacation homes, and thus would be vacant throughout some portions of the year. However, to provide a conservative analysis, this EIR assumes that the occupancy of residential estates would be equivalent to a typical single family home.

Maha Farm Village

The Maha Farm Village (Maha Farm) is intended to be the central location of the Maha Resort, and a hub for events and commercial activities. Maha Farm would be located near the western boundary of Upper Bohn Lake, and would be centered around a proposed lagoon that would be hydrologically connected to the lake and an ephemeral stream (refer to description of *Water Features* below for more details on the proposed lagoon and enhancements to the edge of Upper Bohn Lake). Development would include a sales center, hotel, residents club, farm village, farm barn hub, amphitheater, events center and two wineries, as described below:

- The Hilltop Lodge/Sales Center: The sales center area would be located on the top of a large hill adjacent to Upper Bohn Lake, and would provide visitors with expansive views of the majority of the Guenoc Valley Site. This area would include administration offices, gardens, a restaurant, and approximately 8 hotel units known as the Hilltop Lodge.
- The Maha Farm Village: This area would include the tourist and Maha Farm hotel Restaurant, a café, a post office, artisan barns, a farmers market, and a grocery store.
- Artisan Barn & Farm: The market garden farm barn hub area features greenhouses, workshops, tool sheds, mobile chicken coops, and animal and farm barns surrounded by gardens, pastures, and orchards.
- Amphitheatre: An 18,000 square foot outdoor amphitheater would be located in the Maha Farm area near the lake edge. This amphitheater would operate as a special event facility and would be built to seat approximately 500 guests.
- Special Events Center: An approximately 3,000 SF special events building would be constructed northeast of the Winery at Maha Farm
- Hotel at Maha Farm: The hotel rooms would be in the form of cottages surrounding the proposed lagoon.
- Residents Clubhouse: A private club would be developed on approximately 5 acres (part of Maha Farm Compound) and is proposed to include an outdoor pool water club with beach access to the Lagoon & Upper Bohn, fitness facility, pool terrace, café, boat house, and access to Upper Bohn Lake. Recreation features, such as docks, vista points, picnic areas, boating, and fishing opportunities, would be provided at Upper Bohn Lake. Enhancements to Upper Bohn Lake are described further below.

- Residential Estates: Residential estates would be located west of the sales center and northwest of Upper Bohn Lake, primarily along the perimeter of existing vineyards. Residential estate lots are estimated to range from approximately 2 to 55 acres.
- Two Wineries: The Winery at Maha Farm would be developed on the hillside west of the Lake, and would be surrounded by the existing vineyards in this area. This winery would include caves and storage facilities. A funicular would transport guests from the winery caves up to the Sales Center. The second winery, the Estate Winery, would include be located north of Upper Bohn Lake, adjacent of the eastern edge of the Guenoc Valley Site, and would include wine tasting rooms and winery caves. This winery would be surrounded by the existing vineyards within the site, and proposed residential estate lots.

Refer to **Appendix SPOD**, pages 42-57 for further details regarding the Maha Farm and Sales Center Community.

Bohn Ridge Resort

The Bohn Ridge Resort Community would be located in the center of the Guenoc Valley Site. The community would include a hotel surrounded by a mix of resort residential cottages and residential estates. The residential estate lots would range from approximately 2 to 36 acres. The hotel would include a boutique, restaurants, office space, back of house operations, playroom, gym facilities, a pool, and an outdoor terrace. The land uses within this community are mostly residential. Refer to **Appendix SPOD**, pages 72-75 for further details regarding the Bohn Ridge Resort Community.

Equestrian Center

The Equestrian Center Community would be located directly west of the Bohn Ridge Resort Community and would include a lodge with six hotel units, a clubhouse, and a centrally located polo field with public viewing area on a grass berm and equestrian facilities. Resort residential units and residential estates would surround the equestrian facilities and overlook the approximately 8-acre reservoir (refer to description of *Water Features* below for more details on the proposed Equestrian Center Reservoir). Three of the proposed residential estate lots in this area are large enough to support private polo fields if desired by the future residential property owners. These three lots would be approximately 24 to 29 acres while the rest of the residential estate lots would range from approximately one to four acres. A 47,600 SF clubhouse would support the fields and include a pro shop, dining, office space, back of house support facilities, game room, fire pits, a gym, and pool area. Additional equestrian facilities include an indoor arena, stables, a pony camp, paddocks, and a jumping ring. Refer to **Appendix SPOD**, pages 57-63 for further details regarding the Equestrian Center Community.

Red Hill Estates

The Red Hill Estates Community would border the northern Guenoc Valley Site boundary. This community would include the Renaissance Golf Course with a practice facility, three clubhouses, the Red Hill Hotel, restaurants, and golf course maintenance facilities. Resort residential cottages would be located next to the hotel. Residential estates surround the golf course and are planned to range from approximately 1 to

55 acres. Refer to **Appendix SPOD**, pages 64-71 for further details regarding the Red Hill Estates Community.

Renaissance Golf Course

The 18-hole non-returning Renaissance Golf Course and practice facility would be located within the Red Hill Estates Resort Community. The approximately two mile long golf course would include three clubhouse areas, totaling 28,300 SF, each with a restaurant/lounge and back of house facilities. Additionally, there would be a total of 29,300 SF of maintenance facilities. It should be noted that the existing 175-acre golf course south of Butts Canyon Road is currently abandoned and is not proposed to be operational under Phase 1. However, this facility may be renovated and re-opened in future phases based on market demand, and thus is evaluated on a programmatic level under future phases (refer to **Section 2.5.3**).

Resort at Trout Flat

The resort at Trout Flat would be located in the north-eastern portion of the Guenoc Valley Site adjacent to the Red Hill Estates Community. The Trout Flat hotel is located in the furthest corner of the project site, and would include a boutique, restaurant, lounge and pool. The resort residential cottages and an arrival pavilion would be adjacent to the hotel. The Hotel, cottages, and pavilion would all be single-story structures and overlook existing vineyards. Larger residential estates would lie to the north and south of the hotel and range from approximately 2 to 15 acres. Refer to **Appendix SPOD**, pages 76-79 for further details regarding the Equestrian Center Community.

Spa and Wellness Center Planning Area

The Spa and Wellness Center would be located in the eastern portion of the Guenoc Valley Site, bordering Maha Farm Community residential estates. In addition to a state of the art spa, this area would include 11 residential estate lots, ranging from approximately 2 to 5 acres, all clustered around a walking path leading to the spa and wellness facilities. The spa and wellness facilities would be in the southern portion of the site and would total 228,800 SF including indoor and outdoor uses. The facilities would include spa treatment rooms, an outdoor meditation area, a salon, cafés, terraces, pools, and fitness rooms. Refer to **Appendix SPOD**, pages 80-83 for further details regarding the Spa and Wellness Center Community.

Camping Planning Area

The Camping Area would be located in a remote area on the northern portion of the Guenoc Valley Site. Tented hotel units comprise the majority of the area, with communal dining and support facilities in the center. Each tented hotel unit would include sleeping, dressing, and bathing sections. Refer to **Appendix SPOD**, pages 84-87 for further details regarding the Camping Area.

GVD Accessory Use Planning Areas (Supporting Facilities)

The remaining planning areas represent essential accessory uses for the Proposed Project. These facilities are essential for the operation of the Proposed Project. Supporting facilities include the back of house facilities, emergency response and fire center and the Entourage Hotel (short-term staff housing).

Back of House

Phase 1 includes the construction of a centralized back of house area for shipping and receiving, support services, private entrance and staff parking, central laundry, restrooms, lockers, and a maintenance and service area. The Back of House area would be surrounded to the north, east, and west by the area not in the project site. and would be located adjacent to the historic Lillie Langtry home. The existing ranch center operations in this area would be relocated near the back of the Langtry Winery at the existing management facilities. Additionally, a temporary construction workforce camp would be located in this area to house construction personnel during Phase 1 development. More information about this housing can be found in **Section 2.5.2.10** below.

Emergency Response and Fire Center

The emergency response and fire center would be located on the eastern portion of the Guenoc Valley Site near Upper Bohn Lake and include a fire response center, medical staff, and a helipad dedicated for emergency purposes. The fire response center would house firefighting equipment and fire engines and serve as a headquarter space in case of emergency.

Short-term Workforce Housing – Entourage Hotel

The Entourage Hotel would be next to the emergency response and fire center and include a restaurant, gym, and 50 hotel units. This hotel would be used for short-term staff housing, including special event staff as may be required.

Long Term Workforce Housing

It is anticipated that the employees for the operation of the Proposed Project would primarily be from the local workforce. Due to the limited availability of rental homes and housing stock options near the Guenoc Valley Site, the Proposed Project includes a mixture of on- and off-site workforce housing for employees. A workforce housing unit is defined as a co-living housing structure built-in single-family style residency with potential accessory dwelling units. Workforce housing would be owned and managed by the Resort, and would be leased to employees or local residents. It is anticipated that some units may be leased to multiple employees, and others may be leased to a single employee with additional occupants (such as family members). Depending on demand, these units could also be leased to local residents not employed by the project. Permanent workforce housing (which is separate from the temporary construction housing and short-term staff housing discussed above) would consist of a combination of either on- and/or off-site options. The options are described as follows:

- Option 1 would include both on- and off-site workforce housing units, for a total of 85-housing units (321 bedroom units).
    - On-site workforce housing would consist of 35 housing units located on the west side of Butts Canyon Road (refer to **Appendix SPOD**, pages 88-91). These homes would feature ranch-style farmhouse exteriors, and would provide a combined total of 100 bedrooms that would accommodate employees and their families.
    - Off-site workforce housing would consist of 50 housing units, consisting of 21 single-family units, each with 5 bedrooms, and 29 duplex units, each with 4 bedrooms, for a total of 221

bedrooms. Off-site housing would be located at the Middletown Housing Site described in **Section 2.2.3**.

- Option 2 would include only off-site workforce housing, with 21 single-family and 29 duplex units for a total of 50 residential units.

Off-site workforce housing is described further in **Section 2.6.1**.

Commercial and Retail Uses

Phase 1 would include approximately 865,395 SF of commercial and retail development within the Resort Communities described above and would include resort uses (reception, offices, support areas, etc), hotels units, cafes, restaurants, artisan shops, other accessory buildings, and event space including an amphitheater. Most commercial facilities would be located at the Maha Farm, including a grocery store and artisan markets. Multiple restaurants would be located within each resort planning area. Golf pro shops would be at the Renaissance golf course within the Red Hill Estates Community. **Table 2-4** provides a breakdown of the total square feet of commercial and retail uses within Phase 1 for each resort community. It should be noted that with the exception of retail facilities within the Maha Farms area, which will be accessible to the public, most commercial and restaurant uses would only be accessible to resort guests or through appointment.

TABLE 2-4
COMMERCIAL AND RETAIL SQUARE FOOTAGE BY RESORT COMMUNITY

	Equestrian Center & Lodge	Red Hill Resort	Golf Course	Bohn Ridge Resort	Resort at Trout Flat	Spa & Wellness	Maha Farm	Total
Resort (reception, offices, support areas, etc.	29,200	75,800	9,300	25,800	51,400	114,200	132,096	437,796
Hotel Units	4,800	93,600		48,500	35,100		78,839	260,837
Restaurants	16,300	37,300	1,500	15,300	30,900	3,200	38,711	143,211
Retail	900		500	900	1,300	800	19,151	23,551
Total	51,200	206,700	11,300	90,500	118,700	118,200	268,797	865,395

SOURCE: Maha, 2019

Water Features and Lagoons

Enhancements to Upper Bohn and Lagoon at Maha Farms

The Proposed project will include enhancements to the lake edge of Upper Bohn Lake that would include diverse edge treatments for various native habitats, ecosystems and user experiences through grading of points, coves, wetlands, and shoals with varying plant communities associated with each shoreline

landscape feature. An ephemeral stream flows into the southwest portion of Upper Bohn Lake. The Proposed Project would include enhancing the stream channel into a year-round lagoon with a circulation system and recreational amenities (**Figure 2-8**). The shoreline of Upper Bohn Reservoir and the connected lagoon would include a boathouse, beach areas, play field, and native grass meadows. A funicular would connect the clubhouse to the boathouse in the Maha Farm area. The stream corridor and inset floodplains would be planted with native trees and shrubs and the active channel edge would be planted with sedge and rush. Vehicle and pedestrian bridges would cross the stream. The entire length of proposed stream enhancements is approximately 3,218 linear feet and the surface area of the lagoon would be approximately 4.3 acres. A new spillway, consisting of a natural rock and boulder chute, would be would be built on the embankment to connect the lagoon to Upper Bohn Reservoir. Additionally, a cove would be added as a focal point for the Maha resort residential units. The cove would be dug so that the surface area and volume of the lake is not reduced by development activities in the Maha Village. A reflecting pool and small pond would be constructed at Maha Farm. These features would not be connected to the lagoon system and instead filled with groundwater.

Equestrian Center Reservoir

The proposed reservoir at the equestrian center would be located south of Bucksnort Creek near the proposed clubhouse within the Equestrian Center Community. The reservoir would be filled with groundwater. The reservoir would be an aesthetic focus to the equestrian center area and would also function as an irrigation regulation pond, and provide recreational boating and fishing activities. To balance the water fluctuations of reservoirs, a new wetland area would be created along the north-western section of the proposed reservoir. The wetland will include beneficial habitat while providing a natural lake edge during the summer months and improving water quality. The reservoir would have 6.5 acres of surface area and would be bordered by 1.3 acres of wetland edge, for a total surface area of 7.8 acres. The proposed reservoir will accommodate a maximum of 56.5 acre feet of water volume and may potentially be lined to maintain water levels and clarity depending on final soil and water table investigations. The depth of the reservoir would be 8 to 10 feet with two deeper 12 to 15 feet sections to support fish habitat and maintain high water clarity. Additional potential reservoir features include a fishing pier and a small beach for kayak or small rowboat launches.

Landscape Plan

There are eight separate landscape zones within the Guenoc Valley Site: woodland, chaparral woodland, grassland woodland, grassland, vineyards, farmland, waterside, and rural landscapes and recreation areas. These zones would guide landscape strategies to connect the intended land use to existing landscapes. Landscaping improvements within the woodland landscape zones would be limited to preserve oak woodlands. More information regarding oak woodland preservation can be found in **Section 3.4**.

The overall approach to landscape improvements would be to emphasize existing natural and rural character. New landscaping would generally provide a transition between highly developed landscapes to more natural landscapes managed to reduce fire risk. The majority of newly planted and irrigated landscape would be within 0-30 feet from roads and buildings. A limited amount of landscaping would occur 20-30 feet from roadways and 30-100 feet from buildings. Beyond 50 feet from roadways and 100 feet from



SOURCE: Prunuske Chatham, Inc.7/2019; AES, 9/25/2019

Figure 2-8
Maha Lagoon

buildings, existing landscape would be conserved to the maximum extent and primarily only high fire risk vegetation would be managed.

Agriculture

The Proposed Project proposes to continue historic agricultural practices including vineyards and grazing operations within the site, and expand these uses with on-site food production. The majority of the new proposed agricultural activities would take place at the Maha Farm. Up to 23.3 acres of vegetable gardens and orchards would be located at the Maha Farm area. Agriculture accessory facilities such as a greenhouse and farmers market are also planned for this area. Native hedgerows would be planted around Maha farm for: aesthetic landscape borders, fire breaks, pollinators and bird habitats, carbon sequestration, and other ecosystem services.

Animal husbandry would continue to be an important economic, management and aesthetic experience of the Project. Cattle grazing would continue to be rotated throughout the site within larger open and pasture areas. Sheep and goats would be used close to development areas to aid in reducing vegetation cover and fire risk. Wool sheared from the sheep would be processed into products and sold onsite. Lamb and beef from the grazing herds would be sold to the on-site restaurants and at the Maha farmers market. An on-site bee operation would supply the restaurant and on-site retail areas with honey and bee pollen. A flower farm in the Maha farm's orchard would grow flowers for the Maha hotels and for sale at the farmer's market. Additionally, a Community Supported Agriculture program would be offered so residents could opt to pay a subscription fee to get various agricultural products delivered.

Lighting

Lake County has started the application process to be an International Dark Sky Community. The International Dark-Sky Association (IDA) is a non-profit organization that is dedicated to combating light pollution and promoting stargazing. Cities and counties can apply to IDA to be designated as an International Dark Sky Community, which involves adopting outdoor lighting ordinances and educating residents. The Proposed Project will include efforts to maintain dark skies.

2.5.2.2 Open Space

The Proposed Project seeks to preserve the natural beauty and character of the ranch, and to that end, the majority of the Guenoc Valley Site would remain as undeveloped open space. This open space would be in the form of a designated open space corridor, development restrictions within residential and commercial parcels, as well as general open space areas not proposed for development under Phase 1. The on-site trails and open space areas described below would be maintained by the development's homeowners association.

Open Space Corridor and Open Space Preservation Plan

As shown in **Figure 2-6** above, approximately 2,765 contiguous acres would remain designated as open space consistent with the requirements of the 2008 Langtry Farms Water Rights Modification Project Open Space Preservation Plan (2008 OSPP). The GVD Zoning District will include an open space combining

district for this open space corridor that will define allowable and restricted uses consistent with the requirements of the 2008 OSPP and proposed OSPP Amendment, included as **Appendix OSPP**. The majority of the designated open space is located in the southern portion of the Guenoc Valley Site, with a corridor running through the center of the site along Bucksnort Creek. A brief description of the 2008 OSPP and proposed amendments is provided below.

2008 OSPP

Goals and Objectives

The 2008 OSPP was designed to prioritize the protection of sensitive biotic communities and habitats for special status species, establish viable movement corridors for animals and plant dispersal, and promote of overall natural biodiversity in Guenoc Valley. General goals of the 2008 OSPP are defined by the following metrics:

- Conserve high biodiversity by protecting a diversity of biotic communities and preferentially conserve sensitive biotic communities in the OSPP areas;
- Conserve habitats known or likely to be occupied by threatened and endangered species in OSPP areas;
- Conserve viable wildlife movement areas through terrestrial and riparian corridors across the Ranch, thereby maintaining connections to the regional landscape for the long-term health of OSPP areas;
- Preclude the degradation of the existing natural resources in the designated OSPP areas;
- Protect known culturally significant resources in the OSPP areas; and
- Develop site-specific adaptive management plans to monitor and manage significant threats (e.g., detrimental exotic species invasions, illegal dumping) that degrade the habitat quality of the OSPP areas relative to their baseline status.

Existing Allowable Uses and Management

Within the 2008 OSPP, the following activities are considered allowable uses within the open space preservation area:

- The maintenance, repair, replacement, expansion and use of existing groundwater wells and other irrigation improvements within the open space preservation area, and the construction of new water sources, including the drilling of additional wells and the construction or siting of water storage improvements, fixtures, and pipelines for water and utilities;
- The construction, maintenance, repair, and use of roads within the open space preservation area; and
- Ongoing grazing or other currently approved agricultural operations or existing recreational uses including hiking, hunting, and fishing.

The 2008 OSPP additionally allows for modifications of the boundaries of the open space preservation area for approved activities on the entire Guenoc Ranch Property (including Lake and Napa Counties) provided that acreage removed from the existing open space be replaced contiguous to the remaining open space

at a 1:1 ratio such that the goals and objectives of the 2008 OSPP remain fulfilled. Approval of the Proposed Project would constitute an approved use for which an open space amendment may be defined.

OSPP Amendment

An OSPP amendment has been prepared for the Proposed Project in order to address those necessary changes to the previously defined open space corridor as described in the 2008 OSPP. This amendment is included as **Appendix OSPA**. The Proposed Project would slightly modify the boundaries of the previous open space corridor boundaries as described in Section 3.1 of **Appendix OSPA**. In order to maintain compliance with the 2008 OSPP, any removed area has been replaced in kind with habitat contiguous to the remaining open space preservation area as described in Section 3.2 of **Appendix OSPA**.

Habitat selected for inclusion into the open space preservation area meets those goals and objectives described above within the 2008 OSPP. Section 3.2.1 through Section 3.2.4 of **Appendix OSPA** describe the process of acreage selection for preservation using the most recent biological surveys to target sensitive habitat, special-status plants, high-quality habitat, and existing natural wildlife corridors. These inclusions satisfy the requirements of the 2008 OSPP and improve the quality and functionality of the open space proposed for preservation.

The OSPP amendment further clarifies that those allowable uses within the 2008 OSPP remain acceptable within the amended open space preservation area. The 2020 OSPP amendment provides an assurance for preservation and is considered a binding document that will be filed with the California Water Resources Board consistent with the 2008 OSPP. The open space corridor is proposed to be designated as an open space combining district within the GVD, and thus the restriction of allowable uses in this area consistent with the OSPP will be deed restricted and in separate parcels and enforceable by Lake County.

Development Restrictions and Oak Preservation in Residential and Commercial Parcels

Approximately 316 acres of oak woodlands (including oak savanna) would be preserved within residential and commercial parcels (refer to **Appendix OAK, Attachment 2** for more detail). Parcels containing identified oak woodlands shall be restricted pursuant to the Conditions of the Tentative Parcel Map and the Design Guidelines to a development footprint of one acre without additional review and mitigation. Parcels outside of oak woodland areas shall have a lot coverage of no more than 1.5 acres. Lot coverage includes principal and accessory structures, swimming pools and hot tubs (over 6' out of grade), as well as impermeable hardscape such as: pool decks, private water storage tanks or cisterns, garages, barns, sheds, guest houses, trellises, decks, covered and uncovered hardscape patios, and driveways. Lot coverage shall not include underground accessory structures such as septic, gas, or water lines, landscaping, or agriculture. Resort-wide functions such as community water tanks or alternative energy production would also not be considered as lot coverage.

General Open Space/ Rural Landscapes

In addition to the dedicated open space (designated corridor and deed-restricted within residential) there would also be general undeveloped open space/rural landscapes areas in between the resort communities

throughout the Guenoc Valley Site, although it should be noted that some of this area may be developed under Future Phases.

Multi-Purpose Trails

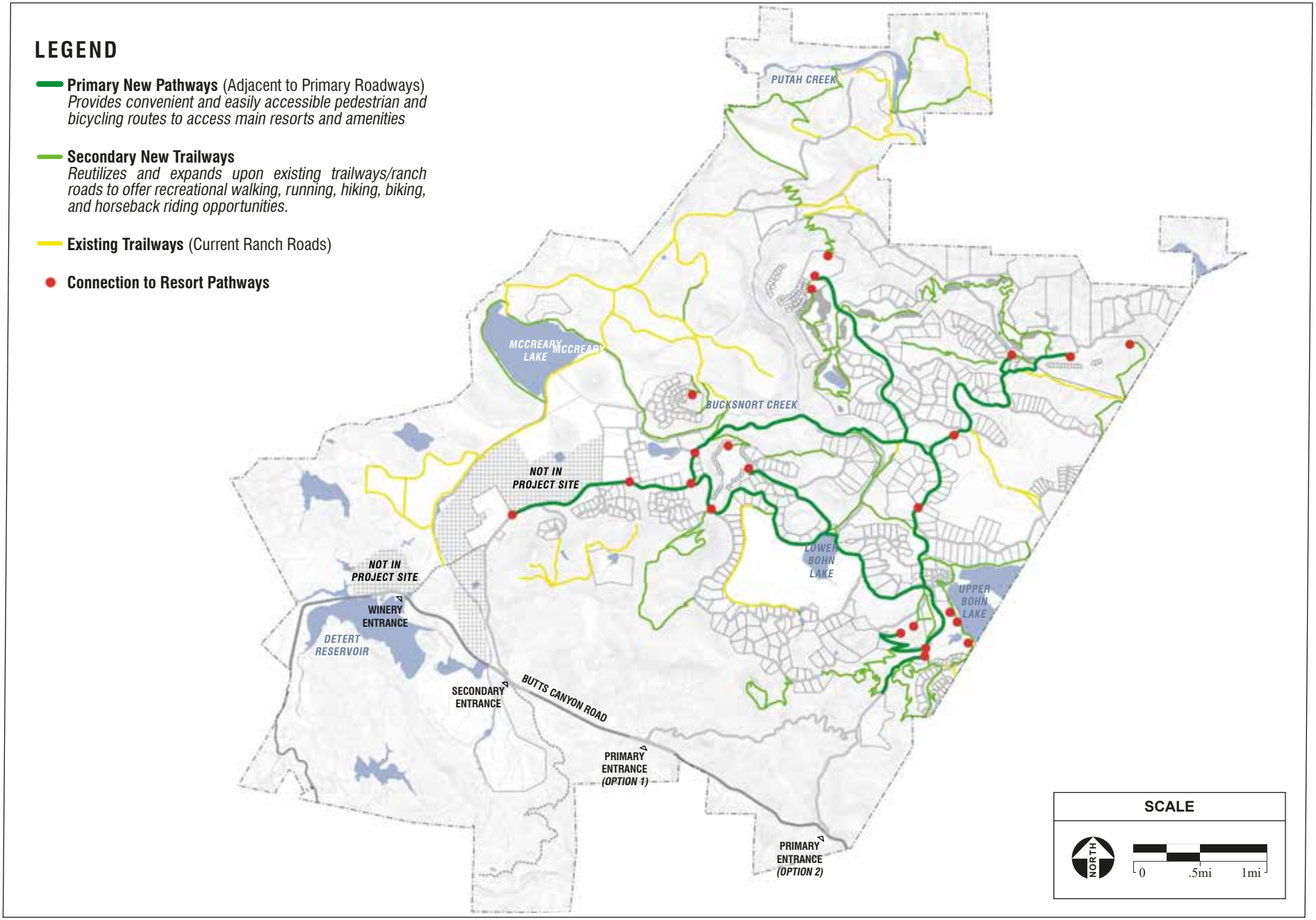
As shown in **Figure 2-9**, there are many existing recreational trail paths throughout the Guenoc Valley Site. Existing and proposed trails extend through the open space areas within the site to connect many of the resort planning areas and provide recreational walking, running, hiking, biking, and horseback riding opportunities. The trail system would include benches at strategic intervals, so trail-users may sit and enjoy the aesthetic views of the project site. Trails would be constructed by scraping to clear brush and vegetation and by compacting native soil underlying the trail alignment. Trailways would be comprised of compacted soil and would not be paved. The trails and open space areas would be maintained by the Homeowners Association.

2.5.2.3 Fire Management Plan and Emergency Response and Fire Center

The Guenoc Valley Site is located within a high fire hazard area as classified by the California Department of Forestry and Fire Protection (Cal Fire). Development in wildland hazard areas is required to meet certain safety and design standards such as the California Fire Code and the Lake County Community Wildfire Protection Plan requirements. Measures beyond the minimum fire safety regulations would be implemented as part of the project and are outlined in the Guenoc Valley Emergency Action and Fire Management Plan (**Appendix FIRE**).

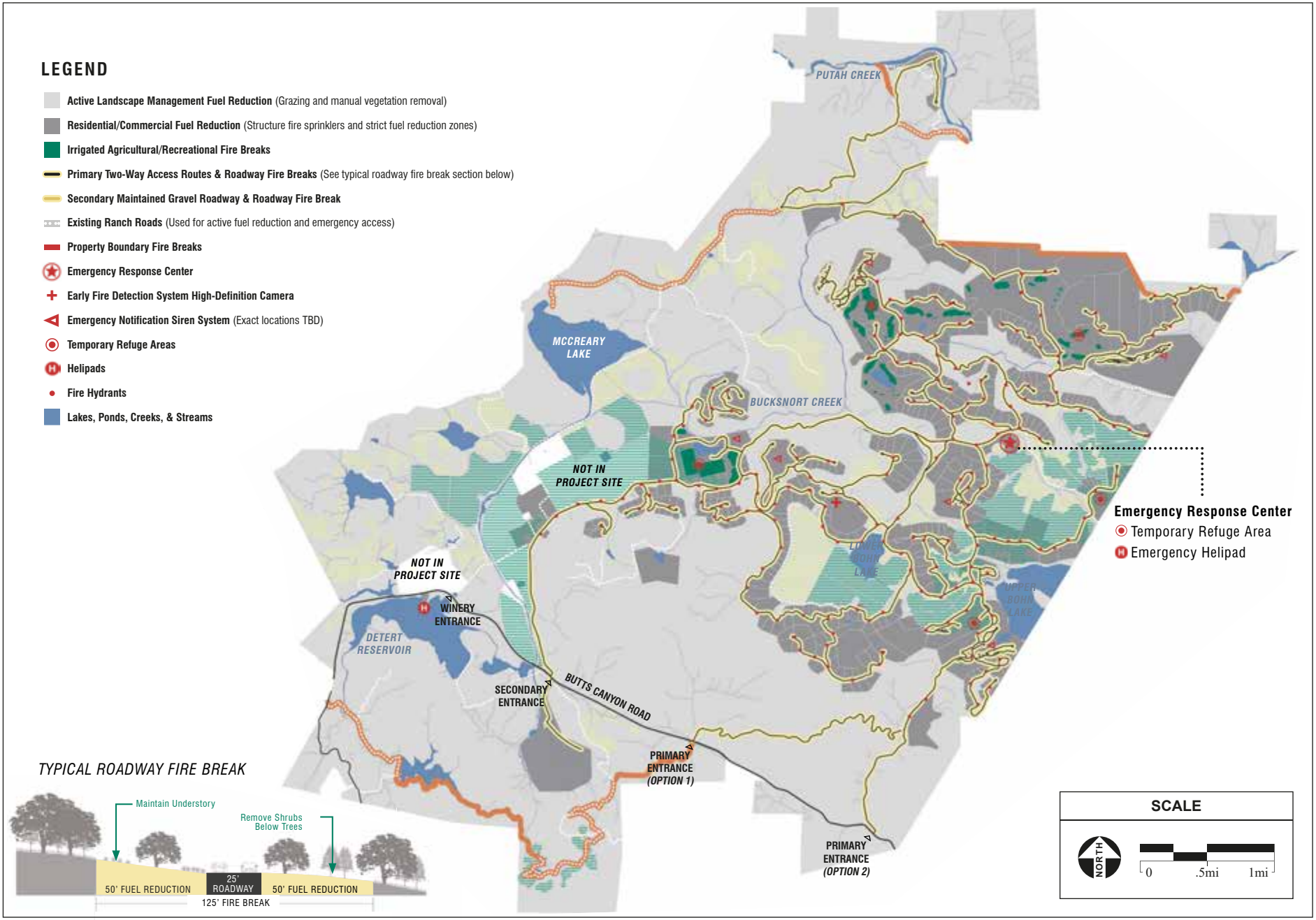
Proposed fire management facilities are shown in **Figure 2-10**, and include extensive fuel breaks along roadways and drainages, five designated temporary refuge areas (emergency gathering and protection sites), vegetation management areas, and the construction of an on-site emergency response and fire 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 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 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 sprinkler systems



SOURCE: SWA Group, 2/2020; AES, 2/6/2020

Figure 2-9
Recreational Trails



SOURCE: SWA Group, 2/2020; AES, 2/6/2020

Figure 2-10
Fire Management Plan

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.

2.5.2.4 Circulation and Parking

Vehicular Circulation

The proposed circulation plan, shown in **Figure 2-11**, includes multimodal circulation routes providing shared access to standard vehicles, minor commercial delivery vehicles, emergency response vehicles, recreational vehicles, and bicycles. Speed limits and traffic calming techniques would be implemented along all vehicular roads. All roads aside from ranch roads and fire access roads will be two-way roads with the potential for defensible space on both sides.

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. There are two options for the primary access road. The Primary Access Road Option 1 entrance would be located approximately 2 miles south of the existing Langtry Winery Entrance. The Primary Access Road Option 2 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 (see **Figure 2-11**). 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. Additionally, warning signs would be installed on both sides of the intersections. Refer to **Section 3.13** for more information about roadway improvements.

Air Transportation

Air transportation/arrival to the site would be provided via a proposed helipad and float plane dock with kiosk and internal transportation services to be established at Detert Reservoir. It is anticipated that the average use of the float plane dock for inbound or outbound flights would be approximately 2-3 times a week, with more frequent use occurring during special events, such as polo field tournaments. The helipad is expected to be used less frequently for travel to the site. Additionally, an emergency heliport would be centrally located at the on-site emergency response and fire center.

Employee Shuttle

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.

Parking

The total number of parking spots proposed for Phase 1 is 753. ADA Spaces shall be provided at a ratio of 1/40 spaces. Bicycle spaces shall be provided at a ratio of 1/15 spaces. A parking lot for employees would be located within the Guenoc Valley Site, south of Butts Canyon Road across from the secondary

entrance within the Back of House or on-site workforce housing area; employees would be shuttled from this parking lot to employment areas within the site.

Non-vehicular Circulation

A non-vehicular circulation system would be developed to connect all development areas and natural destinations. Off-road trails traversing more rugged terrain would be developed for use with hiking, horseback, and mountain bike riding. The on-site emergency response team would be encouraged to utilize the trail system as part of their physical training regime. Additionally, existing and proposed gravel and fire roads would be utilized and maintained for landscape fuel reduction, corridors for moving grazing animals, and wildland fire protection.

2.5.2.5 Water Supply and Wastewater

Given the independent cluster development and remote location of the Guenoc Valley Site, the applicant proposes to develop an independent water and wastewater system to serve the proposed development. Sufficient onsite water and wastewater capacity for Phase 1 and anticipated future phases of the Proposed Project has been demonstrated in **Appendix WSA** and **Appendix WW**. The new water/wastewater system would either be owned and operated by a newly established private utility, or would be sold to and operated by an existing utility company or district. The options for operation of the new system are briefly described below:

- Option 1: Option 1 would include formation of a privately held water and wastewater utility to own, operate and maintain the water and wastewater systems to serve the proposed development. Privately held utilities, also known as investor-owned utilities, are organized as private corporations and are subject to comprehensive regulation by the California Public Utilities Commission (CPUC) regarding water supplies, capital improvements, service quality and water rates. The new utility company would be permitted and regulated by the CPUC, the SWRCB Division of Drinking Water (DDW), and the Central Valley Regional Water Quality Control Board (CVRWQCB).

- Option 2 would be to sell the new water and wastewater infrastructure to an existing regulated utility that is already established through the CPUC. This process would require a Letter of Intent from the Utility and an Asset Purchase Agreement. The operation of the system by the existing utility would also be permitted and regulated by the CPUC, the SWRCB-DDW, and the CVRWQCB.

Water Supply

The proposed water infrastructure plan is provided in **Appendix WATER**, and includes two separate systems: a potable water system primarily used to supply all the drinking, interior, and recreation water demands features (i.e. swimming pools) and a separate non-potable water system to meet all the non-drinking water and primarily exterior water demands for irrigation, non-recreational water features (i.e. fountains and other features), fire protection water and construction related water demands. The water systems would be designed in accordance with State Water Works Standards and Drinking Water Standards. There would be three separate system zones as follows:

1) Guenoc Valley Zone would include potable and non-potable water systems designed to serve the Central Back of House area, Equestrian Center, and Bohn Ridge Resort
2) Upper Bohn Lake Zone would include potable and non-potable water systems designed to serve the Maha Farm/Sales Center area, the Spa, Emergency Response and Fire Center and Support Services, the Red Hill Estates and Renaissance Golf Course, and the Resort at Trout Flat.
3) Camping Area water system zone would serve the remote Camping Area.

Potable Water System Improvements

Potable water demand will be met by on-site water supply wells that have been or will be constructed to meet the State's standards for drinking water supply. The potable water system for each zone will include a series of deep, groundwater supply wells that will pump water into the potable water distribution system, a pressure piped network of main and submain lines to convey potable water to the commercial and residential parcels, and strategically placed water storage tanks and booster pump system stations to maintain pressure in the system to meet maximum water demands.

Groundwater Wells

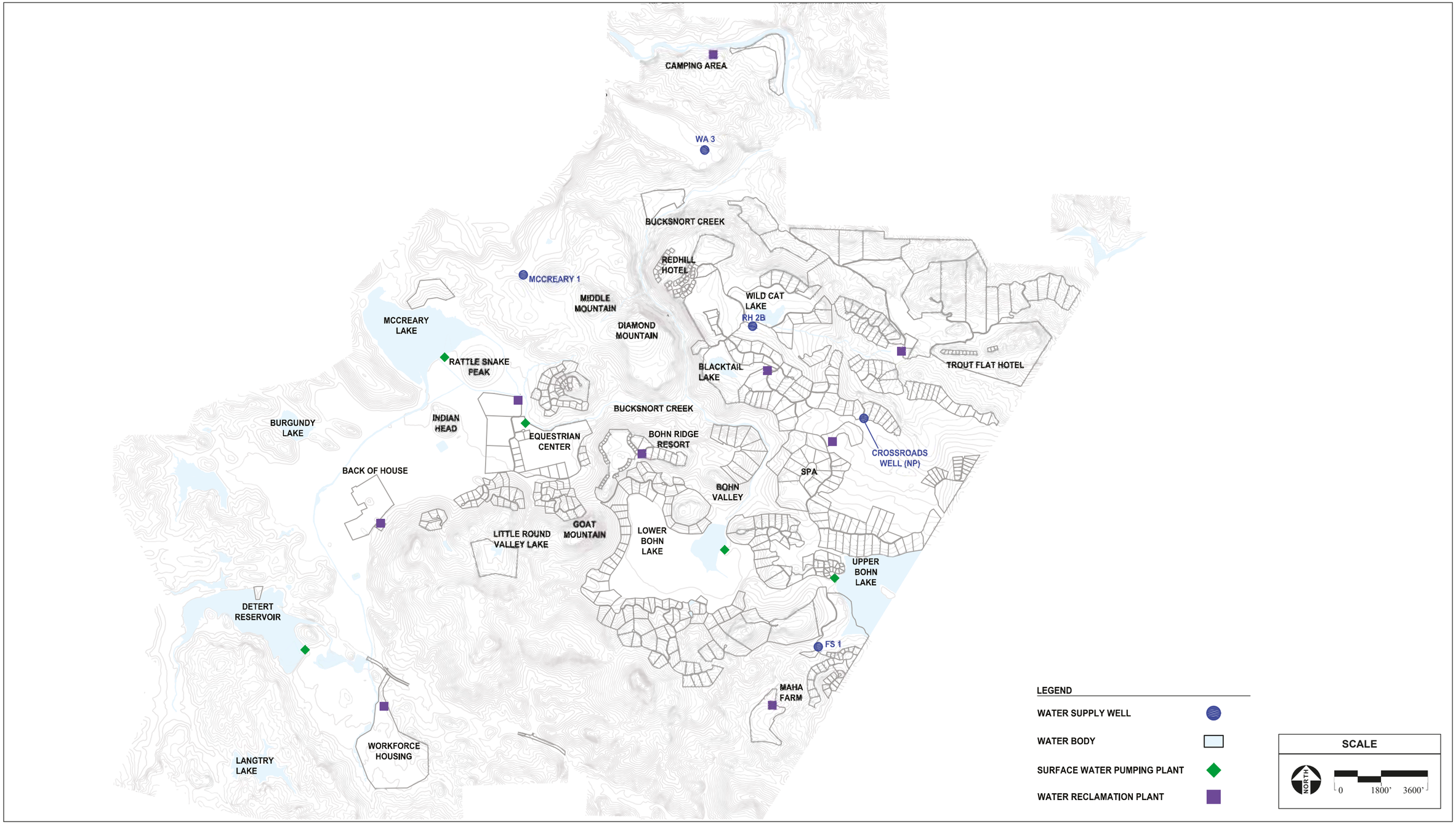
The Proposed Project involves development of multiple deep water supply wells throughout the Guenoc Valley Site. Each water system is planned to have between two to four wells so that at any given time only one or two wells would be in operation, allowing the other wells to be "rested" for several months. This will allow management of the wells so they are not over drafting the groundwater basin. Each well would likely be drilled to 300 to 500 feet deep, completed with at least a 50-foot sanitary seal, and designed to produce between 75 to 300 gallons per minute depending on the pump test results. The placement of the wells will be done in a manner to avoid direct impacts to sensitive cultural, historic and biotic resources at the site. The Back of House area would also utilize an existing spring for domestic water supply. Refer to **Figure 2-12** for the location of groundwater supply production wells. Additionally, given the size and topography of the Guenoc Valley Site, individual wells may be developed for some of the more remote residential estates.

Water Storage Tanks

A series of potable water storage tanks would be installed at each water system. The potable water storage tanks would be steel bolted above ground tanks placed in locations that are not visible to the commercial and residential parcels. The domestic water storage tanks would be sized to satisfy the maximum day demand requirements for each area. The tank storage capacities would range from 5,000 gallons to 130,000 gallons. The water storage tanks would likely be placed in elevated locations to provide gravity flow to the parcels served in the event of a power outage. The tanks would also likely be placed on graded pads bermed with the cut material so that the grading cut and fill volumes are closely balanced to avoid the transport of soils from these sites.

Domestic Booster Pump Systems

A series of booster pump systems would be installed to maintain a uniform operating pressure in each water system. It is anticipated that each booster pump system will include three booster pumps. The booster pumps would be located in small enclosures and placed in graded areas near the water storage tanks.



SOURCE: Sherwood Design Engineers, 10/14/2019; AES, 10/24/2019

Figure 2-12
Water & Wastewater Infrastructure

Water Distribution Pipelines

The systems would consist of both branched and looped water distribution systems of 4-inch diameter water mains and 3-inch submains, and 3- and 2-inch water laterals to supply the commercial buildings and residential parcels. The system will be constructed with either PVC or HDPE pipe rated for drinking water. The majority of water mains and laterals would be installed in planned roadways and driveways, not in undisturbed areas of the site.

Non-Potable Water System Improvements

Non-potable water demand will be met by a combination of surface water from the on-site reservoirs for areas that are located on POU land, on-site recycled wastewater, and groundwater supply wells for lands located outside of the designated POU land. The non-potable systems within the site will include a new non-potable water distribution lines, new surface water pumping systems, wastewater recycling systems, and one or more new groundwater supply wells, including a potential off-site well.

Non-Potable Water Distribution Pipelines (Purple Pipe)

The non-potable water distribution will be constructed to supply fire, irrigation and make up water demands for the site. The non-potable water distribution system will be a “purple pipe” system so that it can convey recycled water, as well as other sources of non-potable through the distribution system. The non-potable water distribution system will serve fire hydrants and external and internal fire sprinkler systems for commercial and residential buildings. The non-potable water distribution system will consist primarily of 10-inch, 8-inch, and 6-inch water mains and submains, and 4-inch, 3-inch, and 2-inch diameter laterals to serve fire sprinkler systems and residential properties. The majority of the non-potable water distribution system will be installed in planned roadways and driveways and should not result in additional land disturbance and impacts to cultural, historic and biotic resources beyond impacts resulting from the construction of the new roads.

Surface Water Supply and Pumping Plants

Surface water supplies would draw from existing entitled surface water rights and would be used for non-potable water demands, including landscape and vineyard irrigation, recreational areas including the golf course and equestrian center, green roofs, non-recreational water features, and fire protection. Water supplies from existing on-site reservoirs are licensed with the SWRCB, Division of Water Rights, and can only be used on designated POU land within the Guenoc Valley Site (see **Figure 2-3** for POU locations). POU land has an appropriative permit water right so that surface water can been used for a beneficial purpose, such as irrigation of agriculture. As stated above, the surface water uses allowed in the POU are: domestic, irrigation, frost protection, heat control, industrial, fire protection, and recreation (SWRCB, 2009).

Both the Guenoc Valley and Upper Bohn Lake Zone non-potable water systems would include new pumping facilities located in the vicinity of the existing pumping stations at Detert, McCreary, Lower Bohn Lake, and Upper Bohn Lake. A new pump station would be installed in the vicinity of the flashboard dam installed across Bucksnort Creek downstream of McCreary Reservoir and this pump station would house

one pumping system to serve the Equestrian Center. **Figure 2-12** shows the locations of new surface water pumping plants.

The new surface water pump stations on Detert and McCreary Reservoirs would be connected to the Guenoc Valley non-potable water system and used to supply irrigation, fire protection and make up water for water features and ponds in this area. The surface water pump stations placed on Lower Bohn Lake and Upper Bohn Lake would be used to pump water to the non-potable water system in the Upper Bohn Lake Region for irrigation, fire protection and make up water for evaporative losses in water features and ponds. The new pump plant at Bucksnort Creek would be placed in a small area above the normal highwater mark and outside of the immediate riparian zone of the creek.

The new surface water pump stations at the reservoirs would be installed adjacent to the existing pumping plants and would be placed in areas that have been graded and should not result in substantial ground disturbance during their construction and installation. The surface water pumps would likely be a turbine style pump that can deliver a high volume of water at a relatively high pressure to supply fire hydrants and large irrigation demands at certain parts of the property.

Recycled Water

Seven small water recycling plants are proposed for Phase 1. These plants would be developed at the Maha Farm, Red Hill Estates, Resort at Trout Flat, Central Back of House, Equestrian Center, Staff Housing, and the Camping area. The treatment systems will be designed to meet State Title 22 recycled water regulations for tertiary level disinfected recycled water that can be used for unrestricted irrigation and recreational use of the water. No recycled water would be used as potable water. Recycled water uses at the site include but are not limited to: irrigation, frost protection, make up water for water features, dust control, fire protection, vehicle washing, and indoor reuse i.e. toilet flushing.

On-Site Groundwater Irrigation Wells

Existing non-potable irrigation wells, including the well located near Upper Bohn Ridge, would continue to be used for irrigation and other non-potable uses.

Off-Site Groundwater Irrigation Well and Conveyance Pipeline

If necessary, an off-site high production well would be used as a primary source of non-potable water to supply irrigation, fire protection and make up water for water features and ponds. The location of the well is described in **Section 2.2.4.** The condition of the existing well is marginal and therefore a new well would be constructed. Pump test results indicate that the existing well has a high production capacity measured at 1,100 gpm. The new well would be designed with a relatively large diameter (12-inch) casing and fitted with either a high capacity turbine or submersible style pump to yield high flows over 1,000 gpm.

A new water 8- to 10-inch diameter water conveyance line would extend from the off-site well for approximately 6 miles within the public right-of-way along Butts Canyon Road, within either the paved roadway or graded road shoulder. It is likely that the conveyance line would pump the water to Detert Reservoir. The pipeline trench would likely be 24 inches wide by 40 inches deep. There are three waterway

crossings along where the pipeline would be constructed. The pipeline would be installed to limit impacts to these waterways by either attaching to existing bridges or directional drilling under the waterway.

The existing use of the Off-Site Well Site as pasture land use and one household would continue after short-term construction impacts associated with installation of the well and pipeline.

Wastewater

The proposed wastewater infrastructure plan is described in **Appendix WW**, and includes twelve wastewater service areas throughout the Guenoc Valley Site that will collect and treat wastewater from commercial uses, supporting uses and some residential areas. Nine of these areas will be served by a sanitary sewer collection system and a centralized water reclamation plant (WRP). Most residential lots would use step systems to connect to the WRPs but larger and remote residential lots would have septic systems. The remaining fareas will be served by a local on-site treatment and reuse or disposal system.

Sanitary Sewer and Community Wastewater Treatment and Recycled Water System

Wastewater management systems for the 12 service areas within the site would include a sanitary sewer collection system to collect the wastewater, small natural or package styled wastewater treatment and reuse systems, and recycled water distribution and reuse systems. Some areas including the back of the house facility, emergency response and fire center, and golf course would be smaller areas that are relatively remote from the larger development areas. These areas would be served by small on-site wastewater systems that would include small package plants to provide Title 22 tertiary water and small reuse systems, such as a subsurface drip dispersal irrigation system to reuse treated water to irrigate landscape around the buildings.

Sanitary Sewer Collection Systems

Sanitary sewer systems would utilize a combination of pressure and gravity sewer systems to pump wastewater to main treatment systems. Pipelines would be located in road right-of-ways and utility easements. Lift stations would be located throughout the wastewater systems and fitted with self-priming sewage pumps. The lift station storage tanks would be sized to collect and convey the maximum day sewage flows for each area. The lift stations would be placed in topographically low-lying areas to allow sewage to gravity flow to the tanks. Wastewater pump systems will be located at the lift stations and used to convey wastewater to the treatment plants. It is anticipated that each wastewater pump system will include at least two (2) duplex sewage pumps plumbed in parallel. Under low or normal flow conditions it is likely that a single wastewater pump is operating and as the wastewater flow increases the standby pumps will turn on to convey the wastewater to the treatment plant. The wastewater pumping systems will be connected to the area-wide System Control and Data Acquisition (SCADA) system to allow for both local and remote operation and continuous monitoring.

Wastewater Treatment and Recycling Systems

The wastewater treatment and recycling systems would include either a natural wastewater treatment system or a small biological package styled treatment system. Nine small WRPs are currently planned for Phase 1 (see **Figure 2-12**). Each WRP will cover a relatively small area ranging from less than 1,500 square feet at the Camping Area to the largest area of 12,500 square feet for the largest system that will serve the

Maha Farms area. Each WRP facility will include a treatment plant, storage tank, booster pump system, and related parking area. A typical WRP facility is illustrated in **Figure 2-13**.

The natural wastewater treatment systems would include a combined pond and wetland treatment system or a small multi-stage trickling filter and wetland treatment system. The small biological package style treatment system would include either a multi-stage trickling filter with a membrane filtration system or packed-bed textile filter and membrane filtration system. All of the wastewater systems will also include advance filtration and disinfection system and inline water quality monitoring system to comply with the State of California's Recycled Water Laws.

At each water reclamation facility there will be a recycled water storage tank and booster pump system that will pump recycled water into the non-potable water distribution system for landscape irrigation, fire protection and make up water to ornamental water features and ponds. Each plant would be designed to treat wastewater so it can be used to supply all or a fraction of the landscape irrigation demand in the vicinity of its respective development cluster. The water reclamation systems would treat wastewater to State Title 22 recycled water standards to allow for reuse of this water for tertiary level disinfected recycled water that can be used for unrestricted irrigation and recreational use of the water. All uses would be non-potable. The systems would be designed to conform to state requirements and would be permitted by the California Regional Water Quality Control Board (RWQCB) and the SWRCB.

Residential Septic Systems

There are three types of residential septic systems planned for the larger and remote lots which cannot be readily served by the more centralized treatment. The type of system used would depend on the type of land use, site-specific soil and groundwater conditions, and distance or adjacencies to other properties or land uses.

- *Residential System Type 1A – Standard Septic System*. A Type 1A system is a standard septic system consisting of a septic tank and subsurface disposal system that would be used on residential parcels that have suitable soil and groundwater conditions and meets setback requirements to conform to Lake County Rules and Regulations (LCR) for On-Site Sewage Disposal and the State of California's On-Site Wastewater Treatment Systems (OWTS) Policy.
- *Residential System Type 1B – On-Site Enhanced Treatment System*. A Type 1B system would include an on-site enhanced treatment system (such as an aerobic treatment, textile filter, sand filter or other alternative treatment system) that would provide pretreatment of the wastewater before it is disposed onsite in a subsurface disposal system. The enhanced treatment system would be required to address site-specific issues, such as marginal soil conditions, high groundwater, or other site constraints that would not allow for a standard septic system to be utilized. The enhanced treatment system would be designed and operated to comply with both the LCR and the State's OWTS Policy.
- *Residential System Type 1C – Septic Tank Effluent Sewer Systems*. A Type 1C system would include an effluent sewer system to connect a residential parcel to a community wastewater treatment and recycled water system. The effluent sewer system is made up of an interceptor tank (septic tank) and a small-diameter collection pipeline that are designed to convey only the liquid

portion of the household wastewater for treatment and disposal or reuse. The septic tank would be located close to the house and would be periodically pumped by a vacuum truck and taken to a municipal treatment plant. The settled wastewater would either flow by gravity to the main collection system or a second pump tank with a pump system would be installed to pump the effluent under pressure to the main collection system. The Septic Tank Effluent Gravity (STEG) and the Septic Tank Effluent Pumping (STEP) systems would conform to Lake County and State of California's standards.

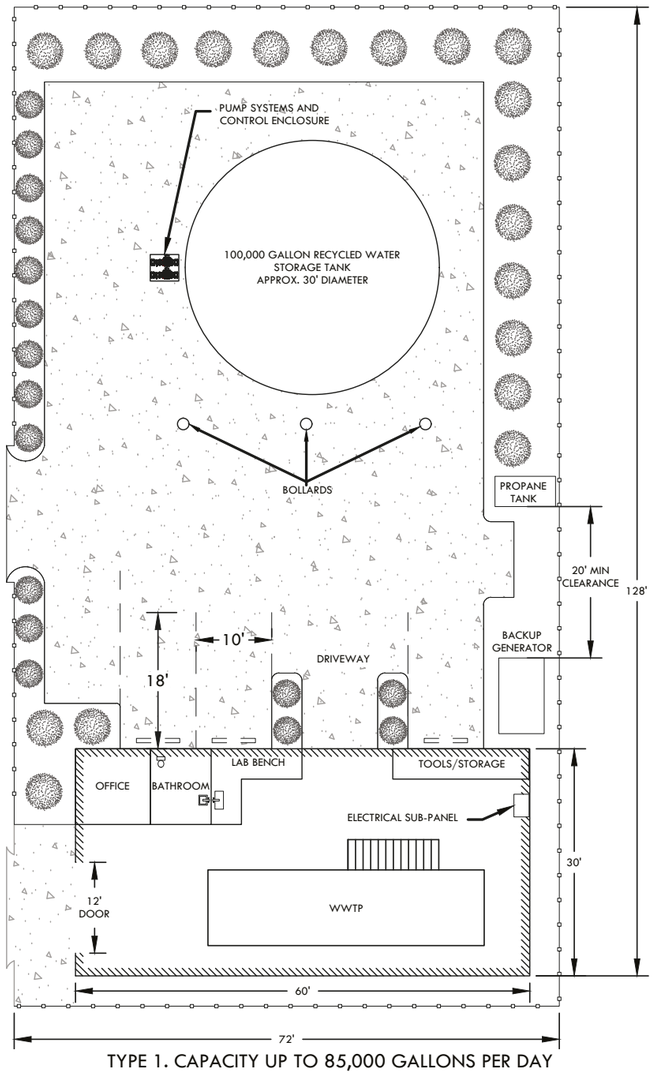
2.5.2.6 Stormwater Drainage and Flood Control

An Earthwork Plan and a comprehensive Stormwater Management Plan Report are included as **Appendix GRADING** and **SW**, respectively. There are 14 drainage areas onsite that discharge to creeks and low-lying areas. Stormwater management techniques throughout the Guenoc Valley Site would focus on maintaining or restoring existing hydrological patterns. After collaborating with the Lake County Public Works Department, the Proposed Project is designed according to the Bay Area Stormwater Management Agencies Association (BASMAA) guidelines, which have been adopted by neighboring counties and comply with State and Federal National Pollutant Discharge Elimination System (NPDES) requirements. Per the BASMAA guidelines, stormwater drainage areas 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.

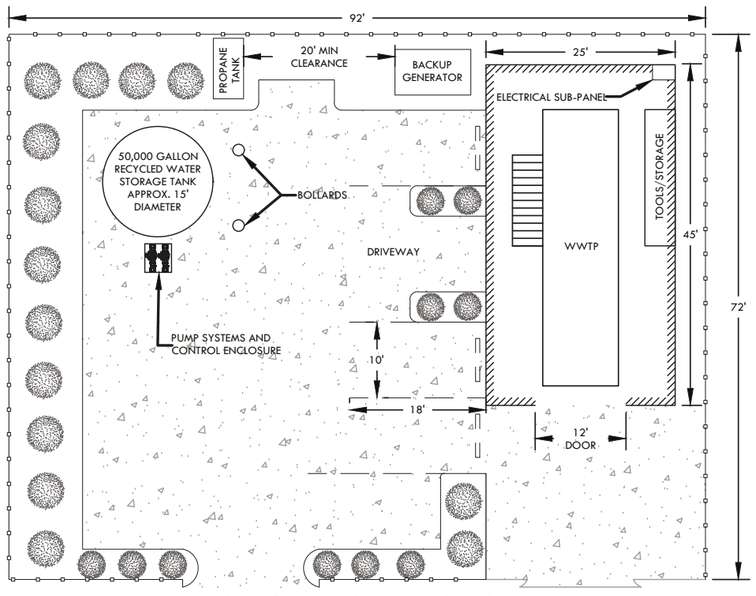
Roads would generally be sloped to a swale to convey stormwater to small sediment forebays prior to entering a drainage and would cross the road via a culvert. Flows would then be dispersed through level spreaders into the adjacent landscape. Each residential parcel would address stormwater mitigation within the parcel boundary and separate stormwater management plans will be required upon submittal of building permit of each parcel. If the impervious area is less than 5%, these parcels would qualify as self-treating areas under the BASMAA guidelines. Commercial areas would use a combination of self-retaining landscape features and bio-retention areas. Proposed methods include vegetated bioswales, checkdams, raingardens, and open bottom culverts

Portions of the Guenoc Valley Site's roadways traverse hilly terrain which include steep slopes and deep gullies. These gullies, where feasible, would be bypassed with arched open bottom culverts or bridges. At smaller water crossings and in addition to piped culverts where needed, pavement sections would be designed to allow water to flow through pervious base sections so as not to create damned conditions behind roads, thus reducing concentrated flow throughout. Where required, permitting from appropriate agencies (U.S. Army Corps of Engineers [USACE], CVRWQCB, and/or California Department of Fish and Wildlife [CDFW]) would be obtained.

.As identified in the FIRM map, the majority of the Guenoc Valley Site is located in zone X, an area determined to be outside of the .02% annual chance floodplain (500-year flood), and Zone D, an area in which flood hazards are undetermined but possible (number 06033C0960D; September 30, 2005). A small area surrounding a portion of Bucksnort Creek, which connects McCreary Lake to Detert Reservoir classified as Zone A, an area subject to inundation by the 1% annual chance flood (100-year flood) (FEMA,2005) but most of this area is in the Not Part of this Project Site area and no development is



TYPE 1. CAPACITY UP TO 85,000 GALLONS PER DAY



TYPE 2. CAPACITY UP TO 30,000 GALLONS PER DAY

SCALE

NORTH

0 10' 20'

SOURCE: Sherwood Design Engineers, 10/14/2019; AES, 10/24/2019

Figure 2-13
Typical Water Reclamation Facility Layouts

proposed near this area.

2.5.2.7 Electrical Utilities and Propane

Electricity

Within the project site, portions of the existing overhead utility services would be utilized and new services would be extended to residential, commercial, and accessory infrastructure, as required. The electrical infrastructure at the Guenoc Valley Site will change from all overhead distribution service to primarily underground service. The infrastructure will mostly be installed underground in the subdivisions and resort properties, and will be designed to exceed minimum safety and efficiency requirements. Approximately 18 miles of existing PG&E 12KV circuit will either be removed, relocated, or reused. The Proposed Project will include the installation of approximately 32 miles of new joint trench and underground electrical infrastructure in the proposed resort community areas to the extent feasible. Almost all of the Proposed Project's electrical utility routing will be installed with underground joint trench alongside communications, and in some areas above ground routing may be utilized if aesthetically viable and not adjacent to flammable vegetation. Electrical infrastructure will be routed in or along existing and newly developed roadways and easements.

The building design for facilities in the Primary Permitted Uses Table (**Table 2-1**) will meet energy code requirements and target between 18 kilo-British thermal units per square foot per year (kbtu/sf-yr) for ground coupled heat pumps to 30 kbtu/sf-yr to minimize the project's electrical demands. As required by California law, the Proposed Project will include the installation of photovoltaic (PV) solar for every residential structure's needs either on the rooftops or through ground-mounted community solar systems. The installation of energy storage devices, with a range of battery types, is expected. The relocation and/or acquisition of existing electrical service easements and poles is expected. Electrical needs for services that are directly located on Butts Canyon Road such as entrance features, streetlights or any developments proposed adjacent to Butts Canyon Road will be individual Service Delivery Points. For these individual areas, the solar systems would either be roof or ground mounted and interconnected at the Service Delivery Points. Substations and points of interconnect to PG&E will be determined by the Distribution Option selected as described below.

One of the electrical infrastructure options includes a micro-grid that has the ability to connect and disconnect from the grid to enable it to operate in both grid-connected and island-mode. A Microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that act as a single controllable entity with respect to the grid. The distributed energy resources that might be included in the project's electrical infrastructure design include: energy efficiency, demand response, distributed generation, solar PV, combustion and heat to power technologies, fuel cells, storage and electric vehicles.

Four electric power distribution options are proposed, as follows:

> Option 1 is full electrical power distribution service by PG&E to all facilities at the project. All energy technologies would be behind the meter and rely on the PG&E for this option. Each residential

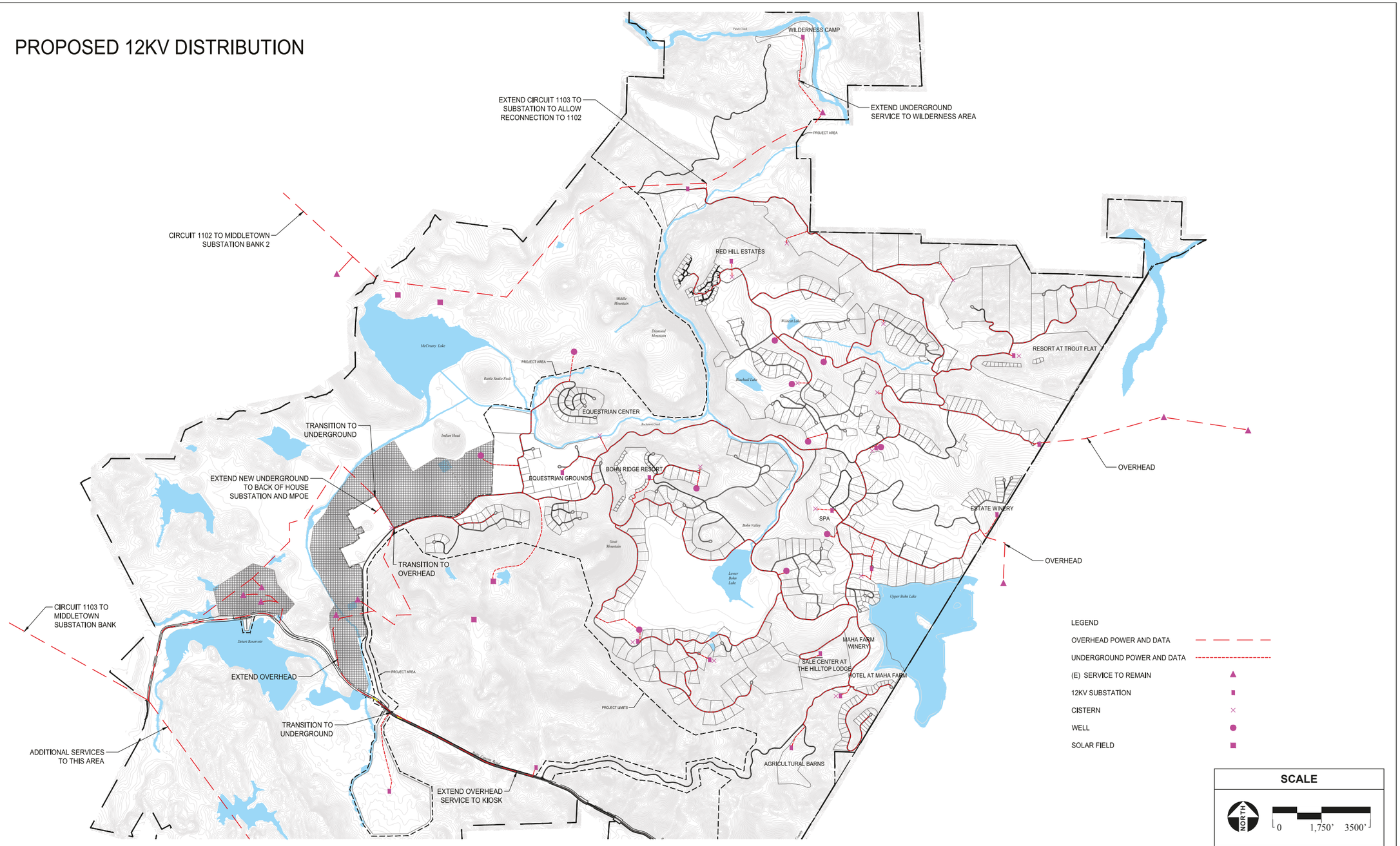
structure would be provided with either rooftop solar or the ability to participate in community alternative energy micro-grid developments located at the project site. Commercial and accessory properties would be built "solar ready" pursuant to applicable California energy code (see **Figure 2-14**). The new system would interconnect into the PG&E systems electrical facilities in the vicinity of the Back of House and at the location of the existing overhead service north of McCreary Lake where the PG&E circuit passes through the lake (see **Figure 2-14**). Alternative energy developments would consist of ground mounted solar arrays coupled with electrical combiner boxes, utility scale inverters, transformers and switchboards with metering, monitoring and relaying as required by PG&E.

4) Option 2 is private ownership of the project's electrical power distribution service to the commercial and accessory facilities. For commercial and accessory facilities, PG&E would provide only a single delivery point and the Applicant would construct, own, and operate new meters and distribution lines from that delivery point throughout the Guenoc Valley Site. Either onsite rooftop or ground-mounted solar systems would be constructed for the commercial and accessory power supplies. For the residential facilities, PG&E would provide the same electrical power distribution services as Option 1 with residential properties having the same onsite solar options described in that option. (see **Figure 2-15**)
5) Option 3 is to create a Public Utility District ("PUD") with the entire project site's electrical power distribution owned and operated independent from PG&E except for maintain a connection to PG&E for back-up, emergency purposes. This option includes behind the meter distributed generation plus storage for all residential and commercial facilities with up to four ground mounted solar plus storage systems, which collectively could generate enough electrical supply for the project's entire energy needs. (see **Figure 2-15**)
6) Option 4 is a hybrid of Options 2 and 3. Under Option 4 the Applicant would own all commercial and accessory distribution services and build up to four privately owned solar plus storage systems. The applicant would sell the electricity generated from the solar plus storage systems to the lessors at the project and/or to a PUD through traditional Power Purchase Agreements (PPAs). The residential facilities would be primarily served by PG&E's power distribution services until a PUD was created. Similar to Option 3, a connection to PG&E would be maintained for back-up, emergency purposes.

Propane

On-Site storage and distribution of propane is anticipated for the Guenoc Valley Site. Gas propane tanks would be underground throughout the Guenoc Valley Site to reduce the risk of gas related wildfires and control for temperature fluctuations. Each residential estate would be serviced by individual underground propane tanks. Each resort community would utilize shared propane tank systems with localized underground distribution systems to serve the hotel and resort residential structures.

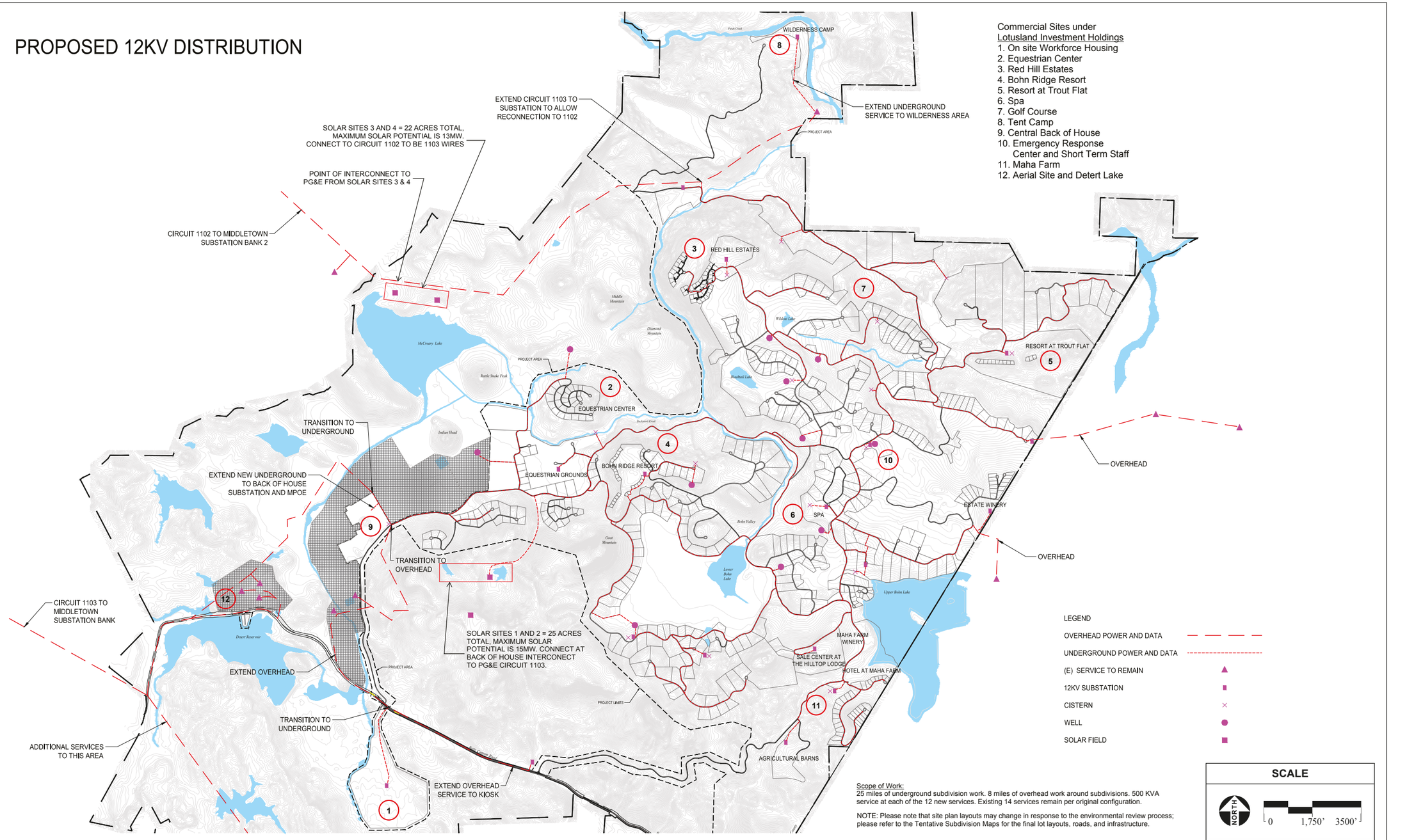
PROPOSED 12KV DISTRIBUTION



SOURCE: Axiom Consulting Engineers and Estriatus Law, 11/2019; AES, 12/2/2019

Figure 2-14
Electrical Option 1

PROPOSED 12KV DISTRIBUTION



Scope of Work:
25 miles of underground subdivision work. 8 miles of overhead work around subdivisions. 500 KVA service at each of the 12 new services. Existing 14 services remain per original configuration.

NOTE: Please note that site plan layouts may change in response to the environmental review process; please refer to the Tentative Subdivision Maps for the final lot layouts, roads, and infrastructure.

SOURCE: Axiom Consulting Engineers and Estriatus Law, 11/2019; AES, 12/2/2019

Figure 2-15
Electrical Options 2 and 3

2.5.2.8 Public Services

Police

The Lake County Sheriff's Office (LCSO) would provide law enforcement services to the Guenoc Valley Site, as it is located in unincorporated Lake County. A "beat" is the territory that a deputy patrols. The project site is under Beat 7A- Middletown/Hidden Valley. The LCSO's main station is located in Lakeport, approximately 30 miles from the Guenoc Valley Site.

Solid Waste

The Proposed Project would implement on-site reduction of solid waste through recycling and composting. Separate refuse collection bins for recyclable waste, compostable waste, and standard waste would be provided. All organic materials would be composted onsite in compliance with CA Air Resources Board, SWRCB, and CA Department of Resources Recycling and Recovery (CalReycle) composting regulations. An Aerated Static Pile composting system is proposed and would be maintained by a specified compost manager. Compost and Recycling Centers would be located at the on-site workforce housing area and another at the Back of House area. Refuse would be taken to Eastlake Landfill.

Communications Network

A combination of fiber and wired lines for cable and internet are proposed. Distribution lines to individual parcels would be extended from new infrastructure as development occurs. It is anticipated that as part of the Proposed Project the installation of a new tower for cell phone reception will be installed in a central location. In addition, there will be a fire camera and an emergency sound signal.

2.5.2.9 Design Guidelines

All development within the proposed Guenoc Valley District must comply with the Maha Guenoc Valley Design Guidelines. These design guidelines cover the following:

- Landscaping, including open space zones, vineyards, and private landscapes
- Infrastructure, including walls, fences, gates, utilities, and site furnishings
- Circulation, including street standards, parking, vehicle access, signage and lighting
- Architecture, including residential building restrictions (height, setbacks, etc.), accessory structures, and recreational amenities

The design guidelines also include a plan that details implementation and enforcement of the guidelines. This document is included as **Appendix DG** of this EIR.

2.5.2.10 Construction

Construction of Phase 1 of the Proposed Project is anticipated to begin in mid-2020 and will be spread out over the course of approximately 8-10 years. Construction of Phase 1 would occur over three phases: Phase 1A, Phase 1B and Phase 1C. Phase 1A would include primary resort facilities as well as supporting infrastructure such as roads, utilities, and support services. The highest concentration of construction employees for Phase 1A is estimated to occur between September 2020 and September 2022. It is

estimated that there would be up to 750 workers on the Guenoc Valley Site at the peak of construction. Phases 1B and 1C would include the residential lots and would occur based on market conditions. Anticipated construction for Phase 1B and 1C is from 2023-2030. The construction headquarters and primary staging area would be located at the Back of House location. Additional staging areas and equipment laydown would occur with the Phase 1 "area of potential effects" shown in **Figure 2-6a-k**. See **Appendix CP** for more detailed information regarding construction.

Construction related activities

As part of the Development Agreement there will be a request for construction to take place seven days a week with extended hours, although construction will typically take place from 6:00am to 6:00pm six days a week. The following types of construction activities would occur at different intervals throughout construction:

- Structure Demolition;
- Earthwork – grading, excavation, backfill;
- Concrete – forming, rebar placement, concrete delivery and placement;
- Structural steel work – assembly, welding;
- Masonry construction;
- Electrical/instrumentation work;
- Trenching; and
- Installation of mechanical equipment and piping.
- Rock crushing operations

Structure demolition is proposed in the Back of House area for two cottages, each approximately 12,000 SF and a large metal pre-fab barn.

Site grading would be nearly balanced, as discussed below and in **Appendix GRADING**. Construction staging areas for the Proposed Project would be located within the Guenoc Valley Site at the Back of House area. Larger items such as lumber and drywall would be trucked directly to the specific building erection location. Contractors using their own cars and construction trucks would enter and exit the site through the Secondary Entrance Road as shown in **Figure 2-11** (it should be noted that this entrance is labeled as the "Vineyard Entrance" in **Appendix CP**, Construction Plan).

Depending on the location and needs of specific construction sites, solar generators would be used for construction-related electricity. Additionally, diesel powered small, medium and large generators as well as temporary connections to existing PG&E power poles would be utilized. During the construction phase 1A, beginning in 2020 until September of 2023, there would be temporary down light construction lighting for safety and security in various areas. Road intersections may be illuminated by over-head lighting. The worker construction camps may be lit by over-head pole lighting, string lighting, ground lighting and/or lighting on the modular structures. In areas of night time operations, temporary construction lighting will be utilized, either from the ground or elevated on poles. Security lighting may be utilized at locations of stored materials to ensure against theft.

For safety purposes, there would be a security check point installed on the Secondary Entrance Road, between the Back of House Operation/Construction Camp Location and the future Equestrian Center. There may be a secondary security check point installed, as necessary on the Secondary Entrance Road before the Back of House Operation Location. When the Primary Entrance onto Butts Canyon Road becomes passable or operational, an additional security check point would be installed and remain operational until the installation of the permanent entry and checkpoint are operational. All contractor employees would only be permitted onsite after successful completion of a safety and procedural course and background evaluation. Additionally, contractor employees would be required to obtain, carry, and display digital badge technology.

Grading

Grading is proposed to be approximately balanced for the Guenoc Valley Site. Approximately 10.36 million cubic yards of cut and 10.32 million cubic yards of fill will be required for development of Phase 1. These earthwork quantities are preliminary and have not been adjusted to account for changes in volume due to clearing and grubbing, soil shrinkage or swelling, compaction, utility spoils, construction methods, etc. These refinements will be made as part of the final engineering process.

Aggregate and Concrete Production

Construction materials for the project will be, at least partially, supplied by aggregate resulting from on-site earthmoving activities and job-specific borrow sites. The aggregate will be processed using on-site job-specific processing plants such as a portable aggregate plant and a portable ready-mixed concrete plant. Rock crushing operations would occur within a 20-acre site just north of Upper Bohn Lake where an existing rock crushing operation is located. Rock crushing will occur using self-contained diesel powered machines. The aggregate and sand produced at the site will be stored on the site, as well as trucked to the Golf Course and the Equestrian and Polo Center where it will be stock piled for later use. Aggregate used for concrete and sand will be washed at the rock crushing facility. A new containment pit will be excavated adjacent to the crusher. Wash water will be recycled in an existing pit. After the water is washed over the aggregate or sand, it will be reclaimed into the adjacent pit, reclaimed and re-used for the wash operation.

Temporary Construction Workforce Camp

In an effort to minimize daily commuter traffic the Proposed Project includes the primary construction worker housing within the Back of House location and up to six temporary smaller construction camps, each comprised of approximately five acres. These facilities would be sized to accommodate approximately 375 employees. The construction personnel would be living in portable housing units on wheels with parking. Meals will include food prepared in an off-site commercial kitchen and catered to each of the construction camp areas.

Each of the smaller construction camps is temporary and will be located within the designated development footprint of the Proposed Project, adjacent to the areas under construction to minimize driving within the ranch to the actual work site. Each of these locations will be serviced by electrical and water sources. The wastewater will be held in holding tanks and then trucked to outside water treatment facilities. Each site will be fenced and monitored for security, with minimal overhead lights needed to maintain security.

2.5.3 FUTURE PROJECT PHASES – PROGRAM-LEVEL ANALYSIS

The proposed zoning amendment of the Guenoc Valley Site to Guenoc Valley Zoning District (GVD) would allow for more development than what is proposed for Phase 1. Although no specific plans for additional phases are proposed at this time, it is anticipated that the future development according to the zoning designation could occur within the Guenoc Valley Site. Thus, this EIR includes a program-level analysis of future project phases that may occur in accordance with the allowable uses under the GVD. Future phases would be subject to additional environmental review and would require project-level analysis.

It is assumed that future phases would include development up to the amount allowed in the zoning ordinance as detailed in **Table 2-1.** This may include up to roughly an additional 200 hotel units, 300 resort residential units, 1000 residential estate villas, and 400 workforce co-housing bedroom units. Additional sports and recreation facilities could be developed under future phases, including outdoor recreation such as sport fields, tennis courts, and indoor space for organized classes and rock climbing.

Fire Management Plan and Emergency Response

The Emergency Response and Fire Center proposed for Phase 1 would serve future development as well. As shown on page 92 of the SPOD (**Appendix SPOD**), the emergency center may be expanded in future phases. Future development would also be required to adhere to the measures specified in the Fire Management Plan, including defensible space around buildings and reduction of flammable vegetation. The fire breaks implemented in Phase 1 would also surround and protect future phases.

Circulation

The design of the circulation system for future phases has not been fully developed but would follow applicable Lake County regulations and design guidelines included in the first phase of the Proposed Project. Additional internal roads may be needed to connect future development, however, no additional entrance access roads along Butt Canyon Road are anticipated.

Water Supply and Wastewater

Water supply for future phases would be served by extension of the independent water system developed under Phase 1. Additional water supply would likely be met through a combination of surface water within the POU areas, groundwater wells, and recycled water; additional supply analysis would be required prior to the future development. Wastewater facilities for Phase 1 would be sized to accommodate future development. Future development is estimated to increase the overall wastewater generated by approximately 40 percent (**Appendix WW**).

Stormwater

Future phases would also be designed according to the BASMAA guidelines. Per the guidelines, stormwater drainage areas 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.

Methods for stormwater detention would include those listed for Phase 1 on page 128 of the SPOD (**Appendix A**).

Electricity and Propane

Electrical systems built in Phase 1 would be sized to accommodate future phases. Potential development allowed under the GVD includes additional PV solar, energy storage, and other energy generation technology. Extension of electrical utility lines and minor additions to the Phase 1 system would connect future phases to the existing electrical utility infrastructure as necessary. Similar to Phase 1, future development would rely on propane tanks for gas service.

Construction

It is anticipated that construction of future phases could begin as early as 2030 and may occur over a 10 year timeframe; however the ultimate timing will be based on market demand and other factors. As with Phase 1, the construction headquarters and primary staging area for future phases would be located at the Back of House location. The types of construction related and grading activities described for Phase 1 are also anticipated under future phases. Refer to **Section 2.5.2.10** for additional detail. Construction materials for future phases are anticipated to be supplied by aggregate resulting from on-site earthmoving activities and job-specific borrow sites. Rock crushing operations may continue within the 20-acre site just north of Upper Bohn Lake where an existing rock crushing operation is located.

2.6 OFF-SITE IMPROVEMENTS

Off-site infrastructure improvements may be necessary to implement the Proposed Project and may require additional entitlements not previously listed. Off-site infrastructure improvements may include, but are not limited to the following:

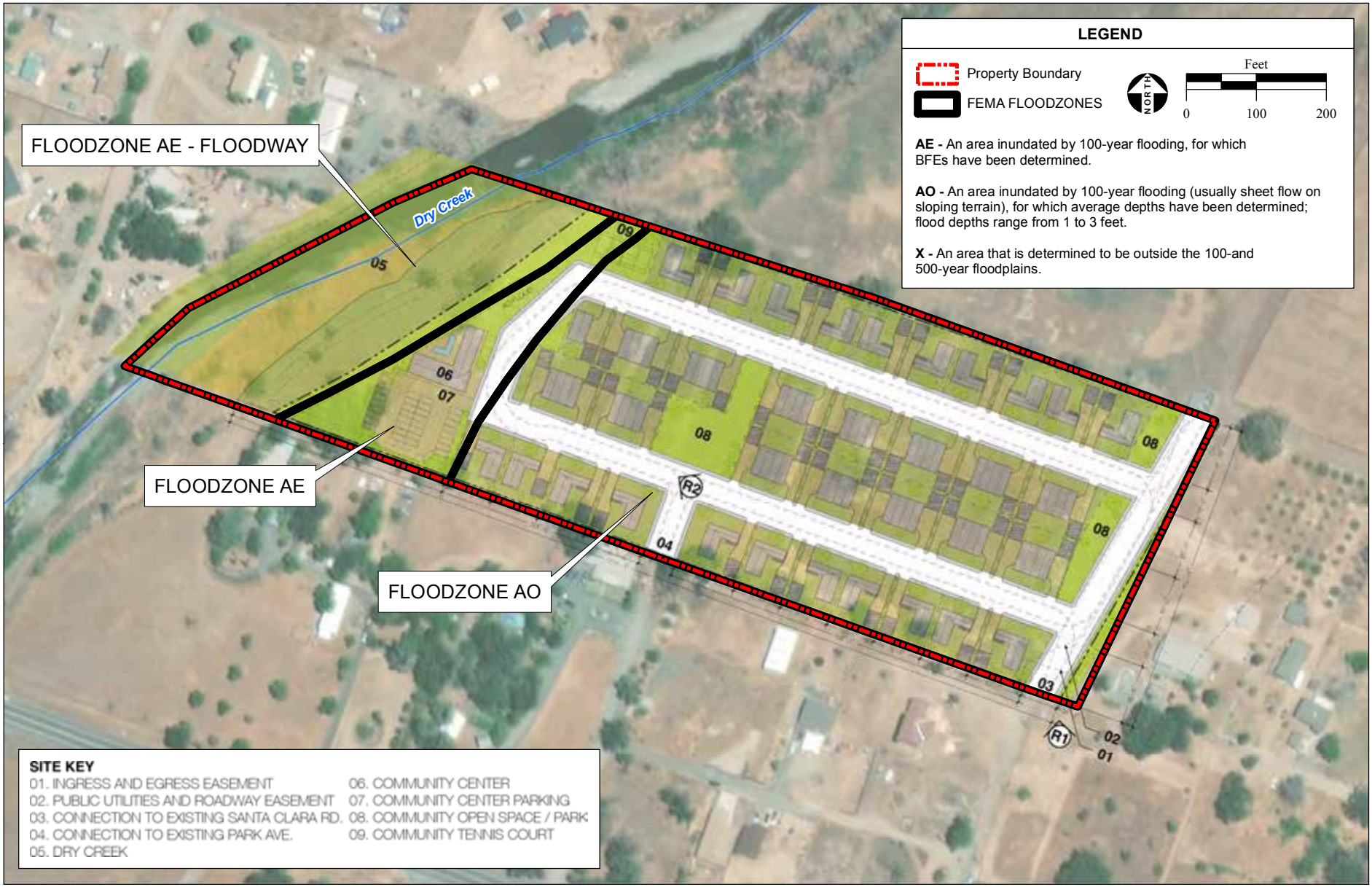
- Electrical transmission line upgrades as described in **Section 2.5.2.7**.
- Water supply infrastructure associated with potential off-site well on a nearby property owned by the Applicant. Please refer to **Section 2.2.4** for a description of the site, and **Section 2.5.2.5** for more information regarding the improvements.
- One new access roadway intersection at Butts Canyon Road. Please refer to **Section 2.5.2.4**
- Off-site workforce housing in Middletown. Please refer to **Section 2.2.3** for a description of the site, and **Section 2.6.1** below for a description

2.6.1 OFF-SITE WORKFORCE HOUSING

Off-Site workforce housing would include the development 21 single family units and 29 duplexes, and a community center with connecting roadways on the approximately 12.75-acre Middletown Housing Site (refer to the description of the site in **Section 2.2.3** above, and **Figures 2-16** and **2-17**). The single family units would typically be approximately 1,297 SF and each include five bedrooms. Some of the single family units will have an ADU option in place of one of the bedrooms Duplexes would be approximately 1,858 SF and each include four bedrooms. All housing structures would be two-stories. The community center would be constructed on an approximately 1-acre area.

As discussed in **Section 2.2.3**, the Middletown Housing Site is within a 100-year flood zone with base flood elevation of 2 feet. All proposed development is within Zone AO and thus to avoid potential impacts, the site would be filled to make all structures above the 2-foot flood elevation. The elevation on the site where development would occur is approximately 1,098 feet amsl. After filling the building pads, the finished flood elevations of the residential buildings would be approximately 3-5 feet higher in elevation. Additionally, rain gardens and larger stormwater detention and treatment areas would be constructed to ensure no significant increase in stormwater that exits the site. The rain gardens would be located on each lot and the detention/treatment areas would be located on either side of the property and in the center of the duplex area. The project site would be generally graded to drain to the detention basins.

The South Lake County Fire Protection District (SLCFPD) and Cal Fire would also provide fire protection and fire suppression services to this site. The Callayomi County Water District (CCWD) will most likely supply potable water to the Middletown Housing Site. Wastewater may be connected to the Middletown wastewater treatment plant. The Middletown Housing Site would also be connected to Middletown's electrical system. Middletown does not have a natural gas system so the site would rely on propane tanks for gas service. The site would also be served by the Lake County Sheriff's office. Solid waste would be taken to the Eastlake Sanitary Landfill, which serves all of Lake County. All of the off-site workforce housing would be built during Phase 1 construction.



SOURCE: Verse Design, 8/15/19; FEMA FIRM, effective 9/30/2005; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/3/2020

Figure 2-16
Middletown Housing Site Plan



SOURCE: Verse Design, 8/15/2019; AES, 10/30/2019

Figure 2-17
Middletown Housing Rendering

2.7 REQUIRED PERMITS AND APPROVALS

As required by Section 15124 (d)(B) of the CEQA Guidelines, a list of permits and other approvals required to implement the Proposed Project is provided below. This EIR analyzes development proposed under Phase 1 at a project-specific level of detail. Future phases will be subject to additional environmental review under CEQA; however, assuming future phases are consistent with the analysis in this EIR, subsequent reviews be tiered from this EIR and limited to issue areas not fully addressed for future phases, such as impacts to biological and cultural resources.

2.7.1 LEAD AGENCY APPROVALS: COUNTY OF LAKE

The County is the Lead Agency for the Proposed Project. In summary, the following County actions and approvals are proposed:

- Amendment to the General Plan and Special Study Area map of the Middletown Area Plan to include the area commonly known as the college parcels; amendment to General Plan Land Use Map designations from Agriculture, Resource Conservation, Rural Lands, and Rural Residential to Resort Commercial (GPAP 18-01);
- Zoning Ordinance Amendment to introduce a new zoning district, Guenoc Valley District ("GVD"), to allow for future uses and implement the goals of the Special Study Area; subsequently rezoning of the Guenoc Valley Site from Rural Lands, Agriculture, and Rural Residential to GVD with agricultural preserve and open space combining districts and GVD Design Guidelines (AM 18-04; RZ 18-01);
- Use Permit for the Specific Plan of Development (Master Development Plan) for Phase 1 (UP 18-01);
- General Plan of Development (GPD 18-01);
- Phased Tentative Subdivision Maps for Phase 1 (SD 18-01) (please refer to **Appendix SPOD** for drafts of the phased tentative subdivision maps);
- Development Agreement (DA 18-01);
- Approval of Improvement Plans for grading, drainage and utilities;
- Encroachment permits;
- Building permits;
- Occupancy permits;
- Septic System Permit from Lake County Environmental Health Department;
- Grading permit for installation of off-site water line along Butts Canyon Road;
- Approvals related to the Middletown Housing Site, including:
    - Rezone approximately 3.5 acres of the Middletown Housing Site from Single-Family Residential to Two-Family Residential.
    - Tentative Subdivision Map for off-site workforce housing; and
    - Building and Grading Permits
    - Approval of connection to the Middletown Wastewater Collection and Treatment System
- Certification of this EIR (EIR 18-01);

A detailed description of key requested entitlements is provided below:

General Plan and Area Plan Amendment

The current General Plan Land Use Map designates the Guenoc Valley Site as primarily Rural Lands, with certain areas of the site designated as Rural Residential, Agricultural, and Resource Conservation. Under the Proposed Project, the General Plan Land Use Map designation of the Guenoc Valley Site would be amended to Resort Commercial.

The current Middletown Area Plan identifies the Guenoc Valley Site as a Special Study Area. One section known as the college parcels is currently outside the Special Study Area as it was not a part of the Guenoc Ranch when the Middletown Area Plan was updated in 2010 (refer to **Section 3.2**, Land Use, for further discussion). This area was gifted to the County for development of a California State University Campus but was found to be unsuitable for this purpose. As a result, the ownership reverted back to the owner of Guenoc Ranch and the area is now part of the Guenoc Valley Site. An amendment to the Special Study Area map is requested to include this area. The Middletown Area Plan is a supplement to the General Plan and thus the amendment to the Special Study Area results in an amendment to the General Plan.

Zoning Ordinance Amendment

The Guenoc Valley Site is primarily zoned as agricultural, rural lands, and rural residential, which does not allow for the mixed-use resort development outlined in the Middletown Area Plan Langtry/Guenoc Special Study Area. In addition, the County's current Zoning Ordinance does not have a mixed-use development district that combines resort, residential, and commercial uses. Thus, a new zoning district, Guenoc Valley district (GVD), is proposed to effect the goals of the Middletown Area Plan. The entire Guenoc Valley Site would fall under the new GVD district. A draft zoning ordinance is included as **Appendix GVD**. The permitted uses within the GVD are outlined in the zoning ordinance, and listed above in **Table 2-1**. Within the GVD, there are two proposed combining districts to preserve the rural character of the area: Designated Open Space and Agriculture. Both of these areas preclude resort and residential development.

Use Permit for General and Specific Plan of Development

A Use Permit is required for the General and Specific Plan of Development (SPOD) for Phase 1. The SPOD is provided in **Appendix SPOD** and identifies development plans for each of the planning areas within the site.

Phased Tentative Maps

The proposed five Phased Tentative Subdivision Maps outline the proposed lot lines within the Guenoc Valley Site. The maps identify "no build" areas, or minimum "no build" acreages within certain commercial and residential lots to preserve sensitive habitats and environmental constraints. The Phased Tentative Subdivision Maps will also include exclusive easements such as utilities and access. In addition to the combining districts and the map restrictions there will be easements within the CC&Rs that will be managed by the Homeowners Association for fire management landscape areas, pathways, and scenic preservation.

2.7.2 OTHER RESPONSIBLE AND PERMITTING AGENCIES

Other anticipated approvals required to implement the Proposed Project are listed below. In addition to these requirements, environmental review and consultation requirements related to federal, State, or other local laws or guidance applicable to individual resources are described in the Regulatory Setting sections provided in **Section 3.0** of this EIR.

Federal

The Proposed Project would require the following actions by federal agencies:

- **Federal Clean Water Act (CWA) Section 404 Permit (USACE and U.S. Environmental Protection Agency [EPA])**. The USACE regulates the placement of fill or dredged materials in waters of the United States (jurisdictional wetlands), which include stream courses and other wetland features. The USACE regulates these activities under the authority of Section 404 of the CWA. The EPA has authority to comment on and veto USACE decisions. The USACE would regulate development that affects jurisdictional waters of the U.S. and wetlands.
- **Federal Endangered Species Act (FESA) Section 7 Consultation (U.S. Fish and Wildlife Service [USFWS])**. As part of the Section 404 permit process, the USACE will initiate consultation with the USFWS in accordance with Section 7 of the FESA to determine whether any federally listed species could be adversely affected and to identify measures to avoid or minimize adverse impacts on listed species. If it is determined that federal species may be adversely affected, the USFWS is responsible for preparing a biological opinion (BO) and incidental take permit.
- **National Historic Preservation Act (NHPA) Section 106 Consultation.** As part of the Section 404 permit process, the USACE will initiate consultation with the State Historic Preservation Office (SHPO) and Native American tribes to identify potential impacts to cultural resources in accordance with Section 106 of the NHPA.
- **Federal Aviation Administration.** Under Federal Aviation Administration (FAA) regulation 14 CFR Part 157, float plane docks, also known as seaplane bases, are considered airports. Therefore, a Notice of Construction, Alteration and Deactivation of Airports must be submitted to the FAA Administrator 90 days before construction begins. The notice includes contact information for the airport owner, type of change, and landing area details. After receipt of notice, the FAA will perform an aeronautical study identifying any hazards to air navigation. The FAA will then issue one of three airport determinations: (1) No Objection, (2) Conditional, which states conditions which must be met to preclude an objectionable determination, and (3) Objectionable, which states the FAA's reasons for issuing such a determination.
- **Federal Emergency Management Agency (FEMA).** Conditional Letter of Map Revision Based on Fill (CLOMR-F) is a letter from FEMA stating that a parcel of land or proposed structure will be elevated by fill would not be inundated by the base flood if fill is placed on the parcel.

State

State regulatory agencies would also need to take action on elements of the Proposed Project, as indicated below.

- **CWA Section 401 Water Quality Certification (CVRWQCB)**. Construction has the potential to directly or indirectly affect "waters and wetlands of the United States". A CWA Section 401 water quality certification, or a waiver thereof, would be required from the RWQCB prior to discharge to waters of the U.S and state.
- **NPDES Construction General Permit (SWRCB)**. The SWRCB requires that all construction sites have adequate control measures to reduce the discharge of sediment and other pollutants to streams to ensure compliance with Section 303 of the CWA. Construction involving clearing, grading, and excavation activities that would result in the disturbance of one acre or more of land is required to obtain coverage under the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity. As such, the Applicant would be required to file for coverage under the NPDES General Permit with the SWRCB and prepare a SWPPP that identifies BMPs to control pollutants in stormwater discharges, both during construction and after construction is completed.
- **Formation of a Privately held Utility for water supply, wastewater services and/or electricity (CPUC).** In the event that electrical utility Options 2-4 are selected, the formation of a privately held utility to own, operate and maintain the systems within the Guenoc Valley Site would be subject to approval and regulation by the CPUC. The applicant will prepare the necessary legal, technical and financial reports needed to form the new utility entity.
- **Master Reclamation Permit (for recycled water) (CVRWQCB)**. A Master Reclamation Permit would be required by the CVRWQCB that regulates the re-use of recycled water from the proposed on-site WRPs.
- **Wastewater System Plan, and Water System Operation and Maintenance Plan (CVRWQCB).** The SWRCB would be required to approve the Water System Plan and Operation and Maintenance Plan prior to the startup and commissioning of the new water systems.
- **Domestic Water Supply Permit (SWRCB-DDW).** Operation of the public water systems within the site would require obtaining a domestic water supply permit from the SWRCB-DDW.
- **Streambed Alteration Agreement (CDFW)**. Construction would require Section 1602 Streambed Alteration Agreement(s) from CDFW. CDFW has jurisdiction over construction activities affecting streambeds and banks within the 100-year floodplain. A 1602 Agreement between the Applicant and CDFW would address methods to avoid or minimize aquatic or wetland losses in accordance with CDFW policies.
- **Permit to Operate (Lake County Air Pollution Control District [Lake County APCD])**. Stationary sources of air emissions, such as certain commercial electrical generation facilities or stand-by generators, may require a permit to operate from the Lake County APCD.
- **Hazardous Materials Environmental Oversight**. If hazardous materials are detected onsite, removal and remediation may require oversight by the appropriate agency (e.g., Department of Toxic Substances Control, Lake County Department of Environmental Health, and CVRWQCB, etc.).
- **Encroachment Permits (Caltrans)**. Implementation of traffic mitigation measures at state transportation facilities will require approval and encroachment permits from Caltrans.

Local

- **Local Agency Formation Commission**. The LAFCO will consider the following actions prior to implementation of the Proposed Project. LAFCO will use the EIR in evaluating the impacts of the following actions:
    - In the event that the option to form or join a public utility is selected, approval of the formation of a new Public Utility District for water supply, wastewater and/or electricity service within the Guenoc Valley Site
    - Potential annexation of the Middletown Site into the service area boundaries of the Callayomi County Water District.
- **Callayomi County Water District.** Annexation of the Middletown Housing Site into the service area boundaries of the Callayomi County Water District.

SECTION 3.0

ENVIRONMENTAL ANALYLSIS

3.0 ENVIRONMENTAL ANALYSIS

SCOPE OF THE ENVIRONMENTAL ANALYSIS

This section of the Environmental Impact Report (EIR) contains individual sections that describe the potential environmental impacts of the Proposed Project described in **Section 2.0**, **Project Description**. Each topical section describes the environmental setting and background information necessary to help the reader understand the conditions that would cause an impact to occur. In addition, each section includes a description of how an impact is determined to be significant or not significant. Finally, the individual sections recommend mitigation measures to reduce significant impacts. The following issue areas are addressed in this section:

Section 3.1 – Aesthetics
Section 3.2 – Land Use and Agriculture
Section 3.3 – Air Quality
Section 3.4 – Biological Resources
Section 3.5 – Cultural Resources
Section 3.6 – Geology and Soils
Section 3.7 – Greenhouse Gas Emissions
Section 3.8 – Hazards and Hazardous Materials
Section 3.9 – Hydrology and Water Quality
Section 3.10 – Noise
Section 3.11 – Population and Housing
Section 3.12 – Public Services
Section 3.13 – Transportation and Traffic
Section 3.14 – Utilities
Section 3.15 – Energy
Section 3.16 – Wildfire

ENVIRONMENTAL SETTING AND DEFINITION OF BASELINE

The CEQA Guidelines (California Code of Regulations [CCR] Section 15125[a]) state that: An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the NOP is published, or if no NOP is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.

As described in **Section 1.2**, the County issued a NOP for the Proposed Project on April 23, 2019, and subsequently initiated the preparation of technical studies and the CEQA environmental review process. Thus, each of the environmental topical sections in **Section 3.0** includes a discussion of physical conditions in the vicinity of the study area on or around April 2019. This environmental setting constitutes

the baseline from which the operational impacts of the Proposed Project, as well as the impacts of future proposed construction activities, are measured and evaluated.

The extent of the environmental setting area evaluated (the project study area) differs among resources, depending on the locations where impacts would be expected. For example, air quality impacts are assessed for the air basin (macroscale) as well as the site vicinity (microscale), whereas aesthetic impacts are assessed for the site vicinity only.

CUMULATIVE IMPACTS

According to the CEQA *Guidelines* Section 15355, "cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." CEQA requires that cumulative impacts be discussed when the project's incremental effect is cumulatively considerable (*Guidelines* Section 15130[a]). These impacts are discussed when appropriate in the relevant issue area sub-section within **Section 3.0** and summarized in **Section 4.2**.

When evaluating cumulative impacts, CEQA allows the use of either a list of past, present, or reasonably foreseeable probable future projects, including projects outside the control of the Lead Agency, or a summary of the projections in an adopted planning document, such as a General Plan, a Specific Plan, or some thoughtful combination of the two.

The context for the cumulative impact analysis within this 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 as well as reasonably foreseeable development projects in the County and region of the project site. Reasonably foreseeable development projects considered within this EIR include, but are not limited to, buildout of the Middletown Area Plan, buildout of the Hidden Valley Subdivision, and the Valley Oaks Planned Development. The cumulative context, including a description of the reasonably foreseeable projects listed above, is included in **Section 4.2.1**.

3.1 AESTHETICS

3.1.1 INTRODUCTION

This section provides a description of visual conditions in the project area and describes the changes to those conditions that would result from implementation of the Proposed Project. Following an overview of the visual resource setting in **Section 3.1.2** and the relevant regulatory setting in **Section 3.1.3**, project-related impacts and recommended mitigation measures are presented in **Section 3.1.4** and **Section 3.1.5**, respectively.

3.1.2 ENVIRONMENTAL SETTING

Regional Setting

The project region is located in southeastern Lake County in Northern California. Lake County is within the Pacific Coastal range, with mountainous topography and lakes, the largest of which is Clear Lake, the largest natural freshwater lake in California. Long-range views within the region include views of Clear Lake and the Cedars Mountains over 12 miles to the northwest and Lake Berryessa, approximately ten miles southeast of the Guenoc Valley Site. Most of the County is a mix of public and rural lands with low density housing development communities such as Middletown.

The surrounding area near the project locations is comprised of mountainous terrain covered with mixed conifer and oak forests; open brush and grass hillsides; vineyards; isolated rural residential development and clusters of high density residential development (Hidden Valley Lake community). The valley floor is comprised of sparse residential development associated with agriculture, either as working ranches or 'ranchettes', which are comprised of larger rural residential parcels that offer owners the opportunity to utilize the land for the purpose of horse pastures, raising livestock, growing annual crops, or to keep as undeveloped space. The Hidden Valley Lake golf course is located adjacent to State Route 29 (SR-29) in the valley, as are commercial businesses. A series of wildfires has burned large portions of Lake County, including areas immediately adjacent to the Guenoc Valley Site, as well as portions of the ranch. The 2015 Valley Fire damaged hillside forests, valley vegetation, and burned numerous residences and commercial businesses, as well as residences in the communities of Hidden Valley Lake and Middletown. SR-29 runs in a north-south direction, approximately 5 miles west of the Guenoc Valley Site and adjacent to the proposed Off-Site Well Site. This highway has been identified as an "Eligible State Scenic Highway-Not Officially Designated". This status does not confer any current visual or scenic resource restrictions on the area surrounding the highway.

Scenic Vistas

The term vista generally implies an expansive view, usually from an elevated point or open area. A scenic vista is a view that possesses visual and aesthetic qualities of high value to the community. Scenic vistas can provide views of natural features or significant structures and buildings. Open area visual resources such as agricultural and natural, undeveloped lands, contribute to the scenic vistas that are present in the project area. According to the Lake County General Plan, designated scenic vistas in the area include Clear Lake, Mt. St. Helena, and The Geysers. Additionally, the Open Space and Recreation Element of the Middletown Area Plan (2010) identified Butts Canyon Road from SR-29 to the Napa County line as a

scenic resource, as it provides scenic vistas of a large valley with agricultural settings, farm houses, Detert Reservoir and ridgelines to the north and south (Middletown Area Plan, 2010).

Scenic Highways and Corridors

There are no official State designated Scenic Highways in Lake County. However, the Guenoc Valley Site is located within the Middletown planning area. The Middletown Area Plan (2010) and the County General Plan states that Butts Canyon Road and SR-29 are designated scenic corridors in Lake County and have the potential to become designated scenic highways in the future.

Guenoc Valley Site Setting

Surrounding Areas near Guenoc Valley Site

There is limited development surrounding the Guenoc Valley Site as the region is mountainous. Bishop Mountain is located north of the site (elevation of 2,120 feet above mean sea level [amsl]), Snell Peak is to the east (1,858 feet amsl), Table Mountain is south of the site (2,865 feet amsl), and McGuire Peak looms to the southwest (2,758 feet amsl). Upon review of aerial maps surrounding the site, it is not anticipated that views of the Guenoc Valley Site are accessible from any major hiking trails on any of the neighboring mountains. The closest residential communities are Hidden Valley Lake and Middletown, neither of which have views of the Guenoc Valley Site due to intervening mountains. The closest roads are Butts Canyon Road and SR-29. Due to the hills in the region, the Guenoc Valley Site is not visible from SR-29, located approximately 5 miles to the west.

Guenoc Valley Site Visual Resources

The Guenoc Valley Site spans a vast area consisting of approximately 16,000 acres (or approximately 25 square miles). The topography of the site consists of rolling hills, small mountains, and valleys, including five small lakes and Detert Reservoir.

There are a number of built structures located along the existing main access road to the site that runs adjacent to the Langtry Vineyards operations and through the center of Guenoc Valley. These structures include the Langtry Winery office building and tasting room, several ranch homes, barns, and equipment storage sheds. With the exception of the Langtry Vineyards office building and tasting room, the majority of these structures are located on the valley floor in the immediate vicinity of the proposed back of house planning area. There are also over 1,000 acres of irrigated pasture and approximately 990 acres of vineyards. Bounded by rolling hills and annual low lying grasslands, many sizable lakes and creeks can be seen traversing the site, including a major reservoir. Beyond the far reaches of the site, tall rocky peaks can be viewed off in the distance. In addition, the site includes an abandoned 18-hole golf course south of Butts Canyon Road. The Lake County General Plan 2008 has designated the Guenoc Valley Site as Agriculture, Rural Lands, and Rural Residential.

Public Views of the Guenoc Valley Site

The 25 square-mile Guenoc Valley Site is private property, and is therefore only accessible to the property owner, employees, and guests. Views of the Guenoc Valley Site currently experienced from publicly accessible vantage points are limited to the views of travelers along Butts Canyon Road, which transects

the southwestern portion of the site, as well as the views of employees and patrons of the Langtry Vineyard tasting room and office. **Figure 3.1-1** identifies representative viewsheds of the Guenoc Valley Site as experienced from publicly accessible vantage points, and **Figures 3.1-2a-c** provide photographs taken from these vantage points. These views are described below.

Public Views from Butts Canyon Road (Viewsheds 1 through 6)

According to the Open Space and Recreation Element of the Middletown Area Plan (2010), Butts Canyon Road from SR-29 to the Napa County line is a scenic resource as it provides views of a large valley with agricultural settings, farm houses, Detert Reservoir and ridgelines to the north and south. Portions of the Guenoc Valley Site can be viewed from Butts Canyon Road. Butts Canyon Road transects the Guenoc Valley Site for approximately 5.3 miles, providing limited views of the site on either side of the road. The majority of these views are limited due to intervening topography, however, Butts Canyon Road does provide expansive views of Detert Reservoir and some areas of the valley south of the roadway. Key viewsheds along this roadway of the Guenoc Valley Site are described briefly below. These viewsheds were selected as they are representative of the range of views along the roadway, and also represent the limited areas where some visual change resulting from the project may be observed.

Viewshed 1: Facing east, viewshed 1 provides expansive views of the Detert Reservoir with oak woodlands and mountainous topography in the background.

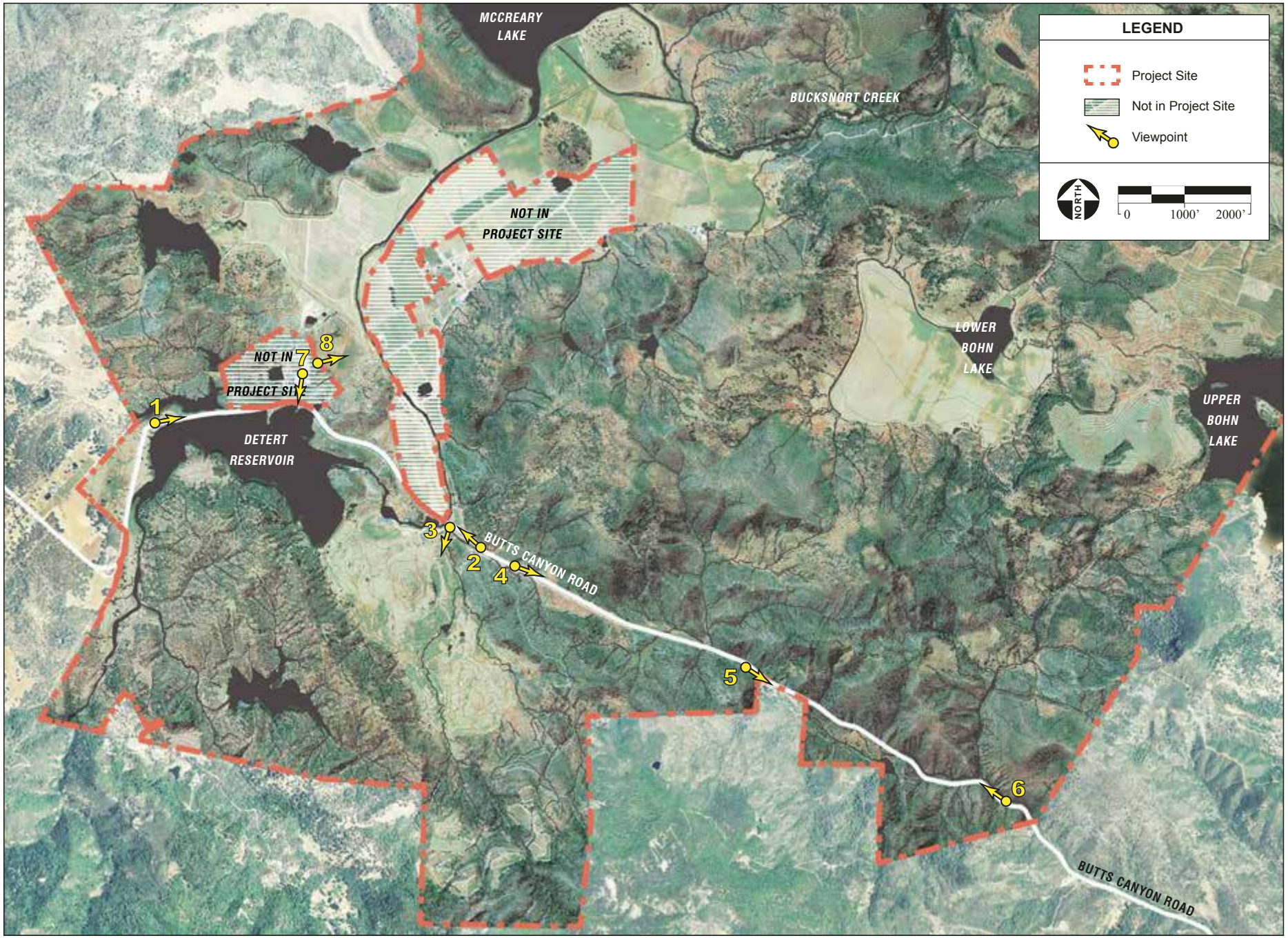
Viewshed 2: Facing northwest on Butts Canyon Road, the Langtry Winery entrance can be viewed. This viewshed includes the winery signage, the entryway leading up to the winery, and the east facing side of the winery.

Viewshed 3: Facing south on Butts Canyon Road, the entry gate and drive of the abandoned golf course can be viewed. An open valley with low-lying grasslands and varied vegetation can be partially seen in the background between several hills.

Viewshed 4: Facing east on Butts Canyon Road, viewshed 4 is a typical view of rolling topography, including pastures and oak woodlands that can be seen both north and south along this segment of the roadway.

Viewshed 5: Facing southeast on Butts Canyon Road, viewshed 5 is a typical view of steep topography and charred vegetation as a result of the 2015 Valley Fire that can be observed to the north and south along this segment of the roadway. This viewshed represents the approximate location of the primary entrance road.

Viewshed 6: Facing northwest on Butts Canyon Road, viewshed 6 is a typical view of steep topography and charred vegetation as a result of the 2015 Valley Fire that can be observed to the north and south along this segment of the roadway. This viewshed corresponds to the location of the proposed access Option 2 at Butts Canyon Road.



SOURCE: SWA Group, 10/2019; AES, 11/13/2019

Figure 3.1-1
Views of the Guenoc Valley Site



VIEWSHED 1: View of Detert Reservoir facing east.



VIEWSHED 2: View of Secondary Entrance facing northwest.



VIEWSHED 3: View facing south of abandoned golf course to the west, and proposed workforce housing site access road.

SOURCE: GoogleEarth, 2019; AES, 11/20/2019

Figure 3.1-2a

Representative Viewshed Photos - Guenoc Valley Site



VIEWSHED 4: View of pasture, oak woodlands, and rolling topography along Butts Canyon Road – facing east.



VIEWSHED 5: View of approximate location of primary Access Option 1, including charred vegetation and steep topography along Butts Canyon Road – facing east



VIEWSHED 6: View of approximate location of primary Access Option 2 at McCain Canyon, including charred vegetation and steep topography along Butts Canyon Road – facing west

SOURCE: GoogleEarth, 2019; AES, 2/7/2020

Figure 3.1-2b

Representative Viewshed Photos - Guenoc Valley Site



VIEWSHED 7: View of Detert Reservoir facing south from Langtry Winery.



VIEWSHED 8: View overlooking Guenoc Valley facing east from Langtry Winery.

SOURCE: GoogleEarth, 2019; AES, 11/20/2019

Figure 3.1-2c
Representative Viewshed Photos - Guenoc Valley Site

Public Views from the Langtry Winery (Viewsheds 7 and 8)

Limited views of the Guenoc Valley Site are available to the public from the Langtry Winery. The Detert Reservoir can be viewed directly south of the winery and portions of grazing hillsides can be seen off in the distance. Additionally, portions of agricultural lowlands and grazing hillsides are visually accessible from the winery.

Viewshed 7: Viewshed 7 provides expansive views of Detert Reservoir with low-lying grasslands and rolling topography with varied vegetation bordering the reservoir and mountainous topography in the background.

Viewshed 8: Viewshed 8 is an expansive view of Guenoc Valley including grazing grasslands, vineyards, shrubbery, and steep hillsides. Several ranch homes and barns associated with the winery operations can be viewed in the far distance.

Middletown Housing Site Setting

Surrounding Areas near Middletown Housing Site

There is no development north of the Middletown Housing Site with only scattered rural residential development to the east, south, and west. Northeast of the site is Minnie Canyon Elementary School, Middletown Middle School, and Middletown High School. Directly west of the site is Dry Creek, a small creek that runs from northeast to southwest. The Middletown Housing Site is partially visible from CA-175, CA-107, and Santa Clara Road, however several residences and intervening trees block a substantial portion of the view from the roadway.

Middletown Housing Site Visual Resources

The Middletown Housing Site is approximately 12.75 acres. The topography of the site is fairly even. The Middletown Housing Site is composed of an undeveloped field with scattered trees and vegetation concentrated around the perimeter. The Lake County General Plan 2008 designated the site as predominantly Single Family Residential with a portion along the western boundary line of the project site designated as Suburban Reserve.

Public Views of the Middletown Housing Site

The Middletown Housing Site is visible from existing residential properties along CA-175 to the south, as well as from existing residential properties and schools along CA-107 to the east of the site. The site is also visible from residential properties on the other side of Dry Creek to the west. **Figure 3.1-3** illustrates views of the Middletown Housing Site from existing sensitive receptors, and **Figure 3.1-4** provide photographs taken from these vantage points. These viewsheds are described below.

Viewshed 1 – Residential developments along Santa Clara Road (off of CA-175)

Viewshed 1 is located along Santa Clara Road (off of CA-175), on the southeastern most corner of the Middletown Housing Site (**Figure 3.1-4**, **Photo 1**). This viewshed is experienced by residents bordering the site and facing in a northeastern direction. Views of the site consist of undeveloped lands with low-lying grasslands and scattered vegetation. It should be noted however, that while the Middletown



SOURCE: Verse Design, 8/15/19; FEMA FIRM, effective 9/30/2005; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.1-3
Views of Middletown Housing Site



PHOTO 1: Viewshed 1



PHOTO 2: Viewshed 2



PHOTO 3: Viewshed 3

SOURCE: AES, 2/7/2020

Figure 3.1-4

Representative Viewshed Photos - Middletown Housing Site

Housing Site has become more visually accessible since the 2015 Valley Fire, it is anticipated that these views will become further obscured over time due to growth of new vegetation.

Viewshed 2 – Highway 175 (CA-175)

Viewshed 2 is located just outside the middle southern boundary of the Middletown Housing Site, facing northeast on CA-175 (**Figure 3.1-4**, **Photo 2**). This viewpoint is experienced by travelers along CA-175 and a few residences. When facing in a northeastern direction, residences along CA-175 that border the site have primarily unobstructed views of the site. Views of the site are dominated by open undeveloped lands. As mentioned above, it is anticipated that these views will become further obscured over time due to growth of new vegetation.

Viewshed 3 – Residential developments across Dry Creek

Viewshed 3 is facing east outside of the southwestern boundary of the Middletown Housing Site, opposite of Dry Creek (**Figure 3.1-4**, **Photo 3**). This viewshed is experienced by the approximately five residences in that location, however the view is partially obscured by vegetation and the crossing of Dry Creek. Views of the site are dominated by open undeveloped lands.

Off-Site Water Well and Pipeline

The Off-Site Well Site mainly includes undeveloped grazing lands. There is one residence on the property and an irrigation pond. The Off-Site Well Site is largely visible as an open field from SR-29 as it travels north past Butts Canyon Road. There is a residence located adjacent to the southeast corner of the site, and an event center (the Middletown Mansion)located just north of the property boundary, though intervening trees screen views of the site from these locations.

Light and Glare

Lighting effects are associated with the use of artificial light during the evening and nighttime hours. There are two primary sources of light: light emanating from building interiors passing through windows; and light from exterior sources (i.e., street lighting, building illumination, security lighting, parking lot lighting, and landscape lighting). Light introduction can be a nuisance to adjacent light-sensitive uses, diminish the view of the clear night sky and, if uncontrolled, can cause disturbances. Land uses such as residences and hotels are considered light sensitive, because occupants have expectations of privacy during evening hours and may be subject to disturbance by bright light sources. Recreational sites such as the camp sites would similarly be considered light sensitive. Light spill is typically defined as the presence of unwanted light on properties adjacent to the property being illuminated. With respect to lighting, the degree of illumination may vary widely depending on the amount of light generated, height of the light source, presence of barriers or obstructions, type of light source, and weather conditions.

Glare is primarily a daytime occurrence typically caused by the reflection of sunlight or artificial light from highly polished surfaces, such as window glass or reflective materials. Daytime glare generation is common in urban areas and is typically associated with mid- to high-rise buildings with exterior façades that are largely or entirely comprised of highly reflective glass or mirror-like materials from which the sun can reflect, particularly following sunrise and prior to sunset. Daytime glare generation is typically related to sun angles,

although glare resulting from reflected sunlight can occur regularly at certain times of the year. Glare can also be produced during evening and nighttime hours by artificial light directed toward a light-sensitive land use. Typically this type of nighttime glare results from unshielded light sources or light sources that are directed upward.

No significant sources of lighting or glare are currently present within the Guenoc Valley Site as the only sources of light are from the few ranch homes and winery. Similarly, the very low density rural residential, agricultural and open space areas surrounding the Guenoc Valley Site do not generate significant amounts of light. While the Middletown Housing Site currently does not emit any light or glare, the urban areas surrounding the site, including residences, schools, and commercial properties, are a source of nighttime light.

Lake County has started the application process to be an International Dark Sky Community. The International Dark-Sky Association (IDA) is a non-profit organization that is dedicated to combating light pollution and promoting stargazing. Cities and counties can apply to IDA to be designated as an International Dark Sky Community, which involves adopting outdoor lighting ordinances and educating residents. The County still needs to retrofit the zoning ordinance lighting requirements but the County Board of Supervisors has issued a proclamation declaring the County's intent to change light pollution legislation. The application process to become an International Dark Sky Community will likely take a few more years (Freeman, 2019).

3.1.3 REGULATORY CONTEXT

Lake County General Plan

Lake County General Plan 2008 contains policies for protecting and enhancing scenic resources in Lake County. The policies focus on preserving the views from scenic roadways and limiting outdoor lighting and glare. The County's General Plan policies and goals as well as analysis regarding the Proposed Project's consistency with the General Plan are located in **Appendix GPCT** and are described below:

Policy LU-7.10: The County shall maintain visual access to views of Clear Lake, hillsides, creeks, and other distinctive natural areas by regulating building orientation, height, and bulk.

Policy LU-7.15: The County shall require screening of storage, trash receptacles, loading docks, and other building or site features required to reduce visual impacts from public areas. Screening shall consist of solid fencing, landscaping, or a combination of both.

Policy T-1.11: Develop and maintain roads and highways in a manner that protects natural and scenic resources.

Policy OSC-1.18: The County shall ensure that lighting in residential areas and along roadways shall be designed to prevent artificial lighting from reflecting into adjacent natural or open space areas.

Policy OSC-2.1: In the rural areas of the County (located outside of Community Growth Boundaries) structures built within the immediate foreground view of a scenic roadway should reflect the following guidelines.

- Structures should be sited back, to the extent feasible, from the roadway edge a sufficient distance to minimize intrusion upon the natural features and backdrops as viewed from the roadway or adjacent residences.
- Structures should be sited to minimize obstruction of views of significant natural features, such as Clear Lake and Mt. Konocti. Increased height should only be allowed when building orientation provides for increased side-setbacks that provide view corridors.

Policy OSC-2.4: Within the designated scenic corridors, roadway improvements should be constructed in a manner which minimizes roadway width and thus, reduces domination of the view by road surface; and conforms to the natural contours of the land and minimizes extensive grading and removal of roadside vegetation.

Policy OSC-2.5: Where possible, on-street parking should be prohibited to minimize obstruction of and intrusion upon views from the roadway except at strategically located turn-outs.

Policy OSC-2.6: Commercial parking areas within scenic corridors should be designed to provide attractive open areas, which complement and expand scenic views. Special consideration should be given to these parking areas as to their physical location, layout, and landscaping in an effort to make them an asset in the preservation of scenic corridor values.

Policy OSC-2.9: The siting of transmission lines shall avoid interfering with scenic views to the greatest extent possible, taking into account the design and size of the transmission towers, the nature of the landscape, and the placement of the transmission towers in the landscape. New high voltage transmission facilities (115 K.V. lines and above) shall not be sited along foreground views (up to 1/4-1/2 mile) of potential state and county scenic highways (as designated in the state and county scenic highways or designated in the county general plan, or community areas), or major resorts or wineries unless no feasible alternatives exist. In situations where no feasible alternatives exist, undergrounding or other visual mitigation measures shall be imposed.

Policy OSC-2.13: County shall require that all outdoor light fixtures including street lighting, externally illuminated signs, advertising displays, and billboards use low-energy, shielded light fixtures which direct light downward (i.e., lighting shall not emit higher than a horizontal level). Where public safety would not be compromised, the County shall encourage the use of low energy lighting for all outdoor light fixtures.

Policy OSC-2.14: Street lighting should only be utilized where needed to protect public safety.

Policy OSC-2.16: The County shall require the use of low glare building materials for new buildings constructed within the county.

The County General Plan identifies scenic resources that are encouraged to be protected though policies and goals. The General Plan identifies portions of Butts Canyon Road, Big Canyon Road, and CA-175 as having the potential to become designated scenic highways or routes. Similarly, the General Plan identifies parts of SR-29, CA-175, and Butts Canyon Road (including the portion in the Guenoc Valley Site) as areas that should be considered open space corridors of significance. The General Plan also identifies the historic character of Middletown as a scenic resource.

Middletown Area Plan

The Middletown Area Plan (Area Plan) was developed to be a guide for the long-term growth and development within the area, and is a "compliment to the Lake County General Plan" (Middletown Area Plan, 2010). The Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Improvements are all located within the Area Plan, which encompasses the mountains and valleys of southeastern Lake County.

The Area Plan provides guidance for a variety of resources, including scenic resources, as part of the Open Space & Recreation element of the Natural Resources section of the Plan. As designated by the Area Plan, scenic resources include forest ridges, grasslands and rolling hills, agricultural landscapes, Mt. St. Helena, and the Callayomi and Coyote Valleys as well as riparian vegetation associated with St. Helena Creek. The Area Plan notes that the County General Plan polices encourage the protection of the County's scenic highways and resources to promote recreation-based economy and provide for scenic values for both residents and visitors, as well as the protection of night skies from light pollution. The Area Plan also has policies in place for the promotion of agriculture and related uses (Objective 5.5.4).

Community Design Principles

The Middletown Area Plan contains community design principles, which may apply to the Middletown Housing Site:

- Projects should possess a "village" scale and character which is sensitive to the scale and livability of the adjacent residential areas.
- Commercial buildings should be designed with a small scale massing and complexity that is appropriate to the context of the transportation system of the area. The Local and Community Commercial zones should be oriented for low speed automobile traffic and a pedestrian nature.
- Street front functionality and visual continuity should be maintained, and all projects should be sympathetic in form, scale, and height to adjacent structures. Uniform front setbacks should be maintained as much as possible to create the ideal pedestrian corridor.
- Landscaping should be used to soften the appearance of buildings and to integrate new construction into the overall commercial/ residential neighborhood. Where space is inadequate for in-ground planting, use container or sidewalk plantings.
- The physical and visual impact of parking lots should be minimized.
- Structures over one-story should be designed to minimize their visual bulk, and to relate to the visual scale of pedestrians.
- Multi-tenant developments should be designed to emphasize an overall sense of project and place, rather than the prominence of individual tenants.

Scenic Roadways

Specific to roads and highways in the Middletown Planning Area (MAP), the MAP notes that SR-29 is an eligible state scenic highway. Additionally, both SR-29 and Butts Canyon Road are considered designated scenic corridors. The MAP also identifies the characteristics of the General Plan's SC Combining District, and determines that SR-29 from the Napa County line north to Spruce Grove Road, and Butts Canyon Road from the Middletown Cemetery to the County Line (including the portion of Butts Canyon Road that bisects the Guenoc Valley Site), "should also be considered open space corridors of significance."

Both the Guenoc Valley Site and the Middletown Housing Site are located within the Middletown Planning Area. Views from SR-29 and Butts Canyon Road are considered an important element for implementation of the MAP, and visual impacts from the development of a project on adjacent hillsides may be considered pertinent to the objectives in the Middletown Planning Area. As part of the MAP, the Natural Resource element has developed objectives for scenic resources and recreation (Objective 3.7.2), which include views of distant hillsides. Specific policies pertinent to the Guenoc Valley Site and views from SR-29 include:

Policy 3.7.2a: Protect the natural scenery along scenic highways and roads from new development that would diminish the aesthetic value of the scenic corridor. This policy provides guidance for areas along scenic roadways as part of the SC Combining District and recommends the County develop new ordinances for development within the District and amending the ordinances to prohibit billboard signage on commercial properties.

Policy 3.7.2b: Encourage preservation of open areas within the communities to retain a rural character and promote low intensities of development in areas separating communities. Recommends that cluster development and low density development on large parcels be used, especially between Community Areas (such as Coyote Valley and Middletown).

Policy 3.7.2c: Limit aesthetically unpleasing development on steep, highly visible slopes and on top of prominent peaks and hilltops. Policy recommends that highly visible slopes be designated as Rural Lands and that the County should develop ridgeline policies through the Zoning Ordinance.

Night Skies

The Middletown Area Plan briefly discusses the protection of night skies through the enforcement of commercial and residential design standards, and notes that the County Zoning Ordinance regulates glare from nighttime lighting (Zoning Ordinance 41.8). The Area Plan has developed Objective 3.7.3 to protect night skies from light pollution, as described below:

Policy 3.7.3a. Promote the use of lighting that enhances visibility, convenience and public safety without the nuisance associated with glare and light pollution. The policy recommends that lighting standards be included in design guides for the planning area, and that lighting standards should follow dark sky principles to prohibit unnecessary and intrusive light trespass and glare.

Lake County Zoning Ordinance General Performance Standards

The Lake County Zoning Ordinance prescribes zoning and land uses by zone across the County. Lake County has developed general performance standards that apply across various zoning districts and are meant to promote compatibility among a variety of adjacent land uses, found in Article 41-General Performance Standards (Lake County, 2017). These development standards include both compliance and exemptions, based on land uses.

Section 41.8 Glare and Heat: This performance standard states that "All exterior lighting accessory to any use shall be hooded, shielded or opaque. No unobstructed beam of light shall be directed beyond any exterior property line. Buildings and structures under construction are exempt from this provision."

3.1.4 IMPACTS

Method of Analysis

The value attached to changes in visual character is largely subjective. This EIR does not seek to assign a judgment of "good" or "bad" to a proposed change; rather, it identifies any "substantial adverse effect," as defined below, as a significant environmental impact. The visual setting of each of the project sites has been determined from site visits and site photographs. The County's General Plan and other applicable planning documents were reviewed to determine what visual elements have been deemed valuable by the community. This analysis focuses on the manner in which development could alter the visual elements or features that exist in or near the project sites under baseline conditions.

The determination of which changes to the visual environment cross a threshold of "substantial adverse effect" or degradation is based on the criteria described in the following methodology summary. Following professionally accepted practice in visual analysis, visual impacts are defined as a consequence of three primary factors:

- The existing scenic quality of an area;
- The level of viewer exposure and concern with visual change; and
- The level of actual visual change caused by the project as seen by a given viewer group.

The overall visual sensitivity of each location is first established based on existing visual quality, viewer exposure, and viewer concern. These factors are then considered together with the level of expected visual change or contrast, and significance. Visual change is an overall measure of contrast in basic visual attributes such as form, line, color, and texture as a result of the Proposed Project. Scenic view obstruction refers to the degree to which the project would block or intrude upon scenic view corridors, especially those recognized in public policies. Thus, a substantial adverse effect can occur when viewers with high levels of overall visual sensitivity (i.e., high viewer concern and visual exposure, in settings of high existing visual quality) encounter high levels of visual change (contrast) or scenic view obstruction as a result of the Proposed Project.

Thresholds of Significance

Criteria for determining the significance of impacts to visual resources have been developed based on Appendix G of the California Environmental Quality Act (CEQA) *Guidelines* and relevant agency thresholds. Impacts associated with aesthetics would be considered significant if the Proposed Project would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. Public views are those that are experienced from a publicly accessible vantage point. If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

This analysis assumes that development within the Guenoc Valley Site and the Middletown Housing Site would comply with the County's General Plan policies and the proposed Design Standards as discussed in **Section 2.5.2.9**; therefore, such policies and standards are not specifically identified as mitigation.

Effects Found Not to be Significant

As discussed within the Initial Study (IS) for the Proposed Project included within **Appendix C**, the Proposed Project is not within the viewshed of any state scenic highway. Therefore, further discussion of this issue area is not included within this EIR.

Impacts

IMPACT 3.1-1	**SUBSTANTIALLY DEGRADE A SCENIC VISTA OR THE EXISTING VISUAL CHARACTER OR QUALITY OF PUBLIC VIEWS OF THE SITE AND ITS SURROUNDINGS. IF THE PROJECT IS IN AN URBANIZED AREA, CONFLICT WITH APPLICABLE ZONING AND OTHER REGULATIONS GOVERNING SCENIC QUALITY.**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
Significance Before Mitigation	Potentially Significant	Potentially Significant	Less than Significant
Mitigation Measures	None Available	None Available	-
Significance After Mitigation	Significant and Unavoidable	Significant and Unavoidable	N/A

Guenoc Valley Site: Phase 1 – Project Level Analysis

Construction Activities

Construction of the Guenoc Valley Site would require grading, rock splitting, vegetation removal, temporary use and storage of construction equipment and building materials, installation of temporary security fencing and erosion control measures, and other visual disturbances associated with construction activity on the site. Although Phase 1 construction operations would change the visual character of the Guenoc Valley Site, the majority of construction would occur away from public roads and scenic vistas. The construction staging area within the proposed Back–of-House planning area would be visible from the sensitive receptor Langtry Vineyards tasting room and office. It is anticipated that minimal construction of the on-site workforce housing may be potentially visible to the public from Butts Canyon Road and the Langtry Vineyards. However, construction activities and equipment on the site would be temporary in nature and would be mostly obscured from public views of the Guenoc Valley Site. Therefore, construction of the Proposed Project on the Guenoc Valley Site would have a less than significant impact on the visual character of the surrounding area and scenic vistas.

Operation

The Proposed Project would convert portions of rural lands within the Guenoc Valley Site into a luxury resort and rural estate community. While the majority of the site will remain undeveloped under Phase 1, the introduction of residences, commercial uses, and infrastructure in an area that is presently undeveloped would change the existing visual character of the Guenoc Valley Site. Scenic vistas in Lake County are generally described in the General Plan and related documents as views of areas such as Clear Lake, Mt. St. Helena, and The Geysers. The Guenoc Valley Site is not located in the foreground or background of any of these scenic vistas, and the Proposed Project would not have an impact on these areas.

As described above, public views and scenic vistas of the site are limited to the views of travelers along Butts Canyon Road, as well as patrons and employees of the Langtry Winery. The majority of the proposed development would not be visible from publicly accessible vantage points as it will be screened by the topography and vegetation of the site. The only components of Phase 1 that are anticipated to be visible from these areas include: 1) the introduction of a float plane dock on Detert Reservoir, 2) the addition of the proposed new primary access road and intersection along Butts Canyon Road, as well as the addition of turning lanes at the existing secondary entrance 3) the workforce housing south of Butts Canyon Road may be visible in the distance from Butts Canyon Road, however the majority of this development would be shielded by topography, and 4) development within the back-of-house area and a potential solar field location may be visible in the distance from the scenic vistas of the Guenoc Valley that can be observed from the Langtry Winery. The key viewsheds described in **Section 3.1.2** and shown in **Figures 3.1-1** and **3.1-2a-c** would change as follows:

Butts Canyon Road Viewsheds: Butts Canyon Road is a designated scenic corridor and open space corridor of significance in the Middletown Area Plan. Approximately 5 miles of the Butts Canyon Road and right-of-way extends through the southern portion of the Guenoc Valley Site. As shown in **Figure 2-6**, the eastern 3 miles of Butts Canyon Road is adjacent to the proposed dedicated open space area. As such, the visual character and scenic vistas in this area will remain largely unchanged under the Proposed Project. However, as shown in **Figure 2-6** and **Figure 3.1-5a-c**, the Primary Access Road Option 2 would connect to the Butts Canyon Road and be visible from the Butts Canyon Road within that 3 mile segment.



An eastern directed overview of the Primary Access Road Option 2 intersection with Butts Canyon Road.

SOURCE: Maha Guenoc Valley, 2020; AES, 2/7/2020

Figure 3.1-5a
Primary Access Road Option 2 Rendering 1



BEFORE PROJECT 1: Existing View heading east along Butts Canyon Road.



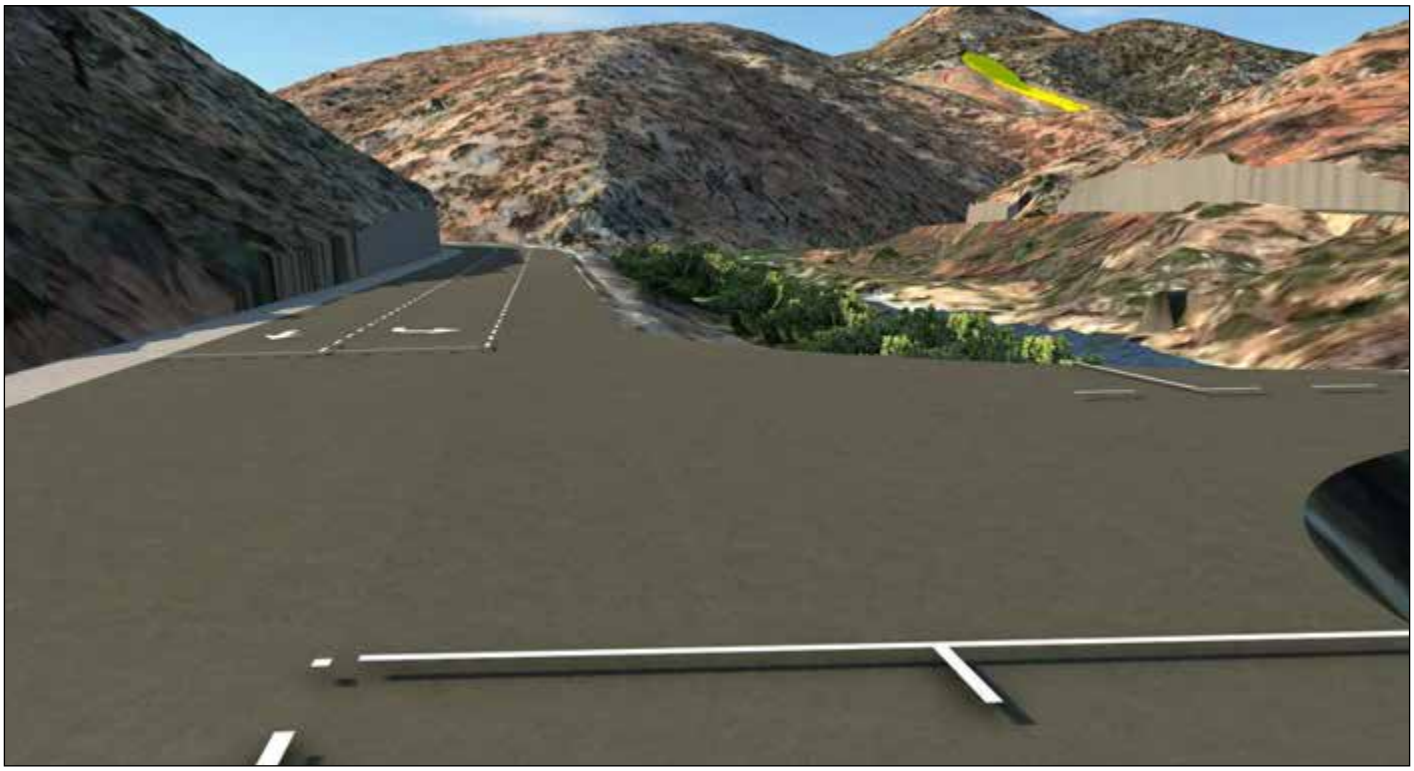
AFTER PROJECT: The Primary Access Road Option 2 as viewed by a traveller heading east along Butts Canyon Road.

SOURCE: Maha Guenoc Valley, 2020; AES, 2/7/2020

Figure 3.1-5b
Primary Access Road Option 2 Rendering 1



BEFORE PROJECT: Existing View heading west along Butts Canyon Road.



AFTER PROJECT: The Primary Access Road Option 2 as viewed by a traveller heading west along Butts Canyon Road.

SOURCE: Maha Guenoc Valley, 2020; AES, 2/7/2020

Figure 3.1-5c
Primary Access Road Option 2 Rendering 2

Viewshed 1: Under Phase 1, the visual character of this view would remain largely unchanged, with the exception that a float plane dock and kiosk would be introduced on Detert Reservoir. The float plan dock would be constructed with natural wood materials, and would not alter the nature of the landscape as primarily open space with grazing and agricultural activities. Additionally, the float plan dock and kiosk would not block or adversely alter scenic vistas along Butts Canyon Road.

Viewshed 2: Under Phase 1, the visual character of this view would remain largely unchanged, with the exception that additional turning lanes would be added along Butts Canyon Road to accommodate the increase in trips on the secondary access roadway, as well as the driveway to the on-site workforce housing area. These changes would not alter the nature of the landscape or impede scenic vistas along Butts canyon Road.

Viewshed 3: Viewshed 3 consists of views of a valley and the abandoned golf course to the south of Butts Canyon Road between several hills. Under Phase 1, the access roadway to the abandoned golf course and workforce housing would be widened and paved to accommodate the increase in project related trips. In the background, the access roadway would be extended to the southeast, and several workforce housing structures may be visible in the distance. The introduction of residential development in this area would alter the visual setting, but would not impede any scenic vistas. Furthermore, due to the distance from the roadway, the workforce housing would not substantially degrade the visual character of the area as experienced by travelers along Butts Canyon Road.

Viewshed 4: The areas to the north and south of Butts Canyon Road in this area would be preserved as open space. Distant proposed Phase 1 development within the Guenoc Valley Site would not be visible due to the steep topography in this area. Therefore, viewshed 4 would not be altered in any way as a result of Phase 1.

Viewshed 5: Under Phase 1, viewshed 5 would be altered by the addition of the primary access road to the north and associated access intersection and signage. Views of the primary access road would only be experienced for a short distance along Butts Canyon Road in this area due to the steep topography and windy roadway conditions.

Viewshed 6: The areas to the north and south of Butts Canyon Road in this area would be preserved as open space. Distant development within the Guenoc Valley Site would not be visible due to the steep topography in this area. However, this viewshed would be altered under Primary Access Road Option 2 through the construction of a new intersection and access roadway in this location, as illustrated in **Figure 3.1-5.** Due to the steep topography in this area and windiness of the road, Primary Access Road Option 2 would involve vegetation clearing and extensive cut slopes that would significantly alter the viewshed as experienced by travelers along this segment of the roadway.

Langtry Winery Viewsheds: Limited views of the Guenoc Valley Site are available to the public from the Langtry Winery. These views are considered scenic vistas as they afford long range views of agricultural and natural viewscapes.

Viewshed 7: Viewshed 7 consists of a scenic vista of the Detert Reservoir as experienced by patrons and employees of the Langtry Winery from the outdoor areas of the winery tasting room and office buildings. Under Phase 1, the visual character of this view would remain largely unchanged, with the exception that a float plane dock and kiosk would be introduced on Detert Reservoir. The float plan dock would be constructed with natural wood materials, and would not alter the nature of the landscape as primarily open space with grazing and agricultural activities. Additionally, the float plan dock and kiosk would not block or adversely alter scenic vistas.

Viewshed 8: Viewshed 8 consists of a scenic vista of the Guenoc Valley as experienced by patrons and employees of the Langtry Winery from the outdoor areas of the winery tasting room and office buildings. Under Phase 1, distant views (approximately 0.7 miles away) of the current ranch operations at the proposed back-of-house area would change through an increase in development and buildings in this area. Given the distance of the proposed back-of-house area to the Langtry Winery, this visual change would not substantially alter the visual character or degrade scenic vistas of the Guenoc Valley.

The stated objective of the proposed Guenoc Valley District (GVD) design guidelines described in **Section 2.5.2.9** and included in **Appendix DG**, is to preserve the character of the landscape through landscaping, invisible infrastructure where feasible, and the design of individual architectural clusters that respond to the variety of the landscape visually and topographically. The following key requirements of the design guidelines will reduce the visual effects of the project:

- Fencing: The materials that will be used for on-site fencing will be strategically chosen and be well-suited for the surrounding site conditions, nearby infrastructure, architecture, and site features. Appropriate materials such as wood and metal will be utilized and will assist in minimizing visual impacts due to its natural earth tone colors that help it to blend in with the surrounding environment. Additionally, fencing will be limited to retain a sense of continuous rural landscape.

- Parking Lots: All unenclosed parking areas will be well integrated within the design of the surrounding landscape and shall provide adequate vehicular space, minimizing a clustering effect. Additionally, parking areas shall be screened from view whenever possible, hidden behind trees and vertical screens, including trellises and canopies.

- Signage: Signage will be aesthetically pleasing both in its design and form. Signage design will be architecturally modern and include raw materials and a natural muted color palette. Potential high-quality materials include steel, wood, concrete, stone, or painted metal or stone surfaces, which will be both visually pleasing, yet not overwhelming. Additionally, signage sites will be strategically chosen in order to create ample spacing and provide a natural flow.

- Residential Landscaping: The design of the residential landscape will be closely integrated with the character of the existing landscape, using a “light touch” approach that both compliments and elevates the site’s fundamental qualities. Existing native and agricultural landscape patterns will be maintained and preserved, minimizing unnecessary site disturbance whenever possible.

- Recreational Amenities: Outdoor recreational areas, such as tennis courts, croquet courts, bocce ball courts, lawn bowling, or polo fields, will be allowable uses, and have been specifically selected for their minimal impact on noise and aesthetics. All recreational amenities will utilize materials and designs that are compatible with the surrounding environment and will be landscape screened when possible, further minimizing visual impacts.

- Outdoor Artwork: Outdoor artwork is encouraged and would be placed at various focal points such as roadway and pathway intersections, scenic overlooks, and arrival areas. The artwork will be both creative and visually appealing by nature and would help to soften the landscape.

- Photovoltaic Panels: All electrical conduit from solar frames to the primary structure shall be underground, where feasible.

- Patios, Courtyards & Terraces: All patios, courtyards, and terraces will utilize natural or rustic materials, such as stone, decomposed granite, gravel, timber, ceramic tiles, and brick or concrete pavers, which will help it to blend in with the surrounding environment. Additionally, these areas will be designed in such a way that they blend in with the site's natural topography, vegetation, and water conditions, encouraging thoughtful and tasteful outdoors amenities.

The proposed development will follow existing General Plan policies, and the proposed design guidelines will minimize visual effects by creating infrastructure that will seek to blend in with its surrounding environment and instituting modern and ecological techniques to reduce the footprint of the development. Further, the majority of the proposed development would not be visible from publically accessible vantage points as it will be screened by the topography and vegetation of the site. However, the Primary Access road Option 2 at Butts Canyon Road and along McCain Canyon would substantially change the visual character of a scenic corridor. As a result, the proposed development under Phase 1 would have a ***significant and unavoidable*** impact on the visual character and scenic vistas along this segment of Butts Canyon Road.

Guenoc Valley Site: Future Phases – Programmatic Analysis

Construction

Similar to Phase 1, construction of the Future Phases of the Guenoc Valley Site would require grading, rock splitting, vegetation removal, temporary use and storage of construction equipment and building materials, installation of temporary security fencing and erosion control measures, and other visual disturbances associated with construction activity on the site. Although construction operations would change the visual character of the Guenoc Valley Site, the change from construction would be temporary in nature. This impact would be ***less than significant***.

Operation

Future phases of the Proposed Project could include development as allowed under the proposed GVD. This may include up to an additional 200 hotel units, 300 resort residential units, 1,000 residential estate villas, and 400 workforce co-housing bedroom units. Additional sports and recreational facilities could be

developed under future phases, including outdoor sport fields and tennis courts. Future phases may also involve redevelopment of the former golf course south of Butts Canyon Road.

As shown in **Figure 2-6**, the eastern 3 miles of Butts Canyon Road extends through the proposed 2,765-acre dedicated open space area. As such, the visual character and scenic vistas in this area will remain largely unchanged under future phases of the Proposed Project. Additionally, development would be restricted within the proposed Agricultural Preserve Combining District within the Guenoc Valley and other areas of the site (refer to **Section 3.2**, **Figure 3.2-7** for the location of the Agricultural Preserve Combining District). However, future phases could involve further development that is visible along Butts Canyon Road, a designated scenic corridor, as well as from the scenic vistas of the region that can be observed from the Langtry Winery. This is a ***potentially significant*** impact.

As with Phase 1, any development under future phases of the Guenoc Valley Site would adhere to the design guidelines described above. The stated objective of the proposed GVD design guidelines is to preserve the character of the landscape through landscaping, invisible infrastructure where feasible, and the design of individual architectural clusters that respond to the variety of the landscape visually and topographically. Regardless, depending on the location, scale, design, and density of the proposed development, future phases could substantially alter the visual character or scenic vistas of the site as viewed from public vantage points, from rural to urban development. The visual alteration of the Guenoc Valley Site under future phases is conservatively assumed to constitute a ***significant and unavoidable*** impact to the visual character and scenic views of the site.

Off-Site Workforce Housing – Project Level Analysis

Construction

Construction of the Proposed Off-Site Workforce Housing and infrastructure on the undeveloped parcel would change the existing visual character of the Middletown Housing Site. However, construction on the Middletown Housing Site would be temporary in nature and would include fencing surrounding the construction area. Therefore, construction of the Middletown Housing Site would have a ***less than significant*** impact on the visual character of the surrounding area.

Operation

As detailed above, the Middletown Housing Site is only partially visible from CA-175, CA-107, and Santa Clara Road, although residences bordering the east, west, and south sides of the property would be able to view the development. Due to intervening topography and residential development, development on the site would not be visible from downtown Middletown or any designated scenic vista or scenic corridor.

The Off-Site Workforce Housing would convert a vacant, undeveloped lot in an urban area into subdivided residential housing. The development of residences and infrastructure on an undeveloped parcel would change the existing visual character of the Middletown Housing Site. However, the Middletown Housing Site is located in an urban setting and the Off-Site Workforce Housing would be generally consistent with the visual setting of surrounding areas. Surrounding land uses include multifamily residences, single family homes, and schools. Under the Proposed Project, approximately 3.5 acres of the 12.75-acre Middletown Housing Site would be rezoned from Single-Family Residential to Two-Family Residential to allow for the

development of proposed duplex housing units in this area. The rezoned area would occur within the central area of the site, and would be surrounded on all sides by single family residential development that is consistent with the existing zoning of the site. Thus, the visual character of the site as viewed from surrounding areas would be consistent with allowable uses under the existing zoning designation. Additionally, an approximately 200-foot wide area along the riparian corridor and creek would remain as undeveloped open space. As described further in **Appendix GPCT**, Off-Site Workforce Housing would not conflict with applicable General Plan policies governing scenic quality. Therefore, the Middletown Housing Site would have a ***less than significant*** impact on the visual character of the surrounding area and scenic vistas.

Off-Site Infrastructure Improvements – Project Level Analysis

The off-site water well and pipeline would not result in a change to the visual character of the site or impact a scenic vista. With the exception of the water well pump, which would be both small in size and positioned close to the ground, the pipeline itself would be located solely underground, completely out of sight. Other off-site infrastructure improvements include electrical transmission line upgrades, which would be located where existing lines are and thus would not result in a change in visual character. The construction and operation of the off-site water well and pipeline and other off-site infrastructure improvements would have a ***less than significant*** impact on the visual character of the surrounding area.

IMPACT 3.1-2	**NEW SOURCES OF LIGHT OR GLARE**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
Significance Before Mitigation	Less than Significant	Less than Significant	Potentially Significant
Mitigation Measures	-	-	MM 3.1-1 Off-Site Workforce Housing Lighting Design
Significance After Mitigation	N/A	N/A	Less than Significant

Guenoc Valley Site: Phase 1 and Future Phases – Project Level Analysis

Introduction of artificial light into a rural area contributes to the change in character of that area from rural to urban. In addition, lighting can be an annoyance if it spills into backyards or homes, because it can interfere with sleeping or other activities. The Guenoc Valley Site is currently undeveloped and contains no light sources with the exception of light from the existing residential unit in the northeastern portion of the site. The Proposed Project would introduce sources of light from residences, businesses, recreational facilities, streetlights, and vehicles, all of which would increase the ambient nighttime illumination level, potentially altering nighttime views.

As required by the proposed GVD design guidelines (described in **Section 2.5.2.9** and included in **Appendix DG**), site-wide lighting design shall preserve nighttime dark skies in accordance with the Dark Sky Initiative adopted by the County and California Building Codes. The use of outdoor lighting will be minimized and selectively used to illuminate and differentiate outdoor areas; guide nighttime navigation along roadway and pathway corridors; direct access to resort, residential, and building entries; highlight signage and address markers; and improve safety and security. The fewest possible fixtures shall be used to meet these needs. The following key requirements of the design guidelines will reduce light spillover and adverse effects to nighttime skies:

- Exterior Lighting: All exterior lighting shall be shielded and downcast, and designed so that no direct beam illumination leaves the property line. Exterior lighting includes fixtures on the exterior of buildings, all landscape lighting fixtures, pool lighting and pathway illumination.

- Roadway Lighting: In general, lighting should be more prominent at intersections and resort or residential access points, and otherwise be minimized. Lighting fixtures and patterns along roadways and pathways should complement nearby architectural styles while also creating a cohesive site-wide experience for visitors and residents. Lighting should be no higher than necessary to provide efficient lighting for its intended purpose.

- Landscape Lighting: Landscape lighting fixtures should be equipped with cut-off shields and downcast to limit visibility from adjacent areas. Additionally, on-demand photocell and motion-sensing lighting systems will also be prioritized to minimize unnecessary nighttime lighting.

- Residential Lighting Design: Residential lighting shall avoid lighting or glare which is directed onto the roadway or nearby residences, resorts, or amenities. Lighting design will be carefully designed in order to avoid unnecessary illumination of natural habitats. Additionally, the use of intense, bright, blinking, or flashing lights would be avoided.

- Accent Lighting: Accent lighting would be used in limited circumstances to emphasize prominent site features, such as boulders, artwork, or plantings. Accent lighting would be avoided to directly illuminate buildings, minimizing adverse impacts to nighttime skies.

- Address Markers: Residential parcels will have either an address marker or monument at driveway entrances. Address markers will include either a backlight or downlight lighting treatment in order to aid nighttime navigation and safety, resulting in a low impact in regards to nighttime lighting and glare.

- Energy-efficient Lamps: Whenever possible, outdoor lighting would utilize energy-efficient light sources that provide pleasing light color, resulting in minimal glare and reducing adverse impacts to nighttime skies.

- Lighting Locations: Wherever possible, light fixtures and sources should be hidden from direct daytime or nighttime view by being recessed into the ground or hidden by plant materials. Lighting levels should be no higher than necessary to provide efficient lighting of various landscape areas. Low-level, pedestrian-scale lighting should be used to the greatest extent possible.

- Photovoltaic Panels: Solar panels may not be used where they would produce a direct glare or redirect sunlight into adjacent or nearby residential or commercial properties.

With adherence to the proposed dark sky design measures, the impact of new sources of light as a result of the implementation of the Proposed Project at the Guenoc Valley Site would be ***less than significant.***

Glare is typically caused by the reflection of sunlight or artificial light from highly polished surfaces, such as window glass or reflective materials. Window glass or any metallic materials from the proposed structures on the site could reflect sunlight, potentially creating a new source of glare. However, consistent with the GVD design guidelines, the proposed structures and fencing would utilize earth tones and be designed to blend with the natural landscape and reduce the potential for impacts from glare by use of wood and other natural material. Therefore, impacts related to glare would be ***less than significant***.

Off-Site Workforce Housing – Project Level Analysis

The Middletown Housing Site is currently undeveloped and contains no light sources. Development of the Off-Site Workforce Housing would result in a substantial change in the amount of light generated and would alter nighttime views of the site. There would be additional light from residences and the community center which would increase the ambient nighttime illumination level. This additional lighting would occur in close proximity to adjacent residential areas. Lighting can be an annoyance if it spills into backyards or homes, because it can interfere with sleeping or other activities. This is a ***potentially significant*** impact. Mitigation Measure 3.1-1 requires that all project lighting be full cut off and shielded in order to direct light downward (not up or away) from the light source. In addition, all street lighting shall be a maximum height of 14 feet. After mitigation, impacts as result from lighting on the Middletown Housing Site would be reduced to ***less than significant***.

Glare is typically caused by the reflection of sunlight or artificial light from highly polished surfaces, such as window glass or reflective materials. Window glass or any metallic materials from the proposed residential units could reflect sunlight, potentially creating a new source of glare. However, due to the residential nature of the Off-Site Workforce Housing and size of the windows on residential structures, there would not be the significant glare issues which arise when large mirrored or reflective surfaces are used as a decorative feature, such as those large surfaces that exist on some office and commercial buildings. Construction and operation of the Middletown Housing Site would result in a ***less than significant*** impact associated with glare.

IMPACT 3.1-3	**CUMULATIVE AESTHETIC IMPACTS**
Significance Before Mitigation	Less than Significant
Mitigation Measures	None
Significance After Mitigation	N/A

There has been minimal cumulative development in southwest Lake County with the exception of Middletown. The surrounding area is dominated by agriculture, wineries, and rural residences. Present and future cumulative projects in the County include vineyards, wineries, and veterinarian clinics. Cumulative projects would not drastically alter the aesthetics of the County and would not increase lighting or glare. The Proposed Project would contribute to the loss of open space and would introduce new sources of light and glare. However, when analyzed with cumulative development, and in relation to the size of the County, the impact to aesthetics would be minimal. Therefore, cumulative impacts are ***less than significant***.

3.1.5 MITIGATION MEASURES

All feasible aesthetic design measures for the Guenoc Valley Site are included in the GVD Design Guidelines (**Appendix DG**); therefore, aesthetic mitigation is only available/necessary for the Middletown Housing Site.

MM 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.

3.2 LAND USE AND AGRICULTURE

3.2.1 INTRODUCTION

This section provides a description of the land use and agricultural resources in the project area and describes the changes to those conditions that would result from implementation of the Proposed Project. Following an overview of the current land uses and the agricultural setting in **Section 3.2.2** and the relevant regulatory setting in **Section 3.2.3**, project-related impacts and recommended mitigation measures are presented in **Section 3.2.4** and **Section 3.2.5**, respectively.

3.2.2 ENVIRONMENTAL SETTING

Regional Setting

The project area is entirely located within the Lake County (County) boundary. Land in the County is mainly agricultural, rural, rural residential, and open space. The 330,780-acre (515 square miles) Berryessa Snow Mountain National Monument begins at the northern portion of the County, overlapping the Mendocino National Forest, and extends through the eastern area of the County down to Lake Berryessa in Napa County. The monument covers much of the eastern half of the County. The 44,000-acre Clear Lake lies in the middle of the County, just west of the monument. Most residential and commercial development in the County surrounds Clearlake.

Guenoc Valley Site Setting

Existing Uses

The entire Guenoc Ranch Property encompasses approximately 22,000 acres and extends into Napa County. The approximately 16,000-acre Guenoc Valley Site is located solely within the Lake County portion of Guenoc Ranch. Lotusland Investment Holdings, Inc. (Applicant) manages the entire ranch. Portions of the ranch are leased to other entities for agricultural use under long-term leases. The Guenoc Valley Site lies on the southeast border of the County, with Napa County bordering the site to the south and east. As shown in **Figure 2-1**, land uses on the Guenoc Valley Site are a mix of agriculture, recreation and open space. These land uses specifically include: irrigated pastures, dry land grazing/open space, a former golf course, ranch center, a few ranch homes, and eight water bodies. The main water bodies include Upper Bohn Reservoir, Lower Bohn Reservoir, Detert Reservoir, McCreary Lake, Amel Lake, Lake Bordeaux, and Lake Burgundy. More information regarding these reservoirs is located in **Section 3.4**. The ranch center includes the 19th century home of Lillie Langtry and several other ranch homes, barns, and storage yards used to support existing ranch operations. An older ranch home, known as the Gebhard Lodge, located to the northeast of the ranch center, is used as a guesthouse and hunting lodge as it has been used for the past 100 years. The Langtry winery and associated vineyards, as well as the Lillie Langtry home, are located on a 502-acre island of property under separate ownership within the western portion of the site that is excluded from the Guenoc Valley Site. The Langtry winery is open to the public and hosts thousands of visitors per year.

Agricultural Resources

The Guenoc Valley Site has been grazed by cattle and sheep for centuries and is still actively used for grazing. Livestock pastures currently utilized on the site are shown on page 20 of the SPOD (**Appendix A**). The land has also been used to grow forage crops and vineyards. Approximately 990 acres of the site is currently planted in vineyards, and an additional 970 acres of the site has been leased to a third party for potential vineyard expansion. Existing vineyards and areas leased for vineyard development are shown on **Figure 2-3** in **Section 2.2.1**.

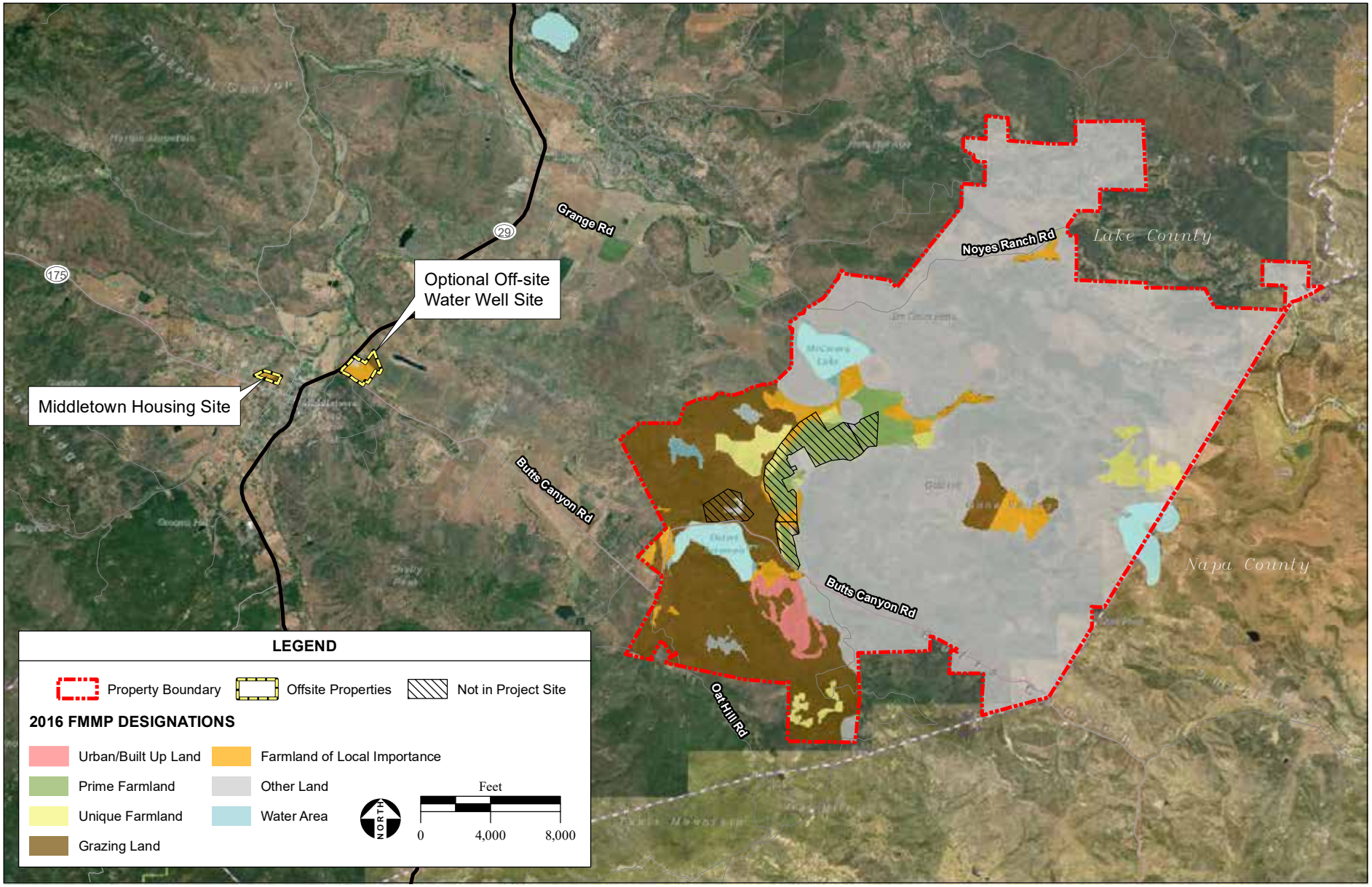
Williamson Act Contract Lands

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. As of 2019, none of the parcels within the Guenoc Valley Site are zoned Agricultural Preserve Zones and therefore none are enrolled in a Williamson Act contract. Parcels directly adjacent to the northeastern boundary of the Guenoc Valley Site and two parcels adjacent to the western boundary near Butts Canyon Road are zoned Agricultural Preserve Zones.

Farmland Mapping and Monitoring Program

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. These classifications combine the actual farming use of the land with the technical soil ratings that determine a land area's suitability for farming. In 2016 the California Department of Conservation (DOC) classified the Guenoc Valley Site with the following farmland designations: *Prime Farmland, Unique Farmland, Farmland of Local Importance, and Grazing Land* (refer to **Figure 3.2-1 Farmland Map**). The existing abandoned 18-hole golf course on the property is listed as a separate classification- *Urban and Built-up Land,* and the remaining portions of the property are classified *Other Land*. Prime Farmland, Unique Farmland, and Farmland of Statewide Importance are considered "Important Farmland" under CEQA. The DOC has provided the following definitions:

> Prime Farmland: prime farmland has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
>
> Unique Farmland: unique farmland consists of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
>
> Farmland of Local Importance: lands which do not qualify as prime farmland or farmland of statewide importance or unique farmland, but are currently irrigated pasture or nonirrigated crops; and unirrigated land with soils qualifying for prime farmland or farmland of statewide importance



SOURCE: CA Dept. of Interior, Farmland Mapping Monitoring Program, (FMMP), 2016; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/12/2020

Figure 3.2-1
Farmland Map

areas of unirrigated prime and statewide importance soils overlying ground water basins may have more potential for agricultural use.

Grazing Land: Grazing land is land on which the existing vegetation is suited to the grazing of livestock.

Urban and Built-Up Land: land larger than 10 acres with man-made structures and infrastructure, including golf courses.

Other Land: Vacant and nonagricultural land larger than 40 acres in size

Farmland Suitability Assessments

The Land Capability Classification System is based on the limitations of soils for irrigated field crops, the risk of damage if soils are used for crops, and the way soils respond to management. Land capability classes for irrigated lands are designated by the numbers I through VII, indicating progressively greater limitations and narrower choices for agricultural use. The NRCS has labeled around 5% of the Guenoc Valley Site with Irrigated Land Capability Classifications of 1 and 2. These locations generally match the Important Farmland designations on the Guenoc Valley Site.

The California Revised Storie Index Rating System is another way to assess farmland suitability. This system rates the potential productivity of the soil using a grading system of 1 (excellent) through 6 (non-agricultural). The rating is based on factors such as degree of soil profile development, texture of the surface layer, steepness of the slope, soil pH, and drainage characteristics. Grade 1 soils have few or no limitations for agricultural production. Most of the soils rated as Grades 1 and 2 on the Guenoc Valley Site are planted vineyards and are generally located within the Important Farmland areas.

Forestry Resources

As explained further in **Section 3.2.3**, forest land is defined in Public Resources Code 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." Over 4,000 acres of varied oak woodland habitat is located on the Guenoc Valley Site; more information about oak woodland habitat as it relates to fish, wildlife and biodiversity, can be found in **Section 3.4 Biological Resources**. An Oak Mitigation Plan has been developed for the Proposed Project (**Appendix BIO-6**). The analysis in this section focuses primarily on forest lands that produce commercially harvestable trees. Approximately 61 acres of Douglas fir habitat is located on the southern portion of the Guenoc Valley Site (**Appendix BRA2**). Douglas fir is commonly harvested so it is considered forest land. However, no lands on the Guenoc Valley Site are zoned forest land, nor has the Guenoc Valley Site ever been commercially harvested for timber resources.

Timberland is defined in the Public Resources Code 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. The Guenoc Valley Site does not contain any land zoned as timberland but the Douglas fir habitat would also be considered timberland because it is a commercial species.

Surrounding Land Uses

Lake County

Land to the north and west of the Guenoc Valley Site is located in Lake County. This surrounding land is mostly rural and agricultural lands with limited development. The Cedars Mountains border the northeast side of the Guenoc Valley Site. A US Coast Guard long-range navigation (LORAN) station borders the Guenoc Valley Site to the northwest. This station was decommissioned in 2010 (Larson, 2010). The closest edge of the Hidden Valley Lake Community is approximately one mile to north of the Guenoc Valley Site and the Middletown Community is approximately three miles west.

Napa County

Land to the east and south of the Guenoc Valley Site is located in Napa County. These lands are largely rural and agricultural, and include a mix of dry land grazing, vineyards, and irrigated pastures. Berryessa Estates is the closest residential subdivision in Napa County and is approximately 4.5 miles away.

Air Facilities in the Region

The Guenoc Valley Site is not within an airport land use plan area. There is a private airstrip referred to as 7-M Ranch approximately 1 mile west of the southern site boundary. It is anticipated that this airstrip is utilized by small private planes or agricultural aircrafts because this airstrip is not found on the FAA list of public and private air facilities (FAA, 2019).

The closest public airport is Angwin Airport, Parrett Field located in Napa County and is roughly ten miles away from the Guenoc Valley Site. The Angwin Airport is the home of the Pacific Union College aviation program and also provides flight instruction for community members. The Lampson Field Airport is a public airport in Lake County, approximately 36 miles northeast of the Guenoc Valley Site.

Middletown Housing Site Setting

The Middletown Housing Site is located within the Middletown Community Growth Boundary (Middletown Area Plan). The site is currently undeveloped. The majority of the site was burned in the 2015 Valley Fire and subsequently vegetation has grown back with nonnative grasses. As shown in **Figure 3.2-1** above, the Middletown Housing Site is mostly farmland of local importance and the rest is grazing lands. There is no zoned forest or timberland on the site. However, there is approximately 0.29 acres of oak woodland onsite that is addressed further in **Section 3.4 Biology**.

Similar undeveloped land borders the site to the west and north. Dry Creek runs northwest of the Middletown Housing Site and at its closest, is approximately 65 feet away. As identified on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), effective September 29, 2005, the Middletown Housing Site is located in Zone AO, a 1% Annual Chance Flood Hazard zone with a 2-feet base flood elevation (FEMA, 2005). A 1% Annual Chance Flood Hazard Zone is the 100-year flood

zone. A small portion of the Middletown Housing Site close to Dry Creek is classified as AE, a Regulatory Floodway (refer to **Figure 2-4**). Rural residential properties lie west of the Middletown Housing Site on the opposite side of Dry Creek. Scattered single family and multi-family residential properties border the site to the east and south. Denser residential development and commercial development lie further east. The Minnie Cannon Elementary School is approximately 655 feet northeast from the closest edge of the site boundary.

Off-Site Infrastructure Improvement Areas Setting

The Off-Site Well Site includes two parcels and is located just outside the Middletown community, near the intersection of SR 29 and Butts Canyon Road. The site is relatively flat undeveloped grassland with the exception of one house, shed, dirt road, and an irrigation pond. The property was previously planted with vineyards but burned in the 2015 Valley Fire; the site is now used for pasture. There is one existing high-capacity well adjacent to the property in marginal condition (**Appendix WATER**). Surrounding land uses consist of rural residential properties, the Middletown Mansion event center, and agricultural use. Saint Helena Creek is approximately 400 feet from the western edge of the well site, on the opposite side of SR 29. The Off-Site Well Site is approximately 4 miles away along Butts Canyon Road to the closest edge of the Guenoc Valley Site boundary. The entire Off-Site Well Site is Farmland of Local Importance. The pipeline will run approximately six miles along the side of Butts Canyon Road, within the right of way. Land uses along the pipeline corridor consist primarily of open space and agricultural lands, with a few rural residential properties.

3.2.3 REGULATORY CONTEXT

The California Environmental Quality Act (CEQA) *Guidelines* Section 15125(d) states that an "EIR shall discuss any inconsistencies between the Proposed Project and applicable general plans and regional plans." Applicable statewide and regional land use and agricultural policies are described below.

Regional

Lake County General Plan 2008

The General Plan contains goals and policies related to land use and agricultural resources. The land use goals encourage economic and social growth, housing need accommodation, commercial and industrial development, and character/scale preservation. The agricultural goals focus on maintaining and promoting a diverse, health and competitive agricultural industry. The goals also include promoting agri-tourism and renewable timber production. **Appendix GPCT** analyzes the Proposed Project's consistency with the General Plan pursuant to the CEQA Guidelines Section 15125(d); however, the determination of the Proposed Project's consistency with the General Plan ultimately rests with the Lake County Board of Supervisors. Relevant policies are as follows:

Land Use Element

Policy LU-1.1: The County shall promote the principles of smart growth, including: creating walkable neighborhoods; creating a strong sense of community identity; mixing land uses; directing growth toward existing communities; taking advantage of compact building design; discouraging sprawl;

encouraging infill; preserving unique historical, cultural and natural resources; preserving open space; and creating a range of housing opportunities and choices.

Policy LU-1.2: The County shall promote flexibility and innovation through the use of planned unit developments, development agreements, specific plans, mixed use projects, and other innovative development and planning techniques.

Policy LU-1.3: The County shall prevent the intrusion of new incompatible land uses into existing community areas.

Policy LU-1.5: The County shall actively support the development of mixed use projects as a means to reduce travel distances and create neighborhood environments that offer a range of residential options.

Policy LU-2.1: The County shall encourage residential growth to locate in existing urban areas where infrastructure is available and capacity is sufficient. The County shall ensure that development does not occur unless adequate infrastructure capacity is available for that area.

Policy LU-2.3: The County shall maintain distinct urban edges for all unincorporated communities, while creating a gradual transition between urban uses and open space.

Policy LU- 2.4: The County shall require adequate setbacks between agricultural and non-agricultural uses. Setbacks shall vary depending on type of operation and chemicals used for spraying. Buffers shall consider several factors including building orientation, planting of trees for screening, and unique site conditions. Buffers shall be provided by the new proposed development

Policy LU-2.6: The County shall limit urban development to the areas within designated Community Growth Boundaries (as defined on Figures 3-2 through 3-13 of the General Plan).

Policy LU-3.1: The County shall encourage major new residential development to locate in close proximity to existing infrastructure and opportunities for employment, services, and recreation.

Policy LU-3.2: The County shall consider rural development intensity in rural areas located outside of Community Growth Boundaries according to its ability to support water and waste disposal needs, access, slope characteristics, protection of sensitive natural resources and the site's susceptibility to natural hazards.

Policy LU-3.3: The County shall encourage proposed rural development to be clustered onto portions of the site that are best suited to accommodate the development, and shall require access either directly onto a public road or via a privately maintained road designed to meet County road standards.

Policy LU-3.4: The County shall limit lands designated for agricultural use to only allow single-family residences and quarters for farm laborers as secondary uses, agricultural tourism related uses, and agricultural support services.

Policy LU-3.6: The County shall encourage higher building intensities (at the high end of the density range) adjacent to parks and other open spaces, along transit routes, and near activity centers such as recreational facilities, libraries, shopping centers, and entertainment areas.

Policy LU-3.8: The Rural Residential land use designation shall be subject to the following requirements: Areas which qualify for densities greater than 1 unit per 10 acres must meet the following characteristics: average slopes must be below a 30% grade; and, areas not identified as a moderate-to-high landslide hazard area (special study zones).Access to new development should be via an existing publicly maintained road or via a new road improved consistent with adopted county standards.

Policy LU-3.10: The County shall allow uses (not related to forest production) on lands designated Resource Conservation in forestry production areas, provided the use or uses:

- are consistent with the Aggregate Resources Management Plan or mining operations;
- are consistent with the Geothermal Resources Element for geothermal activities;
- are consistent with preservation of unique natural landmarks;
- are compatible with sustainable forest practices;
- are managed so as to minimize impact on designated Lake County viewsheds;
- minimize forest site productivity losses; and,
- will meet standards relating to the availability of fire protection, water supply, water quality, groundwater recharge and extraction, watershed management or restoration programs, and waste disposal.

Policy LU-4.2: The County shall locate commercial designations for travel-related commercial services, such as gasoline service stations, food and beverage sales, eating and drinking establishments, and lodging, along major collectors (within ¼-mile from intersections), State Highways (within ¼-mile from interchanges) and in resort areas as identified in the Land Use Plan

Policy LU-4.5: The County shall use the following guidelines for the proper development and location of commercial centers:

- The market area should serve the community and surrounding areas
- Typical uses include eating and drinking establishments, food and beverage sales, general personal services, entertainment services, and retail sales. Other uses such as supermarkets, administrative and professional offices, medical services, and financial, insurance, and real estate services may be included.
- Where the surrounding area is an agricultural area, the center should include goods and services that serve agricultural needs, and venues for marketing of local, value-added agricultural products should be encouraged.
- The center should be located where it can be easily accessed from at least one major local road.
- Development should provide for adequate, appropriately placed parking to accommodate patrons to the market area

Policy LU-4.8: The County shall require free-standing, travel oriented visitor commercial uses (e.g., entertainment, commercial recreation, lodging, fuel) to be located in areas where traffic patterns

are oriented to major arterials and highways. Exceptions may be granted for resort or retreat related developments that are sited based on unique natural features.

Policy LU-6.1: The County shall actively promote the development of a diversified economic base by continuing to promote agriculture, recreation services, and commerce, and by expanding its efforts to encourage industrial and nonindustrial corporate development, and the development of geothermal resources.

Policy LU-6.4: The County shall encourage high quality development projects that will entice visitors, businesses, and permanent residents to the area.

Policy LU-6.5: The County shall pursue businesses such as upscale resorts and lodging, wineries and tasting rooms, visitor oriented retail businesses, and other businesses that would attract high income and multi-day visitors to the County.

Policy LU-6.7: The County shall encourage community and regional events and recreational activities to bolster community pride and identification

Policy LU-6.8: The County shall promote agro-tourism, eco-tourism, and outdoor recreation in Lake County to outside markets

Policy LU-6.12: The County shall encourage development of resorts while ensuring land suitability and compatibility with surrounding land uses. Mixed Use Resort proposals requesting increased residential density may be considered outside of Community Growth Boundaries provided that:(1) The primary scope of the project is resort commercial. (2) The resort provides substantial resort and recreational facilities that will be available to the public, and the project will specifically enhance the tourism objectives of the County. (3) The developer is able to adequately demonstrate that the additional residential units are necessary to support the infrastructure and public resort amenity costs for the overall project and the overall project is economically infeasible without the additional residential units. (4) The residential component is secondary and subordinate. (5) Applications are submitted as Planned Developments. For Mixed Use Resorts to include residential units, the development must be processed as a Planned Development. This process will be used to determine the appropriate number of residential units allowed.

6.12.1 Except as provided in 6.12.2 below, the residential component of a Mixed Use Resort shall not allow more residential units than resort units during the course of construction and at build out.

6.12.2 If a Mixed Use Resort is adjacent to a Community Growth Boundary and public infrastructure (sewer, water, fire, schools) are available, the number of residential units needed to support resort amenities may exceed the number of resort units, if it is determined that the project will specifically enhance the tourism objectives of the County. However, the number of residential units compared to resort units shall not exceed a 2:1 ratio and in no case shall the residential density exceed one residential unit per gross acre of the total acreage of the Mixed Use Resort project area. (Resolution No. 2011-13, 1/25/2011)

Policy LU-6.14: The County shall encourage clustering and smart growth concepts that promote fewer vehicle access points and enhance visual and pedestrian access.

Policy LU-7.4: The County shall ensure that new development respects Lake County's heritage by requiring that development respond to its context, be compatible with the traditions and character of each community, and develop in an orderly fashion which is compatible with the scale of surrounding structures.

Policy LU-7.5: The County shall encourage development of diverse and distinctive neighborhoods that build on the patterns of the natural landscape and are responsive in their location and context.

Policy LU-7.9: The County shall emphasize each community's natural features as the visual framework for new development and redevelopment.

Policy LU-7.13: The County shall enhance the community image by identifying significant built and natural landmarks and recreational features.

Policy LU-7.16: The County shall encourage automobile-oriented uses to locate parking in areas less visible from the street.

Open Space, Conservation and Recreation Element

Policy OSC-6.12: The County shall preserve natural open space resources through the concentration of development in existing communities, use of cluster development techniques, maintaining large lot sizes in agricultural areas, avoiding conversion of lands currently used for agricultural production, and limiting development in areas constrained by natural hazards.

Agricultural Resource Element

Policy AR-1.1: The County shall utilize the areas designated as Agriculture on the General Plan Land Use Diagram as representing the Primary Agricultural Areas in the County (Prime Farmland, Unique Farmland, Farmland of Statewide Importance and Farmland of Local Importance).

Policy AR-1.3: The County shall limit non-agricultural development in the unincorporated portions of the County designated as Primary Agricultural Areas, as follows:

- For new land divisions or lot line adjustments, the County shall maintain a minimum parcel size large enough to sustain agricultural use outside of the Community Growth Boundaries.
- The County's rules for parcel sizes shall be based on slope, local agricultural conditions, and the need to ensure the viability of agricultural operations.
- Residential uses in support of agricultural operations are allowed if appropriate buffers from agricultural uses are provided (see Policy AR-1.6, Buffers).

Policy AR-1.4: With the exception of allowable resort, support commercial uses, agricultural industry, and farmworker housing, non-agricultural development should be directed to appropriate areas within the Community Growth Boundaries and the cities of Clearlake and Lakeport (including areas within adopted spheres of influence).

Policy AR-1.5: As a condition of approval of a discretionary development permit, relating to property located inside a Primary Agricultural Area or within 1,000 feet of agricultural land or agricultural operations, the County will ensure all property owners and/or applicants are informed of the potential

agricultural operations in the area and agricultural conditions in the area and will be required to sign and record a deed notification containing the information in the County's Zoning Ordinance (Section 21-4.18, Notice of Farming Practices) with the deed for the property(ies) involved.

Policy AR-1.6: To protect current agricultural activities, the County shall require an appropriate buffer between existing agricultural uses and proposed residential dwellings or other inhabited structures in the Primary Agricultural Areas. Buffer design and maintenance will be required based on site conditions, but will incorporate, at a minimum, the following:

- Buffers shall be located on the parcel(s) for which a permit or approval is sought.
- Buffers shall be sized and physically designed to avoid conflicts between agriculture and non-agricultural uses. The size of the buffer shall be determined on a site-by-site basis taking into account the type of existing agricultural uses, the nature of the proposed development, the natural features of the site, and any other factors that affect the specific situation. A minimum buffer of 100 feet from a property used for commercial agricultural purposes shall be required.
- Buffer areas can be incorporated into the adjacent agricultural areas if the new development can purchase a conservation easement from the agricultural entity to restrict operations that may drive a large buffer area (e.g., eliminating spraying on the adjacent area).
- In larger buffer areas (such as along the outer edge of a community), appropriate types of land uses for buffers include compatible agriculture, open space and recreational uses such as parks and golf courses, industrial uses, and cemeteries.
- The County shall condition projects to ensure the on-going maintenance of buffers.
- Buffer restrictions may be removed if agricultural uses on all adjacent parcels have permanently ceased.
- Development of a residential unit owned by the agricultural operator on that (or adjacent) property is exempt from the provisions of this policy.
- The County will encourage property owners and developers to place new homes on a site to maximize the distance of that unit from adjacent agricultural uses.
- The County will ensure that adequate buffers are maintained when a lot line adjustment is requested.
- For pre-existing, legally created parcels where the minimum or appropriate buffer cannot be provided, the buffer shall be maximized on the site.

Policy AR-1.7: Extension of services, such as sewer and water lines and roadways, into areas preserved for agriculture use should be avoided. Where necessary, they should be located in public rights-of-way in order to prevent interference with agricultural operations and to provide ease of access for operation and maintenance. Service capacity and length of lines shall be designed to prevent the conversion of agricultural lands into urban/suburban uses.

Policy AR-1.8: The County should discourage the parcelization of land within the designated Primary Agricultural Areas that would divide land into units too small to economically support a viable agricultural operation and which contributes to the transition of agricultural lands to non-agricultural uses.

Policy AR-1.12: The County shall encourage the use of agricultural and conservation easements to preserve agricultural land.

Policy AR-2.1: The County should continue to support programs of agricultural technical assistance and should cooperate with public and private groups to promote the economic development of agricultural areas

Policy AR-2.3: The County shall encourage the development of agricultural economic zones, promoting the development of agriculturally-related uses such as wineries, olive press facilities, and other agricultural processing facilities, to increase the overall agricultural viability of the County.

Policy AR-2.4: The County shall allow, by discretionary permit in areas designated Primary Agricultural Areas, agriculturally-related uses, including value-added processing facilities, and certain non-agricultural uses. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria:

A. The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics;
B. The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius;
C. The activity must be found to support agricultural operations, production, or processing within the County; and Lake County General Plan September 2008 Page 12-10
D. For proposed value-added agricultural processing facilities, the evaluation under criteria “a” above, shall consider the service requirements of the use and the capability and capacity of cities and unincorporated communities to provide the required services.

Policy AR-2.8: Within the Primary Agricultural Areas, the County will permit agriculturally- related commercial uses that meet the following criteria:

- Uses shall be limited to those that promote agricultural production in the County
- All agricultural processing and marketing facilities shall be encouraged to utilize products grown or derived from Lake County.
- Direct-market stands shall be allowed in agricultural areas
- The use is compatible with existing agricultural uses in the area and does not adversely impact agricultural operations
- The use does not require the extension of urban services (sewer and/or water service)
- No facilities supporting or offering off-road vehicles.

Policy AR-3.1: The County should establish criteria for, and amend the zoning ordinance to allow development of agricultural tourism facilities, as long as the facility is secondary and incidental to the commercial agricultural use on that site and the tourism activity does not negatively impact agricultural operations on adjacent lands, based upon parcel size, proposed use and the parcels ability to provide adequate buffer zones.

The following specific guidance for the Guenoc area is found within Chapter 2 Community Profiles:

“Due to the large size of this ranch, under one ownership, future development should occur via the Planned Development process to allow for clustering of residential density and flexibility for innovative resort related uses in areas where terrain is appropriate. Special consideration may be

given for increased density (beyond the presently mapped density) pursuant to Policy LU-6.12 if the agricultural uses, particularly the vineyards, can be preserved and if a substantial amount of resort and/or retreat development is included as part of future development proposals. Future proposals at this site will be reviewed under the provisions of CEQA, and will be reviewed based on their merits. Development proposals should be consistent with the smart growth polices outlined in Section 3.6, and the economic development policies of Section 3.9 of the Land Use Element of this General Plan."

Land Use Designations and Zoning

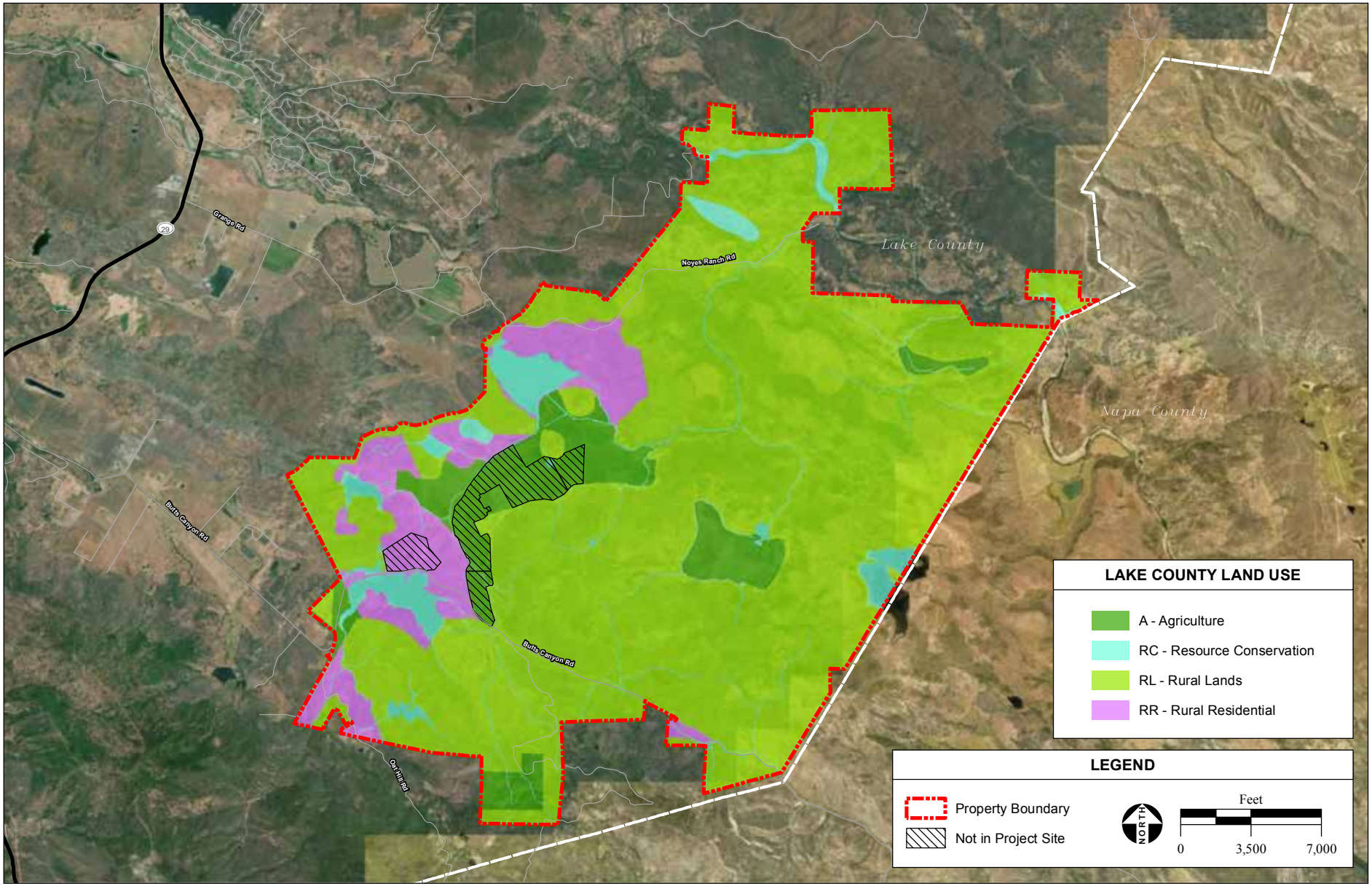
Guenoc Valley Site

The Lake County General Plan 2008 designates the Guenoc Valley Site as a mix of Rural Residential, Rural Lands, Agriculture, and Resource Conservation (see **Figure 3.2-2**). The following descriptions are provided by the General Plan for these designations.

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 land use category is to protect the County's valuable agricultural resources and to prevent development that would preclude its future use in agriculture. These lands are actively or potentially engaged in crop production, including horticulture, tree crops, row and field crops, and related activities. Wineries and the processing of local agricultural products such as pears and walnuts are encouraged within this designation. These lands also provide important groundwater recharge functions. As watershed lands, these lands function to collect precipitation and provide for important filtering of water to improve water quality. They are generally supportive to the management of the natural infrastructure of the watersheds.

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 on these lands. 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. Other typical uses permitted conditionally include, but are not limited to, recreational facilities, manufacturing and processing operations, mining, and airfields. These lands also provide important groundwater recharge functions. As watershed lands, these lands function to collect precipitation and provide for important filtering of water to improve water quality. They are generally supportive to the management of the natural infrastructure of the watersheds, and are located outside of Community Growth Boundaries.

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. Building intensity should be greater where public services such as major roads, community water systems, or public sewerage are available. However, most of the lands designated for this land use category would have wells and septic systems. These lands provide important ground water recharge functions. As



SOURCE: Lake County General Plan, 2008; DigitalGlobe Aerial Photograph, 11/2018; AES, 11/21/2019

Figure 3.2-2

Lake County GP Land Use Map - Guenoc Valley Site

watershed lands these lands function to collect precipitation and provide for important filtering of water to improve water quality. They are generally supportive to the management of the natural infrastructure of the watersheds.

Typical uses permitted by right include single family residences; crop production; raising of poultry, rabbits, and other small animals for domestic use; raising of bovine animals, horses, sheep, and goats for domestic use; and sale of crops produced on the premises. Typical uses permitted conditionally include agricultural-related services and recreational facilities. This designation is primarily located outside of Community Growth Boundaries, but some areas will be appropriate inside these boundaries as well.

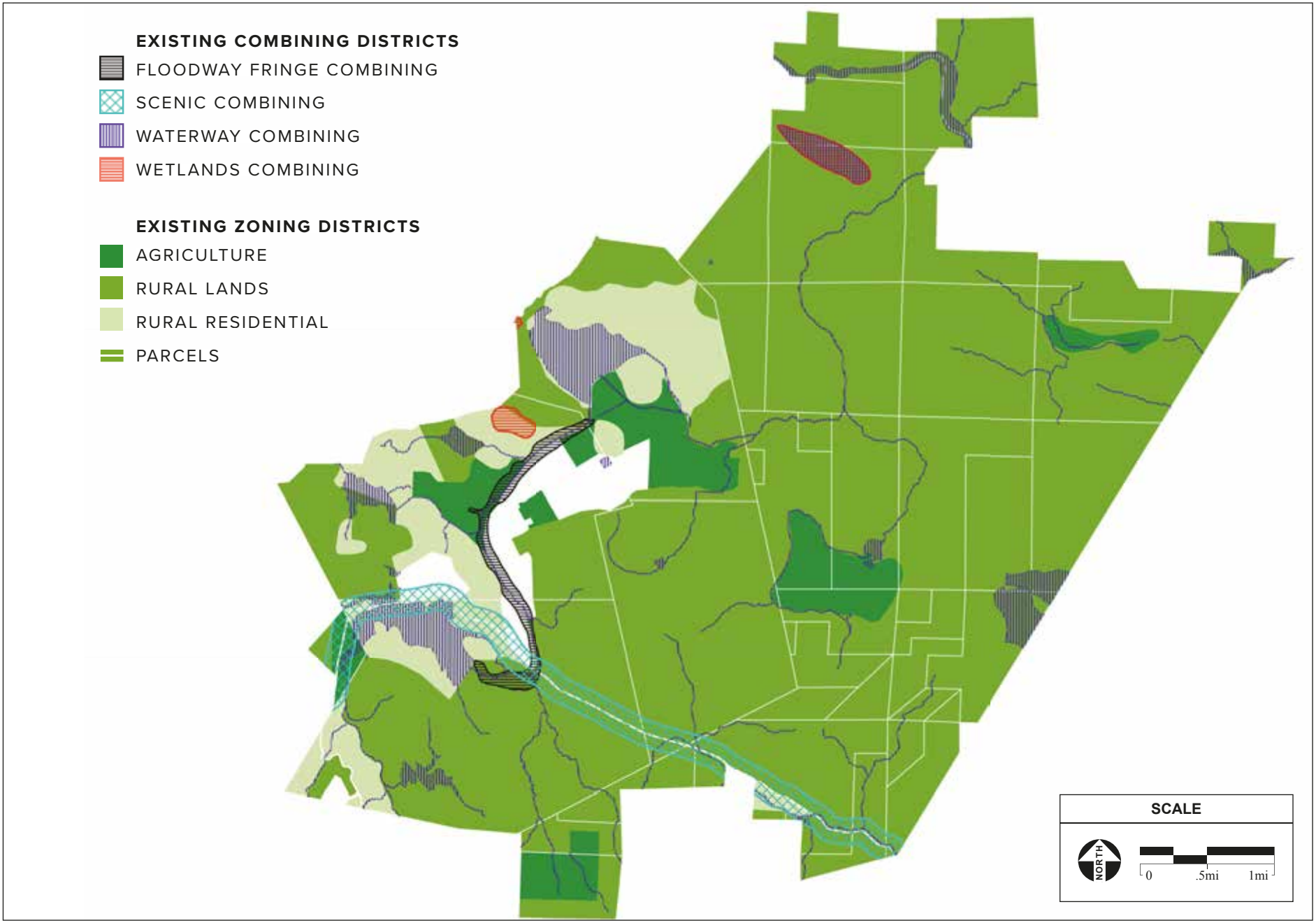
Resource Conservation: The purpose of this land use category is to assure the maintenance or sustained generation of natural resources within the County. The highest priority for these lands is to provide for the management of the County's natural infrastructure. This management should include, but is not limited to, functioning as watershed lands which collect precipitation and provide for the important filtering of water to improve water quality. In addition, these lands provide important ground water recharge capability which is critical to the maintenance of the natural ecosystem and to providing a sustainable ground water supply for the County. This category would include public and private areas of: significant plant or animal habitats; forest lands in Timberland Preserve Zones; agricultural lands within the Williamson Act; grazing; watersheds including waterways and wetlands; outdoor parks and recreation; retreats; mineral deposits and mining areas which require special attention because of hazardous or special conditions; publicly-owned land (e.g., U.S. Forest Service, BLM land, State, and County); and open space activities. Uses allowed in this designation are those related to resource utilization and resource conservation activities. Resource utilization operations and facilities will require a conditional use permit. This designation is located both inside and outside of Community Growth Boundaries.

The Lake County Zoning Ordinance designations on the Guenoc Valley Site include Agriculture (A), Rural Lands (RL), and Rural Residential (RR) as shown on **Figure 3.2-3**. The purpose of each designation is detailed below.

Agriculture: 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: 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: To provide for single-family residential development in a semi-rural setting along with limited agriculture.



SOURCE: SWA Group, 10/2019; Lake County Community Development Zoning Map, 2015; AES, 1/6/2020

Figure 3.2-3
Lake County Zoning Districts – Guenoc Valley Site

Middletown Housing Site

The Lake County land use designations from the General Plan 2030 on the Middletown Housing Site are Low Density Residential and Resource Conservation (refer to **Figure 3.2-4**). Low density residential allows 1-5 dwelling units per acre.

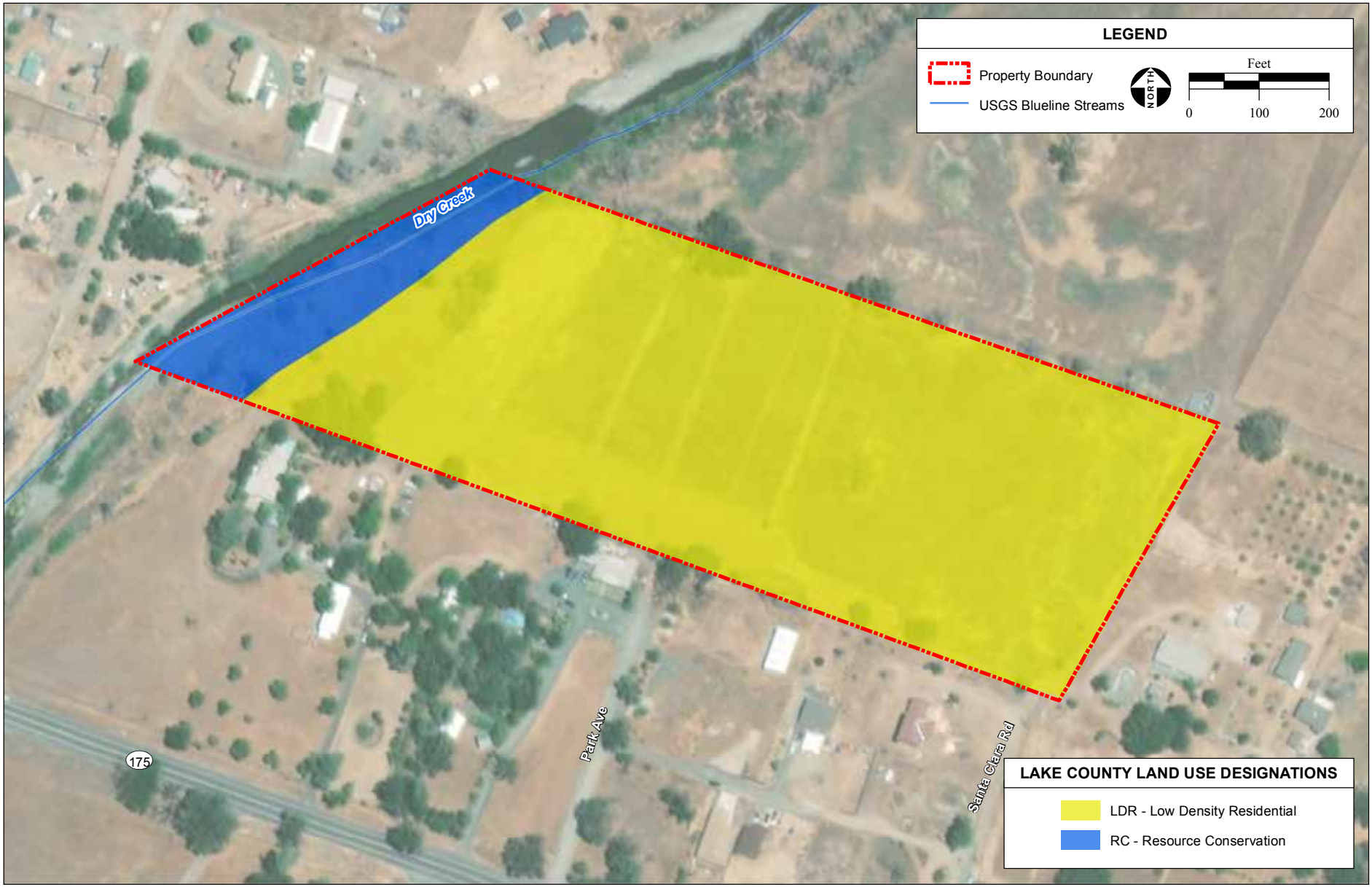
The Lake County Zoning Ordinance main designation on the Middletown Housing Site is Single Family Residential with a Parking Combining District. The western border of the site overlapping Dry Creek is designated Suburban Reserve (refer to **Figure 3.2-5**). Additionally, this area overlaps with a Floodway Combining District and a Waterway Combining District. Single Family Residential allows one single family home and one granny unit or residential second unit or guest house. Maximum density is 6,000 SF per dwelling unit and maximum lot coverage is 35 percent for a one story dwelling and 30 percent for a two story dwelling.

County of Lake Right to Farm

As discussed above, General Plan Policy AR-1.5 requires that all residential properties within 1,000 feet of agricultural land or operations sign the County of Lake Right to Farm form. The form notifies the property owner of the Right-to-Farm Ordinance (Lake County Code, Article 4). This ordinance states that the County recognizes and supports the right to farm agricultural lands in a manner consistent with accepted customs, practices, and standards. Consequently, adjacent properties on or near agricultural land should be prepared to accept the inconveniences or discomforts associated with agricultural operations or activities, including but not limited to noise, odors, insects, fumes, dust, the operation of machinery of any kind during any 24 hour period (including aircraft), the application by spraying or otherwise of chemical fertilizers, soil amendments, seeds, herbicides, and pesticides, the storage of livestock feed and other agricultural commodities and the storage, application and disposal of manure. Inconveniences or discomforts associated with such agricultural operations or activities shall not be considered to be a nuisance.

Lake County Regional Blueprint Plan

The Lake County 2030 Blueprint was developed in 2010 for the Lake County/City Area Planning Council, the agency that is responsible for the County's Regional Transportation Plan. The Blueprint Plan is not prescriptive for local governments; instead, it provides an overall development framework intended to guide planning decisions. In the plan, there are scenarios that detail the Blueprint's ideal version of future growth (Balanced Growth) based on factors such as balance between rural and community development. The Balanced Growth scenarios are then compared to projected growth based on current trends. The plan states that development in 2030 would likely be 18% higher than the ideal Balanced Growth scenario. Therefore, the plan recommends that overall development in Lake County decrease by 18%.



SOURCE: Lake County General Plan, 2008; DigitalGlobe Aerial Photograph, 6/2018; AES, 11/21/2019

Figure 3.2-4

Lake County General Plan Land Use Map - Middletown Housing Site



SOURCE: Lake County General Plan, 2008; DigitalGlobe Aerial Photograph, 6/2018; AES, 10/2/2019

Figure 3.2-5
Lake County Zoning - Middletown Housing Site

Middletown Area Plan 2010

Area plans are supplements to the County General Plan and provide guidance for long term growth and development. The plans are consistent with the goals of the General Plan. Both the Guenoc Valley Site and the Middletown Housing Site are located within the boundaries of Middletown Area Plan. In general, the agricultural objectives of the Plan outline promoting agricultural development, using buffers between residential and agricultural lands, and protecting agricultural land from water quality and erosion damage. The Plan provides specific policies related to the Guenoc Valley Site in Section 6.3: Special Study Area Langtry/Guenoc. The objectives in the Plan for the Guenoc Valley Site include retaining and expanding agricultural uses and ensuring high quality and low-impact planned development. The Plan describes the current maximum overall residential capacity on the Guenoc Valley Site to be approximately 800 units and suggests that amendments to zoning designations for more residential development would be considered. In addition, the Plan states that "future agricultural land uses on the property should contribute to the expansion of ranchland, production, and winery operations." Relevant policies include:

Policy 3.4.1a: Support the continued use of agricultural lands and discourage conversion of these lands to other uses unless necessary to accommodate an orderly and logical pattern of urban development.

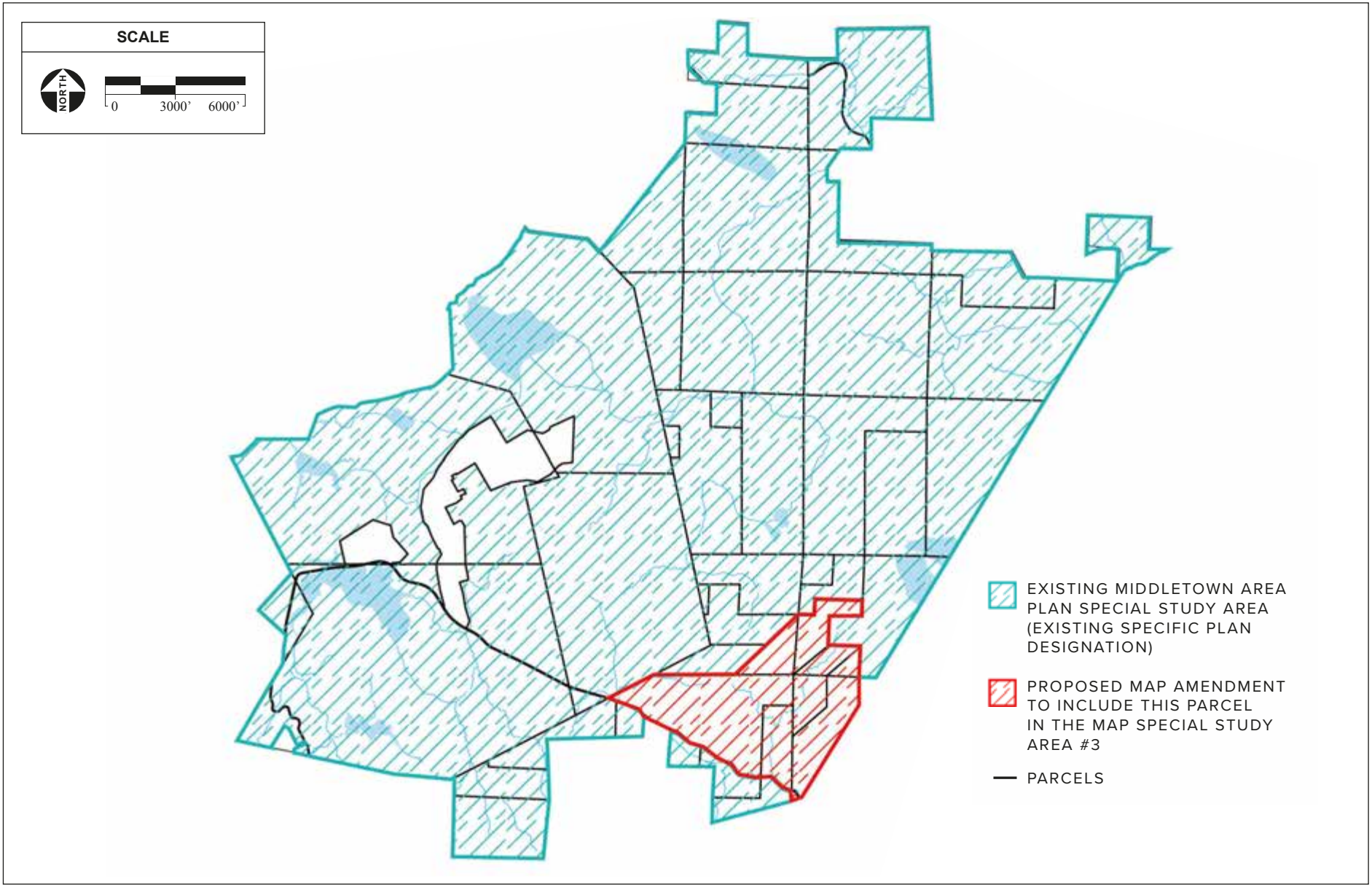
Policy 3.4.1b: Rezoning or division of lands that have historically been in agricultural production for non-agricultural purposes should be prohibited, except in special situations where all of the following criteria can be met:

1) Sewage disposal, water and adequate road access is available.
2) Utilization of the site for non-agricultural uses will not significantly impact adjacent agricultural uses.
3) The site is located within a Community Growth Boundary or the conversion is needed for expansion of the boundary, consistent with the criteria set forth in the Land Use element of the General Plan.
4) Development being proposed is clustered to maximize open space and provide buffer areas.

Policy 3.4.1c: Adequate building setback lines or buffer areas shall be encouraged in land divisions in any areas contiguous to agricultural operations where dust, noise, spray drift or other nuisance conditions could result in conflicts due to normal farming practices.

Policy 5.1.2a: Centrally located businesses and services shall be encouraged in locations that conveniently serve residential areas and foster and support the revitalization or creation of town centers.
Policy 5.1.2b: Commercial development shall be consistent with the guidelines of this plan to provide attractive and compatible development, complimentary in theme to existing development.

As described in **Section 2.7.1**, a portion of the Guenoc Valley Site was set aside for development of a college, thus was not included in the map of the Guenoc Valley Special Study Area; this area is referred to as the "college parcels" and is owned by the Applicant (see **Figure 3.2-6**). It was since determined that those parcels were not suitable for a college campus and thus this Proposed Project also includes an amendment to the Middletown Area Plan Special Study Area Map to include the college parcels.



SOURCE: SWA Group, 9/2019; AES, 10/1/2019

Figure 3.2-6
Existing and Proposed Special Study Area - Guenoc Valley Site

State

California Department of Conservation

The DOC administers and supports a number of programs, including the Williamson Act, the California Farmland Conservancy Program (CFCP), the Williamson Act Easement Exchange Program (WAEEP), and the Farmland Mapping and Monitoring Program (FMMP). These programs are designed to preserve agricultural land and provide data on conversion of agricultural land to urban use. The DOC has authority over the approval of agreements entered under the WAEEP.

Williamson Act Lands

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is a non-mandated state program, administered by counties and cities to preserve agricultural land and discourage the premature conversion of agricultural land to urban uses. The act authorizes local governments and property owners to enter (voluntarily) into contracts to commit agricultural land to specified uses for ten or more years. Once the contract is in effect, the land is valued for taxation based on its agricultural income rather than unrestricted market value. This results in a lower tax rate for owners. In return, the owners guarantee that these properties remain under agricultural production for an ten-year evergreen period. The contract is renewed automatically unless the owner files a notice of non-renewal, thereby maintaining a constant 10-year contract. Participation is on a voluntary basis by both landowners and local governments and is implemented through the establishment of agricultural preserves and the execution of Williamson Act contracts.

Farmland Mapping and Monitoring Program

The FMMP was established by the California Department of Conservation (DOC) in 1982 to continue Important Farmland Mapping efforts by the Natural Resources Conservation Service (NRCS). The minimum mapping unit for classification is 10 acres unless otherwise specified (DOC, 2004). The 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. These classifications combine the actual farming use of the land with the technical soil ratings that determine a land area's suitability for farming.

California Z'Berg-Nejedly Forest Practice Act

The California Z'Berg-Nejedly Forest Practice Act (Forest Practice Act) was enacted in 1973 to ensure that logging on private and other non-federal lands is done in a manner that will preserve and protect fish, wildlife, forests and streams. The Forest Practice Act considers land timberland if it is capable of growing a crop of commercial tree species (Public Resources Code 4526). Logging operators must be licensed by the California Department of Forestry and Fire Protection Cal Fire to operate on non-federal lands. The Forest Practice Act Article 9 includes regulations for timberland conversion; it states that

> "A person who owns timberlands that are to be devoted to uses other than the growing of timber shall file an application for conversion with the board. The board shall, by regulation, prescribe the procedures for, and the form and content of, the application. An application for a timberland conversion permit shall be accompanied by an application fee, payable to the department, in an amount determined by the board pursuant to subdivision (b)."

Cal Fire is the designated "board" referenced above. Additionally, the Forest Practice Act indicates that approval of the conversion application is conditional upon approval of any required rezoning or use permits.

California Forest Legacy Program Act of 2007

This Act was developed to incentivize the preservation of private forest lands. The act permits Cal Fire and owners of private forest lands to enter into voluntary conservation easements. The private owner can restrict development of their forest lands and obtain compensation from the state. The Act defines forest land in 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."

Federal

Federal Aviation Administration

The Federal Aviation Administration (FAA) is an agency within the U.S. Department of Transportation. The FAA recommends that the design of seaplane bases, also known as float plane docks, follow the standards set within Advisory Circular 150/5395-1B. In this Advisory Circular, the following standards are applicable to this Proposed Project:

Waterlanes (Runway)

The length of a seaplane base runway or waterlane must be determined using the most demanding aircraft, plus a safety buffer. When there are no constraints on the width of the waterlane, 200 feet wide is considered a reasonable minimum width for most seaplane bases. The water operating areas should provide a minimum of four feet of depth; six feet is recommended. In open water, the operating areas should be clear of underwater obstructions that are less than four feet below the low tide line. If not possible to avoid or remove the obstruction, it should be identified with a marker, or buoy. Water lanes may be marked or unmarked. The installation of buoys may require coordination with multiple resource and government agencies (e.g., U.S. Coast Guard, U.S. Army Corps of Engineers, etc.) and tribal groups.

Taxi Channels

A taxi channel is a basic, minimum facility of a seaplane base that allows adequate separation for water taxing. The taxi channel provides direct access from the sea lane to the anchorage area and onshore facilities. The taxi channel should be oriented so that the approach to shoreline and onshore facilities, such as the anchorage area and ramp, pier, will be into the prevailing wind or current. Dimensions are as follows:

- Minimum Width: 125 feet (recommend 150 feet)
- Minimum Depth: 4 feet
- Wingtip to Wingtip Clearance for passing seaplanes (dual directional taxi channels): 50 feet

Turning Basins

Turning basins are extra wide water maneuvering areas to facilitate water taxiing, turn maneuvers, and to accommodate periods of changing wind and current conditions. The stronger the wind and current, the more room it takes to make a water turn. Hence under these conditions, a minimum clearance of 50 feet (15 m) should be provided between the side of the turning basin and the nearest object.

Anchorage Areas

The basic seaplane base has a dedicated anchorage area along the shoreline for securing seaplanes. Sea plane base owners should provide information to pilots on type of bottom conditions to be expected for anchoring, if known. Center-to-center spacing of anchors, where small twin-float seaplanes are to be moored, should not be less than twice the length of the longest anchor line plus 125 feet to allow for weathervaning, fuselage and wingspan parameters. For larger types of seaplanes, including flying boats and amphibians this spacing should be increased by an additional 100 feet. Mooring anchoring may be necessary for the proposed seaplane dock due possible unsuitable bottom conditions of the reservoir for traditional anchoring.

Ramps

A typical ramp designed to accommodate seaplane floats is approximately 15 by 20 feet (5 m by 6 m) wide and extends into the water to allow seaplanes to be launched and retrieved easily. The ramp needs to be sized appropriately to accommodate the aircraft that will be using it. The ramp site should offer a minimum 200 feet (60 m) of unobstructed turning diameter directly offshore from the ramp in the direction from which approaches are normally made. Some locations may require an additional ramp where variable wind conditions are a factor.

Docks

The term “dock” is often used as a catch-all term for any structure that can be used to secure watercraft (including floatplanes) to a fixed facility, either the shoreline or a structure affixed to the seabed/lakebed. These structures could be a dock, pier, wharf, or float. Depending on type, docks may rise and fall with the water level. The deck surface of a dock should be 12 to 18 inches above the water. Fender systems on docks prevent the dock from damaging a plane’s fuselage or floats. Tires are adequate for use as fenders.

Additionally, under 14 CFR Part 61 the FAA requires that pilots meet certain education and training requirements before certified to operate an aircraft. 14 CFR Part 91 includes FAA general operating and flight rules for all aircraft. This part includes the following relevant regulations:

- Low-flying air craft must fly at an altitude of 1,000 feet above the highest obstacle in congested areas, such as cities, towns, and settlements and 500 feet or more over areas other than congested; and
- Aircraft operation on the water shall keep clear of all vessels and avoid impeding their navigation.

3.2.4 IMPACTS

Method of Analysis

The land use and agricultural resource 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 Guenoc Valley Site.

The land use evaluation is based on a qualitative comparison of existing and proposed uses on the site and their compatibility with existing land uses and planned land uses as defined in the County’s General Plan and/or the Middletown Area plan, as well as other applicable local and regional environmental and planning documents. Uses that would be allowed within each land use category in the development area

are compared to adjacent existing and proposed uses to determine compatibility. Proposed land uses are described in detail in **Section 2.0, Project Description**, and illustrated by **Figure 2-6 Site Plan** and **Table 2-1 Guenoc Valley District Primary Permitted Uses**.

Thresholds of Significance

Criteria for determining the significance of land use impacts to have been developed based on Appendix G of the CEQA Guidelines. For the purposes of this EIR, land use impacts are considered significant if the Proposed Project would:

- Physically divide an established community.
- Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
- Create land use conflicts or be incompatible with existing or proposed adjacent land uses.
- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code [PRC] section 12220[g]), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104[g]).
- Result in the loss of forest land or conversion of forest land to non-forest use.
- Involve other changes in the existing environment, which due to their location or nature, could result in the conversion of Farmland to non-agricultural uses, or conversion of forest land to non-forest use.

Effects Found Not to be Significant

As discussed within the Initial Study (IS) for the Proposed Project, there are no properties under Williamson Act contracts on the Guenoc Valley Site or Middletown Housing Site, so these issues will not be addressed further in this EIR. In addition, potential impacts related to the dividing of established communities are not addressed further because the Guenoc Valley Site is located on contiguous land managed wholly by one company and no established communities exist immediately adjacent to the Guenoc Valley Site. Further the proposed Off-Site Workforce Housing at the Middletown Housing Site would not divide an established community.

Impact Analysis

IMPACT 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	**Other Phase 1 Areas**	
	Phase 1and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Less than Significant	Less than Significant	No Impact
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

Phase 1 and Future Phases

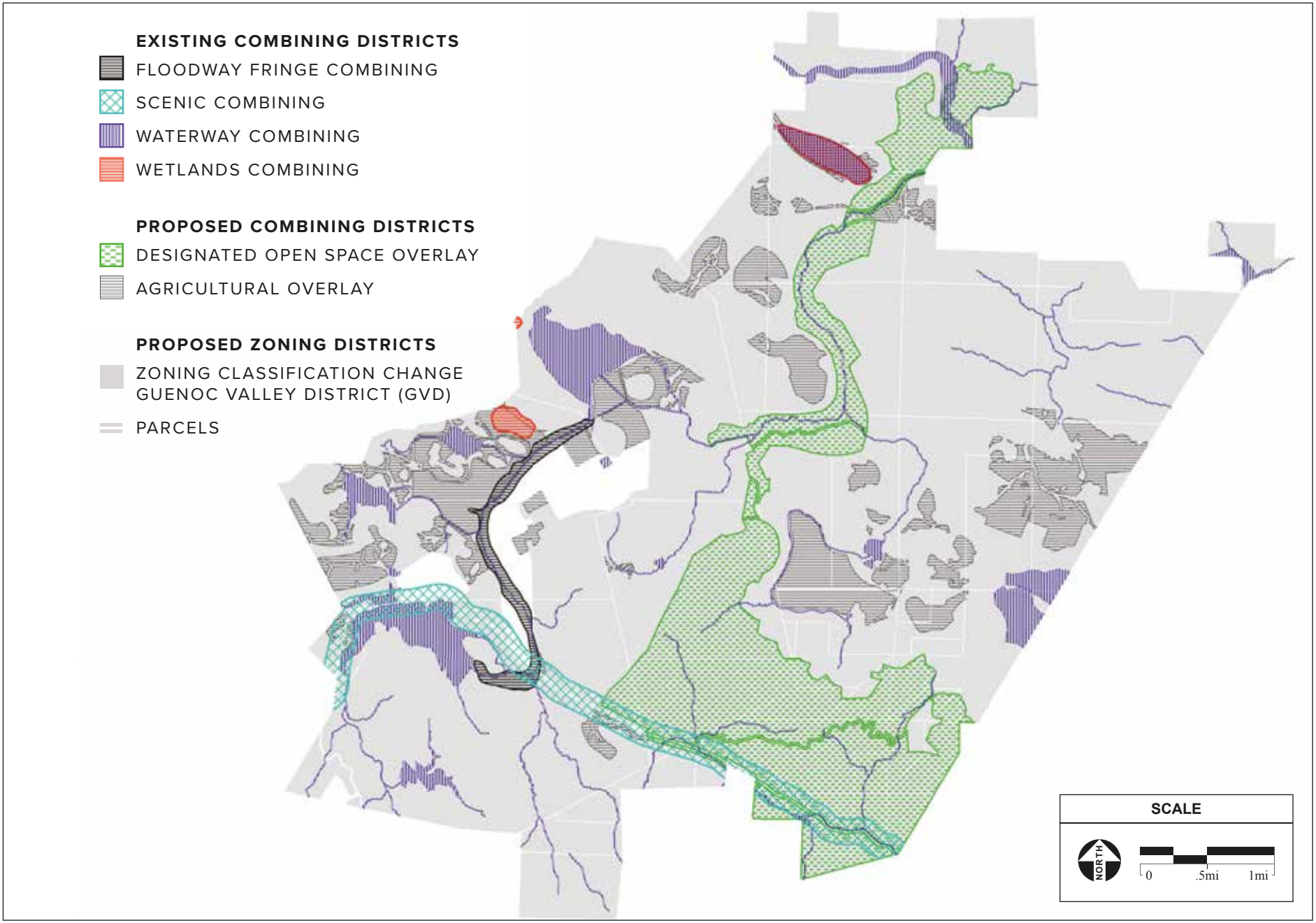
Applicable land use plans for the Proposed Project include the Lake County 2008 General Plan, the Lake County Zoning Ordinance, and the Middletown Area Plan. The Proposed Project includes the following amendments to these plans:

- **Amendment to the General Plan and Special Study Area map of the Middletown Area Plan to include the area commonly known as the college parcels** (see **Figure 3.2-6**)**;**

  The current Middletown Area Plan identifies the Guenoc Valley Site as a Special Study Area. One section known as the college parcels is currently outside the Special Study Area as it was not a part of the Guenoc Ranch when the Middletown Area Plan was updated in 2010. This area was gifted to the County for development of a California State University Campus but was found to be unsuitable for this purpose. As a result, the ownership reverted back to the owner of Guenoc Ranch and the area is now part of the Guenoc Valley Site. As shown in **Figure 3.2-6**, the Proposed Project would include an amendment to the Special Study Area map to include this area.

- **Amendment to General Plan Land Use Map designations from Agriculture, Resource Conservation, Rural Lands, and Rural Residential to Resort Commercial** (see **Figure 3.2-7**);

  The General Plan currently designates the land uses on the Guenoc Valley Site as: Rural Residential, Agriculture, and Rural Lands. The Proposed Project includes a request to change the land use designation of the entire Guenoc Valley Site to Resort Commercial. **Figure 3.2-7** illustrates the proposed General Plan land use designation. The General Plan provides the following description of Resort Commercial:



SOURCE: SWA Group, 10/2019; Lake County Community Development Zoning Map, 2015; AES, 1/6/2020

Figure 3.2-7
Proposed Zoning Districts – Guenoc Valley Site

"This land use category provides for a mix of commercial uses oriented toward tourists and other visitors to the county, including agriculturally- based tourism. Typical uses that would be permitted include: recreation activities (e.g., golf courses); dining; entertainment services; destination-resorts; various types of lodging facilities such as, but not limited to hotels, motels, retreats, fractional ownership lodging units and time-share units; wineries; spas; and on-site residential uses if secondary and subordinate to commercial resort uses. This designation is located both inside and outside of Community Growth Boundaries."

The Proposed Project would be consistent with this land use designation because development would include recreation activities, dining, entertainment, hotels, retreats, wineries, spas, and on-site residential uses. The recommended density for the Resort Commercial designation is 0.1 – 1.0 maximum floor-area ratio (FAR). The FAR is the gross building square footage to net square footage of the lot (parcel). Consistent with this requirement, the average residential density of Phase 1 would be approximately 0.1 unit per acre.

- **Zoning Ordinance Amendment to introduce a new zoning district, Guenoc Valley District ("GVD"), to allow for future uses and implement the goals of the Special Study Area; subsequently rezoning of the Guenoc Valley Site from Rural Lands, Agriculture, Rural Residential, and an Agricultural Protection Zones to GVD Zone with Open Space and Agricultural Preserve Combining Districts** (see **Figure 3.2-7**);

  The Guenoc Valley Site is primarily zoned as agricultural, rural lands, and rural residential, which does not allow for the mixed-use resort development outlined in the Middletown Area Plan Langtry/Guenoc Special Study Area. In addition, the County's current Zoning Ordinance does not have a mixed-use development district that combines resort, residential, and commercial uses. Thus, a new zoning district, GVD, is proposed to effect the goals of the Middletown Area Plan. The entire Guenoc Valley Site would fall under the new GVD zoning district. A draft zoning ordinance is included as **Appendix GVD**. The permitted uses within the GVD are outlined in the zoning ordinance, and listed in **Section 2.0**, **Table 2-1 Guenoc Valley District Primary Permitted Uses**. As shown on **Figure 3.2-7**, within the GVD, there are two combining districts to preserve the rural character of the area: Designated Open Space and Agricultural Preserve Combining District. Both of these areas preclude resort and residential development.

  Many of the goals and policies of the General Plan and Middletown Area Plan were adopted for the purpose of avoiding or mitigating environmental effects. A discussion of the consistency of the Proposed Project with specific policies is included in **Appendix GPCT**. The Proposed Project is generally consistent with the goals and policies in the General Plan, and would further the intention of policies that encourage resort development within the County and promote clustered development to limit land use impacts. Additionally, the General Plan includes policies for preserving open space. Phase 1 of the Proposed Project includes 2,765 acres of designated open space with additional open space preserved through deed-restrictions on residential parcels and other open space incorporated into the landscaping design.

  The Middletown Area Plan also emphasizes resort development and states that "resort development should be strongly supported by the County as a means to provide local jobs and

create additional attractions for tourists". The Middletown Area Plan includes the Guenoc Valley Site as a Special Study Area and states that the goal of the area is to have a mix of resort/commercial, residential, and agricultural uses. The Proposed Project would be generally consistent with the Middletown Area Plan's goals for the land uses within the Guenoc Valley Site.

Under the State Planning and Zoning Law, Government Code 65000 et seq., a development project cannot be approved if it is inconsistent with the General Plan, and thus, the Proposed Project could not proceed if determined by the County to be inconsistent. The County's application procedure for rezoning and use permits for resort or commercial planned developments generally includes a review of the project's consistency with the General Plan and submission of site plans. County approval of the rezone of the Guenoc Valley Site to the GVD would indicate consistency with the General Plan. Based on the evaluations contained in the EIR, the Proposed Project is generally consistent with the County's General Plan and Middletown Area Plan.

Policy conflicts do not, in and of themselves, constitute a significant adverse environmental impact. A policy inconsistency is considered to be a significant adverse environmental impact when it is related to a policy adopted for the purpose of avoiding or mitigating an environmental effect and it is anticipated that the inconsistency would result in a significant adverse *physical* impact. Any such associated physical impacts are discussed in this EIR under specific topical sections, such as noise, air quality, and transportation and circulation, as appropriate.

With the County's approval of General Plan Amendment, Zoning ordinance amendments, and amendment to the Middletown Area Plan Special Study Map, the Proposed Project would not conflict with applicable land use policies, as outlined in **Appendix GPCT**. Therefore, this is considered a **less than significant** impact.

Off-Site Workforce Housing

The Off-Site Workforce Housing on the approximately 12.75-acre Middletown Housing Site would include 21 single family homes each with five rooms and 29 duplexes each with four rooms. The average density of the off-site workforce housing would be approximately 4 dwelling units per acre. The single family lots would be approximately 6,050 SF and the duplex lots would be approximately 8,522 SF. All development on the Middletown Housing Site would occur within the General Plan Land Use designation of Low Density Residential. This development would be consistent with the General Plan Land Use Designation of Low Density Residential because the lot sizes are larger than 6,000 SF, and the overall the density is between 1-5 dwelling units per acre.

The Proposed Project includes a re-zoning of approximately 3.5 acres in the center of the Middletown Housing Site from Single-Family Residential to Two-Family Residential. This is the area containing the proposed duplexes. Two-Family Residential district allow for duplexes with a maximum permitted density of one unit per 4,000 SF. The proposed duplexes would have a density of approximately one unit per 4,261 SF, which is consistent with the zoning ordinance. The other approximately 9.25 acres would remain zoned as Single-Family Residential. The single-family homes would be consistent with the maximum permitted density of one unit per 6,000 acres. With the County's approval of the rezoning of the Middletown Housing

Site, the Proposed Project would not conflict with applicable land use policies including the General Plan and Zoning Ordinance; this is a **less-than-significant** impact.

Off-Site Infrastructure

Rehabilitation of the existing well or installation of one new well on the Off-Site Well Site would not result in a change in land use so there would not be any conflicts with land use plans. Additionally, the pipeline would be constructed along the shoulder of Butts Canyon Road within the Right-of-Way so there would also be no land use changes associated with the pipeline. There would be **no impacts** related to conflicts with land use plans.

IMPACT 3.2-2	**CREATE LAND USE CONFLICTS OR BE INCOMPATIBLE WITH EXISTING OR PROPOSED ADJACENT LAND USES.**		
	Guenoc Valley Site	**Other Phase 1 Areas**	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially Significant	Less than Significant	Less than Significant
Mitigation Measures	MM 3.2-1: Right-to-Farm Disclosure	None Required	None Required
Significance After Mitigation	Less than Significant	N/A	N/A

Phase 1 and Future Phases

Implementation of the Proposed Project would change the character of the Guenoc Valley Site. It would replace rural lands and agriculture with residential and commercial uses, and associated infrastructure including roads, photovoltaic power stations, and other utilities detailed in **Section 2.0 Project Description**. The below discussion analyzes whether proposed land uses within the Guenoc Valley Site are compatible with existing or planned uses in the project vicinity. The determination of compatibility of land uses typically relies on the types of land uses adjacent to the Proposed Project and associated with the Proposed Project. The identification of incompatible uses occurs if a land use is anticipated to disrupt the existing or planned use of an adjacent property. The Guenoc Valley Site is generally bordered by rural and agricultural lands.

Compatibility with Surrounding Rural Residential Uses

Nearby existing residential uses include a few rural residential homes near the southern border of the Guenoc Valley Site boundary and the Hidden Valley Community approximately one mile north of the Guenoc Valley Site boundary. There are no communities directly adjacent to the Guenoc Valley Site. Development of Phase 1 of the Proposed Project would not occur near these borders and therefore would not create inconsistencies with surrounding residential uses. Future Phases may include development closer to the Guenoc Valley Site boundaries and therefore potentially closer to the Hidden Valley residential community and other rural residences. However, the Guenoc Valley Site is geographically separated from

the Hidden Valley Community by topography and Putah Creek and there would still be approximately 0.9 miles between the site boundary and the closest edge of the Hidden Valley Community. Although the proposed residential areas would be clustered within resort communities, the overall density would still be low with an average lot size of five acres. This low density would be generally consistent with surrounding residential areas. Additionally, all Phase 1 and future phase development would comply with the proposed GVD Design Guidelines, which includes standards for buildings such as height, lot coverage, and lighting to ensure compatibility with surrounding development (**Appendix DG**). Impacts related to land use compatibility with surrounding residences would be **less-than-significant**.

Compatibility with Surrounding Agricultural Uses

The majority of the Guenoc Valley Site border is adjacent to undeveloped grazing land or agricultural land. It is expected that cattle grazing would continue to occur as the primary agricultural activity on adjacent lands. Adjacent areas developed with intense agricultural uses, such as vineyards, which may involve activities such as spraying of pesticides or herbicides, are located along the eastern site border with Napa County, as well as within the Guenoc Valley in the "area excluded from the project site". Additionally, as shown in **Figure 2-3**, there are approximately 990 acres of vineyard development currently within the Guenoc Valley Site and another 970 acres leased for potential future vineyard development. These leased vineyard development areas within the Guenoc Valley Site would be located within the proposed GVD "Agricultural Preserve Combining District".

Agricultural activities can produce dust, noise, and odor at levels that can cause a nuisance when close to residential areas. The introduction of commercial uses and up to 1,400 residential estates under buildout of the GVD could generate conflicts with adjacent agricultural activities, and potentially impact agricultural operations in adjacent areas either through increased complaints by residents regarding agricultural operations, which could interfere with production, or by trespass, vandalism, or theft at nearby farms due to increased population and ease of access. There would be 100 foot fire breaks along many edges of the property boundary, which would also provide a buffer from any present or future adjacent agricultural operations. **.** Along the western Guenoc Valley Site boundary, all proposed development would be set back at least 50 feet from the Napa County line, which is currently cultivated vineyards. As stated in the Lake County Right-to-Farm Ordinance, existing and future agricultural operations may continue in a manner consistent with the underlying zoning, and impacts from agricultural land uses on non-agricultural areas shall not be considered a nuisance to the non-agricultural land use. The County has also established a grievance committee to assist with conflicts between residents and agricultural operations. Even so, potential incompatibilities with agricultural uses could potentially impact the overall economic viability of continued agricultural operations. This is considered a **potentially significant** impact.

In order to fully comply with the County's Right-to-Farm Ordinance, **Mitigation Measure 3.2-2** shall be implemented. This measure would ensure that all prospective buyers of residential lots within the project site are informed of the Right-to-Farm Ordinance and its legal requirements, thus ensuring that implementation of the Proposed Project would not restrict neighboring land with respect to present or future agricultural uses. **Mitigation Measure 3.2-2** also requires a description of adjacent agricultural operations so that buyers within the Proposed Project are aware of the operational aspects of agricultural uses including noise, odors, and dust. After mitigation, land use conflicts with adjacent agricultural operations would be reduced to **less than significant**.

Compatibility of Aircraft Operations with Adjacent Uses

The Proposed Project includes construction and operation of a float plane dock on Detert Reservoir. The float planes would comply with FAA Regulations including 14 CFR Part 91 for general operating and flight rules. Under these regulations, the float plane must fly at an altitude of at least 500 feet above any person, vessel, vehicle, or structure. Additionally, all pilots flying float planes for the Proposed Project would be certified to operate the aircraft. Noise impacts of the float plane dock are analyzed in **Section 3.10 Noise**. Impacts related to float plane land use compatibility would be **less-than-significant**.

Off-Site Workforce Housing

Scattered single family and multi-family residential are located adjacent to the eastern and southern borders of the Middletown Housing Site. Additional rural residential communities lie on the opposite side of Dry Creek, west of the Middletown Housing Site. Denser residential and commercial developments, including schools, are located less than a mile east of the property. The proposed Off-Site Workforce Housing consists of single-family residential homes near the borders of the property with duplex housing in the center, which would be compatible with surrounding residential and other nearby land uses. Although there is undeveloped land to the northeast of the site, this area is zoned Single-Family Residential and designated Low Density Residential in the General Plan, so it is anticipated that this area would be developed with residences in the future. This impact is **less-than-significant**.

Off-Site Infrastructure

The off-site well and pipeline would not result in any change in land uses so there is **no impact** related to land use inconsistencies.

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**			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Significant	Potentially Significant	Less than Significant	No Impact
Mitigation Measures	MM 3.2-2: Agricultural Conservation	MM 3.2-2: Agricultural Conservation	None Required	None Required
Significance After Mitigation	Significant and Unavoidable	Significant and Unavoidable	N/A	N/A

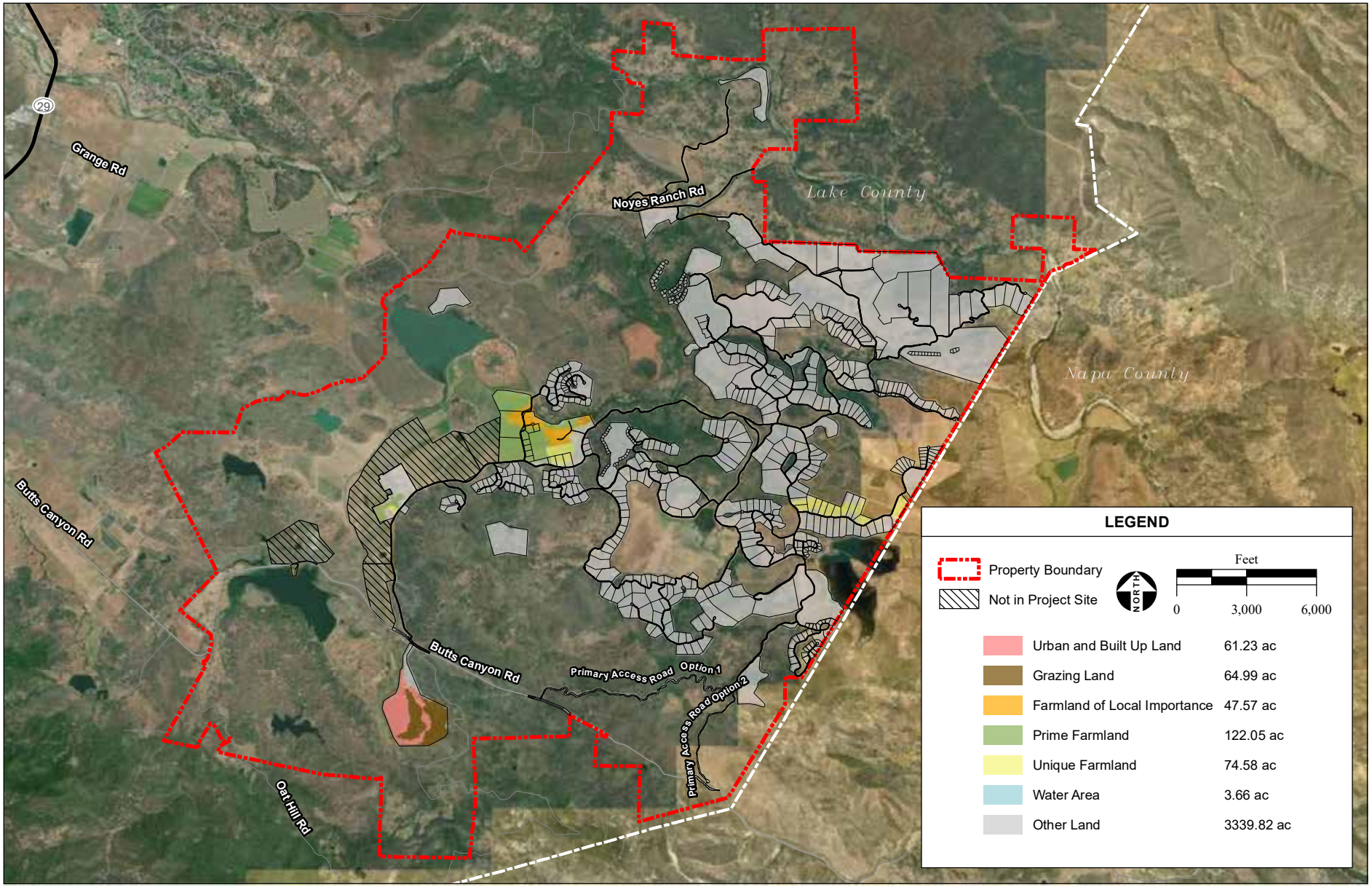
Phase 1

According to the 2016 FMMP Map prepared by the DOC, much of the Prime Farmland and Unique Farmland (collectively referred to as "Important Farmland") within the area occurs within the Guenoc Ranch Property in the areas under separate ownership that are not a part of the Guenoc Valley Site (**Figure 3.2-1**). The Guenoc Valley Site itself contains approximately 173 acres of Prime Farmland, and 398 acres of Unique Farmland, (collectively referred to as "Important" Farmland). As shown on **Figure 3.2-8** and **Table 3.2-1**, of the Important Farmland within the site, approximately 121.6 acres of Prime Farmland, and 74.3 acres of Unique Farmland occurs within the Phase 1 parcel boundaries. Specifically, as shown on **Figure 3.2-9**, the Equestrian Center Community, including polo fields and residential estates, is proposed for development on a mix of Prime Farmland, and Unique Farmland. In addition, the Back of House planning area parcels contain some Prime and Unique Farmland and twelve residential estate parcels in the Maha Farm Community overlap with Unique Farmland. **Table 3.2-1** provides a breakdown of the acreage of Important Farmland within each Phase 1 planning area. After accounting for the development footprint within resort/commercial parcels, and 1.5-acre lot development restrictions with residential parcels, Phase 1 development may convert approximately 28.44 acres of Prime Farmland, and 22.1 acres of Unique Farmlands as designated by the FMMP to non-agricultural uses. This is a **significant impact**. Although it is possible that this important farmland would be converted in its entirety, much of the farmland is within residential estate parcels, and the future owners may decide to maintain the farmland on their property. **Mitigation Measure 3.2-2** requires acre for acre long-term permanent protection on farmland of equivalent quality, so every acre of Prime Farmland, and Unique Farmland converted would result in the same number of acres of Important Farmland preserved somewhere else on the property or in the vicinity. Although **Mitigation Measure 3.2-2** would reduce the impact of Important Farmland conversion, there would still be a net loss of Important Farmland as a result of Phase 1; thus the impact is ***significant and unavoidable***.

Table 3.2-1
PHASE 1 IMPORTANT FARMLAND

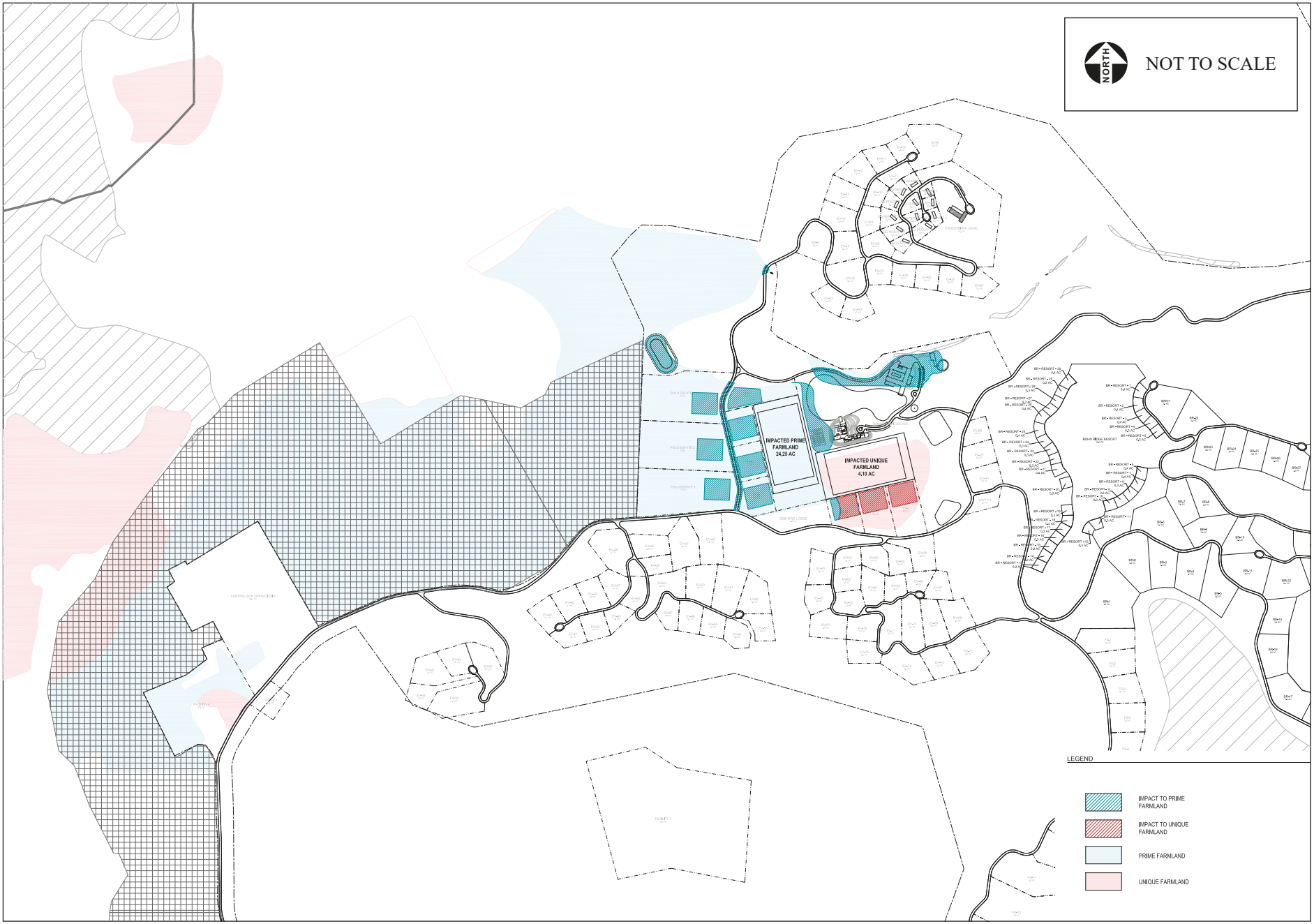
Planning Area	Prime Farmland		Unique Farmland	
	In Phase 1 Area (ac)	Converted (ac)	In Phase 1 Area (ac)	Converted (ac)
Equestrian Center	109.2	24.3	20.1	4.1
Central Back of House	12.3	4	3.0	0
Maha Farms	0.14	0.14	51.2	18
Total[1]	121.6	28.4	74.3	22.1

1. Values may slightly differ from **Figure 3.2-8** due to rounding



SOURCE: CA Dept. of Interior, Farmland Mapping Monitoring Program, (FMMP), 2016; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/5/2020

Figure 3.2-8
Farmland Within Phase 1 Parcels



SOURCE: Verse Design Engineers, 2/2020; AES, 2/6/2020

Figure 3.2-9
Equestrian Center Farmland Impact

Future Phases

As stated above, the Guenoc Valley Site contains approximately 172.4 acres of Prime Farmland, and 398 acres of Unique Farmland, (collectively referred to as "Important" Farmland). Of the Important Farmland within the site, approximately 50.8 acres of Prime Farmland, and 323.7 acres of Unique Farmland occur outside of the Phase 1 parcel boundaries. Much of this area would be protected within the proposed GVD Agricultural Preserve Combining District. Important Farmlands could be converted in future phases, but not all. For example, the Unique Farmland on the southern portion of the site is included in the proposed Open Space corridor. However, future development may convert Important Farmlands and thus the impact is **potentially significant**. **Mitigation Measure 3.2-2** requires acre for acre conservation easements, so every acre of Prime Farmland, and Unique Farmland converted would result in the same number of acres of equivalent Important Farmland preserved somewhere else on the property or within the vicinity. With implementation of **Mitigation Measure 3.2-2**, impacts related to conversion of Important Farmland during future phases would be reduced but still ***significant and unavoidable***.

Off-Site Workforce Housing

The Middletown Housing Site is designated by the DOC as Farmland of Local Importance and Grazing Land. Conversion of land with these designations is not considered a significant impact according to the CEQA Appendix G significance thresholds. Additionally, this land is not currently used for cultivation of crops or grazing and as mentioned above is zoned Single-Family Residential and designated Low-Density Residential by the General Plan. Impacts related to conversion of Important Farmland from the Off-Site Workforce Housing are **less-than-significant**.

Off-Site Infrastructure

The grazing land uses on the Off-Site Well Site would continue under the Proposed Project. Rehabilitation of the existing well or installation of one new well would not result in conversion of the land. There would be **no impacts** related to conversion of Important Farmland as result of the proposed off-site well and pipeline.

IMPACT 3.2-4	**CONFLICT WITH EXISTING ZONING FOR AGRICULTURAL USE**		
	Guenoc Valley Site	**Other Phase 1 Areas**	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Less than Significant	No Impact	No Impact
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	Less than Significant	N/A	N/A

Guenoc Valley Site - Phase 1 and Future Phases

Under the Proposed Project, approximately 1,097 acres of land on the Guenoc Valley Site currently zoned for agriculture would be amended to the new GVD zoning district. The Guenoc Valley Zoning District would include an Agricultural Preserve Combining District as described in **Section 2.7.1**. This Agricultural Preserve Combining District would have certain restrictions on development to preserve agricultural lands on the site. The Agricultural Combining District would cover the much of the existing vineyards and areas leased for potential future vineyard development within the site (see **Figure 3.2-7**). The total area included in the proposed Agricultural Preserve Combining District would be approximately 1,743 acres, which is roughly 646 acres more than the area of currently zoned agricultural land. With approval of the zoning ordinance amendment to rezone the Guenoc Valley Site as GVD with Agricultural Preserve Combining District, the Proposed Project would not conflict with zoning for agricultural use and would actually result in more acres zoned for agriculture. This is considered a **less-than-significant impact**.

Off-Site Workforce Housing

The Middletown Housing Site is not zoned for agricultural use nor is it designated agricultural land in the County's General Plan; there would be **no impact** related to conflicts with zoning for agricultural use.

Off-Site Infrastructure

The Off-Site Well Site is not zoned for agricultural use nor is it designated agricultural land in the County's General Plan. The pipeline would be constructed along the shoulder of Butts Canyon Road in the right-of-way. Thus, there would be **no impact** related to conflicts with zoning for agricultural use.

IMPACT 3.2-5	**RESULT IN THE LOSS OF FOREST LAND OR CONVERSION OF FOREST LAND TO NON-FOREST USE**			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	No Impact	Less than significant	Less than Significant	No Impact
Mitigation Measures	None Required	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A	N/A

Phase 1

Neither the Guenoc Valley Site nor adjacent properties are zoned for timberland, forest land, or timberland production. The only commercially harvestable forest land within the Guenoc Valley Site consists of approximately 61 acres of Douglas fir forest land concentrated in the southernmost portion of the site (**Appendix BRA2**). No Phase 1 development is proposed for this area. Therefore, there is **no impact**

related to loss or conversion of forest land. As stated above, impacts related to conversion of oak woodlands are analyzed in **Section 3.4 Biological Resources.**

Future Phases

There may be development on the southernmost portion of the Guenoc Valley Site in future phases, and therefore, potential development on the approximately 61 acres of Douglas fir forest lands. Future development would be subject to further CEQA environmental review that would analyze impacts to forest resources. This environmental review would assess conversion of forest lands and provide mitigation in the event that future site plans propose significant forest conversion. Future development would comply with the Forest Practice Act; as explained in **Section 3.2.2**, conversion of commercially harvestable forest resources would require Cal Fire approval of timber conversion permit and prior to the County's approval of any applicable use permits. Furthermore, neither the Guenoc Valley Site nor adjacent properties are zoned for timberland, forest land, or timberland production. Impacts resulting from the loss of forest land or conversion of forest land to non-forest use would be **less-than-significant**.

Off-Site Workforce Housing

The Middletown Housing Site does not contain forest lands as described above, so there is **no impact** related to loss or conversion of forest land. Impacts related to conversion of oak woodlands are analyzed in **Section 3.4 Biological Resources**.

Off-Site Infrastructure

The off-site infrastructure would not result in any changes in land use, including conversion of forest lands and thus there is **no impact**.

IMPACT 3.2-6	**CUMULATIVE LAND USE AND AGRICULTURAL IMPACTS**		
	Guenoc Valley Site	**Other Phase 1 Areas**	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
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

Phase 1 and Future Phases

Land Use Consistency and Compatibility

For land use compatibility, the immediate vicinity of the Guenoc Valley Site is considered the cumulative context because any incompatibility would occur primarily at the interface of different land uses. The immediate vicinity of the Guenoc Valley Site is currently a mix of rural and agricultural lands. Future developments in this area may include buildout of approximately 920 lots in the Hidden Valley community approximately a mile north of the Guenoc Valley Site, as well as a 380-unit senior community known as "Valley Oaks". More information about these developments is located in **Section 4.2.1 Cumulative Context**. As the cumulative setting area continues to develop, it is likely that land use conflicts will 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. All future development would be subject to the County's land use designations, zoning, and development standards. These existing regulations would minimize potential conflicts with adjacent uses by controlling building intensity, height, allowable uses, and noise generation, among others. Because the Proposed Project incorporates measures to blend with the surrounding rural environment (such as set backs from agricultural uses in Napa County and low density development), the Proposed Project would be consistent with the existing and planned land uses surrounding the site and would not contribute to cumulative land use conflicts. Cumulative impacts associated with land use conflicts would be **less than significant**.

Agricultural Resources

The cumulative context for agricultural land conversion would be Lake, Napa and Sonoma Counties which contain a wide range of agricultural uses, from grazing and row corps to vineyards. The geographic scope is limited based on similar soils that are found in these adjacent areas.

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. Other projects in the cumulative context would also result in the loss of agricultural land. Because farmland is being lost to development throughout Lake County and the region, the loss of farmland and agricultural productivity would be cumulatively significant. The Proposed Project would convert approximately 115.6 acres of Important Farmland which would be off-set through onsite mitigation that would preserve land of similar agricultural quality. Additionally, the Proposed Project would include 1,743 acres of Agricultural Preserve Combining District to preserve agricultural uses within the site, which is greater than the 1,097 acres of current zoned agricultural land within the site. Further, the Proposed Project integrates agricultural activities into the community design. The proposed Agricultural Preserve Combining District and the on-site mitigation to off-set Important Farmland conversion would reduce the Proposed Project's contribution to cumulative effects to agricultural resources to **less than significant**.

Off-Site Workforce Housing

The Middletown Housing Site is within the Middletown Community Growth Boundary, which means that the County has planned for cumulative residential and commercial development in this area. The proposed Off-Site Workforce Housing development would include single-family homes and duplexes, which is generally compatible with the surrounding residential land use. This development is also consistent with

the General Plan Land Use designations and proposed zoning. As discussed above for Phase 1 and future phases, cumulative development would also be subject to the County's land use designations, zoning, and development standards. These existing regulations would minimize potential conflicts with adjacent uses by controlling building intensity, height, allowable uses, and noise generation, among others. Cumulative impacts associated with land use conflicts would be **less than significant**.

3.2.5 MITIGATION MEASURES

MM 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.

MM 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).

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 INTRODUCTION

This section provides a description of air quality conditions in the project area and describes the changes to those conditions that would result from implementation of the Proposed Project. Following an overview of the air quality setting in **Section 3.3.2** and the relevant regulatory setting in **Section 3.3.3**, project-related impacts and recommended mitigation measures are presented in **Section 3.3.4** and **Section 3.3.5**, respectively.

3.3.2 ENVIRONMENTAL SETTING

The Guenoc Valley Site, Middletown Housing Site, and Off-Site Improvement Areas are located in the western portion of Lake County, California, which is located within the Lake County Air Basin (LCAB) and is within the jurisdictional boundaries of the Lake County Air Quality Management District (LCAQMD). 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. Therefore, existing air quality conditions in a region are determined by natural factors such as topography, meteorology, and climate, in addition to the amount and concentration of emissions released by existing air pollutant sources, each of which is discussed separately below.

Topography, Climate, and Meteorology

Mountains surrounds the LCAB, which is why it is rarely influenced by outside meteorology (WRCC, 2016). Summer months in the LCAB are characterized by high temperatures, approximately 90 degrees Fahrenheit (ºF) with little to no rainfall. Winter months are mild with temperatures in the mid-50 ºF. During the winter, rainfall averages 27 inches. The LCAB is rarely influenced by outside meteorology given the unique topography of the air basin (WRCC, 2016).

Ambient Air Quality Standards and Attainment Status

Ambient air quality in the LCAB is affected by pollutants emitted from stationary and mobile sources. Stationary sources are divided into point sources and area sources. Point sources consist of one or more emission sources at a facility from an identified location and are usually associated with manufacturing and industrial processing plants. Area sources are widely distributed and consist of many small emission sources. Area source examples include lawnmowers and other landscape maintenance equipment, natural gas fired water and space heaters, and consumer products such as paints, hairspray, deodorant, and similar products with evaporative emissions. Mobile source emissions are from on- and off-road motor vehicles and include emissions from vehicle tailpipes, evaporative emissions, and fugitive emissions.

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).

Primary CAPs are those that are emitted directly from sources. CO, NO_x, SO_2, and most forms of particulate matter (PM_{10} and $PM_{2.5}$) are primary air pollutants. Secondary CAPs are those formed by chemical and photochemical reactions in the atmosphere. Ozone and nitrogen dioxide are the principal secondary pollutants.

The U.S. Environmental Protection Agency (EPA) 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, the California Air Resources Board (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 3.3-1** shows the NAAQS and CAAQS.

The federal Clean Air Act (CAA; 42 U.S.C. 7401 et seq.) and the California Clean Air Act (CCAA) require all areas of California to be classified as attainment, nonattainment, or unclassified (the term "unclassifiable" is used in the federal CAA) as to their status with regard to the NAAQS and CAAQS. The CAA and CCAA require that EPA or CARB designate portions of the state where the NAAQS or CAAQS are not met, based on air quality monitoring data, as "nonattainment areas." Because of the differences between the national and state standards, the designation of nonattainment areas may be different. Both the CCAA and CAA require local air districts to prepare air quality attainment plans for pollutants for which the area is designated nonattainment. As shown in **Table 3.3-1,** the LCAB is designated as unclassified or attainment for all NAAQS and CAAQS CAPs.

Pollutants of Concern

CARB maintains several ambient air quality monitoring stations within the LCAB that provide information on the average concentrations of CAPs in the region. Monitored ambient air pollutant concentrations reflect the number and strength of emission sources and the influence of topographical and meteorological factors. As shown in **Table 3.3-1** all CAPs are in attainment or unclassified in the LCAB and has the fourth best air quality in the nation. As shown in **Table 3.3-1** LCAB does not have any pollutants of concern; however, given the bowl like topography of the LCAB, recent California fires, and its rural nature particulate matter is always a concern in the basin.

TABLE 3.3-1
SVAB CAAQS AND NAAQS ATTAINMENT STATUS

Criteria Air Pollutants	Averaging Time	CAAQS	NAAQS
Ozone	1-Hour	Attainment	NA
	8-Hour	Attainment	Unclassified/Attainment
CO	1-Hour	Attainment	Unclassified/Attainment
	8-Hour	Attainment	Unclassified/Attainment
NO_2	1-Hour	Attainment	Unclassified/Attainment
	Annual	Attainment	Unclassified/Attainment
SO_2	1-Hour	Attainment	Attainment (Pending)
	Annual	Attainment	NA
PM_{10}	24-Hour	Attainment	Unclassified/Attainment
	Annual	Attainment	NA
$PM_{2.5}$	24-Hour	NA	Unclassified/Attainment
	Annual	Attainment	Unclassified/Attainment
Lead (Pb)	30-Day/3-Months	Attainment	Unclassified/Attainment
Sulfates	24-Hour	Attainment	NA
Hydrogen sulfide	1-Hour	Attainment	NA
Visible Reducing Particles	8-Hour	Attainment	NA
Vinyl Chloride	24-Hour	Attainment	NA

Source: CARB, 2019a.

Toxic Air Contaminants

In addition to the criteria pollutants discussion above, toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs), are also a category of environmental concern. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

Many types of TACs exist, with varying degrees of toxicity. According to The California Almanac of Emissions and Air Quality (CARB, 2019b), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, including diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. The most important of these being particulate matter from diesel-fueled engines (DPM). DPM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Based on receptor modeling techniques, CARB estimated the DPM health risk in the SVAB in 2006 to be 375 excess cancer cases per million people (CARB, 2006). CARB's DPM reduction efforts and reductions in public exposure to DPM are of increased importance. CARB's Risk

Reduction Plan to Reduce Particulate Matter Emission from Diesel-Fueled Engines and Vehicles (CARB, 2000) ("Diesel Reduction Plan") calls for all new diesel-fueled vehicles and engines to use state-of-the-art catalyzed diesel particulate filters and very low-sulfur diesel fuel. The projected emission benefits associated with the full implementation of CARB's plan, including proposed federal measures, are reductions in DPM emissions and associated cancer risks of 85 percent by 2020.

Stationary TAC Emission Sources

According to the CARB Community Health Air Pollution Information System, the nearest major stationary sources of TACs is in Middletown located greater than 4 miles northwest of the Plan Area.

Mobile TAC Emission Sources

Vehicles on existing area roadways, mainly on- and off-road agricultural vehicles on Butts Canyon Road, Bucksnort Creek Road, and farmlands, are sources of DPM and other TACs associated with vehicle exhaust.

Naturally Occurring Asbestos (NOA)

Naturally occurring asbestos (NOA) is found in at least 44 of California's 58 counties. Asbestos is the name for a group of naturally occurring silicate minerals. Exposure to friable asbestos may result in inhalation or ingestion of asbestos fibers, which over time may result in damage to the lungs or membranes that cover the lungs, leading to illness or even death. NOA, often found in serpentine rock formations, is present in several areas of Lake County. When material-containing NOA is, disturbed the asbestos fibers can become airborne, thereby creating a potential health hazard.

According to the LCAQMD ultramafic, ultrabasic, serpentine rock and soils of Lake County map (LCAQMD, 2007), the Guenoc Valley Site is located in an area that is likely to contain NOA.

Odors

Odors, generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet then the person is

describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Potential existing sources of odor in the region consist of agricultural land uses located within the Guenoc Valley Site and in the vicinity of the Guenoc Valley Site.

Sensitive Receptors

Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality related health problems. Residential areas are considered sensitive to poor air quality, because people usually stay home for extended periods of time increasing the potential exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

Guenoc Valley Site Nearby Sensitive Receptors

The lands surrounding the Guenoc Valley Site are primarily open space, agricultural with some scattered, residential land uses. The closest residential receptors to the site boundaries are as follows:

- Rural residential home located off of Butts Canyon Road, approximately 250 feet from the southern boundary of the site (approximately 4,695 feet from the proposed Float Plane Dock, and 3,500 feet from Detert Reservoir)
- Rural residential home located off of County Road 102 (Oat Hill Road) approximately 1,100 feet from the southern site boundary (approximately 3,200 feet to the south of the proposed on-site workforce housing parcel)
- Rural residential homes located northwest of McCreary Lake, approximately 3,000 feet from the northwestern site boundary (approximately 4,000 feet from a potential solar field location)
- Rural residential homes in the Hidden Valley Lake subdivision, the closest of which is approximately 5,000 feet (nearly one mile) from the northwestern site boundary (and 6,000 feet from a potential solar field location)

Within Napa County, the nearest sensitive receptor is a residential unit approximately 3 miles southwest of the project boundary. The nearest schools are located approximately 7 miles northwest of the Guenoc Valley Site in town of Middletown. The nearest hospital is located over 10 miles south of the Guenoc Valley Site in the town of St. Helena.

Middletown Housing Site Nearby Sensitive Receptors

The Middletown Housing Site is undeveloped and located within a primarily urban area with residential units surrounding it. Just south of the site are the nearest streets, Park Ave and Sunset Ave, and SR-175 is also south of the site.

There are multiple different sensitive receptors located within 0.5 mile of the Middle Housing Site. The nearest residential unit is adjacent to the Middletown Housing Site on its southern border. There are several schools located less than a 1,000 feet northeast of the Middletown Housing Site, including Middletown High School (approximately 1,050 feet northeast), Loconoma Valley High School (approximately 1,050 northeast), Minnie Cannon Elementary School (approximately 800 feet northeast), and Middletown Christian School (approximately 2,000 east).

Off-Site Infrastructure Improvement Areas Sensitive Receptors

The Off-Site Infrastructure Improvement Areas are currently undeveloped and surrounded by a rural landscape with scattered development. The proposed pipeline corridor borders Butts Canyon Road on its route to the Guenoc Valley Site. Along this route, there are a few residential sensitive receptors adjacent to the roadway. The nearest residential units to the Off-Site Well Site are adjacent to the north and west property boundary. There is one residential home on the off-site well property.

3.3.3 REGULATORY CONTEXT

EPA, CARB, and LCAQMD regulate air quality within the LCAB. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. EPA regulations cannot be less stringent then state and local regulations; however, state and local regulations can be more stringent.

Federal Plans, Policies, Regulations, and Laws

The EPA is required to implement national air quality programs. EPA's air quality mandates come from the CAA, enacted in 1970. The most recent amendments made by Congress were in 1990. Federal air quality laws regulate CAPs, HAPs, and nuisance air pollutant emissions from industrial sources.

As mentioned earlier, CAPs are substances for which the EPA has established specific concentration level criteria based upon specific medical evidence of health effects or visibility reduction, soiling, nuisance, and other forms of damage. HAPs, are airborne substances capable of causing adverse health effects as a result of short-term (acute) or long-term (chronic) exposure. Nuisance pollutants are substances that can result in complaints from the population about adverse impacts on quality of life. The nuisance pollutants regulated by the federal air quality laws are odors and visible plumes (smoke).

Federal Clean Air Act

The CAA required the EPA to establish NAAQS to define levels of air quality that protect the public health and welfare from the known adverse effects of air pollutants and set deadlines for attainment. If a CAP does not meet the NAAQS criteria for the specific CAP then the region or area is designated by the EPA as nonattainment. Once an area reaches attainment for particular criteria pollutant, then the area is re-designated attainment or maintenance. The CAA places most of the responsibility on states to achieve

compliance with the NAAQS. States, municipal statistical areas, and counties that contain areas of nonattainment are required to develop a State Implementation Plan (SIP), which outlines policies and procedures designed to bring the state into compliance with the NAAQS. The CAA amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA has the responsibility to review all state SIPs to determine conformance to the mandates of the CAA and determine whether implementation would achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated period may result in sanctions to transportation funding and stationary air pollution sources in the air basin.

Federal Hazardous Air Pollutant Program

Title III of the CAA requires the EPA to promulgate National Emissions Standards for Hazardous Air Pollutants (NESHAPs). The NESHAPs may differ between regional sources and area sources of HAPs. Major sources defined as stationary sources with potential to emit more than 10 tons per year (tpy) of any HAP or more than 25 tpy of any combination of HAPs, all others are area sources. The emissions standards were promulgated in two phases. In the first phase (1992–2000), EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable for major sources. For area sources, the standards were based on generally available control technology. In the second phase (2001–2008), the EPA promulgated health risk–based emissions standards necessary to address risks remaining after implementation of the technology-based NESHAP standards.

In addition to standards for stationary sources of HAPs, the CAA also requires the EPA to promulgate vehicle or fuel standards to include reasonable controls for toxic emissions, addressing at a minimum benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the CAA requires the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions. NESHAP regulations are commonly used to ensure the emission of HAPs (such as asbestos) are reduced or eliminated during construction through a permitting process.

State Plans, Policies, Regulations, and Laws

California Clean Air Act

The CCAA, adopted in 1988, required the establishment of the CAAQS. As shown in **Table 3.3-1**, the CAAQSs was created for the following pollutants; sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the six national CAPs. The CAAQS are generally more stringent than the NAAQS. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The CCAA requires that air quality plans be prepared for areas of the state that have not met state air quality standards for O_3, CO, NO_2, and SO_2. Among other requirements of the CCAA,

the plans must include a wide range of implementable control measures, which often include transportation control measures and performance standards. In order to implement the transportation-related provisions of the CCAA, local air pollution control districts have been granted explicit authority to adopt and implement transportation control measures.

Toxic Air Contaminants

In addition to the above-listed California CAPs, Toxic Air Contaminants (TACs) are another group of pollutants regulated under the CCAA. TACs are less pervasive in the urban atmosphere than the criteria pollutants, but are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are 244 chemicals listed by the State as TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), grading (asbestos), and diesel motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

Ambient air quality standards have not been set for TACs. Instead, these pollutants are typically regulated through a technology-based approach for reducing TACs. This approach requires facilities to install Maximum Achievable Control Technology (MACT) on emission sources.

California Air Resources Board

CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementation of the CCAA. CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS. Collectively, all regional air pollution control plans or air quality management plans to achieve the NAAQS throughout the state constitute the SIP. As California's air quality management agency, CARB regulates mobile emission sources and oversees the activities of county air pollution control districts and regional air quality management districts. CARB regulates local air quality indirectly by using state standards and vehicle emission standards, conducting research activities, and carrying out planning and coordinating activities. CARB also provides land use guidance, as it relates to air quality, including criteria for siting schools and other sensitive land uses.

California Code of Regulations

California Code of Regulations, Title 13, Chapters 3.5 and 3.6 require that all heavy duty vehicles powered by a diesel engine and operating on California highways, submit to a smoke emissions test. Vehicles with 1991 or newer model-year diesel engines may not exceed an opacity level of more than 40 percent. Vehicles with 1990 or older model-year diesel engines may not exceed an opacity level of 55 percent.

California Code of Regulations, Title 13, Chapter 9, Article 4.8 regulates diesel fleet emissions. The contractor shall use CARB ultra-low-sulfur diesel fuel for all diesel-powered equipment. In addition, low sulfur fuel shall be utilized for all stationary equipment. Targets for each year between 2011 and 2020 are mandated for particulate matter emissions. A large or medium fleet must meet a DPM index that is less than or equal to the calculated target rates. Small fleets will be required to comply with DPM averages starting in 2020.

California Code of Regulations, Title 13, Chapter 9, Article 5, the California Portable Equipment Registration Program, regulates portable equipment and requires that such equipment be registered with the air district. Registered portable engines shall not exceed the following emission limits:

- 550 pounds per day per engine of CO
- 150 pounds per day per engine of particulate matter less than 10 microns
- For registered portable engines operating onshore, 10 tons for each pollutant per district per year per engine for NO_x, sulfur oxides (SO_x), volatile organic carbon (VOC), PM_{10} and CO in nonattainment areas.

Senate Bill (SB) 656

In 2003, the State Legislature passed Senate Bill (SB) 656 to reduce public exposure to PM_{10} and $PM_{2.5}$. The legislation requires CARB, in consultation with local air pollution control and air quality management districts, to adopt a list of the most readily available, feasible, and cost-effective control measures that could be implemented by air districts to reduce PM_{10} and $PM_{2.5}$. The legislation establishes a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for $PM_{2.5}$, and provides new direction on PM reductions in those areas not subject to federal requirements for PM_{10}. Source categories addressed by SB 656 include measures to address the following sources: residential wood combustion and outdoor green-waste burning; fugitive dust sources such as paved and unpaved roads and construction; combustion sources such as boilers, heaters, and charbroiling; solvents and coatings; and product manufacturing. These measures include, but are not limited to, the following:

- Reduce or eliminate wood-burning devices allowed
- Prohibit residential open burning
- Permit and provide performance standards for controlled burns
- Require water or chemical stabilizers/dust suppressants during grading activities
- Limit visible dust emissions beyond the project boundary during construction
- Require paving/curbing of roadway shoulder areas
- Require street sweeping

Assembly Bill (AB) 1807 and AB 2588

State requirements specifically address air toxics issues through Assembly Bill (AB) 1807, which established the state air toxics program and AB 2588, the Air Toxics Hot Spots Information and Assessment Act. Under this bill, stationary sources of emissions are required to report the types and quantities of certain substances that their facilities routinely release through the air. The air quality regulations developed from these bills have been modified to incorporate the federal regulations associated with the federal CAA Amendments of 1990.

Local Plans, Policies, Regulations, and Laws

At the local level, air quality is managed through land use and development planning practices.

Lake County Air Quality Management District

The LCAQMD attains and maintains air quality conditions in Lake County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the LCAQMD includes adoption, and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. Air quality General Plan Chapters applicable to the Proposed Project are discussed below.

LCAQMD Rules and Regulations

LCAQMD Rules and Regulations (LCAQMD, 2006) includes rules and regulations required and recommended for all projects. Project proponents are responsible for compliance with the adopted LCAQMD rules and regulations. A general summary of the key LCAQMD rules and regulations which are applicable to construction and operation of the Proposed Project may include, but are not limited to:

Chapter II Prohibitions and Standards

Article I-Visible Emissions: A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as number 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

Article II-Particulate Matter Emissions: A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause to have a natural tendency to cause injury or damage to business or property. The provisions of Rule 205 do not apply to odors emanating from agriculture operations necessary for the growing of crops or raising of fowl or animals.

Article IV-Other Emissions or Contaminants : A person shall not manufacture for sale nor use for paving, road construction or road maintenance any: rapid cure cutback asphalt; slow cure cutback asphalt containing organic compounds which evaporate at 500°F or lower as determined by current American Society for Testing and Materials (ASTM) Method D402; medium cure cutback asphalt except as provided in Section 1.2 of Rule 217; or emulsified asphalt containing organic compounds which evaporate at 500°F or lower as determined by current ASTM Method D244, in excess of 3 percent by volume.

Asbestos Emissions Control Measures

Section 467, Part V-Roadways and Surfacing Standards, B-Asbestos Emissions Control Measure: All construction projects located on a serpentine outcrop or alluvial material from an outcrop, which contains greater than one percent (1%) asbestos having the potential to create a wearing surface, shall notify the District of intended operations 30 days prior to construction activity. A representative from each project shall file and receive approval of an asbestos-dust-hazard mitigation plan prior to any construction activity at the site. The plan shall address and include mitigation for: excavation, roads, yards, driveways, parking areas, hauling and tracking of material onto adjacent roadways. All material shall be transported in a manner minimizing dust emissions. In no instance shall the dust from such operations exceed five percent (5%) opacity twenty (20) feet from the traveled surface. Employees working on such projects shall be informed

of the potential health risk of air borne asbestos, and the requirements of the asbestos-dust-hazard mitigation plan by the owner of the project.

Chapter IV Permits

Article I-Authority to Construct: No person shall sell or supply new wood burning appliances unless it is an EPA phase II Certified wood burning appliance, pellet-fueled wood burning heater, masonry heater, or determined to meet the EPA standard for particulate matter emissions standards.

Article I-Permit to Operate: No person shall sell or supply new wood burning appliances unless it is an EPA phase II Certified wood burning appliance, pellet-fueled wood burning heater, masonry heater, or determined to meet the EPA standard for particulate matter emissions standards.

County of Lake General Plan

The following goals, objectives, and policies are included in the County of Lake General Plan Health and Safety Chapter (Lake County, 2008).

Section 7.3 Air Quality Chapter Goals

Policy HS-3.3 To reduce the number of vehicle trips and miles traveled, residential development should be in close proximity to places of shopping, play, and employment. Where feasible walking and bicycle trails, and cluster development should be considered.

Policy HS-3.4 As unpaved roads are a major source of the County's particulate emissions, the County should require that all new roads and driveways for new projects that are in close proximity to adjacent residences or the public be paved or treated to reduce dust generation where feasible. Unpaved roads, driveways and parking areas should be considered for surfacing improvements when permits are granted for expanded use.

Policy HS-3.8 The County shall require consideration of alternatives or amendments that reduce emissions of air pollutants when reviewing project applications.

Policy HS-3.9 The County may require an analysis of potential air quality impacts associated with significant new developments through the environmental review process, and identification of appropriate mitigation measures prior to approval of any major development project.

Policy HS-3.10 The County shall require dust-suppression measures for grading activities, and asbestos dust hazard mitigation plans for projects located in Naturally Occurring Asbestos Areas.

Policy HS-3.11 The County shall require that all projects requiring a grading permit or a building permit that would result in earth disturbance, in areas likely to contain naturally occurring asbestos, utilize approved asbestos dust mitigation measures as required by the LCAQMD, CARB and the Lake County Community Development Department.

Policy HS-3.12 The County shall adopt a mandatory disclosure program, where potential buyers and sellers of real property in all areas likely to contain naturally occurring asbestos are provided information regarding the potential presence of asbestos subject to sale. Information shall include potential for exposure from access roads and from disturbance activities (e.g., landscaping), and shall include typical mitigation measures and legal requirements.

Middletown Area Plan (2010)

The Public Safety Section of the Middletown Area Plan includes the following objectives and policies related to air quality within the Middletown Planning Area:

OBJECTIVE 4.4.1 Minimize air pollution emissions and maintain clear visibility for the area's viewsheds.

Policy 4.4.1a Aggregate mining particulate control measures should be encouraged especially in areas adjacent to existing or approved residential development.

Policy 4.4.1b Land use patterns that reduce air quality problems related to local geography, terrain and air flow patterns shall be promoted. New development that adjoins conflicting existing uses shall establish and maintain site-specific buffer zones to reduce air quality impacts.

Policy 4.4.1c Alternatives to open burning of vegetative waste such as chipping or composting should be promoted.

Policy 4.4.1c Reduce air quality impacts related to release of asbestos related materials during disturbance of serpentine soil areas.

3.3.4 IMPACTS

Project-related air quality impacts fall into three categories: short-term impacts due to construction, long-term impacts due to project operation, and cumulative impacts. Impacts in each category can be classified as having effects on a regional or local scale.

Method of Analysis

The discussion below presents the methodologies used to conduct the air quality analysis, as well as to assess the significance of the impacts evaluated in this section.

Construction

Short-term construction activities would result in the generation of PM_{10} and $PM_{2.5}$ containing fugitive dust and ROG, NO_x, and CO from diesel-fired construction equipment. California Emissions Estimator Model, Version 2013.2 (CalEEMod) is a CARB recommended air quality model that estimates construction emissions of CAPs from land uses by utilizing the most relevant EPA, CARB, and/or district-specific emission factors and California meteorological data. CalEEMod was used to estimate emissions from

construction-related sources of the Proposed Project. The model calculates construction emissions for land use development projects based on building size, land use and type, and disturbed acreage, and allows for use of default model values or input of project-specific information. Project-generated criteria pollutants were modeled based on information provided in the project description and default CalEEMod settings and parameters attributable to the construction period and project location. Construction of the Proposed Project is assumed to use Tier 4 Final off-road equipment as feasible, except for paving and rock crushing equipment. A detailed list of the assumptions used to estimate construction emissions is included in **Appendix AIR**.

The modeling assumed construction of the Proposed Project in several phases as discussed in **Section 2.5.2.9** and **Appendix CP**. Modeling assumed that Phase 1A would occur between April 2020 and December 2023 and would consist of primary resort facilities as well as supporting infrastructure such as roads, utilities, and support services. Additionally, construction of both on-site and Off-Site Workforce Housing and Infrastructure is conservatively assumed to occur concurrently with Phase 1A. Phase 1B and 1C are assumed to occur between December 2023 and November 2030, and would include the buildout of residential lots based on market conditions. Construction of the Future Phases of the Proposed Project could occur after the completion of Phase 1, and for modeling purposes, is assumed to occur between November 2030 and December 2040. Construction for each phase would consist of site preparation, grading, building, paving, and architectural coating. Estimated construction emission results from CalEEMod are presented below, and CalEEMod tables and output files are included within **Appendix AIR**.

Operation

Criteria Pollutant Emissions

The Proposed Project would generate operational emissions of the criteria pollutants, including ozone precursors (reactive organic gas [ROG] and NO_x), CO, PM_{10}, $PM_{2.5}$, and SO_x. CalEEMod was used to estimate area, energy, and mobile emissions associated with operation of the Proposed Project. Input values for the model included CalEEMod defaults and site-specific data. Area, energy, and mobile emissions were modeled based on proposed land uses types and sizes as described in **Section 2.0**, and the trip generation data described in **Section 3.13**. A detailed list of the assumptions used to estimate operational emissions is included in **Appendix AIR**.

Although Phase 1 of the Proposed Project would be built out in multiple phases between the years 2020 and 2030 as described above, the analysis of project-specific near-term impacts conservatively assumes full buildout of the Phase 1, including the Off-Site Workforce Housing, in the year 2022. For the Future Phases of the Proposed Project, the analysis conservatively assumes full buildout in the year 2030. 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 fact 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.

Area, energy, and mobile emissions were modeled based on proposed land uses types and sizes as described in **Section 2.0**, and the trip generation data described in **Section 3.13**. The trip generation data includes data for internal trips and vehicle miles traveled. Operational emission results from CalEEMod are presented below, and CalEEMod input tables and output files are included within **Appendix AIR**.

CO Hot Spot Analysis Methodology

The CO Protocol was used to screen the potential for impacts connected with CO Hot Spots. In 1997, the EPA approved the CO Protocol for use as an alternative hot spot analysis method in California. The CO Protocol is the standard method used for project-level CO analysis by Caltrans.

The CO Protocol outlines a screening process for determining which intersections could potentially have significant impacts. Projects that would lead to worsening the level of service (LOS) of a signalized intersection to E or F represent a potential for a CO violation and would require further analysis; projects that do not worsen signalized intersections to LOS E or F would require no more analysis. Projects that significantly increase the delay (delay of 10 seconds or more) at an intersection operating at LOS E or LOS F in the existing condition would represent a potential for a CO violation and would require further analysis.

Because LCAQMD has not developed conservative screening methods for CO, the potential for CO hot-spots was further evaluated using a quantitative screening method recommended by the Bay Area Air Quality Management District (BAAQMD), as described in **Impact 3.3-4**, below.

Toxic Air Contaminants and Hazardous Air Pollutants

Construction

CARB has identified DPM as a TAC. DPM is generated during construction by on- and off-road construction vehicles. DPM is also generated in substantial quantities by high-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic.

Health risks from TACs are a function of the concentration of emissions and the duration of exposure. The primary source of TACs during construction is DPM from construction equipment exhaust. The evaluation of TACs from construction is conducted qualitatively due to the short-term nature of construction and the distance of construction from the closest sensitive receptors.

CARB and the USEPA has identified friable asbestos as TACs and HAPs. Friable asbestos occur when naturally serpentine soil or rocks are disturbed during grading and site preparation activities. Asbestos TACs and HAPs have no quantifiable thresholds; therefore, for this analysis, friable asbestos areas within the Guenoc Valley Site will be identified and mitigation measures, which will reduce airborne asbestos, will be recommended.

Operation

Although the project would not generate substantial quantities of TACs or HAPs during operation, there is the potential that proposed sensitive receptors within the Guenoc Valley Site, including residential land uses, could be exposed to TACs and HAPs during land disturbances or on-site stationary combustion sources, as well as DPM from on-road diesel vehicles. A screening level assessment was conducted to assess the health risks to future residents and employees using CARB's Air Quality and Land Use Handbook: A Community Health Perspective (CARB, 2005). Because there are no industrial, commercial, or major vehicle (DPM) sources of TACs or HAPs within 2.5 miles of the Guenoc Valley Site, no further analysis is required. However, the screening protocol provided that the local AQMD be contacted to assist

in evaluating potential hazards from naturally occurring asbestos during normal operations of each type of land use proposed in **Section 2.0**.

The health risks from airborne naturally occurring asbestos during operation are evaluated in **Section 3.8**. The probability of NOA becoming airborne during operation is low because little soil-disrupting activities would occur once the landscaping at these parcels are established. Further, implementation of the Dust Mitigation Plan required under Mitigation Measure 3.8-5, would require that disturbed surfaces containing NOA be stabilized with vegetative cover, 3 inches of non-asbestos containing material, or paving. Therefore, a **less-than-significant** impact would occur. Serpentine soil is not reported for the Middletown Housing Site (LCAQMD, 2007). Therefore, **no impact** would occur from naturally occurring asbestos.

Odors

Odor analyses typically evaluate the potential for a proposed project to generate odors on existing sensitive receptors. Odor sources typically include industrial land uses, such as sewage treatment plants, landfills, recycling facilities, and electricity generation facilities. The Proposed Project is generally not considered an odor source, however the wastewater treatment infrastructure, described in **Section 2.0**, could introduce substantial odors to existing sensitive receptors. Consequently, the focus of the odor analysis is on the potential for the wastewater treatment infrastructure to affect existing sensitive receptors.

Thresholds of Significance

For purposes of this analysis, the following thresholds of significance have been used to determine whether implementation of the Proposed Project would result in significant air quality impacts.

Based on Appendix G of the State CEQA Guidelines, an air quality impact is considered significant if implementation of the proposed project would do any of the following:

A) Conflict with or obstruct implementation of the applicable air quality plan;
B) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
C) Expose sensitive receptors to substantial pollutant concentrations; or
D) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

As stated in Appendix G of the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations.

The County is in attainment or unclassified for all CAPs, and therefore LCAAMD has not adopted specific CEQA thresholds relating to air quality. Because the LCAQMD does not have standards for thresholds of significance for criteria air pollutants, BAAQMD thresholds have been reviewed in this analysis as the basis 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. Implementation of the Proposed Project would result in significant air quality impacts if unmitigated emissions from the Proposed Project construction or operation would:

- Exceed the BAAQMD project construction thresholds:
    - ROG: 54 lbs/day
    - NOx: 54 lbs/day
    - PM_{10} (exhaust): 82 lbs/day
    - $PM_{2.5}$ (exhaust): 54 lbs/day
- Exceed the BAAQMD project operational thresholds:
    - ROG: 54 lbs/day or 10 tpy
    - NOx: 54 lbs/day or 10 tpy
    - PM_{10} : 82 lbs/day or 15 tpy
    - $PM_{2.5}$: 54 lbs/day or 10 tpy

If any of the thresholds above are exceeded, then all feasible mitigation measures should be implemented to minimize the project's emissions.

Impacts

IMPACT 3.3-1	**CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN**	
	Phase 1 (including Off-Site Workforce Housing and Infrastructure)	**Future Phases**
Significance with Policies and Regulations	Less Than Significant	Less Than Significant
Mitigation Measures	None Required	None Required
Significance After Mitigation	Not Applicable	Not Applicable

The LCAB is currently in attainment for all state and federal air quality standards. Consequently, there are no air quality plans for the LCAB. This impact is ***less than significant***.

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	
	Phase 1 (including Off-Site Workforce Housing and Infrastructure)	**Future Phases**
Significance with Policies and Regulations	Potentially Significant	Potentially Significant
Mitigation Measures	**MM 3.3-1**	**MM 3.3-1**
Significance After Mitigation	Less than Significant	Less than Significant

Phase 1 – Project Level Analysis

Construction-related activities associated with the Proposed Project would generate emissions 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. Construction-related emissions would be intermittent and temporary in nature.

A variety of heavy equipment, including trucks, scrapers, excavators, and graders, would be used to complete each phase. PM_{10} and $PM_{2.5}$ and ozone precursors are the primary pollutants of concern resulting from operation of construction equipment, earth-moving activities, and soil hauling. ROGs, NO_x, SO_2, CO, $PM_{2.5}$, PM_{10}, and DPM emissions would primarily be produced by diesel-fueled equipment use and earth-moving activities. Worker commute trips and other construction-related activities (application of architectural coatings, such as paint) also contribute to project-related construction emissions. The generation of dust (fugitive PM_{10} and $PM_{2.5}$) during construction activities could adversely affect sensitive receptors and construction workers by exacerbating existing respiratory problems such as asthma. Dust can also adversely affect children and the elderly who are more susceptible to respiratory illnesses.

Effects on air quality during construction were evaluated by estimating the amount of CAPs that would be emitted over the duration of the construction period for each phase of construction.

The Proposed Project would be required to comply with all LCAQMD rules and regulations for construction, including but not limited to the following rules specifically applicable to construction related air quality impacts:

- Chapter II, Article I related to visible emissions,
- Chapter II, Article II related to particulate matter emissions,
- Chapter II, Article IV related to other emissions or contaminates,
- Chapter II, Article IV, Section 467 related to asbestos emissions control measures.
- Chapter IV, Article I, related to construction permits.

Table 3.3-2 shows project-related emissions for each phase of construction under the Proposed Project, including construction off-site infrastructure improvements and potential off-site workforce housing described in **Section 2.0**. Emission levels after mitigation and compliance with LCAQMD rules are listed first, and emissions before mitigation and compliance with LCAQMD rules are shown in parentheses. Refer to **Appendix AIR** for CalEEMod input and output files.

TABLE 3.3-2
MITIGATED (UNMITIGATED) CONSTRUCTION EMISSIONS

Category	ROG	NO_X	CO	SO_2	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
	(lbs/day)					
Phase 1A (2020-2023)						
Average[1]	54 (88)	158 (532)	461 (435)	0.83 (0.83)	1.1 (24)	1.0 (23)
BAAQMD Threshold	*54*	*54*	-	-	*82*	*54*
Above Threshold?	***Yes[2]***	***Yes***	N/A	N/A	No	No
Phase 1B and 1C (2023-2030)						
Average[1]	13 (21)	23 (103)	130 (114)	0.24 (0.24)	0.08 (4.1)	0.08 (3.9)
BAAQMD Threshold	*54*	*54*	-	-	*82*	*54*
Above Threshold?	No	No (Yes)	N/A	N/A	No	No
Future Phases (2030-2040)						
Average[1]	38 (44)	35 (66)	142 (122)	0.34 (0.34)	0.10 (1.0)	0.10 (1.0)
BAAQMD Threshold	*54*	*54*	-	-	*82*	*54*
Above Threshold?	No	No (Yes)	N/A	N/A	No	No

Notes:
1. Project construction emissions in lbs/day are calculated by dividing the total emissions by the actual number of project construction days.
2. Emissions equal to the threshold are considered to be significant,
Source: CalEEMod, 2016, **Appendix AIR**.

Construction-related air quality emissions have been compared with BAAQMD significance thresholds to determine if mitigation measures are warranted. As shown in **Table 3.3-2**, unmitigated emissions associated with all phases of construction would exceed the BAAQMD CEQA thresholds of significance for NOx. Additionally, unmitigated ROG emissions would exceed the thresholds of significance during construction of Phase 1A. This is a ***potentially significant*** impact. **Mitigation Measure 3.3-1** requires that dust and construction control measures are implemented that would minimize emissions from construction activities.

As stated above, the LCAB is in attainment for all applicable federal and state ambient air quality standard for CAPs. Therefore, the Proposed Project would not generate construction related emissions resulting in a cumulatively considerable net increase of any criteria air pollutant for which the project region is nonattainment. With the implementation of Mitigation Measure 3.3-1, construction related emissions would be minimized. This impact is ***less than significant***.

Future Phases – Programmatic Analysis

Similar to the Phase 1, future phases of construction within the Guenoc Valley Site as allowed under the GVD would generate emissions of CAPs. Although no specific plans have been developed, emissions resulting from buildout of future phases over a 10 year period have been estimated and are presented in **Table 3.3-2**. As shown, unmitigated emissions associated with future phases of construction could exceed the BAAQMD CEQA thresholds of significance for NOx. This is a ***potentially significant*** impact. **Mitigation Measure 3.3-1** requires that dust and construction control measures are implemented during future phases of construction that would minimize emissions from construction activities.

As stated above, the LCAB is in attainment for all applicable federal and state ambient air quality standard for CAPs. Therefore, future phases under the Proposed Project would not generate construction related emissions resulting in a cumulatively considerable net increase of any criteria air pollutant for which the project region is nonattainment. With the implementation of Mitigation Measure 3.3-1, construction related emissions from future phases would be minimized. This impact is ***less than significant***.

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**	
	Phase 1 (including Off-Site Workforce Housing and Infrastructure)	**Future Phases**
Significance with Policies and Regulations	Potentially Significant	Potentially Significant
Mitigation Measures	**MM 3.3-2**	**MM 3.3-2**
Significance After Mitigation	Less Than Significant	Less Than Significant

Phase 1 and Future Phases - Area and Mobile Emissions

Buildout of the Proposed Project would result in the generation of mobile emissions from patron, employee, and delivery vehicles and area and energy CAP emissions from the combustion of propane in boilers, stoves, heating units, and other equipment on the Guenoc Valley Site. Operational emissions including area, energy, mobile, stationary, waste and water related emissions were estimated using CalEEMod. Operational emissions for Phase 1 of the Proposed Project are shown in **Table 3.3-3**. Emission levels after mitigation are listed first, and emissions before mitigation are shown in parentheses. Refer to **Appendix AIR** for CalEEMod input and output files. The estimates represent annual operational emissions.

TABLE 3.3-3
MITIGATED (UNMITIGATED) OPERATIONAL EMISSIONS

Category	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
	(tons/yr)					
Phase 1 (including on- and off-site workforce housing)						
Area	10 (10)	0.1 (0.1)	5 (5)	0 (0)	0 (0)	0 (0)
Energy	0.2 (0.3)	3 (4)	2 (2)	0 (0)	0.1 (0.2)	0.1 (0.1)
Mobile	3 (3)	11 (11)	45 (45)	0.2 (0.2)	18 (18)	5 (5)
Waste	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Water	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Phase 1 Subtotal	*13 (13)*	*14 (15)*	*52 (52)*	*0.2 (0.2)*	*18 (18)*	*5 (5)*
Future Phases						
Area	13 (13)	0.1 (0.1)	9 (9)	0 (0)	0 (0)	0 (0)
Energy	0.1 (0.2)	1 (2)	1 (1)	0 (0)	0.1 (0.1)	0 (0)
Mobile	2 (2)	6 (6)	31 (31)	0.1 (0.1)	11 (11)	3 (3)
Waste	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Water	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Future Phases Subtotal	*16 (16)*	*7 (8)*	*40 (41)*	*0.1 (0.1)*	*11 (11)*	*3 (3)*
All Phases Total	**29 (29)**	**21 (23)**	**92 (93)**	**0.3 (0.3)**	**29 (29)**	**8 (8)**
BAAQMD Threshold	*10*	*10*	-	-	*15*	*10*
Above Threshold?	***Yes***	***Yes***	N/A	N/A	***Yes***	No
Source: CalEEMod, 2016, **Appendix AIR**.						

Operational air quality emissions have been compared with BAAQMD significance thresholds to determine if mitigation measures are warranted. As shown in **Table 3.3-2**, unmitigated emissions associated with operation would exceed the BAAQMD CEQA thresholds of significance for ROG, NOx, and PM_{10}. This is a ***potentially significant*** impact.

Mitigation Measure 3.3-2 provides a range of actions that would reduce operational emissions by requiring a commitment to solar energy, use of low VOC paints, energy-efficient lighting, low-flow appliances, recycled-water irrigation systems, and drought tolerant vegetation. The use of solar energy would also reduce the use of generators during PG&E shutoffs and would therefore potentially reduce associated emissions. Additionally, Mitigation Measure 3.13-4 requires implementation of a Transportation Demand Management (TDM) Program to reduce the vehicle miles traveled (VMT) generated by the Proposed Project. The trip reduction from implementation of the TDM Program would also result in a reduction in operational emissions from the Proposed Project.

As stated above, the LCAB is in attainment for all applicable federal and state ambient air quality standard for CAPs. Therefore, the Proposed Project would not generate emissions of any criteria air pollutant for which the project region is nonattainment. With the implementation of Mitigation Measure 3.3-2, operational related emissions would be minimized. This impact is ***less than significant***.

Phase 1 and Future Phases – Stationary Sources

The Proposed Project may include commercial stationary sources of pollutants that would be required to obtain permits to operate under LCAQMD Chapter IV, Article II Permit to Operate. These sources could include, but not be limited to, diesel-engine generators for emergency power generation; central heating boilers; kitchen equipment at restaurants; and dry cleaning equipment. The permit process would assure that these sources would be equipped with the required emission controls and individually would comply with permitting requirements. Compliance with the LCAQMD's rules and regulations would reduce potential impacts from stationary source emissions to ***less than significant***.

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**	
	Phase 1 (including Off-Site Workforce Housing and Infrastructure)	**Future Phases**
Significance	Less Than Significant	Less Than Significant
Mitigation Measures	None Required	None Required
Significance After Mitigation	Less Than Significant	Less Than Significant

Operation of the Proposed Project has the potential to cause increased concentrations of CO from mobile sources.CO is a localized pollutant of concern, CO concentration levels are highest near intersections with congested slow or idling traffic where the LOS is E or F. The Proposed Project would increase traffic volumes at intersections within the project site vicinity. An analysis of intersections in the vicinity of the project site is provided in **Section 3.13** and **Appendix TIA**, 2019 TIA, Abrams Associates.

As shown in the TIA, traffic would worsen the LOS from A, B, C, or D to LOS E or F at several intersections. As described in **Section 3.13**, the following intersections would exceed acceptable LOS standards due to the Proposed Project:

Intersection #3 (State Route 29 at Spruce Grove Road South)
Intersection #4 (State Route 29 at Hidden Valley Road)
Intersection #5 (State Route 29 at Hartmann Road)
Intersection #7 (State Route 29 at Butts Canyon Road)
Intersection #20 (State Route 29 at Tubbs Lane)
Intersection #21 (State Route 128 at Tubbs Lane)

The TIA proposes various mitigation measures for these intersections that would reduce delay and improve operational conditions during all project phases. However, the impacts at Intersections #20 and #21 in Napa County involve mitigations that cannot be guaranteed as the improvements would be outside the jurisdiction

of Lake County. Therefore, the impacts at these two intersections are considered significant and unavoidable and further quantitative screening for CO impacts is required.

Because LCAQMD does not provide further recommended screening methodology for CO, CO is further evaluated using a quantitative screening methodology recommended by the BAAQMD, which is located adjacent to the LCAQMD. The BAAQMD recommended screening methodology states that a Proposed Project would result in a less-than-significant impact to air quality for local CO if the following criteria are met:

- The Proposed Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
- The Proposed Project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

As shown in **Appendix TIA**, the maximum peak hour traffic volumes would be well below 44,000 at all intersections, including Intersections #20 and #21. There are no facilities in the vicinity of Intersections #20 and #21 that would limit the mixing of air and the mix of vehicles at the intersection will be the same with the implementation of the Proposed Project. Also, because of stricter vehicle emissions standards in newer cars, new technology, and increased fuel economy, future CO emissions would be substantially lower than those under the existing conditions. Thus, even though the Proposed Project would increase vehicle trips and delay at Intersections #20 and #21, project-generated local mobile-source 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. As a result, this impact would be less than significant and no mitigation is required.

IMPACT 3.3-5	**EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS**	
	Phase 1 (including Off-Site Workforce Housing and Infrastructure)	**Future Phases**
Significance with Policies and Regulations	Potentially Significant	Potentially Significant
Mitigation Measures	**MM 3.3-1**	**MM 3.3-1**
Significance After Mitigation	Less than Significant	Less than Significant

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. This analysis evaluates the location of sensitive receptors, which consist of schools and residences, in

relation to potential sources of TACs: construction equipment, industrial sources, and high-capacity roadways. Proposed sensitive land uses consist of residences. Existing off-site sensitive receptors consist of residences located southwest of the Guenoc Valley Site along Butts Canyon Road and County Road 102, and adjacent to the Middletown Housing Site.

Phase 1 and Future Phases - Construction (All Project Components)

Project construction would result in short-term emissions of diesel exhaust, of which a major constituent is DPM, a known TAC. Off-road heavy-duty diesel equipment would emit DPM during site preparation (e.g., excavation and grading); paving; installation of utilities, materials transport and handling; building construction; and other miscellaneous activities. LCAQMD has not adopted a methodology for analyzing such impacts and has not recommended that HRAs be completed for construction- related emissions of TACs. Due to the intermittent nature of construction activities, the relatively short-term construction period, and the distance to sensitive receptors, the project would not result in long-term exposure of sensitive receptors to significant health risks associated with construction-related emissions of TACs. Therefore, exposure of sensitive receptors to TACs from construction activities is considered a **less-than significant** impact. **Mitigation Measure 3.3-1** would require the use of Tier 4 construction engines and filters to the maximum extent feasible, and would minimize vehicle idling times during construction activities, further reducing the less-than-significant effect.

Phase 1 and Future Phases - Operation (All Project Components)

No sources of substantial TACs are associated with the operation of the Proposed Project. However, because the Proposed Project would include the development of residential land uses, which include sensitive receptors, an assessment of compatibility with the surrounding land uses is provided.

There are no nearby industrial areas in the vicinity of the Guenoc Valley Site. The main source of TACs would be agricultural equipment and on-road mobile sources on nearby surface streets. CARB has developed recommendations against siting new sensitive land uses within 500 feet of freeways or arterials that have more than 100,000 average daily trips (ADT) per day (CARB, 2005). Key recommendations in the Handbook include taking steps to avoid siting new, sensitive land uses in the following locations:

- 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles / day
- 1,000 feet of a major service and maintenance rail yard
- Within 300 feet of any dry cleaning operation using perchloroethylene (for operations with two or more machines, within 500 feet). California regulations prohibit the installation of new perchloroethylene dry cleaning equipment, and thus this is only relevant for existing dry cleaners using old equipment.
- 300 feet from the fenceline of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater)
- 50 feet from the fenceline of a typical gas dispensing facilities

State Route 29 (SR-29) is located approximately 7 miles northwest of the Guenoc Valley Site. Roadways in the vicinity of the Guenoc Valley Site, including Butts Canyon Road are sized to handle less than 50,000 ADT. Traffic counts conducted in 2019 indicate that Butts Canyon Road carries approximately 1,700

vehicles per day in the vicinity of the Guenoc Valley Site (**Appendix TIA**). Therefore, the location of residential units with the Guenoc Valley Site does not pose a substantial health risk due to DPM or TAC from high-volume roadways.

State Route 175 (SR-175) is located less than 500 feet southwest of the Middletown Housing Site. The Caltrans 2017 traffic census indicates that SR-175 in the vicinity of the Middletown Housing Site carries approximately 2900 ADT. Therefore, the location of residential units with the Middletown Housing Site does not pose a substantial health risk due to DPM or TAC from high-volume roadways.

There are no industrial uses located in the vicinity of the Guenoc Valley Site or Middletown Housing Site that have the potential to result in exposure to TACs or $PM_{2.5}$ at on-site residences. Proposed land uses that may emit TACs must demonstrate compliance with the applicable health risk thresholds will not be exceeded by submitting an application for a Permit to Operate to the LCAQMD. The LCAQMD will review each use and if it is determined that there are potential risks, a risk assessment and menu of site-specific measures that would lessen impacts associated with TACs would be required; therefore, this impact would be **less than significant**.

IMPACT 3.3-6	**RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE**	
	Phase 1 (including Off-Site Workforce Housing and Infrastructure)	**Future Phases**
Significance with Policies and Regulations	Potentially Significant	Potentially Significant
Mitigation Measures	**MM 3.3-1**	**MM 3.3-1**
Significance After Mitigation	Less Than Significant	Less Than Significant

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. Although offensive odors rarely cause any physical harm, they still can be unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Phase 1 and Future Phases Construction (All Project Components)

The Proposed Project would result in diesel exhaust emissions from on-site construction equipment during the construction phase. Diesel exhaust emissions can result in temporary and intermittent odors at off-site sensitive receptors. These odors are generally not detectible beyond a project's property line due to the rapid deposition of diesel exhaust emissions. In addition, CARB's Diesel Reduction Plan (discussed in **Section 3.3.2**), recommends control measures to reduce the risks associated with DPM and achieve a goal of 85 percent reduction by 2020. Implementation of **Mitigation Measure 3.3-1** will further reduce exposure

of existing and future residents to the odors from construction-related diesel exhaust. Impacts associated with construction odors are considered ***less than significant***.

Phase 1 Operation

As discussed in **Section 2.0**, the Proposed Project includes the development of several wastewater treatment and recycling systems within the Guenoc Valley Site. Seven small water reclamation plants (WRPs) are currently 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. The water reclamation systems would treat wastewater to State Title 22 recycled water standards to allow for reuse of this water for unrestricted irrigation and recreational use. Additionally, none of the WRPs planned for Phase 1 would be located near existing sensitive receptors. The nearest sensitive receptor, located off of County Road 102, would be located more than 3,200 feet away from the nearest WRP. Therefore, operation of the WRPs under the Proposed Project would not result in potentially significant odors. This impact is ***less than significant***.

Future Phases Operation

As discussed in **Section 2.0**, future development is estimated to increase the overall wastewater generated by approximately 40 percent (**Appendix WW**). However, the wastewater facilities planned for Phase 1 would be sized to accommodate future development. Therefore, no additional odor sources from wastewater treatment systems would be introduced under the future phases of the Proposed Project. This impact is ***less than significant***.

3.3.5 MITIGATION MEASURES

MM 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 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 approval of dust control plans.

MM 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;

Transportation Demand Management Measures

Implement Mitigation Measure 3.13-4 to develop and implement a transportation demand management plan to achieve a reduction in vehicle miles traveled as a result of the Proposed Project. At a minimum these measures will include:

- Dedicate 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.
- Use of an electric fleet for internal transport 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 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;
- Use of drought-tolerant and native vegetation
- Low VOC paint shall be utilized for parking areas and the interiors and exteriors of the both residential and non-residential buildings.

Residential Measures

- Provide net zero renewable electrical energy through installation of solar photovoltaic systems consistent with the 2019 Building Energy Efficiency Standards. This may be achieved through the use of rooftop solar or proposed on-site photovoltaic systems, or the equivalent renewable energy source. It is the Project's goal to generate enough renewable electrical energy for the Project's needs and to store and distribute it throughout the site. This requires extensive regulatory review; therefore, renewable energy systems shall be required to be installed within one year of final, non-appealable regulatory approvals. Occupancy certificates may be issued and final subdivision maps may be recorded prior to issuance of these regulatory approvals provided that regulatory review is ongoing at the time.
- 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

- Provide net zero renewable electrical energy for the Project's commercial/resort uses through installation of solar photovoltaic systems. This may be achieved through the use of rooftop solar or proposed on-site photovoltaic systems, or the equivalent renewable energy source. It is the Project's goal to generate enough renewable electrical energy for the Project's needs and to store

and distribute it throughout the site. This requires extensive regulatory review; therefore, renewable energy systems shall be required to be installed within one year of final, non-appealable regulatory approvals. Occupancy certificates may be issued and final subdivision maps may be recorded prior to issuance of these regulatory approvals provided that regulatory review is ongoing at the time.

- 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.

3.4 BIOLOGICAL RESOURCES

3.4.1 INTRODUCTION

This section provides a description of biological conditions in the project area and describes the changes to those conditions that would result from implementation of the Proposed Project. Following an overview of the biological resource setting in **Section 3.4.2** and the relevant regulatory setting in **Section 3.4.3**, project-related impacts and recommended mitigation measures are presented in **Section 3.4.4** and **Section 3.4.5**, respectively.

3.4.2 ENVIRONMENTAL SETTING

Regional Setting

The Guenoc Valley Site is located in unincorporated Lake County, approximately six miles southeast of the town of Middletown (**Figure 2-1** and **2-2**). Long Valley and Coyote Valley occur to the west, and the Cedar Mountains are situated to the north. Terrain in the region varies from areas of level valley to areas of steep, rocky terrain. Surrounding land is largely undeveloped or subject to limited agricultural activities such as grazing and consists of a wide array of biological communities similar to those found within the area of the Proposed Project. Developed land in the region includes a mixture of residential, commercial, and agricultural uses. Climate of the area consists of hot, dry summers and cool, moist winters. Annual precipitation averages approximately 44.1 inches, with no or insignificant snowfall (WRCC, 2016).

Hydrology

Hydrology of the region occurs primarily within the Putah Creek watershed that drains into Lake Berryessa. Guenoc Valley contains significant hydrologic resources, with a large network of ponds and reservoirs connected by perennial to intermittent streams and agricultural ditches, piping, and channels. Putah Creek, a perennial stream, runs along the northern and eastern portions of Guenoc Ranch, and the onsite drainages ultimately flow into Putah Creek and tributaries. Other major tributary creeks within the region include Bucksnort Creek, Butcherknife Creek, Hunting Creek, Butts Creek, and Cassidy Creek.

Major ponds and reservoirs within the Guenoc Valley area include Detert Reservoir, McCreary Reservoir, Burgundy Reservoir, Bordeaux Reservoir, Upper Bohn Reservoir, Lower Bohn Reservoir, Langtry Reservoir, and Amel Reservoir. Many of the reservoirs are connected through a network of natural streams and manmade ditches or piping that allows water to be moved across Guenoc Ranch in response to management needs.

Guenoc Valley Site Setting

Field surveys were completed on the Guenoc Valley Site on multiple dates in 2017, 2018, and 2019. Setting information described in this section has been derived from the following reports and resources.

- Biological Resources Assessment (BRA) for Phase 1 of the proposed Maha Resort and Guenoc Valley Development. A detailed description of methods used in identifying and analyzing biological resources is included in Section 4.0 of **Appendix BRA1**.

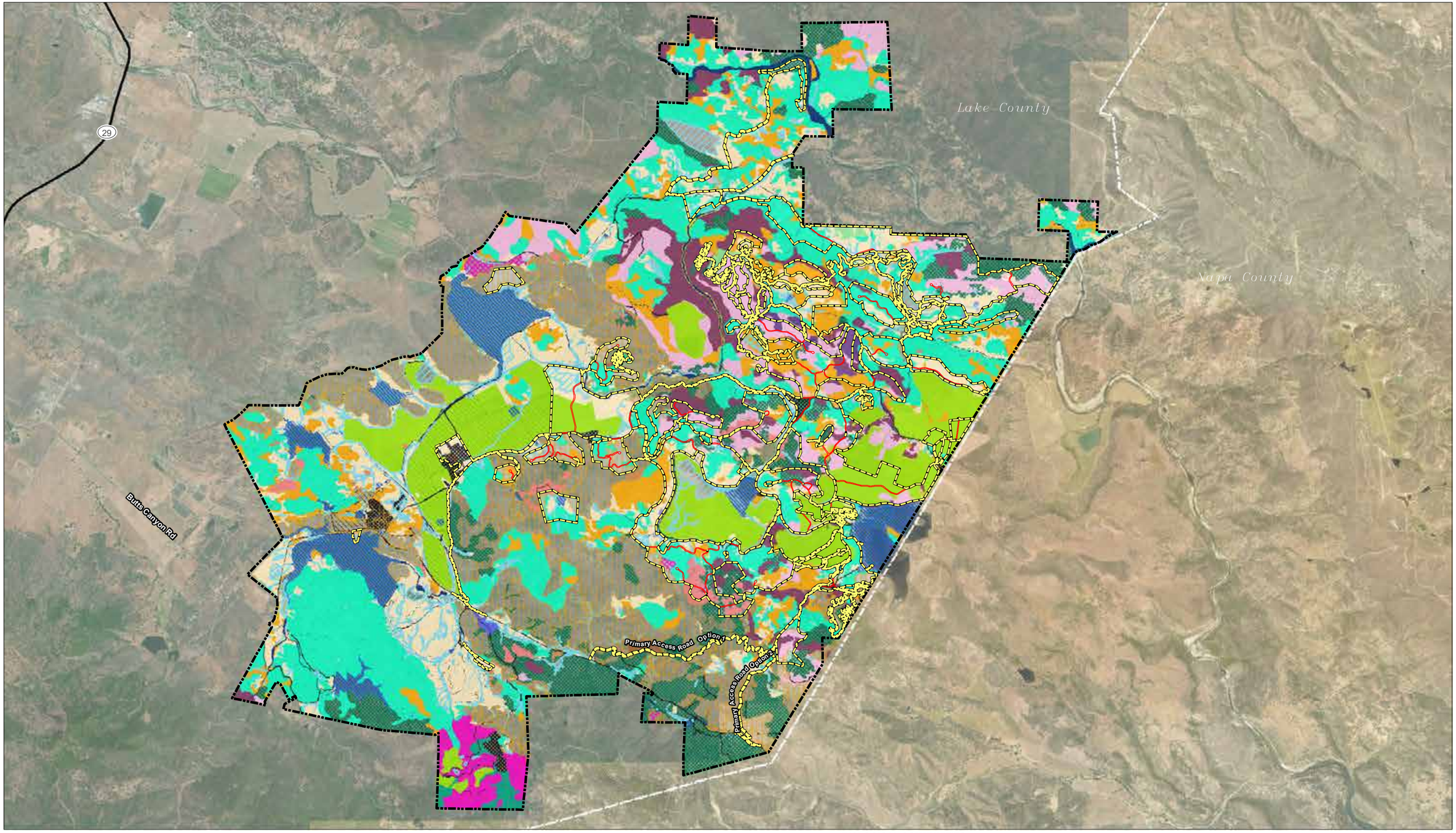
- BRA for Phase 2 and Open Space of the proposed Maha Resort and Guenoc Valley Development. A detailed description of methods used in identifying and analyzing biological resources is included in Section 4.0 of **Appendix BRA2**.
- An Aquatic Resources Delineation Report prepared for Phase 1 of the proposed Maha Resort and Guenoc Valley Development. A detailed description of methods used in identifying and analyzing biological resources is included in Section 4.0 of **Appendix WD**.
- The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database layer within the Biogeographic Information and Observation System (CDFW, 2019).

Habitat Types

Several vegetative communities and habitat types occur on the Guenoc Valley Site. A summary of habitat types is shown in **Figure 3.4-1,** and habitat types with acreages are included in **Table 3.4-1.**

TABLE 3.4-1
HABITAT TYPES AND ACREAGES ON THE GUENOC VALLEY SITE

Habitat Type	Acres
Terrestrial	
Developed	218.2
Agriculture (currently developed)	1,001.6
Rock outcrop	37.9
Non-native annual grasslands	2,259.4
Purple needlegrass grassland	11.7
Leather oak chaparral	2,573.2
Scrub oak chaparral	49.8
Chamise chaparral	987.2
Whiteleaf manzanita chaparral	150.4
Musk brush chaparral	33.1
California yerba santa scrub	37.9
Deer weed scrub	19.7
White alder grove	10.9
Brewer willow thicket	3.6
Douglas fir forest	61.5
Sargent cypress woodland	10.7
Foothill pine woodland	1,400.7
Interior live oak woodland	756.5
Valley oak woodland	49.3
Blue oak woodland	3,472.4
Blue oak savanna	1,238.7
Mixed oak woodland	174.9
Total	**14,559.3**
Aquatic	
Streams and drainages	199.3 (1,079,758 linear feet)
Ponds and reservoirs	658.1
Emergent wetlands	429.7
Total	**1,287.1**
Source: **Appendix BRA1**, **Appendix BRA2**	



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-1
Habitat Types Within Guenoc Valley Site Area of Potential Effects

Habitat types are further described below and within Section 5.1 of **Appendix BRA1** and **Appendix BRA2**. Detailed habitat sheet mapping is also included as Appendix A of **Appendix BRA1 and Appendix BRA2**. A habitat map showing sensitive habitat types within the Phase 1 parcel boundaries is included as **Figure 3.4-2**.

Developed

The Guenoc Valley Site contains multiple areas of development. Several ranch homes are present onsite. There are also several areas with barns, equipment storage areas, work yards, and a network of paved and unpaved roads. Developed areas include outbuildings largely associated with current agricultural operations on the Guenoc Valley Site. Vegetation in these areas is largely ornamental and is not considered sensitive. Developed habitat constitutes 218.2 acres (1.3 percent) of the Guenoc Valley Site.

Agricultural

Large portions of the Guenoc Valley Site have been converted to vineyards or are already approved for future vineyard development. Areas of existing vineyards, as well as areas with active clearing, planting, and other viticulture/agricultural creation activities, were mapped as agricultural areas. Vegetation in this area not considered sensitive and is dominated by grape vines with little to no understory.

Currently planted lands constitute 1,681.6 acres (10.2 percent) of the Guenoc Valley Site. Additional land is approved for irrigation for vineyard creation as a result of the Guenoc Water Rights Modification Project described in **Section 2.3.4**. This acreage represents only those areas currently in agricultural use at the time of biological surveys.

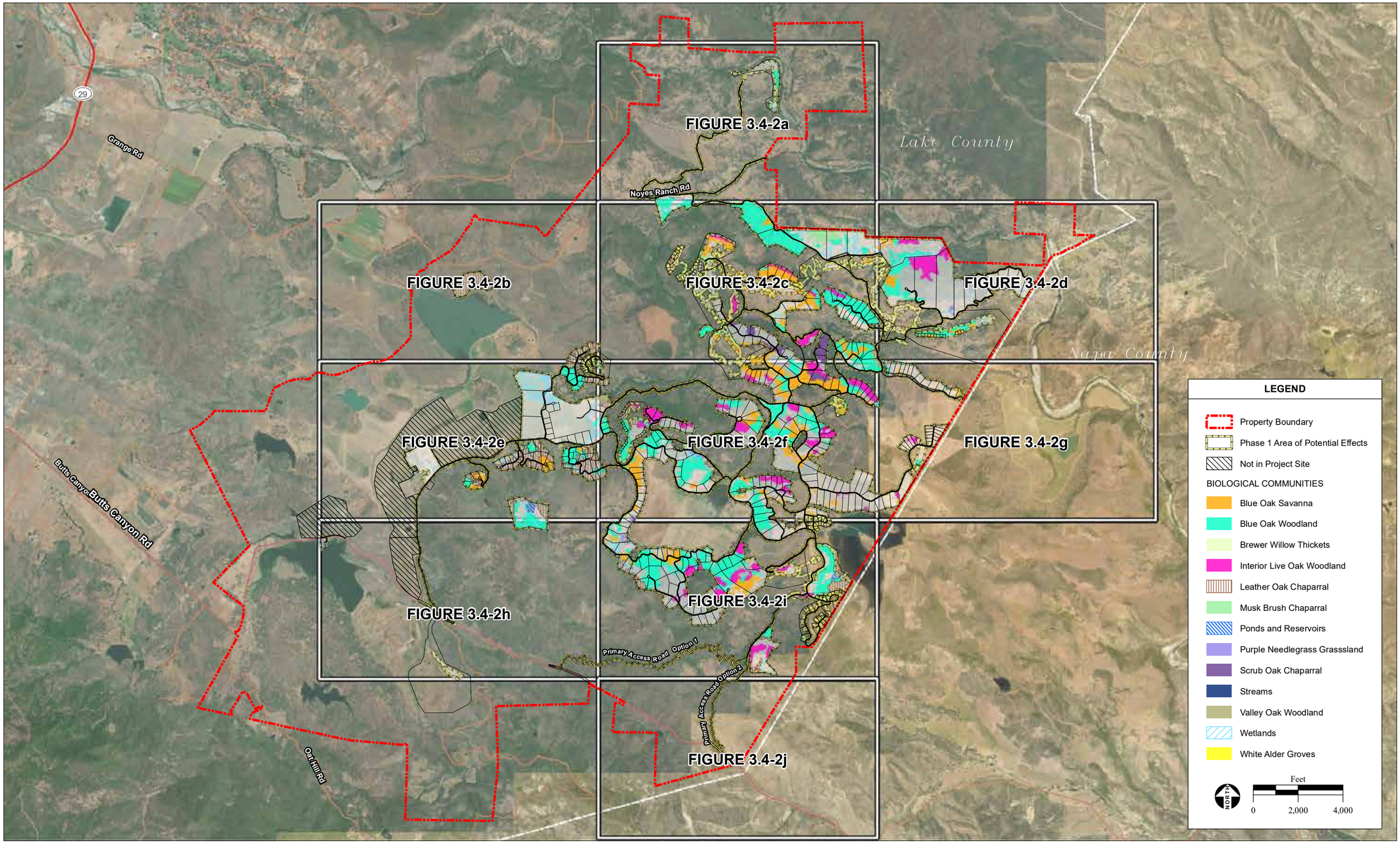
Rock Outcrop

Rock outcrops occur across the Guenoc Valley Site as large cliff faces, denuded serpentine ridges, and other outcroppings. Vegetation within rock outcrops is typically absent to sparse, although some stunted vegetation may be present. Bare ground dominates this habitat type, and, while not considered a sensitive habitat type, may provide important habitat features for some plant and wildlife species. Rock outcrops constitute 37.9 acres (0.2 percent) of the Guenoc Valley Site.

Non-Native Annual Grasslands

Non-native grasslands on the Guenoc Valley Site are characterized by the following vegetation alliances: wild oat grass grasslands, annual brome grasslands, wild barley grasslands, perennial ryegrass fields, barbed goat grass patches, cheatgrass–medusahead grassland, and yellow star-thistle fields.

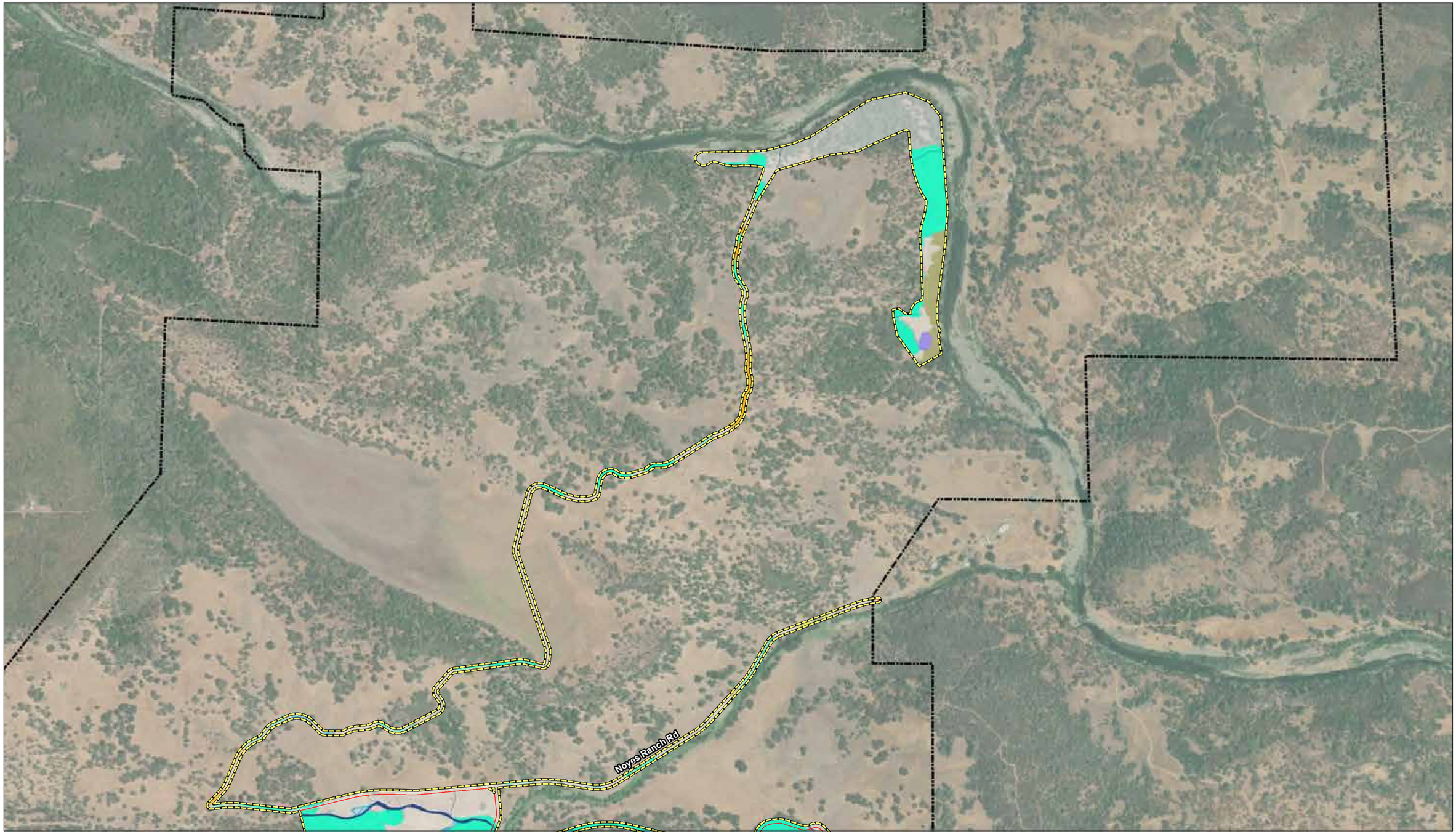
In cases where non-native annual grasslands occur in seasonal wetland habitat, they were mapped as seasonal wetlands, rather than as grasslands. Non-native annual grasslands contain less than 10 percent of native species, and are therefore not a sensitive habitat type. This habitat constitutes 2,259.4 acres (13.7 percent) of the Guenoc Valley Site.



SOURCE: WRA, Inc., 2009, 2019; AES, 2/3/2020

Figure 3.4-2

Guenoc Valley Site Sensitive Habitats Within Phase 1 Area of Potential Effects



Property Boundary
Phase 1 Area of Potential Effects
Not in Project Site
Roadway Grading

NORTH

Feet
0 400 800

BIOLOGICAL COMMUNITIES

Blue Oak Savanna
Blue Oak Woodland
Brewer Willow Thickets
Interior Live Oak Woodland
Leather Oak Chaparral
Musk Brush Chaparral
Ponds and Reservoirs
Purple Needlegrass Grassland
Scrub Oak Chaparral
Streams
Valley Oak Woodland
Wetlands
White Alder Groves

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/29/2020

Figure 3.4-2a
Sensitive Habitat Types Within Guenoc Valley Site Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/29/2020

Figure 3.4-2b
Sensitive Habitat Types Within Guenoc Valley Site Area of Potential Effects

Property Boundary
Phase 1 Area of Potential Effects
Not in Project Site
Roadway Grading

NORTH

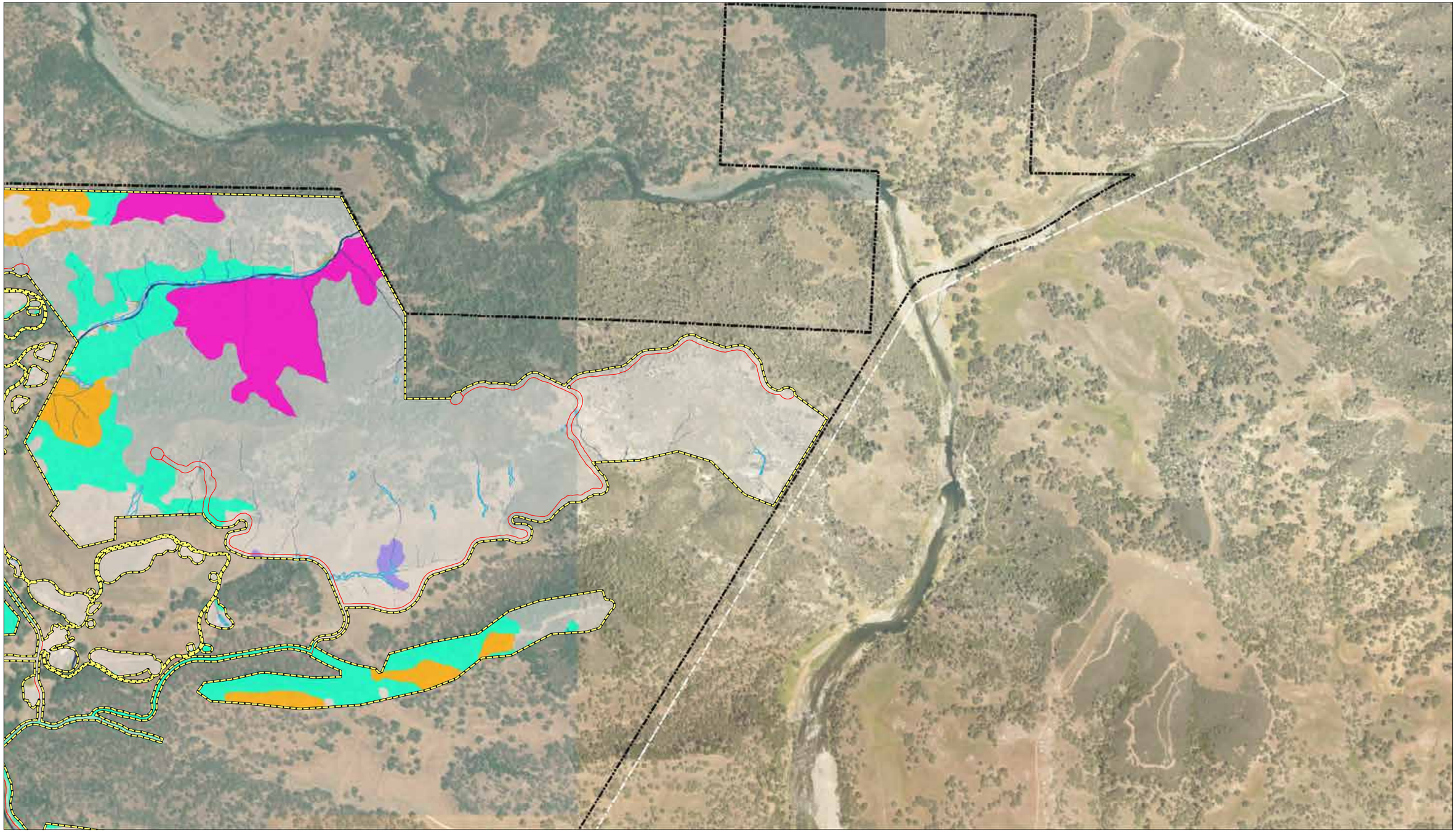
Feet
0 400 800

BIOLOGICAL COMMUNITIES

Blue Oak Savanna
Blue Oak Woodland
Brewer Willow Thickets
Interior Live Oak Woodland
Leather Oak Chaparral
Musk Brush Chaparral
Ponds and Reservoirs
Purple Needlegrass Grassland
Scrub Oak Chaparral
Streams
Valley Oak Woodland
Wetlands
White Alder Groves

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/29/2020

Figure 3.4-2c
Sensitive Habitat Types Within Guenoc Valley Site Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/29/2020

Figure 3.4-2d

Sensitive Habitat Types Within Guenoc Valley Site Area of Potential Effects

Property Boundary
Phase 1 Area of Potential Effects
Not in Project Site
Roadway Grading

NORTH
Feet
0 400 800

BIOLOGICAL COMMUNITIES

Blue Oak Savanna
Blue Oak Woodland
Brewer Willow Thickets
Interior Live Oak Woodland
Leather Oak Chaparral
Musk Brush Chaparral
Ponds and Reservoirs
Purple Needlegrass Grassland
Scrub Oak Chaparral
Streams
Valley Oak Woodland
Wetlands
White Alder Groves

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/29/2020

Figure 3.4-2e
Sensitive Habitat Types Within Guenoc Valley Site Area of Potential Effects

Property Boundary
Phase 1 Area of Potential Effects
Not in Project Site
Roadway Grading

NORTH

Feet
0 400 800

BIOLOGICAL COMMUNITIES

Blue Oak Savanna
Blue Oak Woodland
Brewer Willow Thickets
Interior Live Oak Woodland
Leather Oak Chaparral
Musk Brush Chaparral
Ponds and Reservoirs
Purple Needlegrass Grassland
Scrub Oak Chaparral
Streams
Valley Oak Woodland
Wetlands
White Alder Groves

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/29/2020

Figure 3.4-2f
Sensitive Habitat Types Within Guenoc Valley Site Area of Potential Effects

Property Boundary
Phase 1 Area of Potential Effects
Not in Project Site
Roadway Grading

NORTH

Feet
0 400 800

BIOLOGICAL COMMUNITIES

Blue Oak Savanna
Blue Oak Woodland
Brewer Willow Thickets
Interior Live Oak Woodland
Leather Oak Chaparral
Musk Brush Chaparral
Ponds and Reservoirs
Purple Needlegrass Grassland
Scrub Oak Chaparral
Streams
Valley Oak Woodland
Wetlands
White Alder Groves

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/29/2020

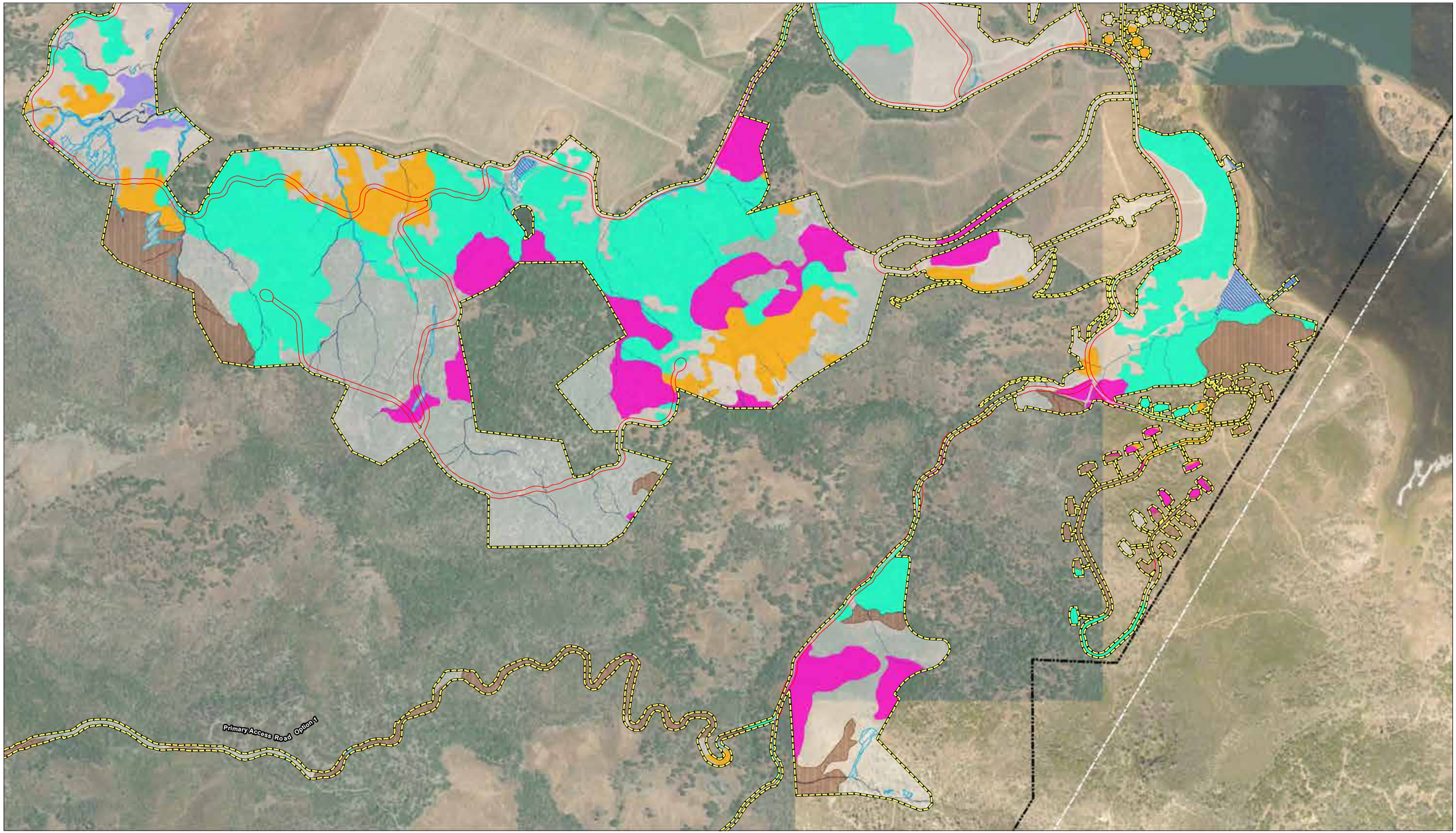
Figure 3.4-2g
Sensitive Habitat Types Within Guenoc Valley Site Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/29/2020

Figure 3.4-2h

Sensitive Habitat Types Within Guenoc Valley Site Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/29/2020

Figure 3.4-2i

Sensitive Habitat Types Within Guenoc Valley Site Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/29/2020

Figure 3.4-2j

Sensitive Habitat Types Within Guenoc Valley Site Area of Potential Effects

Purple Needlegrass Grassland

Purple needlegrass grassland occurs in valley and foothill areas throughout cismontane California. Purple needlegrass grassland is part of the needlegrass–melicgrass grassland alliance (*Nassella* spp.–*Melica* spp. Herbaceous Alliance). Although the needlegrass–melicgrass grassland alliance is listed as "apparently secure" at the global (G4) and state (S4) levels by the CDFW, the purple needlegrass association within this alliance is considered a sensitive plant association by CDFW, and native grasslands are generally afforded additional protection under the California Environmental Quality Act (CEQA).

Within the Guenoc Valley Site, purple needlegrass grassland was observed in a limited number of locations within larger expanses of non-native annual grassland. Stands of purple needlegrass were mapped where purple needlegrass was a minimum of 10 percent absolute cover. In most cases, non-native annual grasses comprised the highest cover. This habitat constitutes 11.7 acres (0.1 percent) of the Guenoc Valley Site.

Leather Oak Chaparral

Leather oak chaparral is known from the North and Central Coast Ranges and Sierra Nevada Foothills from Del Norte County south to Santa Barbara County. This vegetation alliance is typically located on hills, steep slopes, and ridgelines underlain by shallow, rocky substrate derived from serpentine soils.

Within the Guenoc Valley Site, leather oak chaparral is located on a range of aspects and on ridgelines underlain often by serpentine soils, or integrated within foothill pine woodland. In areas affected by the 2015 Valley Fire, leather oak represents the dominant shrub, re-sprouting from its base in all but the most severely burned areas. The shrub canopy is generally open in areas burned during the Valley Fire and dense in unburned areas. Tree cover is sparse to absent, typically consisting of foothill pine. The shrub canopy is dominated by leather oak, with occasional co- or sub-dominance by toyon, yerba santa, whiteleaf manzanita, and chamise. This habitat is not considered sensitive. A total of 2,573.2 acres of the Guenoc Valley Site (15.6 percent) are comprised of leather oak chaparral.

Scrub Oak Chaparral

Scrub oak chaparral typically occurs on steep, north-facing slopes on deep to shallow, well-drained soils throughout cismontane California. This vegetation alliance is dominated by scrub oak in the shrub layer canopy with several other scrubby species present such as leather oak, yerba santa, and toyon. Emergent trees may be present at low cover.

Within the Guenoc Valley Site, scrub oak chaparral was located in a limited number of locations, typically on northern and eastern slopes on serpentine soils, and along ridgelines and dry slopes on non-serpentine soils. Scrub oak chaparral is not considered a sensitive habitat type and constitutes 49.8 acres (0.3 percent) of the Guenoc Valley Site.

Chamise Chaparral

Chamise chaparral is known from the interior North Coast Ranges south to the South Coast Ranges, Transverse Ranges, and Sierra Nevada Foothills. This community is typically located on steep, dry, south-facing terrain underlain by shallow, often serpentine, well-drained substrates.

Within the Guenoc Valley Site, this community is located primarily on south-facing aspects and ridgelines underlain by well-drained stony clay loam derived from volcanic parent material, and to a lesser extent from serpentine parent material. The majority of chamise chaparral onsite is dense and often the only species present. Other shrub species, such as leather oak and yerba santa, are occasionally present. Occasional trees are also present, including foothill pine, blue oak, and interior live oak. The herbaceous layer is typically sparse to absent, particularly in dense stands. In more open stands, the interstitial areas are characterized by sparse annual herbs. Chamise chaparral is considered a non-sensitive alliance that constitutes 987.2 acres (6.0 percent) of the Guenoc Valley Site.

Musk Brush Chaparral

While not described as its own alliance in the literature, musk brush (*Ceanothus jepsonii*) was observed as the dominant plant in chaparral communities on serpentine soils in several portions of the Guenoc Valley Site. The tree layer of this habitat type is sparse to absent and composed of foothill pine and interior live oak. The shrub layer is typically dense and dominated by musk brush, with leather oak, whiteleaf manzanita, and chamise as subdominants. Although CDFW does not recognize this community as its own alliance, it does recognize a leather oak–musk brush provisional association, which is sensitive. Because of this, musk brush chaparral on the Guenoc Valley Site is considered sensitive. Musk brush chaparral constitutes 33.1 acres (0.2 percent) of the Guenoc Valley Site.

California Yerba Santa Scrub

California yerba santa scrub typically occurs on lower to middle slopes of serpentine, metavolcanic, and plutonic substrates in the eastern foothills of the Northern Coast Range and along the western foothills of the Sierra Nevada Range in California. California yerba santa scrub is best described under the mixed serpentine chaparral alliance.

Within the Guenoc Valley Site, California yerba santa scrub typically occurs in areas that burned in the 2015 Valley Fire, on rocky, serpentine, and volcanic substrates. Stands range from dense to open, with the interstitial areas characterized by sparse herbs. The tree layer is sparse to absent and composed of foothill pine, blue oak, or interior live oak. The shrub layer is dominated by California yerba santa with chamise, buckbrush, deer weed, poison oak, and leather oak as subdominants. In many areas, this community forms a patchwork mosaic within larger stands of leather oak chaparral and chamise chaparral, making it difficult to draw distinctions between the California yerba santa scrub and the other two communities. In these cases, smaller stands of California yerba santa scrub were mapped into the larger surrounding community. California yerba santa scrub is considered non-sensitive, and constitutes 33.1 acres (0.2 percent) of the Guenoc Valley Site.

Whiteleaf Manzanita Chaparral

Whiteleaf manzanita chaparral occurs on ridges and upper slopes on shallow, weathered substrate developed from sandstone, granitic, or ultramafic substrates in the northern and central cismontane mountain ranges of California.

Whiteleaf manzanita chaparral occurs in scattered locations within the Guenoc Valley Site on gently to moderately sloped serpentine substrate. The tree layer is sparse to absent, comprised of foothill pine and

interior live oak. The shrub layer is typically dense and tall, dominated by whiteleaf manzanita, with leather oak, chamise, yerba santa, and toyon. The herbaceous layer is often sparse, composed of species such as woolly sunflower, small fescue, and Napa cryptantha. In many areas, whiteleaf manzanita was present at high cover, but was mixed with foothill pine at greater than 10 percent cover, and in these areas, the vegetation was mapped as foothill pine woodland. Whiteleaf manzanita chaparral is considered a non-sensitive alliance and comprises 150.4 acres (0.9 percent) of the Guenoc Valley Site.

Deer Weed Scrub

Deer weed scrub typically occurs in areas of recent disturbance such as clearing, fire, or intermittent flooding throughout cismontane California. Within the Guenoc Valley Site, this alliance was observed in a limited number of areas affected by the Valley Fire in 2015, and it is expected that this community would naturally transition into other shrub- or tree-dominated alliances if left undisturbed. Trees were absent, and the shrub layer was open to dense, dominated by deer weed, with lower cover of leather oak, yerba santa, and pitcher sage (*Lepechinia calycina*). The herbaceous layer was denser in more open stands and was characterized by annual grasses such as small fescue and soft chess. Deer weed scrub is considered a non-sensitive habitat type that comprises 19.7 acres (0.1 percent) of the Guenoc Valley Site.

White Alder Grove

White alder groves typically occur along riparian corridors, incised canyons, seeps, stream banks, mid-channel bars, floodplains, and stream terraces throughout California. White alder is typically codominant with a variety of other riparian trees. The shrub layer is generally sparse to absent, and the herbaceous layer is variable.

Within the Guenoc Valley Site, white alder groves occur along a low-gradient portion of Butcherknife Creek, where it occurred as the dominant species with a mix of sedge and grasses in the understory. Although this alliance is not considered sensitive by the CDFW, white alder groves within the Guenoc Valley Site qualify as forested wetlands. Because it is considered wetland-type habitat, it is treated as a sensitive community. White alder grove comprises 10.9 acres (0.1 percent) of the Guenoc Valley Site.

Brewer Willow Thicket

Brewer willow thickets typically occur along creek bottoms and stream terraces, typically on serpentine-derived alluvium. This community occurs throughout the North Coast Range as well as the northern, interior portion of the South Coast Range. Brewer willow is the dominant species, and may occur with other shrubs such as coffeeberry (*Frangula californica*), spice bush (*Calycanthus occidentalis*), and western azalea (*Rhododendron occidentale*) as codominants.

Within the Guenoc Valley Site, Brewer willow thickets occur primarily along McCain Creek and Butts Creek. Stands are dense and dominated by Brewer willow, with other shrubs such as western azalea present at low cover. Where the community occurs along low-gradient streams, it generally qualified as scrub-shrub wetlands. This community is considered sensitive. Brewer willow thicket comprises 3.6 acres (0.02 percent) of the Guenoc Valley Site.

Douglas Fir Forest

Douglas fir forest occurs throughout coastal and cismontane northern and central California. Douglas fir forest occurs in the far southern portion of the Guenoc Valley Site, on volcanic substrates on steep slopes above the vineyards south of Butts Canyon Road. The canopy is dense and dominated by Douglas fir, with occasional sub-dominance by canyon live oak (*Quercus chrysolepis*), California black oak (*Quercus kelloggii*), and madrone (*Arbutus menziesii*). The understory is typically open and sparse. Douglas fir forest is considered non-sensitive and comprises 61.5 acres (0.4 percent) of the Guenoc Valley Site.

Sargent Cypress Woodland

Sargent cypress woodland typically occurs on stream benches and terraces, open slopes, and ridges on ultramafic substrates in the northern and central California Coast Ranges. Sargent cypress tends to form pure stands in its southern range and mixed stands with species such as McNab cypress (*Hesperocyparis macnabiana*), foothill pine, and California bay in its northern range.

Within the Guenoc Valley Site, Sargent cypress woodland occurs in small areas south of Butts Canyon Road, typically on gentle, north-facing slopes on serpentine substrates. The tree canopy is dense to open, consisting of Sargent cypress with occasional foothill pines. Under dense canopy, the understory is sparse to absent. Where the canopy is more open, the interstitial areas are characterized by dense shrubs such as whiteleaf manzanita and leather oak. Sargent cypress woodland is considered a sensitive vegetation alliance by the CDFW and comprises 10.7 acres (0.1 percent) of the Guenoc Valley Site.

Foothill Pine Woodland

Foothill pine woodland typically occurs on streamside terraces, valleys, slopes, and ridges on shallow, often infertile, moderately drained soils throughout cismontane California. Often this alliance is intermixed with chaparral. Where soils are less rocky, foothill pine woodland often occurs in mixed stands of blue oak (*Quercus douglasii*) and interior live oak (*Quercus wislizeni*).

Within the Guenoc Valley Site, foothill pine woodland is located along alluvial terraces and on both rocky and finer substrate slopes. On rocky substrates, it occurs with a chaparral understory, often on serpentine soils. In these situations, the overstory is composed of open foothill pine. The understory is variously composed of open to dense shrubs. Herbaceous cover is typically of low density.

Foothill pine woodland is interspersed with leather oak scrub, California yerba santa chaparral, whiteleaf manzanita scrub, blue oak woodland, and interior live oak woodland. When interspersed with oaks, overall canopy ranges from closed to somewhat open. The understory shrubs and herbaceous layers are generally sparse or dominated by non-native grasses. In many areas, foothill pine was the dominant tree species prior to the Valley Fire in 2015, but was killed in the fire and is giving way to re-sprouting leather oak or California yerba santa. In these areas, the vegetation was mapped as foothill pine woodland if a large number of trees survived the fire. The foothill pine woodland alliance is considered non-sensitive and comprises 1,400.7 acres (8.5 percent) of the Guenoc Valley Site.

Interior Live Oak Woodland

Interior live oak woodland typically occurs on upland slopes, valley bottoms, and terraces on shallow, moderately to excessively drained soils throughout cismontane California. Interior live oaks are dominant or co-dominant in the tree canopy layer with other oak species, California buckeye, madrone (*Arbutus menziesii*), and/or foothill pine. Canopy cover is intermittent or savanna-like.

Within the Guenoc Valley Site, interior live oak woodland occurs throughout the area, including on serpentine substrates. In most cases, interior live oak woodland canopy is dense, characterized by pure interior live oak, with occasional co- or sub-dominance by blue oak or foothill pine. In dense canopy, the understory is occasionally dense with shrubs as poison oak. Interior live oak woodland is sometimes characterized by a more open canopy with dense shrubs such as chamise and common manzanita or dense non-native annual grasses. Although it is not considered a sensitive alliance by the CDFW, interior live oak woodland is protected by Lake County. Interior live oak woodland comprises 756.5 acres (4.6 percent) of the Guenoc Valley Site.

Valley Oak Woodland

Valley oak woodland is known from the southern Cascade Range, Coast Ranges, Central Valley, Transverse Range, and Sierra Valley Foothills from Siskiyou County south to Los Angeles County. This community is typically found on deep, poorly drained clay soils in valley bottoms, alluvial floodplains, and lower slopes.

Within the Guenoc Valley Site, valley oak woodland occurs in alluvial terraces along perennial streams. Canopy cover is continuous to intermittent, dominated by valley oak with scattered arroyo willow (*Salix lasiolepis*) and Fremont cottonwood. Valley oak woodland is considered a sensitive vegetation alliance by the CDFW, and is generally considered sensitive riparian vegetation where it occurs within the Guenoc Valley Site. Valley oak woodland is also protected by the Lake County. This habitat type comprises 49.3 acres (0.3 percent) of the Guenoc Valley Site.

Blue Oak Woodland and Blue Oak Savanna

Blue oak woodland and savanna are typically located on valley bottoms, foothills, and rocky outcrops on shallow, moderately to excessively drained soil low in fertility throughout cismontane California. Blue oaks are dominant or codominant with other oak species and species such as California buckeye (*Aesculus californica*) and foothill pine. The canopy of blue oak woodland is typically intermittent to continuous, often occurring as broad savanna.

Within the Guenoc Valley Site, blue oak woodland and savanna occur on valley bottoms and slopes, typically on deeper, finer-textured serpentine and volcanic soils. Non-native grasslands dominate the ground cover in a majority of areas within blue oak savanna. Although CDFW does not distinguish between blue oak woodland and savanna, blue oak habitats were mapped into two categories to facilitate impact and mitigation calculations. Areas with approximately 60 percent or less total canopy cover with less than two thirds of tree canopies touching are mapped as oak savanna. Areas with greater cover of blue oaks or a higher percentage of tree canopies touching are considered woodland.

Although it is not considered a sensitive alliance by the CDFW, blue oak woodland and savanna is protected by Lake County. Blue oak woodland comprises 3,472.4 acres (21.0 percent) of the Guenoc Valley Site while blue oak savanna covers 1,238.7 acres (7.5 percent) of the Guenoc Valley Site.

Mixed Oak Woodland

Mixed oak forest occurs on valleys and gentle to steep slopes on moderately deep soils in the northern and central California coast and Coast Ranges. Mixed oak forest is mapped in the southern portion of the Guenoc Valley Site on volcanic substrates on the steep slopes adjacent to the vineyards south of Butts Canyon Road. Blue oak, interior live oak, and California black oak are co-dominant in the tree canopy. Other tree and shrub species within this habitat type include madrone, California bay (*Umbellularia californica*), leather oak, birch-leaf mountain mahogany (*Cercocarpus betuloides*), poison oak, toyon, and deer brush. Interstitial areas within more open canopy are characterized by dense annual herb species. Although it is not considered a sensitive alliance by the CDFW, mixed oak woodland is protected by Lake County. Mixed oak woodland comprises 174.9 acres (1.1 percent) of the Guenoc Valley Site.

Streams and Drainages

The Guenoc Valley Site contains a number of ephemeral, intermittent, and perennial streams. Ephemeral streams are linear features within which water flows only during or immediately after a significant rain event. These streams are dry for the majority of the year. Intermittent streams are linear features within which water flows for a portion of the year, generally drying out during the driest time of the year. Perennial streams are linear features within which water flows the entire year, even during the dry season.

Larger streams within the Guenoc Valley Site include Putah Creek, Bucksnort Creek, Butts Creek, and Butcherknife Creek. The Guenoc Valley Site supports both intermittent and perennial streams that generally have a well-developed riparian corridor dominated by valley oak, white alder, red arroyo, and/or Brewer willows. Where these streams occur near old barns and homesteads, northern California black walnut (*Juglans hindsii*) is also present. These well-developed riparian corridors provide a valuable resource for wildlife species. Perennial and intermittent streams cover 199.3 acres (1.2 percent, 1,079.8 linear feet) of the Guenoc Valley Site.

Ponds and Reservoirs

The Guenoc Valley Site contains a number of ponds and reservoirs, ranging from small depressions that pond water during only a portion of the growing season, to larger features that hold water year-round. A network of aboveground water pipes for the purpose of agricultural irrigation connect and utilize several of these features, many of which were historically created by damming natural drainage courses to support ranching and agricultural activities. Most of these larger impoundments are covered under the Guenoc Valley Ranch water rights, which control surface water use and storage.

These features provide a valuable resource for native wildlife species; however, because they offer a source of perennial water, they also support a number of non-native aquatic wildlife species such as the American bullfrog (*Lithobates catesbeianus*) and non-native fish species.

Emergent Wetlands

Seasonal wetlands are biotic communities in which the water table is near the surface long enough to support hydrophytic vegetation, but dries out during a portion of the normal growing season. A variety of wetland habitats occur within the Guenoc Valley Site, including forested wetlands, scrub-shrub wetlands, perennial marshes, and seasonal wetlands. Forested and scrub-shrub wetlands are dominated by white alder groves along Butcherknife Creek and Brewer willow thickets along Butts Creek; these communities are described above.

Perennial marshes occur at the edges of larger ponds and reservoirs and occupy up to the entirety of more shallow features. These habitats are dominated by a range of perennial vegetation alliances including: pale spike rush marsh, hardstem bulrush marsh, and cattail marsh. Within the Guenoc Valley Site, several seasonal wetland types were observed within the following vegetation alliances: bentgrass-tall fescue meadows, Fremont's goldfields, California button celery patches, common monkeyflower seeps, meadow barley patches, Mediterranean barley patches, white-tip clover swales, and rabbit's foot grass swales. Emergent wetlands are considered a sensitive habitat type and comprise 429.7 acres (2.6 percent) of the Guenoc Valley Site.

Wetlands and Waters of the U.S.

Several aquatic habitats described above may be considered potentially jurisdictional wetlands or Waters of the U.S. under the Clean Water Act (CWA) as defined in **Section 3.4.3**. An Aquatic Resources Delineation Report was prepared by WRA in 2019 based on multiple site visits conducted in 2017 and 2018 (**Appendix WD**). This report identified potential federal jurisdictional wetlands and waters present within a large portion of the Guenoc Valley Site. A total of 122.9 acres of wetlands, 10.7 acres of open waters, and 58.3 acres (369,219.0 linear feet) of streams and ephemeral ditches were identified as potentially jurisdictional under the CWA.

Wildlife Movement

The Guenoc Valley Site contains open space throughout existing development. The planted vineyard areas constitute a majority of existing development and are protected with 6-foot or higher deer fencing. While natural features such as Bucksnort Creek may function in part as a wildlife corridor, the Guenoc Valley Site is not located within an Essential Connectivity Area (Spencer, 2010). Surrounding land ownership includes private landowners and is a mixture of developed and open space. Private land uses surrounding the Guenoc Valley Site include mostly agricultural uses, with fencing used to hold livestock in many areas. The Guenoc Valley Site also borders undeveloped land held by the Bureau of Land Management and adjacent landowners. Existing roadways on the Guenoc Valley Site consist of paved entrance roads and a network of dirt and gravel agricultural roads. Butts Canyon Road and Oat Hill Road are the only roadways in close proximity to the Guenoc Valley Site. These are both two-lane roads with narrow, paved shoulders. The town of Middletown and the Hidden Valley Lake rural residential community represent the highest concentration of nearby development.

Critical Habitat

No Critical Habitat, Essential Fish Habitat, or other habitat designated by federal, state, or local conservation plans occur on the Guenoc Valley Site.

Special-Status Wildlife

For the purposes of this Environmental Impact Report (EIR), special-status has been defined to include those species that meet the definitions of rare or endangered plants or animals under CEQA including species that are:

- Listed as endangered or threatened (or formally proposed for, or candidates for, listing) under the Federal Endangered Species Act (FESA; 50 Code of Federal Regulations [CFR] §§ 17.11 and 17.12);
- Listed as endangered or threatened (or proposed for listing) under the California Endangered Species Act (CESA; California Fish and Game Code § 2050, et seq.);
- Designated as endangered or rare, pursuant to California Fish and Game Code (§ 1901);
- Designated as fully protected, pursuant to California Fish and Game Code (§§ 3511, 4700, 5050, or 5515);
- Designated as species of special concern (SSC) by the CDFW;
- Meet the definitions of endangered or rare under Section 15380 of the CEQA Guidelines;
- Are considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Lists 1 and 2); or
- Are listed as rare under the California Native Plant Protection Act (California Fish and Game Code§ 1900 et seq.).

The Guenoc Valley Site was analyzed for the potential to support special-status wildlife species. Methods of analysis are included in Section 4.2 of **Appendix BRA1** and **Appendix BRA2**. A total of five special-status mammals, 16 special-status birds, one special-status reptile, and one special-status amphibian have the potential to occur within the Guenoc Valley Site (**Table 3.4-2**). A detailed description of each species is included in Section 5.3 of **Appendix BRA1** and **Appendix BRA2**.

Species with the potential to occur indicates that the Guenoc Valley Site contains suitable habitat for at least a portion of the species life history or survival needs and that suitable habitat is reasonable accessible to the species analyzed. Species were assigned a high potential to occur when suitable to high quality habitat for the species was observed on site and/or documented occurrences of this species in the immediate vicinity of the Guenoc Valley Site were identified. Species were assigned a moderate potential to occur when habitat observed was suitable, supported only a portion of the species life history, and/or documented occurrences have not been recorded for the species on or adjacent to the Guenoc Valley Site.

TABLE 3.4-2
SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE GUENOC VALLEY SITE

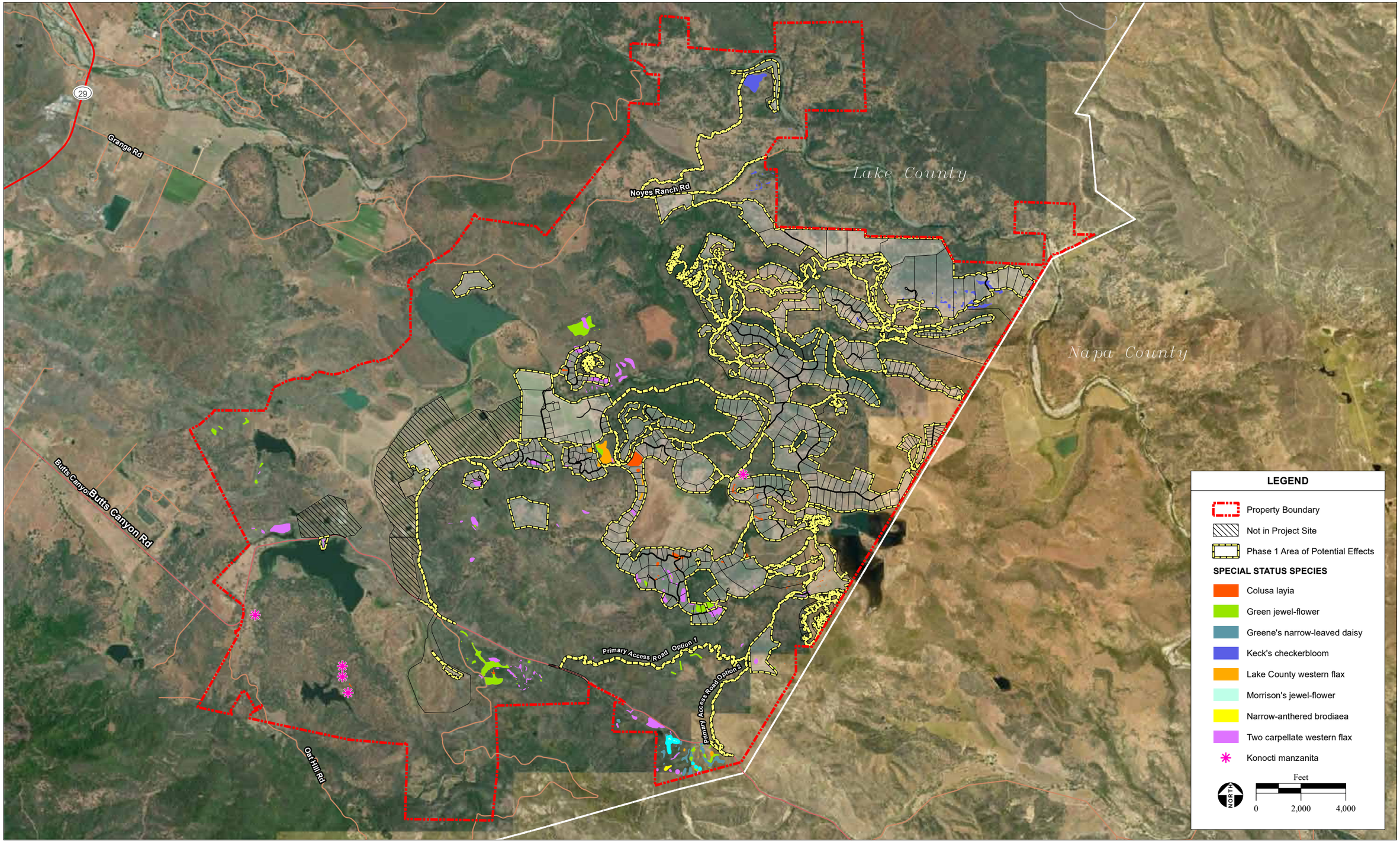
Species	Status	Potential to Occur
Mammals		
Pallid bat (*Antrozous pallidus)*	SSC	Observed onsite (foraging)
Ring-tailed cat (Ringtail) *(Bassariscus astutus)*	CFP	Moderate
Townsend's big-eared bat *(Corynorhinus townsendii)*	SSC	High
Western red bat *(Lasiurus blossevillii)*	SSC	Moderate
American badger *(Taxidea taxus)*	SSC	Moderate
Birds		
Tricolored blackbird *(Agelaius tricolor)*	ST, SSC	High
Grasshopper sparrow *(Ammodramus savannarum)*	SSC	High
Golden eagle *(Aquila chrysaetos)*	CFP	Observed onsite (nesting and foraging)
Long-eared owl *(Asio otus)*	SSC	Moderate
Burrowing owl *(Athene cunicularia)*	SSC	Moderate
Northern harrier *(Circus hudsonius)*	SSC	Observed onsite (foraging)
Olive-sided flycatcher *(Contopus cooperi)*	SSC	Moderate
White-tailed kite *(Elanus leucurus)*	CFP	Observed onsite (foraging)
American peregrine falcon *(Falco peregrinus anatum)*	CFP	Observed onsite (nesting)
Bald eagle *(Haliaeetus leucocephalus)*	SE, CFP	Observed onsite (nesting and foraging)
Yellow-breasted chat (*Icteria virens)*	SSC	Moderate
Least bittern *(Ixobrychus exilis)*	SSC	Moderate
Loggerhead shrike *(Lanius ludovicianus)*	SCC	High
Purple martin *(Progne subis)*	SSC	High
Yellow warbler *(Setophaga* [*Dendroica*] *petechia brewsteri)*	SSC	Observed onsite (foraging)
Yellow-headed blackbird (*Xanthocephalus xanthocephalus)*	SSC	Observed onsite (nesting)
Reptiles		
Western pond turtle *(Actinemys marmorata)*	SSC	Observed onsite (multiple locations)
Amphibians		
Foothill yellow-legged frog *(Rana boylii)*	SSC, SC	Observed onsite (multiple locations)

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

Source: **Appendix BRA1**, **Appendix BRA2**

Special-Status Plants

The Guenoc Valley Site was analyzed for the potential to support special-status plant species. Methods of analysis are included in Section 4.2 of **Appendix BRA1** and **Appendix BRA2**. A total of 61 special-status plant species have the potential to occur within the Guenoc Valley Site (**Table 3.4-3**). A detailed description of each species is included in Section 5.2 of **Appendix BRA1** and **Appendix BRA2**. A map showing known locations of special-status plants is included as **Figure 3.4-3.**



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/24/2020

Figure 3.4-3
Guenoc Valley Site Special-Status Plant Locations

TABLE 3.4-3
SPECIAL-STATUS PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON THE GUENOC VALLEY SITE

Species	Status	Potential to Occur
Napa false indigo (*Amorpha californica var. napensis)*	1B.2	Moderate
Bent-flowered fiddleneck *(Amsinckia lunaris)*	1B.2	Moderate
Konocti manzanita (*Arctostaphylos manzanita ssp. elegans)*	1B.3	Observed onsite – outside Phase 1 parcel boundaries
Clara Hunt's milk-vetch *(Astragalus claranus)*	FE, ST, 1B.1	Moderate
Jepson's milk-vetch *(Astragalus rattanii var. jepsonianus)*	1B.2	High
Big-scale balsamroot *(Balsamorhiza macrolepis)*	1B.2	Moderate
Watershield *(Brasenia schreberi)*	2B.3	Moderate
Narrow-anthered brodiaea *(Brodiaea leptandra)*	1B.2	Observed onsite – outside Phase 1 parcel boundaries
Pink creamsacs *(Castilleja rubicundula var. rubicundula)*	1B.2	Moderate
Rincon Ridge ceanothus *(Ceanothus confuses)*	1B.1	Moderate
Calistoga ceanothus *(Ceanothus divergens)*	1B.2	Moderate
Holly-leaved ceanothus *(Ceanothus purpureus)*	1B.2	Moderate
Sonoma ceanothus *(Ceanothus sonomensis)*	1B.2	Moderate
Dwarf soaproot *(Chlorogalum pomeridianum var. minus)*	1B.2	Moderate
Serpentine cryptantha (*Cryptantha dissita)*	1B.2	Moderate
Deep-scarred cryptantha *(Cryptantha excavate)*	1B.1	Moderate
Cascade downingia *(Downingia willamettensis)*	2B.2	Moderate
Brandegee's eriastrum *(Eriastrum brandegeeae)*	1B.1	Moderate
Greene's narrow-leaved daisy *(Erigeron greenei)*	1B.2	Observed onsite – occurs within Phase 1 parcel boundaries
Snow Mountain buckwheat *(Eriogonum nervulosum)*	1B.2	Moderate
Loch Lomond button-celery *(Eryngium constancei)*	FE, SE, 1B.1	Moderate
Jepson's coyote thistle *(Eryngium jepsonii)*	1B.2	Moderate
Adobe-lily *(Fritillaria pluriflora)*	1B.2	Moderate
Boggs Lake hedge-hyssop *(Gratiola heterosepala)*	SE, 1B.2	Moderate
Hall's harmonia *(Harmonia hallii)*	1B.2	Moderate
Congested-headed hayfield tarplant *(Hemizonia congesta ssp. congesta)*	1B.2	Moderate
Glandular western flax *(Hesperolinon adenophyllum)*	1B.2	Moderate
Two-carpellate western flax (*Hesperolinon bicarpellatum)*	1B.2	Observed onsite – occurs within Phase 1 parcel boundaries
Lake County western flax *(Hesperolinon didymocarpum)*	SE, 1B.2	Observed onsite – occurs within Phase 1 parcel boundaries
Drymaria-like western flax (*Hesperolinon drymarioides)*	1B.2	Moderate
Sharsmith's western flax *(Hesperolinon sharsmithiae)*	1B.2	Moderate
Bolander's horkelia (*Horkelia bolanderi)*	1B.2	Moderate
Santa Lucia dwarf rush *(Juncus luciensis)*	1B.2	Moderate
Burke's goldfields *(Lasthenia burkei)*	FE, SE, 1B.1	Moderate
Colusa layia *(Layia septentrionalis)*	1B.2	Observed onsite – occurs within Phase 1 parcel boundaries
Legenere *(Legenere limosa)*	1B.1	Moderate

Jepson's leptosiphon *(Leptosiphon jepsonii)*	1B.2	Moderate
Sebastopol meadowfoam *(Limnanthes vinculans)*	FE, SE, 1B.1	Moderate
Cobb Mountain lupine *(Lupinus sericatus)*	1B.2	Moderate
Marsh microseris *(Microseris paludosa)*	1B.2	Moderate
Baker's navarretia (*Navarretia leucocephala ssp. bakeri)*	1B.1	Moderate
Small pincushion navarretia *(Navarretia myersii ssp. deminuta)*	1B.1	Moderate
Porter's navarretia (*Navarretia paradoxinota)*	1B.3	Moderate
Marin County navarretia (*Navarretia rosulata)*	1B.2	Moderate
Slender Orcutt grass *(Orcuttia tenuis)*	FT, SE, 1B.1	Moderate
Sonoma beardtongue *(Penstemon newberryi var. sonomensis)*	1B.3	Moderate
Bearded popcornflower (*Plagiobothrys hystriculus)*	1B.1	Moderate
Eel-grass pondweed *(Potamogeton zosteriformis)*	2B.2	Moderate
Lake County stonecrop *(Sedella leiocarpa)*	FE, SE, 1B.1	Moderate
Napa checkerbloom *(Sidalcea hickmanii ssp. napensis)*	1B.1	Moderate
Keck's checkerbloom (*Sidalcea keckii)*	FE, 1B.1	Observed onsite – occurs within Phase 1 parcel boundaries
Marsh checkerbloom *(Sidalcea oregana ssp. hydrophila)*	1B.2	Moderate
Socrates Mine jewelflower *(Streptanthus brachiatus ssp. brachiatus)*	1B.2	Moderate
Freed's jewelflower (*Streptanthus brachiatus ssp. hoffmanii)*	1B.2	Moderate
Green jewelflower (*Streptanthus hesperidis)*	1B.2	Observed onsite – occurs within Phase 1 parcel boundaries
Three Peaks jewelflower *(Streptanthus morrisonii ssp. elatus)*	1B.2	Observed onsite – outside Phase 1 parcel boundaries
Kruckeberg's jewelflower *(Streptanthus morrisonii ssp. kruckebergii)*	1B.2	Moderate
Early jewelflower (*Streptanthus vernalis)*	1B.2	Moderate
Slender-leaved pondweed *(Stuckenia filiformis ssp. alpine)*	2B.2	Moderate
Napa bluecurls *(Trichostema ruygtii)*	1B.2	Moderate
Oval-leaved viburnum *(Viburnum ellipticum)*	2B.3	Moderate

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

Source: **Appendix BRA1**, **Appendix BRA2**

Middletown Housing Site Setting

The Middletown Housing Site comprises approximately 13 acres within the town of Middletown (**Figure 2-1** and **Figure 2-4**). Topography is relatively flat at approximately 1,100 feet above mean sea level. The majority of the Middletown Housing Site was burned by the Valley Fire in September in 2015 and has since

been allowed to recover naturally. Surrounding land uses are generally low-density residential.
Dry Creek borders the property to the northwest, and site access is available from a gravel road connecting to Santa Clara Road along the southwest. The setting information described in this section has been derived from the following reports and resources:

- BRA for 2100 Santa Clara Road (**Appendix BRA-Middletown**);
- Section 404 Aquatic Resources Report 21000 Santa Clara Road (**Appendix WD-Middletown**);
- U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consulting (IPaC) official list of federal special-status species with the potential to occur on the Middletown Housing Site, dated July 15, 2019 (USFWS, 2019a);
- California Natural Diversity Database (CNDDB) query, dated July 15, 2019, of state and federal special-status species with the potential to occur in the Middletown, Detert Reservoir, Whispering Pines, and Mount St. Helena U.S. Geological Survey (USGS) 7.5-minute topographic quads (CDFW, 2019);
- CNPS query, dated July 15, 2019, of special-status plants with the potential to occur in the Middletown, Detert Reservoir, Whispering Pines, and Mount St. Helena USGS 7.5-minute topographic quads (CNPS, 2019); and
- USFWS National Wetlands Inventory, dated July 15, 2019 (USFWS, 2019b).

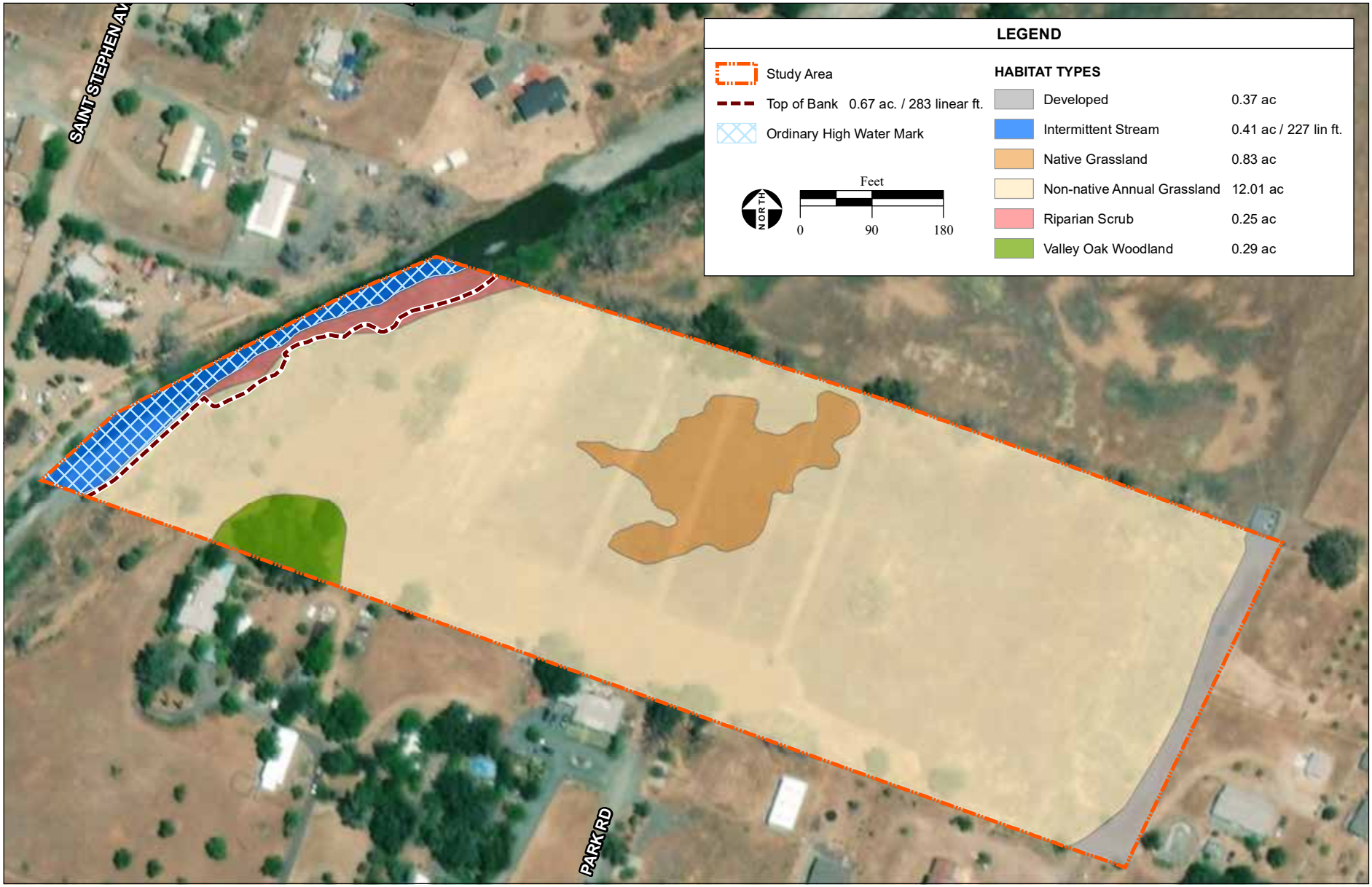
Regionally occurring special-status species and analyses of the potential for a species to occur are listed in Section 5.0 of **Appendix BRA-Middletown**. Based on database search results, no new special-status species or additional biological information occur that are pertinent to analysis in the Middletown Housing Site BRA.

Habitat Types

Several vegetative communities and habitat types occur on the Middletown Housing Site. Terrestrial habitats include: developed, non-native annual grassland, valley oak woodland, native grassland, and riparian scrub. Intermittent stream is the only aquatic habitat present onsite. Habitat types are shown in **Figure 3.4-4** and habitat acreages are included in **Table 3.4-4.** Habitat types are summarized below and described in greater detail within Section 5.1 of the Middletown Housing Site BRA (**Appendix BRA-Middletown**). Multiple surveys were conducted in 2018 and 2019, and detailed survey methods are included in Section 4.0 of the Middletown Housing Site BRA (**Appendix BRA-Middletown**).

TABLE 3.4-4
HABITAT TYPES AND ACREAGES ON THE MIDDLETOWN HOUSING SITE

Habitat Type	Acres
Developed	0.4
Non-native annual grassland	11.2
Oak woodland	0.3
Native grassland	0.8
Riparian scrub	0.3
Intermittent stream	0.4 (227 linear feet)
Total	**13.4**
Source: Appendix BRA-Middletown	



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/13/2020

Figure 3.4-4
Habitat Types on the Middletown Housing Site

Developed

An existing gravel road that provides access to the Middletown Housing Site from Santa Clara Road runs along the southeast border of the site and constitutes the 0.4 acres (2.7 percent) of the Middletown Housing Site.

Non-Native Annual Grassland

The majority of the Middletown Housing Site consists of non-native annual grassland. Species observed include wild oat (*Avena barbata*), soft chess (*Bromus hordeaceus*), medusa head (*Elymus caput-medusae*), and rye (*Secale sp.*). Non-native fobs were also observed within this habitat type. This habitat type constitutes 11.2 acres, or 83.9 percent of the Middletown Housing Site.

Valley Oak Woodland

Valley oak woodland (*Quercus lobata*) occurs along a portion of the southwestern property boundary. Tree cover is relatively dense, and the understory is defined predominantly by non-native grasses. This habitat type constitutes 0.3 acres, or 2.2 percent of the Middletown Housing Site.

Native Grassland

Native grasses on the site are dominated by squirreltail grass (*Elymus multisetus*). This habitat type occurs as one continuous patch of habitat in the center of the Middletown Housing Site, and is bound on all sides by non-native annual grassland. This habitat type constitutes 0.8 acres, or 6.2 percent of the Middletown Housing Site.

Riparian Scrub

Riparian scrub occurs along the banks of Dry Creek, and was burned during the Valley Fire. The habitat is re-growing and forming woody thickets mixed with open herbaceous areas. The shrub canopy is dominated by arroyo willow, with sandbar willow (*Salix exigua*) and Oregon ash (*Fraxinus latifolia*) as codominants. The herbaceous areas are dominated by wetland species including tall cyperus (*Cyperus eragrostis*), iris-leaved rush (*Juncus xiphioides*), fiddleleaf dock (*Rumex pulcher*), annual beard grass (*Polypogon monspeliensis*), and western goldenrod (*Euthamia occidentalis*). This habitat type constitutes 0.3 acres, or 1.9 percent of the Middletown Housing Site.

Intermittent Stream

A 227-linear foot (0.4 acre) portion of Dry Creek is located along the western boundary of the Middletown Housing Site. Dry Creek is a tributary of Putah Creek, located approximately 0.4 miles to the northeast. Dry Creek is an intermittent stream with water going subsurface during the driest portions of the year. The stream bottom is unvegetated, consisting of mixed gravel and fine sediment. The slopes of the bank are somewhat gradual, with evidence of scour to the top of the ordinary high water mark (OHWM). This habitat type constitutes 0.4 acres, or 3.1 percent of the Middletown Housing Site.

Wetlands and Waters of the U.S.

A Section 404 Aquatic Resources Report was completed by WRA in 2019 for the Middletown Housing Site to identify potentially jurisdictional wetlands and Waters of the U.S. as described above (**Appendix WD-Middletown**). This report identified the 227 linear feet (0.4 acres) of Dry Creek as an intermittent stream with the potential to be a jurisdictional Water of the U.S.

Wildlife Movement

Dry Creek on the Middletown Housing Site provides open areas for wildlife movement. The terrestrial habitat provides marginal habitat for birds, bats, and potential transient species common in disturbed or low-quality habitat. The Middletown Housing Site is not located within an Essential Connectivity Area (Spencer, 2010). Roadways, residential development, and an elementary school surround the Middletown Housing Site.

Critical Habitat

No Critical Habitat, Essential Fish Habitat, or other habitat designated by local conservation plans occurs on this site.

Special-Status Species

Based on the results of the Middletown Housing Site BRA (**Appendix BRA-Middletown**) and informational resources described above, a total of 12 special-status wildlife species and six special-status plants have the potential to occur onsite. **Table 3.4-5** summarizes species with the potential to occur onsite. Those species that do not have the potential to occur onsite or are not considered special-status are not further discussed herein. No special-status species were observed on the Middletown Housing Site during surveys.

Off-Site Infrastructure Improvement Areas Setting

Habitat Types

The Off-Site Infrastructure Improvement Areas consist of an agricultural field and developed/disturbed habitat that provides low habitat value to plants and wildlife. The width and shoulder of Butts Canyon Road occurs within the Off-Site Infrastructure Improvement Areas. The shoulder is narrow and paved or graveled throughout the site. Trees occur along portions of the roadside and are sparse or absent in other areas.

Wetlands and Waters of the U.S.

The proposed pipeline corridor occurs within the right-of-way of Butts Canyon Road, including the paved roadway and the existing shoulder. A roadside ditch runs along the north side of the road in several stretches adjacent to the proposed pipeline placement. Butts Canyon Road crosses or occurs within proximity of several ephemeral drainages and wetland features. Roadside ditches, ephemeral drainages, and other wetland habitats along Butts Canyon Road have the potential to be jurisdictional. The property of the well does not contain aquatic features.

TABLE 3.4-5
SPECIAL-STATUS SPECIES WITH THE POTENTIAL TO OCCUR ON THE MIDDLETOWN HOUSING SITE

Species	Status	Potential to Occur
Plants		
Bent-flowered fiddleneck *(Amsinckia lunaris)*	1B.2	Moderate
Congested-headed hayfield tarplant *(Hemizonia congesta ssp. congesta)*	1B.2	Moderate
Colusa layia *(Layia septentrionalis)*	1B.2	Moderate
Jepson's leptosiphon *(Leptosiphon jepsonii)*	1B.2	Moderate
Cobb Mountain lupine *(Lupinus sericatus)*	1B.2	High
Keck's checkerbloom (*Sidalcea keckii)*	FE, 1B.1	Moderate
Mammals		
Pallid bat (*Antrozous pallidus)*	SSC	Moderate
Western red bat *(Lasiurus blossevillii)*	SSC	Moderate
Birds		
Long-eared owl *(Asio otus)*	SSC	Moderate
Olive-sided flycatcher *(Contopus cooperi)*	SSC	Moderate
White-tailed kite *(Elanus leucurus)*	CFP	High
Yellow-breasted chat (*Icteria virens)*	SSC	Moderate
Loggerhead shrike *(Lanius ludovicianus)*	SCC	Moderate
Purple martin *(Progne subis)*	SSC	Moderate
Yellow warbler *(Setophaga* [*Dendroica*] *petechia brewsteri)*	SSC	Moderate
Reptiles		
Western pond turtle *(Actinemys marmorata)*	SSC	Moderate
Amphibians		
Foothill yellow-legged frog *(Rana boylii)*	SSC, SC	Moderate

Notes:
CFP – California Fully Protected Species
FE – Federally Listed Endangered Species
SC – California State-Listed Candidate Species
SSC – California Species of Special Concern

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

Sources: **Appendix BRA-Middletown**; USFWS, 2019a; CDFW, 2019; CNPS, 2019

Wildlife Movement

Construction and ongoing maintenance of Off-Site Infrastructure Improvement Areas would occur within an existing roadway and would predominantly be undergrounded except where connected to infrastructure crossing aquatic habitat. A majority of the roadside is fenced by private landowners and presents an additional obstacle to wildlife movement. The Off-Site Infrastructure Improvement Area is not located within an Essential Connectivity Area (Spencer, 2010).

Critical Habitat

No Critical Habitat, Essential Fish Habitat, or other habitat designated by local conservation plans occurs in the Off-Site Infrastructure Improvement Areas.

Special-Status Wildlife and Use

The Off-Site Infrastructure Improvement Area is developed/disturbed and provides poor quality habitat for wildlife. Adjacent land is owned by private landowners, and a majority of the properties are fenced. Many areas are used for grazing or other agricultural uses. The Off-Site Infrastructure Improvement Area does not provide suitable habitat for special-status wildlife.

Special-Status Plants

The Off-Site Infrastructure Improvement Areas are paved and graveled. A small portion of the pipe would cross an existing horse paddock. Therefore, suitable habitat for special-status plants does not occur.

3.4.3 REGULATORY CONTEXT

Federal

Federal Endangered Species Act

The USFWS and the National Marine Fisheries Service (NMFS) implement the Federal Endangered Species Act (FESA) of 1973 (16 USC Section 1531 et seq.). Threatened and endangered species on the federal list (50 CFR §§17.11 and 17.12) are protected from "take" (direct or indirect harm), unless a Section 10 Permit is granted to an individual or a Section 7 consultation and a Biological Opinion with incidental take provisions are rendered to a federal Lead Agency. The USFWS also designates species of concern. Species of concern receive attention from federal agencies during environmental review, although they are not otherwise protected under FESA. Project-related impacts to such species would be considered significant under CEQA and would require mitigation.

Critical habitat is defined under FESA as specific geographic areas within a listed species range that contain features considered essential for the conservation of the listed species. Designated critical habitat for a given species supports habitat determined by USFWS to be important for the recovery of the species. Under FESA, habitat loss is considered to be an impact to a species.

Wetlands and Waters of the U.S.

Any activity that involves discharge of dredged or fill material in navigable Waters of the U.S. as defined by the CWA must first obtain authorization from the U.S. Army Corps of Engineers (USACE), under Section 404 of the CWA. Projects requiring a 404 permit under the CWA also require a Section 401 certification from the appropriate Regional Water Quality Control Board (RWQCB). These two agencies also administer the National Pollutant Discharge Elimination System (NPDES) general permits for construction activities disturbing one acre or more of land discharging stormwater runoff to CWA jurisdictional waters.

The USACE defines the term "Waters of the United States" is defined as:

- All waters currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the flow of the tide;
- All interstate waters including interstate wetlands; or

- All other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, where the use or degradation of which could affect interstate or foreign commerce including any such waters.

The term "Wetlands" is defined as:

- Waters of the U.S. that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands that meet these criteria during only a portion of the growing season are classified as seasonal wetlands.

These regulatory definitions are derived from 33 CFR Part 328 based on the 1986 regulations presently in effect at the time of preparation of this Draft EIR. On January 23, 2020, the U.S. Environmental Protection Agency and USACE announced the "Navigable Waters Protection Rule" which redefines "waters of the United States" pursuant to applicable regulations. The final rule will become effective 60 days after publication in the Federal Register. The County will update references and resulting effects as necessary in the Final EIR. Impacts to Wetlands and Waters of the U.S. will be held to the definition of wetlands and waters at the time of USACE approval of the Proposed Project delineation.

Migratory Bird Treaty Act

Migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC §§ 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR § 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR § 21). A December 22, 2017 Memorandum Opinion issued by the Solicitor of the Department of the Interior concluded that the MBTA does not cover "take that results from an activity, but is not the purpose of that activity (i.e., "incidental" take). This decision was supplemented by new guidance issued by the USFWS on April 11, 2018. Thus, the Project must avoid any purposeful take of migratory birds or their nests or eggs as protected by the MBTA.

Bald and Golden Eagle Protection Act

The Bald Eagle Protection Act was enacted in 1940 to protect bald eagles and was later amended to include golden eagles (16 USC §§ 668-668). The Act prohibits take, possession, and commerce of bald and golden eagles, parts, feathers, nests, or eggs, with limited exceptions. The definition of take includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. Bald eagles may not be taken unless a permit is issued prior to take. Activities that can be authorized by a permit include: scientific research, exhibition, tribal religious events, depredation, falconry, and the take of inactive golden eagle nests that interfere with resource development or recovery operations.

State

California Endangered Species Act

CDFW implements state regulations pertaining to fish and wildlife and their habitat. The California Endangered Species Act (CESA) of 1984 (California Fish and Game Code §2050 et seq. and California Code of Regulations [CCR] Title 14 §§ 670.2 and 670.51) prohibits the take (interpreted to mean the direct killing of a species) of species listed under CESA (14 CCR §§ 670.2 and 670.5). A CESA permit must be obtained if a proposed project would result in the "take" of listed species, either during construction or over the life of the project. Under CESA, CDFW is responsible for maintaining a list of threatened and endangered species designated under state law (California Fish and Game Code § 2070). CDFW also maintains lists of species of special concern, which serve as "watch lists." Pursuant to requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed species may be present in the project area and determine whether the proposed project would have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and require mitigation.

CEQA Guidelines Title 14

CEQA guidelines define the objectives, mandates, and regulations for those public agencies that administer CEQA and those individuals subject to CEQA regulations. Title 14 of the CEQA Guidelines provides interpretation of regulations for the identification of impacts to natural resources that a CEQA project may have. Title 14 additionally identifies the appropriate agencies that have jurisdiction over specific project types or impacts and provides these agencies with the authority to approve mitigation for those impacts over which they have jurisdiction. This includes the allowance for agency protection of those species not formally listed under FESA or CESA but which still may be considered rare, threatened, or endangered.

The CNPS maintains an extensive list of plant species that it considers to be rare, threatened, or endangered, but have no designated status or protection under federal or state endangered species legislation. Impacts to CNPS-listed species (e.g., CNPS list 1B and 2) are usually considered during CEQA environmental review.

California Fish and Game Code

The California Fish and Game Code provides the legal framework for regulations enforced by CDFW as they relate to wildlife and their habitats within California. California Fish and Game Code includes provisions against the take of any CDFW Fully Protected Species without a permit as well as provisions against the needless destruction of eggs and nests.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (California Fish and Game Code § 1900 et seq.) requires CDFW to establish criteria for determining if a species or variety of native plant is endangered or rare. The CNPS inventories the native flora of California and ranks species according to rarity; plants with California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B are considered special-status species requiring analysis under CEQA.

CRPR 1A plants are presumed extinct in California, CRPR 1B plants rare or endangered in California and elsewhere, and CRPR 2A plants are presumed extirpated in California but more common elsewhere. CRPR 2B plants are rare, threatened, or endangered in California, but are more common elsewhere. CRPR 3 is a watch list for plants about which more information is needed. CRPR 4 is a watch list for plants of limited distribution.

Lake and Streambed Alteration Agreement

CDFW requires a Lake and Streambed Alteration Agreement (LSAA) for all projects that result in the modification of a lake, river or streambed, bank, or channel as defined pursuant to Section 1600 et seq. of the California Fish and Game Code. Additionally, an LSAA is required for the extraction or deposition of fill material into a lake, river, or stream. Following notification of a project, CDFW determines if the project could substantially adversely affect fish or wildlife resources and if an LSAA is required.

Oak Woodlands Protection Act

The Oak Woodlands Protection Act requires that the County shall determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. The County is also required to hold the project responsible for appropriate mitigation for impacts to oak woodland. Acceptable mitigation under the Oak Woodlands Protection Act includes conservation and plantings.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) administers Section 401 of the CWA. Section 401 of the CWA requires that an applicant for a Section 404 permit obtain a certification, or a waiver thereof, that the proposed project will not violate applicable state water quality standards. In California, the authority to either grant certification or waive the requirement for certification has been delegated by the SWRCB to the nine regional boards. A Section 404 permit is not valid under the CWA unless "certified" by the State of California, or if certification has been waived, or the time to certify has expired.

Additionally, implementation of the SWRCB NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities ("General Permit") is designed to reduce impacts associated with erosion and runoff from construction sites. Any construction activity that will disturb one or more acres of land and will discharge to waters subject to the CWA requires the "discharger" to obtain coverage under the General Permit. To obtain coverage under the General Permit, the discharger must undertake a risk assessment, develop a Stormwater Pollution Prevention Plan (SWPPP), implement Best Management Practices (BMPs) in accordance with the SWPPP, and comply with monitoring and reporting requirements and other management practices to prevent or reduce pollution.

Regional and Local

Lake County General Plan 2008

Chapter nine of the Lake County General Plan (General Plan) covers biological and open space resources. The following policies included in the General Plan relate to biological resources of the Proposed Project.

Policy OSC-1.1: The County should ensure the protection of environmentally sensitive wildlife and plant life, including those species designated as rare, threatened, and/or endangered by state and/or federal government.

Policy OSC-1.2: The County shall limit the encroachment of development within areas that contain a moderate to high potential for sensitive habitat, and direct development into less significant habitat areas.

Policy OSC-1.3: When reviewing development proposals, the County should encourage cluster development in areas with moderate to high potential for sensitive habitat.

Policy OSC-1.4: The County shall require that buildings and other forms of development be set back from riparian corridors to avoid damage to habitat.

Policy OSC-1.6: The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats.

Policy OSC-1.7: The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation, and ensure that a maximum number and variety of well-adapted plants are maintained.

Policy OSC-1.9: The County shall require buffer areas between development projects and significant watercourses, riparian vegetation, and wetlands.

Policy OSC-1.13: The County shall support the conservation and management of oak woodland communities and their habitats.

Policy OSC-1.14: Prior to approving a specific plan or project, the County shall require a biological study to be prepared by a qualified biologist for proposed development within areas containing a moderate to high potential for sensitive habitat, sensitive wildlife species, and/or sensitive plant species. As appropriate, the study shall include the following activities: (1) inventory species listed in the CNPS Manual of California Vegetation; (2) inventory species identified by USFWS, the California Department of Fish and Game, and NMFS; (3) inventory special-status species listed in the CNDDB; and (4) conduct field surveys of the project site by a qualified biologist.

Policy OSC-1.15: The County shall strive to protect natural resource areas, fish and wildlife habitat areas, scenic areas, open space areas, and parks from encroachment or destruction by incompatible development and invasive species.

Policy OSC-1.19: The County should incorporate the protection of sensitive habitat as nature areas where recreational facilities are proposed in these habitats.

Middletown Area Plan 2010

Section 3.3 of the Middletown Area Plan covers biological resources within the Middletown Plan Area. Policies within Section 3.3 support those policies outlines in the General Plan.

Policies within the Middletown Plan Area include encouraging habitat restoration along waterways, incorporating wildlife corridors, and dedicating open space. The Middletown Area Plan also identifies those special-status plants and animals and sensitive biological resources that may be present within the Middletown Plan Area.

Guenoc Water Rights Modification Project Mitigation Plans

Biological resources on the entire 22,000-acre Guenoc Ranch Property (which spans both Lake and Napa counties) were previously evaluated in the 2009 Final Environmental Impact Report for the Guenoc Water Rights Modification Project (2009 FEIR; Analytical Environmental Services [AES], 2009). The permits and licenses associated with the 2009 FEIR provided for the use of appropriated water to establish and maintain existing and potentially new vineyards, as well as the diversion and storage of newly appropriated surface water in an existing and enlarged reservoir. Mitigation associated with the Water Rights Modification Project included preservation of contiguous open space on the property at a ratio of one acre of open space to every acre of approved vineyard development (2,765 acres). Mitigation additionally included 1,089 acres of oak woodland preservation area within the proposed places of use for appropriated water. These mitigation requirements were outlined in detail within the 2008 Open Space Preservation Plan (Appendix H of the 2009 FEIR), and the Oak Tree Replacement Plan (Appendix G of the 2009 FEIR).

2008 Open Space Preservation Plan

Terms of the Water Rights permit analyzed within the 2009 FEIR required the preservation of 2,765 acres of open space to offset the conversion of habitat from potential vineyard development within the approved place of use (POU). An Open Space Preservation Plan (OSPP) was prepared to outline preservation goals and to identify and describe areas for open space preservation (AES, 2008a). The OSPP allows for the modification of open space boundaries under certain conditions, including:

- Approved activities on the Guenoc Ranch Property that conflict with existing OSPP boundaries, subject to additional County approvals; and
- To further goals outlined within the OSPP such as the protection of sensitive biological resources.

2008 Tree Replacement Plan

Terms of the Water Rights permit analyzed in the 2009 FEIR also required oak mitigation within the total proposed POU. In 2008, an Oak Tree Replacement Plan was completed that outlined mitigation for impacts to oak trees from approved vineyard development (AES, 2008b). In addition to replanting oaks, the Oak Tree Replacement Plan requires the preservation of 1,089 acres of oak woodland within the POU proposed prior to mitigation.

3.4.4 IMPACTS

Method of Analysis

Analysis of impacts on biological resources resulting from the Proposed Project is based on background and historic record searches, review of previous field investigations, reconnaissance-level visits to the site, and biological reports prepared for the Proposed Project.

Background research included reviewing the CNDDB, IPaC, and CNPS databases to determine the potential for occurrence of special-status plant or wildlife species in the vicinity of the Proposed Project.

A series of natural resource investigations were conducted for the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Improvement Sites. Reports and results were reviewed to determine species observed and likely to occur. Botanical and wildlife surveys of the sites occurred on multiple dates in 2018 and 2019 (**Appendix BRA1** and **Appendix BRA2**).

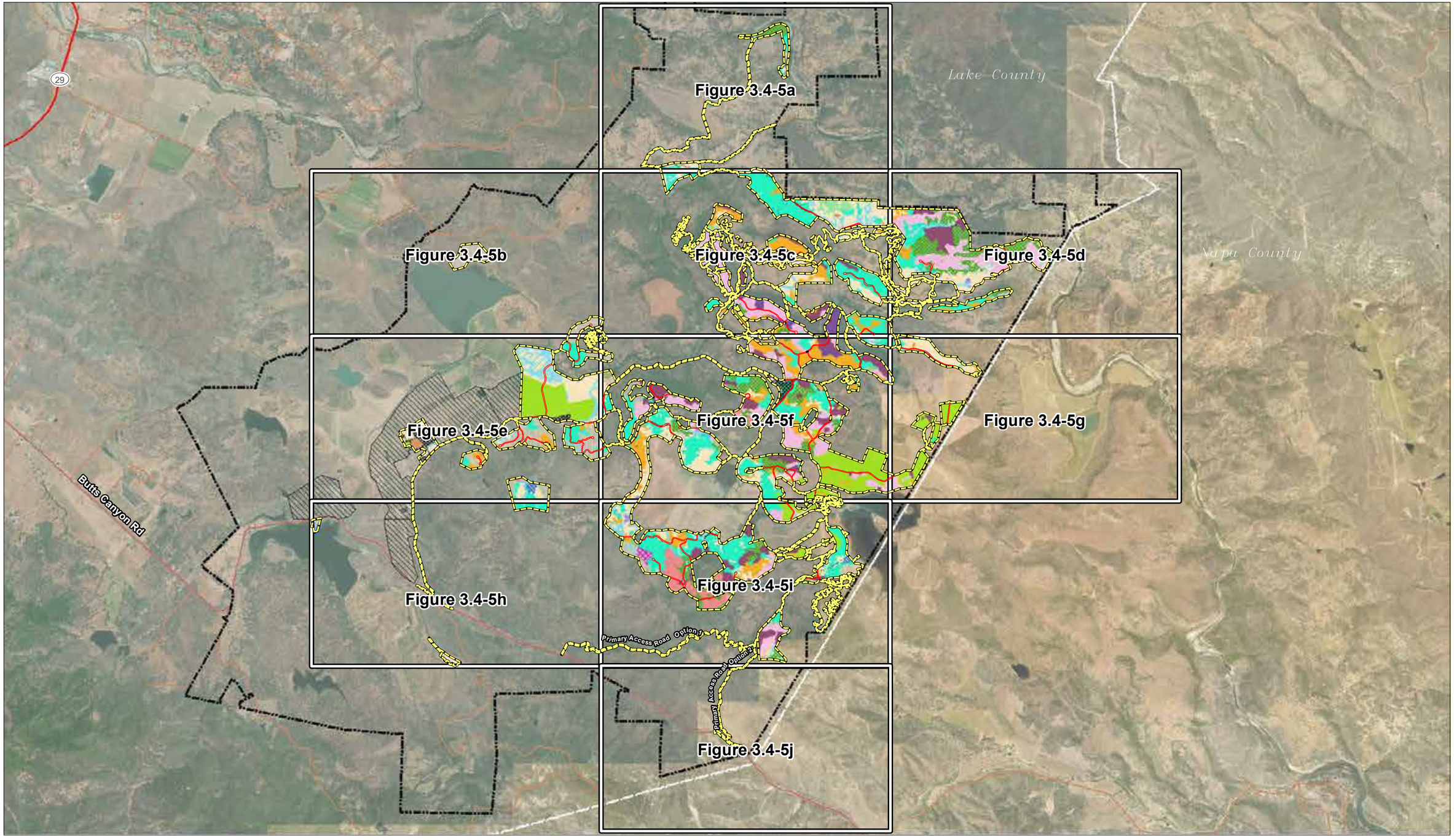
Phase 1 Area of Potential Effects

The Phase 1 potential development footprint area includes the habitat areas within the Guenoc Valley Site that might be converted to commercial, residential, or resort development uses as a result of Phase 1. The potential development footprint includes the proposed limits of grading for the commercial/resort lots, roadways, and infrastructure. The footprint for roadways includes the grading areas and has been expanded to a minimum of 50 feet of width on either side of the roadway to encompass the potential fuel reduction zone of the road as described in **Appendix FIRE**. However, the development footprint within the residential lots is unknown and would be based on the residential layouts that would be designed by the individual owners following sale of the lots.

The Design Guidelines will restrict the area of development within each residential lot to a maximum of 1.5 acres, and restrict the maximum area of impacts to oak woodlands within each residential lot to 1 acre (**Appendix DG**). Because the precise location of each 1.5-acre development area within the residential lots is unknown, the potential habitat conversion for the residential lots cannot be precisely defined. Therefore, the potential development footprint area conservatively includes the entirety of each residential parcel, with the exception that only one acre of oak woodlands is assumed to occur within the potential development footprint area for residential parcels containing more than one acre of oak woodlands.

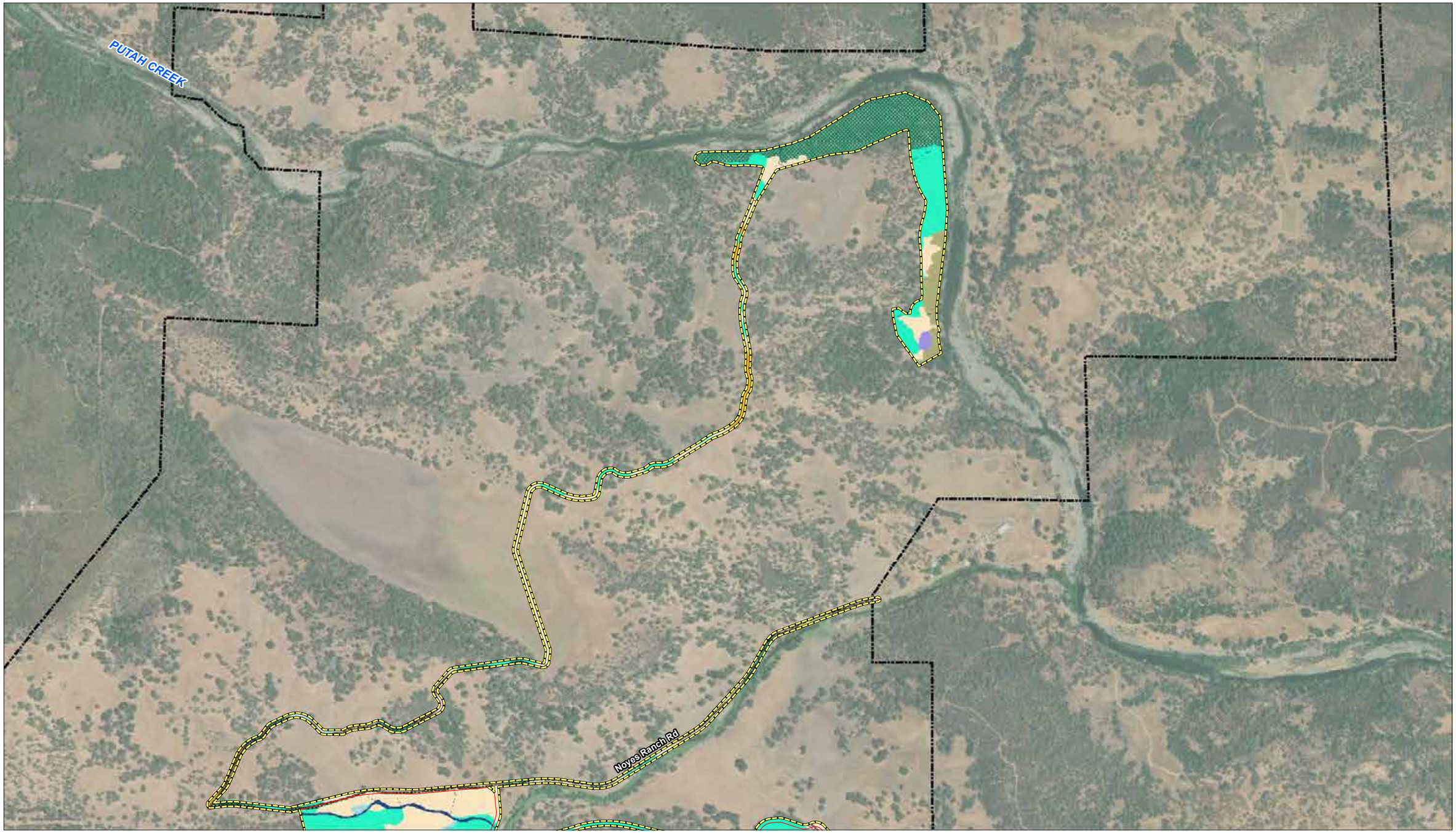
Table 3.4-6 lists the acres of habitat types within the Guenoc Valley Site, and within the potential development footprint area of Phase 1. For simplicity, the potential development footprint area for Phase 1 is referred to as the Phase 1 Area of Potential Effects (APE) (**Figure 3.4** and **5a** through **5i**).

A breakdown of habitat types occurring within the Middletown Housing Site and within its APE is included in **Table 3.4-7**. Because only developed/ disturbed habitat occurs within with Off-Site Infrastructure Improvement Areas, an impacts table by habitat type is not necessary.



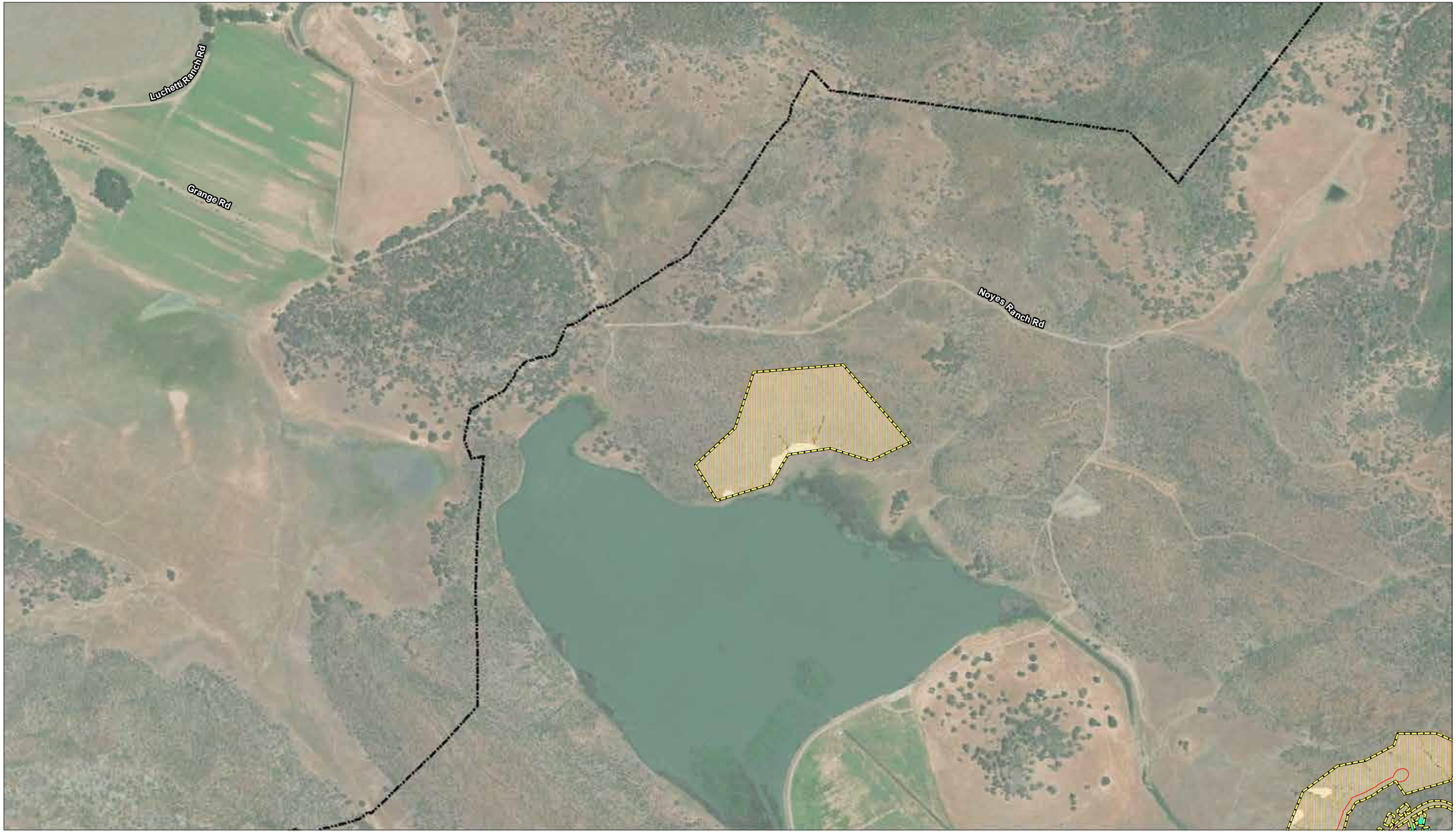
SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-5
Habitat Types Within Guenoc Valley Site Area of Potential Effects



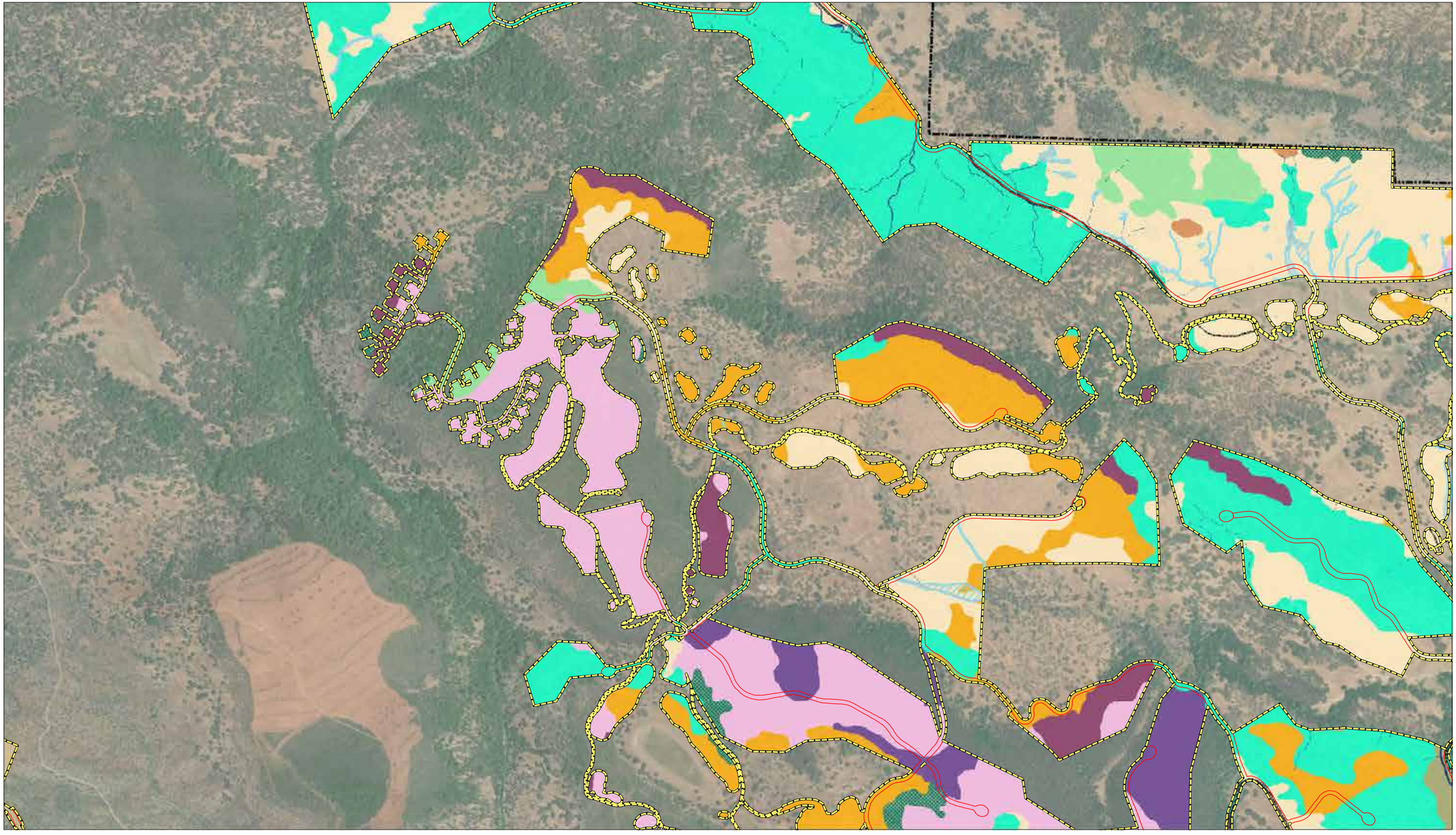
SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-5a
Habitat Types Within Guenoc Valley Site Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

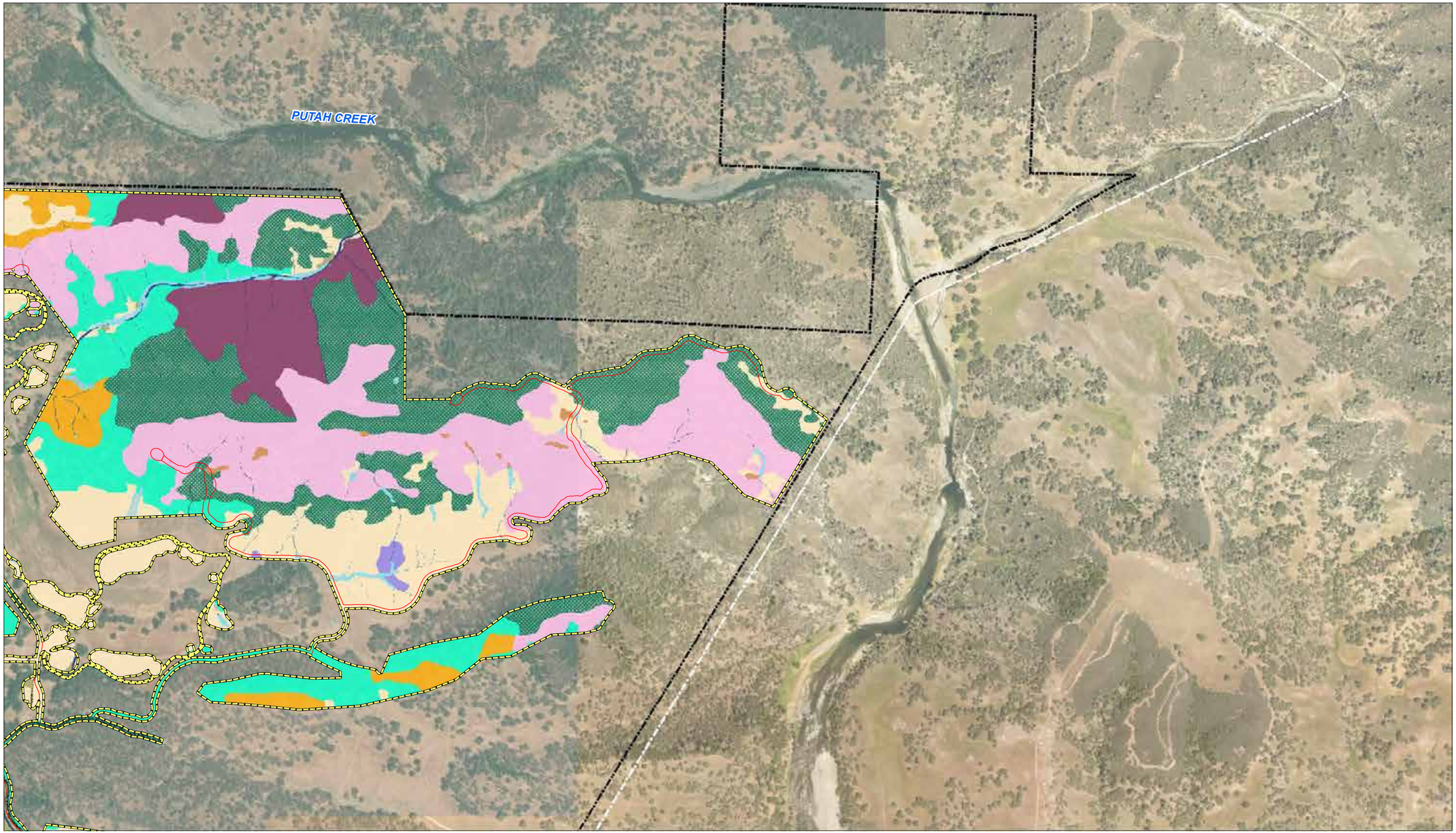
Figure 3.4-5b
Habitat Types Within Guenoc Valley Site Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-5c

Habitat Types Within Guenoc Valley Site Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-5d

Habitat Types Within Guenoc Valley Site Area of Potential Effects

Property Boundary
Not in Project Site
Phase 1 Area of Potential Effects
Roadway Grading

NORTH

Feet
0 400 800

BIOLOGICAL COMMUNITIES

- Agriculture
- Blue Oak Savanna
- Blue Oak Woodland
- Brewer Willow Thickets
- California Yerba Santa Scrub
- Chamise Chaparral
- Deer Weed Scrub
- Developed
- Foothill Pine Woodland
- Interior Live Oak Woodland
- Leather Oak Chaparral
- Musk Brush Chaparral
- Non-native Annual Grasslands
- Ponds and Reservoirs
- Purple Needlegrass Grassland
- Rock Outcrop
- Scrub Oak Chaparral
- Streams
- Valley Oak Woodland
- Wetlands
- White Alder Groves
- Whiteleaf Manzanita Chaparral

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-5e
Habitat Types Within Guenoc Valley Site Area of Potential Effects

Property Boundary
Not in Project Site
Phase 1 Area of Potential Effects
Roadway Grading

NORTH

Feet
0 400 800

BIOLOGICAL COMMUNITIES

- Agriculture
- Blue Oak Savanna
- Blue Oak Woodland
- Brewer Willow Thickets
- California Yerba Santa Scrub
- Chamise Chaparral
- Deer Weed Scrub
- Developed
- Foothill Pine Woodland
- Interior Live Oak Woodland
- Leather Oak Chaparral
- Musk Brush Chaparral
- Non-native Annual Grasslands
- Ponds and Reservoirs
- Purple Needlegrass Grassland
- Rock Outcrop
- Scrub Oak Chaparral
- Streams
- Valley Oak Woodland
- Wetlands
- White Alder Groves
- Whiteleaf Manzanita Chaparral

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-5f
Habitat Types Within Guenoc Valley Site Area of Potential Effects



Property Boundary
Not in Project Site
Phase 1 Area of Potential Effects
Roadway Grading

NORTH

Feet
0 400 800

BIOLOGICAL COMMUNITIES

- Agriculture
- Blue Oak Savanna
- Blue Oak Woodland
- Brewer Willow Thickets
- California Yerba Santa Scrub
- Chamise Chaparral
- Deer Weed Scrub
- Developed
- Foothill Pine Woodland
- Interior Live Oak Woodland
- Leather Oak Chaparral
- Musk Brush Chaparral
- Non-native Annual Grasslands
- Ponds and Reservoirs
- Purple Needlegrass Grassland
- Rock Outcrop
- Scrub Oak Chaparral
- Streams
- Valley Oak Woodland
- Wetlands
- White Alder Groves
- Whiteleaf Manzanita Chaparral

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-5g
Habitat Types Within Guenoc Valley Site Area of Potential Effects



Property Boundary
Not in Project Site
Phase 1 Area of Potential Effects
Roadway Grading

NORTH

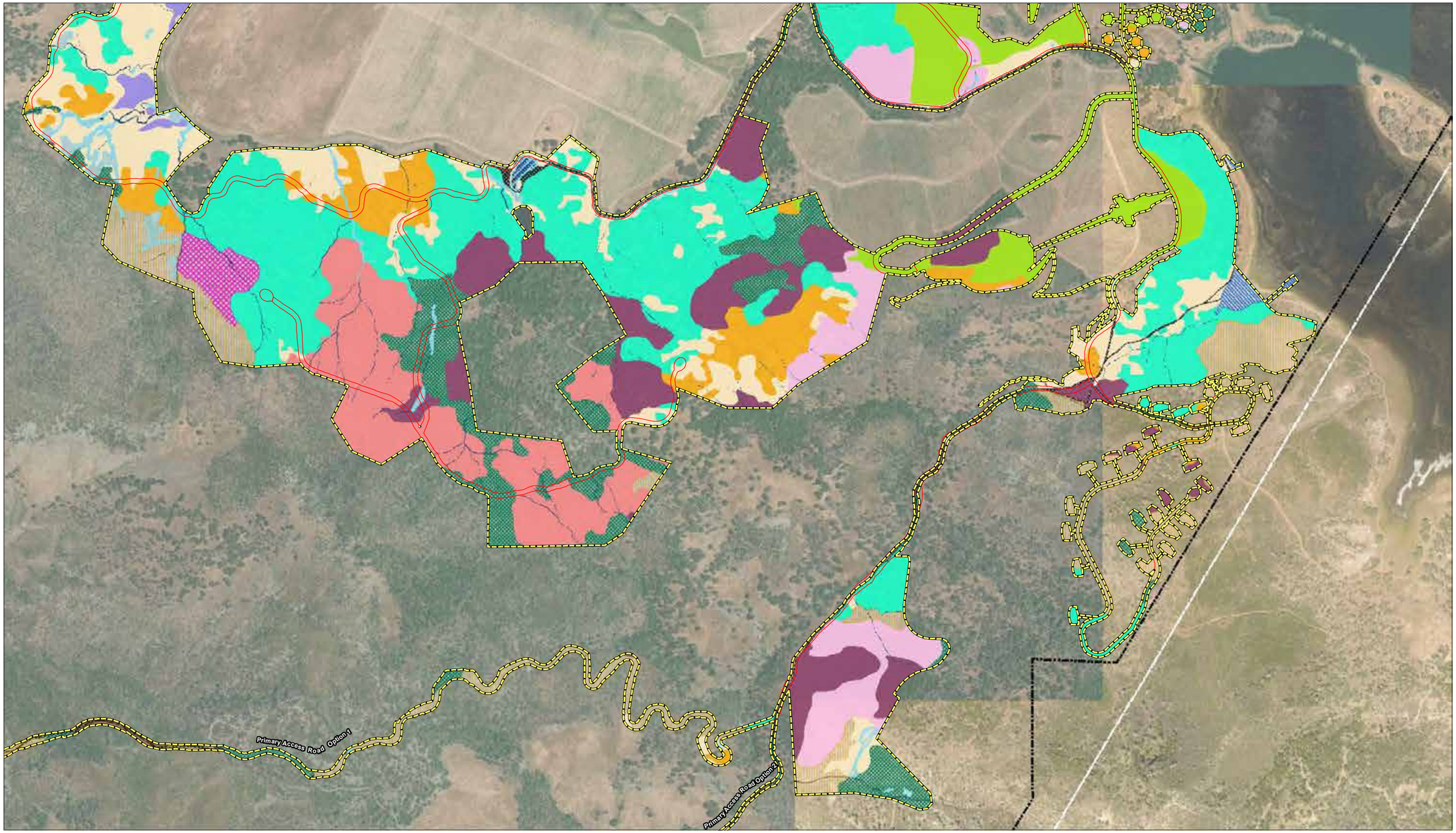
Feet
0 400 800

BIOLOGICAL COMMUNITIES

- Agriculture
- Blue Oak Savanna
- Blue Oak Woodland
- Brewer Willow Thickets
- California Yerba Santa Scrub
- Chamise Chaparral
- Deer Weed Scrub
- Developed
- Foothill Pine Woodland
- Interior Live Oak Woodland
- Leather Oak Chaparral
- Musk Brush Chaparral
- Non-native Annual Grasslands
- Ponds and Reservoirs
- Purple Needlegrass Grassland
- Rock Outcrop
- Scrub Oak Chaparral
- Streams
- Valley Oak Woodland
- Wetlands
- White Alder Groves
- Whiteleaf Manzanita Chaparral

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-5h
Habitat Types Within Guenoc Valley Site Area of Potential Effects



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-5i
Habitat Types Within Guenoc Valley Site Area of Potential Effects



Property Boundary
Not in Project Site
Phase 1 Area of Potential Effects
Roadway Grading

NORTH

Feet
0 400 800

BIOLOGICAL COMMUNITIES

- Agriculture
- Blue Oak Savanna
- Blue Oak Woodland
- Brewer Willow Thickets
- California Yerba Santa Scrub
- Chamise Chaparral
- Deer Weed Scrub
- Developed
- Foothill Pine Woodland
- Interior Live Oak Woodland
- Leather Oak Chaparral
- Musk Brush Chaparral
- Non-native Annual Grasslands
- Ponds and Reservoirs
- Purple Needlegrass Grassland
- Rock Outcrop
- Scrub Oak Chaparral
- Streams
- Valley Oak Woodland
- Wetlands
- White Alder Groves
- Whiteleaf Manzanita Chaparral

SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 2/7/2020

Figure 3.4-5j
Habitat Types Within Guenoc Valley Site Area of Potential Effects

TABLE 3.4-6
HABITAT TYPES WITHIN THE GUENOC VALLEY SITE AND PHASE 1 APE

Habitat Type	Acres on Guenoc Valley Site	Acres Within Phase 1 APE	Habitat Sensitivity
Terrestrial			
Developed	218.2	81.0	Non-sensitive
Agriculture (currently developed)	1,001.6	291.8	Non-sensitive
Rock outcrop	37.9	8.0	Non-sensitive
Non-native annual grasslands	2,259.4	554.1	Non-sensitive
Purple needlegrass grassland	11.7	8.0	Sensitive
Leather oak chaparral	2,573.2	197.9	Non-sensitive
Scrub oak chaparral	49.8	29.3	Non-sensitive
Chamise chaparral	987.2	351.7	Non-sensitive
Whiteleaf manzanita chaparral	150.4	57.3	Non-sensitive
Musk brush chaparral	33.1	19.5	Sensitive
California yerba santa scrub	37.9	6.9	Non-sensitive
Deer weed scrub	19.7	0.9	Non-sensitive
White alder grove	10.9	0.1	Sensitive
Brewer willow thicket	3.6	0.04	Sensitive
Douglas fir forest	61.5	0.0	Non-sensitive
Sargent cypress woodland	10.7	0.0	Sensitive
Foothill pine woodland	1,400.7	206.1	Non-sensitive
Interior live oak woodland	756.5	189.0	Sensitive
Valley oak woodland	49.3	13.1	Sensitive
Blue oak woodland	3,472.4	599.4	Sensitive
Blue oak savanna	1,238.7	269.4	Sensitive
Mixed oak woodland	174.9	0.0	Sensitive
Total	**14,559.3**	**2,877.6**	
Aquatic			
Streams	199.3	13.1	Sensitive
Ponds and reservoirs	658.1	7.4	Sensitive
Emergent wetlands	429.7	49.6	Sensitive
Total	**1,287.1**	**69.9**	
Source: **Appendix BRA1**, **Appendix BRA2**, **Figure 3.4-1** and **3.4-5**			

TABLE 3.4-7
HABITAT TYPES WITHIN THE MIDDLETOWN HOUSING SITE

Habitat Type	Acres on the Middletown Housing Site	Acres Impacted	Habitat Sensitivity
Terrestrial			
Developed	0.4	0.4	Non-sensitive
Non-native annual grasslands	11.2	8.8	Non-sensitive
Native grassland	0.8	0.7	Sensitive
Riparian scrub	0.3	0.0	Sensitive
Valley oak woodland	0.3	0.08	Sensitive
Aquatic			
Intermittent Stream	0.4	0.0	Sensitive
Source: **Appendix BRA-Middletown; Figure 3.4-4**			

Thresholds of Significance

The following thresholds of significance have been used to determine whether implementation of the Proposed Project would result in significant impacts to biological resources. Based on Appendix G of the CEQA Guidelines, an impact to biological resources is considered significant if implementation of the Proposed Project would:

- Have a 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;
- Have a 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;
- 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 modification, or other means;
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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**			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Significant	Significant	Significant	Significant
Mitigation Measures	MM 3.4-1 through MM 3.4-13; MM 3.9-1, 3.9-2; MM 3.10-2	MM 3.4-1 through MM 3.4-14; MM 3.9-1, 3.9-2; MM 3.10-2	MM 3.4-1 through 3.4-3, 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	MM 3.4-8 and 3.4-9
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant

An impact to special-status species may be considered significant if a project has the potential to result in the direct or indirect harm to a special-status species or individuals of that species. Indirect impacts include loss of habitat, particularly critical habitat. Construction in general has the potential to displace special-status species and convert or degrade habitats on which they rely. This is a ***potentially significant*** impact. **Mitigation Measures 3.4-1** and **3.4-2** would reduce the overall potential for construction of the Proposed Project to result in direct impacts to special-status species, or in habitat loss or degradation that could result in significant impacts to special-status species. **Mitigation Measures 3.4-1** and **3.4-2** require general construction BMPs and construction worker awareness training. Species-specific impacts and mitigations for the Guenoc Valley Site, Middletown Housing Site, and Off-Site Infrastructure Improvement Areas are described below.

Guenoc Valley Site – Phase 1 Construction

The Guenoc Valley Site does not include USFWS-designated Critical Habitat or NMFS-designated Essential Fish Habitat, therefore, impacts to designated habitats would not occur. A total of 10 special-status wildlife species and nine special-status plant species have been observed on the Guenoc Valley Site. An additional 13 special-status wildlife species and 52 special-status plant species have the potential to occur on the Guenoc Valley Site, but were not observed during surveys (**Tables 3.4-2** and **3.4-3**).

Special-Status Plants

The following special-status plants have been identified within the Phase 1 APE: Colusa layia, green jewelflower, Greene's narrow-leaved daisy, Keck's checkerbloom, Lake County western flax, and two-carpellate western flax (**Figure 3.4-3**). Other special-status plant species that have the potential to occur onsite were not observed during the bloom surveys conducted within the Phase 1 APE. Given the long timeframe for development, it is also possible for the recruitment of special-status plants to occur within the Phase 1 APE prior to construction. Removal of special-status plants, or degradation of special-status plant habitat during construction would constitute a ***potentially significant*** impact. Implementation of **Mitigation Measure 3.4-3** would reduce impacts to special-status plants.

Under **Mitigation Measure 3.4-3**, preconstruction surveys within the appropriate identification period would determine the specific locations of special-status plants and require establishment of suitable buffers and modification of final lot development plans based on survey results. In the event that avoidance is not feasible, **Mitigation Measure 3.4-3** would require appropriate measures to off-set impacts, including relocation and/or compensatory plantings within the Guenoc Valley Site. These activities would be monitored by a qualified biologist in order to ensure that transplants are successful and that replanting at a 2:1 ratio achieves a minimum 80 percent success ratio. Additionally, should special-status plants not previously identified in the Phase 1 APE be identified in botanical preconstruction surveys, agency consultation would occur as needed if the identified plant does not have a demonstrated history of successful transplantation, or does not support sufficient preservation areas on site. After mitigation, impacts to special-status plants would be reduced to a ***less-than-significant*** level.

As described in Section 6.0 of **Appendix BRA1** and **BRA2**, CNPS list 3 and list 4 plants were observed on the Guenoc Valley Site. While these plants are not considered special-status plants for the purpose of this EIR, their inherent value has been considered through the design and development of the Proposed Project. Known occurrences of CNPS list 3 and list 4 plants have been included within designated open space and, in this way, effects on these plants have been avoided where feasible.

Special-Status Mammals

American Badger

American badgers have the potential to utilize grassland habitat on the Guenoc Valley Site for foraging, denning, and raising of young. A total of 2,271.0 acres of grassland habitat occurs within the Guenoc Valley Site. Of this, 562.1.0 (24.8 percent) fall within the Phase 1 APE portion of the Guenoc Valley Site. However, as discussed above, not all of this area would be impacted due to residential lot coverage restrictions. Therefore, over 75 percent of suitable American badger habitat on the Guenoc Valley Site would not be impacted by construction of Phase 1 of the Proposed Project. Additionally, badgers are known to occupy multiple dens over the course of their lives and typically have access to multiple dens at a given time. No badgers or badger dens have been observed onsite during surveys, and the nearest documented occurrence of this species is over 10 miles from the Guenoc Valley Site, recorded in 2011. Potential loss of habitat is therefore considered ***less than significant***.

While individual badgers typically have multiple dens for daily refuge, these dens are also used for birthing and other important activities related to raising of young. Construction activities within annual grassland could impact badgers or badger dens should they occur within an area designated for development. Destruction of active dens, especially birthing dens, has the potential to occur during habitat conversion. Destruction of an active birthing den would be a ***significant*** impact. **Mitigation Measure 3.4-4** requires identification of potential American badger dens in preconstruction surveys followed by appropriate agency consultation and measures in the event that an occupied den is detected. After mitigation, impacts to American badger as a result of Phase 1 construction would be reduced to ***less-than-significant*** levels.

Ringtail

Ringtail have the potential to utilize a wide variety of habitat types within the Guenoc Valley Site. Oak woodland, rock outcrops, chaparral, and similar habitat types have the potential to support ringtail. This animal may forage in these habitats or seek refuge in abandoned dens, tree crevasses, or rock outcrops. Phase 1 construction would not result in the complete conversion of any suitable ringtail habitat type within the Guenoc Valley Site. Approximately 2,000 acres of suitable ringtail habitat would be preserved within the designated Open Space Preservation Area (**Appendix OSPP**). Ringtail habitat occurs throughout the approximate 13,000 acres of habitat outside of the Phase 1 APE, including approximately 30 acres of rock outcrop, 3,175 acres of chaparral, and 4,820 acres of oak habitat. Restrictions on residential lot development as described in the Design Guidelines (**Appendix DG**) and oak preservation would further reduce conversion of ringtail habitat. Additionally, ringtails are highly mobile animals that do not rely on the presence of a single den or refuge throughout their life, often switching refuge locations every few days. Potential loss of habitat is therefore considered ***less than significant***.

While the majority of ringtail habitat would remain un-impacted, construction of Phase 1 of the Proposed Project could result in the destruction of suitable ringtail birthing dens. Destruction of an active birthing den would constitute a ***significant*** impact. **Mitigation Measure 3.4-5** requires identification of potential active ringtail dens in preconstruction surveys followed by the appropriate avoidance or removal measures. After mitigation, impacts to ringtails would be reduced to ***less-than-significant*** levels.

Special-status Bats

Pallid bat, western red bat, and Townsend's big-eared bat have the potential to occur onsite. Of these, pallid bat was detected foraging on the Guenoc Valley Site using a Sonobat recording device. Potential foraging and roosting habitat for special-status bats is preserved through the avoidance of 90.9 percent of oak habitat, at least 78.9 percent of rock outcroppings, and riparian habitats that may provide suitable roost habitat. Additional foraging habitat and continuity of habitat is preserved through clustering of development such that 81.9 percent of the Guenoc Valley Site would not be directly impacted by Phase 1 construction. Because each habitat present on the Guenoc Valley Site occurs at least partially outside of the Phase 1 APE, Phase 1 would not result in complete conversion of any potential suitable bat foraging or roosting habitat. Potential loss of habitat is therefore considered ***less than significant***.

The Proposed Project additionally has the potential to impact special-status bats through direct injury or mortality should a roost tree in active use be removed during construction of Phase 1. These impacts are considered ***potentially significant***. In order to address these impacts, **Mitigation Measure 3.4-6** is recommended. Implementation of **Mitigation Measure 3.4-6** would require pre-construction surveys within potential bat roost habitat as identified by a qualified biologist. Trees identified as potentially supporting day roosts by a qualified biologist would be subject to a two-day removal process that would allow any day roosting bats, should they occur, to vacate the roost. Consultation with CDFW as necessary based on the results of preconstruction surveys would further reduce impacts. Any active maternity roosts would be avoided until the end of the maternity roosting season. Implementation of **Mitigation Measure 3.4-6** would reduce impacts to special-status bats due to removal of potential roost trees to a ***less-than-significant*** level.

Additionally, indirect impacts from nighttime construction noise has the potential to create ***potentially significant*** sensory disturbance to special-status bats. Continuous loud nighttime noise has the potential to disrupt nighttime foraging activities and may displace special-status bats from forging in areas of heavy construction. However, construction of Phase 1 would occur in multiple phases for each clustered development community. As stated above, 81.9 percent of the Guenoc Valley Site would not be developed as a result of Phase 1 construction. With implementation of **Mitigation Measure 3.10-2**, overall construction noise would be reduced through the use of mufflers, shields, shrouds, and other equipment choice and design to reduce noise production. The area potentially subject to nighttime construction noise as a result of the Proposed Project would be much smaller than the total area scheduled for Phase 1 development, as each community would be developed in its own phase. Additionally, much of the construction activity would occur during daylight hours, outside of peak bat foraging activity. Because the Proposed Project would not significantly impact available foraging habitat, and because potential nighttime construction noise would not occur across the entirety of the Phase 1 APE at any given time, impacts to special-status bats are minimized. With implementation of **Mitigation Measure 3.10-2**, impacts would be ***less than significant***.

The use of artificial lighting during nighttime bat foraging activities causes disorientation and disruption of normal feeding behavior. Excessive use of artificial nighttime lighting or high-intensity lighting has the potential to ***significantly impact*** special-status bats during foraging activity. Per the project design guidelines, lighting would be restricted primarily to the safety and security of visitors with minimal and restricted lighting of aesthetic features such as artwork and landscaping (**Appendix DG**). These features would be subject to restrictions on light type, intensity, shielding, timing, and intensity as described in the design guidelines. **Mitigation Measure 3.4-7** further reduces effects from lighting by restricting the use of lighting between 11 p.m. and 7 a.m. unless required for safety or security purposes, with specific restrictions on such safety or security lighting.

With implementation of **Mitigation Measure 3.10-2** presented in **Section 3.10.5**, and **Mitigation Measures 3.4-1**, **3.4-2**, **3.4-6**, and **3.4-7**, impacts to special-status bats would be reduced to a ***less-than-significant*** level.

Special-Status, Nesting, and Migratory Birds

The Guenoc Valley Site provides suitable nesting and foraging habitat for numerous special-status birds (**Table 3.4-2**). Bald and golden eagles protected under the Bald and Golden Eagle Protection Act, as well as other birds protected under the Migratory Bird Treaty Act, have been observed onsite. The Fish and Game code additionally provides protection to nesting bids. Results of targeted bird surveys and general survey results are included in Section 5.3 of **Appendices BRA1** and **BRA2**. The Phase 1 APE consists 2,897.9 acres of the approximately 16,000-acre Guenoc Valley Site. Within the Phase 1 APE, additional non-dedicated open space would be preserved through lot coverage development restrictions on residential lots as defined in the design guidelines (**Appendix DG**). The majority of suitable nesting and foraging on the Guenoc Valley Site would not be directly converted as a result of Phase 1 construction.

While the majority of nesting and foraging habitat on the Guenoc Valley Site would be preserved under Phase 1, nest-disturbance as a result of noise, visual disruption, or other sensory disturbance during the nesting season has the potential to result in nest destruction, abandonment, or failure. This is considered a ***potentially significant*** impact. Implementation of **Mitigation Measure 3.4-8** would reduce impacts related to disturbance from construction activities to special-status or nesting birds. Identification of active nests and establishment of suitable buffers protects against accidental nest destruction and reduces the likelihood that disturbance levels would result in nest abandonment, thus minimizing risks to nesting birds. 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. Construction of the Proposed Project is not likely to result in nighttime activities and sound disruption. Additionally, noise-reducing **Mitigation Measure 3.10-2** included in **Section 3.10.5** would reduce impacts associated with sensory disturbance from construction-related noise. Through reduction of allowable noise generation and timing of potentially disruptive sounds, nesting birds are sheltered from constant disruption and noise levels that would impact habitat within undeveloped areas. Implementation of **Mitigation Measures 3.10-1** and **3.10-2** presented within **Section 3.10.5**, and **Mitigation Measures 3.4-1**, **3.4-2**, and **3.4-8** would reduce construction noise effects on special-status birds to a ***less-than-significant*** level.

Use of artificial lighting during construction has the potential to adversely affect nesting and migratory birds. Artificial lighting has the potential to act as an attractant and can lead to altered behavior resulting in stranding, injury, or mortality. This is considered a ***significant*** impact. While the overall project is designed to preserve dark nighttime skies, **Mitigation Measure 3.4-7** would further reduce the potential impacts to special-status, migratory, and nesting birds associated with the risks of artificial lighting to less-than-significant levels. This is achieved through the reduction of potentially attractive lighting and minimizing spillage of lighting, especially into areas of sensitive habitat. Per the project design guidelines, lighting would be restricted primarily to the safety and security of visitors with minimal and restricted lighting of aesthetic features such as artwork and landscaping (**Appendix DG**). These features would be subject to restrictions on light type, intensity, shielding, timing, and intensity as described in the design guidelines. Implementation of **Mitigation Measure 3.4-7** would reduce lighting effects on special-status bird behavior to a ***less-than-significant*** level.

Burrowing Owl

In addition to special-status bird impacts analyzed above, destruction or loss of active burrowing owl burrows during construction would constitute a ***significant*** impact, regardless of the nesting status of the burrow. While no burrowing owls were observed during surveys related to the Proposed Project, historical observations of this species have occurred on the Guenoc Valley Site. Grasslands provide suitable burrow habitat, and burrowing animals such as ground squirrels necessary to create burrowing owl burrows were observed on the Guenoc Valley Site. Grassland habitat and agricultural habitat onsite also provide foraging opportunities for this species. Burrowing owls are well adapted to succeed in areas of disturbance or in undeveloped areas. A total of 562.1 acres (24.8 percent) of grassland habitat suitable for burrows occurs within the Phase 1 APE. Destruction or loss of active burrowing owl burrows may occur during construction would constitute a ***significant*** impact. **Mitigation Measure 3.4-9** requires preconstruction surveys for active burrows, buffers around active burrows, and exclusion facilitated by a qualified biologist to protect against accidental mortality for burrows within areas of impact. This minimizes impacts to burrowing owls and prevents accidental take. After mitigation, impacts to burrowing owls would be reduced to ***less-than-significant*** levels.

Special-Status Reptiles

The Guenoc Valley Site contains suitable habitat for western pond turtle, which was observed onsite (Figure 5 and Figure 6 of **Appendix BRA1** and **Appendix BRA2**). This species was observed in Bucksnort Creek, Putah Creek, and along the banks of an unnamed reservoir.

Construction in and around suitable habitat has the potential to impact western pond turtle through displacement, direct injury or mortality, or disruption of nesting, foraging, and other behaviors. While much of the development is clustered and does not encroach on these aquatic features, impact levels to western pond turtle are still considered ***potentially significant***. These impacts have the potential to occur during the construction phase of development during ground disturbance and habitat conversion. In order to reduce impacts to western pond turtle, **Mitigation Measure 3.4-10** requires preconstruction surveys to determine presence of western pond turtle within suitable habitat. Preconstruction surveys and timing construction as possible outside of peak nesting season minimizes the potential impact to individuals.

Construction personnel training required under **Mitigation Measure 3.4-2** on the identification and proper response to western pond turtle presence and coordination with a qualified biologist on necessary exclusion methods further reduces construction phase impacts and prevents accidental take. Avoidance and/or exclusion measures as needed would further reduce impacts should western pond turtle be observed within a proposed construction area. Impacts following mitigation would be ***less than significant***.

Should runoff produced during the construction phase result in impaired water quality associated with western pond turtle habitat, ***potentially significant*** impacts to this species have the potential to occur through degradation of habitat. **Mitigation Measures 3.9-1** and **3.9-2** presented in **Section 3.9.5** would minimize potential impacts to water quality on the Guenoc Valley Site, thus minimizing potential impacts to western pond turtle habitats. Implementation of a SWPPP would require construction BMPs and inspections throughout construction to avoid production of runoff with impaired quality. Properly installed SWPPP fencing can also serve as exclusion fencing for WPT. The SWPPP would also require final site stabilization prior to closeout such that bare soil and other potential runoff-impairing issues are properly addressed. Proper monitoring and reporting of aggregate and concrete use and wash consistent with RWQCB permits would require proper production, containment, and cleanup related to these activities. With incorporation of mitigation, impacts to western pond turtle due to habitat degradation would be ***less than significant***.

Implementation of **Mitigation Measures 3.4-1, 3.4-2, and 3.4-10**, and **Mitigation Measure 3.10-2** presented in **Section 3.10.5,** would reduce impacts to special-status amphibians to a ***less-than-significant*** level.

Special-Status Amphibians

The Guenoc Valley Site offers suitable habitat for one special-status amphibian: Foothill yellow-legged frog (FYLF). FYLF was observed on the Guenoc Valley Site along Butts Creek near McCain Creek. Similar to western pond turtle, ***significant impacts*** to FYLF may occur during activities located on or adjacent to suitable aquatic habitat. **Mitigation Measure 3.4-11** would reduce potential impacts to FYLF. Preconstruction surveys, implementation of avoidance and/or exclusion measures as warranted, and timing of construction as possible within the dry season minimizes the potential impact to individuals. Construction personnel training required under **Mitigation Measure 3.4-2** on the identification and proper response to FYLF presence and coordination with a qualified biologist on necessary exclusion methods further reduce construction phase impacts. Implementation of these mitigation measures would reduce impacts to FYLF as a result of habitat conversion to a ***less-than-significant*** level.

Should runoff produced during the construction phase result in impaired water quality associated with FYLF habitat, ***potentially significant*** impacts to this species have the potential to occur through degradation of habitat. **Mitigation Measures 3.9-1** and **3.9-2** presented in **Section 3.9.5** would minimize potential impacts to water quality on the Guenoc Valley Site, thus minimizing potential impacts to FYLF habitats. As noted above for WPT, properly installed SWPPP fencing can also serve as exclusion fencing for FYLF. Implementation of a SWPPP would require construction BMPs and inspections throughout construction to avoid production of runoff with impaired quality. The SWPPP would additionally require final site stabilization prior to closeout such that bare soil and other potential runoff-impairing issues are properly addressed.

Proper monitoring and reporting of aggregate and concrete use and wash consistent with RWQCB permits would require proper production, containment, and cleanup related to these activities. With incorporation of mitigation, impacts to FYLF due to habitat degradation would be ***less than significant***.

Implementation of **Mitigation Measures 3.4-1, 3.4-2,** and **3.4-11**, and **Mitigation Measure 3.10-2** presented in **Section 3.10.5**, would reduce impacts to special-status amphibians to a ***less-than-significant*** level.

Invasive Species

Creation of the Equestrian Center lagoon and other palustrine habitats has the potential to increase the presence of invasive species, specifically bullfrogs, by artificially increasing the presence of suitable habitat. Bullfrogs have been observed on and around existing manmade water features where water has been stored for use. Invasive species such as bullfrogs have the potential to outcompete and predate special-status species. This is considered a ***potentially significant*** impact. **Mitigation Measure 3.4-12** would manage for the presence of invasive species and therefore reduce the impact level to special-status species. This would represent a ***less-than-significant*** impact with the incorporation of mitigation.

Guenoc Valley Site – Phase 1 Operation

Special-Status Plants

The majority of impacts to special-status species would occur during the construction phase due to construction disturbance and conversion of habitat. Operation of Phase 1 of the proposed project within the Guenoc Valley Site would include ongoing grazing activities as vegetation management to reduce fire fuel load as part of the Wildfire Prevention Plan (**Appendix FIRE**). It is possible for grazers to incidentally consume special-status plants during grazing activities. As shown in **Figure 3.4-3**, special-status plants, specifically those listed under CESA and/or FESA occur in multiple locations across the Guenoc Valley Site. Much of the Guenoc Valley Site is currently used for cattle and sheep grazing consistent with the agricultural land uses onsite and similar to those grazing activities proposed for fire management. Additionally, grazing occurs on a rotational basis, which would prevent overgrazing of the landscape. Given the scattered distribution of special-status plants on the Guenoc Valley Site, and the existing and ongoing grazing activities, inclusion of grazing activities for the use of vegetative fuel reduction to reduce fire hazard would not result in long-term adverse impacts to special-status plants. This impact is therefore considered ***less than significant***.

Special-Status Wildlife

The majority of impacts to special-status species would be during the construction phase where habitat conversion would occur and the potential for accidental take is highest. No ongoing conversion of habitat would occur related to operation of Phase 1 development. Special-status species on the Guenoc Valley Site would occur outside of developed areas during the operation of Phase 1.

Per the Design Guidelines, residential noise production is limited and must not generate noise at levels such that it becomes a nuisance to neighbors. The Proposed Project would not result in activities requiring heavy machinery or equipment with the potential to cause severe ground-borne vibration.

Reduction of residential and operating noise would limit the potential area of disturbance into suitable special-status bird nesting and foraging habitat or special-status bat roost and foraging habitat. This would ensure that the quality of undeveloped habitat is not significantly degraded by constant or excessively loud noise production. Noise levels described within **Section 3.10.5** following mitigation would be ***less than significant*** to sensitive receptors. This level of noise minimization would serve to protect nesting birds, including special-status birds, and bats utilizing undeveloped habitat throughout operation of Phase 1.

Ongoing activities on the Guenoc Valley Site also include increased human activity and recreational uses of potential special-status reptile and amphibian aquatic habitat. Due to the inherent recreational value of aquatic habitats, increased ongoing disturbance in these areas is likely to be higher than other undeveloped areas. Such an increase in activity has the potential to disturb or displace western pond turtle and FYLF at significant levels. This is considered a ***potentially significant*** impact. **Mitigation Measure 3.4-13** would be required to reduce impacts to these species. Proper signage educating the public on the value of western pond turtle and FYLF and their supporting habitat would alleviate potential long-term operational impacts.

As discussed under Phase 1 Construction on the Guenoc Valley Site, use of artificial lighting has the potential to ***significantly*** and adversely affect special-status bats and birds. Therefore, those mitigation measures required to reduce impacts related to the use of construction and installation of lighting would also be required for operation of the Proposed Project. **Mitigation Measure 3.4-7** would, as discussed above, reduce impacts from the use of artificial lighting to a ***less-than-significant*** level.

Guenoc Valley Site – Future Phases Construction and Operation

Special-status species with the potential to occur within the Phase 1 APE have been analyzed and addressed for impacts. Habitat types observed and analyzed within the Phase 1 APE are of similar quality and type to those within the balance of the Guenoc Valley Site, which may be impacted in future phases. Special-status species with the potential to occur within the Phase 1 APE have a similar potential to occur within the balance of the Guenoc Valley Site, and may therefore be impacted in future phases.

Land use, design, and construction methods for future phases would be similar to those land uses, design, and construction methods proposed for Phase 1. Therefore, construction and operation of future phases would result in impacts similar to those described above and are therefore ***potentially significant***. Future phases would additionally be subject to the same restrictions outlined in the design guidelines emphasizing the maintenance of natural resources on the Guenoc Valley Site through clustered development, restrictions on residential lot development as described in the Design Guidelines (**Appendix DG**), and minimization of operational disturbance to sensitive biological resources. Therefore, those mitigation measures presented for the Phase 1 construction and operation of the Guenoc Valley Site are applicable to those impacts analyzed for future phases of development, including **Mitigation Measures 3.4-1** through **3.4-13**.

However, due to the biological diversity of the Guenoc Valley Site and the potential for sensitive biological resources to occur, exact impacts from future phases of construction and operation cannot be evaluated based on a programmatic understanding of future phases of development. Through implementation of **Mitigation Measure 3.4-14**, a robust analysis of specific future phase impacts would occur.

This analysis, along with any associated mitigation tailored to future phases impacts would be incorporated into the Proposed Project. Implementation of mitigation outlined for Phase 1 of construction followed by further analysis of impacts and additional necessary mitigation would reduce impacts of future phases to a ***less-than-significant*** level.

Middletown Housing Site – Construction

The Middletown Housing Site does not include USFWS-designated Critical Habitat or NMFS-designated Essential Fish Habitat. The Middletown Housing Site was evaluated and found to have suitable habitat to support five special-status plants and 11 special-status animals (**Appendix BRA-Middletown**; USFWS, 2019a; CDFW, 2019; CNPS, 2019). No special-status plants or animals were observed on the Middletown Housing Site during surveys conducted in 2018 and 2019.

Special-Status Plants

Surveys of the Middletown Housing Site occurred within the appropriate identification window of potentially occurring special-status plants. Because no special-status plants were observed on the Middletown Housing Site, no impacts to special-status plants are expected to occur. However, because suitable habitat to support six special-status plants was identified on the Middletown Housing Site, establishment of special-status plants could occur between initial biological surveys and ground disturbance (**Table 3.4-5**). This is considered a ***potentially significant*** impact. Preconstruction surveys to verify presence or absence of special-status plants, followed by implementation of specific measures, as described in **Mitigation Measure 3.4-3**, would ensure that impacts to special-status plants on the Middletown Housing Site are ***less than significant***.

Special-Status Wildlife

The Middletown Housing Site contains suitable habitat for 11 special-status wildlife species (**Table 3.4-5**). These species were analyzed and found to have the potential to occur on the Guenoc Valley Site, with impacts determined to be ***potentially significant.*** Should these species occur, the Proposed Project has the potential to significantly impact these species on the Middletown Housing Site in a similar manner to the description of impacts above for the Guenoc Valley Site. This includes special-status bird nest disturbance or destruction, degradation of aquatic habitat through untreated runoff, removal of potential bat roosts, and sensory disturbance to special-status bats and birds from the use of artificial lighting. Therefore, mitigation measures presented above are suitable to mitigate for impacts to special-status wildlife on both the Guenoc Valley Site and Middletown Housing Site. This includes **Mitigation Measures 3.4-1 and 3.4-2**, **Mitigation Measures 3.4-6** through **3.4-8**, and **Mitigation Measures 3.4-10** and **3.4-11**. **Mitigation Measures 3.9-1** and **3.9-2** presented in **Section 3.9.5** and **Mitigation Measure 3.10-2** presented in **Section 3.10.5** would also be required. With incorporation of these mitigation measures, impacts to special-status wildlife on the Middletown Housing Site are ***less than significant***.

Middletown Housing Site – Operation

Operation of the Middletown Housing Site would not result in ongoing habitat conversion such that impacts to special-status species would occur. Operation of the Middletown Housing Site would not result in extreme noise events, ground-borne vibrations, or use of disruptive heavy machinery.

Per the project design guidelines, use of artificial lighting would be minimal. The Middletown Housing Site is within a developed area and would not result in significant impacts to special-status species. This would be a **less-than-significant** impact. Therefore, there is no mitigation necessary for potential impacts to special-status species as it relates to the operation of the Middletown Housing Site.

Off-Site Infrastructure Improvement Areas – Construction

The Off-Site Infrastructure Improvement Areas do not contain suitable habitat for special-status species. No USFWS-designated Critical Habitat or NMFS-designated Essential Fish Habitat occurs within the Off-Site Infrastructure Improvement Area. Therefore, no impacts would occur to these resources.

While no special-status species have the potential to occur within the Off-Site Infrastructure Improvement Area, construction activity within these areas may disturb nearby nesting birds, should they occur. This would constitute a ***significant impact***. Implementation of **Mitigation Measures 3.4-7** and **3.4-8** for activities in the Off-Site Infrastructure Improvement Area would reduce such impacts to a ***less-than-significant*** level.

Off-Site Infrastructure Improvement Areas – Operation

Ongoing use and maintenance of the Off-Site Infrastructure Improvement Areas would occur within habitat not suitable for special-status species and would not include the conversion of habitat. There would be ***no impact***. Therefore, there is no mitigation necessary for potential impacts to special-status species as it relates to the operation of the Off-Site Infrastructure Improvement Areas.

Combined Project Impacts

In summary, the Proposed Project, including Phase 1, future phases, Off-Site Workforce Housing, and Off-Site Infrastructure Improvements, would not result in impacts to EFH or Critical Habitat, and mitigation presented above would prevent significant combined direct or indirect impacts to special-status species. Take of special-status wildlife would be prevented through avoidance and impact minimization measures. Impacts related to the Off-Site Workforce Housing and Off-Site Infrastructure Improvements with the potential to be significant would only occur during the construction phase and would be limited to indirect impacts such as nesting and/or roost disturbance and degradation of aquatic habitat. These impacts are minimized through mitigation such as setbacks, buffers, and adherence to water quality discharge requirements described above. Therefore, with mitigation presented above, the combined impact of the Proposed Project on special-status species is **less-than-significant**.

As stated above, additional analysis of the contributing impacts of future phases on the Guenoc Valley Site would be required under **Mitigation Measure 3.4-14** to confirm that mitigation measures presented above would be sufficient to reduce impacts to a less-than-significant level. Therefore, no additional mitigation measures are necessary as it relates to the combined Proposed Project impacts on special-status species.

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			
	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 3.4-1, 3.4-15 through 3.4-18; MM 3.9-1, 3.9-2	MM 3.4-1, 3.4-14 through 3.4-18; MM 3.9-1, 3.9-2	MM 3.4-1, 3.4-15, 3.4-16; MM 3.9-1	None necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	No Impact

An impact on a sensitive natural community may be considered significant if sensitive habitat types were 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.

Guenoc Valley Site – Phase 1 Construction

Table 3.4-6 outlines those areas on the Guenoc Valley Site within the Phase 1 APE. Those areas within the Phase 1 APE have the potential to be directly impacted as a result of the Proposed Project, however, restrictions on residential lot development as described in the Design Guidelines (**Appendix DG**) and non-dedicated open space would occur throughout the Phase 1 APE. The impacts analysis presented herein assumes total conversion of habitat within the Phase 1 APE because final locations of residential structures are not yet known. Therefore, impacts analyzed here would generally exceed actual impacts of the Proposed Project. Detailed habitat sheet mapping is also included as Appendix A of **Appendix BRA1 and Appendix BRA2**, and sheet mapping of the Phase 1 APE is included as **Figures 3.4-5a** through **3.4-5i**.

Purple Needlegrass

Purple needlegrass grassland is considered a sensitive habitat type that has limited distribution in multiple locations on the Guenoc Valley Site. Of the 11.7 acres of purple needlegrass, 8.0 acres (68.4 percent) occurs within the Phase 1 APE as shown on **Figure 3.4-2**. Detailed habitat sheet mapping is also included as Appendix A of **Appendix BRA1 and Appendix BRA2**, and sheet mapping of the Phase 1 APE is included as **Figures 3.4-5a** through **3.4-5i**. Given the residential lot development restrictions within the Design Guidelines, it is not anticipated that the entirety of purple needlegrass within development areas would be removed. **Mitigation Measure 3.4-15** is recommended to ensure maximum avoidance of purple needlegrass within development areas. However, given the sensitive nature of this habitat type and its limited distribution on the Guenoc Valley Site, impacts may still be considered ***potentially significant*** after avoidance measures within **Mitigation Measure 3.4-15**. **Mitigation Measure 3.4-15** therefore includes

provisions for compensatory habitat creation or preservation. There are no recovery plans, guiding documents, or other agency-mandated mitigation requirements for purple needlegrass grasslands. Therefore, a mitigation ratio of 2:1 has been included within **Mitigation Measure 3.4-15**. This would reduce impacts to a ***less-than-significant*** level by providing for long-term mitigation and management for this habitat type.

Musk-brush Chaparral

Musk-brush chaparral is considered a sensitive habitat type that also has limited distribution on the Guenoc Valley Site. Of the 33.1 acres of musk-brush chaparral, 19.5 acres (58.9 percent) occur within the Phase 1 APE. Given the residential lot development restrictions within the Design Guidelines (**Appendix DG**), it is not anticipated that the entirety of musk-brush chaparral within development areas would be removed. **Mitigation Measure 3.4-15** is recommended to ensure maximum avoidance of musk-brush chaparral within development areas. However, given the sensitive nature of this habitat type and its limited distribution on the Guenoc Valley Site, impacts may still be considered ***potentially significant*** after avoidance measures within **Mitigation Measure 3.4-15** should impacts to musk-brush chaparral be unavoidable. **Mitigation Measure 3.4-15** includes provisions for compensatory habitat creation or preservation. There are no recovery plans, guiding documents, or other agency-mandated mitigation requirements for musk-brush chaparral. Therefore, a mitigation ratio of 2:1 has been included within **Mitigation Measure 3.4-15**. This would reduce impacts by providing for long-term mitigation and management for this habitat type such that impacts are ***less than significant***.

White Alder Grove

Phase 1 of the Proposed Project would result in minimal impacts to white alder grove (0.1 acres, 0.9 percent). This constitutes a minimal amount of white alder grove within the Guenoc Valley Site. Given the residential lot development restrictions within the Design Guidelines (**Appendix DG**), it is possible that this habitat would be avoided. However, **Mitigation Measure 3.4-15** is recommended to ensure maximum avoidance of this sensitive habitat type is achieved. Because this is a riparian community, any loss of this habitat type is considered ***potentially significant***. Therefore, **Mitigation Measure 3.4-15** includes avoidance of existing white alder grove, and suitable compensatory habitat creation or preservation would reduce impacts by providing for long-term management for this habitat type such that impacts are ***less than significant***. While there is no specific guiding mitigation required for this habitat type, these forms of mitigation are consistent with the California Wildlife Conservation Board (WCB) recommendations presented within the California Riparian Habitat Conservation Program by encouraging habitat restoration (WCB, 2018). Impacts to riparian habitat types related to permitting is discussed under Impact 3.4-3 below.

Brewer Willow Thicket

Phase 1 of the Proposed Project would result in minimal impacts to brewer willow thicket (0.04 acres, 1.1 percent). This constitutes an insignificant amount of brewer willow thicket within the Guenoc Valley Site. Given the residential lot development restrictions within the Design Guidelines (**Appendix DG**), it is possible that this habitat would be avoided entirely. However, **Mitigation Measure 3.4-15** is recommended in order to ensure avoidance of this sensitive habitat type is achieved. Because this is a riparian community, any loss of this habitat type is considered ***potentially significant***. Therefore, **Mitigation Measure 3.4-15** includes avoidance of existing Brewer willow thicket, and suitable compensatory habitat creation or

preservation would reduce impacts by providing for long-term management for this habitat type such that impacts are ***less than significant***. While there is no specific guiding mitigation required for this habitat type, these forms of mitigation are consistent with the California WCB recommendations presented within the California Riparian Habitat Conservation Program by encouraging habitat restoration (WCB, 2018). Impacts to riparian habitat types related to permitting is discussed under Impact 3.4-3 below.

Oak Woodland and Savanna

Interior live oak woodland, valley oak woodland, blue oak woodland, blue oak savanna, and mixed oak woodland occur across the Guenoc Valley Site. Impacts to oak habitats on the Guenoc Valley Site have been reduced through several impact minimization measures (**Appendix OAK**). Acreages within the APE presented in **Table 3.4-6** represent the total oak habitat within the APE. Oak habitat on the Guenoc Valley Site is considered sensitive by the Oak Woodlands Protection Act and Lake County code. Removal of individual trees or acreage loss of oak woodland constitutes a ***significant impact***.

The Phase 1 APE includes 189.2 acres (25.0 percent of this habitat on the Guenoc Valley Site) of interior live oak woodland, 13.1 acres (26.6 percent of this habitat on the Guenoc Valley Site) of valley oak woodland, 599.4 acres (17.3 percent of this habitat on the Guenoc Valley Site) of blue oak woodland, and 269.5 acres (21.8 percent of this habitat on the Guenoc Valley Site) of blue oak savanna.

By restricting residential lot impacts to oaks to a maximum of one acre per lot through the Design Guidelines (**Appendix DG**), the maximum potential impacts to oak habitat have been reduced to a maximum of 257 acres of blue oak woodland (7.4 percent of this habitat on the Guenoc Valley Site), 146 acres of blue oak savanna (11.8 percent of this habitat on the Guenoc Valley Site), 72 acres of interior live oak (9.5 percent of this habitat on the Guenoc Valley Site), and 2 acres of valley oak woodland (4.1 percent of this habitat on the Guenoc Valley Site). These calculations represent the maximum allowable impacts to oak woodlands based on development restrictions set forth in the Design Guidelines (**Appendix DG**). Actual impacts are likely to be lower.

An Oak Mitigation Plan has been prepared for the Guenoc Valley Site and discusses impacts to both individual oaks as well as oak woodland (**Appendix OAK**). Measures on maximum avoidance of oak woodland and individual oak impacts are discussed within the Oak Mitigation Plan consistent with the Oak Woodlands Protection Act and mitigation standards determined by the County. **Mitigation Measure 3.4-16** defines the minimum mitigation requirements addressed within the Oak Mitigation Plan. This includes preservation of oak woodland at a ratio of at least 1:1 acre per acre for impacts to oak woodland that result in a significant loss of canopy cover. Additionally, compensatory plantings for individual oaks removed for which significant canopy cover is not lost would occur at a ratio determined by the diameter at breast height (dbh) of the tree removed. As per the Oak Mitigation Plan, these plantings would occur at a minimum 2:1 ratio for smaller trees removed and 5:1 for larger oaks removed and would be held to an 80 percent success criteria. Transplanting of oaks is also encouraged within the Oak Mitigation Plan described in **Mitigation Measure 3.4-16**. Transplanted and planted oaks would be monitored by a qualified biologist and subject to adaptive management to ensure success of the mitigation. Following incorporation of the Oak Mitigation Plan described in **Mitigation Measure 3.4-16** and included as **Appendix OAK**, impacts to oaks would be ***less than significant***.

Aquatic Habitats

Aquatic habitats such as streams, ponds and reservoirs, and emergent wetlands are considered sensitive. Many of the aquatic features on the Guenoc Valley Site are manmade and utilized for the ongoing agricultural operations onsite. Construction of residential and commercial structures has the potential to overlap with sensitive aquatic habitat types. Additionally, proposed roadways would cross over or through aquatic habitats in multiple areas. Habitat crossings would consist of free span bridges or single-culvert, two-culvert, or arch culvert designs. Loss, modification, or degradation of these habitat types would be considered **significant**. A total of 13.1 acres (6.6 percent) of stream habitat, 7.4 acres (1.1 percent) of ponds and reservoirs, and 49.6 acres (11.5 percent) of emergent wetlands fall within the Phase 1 APE. As stated above, the Phase 1 APE defines those areas on the Guenoc Valley Site with the potential to be impacted by development and represents maximum potential impacts. Due to the anticipated avoidance of sensitive aquatic habitats, actual impacts to these habitat types would be reduced through project design.

Incorporation of **Mitigation Measure 3.4-17** would reduce impacts to these habitat types through avoidance as possible and construction setbacks to prevent impacts from nearby construction activities. Clearly defined preservation, restoration, and habitat creation mitigation would provide for appropriate goals and long-term management to ensure the efficacy or mitigation such that impacts of the Proposed Project would be ***less than significant*** with mitigation. While direct impacts to these habitat types would require permitting through USACE, and CDFW, and indirect impacts (e.g., storm water) would require permitting through the RWQCB, incorporation of **Mitigation Measure 3.4-17** sets minimum mitigation standards for compensatory action exceeding a ratio of 1:1 to ensure that impacts to aquatic habitat types are reduced independent of permit terms and requirements.
Mitigation Measure 3.4-17 addresses those recommendations related to aquatic habitat management as found in Section 6.0 of **Appendices BRA1** and **BRA2**.

Should runoff produced during the construction phase result in impaired water quality, impacts to these habitat types may be ***significant***. **Mitigation Measures 3.9-1** and **3.9-2** presented in **Section 3.9.5** serve to minimize these impacts by ensuring water quality on the Guenoc Valley Site. Final stabilization of the Guenoc Valley Site and installation of a suitable runoff treatment system for the operational activities would be a condition of the necessary permits required under **Mitigation Measures 3.9-1** and **3.9-2**, and would reduce impacts to a ***less-than-significant*** level. Impacts to potentially jurisdictional habitat types as it relates to permitting is discussed under Impact 3.4-3 below.

Guenoc Valley Site – Phase 1 Operation

Conversion of habitat would be restricted to the construction phase on the Guenoc Valley for Phase 1. Therefore, impacts to sensitive habitats would occur primarily during the construction period. However, due to the safety risk of wildfire, ongoing habitat management to reduce the potential for a catastrophic wildfire may occur throughout the Guenoc Valley Site. As detailed in **Appendix FIRE**, this would include active management primarily within the development area. Passive activities, primarily grazing of livestock, would be used outside of development areas. Should fuel load and fire hazard severity outside of the development areas pose a significant risk to human or structure safety, active management may occur, such as the removal of dead vegetation as described in **Appendix FIRE**. Conversion of habitat would not occur.

Clearing and vegetation removal within sensitive habitats may generate a ***potentially significant*** impact. Incorporation of **Mitigation Measure 3.4-18** would allow for wildfire prevention activities with minimized impacts to sensitive biological resources. Avoidance of sensitive habitat types with a limited distribution would prevent impacts to these habitat types. Restrictions against staging within sensitive habitat and restrictions on allowable equipment for use within habitat types would minimize impact while still allowing for necessary safety activities. Avoidance of sensitive habitats, maximization of passive maintenance, and restriction of the methods of necessary active maintenance would reduce impacts to a ***less-than-significant*** level.

Guenoc Valley Site – Future Phases Construction and Operation

Habitat types observed and analyzed within the Phase 1 parcel boundaries are of similar quality and type to those within the balance of the Guenoc Valley Site with the potential to be impacted in future phases. Construction methods, project design, and ongoing use of future phase areas would be similar to Phase 1. Therefore, potential impacts to sensitive habitat types, including purple needlegrass, musk-brush chaparral, white alder grove, brewer willow thicket, and oak habitat resulting from future phases would be of a similar nature to those described above for Phase 1. This is a ***potentially significant*** impact. Future phases would be subject to the same restrictions outlined in the design guidelines emphasizing the maintenance of natural resources on the Guenoc Valley Site through clustered development, lot development restrictions, and minimization of operational disturbance to sensitive biological resources.

However, Phase 1 would not result in direct impacts to Sargent cypress forest or to Putah Creek. Sargent cypress forest is a sensitive habitat type not addressed for Phase 1 that may be impacted in future phases of development. Therefore, **Mitigation Measure 3.4-15** includes Sargent cypress forest in addition to those sensitive habitats discussed within the Phase 1 APE. Inclusion of protections for Sargent cypress forest would reduce future phases impacts on sensitive natural communities. Putah Creek represents a significant biological corridor and is a jurisdictional water. Per the design guidelines, development of future phases would selectively avoid natural corridors such as Putah Creek. Should future phases of development result in impacts to Putah Creek, agency consultation and permitting would be required, and **Mitigation Measure 3.4-17,** at a minimum, would be required to reduce impacts.

Due to the biological diversity of the Guenoc Valley Site and the varied distribution of sensitive habitat, including Putah Creek and Sargent cypress forest, exact impacts from future phases could not be evaluated based on a programmatic understanding of future phases of development. Therefore, impacts to sensitive habitat types may still be significant following incorporation of **Mitigation Measures 3.4-16** and **3.4-17**. Through implementation of **Mitigation Measure 3.4-14**, a robust analysis of specific future phase impacts would occur. This analysis, along with any associated mitigation tailored to future phases impacts would be incorporated into the Proposed Project. Implementation of mitigation outlined for Phase 1 of construction followed by further analysis of impacts and additional necessary mitigation would reduce impacts of future phases to a ***less-than-significant*** level.

Middletown Housing Site – Construction

The Middletown Housing Site contains multiple sensitive natural communities. A breakdown of impacts by habitat type is included in **Table 3.4-8**.

TABLE 3.4-8
PROJECT IMPACTS ON THE MIDDLETOWN HOUSING SITE BY HABITAT TYPE

Habitat Type	Acres on the Middletown Housing Site	Acres Impacted
Developed	0.4	0.4
Non-native annual grasslands	11.2	8.8
Native grassland	0.8	0.7
Riparian scrub	0.3	0.0
Valley oak woodland	0.3	0.08
Intermittent Stream	0.4	0.0
Source: **Appendix BRA-Middletown; Figure 3.4-4**		

Of the habitats present on the Middletown Housing Site, valley oak woodland, native grasslands, riparian scrub, and intermittent stream are considered sensitive. Direct impacts to sensitive habitat types on the Middletown Housing Site would occur to native grasslands and within the canopy of valley oak trees. Given the central location of native grasslands within the Middletown Housing Site, avoidance of native grasslands is not considered practical. While 0.7 acres is not representative of a significant proportion of native grasslands in the region of the Proposed Project, this is considered a ***potentially significant*** impact. The Middletown Housing Site would not provide sufficient habitat to mitigate for this loss.

Therefore, **Mitigation Measure 3.4-15** is recommended for compensatory activities on the nearby Guenoc Valley Site, which offers sufficient habitat to perform the necessary actions to reduce impacts to native grasslands to ***less-than-significant*** levels.

Similarly, the Middletown Housing Site may not offer sufficient habitat to perform the necessary actions to reduce impacts to individual valley oaks. Under the Oak Woodlands Protection Act and Lake County code, oak habitat is considered sensitive, and removal of trees resulting in loss of oak woodland would be considered a ***significant impact***. Because so few valley oak trees occur on the Middletown Housing Site and suitable habitat would not remain on the Middletown Housing Site for compensatory plantings, **Mitigation Measure 3.4-16** would require avoidance of valley oak trees on the Middletown Housing Site and compensatory replanting activities to the standard of the Oak Mitigation Plan prepared for the Guenoc Valley Site. It is likely that no valley oaks would be impacted as the 0.08 acres is largely under the woodland canopy. Therefore, removal and damage to driplines are likely avoidable. Avoidance of valley oaks and replanting under the Oak Mitigation Plan for unavoidable impacts would reduce potential impacts to ***less-than-significant*** levels.

Should construction result in runoff that impairs the riparian scrub or intermittent stream quality, the impact would be considered ***significant***. **Mitigation Measure 3.9-1** presented in **Section 3.9.5** would reduce these impacts to a less-than-significant level by ensuring the quality of potential runoff into the riparian and stream habitats. Implementation of a SWPPP would require construction BMPs and inspections throughout construction to avoid production of runoff with impaired quality. The SWPPP would additionally require final site stabilization prior to closeout such that bare soil and other potential runoff-impairing issues are properly addressed. With mitigation, impacts to water quality within the stream and riparian habitats are considered ***less than significant***.

Middletown Housing Site – Operation

Operation of the Middletown Housing Site would not result in ongoing habitat conversion and would not result in activities that would jeopardize the quality of nearby sensitive habitat. Much of the land in the vicinity of the Middletown Housing Site is ruderal or developed. Therefore, potential impacts to sensitive habitat from operation of the Middletown Housing Site would be ***less than significant***.

Off-Site Infrastructure Improvement Areas – Construction

There are no sensitive habitat types within the Off-Site Infrastructure Improvement Areas. Work would consist of undergrounding pipeline within an existing paved roadway. Where the roadway crosses existing drainages with wetland characteristics, the pipeline would be attached to existing roadway crossing infrastructure and would not result in conversion or disturbance of sensitive habitat types. No trees would be removed within the Off-Site Infrastructure Improvement Areas. Therefore, there would be ***no impact*** to riparian or other sensitive habitat types related to construction of the Off-Site Infrastructure Improvement Areas.

Off-Site Infrastructure Improvement Areas – Operation

Ongoing use and maintenance of the Off-Site Infrastructure Improvement Areas would occur within previously developed or otherwise ruderal habitat and would not include the ongoing conversion of habitat. Therefore, ***no impact*** to riparian or other sensitive habitat types from operation of the Off-Site Infrastructure Improvements would occur.

Combined Project Impacts

In summary, the Proposed Project, including Phase 1, future phases, Off-Site Workforce Housing, and Off-Site Infrastructure Improvements, would not result in combined impacts to sensitive habitats that would exceed the levels of impacts analyzed above. Construction and operation of the Off-Site Infrastructure Improvement Areas would not result in loss of sensitive habitat. Operation of the Middletown Housing Site and Guenoc Valley Site would similarly not result in ongoing conversion of sensitive habitats. These impacts would not appreciably contribute to overall project impacts. Impacts resulting from habitat conversion on the Guenoc Valley Site during construction, and indirect impacts from recreational use on the Guenoc Valley Site would be mitigated as described above. Mitigation presented above would prevent significant combined direct or indirect impacts to sensitive habitat types. Therefore, with mitigation presented above, the combined impact of the Proposed Project on sensitive habitat is **less-than-significant**.

As stated above, additional analysis of the contributing impacts of future phases on the Guenoc Valley Site would be required under **Mitigation Measure 3.4-14** to confirm that mitigation measures presented above would be sufficient to reduce impacts to a less-than-significant level. Therefore, no additional mitigation measures are necessary as it relates to the combined Proposed Project impacts on sensitive habitat types.

IMPACT 3.4-3	SUBSTANTIAL ADVERSE EFFECT ON STATE OR FEDERALLY PROTECTED WETLANDS THROUGH DIRECT REMOVAL, FILLING, HYDROLOGICAL MODIFICATION, OR OTHER MEANS			
	Guenoc Valley Site		Other Phase 1 Areas	
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
Significance Before Mitigation	Significant	Significant	Less than Significant	Less than Significant
Mitigation Measures	MM 3.4-1, 3.4-17; MM 3.9-1, 3.9-2	MM 3.4-1, 3.4-17; MM 3.9-1, 3.9-2	None necessary	None necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant

Impacts to state or federally protected wetlands or waters may be considered significant if a project resulted in the direct conversion of wetlands, or resulted in runoff and erosion that degrades habitat quality. Additionally, work that alters a watercourse or supporting adjacent habitat, such as a riparian community, would be considered a significant impact.

Guenoc Valley Site – Phase 1 Construction

The Guenoc Valley Site contains significant wetlands and aquatic habitat, much of which is likely jurisdictional. An Aquatic Resources Delineation Report was prepared for the majority of the Phase 1 development area (**Appendix WD**). The Aquatic Resources Delineation Report targeted those aquatic habitats occurring within and around the Phase 1 APE and did not assess aquatic habitat identified in the BRA occurring well beyond the Phase 1 APE for the potential to be jurisdictional. While consultation with USACE and RWQCB would be required to determine which of those aquatic resources present on the Guenoc Valley Site are jurisdictional, the Aquatic Resources Delineation Report identified 122.74 acres of wetlands, 10.70 acres of open waters, and 369,219 linear feet of other waters that are potentially jurisdictional based on the current regulatory framework. A total of 12.9 acres (6.5 percent) of stream habitat, and 7.4 acres (1.1 percent) of ponds and reservoirs would be impacted by the Proposed Project. Potentially minimal acreage of emergent wetlands would be directly impacted. Impacted aquatic habitats have the potential to be jurisdictional.

Construction activities filling or altering jurisdictional wetlands and waters such as road crossings, habitat conversion, and waterfront recreational development would be considered a ***significant impact*** and would require approval of the appropriate permits. Consultation with USACE and approval of a Jurisdictional Delineation or Preliminary Jurisdictional Delineation would be required in order to identify those aquatic habitats subject to agency jurisdiction. Impacts to these habitats would require a CWA Section 404 permit from USACE. A CWA Section 401 state water quality certification from the RWQCB would also be required. Proposed impacts to these habitat types and potentially for associated riparian vegetation would require an LSAA from CDFW. As a condition of these permits, impacts to state or federally protected wetlands must be less than significant, and mitigation would be included as a requirement of the permit. **Mitigation**

Measure 3.4-17 would reduce indirect impacts to habitat types with the potential to be jurisdictional. Appropriate setbacks to these habitat types would ensure that indirect impacts do not result from nearby construction activities. Additional compensatory action, consistent with necessary permit terms, would reduce impacts to jurisdictional habitats not practical to avoid. Acquisition of, and adherence to, the appropriate permits and permit terms for impacts to jurisdictional wetlands and waters would reduce direct impacts to ***less-than-significant*** levels.

As discussed under Impact 3.4-2, degradation of these habitat types through the production of impaired runoff would constitute a ***significant impact***. **Mitigation Measures 3.9-1** and **3.9-2** presented in **Section 3.9.5** would also reduce these impacts. Implementation of a SWPPP would require construction BMPs and inspections throughout construction to avoid production of runoff with impaired quality. The SWPPP would also require final site stabilization prior to closeout such that bare soil and other potential runoff-impairing issues are properly addressed. Proper monitoring and reporting of aggregate and concrete use and wash consistent with RWQCB permits would require proper production, containment, and cleanup related to these activities. Therefore, with the incorporation of mitigation described herein, impacts to state or federally protected wetlands and waters would be ***less than significant***.

Guenoc Valley Site – Phase 1 Operation

Operation of Phase 1 on the Guenoc Valley Site would not result in the removal, fill, or modification of wetlands or waters beyond that occurring for construction. There would be **no impact**.

Guenoc Valley Site – Future Phases Construction and Operation

Habitat types associated with potential state or federal jurisdictional wetlands or waters occurring within the Phase 1 area are representative of the habitat types occurring within the future phases development area. Construction and operation of future phases would result in impacts similar to those described above and is considered a ***significant impact***. Future phases would additionally be subject to the same restrictions outlined in the design guidelines emphasizing the maintenance of natural resources on the Guenoc Valley Site through clustered development, residential lot development restrictions within the Design Guidelines (**Appendix DG**), and minimization of operational disturbance to sensitive biological resources. Additionally, permits for impacts to jurisdictional wetlands or waters would require agency consultation, permit acquisition, and compliance with permit mitigation terms as described above. Therefore, the mitigation measures presented for the Phase 1 construction and operation of the Guenoc Valley Site, including **Mitigation Measures 3.4-17**, **3.9-1,** and **3.9-2**, are applicable to those impacts analyzed for future phases of development to reduce impacts to a ***less-than-significant*** level.

Middletown Housing Site – Construction

Dry Creek forms the northwestern boundary of the Middletown Housing Site. There would be no direct impacts within the riparian habitat, top of bank, or ordinary high water mark of Dry Creek. Per County Code, a 20-foot no-impact buffer is also included as part of the project design. Proposed activities associated with the Middletown Housing Site would not impact state or federally protected wetlands or waters.
This constitutes a **less-than-significant** impact.

Middletown Housing Site – Operation

Operation on the Middletown Housing Site would not result in the removal, fill, or modification of wetlands or waters. There would be **no impact**.

Off-Site Infrastructure Improvement Areas – Construction

There are no aquatic habitats within the Off-Site Infrastructure Improvement Areas. All adjacent aquatic habitats with the potential to be jurisdictional wetlands or waters would be avoided by restricting pipeline placement within existing infrastructure. This constitutes a **less-than-significant** impact.

Off-Site Infrastructure Improvement Areas – Operation

Operation on the Off-Site Infrastructure Improvement Areas would not result in the removal, fill, or modification of wetlands or waters. There would be **no impact**.

Combined Project Impacts

In summary, the Proposed Project, including Phase 1, future phases, Off-Site Workforce Housing, and Off-Site Infrastructure Improvements, would not result in combined impacts to potentially jurisdictional wetlands or waters that would exceed the levels of impacts analyzed above. Operation of the Proposed Project would not result in removal, fill, or modification of wetlands or waters. Construction of the Off-Site Workforce Housing and Off-Site Infrastructure Improvement Areas would not directly impact wetlands or waters, and would implement mitigation above such that water quality standards related to discharge and indirect impacts would not be exceeded. These impacts would not appreciably contribute to overall impacts of the Proposed Project. Therefore, these activities combined with mitigated impacts from construction on the Guenoc Valley Site would not result in combined impacts such that additional mitigation would be required. Mitigation presented above would prevent significant combined direct or indirect impacts to sensitive habitat types. Therefore, with mitigation presented above, the combined impact of the Proposed Project on wetlands or waters of the U.S. or State is **less-than-significant**.

As stated above, additional analysis of the contributing impacts of Future Phases on the Guenoc Valley Site would be required under **Mitigation Measure 3.4-14** to confirm that mitigation measures presented above would be sufficient to reduce impacts to a less-than-significant level. Therefore, no additional mitigation measures are necessary as it relates to the combined Proposed Project impacts on wetlands or waters of the U.S. or State.

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			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Significant	Significant	Less than Significant	No Impact
Mitigation Measures	MM 3.4-7, 3.4-19	MM 3.4-7, 3.4-14, 3.4-19, 3.4-20	None necessary	None necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	No Impact

Impacts to wildlife movement or nursery sites may be considered significant and substantial 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. Based on mapping included within the Mayacamas to Berryessa Connectivity Network, the Guenoc Valley Site appears to be located in an area with a described moderate existing terrestrial permeability and with moderate potential as a permeable land surface for wildlife movement (Pepperwood Preserve, 2018). Riparian permeability around the Guenoc Valley Site is classified as high. The Guenoc Valley Site is within a focal corridor of the Mayacamas to Berryessa Connectivity Network Study.

Guenoc Valley Site – Phase 1 Construction and Operation

The Guenoc Valley Site consists of relatively open areas interspersed within a network of agricultural roads, operations, and development. The Proposed Project would not impact an Essential Connectivity Area (Spencer, 2010). There are no known significant wildlife breeding locations within the Guenoc Valley Site. However, the Guenoc Valley Site is likely used incidentally by individuals during migratory or dispersal activities as well as for the birthing and rearing of young. Based on mapping included within the Mayacamas to Berryessa Connectivity Network, the Guenoc Valley Site contains significant riparian corridor resources and moderate terrestrial permeability in general (Pepperwood Preserve, 2018).

Fencing

The use of fencing has the potential to result in wildlife entrapment or exclusion. High levels of fencing would restrict wildlife movement and access to undeveloped and otherwise suitable habitat. Fragmentation of habitat from fencing that resulted in impacts to wildlife movement would constitute a ***potentially significant*** impact. Existing fencing on the Guenoc Valley Site consists of wildlife-exclusion fencing around vineyards, road access gates, and stone, white vinyl plank, and wire fencing along Butts Canyon Road. The balance of the property utilizes fencing incidentally for purposes such as livestock containment, usually as part of grazing rotation. The Project Design Guidelines restricts allowable fencing to specific uses and styles, with an emphasis on retaining the open nature of the Guenoc Valley Site (**Appendix DG**).

Per the Design Guidelines, fencing is to be designed to allow for wildlife movement, with the exception of vineyard fencing, which may be designed to selectively exclude certain wildlife. Fencing used for the purpose of livestock containment would be designed to balance facilitation of wildlife movement with the need to keep domestic animals safely pastured. Fencing without demonstrated need, such as vineyard exclusion, is not to exceed six feet in height. Therefore, the design guidelines minimize the use of fencing and minimize the need for additional fencing. **Mitigation Measure 3.4-19** further defines best practices for areas in which fencing is necessary for the safety and security of development, individuals, or livestock. Additionally, **Mitigation Measure 3.4-19** prevents complete wildlife barriers within residential communities by requiring Home Owner's Association approval for use of fencing outside of a lot's approved buildable area, and restricts this fencing such that I would not occur within 300 feet of other residential fencing. This ensures that use of fencing outside of the designated buildable area is minimized and would continue to allow minimum 300-foot passageways between residential fences. Additionally, use of fencing for the purpose of inhibiting wildlife movement is prohibited. By restricting fencing locations to those areas necessary for safety and security, and restricting fencing type to avoid entrapment, injury, or exclusion of wildlife, habitat fragmentation due to fencing is reduced to a ***less-than-significant*** level.

Lighting

Current lighting on the Guenoc Valley Site is minimal. Agricultural operations and equipment uses are typically restricted to daylight hours. Minimal residential and office use of artificial lighting also occur. An increase in artificial lighting has the potential to impact wildlife movement through stranding, disorienting, attracting, or otherwise altering natural dispersal and migratory behavior. Per the design guidelines, lighting on the site shall adhere to the Dark Skies Initiative standards (IDA, 2011). Nighttime illumination is restricted to those areas necessary for safe navigation, with minimal use for landscape and design features. Lighting would be required to emit color balanced light that is matte, shielded from spillage, and set on a timer to avoid unnecessary use. As discussed in Impact 3.4-1, impacts a result of artificial lighting are ***potentially significant***. **Mitigation Measure 3.4-7** would reduce impacts to migratory wildlife as a result of lighting to a ***less-than-significant*** level, as described under Impact 3.4-1.

Open Space

As shown in **Figure 2-6** and discussed in **Section 2.5.2.2**, no less than 2,765 contiguous acres would be designated as open space to comply with the requirements of the 2008 Langtry Farms Water Rights Modification Project Open Space Preservation Plan (2008 OSPP). The Guenoc Valley District (GVD) Zoning District would include an open space combining district for this open space corridor that would define allowable and restricted uses consistent with the requirements of the 2008 OSPP and the proposed OSPP Amendment, included as **Appendix OSPP**. The majority of the designated open space is located in the southern portion of the Guenoc Valley Site, with a corridor running through the center along Bucksnort Creek. The area proposed as open space preservation was selected on the basis of high habitat quality, known special-status plant locations, presence of sensitive habitat, and inclusion of natural corridors such as Bucksnort Creek. The OSPP amendment increases preservation of riparian corridor habitat on the Guenoc Valley Site that was identified as containing a high level of important riparian passageways. Therefore, dedicated and contiguous open space constitutes 2,765 acres, or 17.3 percent, of the Guenoc Valley Site.

In addition to the dedicated open space, approximately 10,365 acres of the Guenoc Valley Site would not be impacted by the Proposed Project. Of the 10,365 acres not impacted, a total of 9,516.6 acres would not be developed and would constitute general undeveloped open space areas throughout the Guenoc Valley Site. It should be noted that some of this area may be developed under future phases and would be subject to additional environmental review as discussed below.

The general open space areas would constitute approximately 64.8 percent of the Guenoc Valley Site. Combined with dedicated open space, this results in 81.9 percent of the Guenoc Valley Site outside of the Phase 1 Area of Potential Effects. Restriction on maximum allowable residential lot development is also included as a provision of the project design. Residential parcels are restricted through the Design Guidelines to a maximum of 1.5 acres (**Appendix DG**). Large residential parcels would therefore provide an additional source of non-dedicated open space through the restriction of the buildable area. Areas on residential lots outside of the buildable area, through the Design Guidelines and implementation of **Mitigation Measure 3.4-19,** would not be developed. These areas would not be fenced or landscaped beyond necessary wildfire management activities. Because a majority of residential parcels exceed 1.5 acres in size, restrictions on allowable residential lot development would result in significant additional open space within the Phase 1 APE.

Due to the significant preservation of open space and riparian corridors, clustering of development, and restrictions on fencing and lighting within the Design Guidelines, impacts to wildlife use and movement on the Guenoc Valley Site would be minimized. With implementation **Mitigation Measures 3.4-7** and **3.4-19**, impacts would be ***less than significant***.

Guenoc Valley Site – Future Phases Construction and Operation

Parcel size and locations will determine what impacts the future phases of construction and operation may have on wildlife movement. While the Guenoc Valley Site is not within an Essential Connectivity Area (Spencer, 2010), and no unique nursery sites are known to occur on the Guenoc Valley Site, future phases of development may generate a ***significant impact*** to wildlife movement. **Mitigation Measures 3.4-7** and **3.4-19** as discussed for Phase 1 would apply to future phases to reduce impacts. Additionally, those design guidelines described in **Appendix DG** would further reduce impacts.

Exact impacts from future phases cannot be evaluated based on a programmatic understanding of future phases of development. Through implementation of **Mitigation Measure 3.4-14**, a robust analysis of specific future phase impacts would occur. This analysis, along with any associated mitigation tailored to future phases impacts would be incorporated into the Proposed Project. Implementation of mitigation outlined for Phase 1 of construction followed by further analysis of impacts and additional necessary mitigation would reduce impacts of future phases. However, following the conversion of habitat in Phase 1, future phases of development may result in significant loss of habitat such that wildlife movement may become impaired even with the inclusion of mitigation measures discussed above. **Mitigation Measure 3.4-20** is required for future phases of development. Additional analysis following more detailed future phases planning would be required to accurately define necessary mitigation to ensure that Impact 3.4-6 would be ***less than significant***.

Middletown Housing Site – Construction and Operation

The Middletown Housing Site is within the developed area of Middletown and does not provide habitat that facilitates wildlife movement. Dry Creek occurs along the northwest extent of the Middletown Housing Site and would not be impacted by the Proposed Project. No construction would occur within Dry Creek and the associated riparian habitat. Dry Creek and the balance of the Middletown Housing Site are surrounded by additional development, roadways, fencing, and other wildlife barriers. This constitutes a ***less-than-significant*** impact.

Off-Site Infrastructure Improvement Areas – Construction and Operation

The Off-Site Infrastructure Improvement Areas are contained within an existing roadway with a small portion of pipeline connected to a well within an open pasture, potentially on the Off-Site Well Site. Work would be restricted to existing wildlife barriers and would be undergrounded with the exception of the serviceable portion of the well and any pipeline attached to existing infrastructure over aquatic habitat. The Off-Site Infrastructure Improvement Areas would have ***no impact*** on wildlife movement or use of habitat.

Combined Project Impacts

In summary, the Proposed Project, including Phase 1, future phases, Off-Site Workforce Housing, and Off-Site Infrastructure Improvements, would not result in combined impacts to wildlife movement and use of nursery sites that would exceed the levels of impacts analyzed above. construction and operation of the Off-Site Infrastructure Improvement Areas would not result in impacts to wildlife movement or use of nursery sites and would therefore not contribute to the overall Proposed Project impact. Development on the Middletown Housing Site would occur within a previously developed area several miles from the development on the Guenoc Valley Site. These two sites are separated largely by open space. Therefore, inclusion of the Middletown Housing Site development would not further exacerbate impacts to wildlife movement and use of nursery sites when combined with development on the Guenoc Valley Site. Therefore, with mitigation presented above, the combined impact of the Proposed Project on sensitive habitat is **less-than-significant**.

As stated above, additional analysis of the contributing impacts of Future Phases on the Guenoc Valley Site would be required under **Mitigation Measure 3.4-14** to confirm that mitigation measures presented above would be sufficient to reduce impacts to a less-than-significant level. Therefore, no additional mitigation measures are necessary as it relates to the combined Proposed Project impacts on wildlife movement and use of nursery sites.

IMPACT 3.4-5	CONFLICT WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PRESERVATION POLICY OR ORDINANCE			
	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 3.4-16	MM 3.4-14, 3.4-16	MM 3.4-16	None necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	No Impact

Conflict with existing local policies and ordinances may be considered significant and substantial if a project resulted in construction or use of land contrary to the overall goals of an existing local regulations. Conflict with specific allowable uses or compensatory requirements may also be considered significant.

Guenoc Valley Site Phase 1 – Construction and Operation

A consistency analysis of the Proposed Project related to the Lake County General Plan determined that the Proposed Project is consistent with the biological resources element policies. This analysis is included as **Appendix GPCT**. Lake County Code § 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. The Proposed Project would result in ***significant impacts*** to oak woodland as well as individual oak trees within the Guenoc Valley Site as described in detail within **Appendix OAK**. As discussed under Impact 3.4-2 and **Mitigation Measure 3.4-16**, an Oak Mitigation Plan has been prepared for the Proposed Project in compliance with local policies and ordinances. The impact would be ***less than significant*** with the incorporation of **Mitigation Measure 3.4-16**.

Guenoc Valley Site – Future Phases – Construction and Operation

Construction and operation of future phases would result in impacts similar to those described above. Given the widespread nature of oak woodland habitat on the Guenoc Valley Site, it is likely that Future Phases would result in a ***significant impact*** to this resource as it relates to Lake County Code § 30-21. Future phases would be subject to the same restrictions outlined in the design guidelines emphasizing the maintenance of natural resources on the Guenoc Valley Site through clustered development, restriction on maximum allowable residential lot development, and minimization of operational disturbance to sensitive biological resources (**Appendix DG**). Lot development restrictions would similarly apply. Therefore, **Mitigation Measure 3.4-16** described for the Phase 1 construction and operation of the Guenoc Valley Site are applicable to those impacts to oaks likely to occur within future phases of development.

However, given the long timeline for development, it is possible for current policies and ordinances to be developed or altered prior to development of future phases of construction. Should ordinances and policies be updated or created in conflict with future phases of development, a ***potentially significant*** impact would

result. Implementation of **Mitigation Measure 3.4-14** would require a review of current ordinances and policies during the project-level analysis of future phases of construction. A review of policies and ordinances and incorporation of appropriate mitigation measures to ensure compliance with new or updated ordinances or policies would reduce impacts to a ***less-than-significant*** level.

Middletown Housing Site – Construction and Operation

Proposed Project activities related to the Middletown Housing Site may result in impact to a small number of valley oaks. As discussed under Impact 3.4-2 and **Mitigation Measure 3.4-16**, valley oaks would be avoided when possible, and an Oak Mitigation Plan has been prepared for the Proposed Project in compliance with local policies and ordinances. Impacts on the Middletown Housing Site would not result in a significant loss of oak woodland at the County level as described in County Code, but could constitute a significant portion of oak woodland on the Middletown Housing Site, should full avoidance be impractical. Therefore, **Mitigation Measure 3.4-16** would require maximum avoidance of those valley oaks present on the Middletown Housing Site with compensatory plantings as necessary. There would be a ***less-than-significant*** impact with the incorporation of **Mitigation Measure 3.4-16**.

Off-Site Infrastructure Improvement Areas – Construction and Operation

The Off-Site Infrastructure Improvement Areas are contained within an existing roadway with a small portion of pipeline connecting to a well within an open pasture on the Off-Site Well Site. No significant biological resources would be impacted by development of the Off-Site Infrastructure Improvement Areas. There would be **no impact**.

Combined Project Impacts

In summary, the Proposed Project, including Phase 1, future phases, Off-Site Workforce Housing, and Off-Site Infrastructure Improvements, would not result in combined impacts to local policies and ordinances that would exceed the levels of impacts analyzed above. Construction and operation of the Off-Site Infrastructure Improvement Areas would not result in impacts to local policies and ordinances protecting biological resources. Construction of the Middletown Housing Site may result in removal of fewer than ten valley oak trees. However, this would not significantly impact oak woodland canopy cover at the County level and would be offset through the Oak Mitigation Plan described in **Mitigation Measure 3.4-16**. These potential impacts are extremely low and would therefore not significantly contribute to additional impacts to oaks that may occur through construction of Phase 1 and Future Phases on the Guenoc Valley Site. No other local policies or ordinances protecting biological resources would be impacted by the Proposed Project. Therefore, with mitigation presented above, the combined impact of the Proposed Project on local policies and ordinances is **less-than-significant**.

As stated above, additional analysis of the contributing impacts of Future Phases on the Guenoc Valley Site would be required under **Mitigation Measure 3.4-14** to confirm that mitigation measures presented above would be sufficient to reduce impacts to a less-than-significant level. Therefore, no additional mitigation measures are necessary as it relates to the combined Proposed Project impacts on local policies and ordinances.

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			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Significant	Significant	No Impact	No Impact
Mitigation Measures	MM 3.4-16	MM 3.4-14, 3.4-16	None necessary	None necessary
Significance After Mitigation	Less than Significant	Less than Significant	No Impact	No Impact

Conflict with existing conservation plans may be considered significant and substantial if a project resulted in construction or use of land contrary to the overall goals of an existing conservation plan. Conflict with specific allowable uses or compensatory requirements may also be considered significant.

Guenoc Valley Site Phase 1 – Construction and Operation

As discussed in **Section 3.4.1**, biological resources were evaluated on the Guenoc Valley Site during the preparation and approval process for the 2009 FEIR. The Proposed Project has the potential to impact the Open Space Preservation Area described in the 2008 OSPP required under the 2009 FEIR mitigation (AES, 2008a). The Proposed Project also has the potential to impact the oak preservation areas defined in the 2008 Oak Tree Replacement Plan that was also required under the 2009 FEIR (AES, 2009). Conflict with either of these plans would be considered a ***significant*** impact.

Open Space Preservation Plan

Per the terms and conditions set forth in the 2008 OSPP, a total of 2,765 acres minimum shall be preserved within an Open Space Preservation Area. An Open Space Preservation Area was defined within the OSPP totaling the required 2,765 acres (**Appendix OSPP**). The Proposed Project would result in minimal development of designated open space as currently defined in the OSPP. The OSPP allows for modification of the Open Space Preservation Area for approved uses on the Guenoc Valley Site provided the goals of the OSPP are retained, and the acreage preserved is no less than 2,765 acres. In order to comply with the 2008 OSPP, an amendment was prepared that details additional habitat proposed for inclusion within the Open Space Preservation Area (**Appendix OSPP**).

This amendment was prepared to define open space acreages impacted by the Proposed Project, identify additional acreage for inclusion as open space, and discuss the rationale for determining new open space boundaries. The OSPP amendment was prepared in compliance with acreage goals of the OSPP, and includes additional sensitive biological resources that were not included in the original OSPP boundary. As a component of the Proposed Project, the Open Space Preservation Area would be included in the GVD Zoning District as an open space combining district consistent with the 2008 Open Space Plan. This

constitutes a ***less-than-significant*** impact.

Oak Tree Replacement Plan

Per the terms and conditions of the Oak Tree Replacement Plan, a minimum of 1,089 acres of oak woodland shall be preserved within those areas defined as POU within the 2009 FEIR. Therefore, the Proposed Project must not conflict with the requirement or ability to preserve 1,089 acres of oak woodland within POU to offset the vineyard development approved in the 2009 FEIR. A portion of Phase 1 development occurs within POU and would result in impacts to oak habitat. Removal of oak habitat would constitute a ***significant*** impact should the Proposed Project result in fewer than 1,089 acres of oak woodland preserved within the POU.

An Oak Mitigation Plan has been prepared for the Proposed Project and includes a discussion on oak preservation within POU consistent with the 2008 Oak Tree Replacement Plan (**Appendix OAK**). In addition to the Oak Mitigation Plan and the compliance discussion presented within this EIR, **Mitigation Measure 3.4-16** would ensure full compliance with the Oak Tree Replacement Plan prior to ground disturbance by identifying a minimum of 1,089 acres of oak woodland habitat within the POU. The Oak Mitigation Plan would ensure compliance with the requirements set forth in the 2008 Oak Tree Replacement Plan, thus reducing impacts to a ***less-than-significant*** level.

Guenoc Valley Site – Future Phases Construction and Operation

Due to the establishment of the GVD Zoning District open space combining district, future phases of development would not result in conflict with the 2008 Open Space Plan. However, development of future phases has the potential to impact oak preservation areas and oak mitigation planting required by the existing Oak Tree Replacement Plan. Should future phases of development impact oak preservation or planting areas related to the Oak Tree Replacement Plan, a ***significant*** impact would result. Additionally, should future phases of development conflict with oak preservation and mitigation outlined in the Oak Mitigation Plan prepared for this EIR, a ***significant*** impact would result. The Oak Tree Replacement Plan applies to Phase 1 as well as future phases of construction and operation. Conflict with the oak preservation areas described in **APPENDIX OAK** and the existing Oak Tree Replacement Plan would require additional preservation of oak woodland within the POU such that the minimum acreage preserved would be 1,089 acres. This provision is further detailed in **Mitigation Measure 3.4-16**. Compliance with the Oak Tree Replacement Plan and Oak Mitigation Plan would reduce impacts to existing conservation plans to ***less-than-significant*** levels.

However, given the extended timeline for development, it is possible for conservation plans to be developed or altered prior to development of future phases of construction. Should conservation plans be updated or created in conflict with future phases of development, this would constitute a ***potentially significant*** impact. Implementation of **Mitigation Measure 3.4-14** would require a review of current conservation plans during the project-level analysis of future phases of construction. A review of conservation plans and incorporation of appropriate mitigation measures to ensure compliance with new or updated conservation plans would reduce impacts to ***less-than-significant*** levels.

Middletown Housing Site – Construction and Operation

Proposed Project activities related to the Middletown Housing Site do not conflict with known approved or proposed conservation plans. There would be ***no impact***.

Off-Site Infrastructure Improvement Areas – Construction and Operation

The Off-Site Infrastructure Improvement Areas are contained within an existing roadway with a small portion of pipeline connected to a well within an open pasture potentially on the Off-Site Well Site. No significant biological resources would be impacted by development of the Off-Site Infrastructure Improvement Areas. There would be ***no impact***.

Combined Project Impacts

In summary, the Proposed Project, including Phase 1, future phases, Off-Site Workforce Housing, and Off-Site Infrastructure Improvements, would not result in combined impacts to existing or proposed conservation plans that would exceed the levels of impacts analyzed above. Construction and operation of the Off-Site Infrastructure Improvement Areas and Middletown Housing Site do not fall within a known approved or proposed conservation plan and would therefore not conflict with existing conservation plans. Establishment of the GVD zoning with an open space component would prevent conflict with the existing Open Space Plan for both Phase 1 and Future Phases of construction and operation on the Guenoc Valley Site. Similarly, an Oak Mitigation Plan compliant with the 2008 Oak Tree Replacement Plan and required under **Mitigation Measure 3.4-16** would prevent conflict for both Phase 1 and Future Phases of construction and operation on the Guenoc Valley Site. Therefore, the combined elements of the Proposed Project would not conflict with known or proposed conservation plans, and impacts would continue to be **less than significant**.

Further analysis of the contributing impacts of future phases on the Guenoc Valley Site would be required under **Mitigation Measure 3.4-14** as discussed above and may result in additional mitigation measures to reduce impacts. This may occur should conservation plans be proposed or approved for an area including the Guenoc Valley Site following the analysis presented herein. At this time, no additional mitigation measures are necessary as it relates to the combined Proposed Project impacts on existing or proposed conservation plans.

IMPACT 3.4-7	CUMULATIVE IMPACTS TO BIOLOGICAL RESOURCES			
	Guenoc Valley Site		Other Phase 1 Areas	
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
Significance Before Mitigation	Significant	Significant	Less than Significant	Less than Significant
Mitigation Measures	MM 3.4-1 through MM 3.4-13, 3.4-15 through 3.4-19	MM 3.4-1 through MM 3.4-20	None necessary	None necessary
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant

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. Potential cumulative projects in the vicinity of the Proposed Project are presented in **Section 4.2**. Cumulative projects consist of infrastructure development, minor recreational development, and residential build-up smaller in scale than the Proposed Project. Cumulative projects are anticipated within areas of existing development and are small and/or clustered in development. Additionally, development of the Guenoc Valley Site and cumulative projects would be subject to those regulations and restrictions described in **Section 3.4.3**.

Special-Status Species

The majority of cumulative projects would occur within ruderal habitat and utility or roadway right-of-ways. These areas typically lack the necessary features to support special-status species and would therefore not contribute to reasonably foreseeable cumulative impacts to special-status species. Proposed housing developments in the vicinity of the Proposed Project are similarly within either existing lots or adjacent to developed areas. Of these, the Valley Oaks Planned Development would occur in proximity to Putah Creek and has the potential to impact special-status species associated with this corridor. Therefore, the Valley Oaks Planned Development would potentially impact special-status species and would be considered as part of the cumulative setting for impacts to special-status species. However, environmental review of the Valley Oaks Planned Development project determined that take of special-status species was not likely. The only special-status species with a known potential for take within the development area of the Valley Oaks Planned Development project is Burke's goldfields. This species was not observed in surveys for the Proposed Project and is not anticipated to be impacted. Potential impacts to special-status species as a result of these projects are not cumulatively significant, and potential impacts to special-status species for the Proposed Project would largely be confined to the Guenoc Valley Site. This represents a ***less-than-significant*** cumulative impact. Therefore, no additional mitigation is recommended based on the Proposed Project's cumulative contribution to special-status species impacts.

Sensitive Habitat Types

The majority of cumulatively considered projects would occur within ruderal habitat and utility or roadway right-of-ways. These areas typically consist of ruderal or disturbed habitat that is not sensitive and would therefore not contribute to reasonably foreseeable cumulative impacts to sensitive habitats. Proposed housing developments in the vicinity of the Proposed Project are also within existing lots or developed areas. These areas typically lack sensitive habitat types. However, the Valley Oaks Planned Development would occur in the vicinity of Putah Creek, which supports sensitive riparian habitats and is itself a sensitive habitat. Based on environmental analysis completed for the Valley Oaks Planned Development, no work is anticipated within Putah Creek, and development is set back from the creek itself. Impacts to sensitive habitat types for Valley Oaks Planned Development would include wetlands impacts and removal of up to 13 valley oaks. However, these impacts are not cumulatively considerable and are additionally proposed to be mitigated for through permitting and/or habitat restoration. This represents a ***less-than-significant*** cumulative impact. Therefore, no additional mitigation is recommended based on the Proposed Project's cumulative contribution to sensitive habitat impacts.

Wildlife Use and Movement

Known cumulative impacts are spread over a largely open and undeveloped landscape, and impacts would additionally not result in loss of ecosystem services or other biological functions common in areas of high rural to urban development areas. Infrastructure and urban infill typically do not represent barriers to wildlife use and movement across habitat. The Proposed Project, in addition to cumulatively considered projects, would not sever known wildlife corridors and would not result in activities that would connect developed areas across open habitat. Cumulative projects under environmental review have not revealed significant impacts to wildlife corridors or nursery sites such that mitigation was deemed necessary. Because there are no known significant impacts to wildlife corridors resulting from cumulatively considered projects, impacts to wildlife use and movement as a result of the Proposed Project development are **less than significant**.

Similar to the analysis presented for Phase 1 of development, mitigation measures applied to reduce impacts to biological resources would apply to future phases of construction. As described under **Mitigation Measure 3.4-14**, additional analysis on impacts to wildlife movement would be required following more detailed information on future phases planning. Should significant impacts to wildlife movement be identified, modification of site plans or inclusion of additional mitigation measure would be required. Biological analysis of future phases would be held to the level of detail and current CEQA thresholds and would include an analysis on cumulative impacts. This would include a current evaluation of the cumulative setting at the time of analysis. Additional mitigation measures would be implemented, if necessary, at that time in order to ensure that cumulative impacts are ***less than significant***.

Local Plans, Policies, and Conservation Plans

Cumulative projects described in **Section 4.2** are subject to the regulatory framework presented in **Section 3.4.3**. With the exception of minimal oak tree removal, cumulative projects are not anticipated to conflict with local plans, policies, or regulations. Additionally, there are no proposed or approved conservation plans that the Proposed Project and cumulatively considerable projects are subject to. This represents a ***less-than-significant*** cumulative impact. Therefore, no additional mitigation is recommended based on

the Phase 1 cumulative contribution to conflict with policies, regulations, or conservation plans.

3.4.5 MITIGATION MEASURES

The following mitigation measures are recommended to reduce impacts of the Proposed Project based on analysis presented in **Section 3.4.4**. These mitigation measures include those recommended in the biological reports prepared for the Proposed Project (**Appendices BRA1, BRA2, BRA Middletown, WD-Middletown, WD, OSPP, OAK**).

MM 3.4-1 Construction Best Management Practices

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.

MM 3.4-2 Worker 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** 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 trainings 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.

TABLE 3.4-9
SPECIAL-STATUS SPECIES TO BE INCLUDEDED IN ENVIRONMENTAL AWARENESS TRAINING

Species	Guenoc Valley Site (All Phases)	Middletown Housing Site
Pallid bat (*Antrozous pallidus)*	X	X
Ring-tailed cat *(Bassariscus astutus)*	X	
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	
Western pond turtle *(Actinemys marmorata)*	X	X
Foothill yellow-legged frog *(Rana boylii)*	X	X

MM 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 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 completed 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.

MM 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.

MM 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.

MM 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 surveys, appropriate avoidance or exclusion measures shall be developed in consultation with CDFW.

MM 3.4-7 Artificial Lighting Impacts – Construction and Operation

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 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.

MM 3.4-8 Special-Status Birds - Nesting

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 buffer shall remain in place until the biologist has determined that the nest is no longer active.

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, 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.

MM 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 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.

MM 3.4-10 Western 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 western

pond turtle has been documented shall occur between July 1 and October 31 to avoid the peak nesting season and winter inactivity periods for western pond turtle.

No more than 14 days prior to the start of work within 300 feet of ponds, reservoirs, or wetted streams with the potential to support western pond turtle, a pre-construction survey for western pond turtle shall be completed. If the species is observed, the biologist 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 if relocation is required.

MM 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.

Pre-construction surveys for FYLF within any wetted stream feature near a work area shall be conducted by a qualified biologist at least 14 days prior to the onset of construction activities. Surveys shall cover at least 500 feet upstream and 500 feet downstream of the work area for presence of all life stages. 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 limited to, a protective no-work buffer, exclusion fencing, monitoring, and/or coordination with CDFW.

MM 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.

MM 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.

MM 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 need for additional mitigation measures. 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 **3.4-20, 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.

MM 3.4-15 Impacts 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 described below. This mitigation shall be applicable to impacts for purple needlegrass, musk-brush chaparral, white alder grove, Brewer willow thicket, Sargent cypress forest, 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 designated open space as defined by the Open Space Preservation Area. Habitat preserved within the Open Space Preservation Area shall be preserved in perpetuity.
3) Preservation of in-kind habitat that occurs within lots shall occur only within open space prohibited from development by the Design Guidelines. 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) Preservation of in-kind habitat that occurs outside of residential lots and the Open Space Preservation Area shall be avoided during future phases of development. Should unavoidable impacts to habitat preservation areas outside of designated open space 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.

MM 3.4-16 Oak Mitigation Plan

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;
- Proposed compensatory action suitable to meet mitigation goals;
- 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 oak woodland, when applied, shall be no less than 1.5:1 of in-kind habitat type acreage;
- A suitable method of at least 3 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 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.

MM 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;
- 20 feet from the top of bank of any intermittent or ephemeral stream;
- 20 feet from the edge of any adjacent wetlands or the ordinary high water mark of 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 occuring 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 designated open space, 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 designated open space 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, such as purchase of habitat credits from an approved mitigation bank, may serve to satisfy mitigating requirements to jurisdictional wetlands and waters as dictated by the appropriate permit(s).

MM 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.
- Oak woodland - 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. 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 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.

MM 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 excluding wildlife movement for residential lots exceeding two acres in size shall be prohibited unless:

i) It is approved by the Home Owner's Association and designed in such a manner that it allows for wildlife to pass through; or
ii) A site-specific corridor assessment is conducted by a qualified wildlife biologist that demonstrates wildlife movement. Any recommended wildlife corridor and movement areas shall be enforced by the HOA as part of a pathway and corridor plan to be drafted at the time of such analysis.

MM 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 development area of 1.5 acres unless further restricted by the Design Guidelines. Development of future phases shall avoid riparian corridors that commonly serve as wildlife passageways with development setbacks to the degree feasible. Setbacks and sensitive habitat avoidance shall also be maximized. Prior to implementation of future phases, additional analysis on the overall impacts to wildlife movement shall be performed by a qualified biologist to the level of detail presented within this EIR. Additional mitigation shall be determined by a qualified biologist such that impacts to wildlife movement are reduced to less-than-significant levels.

3.5 CULTURAL RESOURCES

3.5.1 INTRODUCTION

This section provides a description of cultural resource conditions in the project region and the Proposed Project site and potential impacts to cultural resources that would result from implementation of the Proposed Project. Following an overview of the cultural resource setting in **Section 3.5.2** and the relevant regulatory setting in **Section 3.5.3**, project-related impacts and mitigation measures are presented in **Section 3.5.4** and **Section 3.5.5**, respectively.

3.5.2 ENVIRONMENTAL SETTING

The majority of the Guenoc Valley Site is undeveloped and historically was used for agricultural or grazing activities. The following prehistoric, ethnographic, historic, and paleontological setting sections are summarized from an archaeological survey report prepared by Alshuth and Origer (2018), which includes the Guenoc Valley Site, the Middletown Housing Site, and the Off-Site Infrastructure Improvement Areas.

Prehistoric Setting

The patterns that have been defined for the region that includes the Guenoc Valley Site, the Middletown Housing Site, and the Off-Site Infrastructure Improvement Areas are briefly described below.

Post Pattern (11,000 B.C. to 8000 B.C.). The time period for this pattern is the Pleistocene/Holocene transition. Fluted points similar to Clovis points found in the Great Plains, occasionally in association with extinct megafauna, and flaked stone crescents from the Borax site near Clear Lake are characteristic of this pattern, but little is known about other artifacts used or the adaptive system represented.

Borax Lake Pattern (8000 B.C. to 6500 B.C.). This assemblage is characterized by large wide-stemmed points, oval shaped flake tools, and long thin flakes (bladelets). It is uncertain whether this assemblage represents a hunting focus or an incomplete assemblage. Milling stones have been reported at one site with a radiocarbon date within the temporal range of this pattern, but it is not clear whether the milling artifacts are contemporaneous with the Borax Lake Pattern or are artifacts from a later time period.

Early Berkeley Pattern: Mostin Phase (6500 B.C. to 2500 B.C.). The first evidence of stable, long-term settlements is found at Clear Lake at this time. Early evidence of this pattern includes Houx contracting-stemmed and square-stemmed points, formalized burial patterns, and the use of pestles, with abundant acorn macro-fossils implying that acorns were being processed at this early time.

Mendocino Pattern (3000 B.C. to A.D. 500). This pattern is characterized by side-notched, corner-notched, and concave-based dart points of the Mendocino series. Hand stones and milling slabs, flake and cobble tools, and a limited number of cobble mortars and pestles are also present. A high degree of residential mobility, with hunting camps and seasonal encampments represented, is associated with this period.

Berkeley Pattern (1200 B.C. to A.D. 800). This pattern overlaps the timeframe of the Mendocino Pattern. Elaborate artifact assemblages include leaf-shaped and stemmed projectile points, a highly developed

bone tool industry, fishing implements, baked clay objects, and a high frequency of mortars and pestles. Well-defined house floors, artifact assemblages, and black midden soils at sites indicate a high degree of sedentism focused on intensive use of acorns, large game, and fish in the Clear Lake region. The Berkeley Pattern and Mendocino Pattern occupied the lakeshore at the same time, but with different adaptive poses: sedentary for the former and mobile/seasonal for the latter. A greater reliance on exchange is evidenced for the Berkeley Pattern by obsidian biface production from the Borax Lake obsidian source and by the presence of marine shell beads imported from the Pacific coast.

Augustine Pattern (post A.D. 500). The homeland of this pattern is in the Sacramento-San Joaquin Delta region, where a large-scale ceremonial complex has been described. This rarely seen in northwest California. Rattlesnake corner-notched projectile points are a hallmark of the Augustine Pattern, and both sedentary systems and adaptations that are more mobile have been identified along the coast and in the Warm Springs area. This time period may be characterized by limited numbers of centralized villages and smaller short-term occupation sites in a variety of habitats that were not previously used. Both mortar-pestle and handstone-milling slab technology are present.

Ethnographic Setting

At the time of European settlement, the project region was included in the territory controlled by the Lake Miwok, but bounded by the Patwin and Wappo (Alshuth and Origer, 2018). The Lake Miwok controlled the western and middle portions of the Guenoc Ranch, while the Patwin controlled the eastern part of the ranch. The boundary between these two groups is unclear, but would have shifted with seasonal movements following resource availability. All three groups were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures (Alshuth and Origer, 2018). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied continually throughout the year and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near sources of fresh water and in ecotones where plant life and animal life were diverse and abundant.

Historic Setting

Spanish occupation of what later became California began in 1769 with the establishment of the Mission San Diego de Alcalá and the San Diego Presidio. Ultimately, a total of 21 Franciscan missions were established, the last and most northerly being the Mission San Francisco Solano de Sonoma, which was established in southern Sonoma County in 1823. Native people throughout the region had their traditional life ways and land-use patterns abruptly changed with the establishment of the Spanish missions. Native Americans were brought into the missions, both willingly and by force, to be converted to Christianity, to learn farming and other “civilized” skills, and to serve as laborers. Many of the people at the missions died of diseases introduced by foreign settlers and from malnutrition (Alshuth and Origer, 2018).

At the end of the Mission Period, the Mexican government divided up former Church lands and various California governors awarded those properties as enormous land grants to citizens who had served the Mexican government. Approximately 30 percent of the Guenoc Valley Site, along the southwestern side, is within one of those land grants, Rancho Guenoc, granted to George Rock (Roche) by Governor Pío Pico

in 1845. Rancho Guenoc consisted of 21,220 acres of land along Putah Creek (Alshuth and Origer, 2018). Rancho Guenoc was later confirmed to Archibald Ritchie and Paul Forbes in 1857.

Lillie Langtry, also known as the Jersey Lilly, was born on the island of Jersey in 1852. She became one of the most infamous women of her time as the first society woman to go on stage in London (Brittanica.com, 2019). Lillie was discovered by high society when she and her husband moved to London in 1875. She received the nickname "The Jersey Lily" from her portrait painted by John Everett Millais. Photographs and sketches of Lillie, produced by the hundreds, appeared in shop windows, making her an overnight sensation and one of the most popular "Professional Beauties" and trend-setters of the period. She soon attracted the attentions of the Prince of Wales, later to become King Edward VII, and became his mistress. Her romantic association with the Prince and other notable society figures only increased Lillie's celebrity. Her friends included Oscar Wilde, Sarah Bernhardt, Prime Minister William Gladstone, and American railroad magnate Diamond Jim Brady (FemBio, 2019).

In March 1881 Lillie gave birth to Edward VII's illegitimate daughter. As their relationship waned, Lillie was surrounded by creditors and in need of an income, deciding to become an actress as a source of income. She made a successful debut in 1881 in a charity production, then put together her own troupe, which toured the United States in 1882. British and American audiences flocked to see her, attracted by her beauty and fashion, and the ongoing romantic scandals that Lillie never publicly refuted. As her theatrical engagements began to bring in huge box office receipts, Lillie also made many other shrewd investments, including real estate in the US and raising racehorses in England, so that she soon became one of the wealthiest independent women of her time (FemBio, 2019).

In 1888, Langtry purchased approximately 4,200 acres of Rancho Guenoc to raise horses and grow grapes. A winery already existed on the property, and Langtry imported a winemaker from France to assist in production. As a personal touch, each bottle of Langtry wine was adorned with her portrait on the label (Alshuth and Origer, 2018). In 1906, the Langtry property was purchased by George Mastick and Ferdinand Butterfield. In 1912, William F. Detert acquired the land that would constitute the present day Guenoc Ranch. He is noted for building the large earthen dam on Bucksnort Creek that bears his name, W.F. Detert. By the time of his death in 1929, he obtained the contiguous acreage and reconstituted the Rancho Guenoc Land Grant (Alshuth and Origer, 2018).

3.5.3 REGULATORY CONTEXT

Cultural resources are buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Laws and regulations at the federal, state, and local level govern the identification and assessment of archaeological and historic resources. While this EIR is being prepared pursuant to the California Environmental Quality Act (CEQA), it is anticipated that certain Proposed Project activities will separately require permitting under federal statutes and regulations.

Federal Regulatory Context

Section 106 of the National Historic Preservation Act

Archaeological resources are protected through the National Historic Preservation Act of 1966 (NHPA), and its implementing regulation, Protection of Historic Properties (Code of Federal Regulations, 36 Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to take into consideration the potential effects of proposed undertakings on cultural resources listed on or determined potentially eligible for inclusion in the National Register of Historic Places (NRHP), and to allow the Advisory Council on Historic Preservation the opportunity to comment on the proposed undertaking, the NRHP is the actual list of resources; the evaluation and consultation process is outlined in Section 106 of the NHPA.

The NHPA authorizes the Secretary of the Interior to maintain and expand a National Register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture. A property may be eligible for listing in the NRHP if it meets criteria for evaluation as defined in 36 CFR 60.4, as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, association, and:

A) That are associated with events that have made a significant contribution to the broad patterns of our history;
B) That are associated with the lives of persons significant in our past;
C) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D) That have yielded, or may be likely to yield, information important to prehistory or history.

Sites younger than 50 years, unless of exceptional importance, are not eligible for listing in the NRHP.

All properties change over time; therefore, it is not necessary for a property to retain all its historic physical features or characteristics in order to be eligible for listing on the NRHP. The property must, however, retain enough integrity to enable it to convey its historic identity; in other words, to be recognizable to a historical contemporary.

State Regulatory Context

California Environmental Quality Act

CEQA requires that, for projects financed by or requiring the discretionary approval of public agencies in California, the effects of the project on historical resources must be considered (Public Resources Code [PRC] Section 21083.2). Historical resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance (PRC Section 50201) and which are eligible for listing on the California Register of Historical Resources (CRHR).

Under the CEQA Guidelines, an impact is considered significant if a project will result in a substantial adverse change to the resource (PRC Section 21084.1). Actions that would cause a significant impact to a historical resource include demolition, replacement, substantial alteration, and relocation. Before the significance of impacts can be determined and mitigation measures developed, the significance of cultural resources must be determined. The 2000 CEQA *Guidelines* (Section 15064.5) define cases in which a property may qualify as a significant historical resource for the purposes of CEQA review.

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Certain properties, including those listed in, or formally determined eligible for listing in, the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

Furthermore, under PRC 5024.1, Title 14 California Code of Regulations [CCR], Section 4852(c), a cultural resource must retain integrity to be considered eligible for the CRHP. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-disturbing activities, such as farming, often lack integrity because they have been directly damaged or moved from their original location, among other changes.

Typically, an archaeological site in California is recommended eligible for listing in the CRHR based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity.

Sites such as these have the ability to address research questions.

Unique Archaeological Resources

CEQA also provides for the protection of *unique archaeological resources*. PRC Section 21083.2 defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria: (1) that it contains information needed to answer important scientific research questions and that there is demonstrable public interest in that information; (2) that it has a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) that it is directly associated with a scientifically recognized important prehistoric or historic event or person.

The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064.5(c)(4)).

California Health and Safety Code

California law protects Native American burials, skeletal remains and associated grave goods regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains (Section 7050.5 of the Health and Safety Code and PRC 5097.9). When human remains are discovered, the protocol to be followed is specified in California Health and Safety Code.

CEQA Guidelines Section 15064.5, subdivision (e), requires that excavation activities stop whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the NAHC. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Assembly Bill 52 (AB 52)

AB 52 mandates early tribal consultation prior to and during CEQA review for those tribes which have formally requested, in writing, notification on projects subject to AB 52, i.e., projects that have published Notices of Preparation for EIRs or Notices of Intent to adopt Negative Declarations or Mitigated Negative Declarations since July 1, 2015. The bill establishes a new category of Tribal Cultural Resources (TCR) for which only tribes are experts; these resources may not necessarily be visible or archaeological, but could be religious or spiritual in nature. Significant impacts to a TCR are considered significant effects on the environment.

Senate Bill 18

Senate Bill 18 (SB 18), which went into effect January 1, 2005, requires local governments (city and county) to consult with Native American tribes before making certain planning decisions and to provide notice to tribes at certain key points in the planning process. The intent is to “provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places” (Governor’s Office of Planning and Research, 2005).

The purpose of involving tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level, land use designations are made by a local government. The consultation requirements of SB 18 apply to general plan or specific plan processes proposed on or after March 1, 2005.

According to the Tribal Consultation Guidelines: Supplement to General Plan Guidelines (2005), the following are the contact and notification responsibilities of local governments:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code §65352.3).

- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45-day comment period (Government Code §65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.

- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code §65092).

Because this project requires a [General Plan Amendment/Specific Plan Amendment], the provisions of SB 18 would apply.

Local Regulatory Context

Lake County General Plan

Goals and policies of the *Lake County General Plan* (Lake County, 2008) relating to cultural resources are found in Chapter 9 – Open Space, Conservation & Recreation.

Goal OSC-8: To manage and protect sites of cultural and archaeological importance for the benefit of present and future generations.

Policy OSC-8.3: Alteration of Sites with Identified Cultural Resources. When planning any development or alteration of a site with identified cultural or archaeological resources, ways of protecting the resources shall be developed and implemented. Development will be permitted in these areas only after a site-specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and mitigation measures proposed for any impacts the development may have on the resource.

Policy OSC-8.7: Solicit Views from Local Native Americans. The County shall continue to solicit views

from the local Native American communities regarding cultural resources to identify locations of importance to Native Americans, including archaeological sites and traditional cultural properties. Coordination with the Native American Heritage Commission should begin at the onset of a particular project. Any changes, modifications, or additions to the Lake County General Plan will require consultation with local Native American representatives prior to adoption, as specified in California Senate Bill (SB) 18.

Policy OSC-8.8: Confidentiality of Archaeological Sites. The County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

Policy OSC-8.11: Mitigation Monitoring for Historical Resources. The County shall develop standards for monitoring of mitigation measures established for the protection of historical resources prior to development.

Policy OSC-8.13: Discovery of Archaeological/Paleontological Resources. In the event that archaeological/paleontological resources are discovered during ground disturbing activities, the County shall require that grading and construction work within 100 feet of the find shall be suspended until the significance of the features can be determined by a qualified professional archaeologist/paleontologist as appropriate. The County will require that a qualified professional archaeologist/paleontologist make recommendations for measures necessary to protect the find; or to undertake data recovery, excavation, analysis, and curation of archaeological/paleontological materials as appropriate.

Policy OSC-8.14: Discovery of Human Remains. Pursuant to CEQA Guidelines (Section 15064.5), if human remains are discovered during project construction, it is necessary to comply with state laws relating to prohibitions on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (California Health and Safety Code Section 7050.5). If human remains of Native American origin are discovered during project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). If any human remains are discovered or recognized in any location on the project site, there shall be no further excavation or disturbance of the site or any area reasonably suspected to overlie adjacent human remains until:

A) The Lake County Coroner/Sheriff has been informed and has determined that no investigation of the cause of death is required. If the coroner determines that the remains are of Native American origin, the coroner shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent (MLD) from the deceased Native American. The MLD shall have an opportunity to make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

B) Pursuant to Section 5097 of the Public resources Code, if the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation, or the landowner or his or her authorized representative rejects the

recommendation of the descendants and the mediation provided for in subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance. To protect these sites, the landowner shall do one or more of the following:

1. Record the site with the commission or the appropriate Information Center.
2. Utilize an open-space or conservation zoning designation or easement.
3. Record a document with the county in which the property is located.

3.5.4 IMPACTS

Method of Analysis

The information presented in this section is derived from reports prepared by Tom Origer & Associates in 2018 and 2019 and Schultz (2019), as detailed further below. These reports and studies in turn are based on the results of background research at the Northwest Information Center, a Native American contact program, online database searches, and field surveys completed previously by a variety of consultants including Tom Origer & Associates.

Area of Potential Effects

The Guenoc Valley Site comprises 49 parcels totaling approximately 16,000 acres (25 square miles) in southeast Lake County, located on the corners of four United States Geological Survey (USGS) 7.5-minute topographic quadrangles: Detert Reservoir, Aetna Springs, Jericho Valley, and Middletown.
While Phase 1 project components have been defined, future development phases could occur anywhere within the 16,000-acre property. Therefore, the Phase 1 Area of Potential Effects (APE) consists of the parcel boundaries and infrastructure shown on **Figure 2-6**, while all of the remaining lands within the entire 16,000-acre Guenoc Valley Site (minus the Phase 1 APE) are considered to be the APE for future phases. All construction staging, equipment laydown and ground disturbance for Phase 1 would occur within the parcel boundaries shown on **Figure 2-6**, and all construction phasing and activities for future phases would occur within the 16,000-acre Guenoc Valley Site. Depth of potential excavations (the vertical APE) is unknown as development planning has not progressed to that degree, but it is presumed that it could extend up to 10 feet below ground surface in order to accommodate utility trenching and construction pad development on steeply sloped parcels.

In addition to areas within the Guenoc Valley Site, Phase 1 would involve off-site improvements, including the addition of workforce housing at the Middletown Housing Site, as well as the off-site water supply well and pipeline in Butts Canyon Road. Therefore, these areas are also considered to be within the Phase 1 APE. The Middletown Housing Site is currently undeveloped and is bordered by Dry Creek to the west, a tree row to the north, and residences to the east and south and lies within Township 10 North, Range 7 West as depicted on the Middletown, CA USGS 7.5-minute topographic quadrangle. All construction staging would occur within the 12.5-acre project site. Depth of potential excavations (the vertical APE) is unknown as development planning has not progressed to that degree, but it is presumed that it could extend up to 10 feet below surface in order to accommodate utility trenching.

The Off-Site Well Site is located on the east side of Middletown, California and consists of two parcels measuring a combined total of approximately 37 acres bordered by SR 29 to the west, residential properties to the north and east, and Butts Canyon Road to the south. The site is within Township 10 North, Range 7 West as depicted on the Middletown, CA USGS 7.5-minute topographic quadrangle. If a well is dug on the site, then a pipeline would also be required, conveying the water across the shortest possible distance from the well to Butts Canyon Road to the south, where it would join the off-site pipeline, described below. Project construction will be limited to the western half of the site, and the cultural resources investigation focused on that area, however a brief investigation of the remainder of the parcels was completed, as a prehistoric village site had been noted in the vicinity. For purposes of this EIR, the area of potential effects is assumed to include the western half of the two combined parcels. All construction staging will occur within the two parcels. The depth of the prospective well is unknown, but it is assumed that any waterline trench would be no more than 2 feet wide and 4 feet deep and that parking area disturbances would be less than 2 feet deep.

The off-site pipeline (Pipeline) corridor would extend approximately 6 miles along Butts Canyon Road from the connection to the off-site water supply well to a point of connection within the Guenoc Valley Site. The pipeline is depicted on the Middletown and Detert Reservoir USGS quadrangles in Township 10 North, Range 6-7 West. While the pipeline route has been determined, the pipeline may run along either side of Butts Canyon Road. Therefore, the APE is considered to be anything within 20 feet of either side of Butts Canyon Road for the duration of the route. It is assumed that all construction staging would occur within the pipeline trench or on adjacent road edges and shoulders and that the pipeline trench would be no more than 2 feet wide and 4 feet deep.

Native American Consultation

In 2018, Tom Origer & Associates completed a Native American contact program. At that time, the NAHC was asked to provide a list of Native American individuals and groups that might have information regarding the Proposed Project area. The NAHC responded with a list including: Big Valley Band of Pomo Indians, Elem Indian Colony Pomo Tribe, Habematolel Pomo of Upper Lake, Koi Nation of Northern California, Middletown Rancheria Band of Pomo, Mishewal-Wappo Tribe of Alexander Valley, Robinson Rancheria Band of Pomo Indians, and Scotts Valley Band of Pomo Indians. Letters were sent to each of these contacts on February 21, 2018, but no official response was received. However, in coordination with Tom Origer & Associates, three representatives from the Middletown Rancheria participated in an extensive field survey in 2018 (Alshuth and Origer, 2018), and other representatives of Middletown Rancheria accompanied Tom Origer & Associates during their 2019 survey and site testing efforts.

Prior to undertaking investigation of the various Off-Site Improvements areas in 2019, on behalf of the County, AES consulted Middletown Rancheria Tribal Historic Preservation Officer (THPO) Sally Peterson. Ms. Peterson stated that she was aware of ethnographic villages in the general region, but did not know of any that would be impacted by the Off-Site Improvements. When AES completed a shovel testing program for the Off-Site Well Site, Middletown Rancheria monitor Daniel Beltran was present.

On April 24, 2019, the County emailed the NAHC and 18 individuals, advising them that a Notice of Preparation for the Environmental Impact Report (EIR) had been prepared. A response was received from Middletown Rancheria dated May 23, 2019, which stated that there are sites of cultural, historical, and

religious significance for the Tribe, and concern for sites of cultural and religious significance that are known only to the Tribe. On April 24, 2019, Redwood Valley emailed a response to the County stating that they deferred any comments, review or concerns to Middletown Rancheria. On May 9, 2019, Yocha Dehe responded with the statement that the project area is not within the aboriginal territories of the Yocha Dehe Wintun Nation, and referred the County to Middletown Rancheria. A response was received from Middletown Rancheria dated May 23, 2019, which stated that there are sites of cultural, historical, and religious significance for the Tribe, and concern for sites of cultural and religious significance that are known only to the Tribe. Middletown Rancheria requested that they be included in all aspects of the project and development of the EIR.

On December 18, 2019, the County both mailed and emailed a Tribal Consultation Request under SB 18 and AB 52 to all of the tribes previously notified. Big Valley of Pomo Indians THPO Ronald Montez responded on December 18, stating that the Proposed Project is outside their historical tribal boundaries; on December 19 Redwood Valley Rancheria acknowledged the notice but deferred to Middletown Rancheria; and on January 6, 2020 Yocha Dehe Wintun Nation Director of Cultural Resources Isaac Bojorquez stated that the Proposed Project is outside their aboriginal territory and referred the County to Middletown Rancheria.

On December 13, 2019, the County again contacted Middletown Rancheria, acknowledging their comments and Middletown Rancheria's request to consult. The County included several potential dates to schedule a meeting in January 2020. A meeting was held on February 5, 2020 and consultation is ongoing.

Consultation documents are included in **Appendix CULT**.

Guenoc Valley Site

Records Search

In June 2019, AES completed a Phase I cultural resources study, including a record search at the Northwest Information Center (NWIC) for the entire Guenoc Valley Site (NWIC File No. 18-2251). In total, almost 100 cultural resources have been identified within the Phase 1 and Future Phases areas, including bedrock mortars (BRMs), midden sites, prehistoric lithic scatters, historic debris scatters, rock walls, cabin and ranching structures, rock stacks, ethnographic villages, and mine adits; the search results also indicated that large portions of the site had been surveyed previously. In addition, in November 2019, Architectural Resources Group historian Erica Schultz completed an architectural and historic evaluation of the Lilly Langtry house and nearby outbuildings (**Appendix CULT**).

Phase 1 Project Area Surveys

The NWIC records search, documents from Tom Origer & Associates, and current efforts indicate that the Phase 1 Project Area has been included in ten different surveys, beginning in the 1950s, when individual ethnographic village sites were documented. Most recently, Tom Origer & Associates undertook a survey of the Phase 1 Project Area from January 16, 2018 to February 23, 2018 (Alshuth and Origer, 2018; **Appendix CULT**). The Phase 1 area was surveyed using a variety of strategies to reflect the diverse environment. Areas of minimal slope were subject to intensive field survey, using transects spaced 10-15 meters apart. Areas of moderate slope were surveyed using transects spaced 15-20 meters apart. Ground

visibility ranged from good to poor, with dense vegetation, such as chamise, manzanita, and buckbrush, being the primary hindrance. Hoes were used, as needed, to clear patches of vegetation so that the ground surface could be inspected. While in the field, Tom Origer & Associates attempted to revisit 42 previously identified resources, but could not relocate two sites. In addition, they documented 14 new resources, including stone walls, historic debris scatters, prehistoric lithic scatters, mine adits, a homestead site, and a number of isolated historic and prehistoric artifacts. They also noted, but did not record, culverts, dams, ditches, roads, reservoirs, spillways, bridges, fences, and modern developments (Alshuth and Origer, 2018).

At different periods from September to November of 2019, Tom Origer & Associates implemented an investigation of several previously identified resources within the Equestrian Center and Maha Farms vicinities to confirm site boundaries (Alshuth and Origer, 2019a), and in November 2019, completed surveys of 14 small Phase 1 development locations that had not been included in previous work. As a result, Tom Origer & Associates identified four new sites (Bohn Hills historic debris scatter, Ink Ranch corrals, the Hilltop lithic scatter, and the Back of House vineyard lithic scatter [Alshuth and Origer, 2019b]) as well as several isolated artifacts; the sites have been added to the end of **Table 3.5-1**. Tom Origer & Associates also identified a lithic scatter along the Secondary Access Road; comparison with site records indicate that the lithic scatter is in the same location as P-17-116. It is clear that this lithic scatter is not P-17-116, as that site includes house pits, midden, and obvious evidence of a prehistoric occupation site. Instead it is presumed that the P-17-116 location has been incorrectly mapped.

In addition, in November 2019, Erica Schultz completed an architectural and historic evaluation of the Lilly Langtry house and nearby outbuildings (**Appendix CULT**). Schultz' architectural study of the Langtry House and related structures found that there was not a significant association with Lillian Langtry. Langtry did not make significant contributions to local, state, or national history beyond being a famous singer/actor of her era. She also may have only visited the property or lived there for about six weeks. Other prominent people associated with the property include William Detert, Edward T. Foley, and Orville T. Magoon. They acquired the property late in their careers, largely as a retirement property. It is not associated with their productive careers and there is little evidence that they resided at the ranch core. Detert continued to live in San Francisco, and Edward T. Foley lived in Santa Barbara. Foley had already established his award-winning cattle herd in Southern California before he consolidated operations at Guenoc. Orville T. Magoon had already retired from a prominent career as a coastal engineer and inherited the property through his family. He planted a vineyard and released his first vintage ca. 1980; the viticultural use does not meet the elevated threshold of significance for events less than 45 years old.

The Langtry House complex also contained no association with significant events, or for its architectural values. Successive periods of construction/development are evident in the existing buildings, but are not significant for their architecture or design, for example, the interior framing of the barns did not include distinctive methods of construction and the house itself does not retain integrity (Schultz, 2019) due to the additions and changes made over time.

Known Resources within Phase 1 APE

As a result of the record searches and field surveys, 37 known archaeological sites were found within the Phase 1 APE; **Table 3.5-1** summarizes the locations of the resources in relation to the proposed land uses

within the site.

TABLE 3.5-1
CULTURAL RESOURCES WITHIN THE GUENOC VALLEY SITE

Primary No.	Trinomial No.	Description	Date Recorded	Location
Phase 1				
P-17-116	CA-LAK-91	Prehistoric occupation site	1950	Road
P-17-256	CA-LAK-235	Prehistoric occupation site	1957, 1974	Road
P-17-399	CA-LAK-387	Lithic scatter, historic foundation	1974, 2000, 2018	Equestrian Center
P-17-400	CA-LAK-388	Lithic scatter	1974, 2018	Maha Farms
P-17-404	CA-LAK-392	Lithic scatter	1974, 2000	Workforce Housing
P-17-405	CA-LAK-393	Prehistoric occupation site	1974, 2000	Workforce Housing
P-17-406	CA-LAK-394	Foundations, depression	1974, 2000	Workforce Housing
P-17-411	CA-LAK-399	Prehistoric occupation site	1974, 2018	Road, Camping area
P-17-412	CA-LAK-400	Foundation, rock wall	1974, 2018	Road, Camping area
P-17-414	CA-LAK-402	Prehistoric occupation site	1974, 2018	Road, Camping area
P-17-416	CA-LAK-404	Prehistoric occupation site	1974, 2000, 2018	Equestrian Center, road
P-17-417	CA-LAK-405	BRMs, lithic scatter	1974, 2000, 2018	Residential parcel
P-17-420	CA-LAK-231/408	Prehistoric occupation site; village of *Ka-boot*	1957, 1974, 2000	Solar field
P-17-421	CA-LAK-409	Prehistoric occupation site	1974, 2000, 2018	Road
P-17-425	CA-LAK-413H	Cabin, debris scatter	1974, 1997, 2018	Residential parcel
P-17-1363	CA-LAK-1821	Lithic scatter	1994, 2008	Road
P-17-1957	-	Lithic scatter	1997	Residential parcel
P-17-1958	-	Lithic scatter	1997, 2018	Residential parcel
P-17-1959	CA-LAK-1885	Lithic scatter	1997	Road
P-17-1960	CA-LAK-1886	Lithic scatter	1997	Road
P-17-1961	CA-LAK-1887	Lithic scatter	1997	Road
P-17-1962	CA-LAK-1888	Lithic scatter	1997, 2018	Residential parcel
P-17-1963	CA-LAK-1889	Lithic scatter	1997	Residential parcel
P-17-1996	-	Rock wall	1997	Residential parcel
P-17-2027	CA-LAK-1928	Lithic scatter	1997, 2018	Golf Course
P-17-2035	CA-LAK-1936	BRMs, lithic scatter	1997, 2018	Residential parcel
P-17-2038	-	BRM	1997, 2018	Residential parcel
P-17-2039	-	Prehistoric occupation site	1997, 2018	Residential parcel
P-17-2041	-	Possible BRM	1997, 2018	Residential parcel
P-17-2042	-	Rock alignment on top of boulders	1997, 2018	Residential parcel
P-17-2043	-	Rock wall	1997, 2018	Residential parcel
P-17-2952	-	Rock wall	2018	Residential parcel

Primary No.	Trinomial No.	Description	Date Recorded	Location
P-17-2956	-	Rock wall	2018	Camping area
		Ink Ranch Corrals	2019	Golf Building
		Lithic scatter	2019	Back of House vineyard
		Hilltop lithic scatter	2019	Residential parcel
		Bohn Hills historic debris	2019	Residential parcel
		Secondary Access Road lithic scatter	2019	This is at the mapped location of P-07-116
Future Phases				
P-17-115	CA-LAK-90	Prehistoric occupation site	1950, 1977	
P-17-252	CA-LAK-230	Prehistoric occupation site; village of *Sahl-sahl*	1957, 1974, 2018	
P-17-253	CA-LAK-232	Prehistoric occupation site	1957, 1974, 2000	
P-17-255	CA-LAK-234	Bed Rock Mortars (BRMs)	1957, 1974	
P-17-314	CA-LAK-298	Lithic scatter, ground stone	1987, 2000	
P-17-401	CA-LAK-389	BRMs	1974, 1977	
P-17-402	CA-LAK 390	Prehistoric occupation site	1974, 2000	
P-17-403	CA-LAK-391	Lithic scatter	1974, 2000	
P-17-407	CA-LAK-395	Prehistoric occupation site	1974, 1977, 2000, 2015	
P-17-408	CA-LAK-396H	Rock wall	1974	
P-17-409	CA-LAK-397	BRMs, lithic scatter, rock wall	1974, 1997, 2000, 2018	
P-17-410	CA-LAK-398	Rock wall	1974, 2018	
P-17-413	CA-LAK-401	Fire place, rock walls	1974	
P-17-415	CA-LAK-403	Lithic scatter	1974, 2018	
P-17-418	CA-LAK-406	Prehistoric occupation site	1974, 2000, 2018	
P-17-419	CA-LAK-407	Prehistoric occupation site	1974, 2000, 2018	
P-17-422	CA-LAK-410H	Homestead	1974	
P-17-423	CA-LAK-411	Prehistoric habitation	1974, 2000	
P-17-424	CA-LAK-412	Prehistoric occupation site	1974, 2000, 2018	
P-17-1239	CA-LAK-1495	Lithic scatter	1986	
P-17-1470	CA-LAK-231	Lithic scatter	1957, 1974, 2000	
P-17-1964	-	Rock wall	1997, 2018	
P-17-1965	CA-LAK-1890	BRMs, lithic scatter	1997, 2018	
P-17-2022	CA-LAK-1923H	Corrals, fences, debris	1997, 2018	
P-17-2023	CA-LAK-1924H	Cabin foundation, rock wall, debris	2000	
P-17-2024	CA-LAK-1925	Lithic scatter	1997, 2018	

Primary No.	Trinomial No.	Description	Date Recorded	Location
P-17-2025	CA-LAK-1926	Lithic scatter	2000	
P-17-2026	CA-LAK-1927	Lithic scatter	2000	
P-17-2028	CA-LAK-1929	Lithic scatter, historic debris	1997, 2018	
P-17-2029	CA-LAK-1930H	Ink Ranch	1997, 2018	
P-17-2030	CA-LAK-1931	Prehistoric occupation site	1997, 2018	
P-17-2031	CA-LAK-1932	Lithic scatter	2000	
P-17-2032	CA-LAK-1933	Lithic scatter	2000	
P-17-2033	CA-LAK-1934	Lithic scatter	2000	
P-17-2034	CA-LAK-1935	Lithic scatter	2000	
P-17-2036	CA-LAK-1937	Lithic scatter	1997, 2018	
P-17-2037	CA-LAK-1938	Lithic scatter	1997, 2018	
P-17-2045	CA-LAK-1941	Lithic scatter	1997, 2018	
P-17-2046	CA-LAK-1942/H	Lithic scatter, rock walls	1997, 2018	
P-17-2070	-	Lithic scatter	1988, 2000	
P-17-2071	-	Lithic scatter	1988, 2000	
P-17-2072	-	Lithic scatter	1988, 2000	
P-17-2121	CA-LAK-227-228, CA-LAK-1975	Prehistoric occupation site; village of *Hawl' hawl po goot*	1957, 1974, 2000	
P-17-2672	CA-LAK-395	Prehistoric occupation site	1974, 1977, 1978, 2000	
P-17-2946	-	Lithic scatter	2018	
P-17-2947	-	Lithic scatter	2018	
P-17-2948	-	Lithic scatter	2018	
P-17-2949	-	Lithic scatter	2018	
P-17-2950	-	Crabtree Homestead	2018	
P-17-2951	CA-LAK-2265H	Historic debris	2018	
P-17-2040	CA-LAK-1939	Lithic scatter	1997, 2018	
P-17-2953	-	Mine adits	2018	
P-17-2955	-	Lithic scatter	2018	
P-17-2957	-	Rock wall	2018	
P-17-2958	-	Lithic scatter	2018	
P-17-2959	-	Thompson Homestead	2018	
P-17-2960	CA-LAK-2272H	Historic debris	2018	
Sources: NWIC, Tom Origer & Associates				

TABLE 3.5-2
SUMMARY OF KNOWN CULTURAL RESOURCES WITHIN THE GUENOC VALLEY SITE

Impact Area	Number of Sites
Phase 1 APE	
Road	7
Residential Parcels	16
Equestrian Center	2
Maha Farms	1
Back of House	1
Workforce Parcel	3
Camping Area	4
Solar Field	1
Golf Course	2
Sub-total	**37**
Future Phases APE	57
Total	**94**

The following is a summary of the resources which could be affected by Phase 1 development.

Roadway Sites (P-17-116, -256, -421, -1363, -1959, -1960, -1961, Secondary Access Road lithic scatter)
These are sites that are currently mapped within proposed roadway corridors that will be built as part of Phase 1. None of these sites have been evaluated for NRHP/CRHR eligibility. P-17-256, and -421 are prehistoric occupation sites; the remaining sites are lithic scatters. P-17-116 was mapped along the Secondary Access Road however the Tom Origer & Associates November 2019 survey identified only a lithic scatter at this location.

Residential Parcel Sites (P-17-417, -425, -1957, -1958, -1962, -1963, -1996, -2035, -2038, -2039, -2041, -2042, -2043, -2952, and the newly identified Bohn Hills historic debris scatter.)
These are resources found within or immediately adjacent to various residential parcels, as currently designed. P-17-425 is a historic cabin with a debris scatter, -1996, -2043, and -2952 are rock walls. P-17-2039 is a prehistoric occupation site, and the remainder are lithic scatters, though -417, -2035, -2038, and -2041 also include bedrock mortars. Most occupy only a small portion of a parcel, however P-17-417 occupies the entirety of a parcel. None of these sites have been evaluated for NRHP/CRHR eligibility.

Equestrian Center Sites (P-17-399 and -416)
P-17-399 was first identified in 1974 and documented as a lithic scatter and a nearby stone, brick, and concrete foundation. The site was relocated in 2019, near the footprint for the proposed Equestrian Center. Land uses proposed under Phase 1 in the vicinity of this site include the development of a paddock and jumping ring for horses, as depicted on the SPOD Equestrian Center Land Use Map (Appendix SPOD, pg.57). P-17-399 was evaluated in September 2019 using the California Archaeological Resource Identification and Data Acquisition Program for Sparse Lithic Scatters (CARIDAP) to determine NRHP eligibility. As a result of the CARIDAP program, it was determined that P-17-399 may contain data values which would make it eligible for listing on the NRHP and CRHR.

P-17-416 was first identified in 1974 and documented as an open habitation area along the south bank of

Bucksnort Creek. At the time, archaeologists observed midden deposits, bowl mortar fragments, metate fragments, two hopper mortars, two small pestles, and an obsidian projectile point. Land uses proposed under Phase 1 in the vicinity of this site include the Pony Camp and stables. The 2019 investigation of this site included the excavation of 27 backhoe trenches, 12 of which uncovered prehistoric materials such as fire-affected rock, obsidian debitage, obsidian blade fragments, and basalt tool fragments in the upper 45 centimeters (1.5 feet) of soil. Based on the findings of the backhoe investigation site P-17-416 is considered eligible for listing on the NRHP and CRHR.

Maha Farms Site (P-17-400, P-17-1965)
P-17-400 was first identified in 1974 and documented as a lithic scatter with tools and flakes on a slope above a drainage. Land uses proposed under Phase 1 in the vicinity of this site include the 15-acre Maha Farm Marketplace, with orchards, gardens, market, barn, hotels, sales center, and other facilities. In 2019, the archaeological survey crew noted obsidian flakes in the area designated as the northernmost Farming Island, depicted on SPOD Maha Farm Detailed Cluster Map (pg.43) and SPOD Maha Farm Garden Land Use Floor Plans Map (pg.55). The site has not been evaluated for NRHP/CRHR eligibility.

P-17-1965 is an extensive lithic scatter with obsidian and basalt flakes, flaked stone tools, BRMs and groundstone. It is located immediately adjacent to the Maha Farms development, and could extend into the development area.

Back of House Site (Back of House vineyard lithic scatter)
One of the newly identified lithic scatters is located in the vineyard currently occupying the parcel that will be removed and developed for the Back of House. The site has not been evaluated for NRHP/CRHR eligibility.

Workforce Parcel Sites (P-17-404, -405, and -406)
P-17-404 is a lithic scatter, -405 is an occupation site, and -406 includes historic foundations and depressions. None of these sites have been evaluated for NRHP/CRHR eligibility.

Camping Area (P-17-411, -412, -414, and -2956)
P-17-411 and -414 are occupation sites, -412 is a foundation with a nearby rock wall, and -2956 is a rock wall, all located around the periphery of the Camping Area. None of these sites have been evaluated for NRHP/CRHR eligibility.

Solar Field (P-17-420)
P-17-420 is an occupation site located within the proposed solar field, extending beyond the proposed area. This site has not been evaluated for NRHP/CRHR eligibility.

Golf Course (P-17-2027 and the newly identified Ink Ranch corrals)
P-17-2027 is a lithic scatter, and the new find consists of two corrals associated with Ink Ranch. Neither of these sites has been evaluated for NRHP/CRHR eligibility.

Future Phases

Previous archaeological surveys have included some portions of the Guenoc Valley Site, though not all.

These efforts have resulted in the identification of 57 cultural resources (**Tables 3.5-1** and **3.5-2**) outside of the Phase 1 footprint but within areas that may be impacted by future phases of development. Like those already noted, these other sites include prehistoric lithic scatters, bedrock mortars, ethnographic villages, mining sites, rock walls, cabins, and historic debris scatters, as well as isolated artifacts. In general, sites cluster near water sources on level or nearly level ground. Surveys of the more rugged portions of the Guenoc Valley Site have discovered proportionately fewer resources.

Off-Site Workforce Housing

The Middletown Housing Site is located on approximately 12.5 acres between the northern end of Santa Clara Road and Dry Creek. The investigation of this location included a record search at the NWIC (NWIC File No.:18-2002) on April 17, 2019. The record search found that the property had not been surveyed previously, but that three archaeological sites had been identified within ½-mile, CA-LAK-229, a prehistoric midden site, CA-LAK-1687, a lithic scatter, and CA-LAK-2180, a lithic scatter. AES also sent a record search request to the NAHC on April 1, 2019 and received results on April 15. The NAHC did not find any records in the Sacred Lands Files but included a list of individuals who might have information regarding cultural resources on the project site; AES contacted the Middletown Rancheria THPO, who had no information regarding cultural resources on the Workforce Housing Site.

AES conducted a cultural resources field survey of the Middletown Housing Site on April 17-18, 2019. At the time of the survey, the property consisted of an open field thickly overgrown with seasonal grasses and forbs; large-scale soil dumping was observed near the eastern end of the parcel, following the property boundary and continuing for a short distance along the northern edge. Overall, the thick grasses allowed less than 1 percent ground surface visibility where rodent burrows occurred, and so the survey was completed using meandering east-west transects at 50-75 foot intervals. There were two areas of better visibility, a recently plowed north-south corridor near the western end of the property that offered 100 percent ground surface visibility, and that portion of the property closest to Dry Creek. There was a small overflow channel near the creek with a dense layer of pebbles and cobbles deposited during winter floods; short grasses and weeds had sprung up between the rocks. No cultural resources were identified during the survey.

Off-Site Infrastructure

Water Well

The Off-Site Well Site may include a well and a waterline to transport water from the well to Butts Canyon Road to the south. The investigation of the off-site water well included a record search completed with the Workforce Housing record search. The record search found that one archaeological site has been identified within ½-mile of the off-site water well, but that none have been found within the well site. That site is CA-LAK-229, a prehistoric midden site that may be the ethnographic site of *Lakihyomipukut*. In addition, the ethnographic village of *Lálmukpukut* was noted approximately 1,000 feet to the east of the property in the mid-1950s. Because of the proximity of known cultural resources and poor ground surface visibility, the field investigation was completed On June 4-6, 2019 by excavating a series of Shovel Test Pits (STPs).

The Off-Site Well Site consisted of mostly level grassland with a barrel-racing course set up on it; horses and cattle were pasturing on the property during the archaeological investigation. Additionally, a residential

home is on the property. Previously, the property had been used as a vineyard, and some remnant shallow planting rows were still visible as well as the occasional volunteer grape vine. The only artifact recovered was a small fragment of flat, clear glass in STP 12, adjacent to Butts Canyon Road. No other artifacts or features were identified in any STP. While no prehistoric artifacts or features were found during the investigation, the presence of nearby ethnographic village sites indicates an increased potential for buried cultural resources to be uncovered during any project-related construction.

AES excavated 24 STPs crossing the Off-Site Well Site in both north-south and east-west directions. Prior to the excavation, AES consulted with Middletown Rancheria THPO Sally Peterson, who was aware of the nearby ethnographic sites, but had no knowledge of any cultural resources located on the Off-Site Well Site. Middletown Rancheria monitor Daniel Beltran accompanied the AES team during the shovel testing program.

Off-Site Water Supply Pipeline

As proposed, the Water Supply Pipeline would extend approximately 6 miles along Butts Canyon Road from the connection to the off-site wellto a point of connection within the Guenoc Valley Site.

The Water Supply Pipeline corridor was included in the record search performed for the Off-Site Well and Workforce Housing Sites. The record search found that three archaeological sites have been identified within ½-mile of the pipeline route, but that none have been found within the pipeline corridor. These three sites include: CA-LAK-229, a prehistoric midden site, CA-LAK-1687, a lithic scatter, and CA-LAK-2180, a lithic scatter. The record search also indicated that the entire Water Supply Pipeline corridor had been included during the course of 11 or more previous archaeological investigation.

AES completed a survey of the Water Supply Pipeline corridor on April 17-18, 2019. Butts Canyon Road is largely lined with roadside ditches, between the road shoulder and nearby property fences, has an elevated road prism built on fill, and graveled road shoulders. The pipeline survey was opportunistic throughout the corridor, including intensive examination within 100 feet of any drainage crossings, however hardscape, seasonal vegetation, and road gravel obscured the surface, leaving less than 1 percent ground surface visibility. No artifacts or features were identified during any portion of the survey. The presence of occasional water sources as well as ethnographic village sites in the region indicates an increased potential for buried cultural resources to be uncovered during any project-related construction.

Thresholds of Significance

An impact to cultural resources is considered significant under CEQA if implementation of the Proposed Project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;
- Disturb any human remains, including those interred outside of formal cemeteries;

- Cause a substantial adverse change in the significance of a tribal cultural resource pursuant to §21080.3.1 and §21080.3.2

Under the NHPA, if it is determined that historic properties may be affected by an undertaking, the agency proceeds with the Section 106 process, assessing adverse effects. The criteria of adverse effect are found in Section 800.5(a)(1) of the implementing regulations for the NHPA. According to the criteria, an adverse effect occurs when the integrity of the historic property may be diminished by the undertaking through alteration of the characteristics that qualify the property for the NRHP. Such alteration can be caused directly as a result of the undertaking or be an indirect consequence. Similarly, CEQA *Guidelines* Section 15064.5 defines "substantial adverse change" as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings.

For the sake of consistency, the impacts and mitigation measures below are generally discussed using CEQA terminology such as "historical resources" rather than "historic properties"; this discussion includes consideration of resources under the NHPA, but without offering the confusion of using two sets of similar terminology. Where impacts or mitigation measures under NHPA differ from those of CEQA, they are called out separately.

Impacts

IMPACT 3.5-1	CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE AS DEFINED IN § 15064.5			
	Guenoc Valley Site		Other Phase 1 Areas	
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
Significance Before Mitigation	Potentially Significant	Potentially Significant	No Impact	No impact
Mitigation Measures	MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation	MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation	N/A	N/A
Significance After Mitigation	Less than Significant	Less than Significant	N/A	N/A

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Guenoc Valley Site: Phase 1 – Project Level Analysis

Historic-era sites within the Proposed Project include mine adits, corrals associated with the Ink Ranch, cabins, foundations, and debris scatters, and the Langtry house complex. The Lillie Langtry house complex includes the Victorian main house, seven cottages, five sheds, three barns, and a garage, all of which (except for the house) are scheduled to be demolished. While it is outside of the Phase 1 footprint, the house is located directly behind the proposed Central Back-of-House development (SPOD Land Use Floor Plan (pg.94)); architectural plans (SPOD Central Back-of-House Design (pg.92)) present modern wood and metal structures that are an extreme contrast to the late 19th century Langtry house. Therefore, a formal evaluation of the house and associated cottages, sheds, barns, and garage was completed in November 2019 (Schultz, 2019); as a result, the entire complex, including the house, was found not eligible for listing on the CRHR. Therefore, there is no impact to any elements of the Langtry house complex resulting from demolition or construction or operation of the Proposed Project.

Construction of Phase 1 structures has the potential to disturb historic foundations or rock walls at P-17-399, -406, -412, -425, -1996, -2043, and -2952 and the newly identified Bohn Hills historic debris scatter. None of these sites has been formally evaluated for association with historic events or individuals or the data values they might contain, and therefore they are considered potentially eligible for listing on the NRHP and CRHR, pending further background research to determine whether the associations specified in the NRHP or CRHR are present. Impacts to these resources are therefore potentially significant. **Mitigation Measure 3.5-1** requires that the sites be avoided during construction to the extent feasible. In the event

that the sites cannot be avoided, the mitigation measure requires further archaeological investigation including additional research, additional recordation, and/or archaeological testing be conducted in order to assess NRHP/CRHR eligibility. Sites found to be eligible for inclusion on the NRHP and/or CRHR that cannot be avoided during construction, must be subjected to data recovery investigations, as warranted and based on best archaeological practices, prior to any ground disturbance. Implementation of **Mitigation Measure 3.5.1** would reduce impacts to historical resources to a less-than-significant level.

Guenoc Valley Site: Future Phases – Programmatic Analysis

There are no historical resources currently listed on the NRHP or CRHR within the Guenoc Valley Site, however, none of the known resources within the site have been formally evaluated for eligibility.

Construction of future phases of the Proposed Project, including roads, utilities, public structures, and residences has the potential to impact previously identified historical resources within the Guenoc Valley Site. Implementation of **Mitigation Measure 3.5-1** would require evaluation of site NRHP/CRHR potential and the development of avoidance or data collection methods for sites in future phases of construction. Implementation of these measures would reduce impacts on Historical Resources to a less-than-significant level.

Off-Site Workforce Housing – Project Level Analysis

No historical resources were identified during background research or field investigations for the Middletown Housing Site. Therefore, there would be no impact to known historical resources by construction of Off-Site Workforce Housing.

Off-Site Infrastructure Improvements – Project Level Analysis

No historical resources were identified during background research or field investigations for the Off-Site Infrastructure locations. Therefore, there would be no impact to known historical resources by construction of Off-Site Infrastructure.

IMPACT 3.5-2	CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE PURSUANT TO § 15064.5			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring	MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring MM 3.5-3: Future Phase Investigations	MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring	MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant

Guenoc Valley Site: Phase 1 – Project Level Analysis

Prehistoric resources account for most of the cultural resources within the Guenoc Valley Site, and include the 37 sites listed in **Table 3.5-1**. These prehistoric resources have not been evaluated for their eligibility, and therefore must be presumed eligible to the NRHP/CRHR for their data potential. Impacts to these resources are therefore potentially significant. **Mitigation Measure 3.5-1** requires that the sites be avoided during construction to the extent feasible, and includes establishment of buffer zones and fencing to protect sites when construction occurs nearby and requires site testing where resources cannot be avoided by project construction. Sites found to be eligible for inclusion on the NRHP and/or CRHR that cannot be avoided during construction, must be subjected to data recovery investigations, as warranted/based on best archaeological practices, prior to any ground disturbance. Implementation of **Mitigation Measure 3.5-1** would reduce impacts on known archaeological sites to a less-than-significant level.

Construction of Phase 1 structures has the potential to uncover as-yet unknown archaeological resources. If newly discovered archaeological sites are eligible for listing on the NRHP or CRHR, such impacts would be potentially significant. Adherence to the details of the Unanticipated Discoveries Plan detailed in **Mitigation Measure 3.5-2** would require response to finds made during construction, the evaluation of NRHP/CRHR potential for any resources identified, and the development of avoidance or data collection methods as appropriate. Implementation of these measures would reduce impacts on as-yet unknown archaeological resources to a less-than-significant level.

Guenoc Valley Site: Future Phases – Program Level Analysis

Portions of the Proposed Project site have not yet been surveyed for cultural resources, and may contain significant resources. Previously identified sites within the future phases APE include lithic scatters, bedrock mortars, ethnographic villages, prehistoric occupation sites, mining sites, rock walls, cabins, and historic debris scatters, as well as isolated artifacts. If future phases of development would impact any such resources that were eligible for the CRHR or NRHP, this would be a significant impact. Additionally, construction of future phases of the Proposed Project, including roads, utilities, public structures, and residences, has the potential to uncover previously unidentified archaeological resources. This is a **potentially significant** impact. **Mitigation Measures 3.5-1 and 3.5-3** require that appropriate studies be conducted prior to construction, that construction near known resources be monitored, and that finds made during construction be evaluated and addressed appropriately. Implementation of **Mitigation Measures 3.5-1 and 3.5-3** would require identification, evaluation and mitigation of significant impacts for future phases of construction. Additionally, **Mitigation Measure 3.5-2** would require preparation of and adherence to an Unanticipated Discoveries Plan, which would reduce impacts to any unknown resources discovered during construction activities associated with future phases. Implementation of these mitigation measures would reduce impacts on known and previously unidentified archaeological resources to a **less-than-significant** level.

Off-Site Workforce Housing – Project Level Analysis

No archaeological resources were identified during background research or field investigations for the Off-Site Workforce Housing location. However, construction of Off-Site Worker Housing has the potential to uncover previously unidentified resources. This is a **potentially significant** impact. Implementation of **Mitigation Measure 3.5-2** would require preparation of and adherence to an Unanticipated Discoveries Plan, which would reduce impacts to any unknown resources discovered during construction activities. Implementation of these measures would reduce impacts on previously unidentified resources to a **less-than-significant** level.

Off-Site Infrastructure Improvements – Project Level Analysis

No archaeological resources were identified during background research or field investigations for the Off-Site Infrastructure location. However, construction of Off-Site Infrastructure has the potential to uncover previously unidentified resources. This is a **potentially significant** impact. Implementation of **Mitigation Measure 3.5-2** would require preparation of and adherence to an Unanticipated Discoveries Plan, which would reduce impacts to any unknown resources discovered during construction activities. Implementation of these measures would reduce impacts on previously unidentified resources to a **less-than-significant** level.

IMPACT 3.5-3	DISTURB ANY HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES			
	Guenoc Valley Site		Other Phase 1 Areas	
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-4: Cease Work, Contact County Coroner	MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-4: Cease Work, Contact County Coroner	MM 3.5-4: Cease Work, Contact County Coroner	MM 3.5-4: Cease Work, Contact County Coroner
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant

Guenoc Valley Site: Phase 1 – Project Level Analysis

Native American remains have been identified at P-17-256 and there is an elevated potential to uncover Native American remains at the three ethnographic village sites, P-17-252, -420, and -2121. Proposed Project activities near these sites could uncover remains. There is also a generally elevated potential for remains at any prehistoric occupation site including: Phase 1 sites P-17-116, -256, -405, -411, -414, -416, -and 2019. This is a **potentially 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 3.5-1** would reduce impacts to Native American burials at these sites to a less-than-significant level.

Construction and other earthmoving activities during project implementation could also result in damage to as-yet-unknown Native American burials. This is a **potentially significant** impact. If evidence of human remains is uncovered during project development, **Mitigation Measure 3.5-4** requires that all work cease within 100 feet of the find so that remains are not further damaged by equipment. **Mitigation Measure 3.5-4** reduces impacts to human remains by requiring avoidance where feasible, or appropriate study, handling, and recordation where infeasible or discovered during construction. **Mitigation Measure 3.5-4** also outlines the procedures established in the California Health and Safety Code for human remains. Adherence to these measures would reduce potential impacts to human remains to a **less-than-significant** level.

Guenoc Valley Site: Future Phases – Program Level Analysis

Portions of the Proposed Project site have not yet been surveyed for cultural resources, and may contain human remains, particularly occupation and ethnographic village sites. There is also a generally elevated potential for remains at any prehistoric occupation site including: Future Phase sites P-17-115, -252, -253, -402, -407, -418, -419, -423, -424, and -2030. This is a **potentially 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** provides the process to be followed in case of discovery of human remains. Adherence to these measures would reduce potential impacts to human remains to a **less-than-significant** level.

Off-Site Workforce Housing – Project Level Analysis

No archaeological sites with human remains were identified during background research or field investigations for the Off-Site Workforce Housing location. However, construction of Off-Site Worker Housing has the potential to uncover previously unidentified human remains. Discovery of human remains during Off-Site Workforce Housing is a **potentially significant** impact. Implementation of **Mitigation Measure 3.5-4** would reduce impacts to Native American burials uncovered during project construction to a less-than-significant level.

Off-Site Infrastructure Improvements – Project Level Analysis

No archaeological resources were identified during background research or field investigations for the Off-Site Infrastructure locations. However, construction of Off-Site Infrastructure has the potential to uncover previously unidentified human remains. Discovery of human remains during Off-Site Infrastructure Improvements is a **potentially significant** impact. Implementation of **Mitigation Measure 3.5-4** would reduce impacts to Native American burials uncovered during project construction to a less-than-significant level.

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			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring	MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring MM 3.5-3: Future Phase Investigations	MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring	MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant

California Native American prehistoric, historic, archaeological, cultural, and sacred places are essential elements in tribal cultural traditions, heritages, and identities. Because CEQA calls for a sufficient degree of analysis, tribal knowledge about the land and tribal cultural resources at issue are included in environmental assessments for projects that may have a significant impact on such tribal cultural resources (TCRs). TCRs can only be identified by members of the Native American community, thus requiring consultation under CEQA.

In 2018, Tom Origer & Associates completed a Native American contact program on behalf of the County, including sending letters to the individuals identified by the Native American Heritage Commission. There were no formal replies, however members of Middletown Rancheria accompanied Tom Origer & Associates archaeologists on surveys completed in 2018 and 2019. It is also understood that ongoing informal consultation is occurring between Tom Origer & Associates and Middletown Rancheria, as new aspects of the various project components arise.

Prior to undertaking investigation of the various Off-Site Improvements areas in 2019, AES consulted Middletown Rancheria Tribal Historic Preservation Officer Sally Peterson; Ms. Peterson stated that she was

aware of ethnographic villages in the general region, but did not know of any that would be impacted by the Off-Site Improvements. When AES completed a shovel testing program for the Off-Site Well Site, a Middletown Rancheria monitor was present.

On April 24, 2019, the County emailed the NAHC and 18 individuals, advising them that a Notice of Preparation for the EIR had been prepared. A response was received from Middletown Rancheria dated May 23, 2019 which stated that there are sites of cultural, historical, and religious significance for the Tribe, and concern for sites of cultural and religious significance that are known only to the Tribe. Middletown Rancheria requested that they be included in all aspects of the project and development of the EIR. On December 13, the County again contacted Middletown in order to set a date for a meeting in January 2020. A meeting was held on February 5 and consultation is ongoing.

Middletown Rancheria has stated that there are sites with significant cultural and religious meaning to the tribe which, therefore, are TCRs. Formal AB 52 consultation has been initiated and is ongoing. Because TCRs could be impacted by the Proposed Project, this is a **potentially significant** impact. **Mitigation Measure 3.5-1** requires avoidance of archaeological sites, which may be identified as TCRs, through establishment of buffer zones and fencing to protect sites when construction occurs nearby and requires site testing in consultation with Middletown Rancheria where resources cannot be avoided by project construction. Additionally, **Mitigation Measures 3.5-2** and **3.5-3** require that Middletown Rancheria would be consulted if any new previously unknown finds are made during construction or filed investigations conducted prior to future phases. The conclusion of formal consultation under AB 52 and the application of **Mitigation Measures 3.5-1, 3.5-2** and **3.5-3** would reduce impacts to TCRs to a less-than-significant level.

IMPACT 3.5-5	CUMULATIVE IMPACTS TO CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES			
	Guenoc Valley Site		Other Phase 1 Areas	
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring MM 3.5-4: Cease Work, Contact County Coroner	MM 3.5-1: Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring MM 3.5-3: Future Phase Investigations MM 3.5-4: Cease Work, Contact County Coroner	MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring MM 3.5-4: Cease Work, Contact County Coroner	MM 3.5-2: Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring MM 3.5-4: Cease Work, Contact County Coroner
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant

The history of Lake County is extensive, beginning with a Native American population that entered the area thousands of years ago, and moving forward to historic ranching, settlement, and mining. As a result, the Proposed Project region is known to include large numbers of a wide array of cultural resources, from Native American resource procurement areas to ethnographic village sites, ranches, cabins, mines, etc.; the fact that almost 100 resources have been found within the Proposed Project footprint testifies to the frequency of resources in Lake County. These site types are all found in contexts throughout Lake County. Cumulative projects in the region, including the Proposed Project, Hidden Valley, and Valley Oak subdivision, could result in potentially significant cumulative effects to cultural resources and TCRs.

Numerous state, federal, and local laws, regulations, and ordinances seek to protect cultural resources. These would apply to development of the cumulative projects. These policies include inventory and evaluation processes and require consultation with qualified archaeologists in the event that previously undiscovered cultural materials are encountered.

Mitigation Measure 3.5-1 would reduce the Proposed Project's contributions to cumulative cultural resources impacts to known historical resources by ensuring that appropriate resource identification and evaluation is completed in order to identify cultural resources, and that cultural resources discovered during surveys are properly recorded and impacts mitigated. **Mitigation Measures 3.5-1, 3.5-2** and **3.5-3** would reduce the Proposed Project contributions to cumulative cultural resources and Tribal Cultural Resources impacts by ensuring that as-yet unknown cultural resources would be treated appropriately if found during Phase 1 construction or Future Phase development. The discovery of human remains is addressed in **Mitigation Measure 3.5-4**. Implementation of the appropriate mitigation measures would reduce impacts to cultural resources and tribal cultural resources discovered during any phase of the Proposed Project. With mitigation, the Proposed Project's contribution to cumulative impacts to historical, archaeological, and tribal cultural resources would be **less than significant**.

3.5.5 MITIGATION MEASURES

MM 3.5-1 Avoid Historical and Archaeological Resources, Apply Appropriate Mitigation (Impacts 3.5-1 and 3.5-2)

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 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.

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.

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) have not been evaluated for the NRHP or CRHR. They shall be avoided, 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.

Four other sites (P-17-417, -2035, -2038, and -2041) include lithic scatters and 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 accordance with current professional standards in order to assess eligibility to the NRHP or CRHR.

Occupation sites have an elevated potential to contain data 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 in consultation with Middletown Rancheria. Should the Phase II recommend that the site is eligible for the NRHP/CRHR, a program of archaeological Data Recovery shall be implemented in accordance with current professional standards. Construction in the vicinity of the site shall not resume until 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, 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. If the site is found 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 analyses to be performed, documentation of results, and criteria to make a final recommendation to the NRHP/CRHR. 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. 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.

MM 3.5-2 Worker Awareness Training, Unanticipated Discoveries Plan, Construction Monitoring (Impacts 3.5-1, 3.5-2, and 3.5-3)

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).
2) 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 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.
3) 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. At a minimum, the Unanticipated Discoveries Plan shall include:

- Description of field and 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;
- A list of laboratories to be used for specific analyses;
- Provisions for storage or repatriation of recovered materials, developed in consultation with Middletown Rancheria;
- Measures for documentation of results, including forwarding results to the NWIC;
- A Burial Treatment plan developed in consultation with Middletown Rancheria;
- Maps (provided in pdf and shapefiles to the construction contractor, Project Proponent, 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 monitoring during construction is required, identification of appropriate buffer zones for individual site protection during construction, cease work requirements, unanticipated finds reporting requirements; and
- Assessment criteria to determine NRHP/CRHR eligibility

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, Project Proponent, and Middletown Rancheria shall be notified immediately. The Project Proponent 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. 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.

4) 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 monitoring activities shall be determined by the lead archaeologist in consultation with the Tribal Cultural Advisor, or as determined by a cultural resources monitoring agreement between the parties. 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.

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 when the project Tribal Cultural Advisor has indicated that the site has a low potential for tribal cultural resources.

MM 3.5-3 Future Phase Investigations (Impacts 3.5-1, 3.5-2, and 3.5-3)

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 Project Proponent shall retain a qualified professional archaeologist to complete a cultural resources study. 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 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. 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 complete Phase II testing to evaluate NRHP/CRHR eligibility of the site, and, if eligible, shall design an appropriate Treatment Plan in consultation with Middletown Rancheria. Construction activities in the vicinity of the site shall not occur until mitigation has been completed. Any newly identified resources uncovered during Future Phases shall be treated in accordance with **Mitigation Measure 3.5-2** requirements.

MM 3.5-4 Cease Work, Contact County Coroner (Impact 3.5-3)

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 Project Proponent 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.

3.6 GEOLOGY AND SOILS

3.6.1 INTRODUCTION

This section details the geologic characteristics of the project area and analyzes potential hazards to people and property as a result of geologic activity following the implementation of the Proposed Project. Following an overview of the geologic and soil resource setting in **Section 3.6.2** and the relevant regulatory setting in **Section 3.6.3**, project-related impacts and recommended mitigation measures are presented in **Section 3.6.4** and **Section 3.6.5**, respectively.

Information from this section is based in part on the *Preliminary Geotechnical Study Report*, provided as **Appendix GEOTECH**.

3.6.2 ENVIRONMENTAL SETTING

Regional Setting

Lake County is located in Northern California within the Coast Ranges Geomorphic Province. This province is geologically complex and seismically active characterized by sub-parallel northwest-trending faults, mountain ranges and valleys. The oldest bedrock formations mapped within the project area are the Jurassic Knoxville Formation, the Cretaceous-Jurassic Great Valley Sequence and Franciscan Formation. The Knoxville Formation is comprised mainly of massive clayey siltstone with minor sedimentary serpentine, and is mapped primarily within the valley walls of Bucksnort Creek, and in an isolated area south of Butts Canyon Road. The Franciscan Formation of metamorphic rock forms the bedrock in many mountains and underneath the valleys. Sedimentary rocks form groundwater basins and valleys. Volcanic rock is also prevalent in the area, forming volcanoes, hills, geysers and hot springs. Alluvial deposits of sand and gravel occur along Putah Creek north of the Guenoc Valley Site and range from 100 to 300 feet thick (CDM, 2016). The alluvial plain is bounded by sediment from the Cretaceous period and by basalt from the Upper Jurassic age. The valley floors throughout the project area, such as Bohn Valley and the low areas directly south of McCreary Lake, are blanketed by Quaternary alluvium, the youngest unit consisting of unconsolidated gravel, sand, silt, and clay (**Appendix GEOTECH**). The Cache Formation likely underlies the alluvial deposits (Department of Water Resources [DWR], 2004).

Paleontological Setting

The region is underlain by a combination of surficial alluvial deposits, Franciscan assemblage sedimentary rock, and Sonoma Volcanics, offering a range of fossil preservation potential. The gravel, sand, and silt that compose these alluvial deposits have the potential to produce fossils, primarily gastropods, bivalves, and some mammals.

A search of the University of California Museum of Paleontology database for Lake County (UCMP, 2019) indicates that at least 209 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 Guenoc Valley Site, Middletown Housing Site, or Off-Site Infrastructure Improvement Areas.

Guenoc Valley Site Setting

Geology

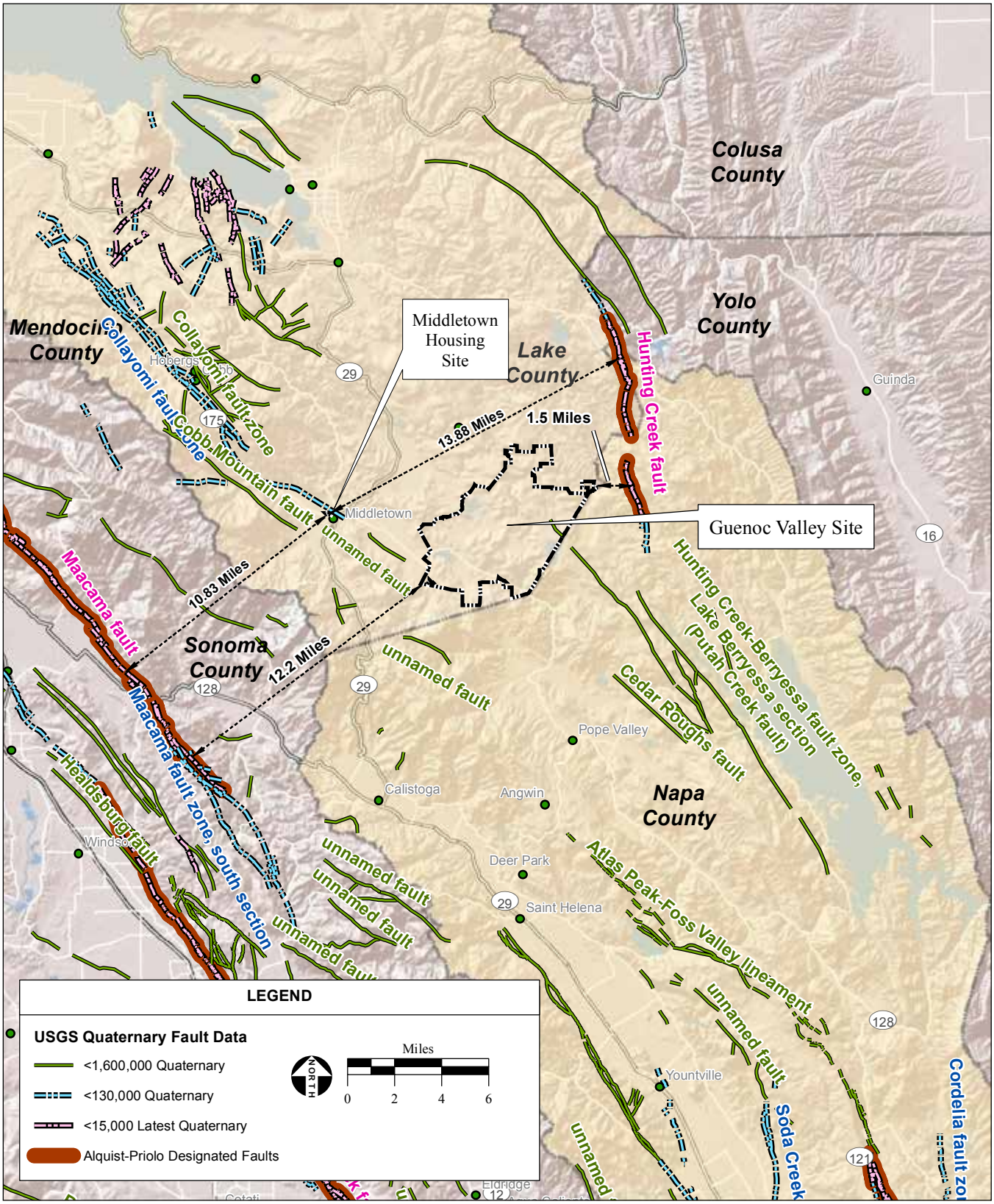
The Guenoc Valley Site is underlain by igneous, sedimentary, and metamorphic bedrock formations ranging from Jurassic to Quaternary in age (**Appendix GEOTECH**). The oldest bedrock formations mapped within the project area are the Jurassic Knoxville Formation, the Cretaceous-Jurassic Great Valley Sequence and Franciscan Assemblage. The Knoxville Formation is comprised mainly of massive clayey siltstone with minor sedimentary serpentine, and is mapped primarily within the valley walls of Bucksnort Creek, and in an isolated area south of Butts Canyon Road. One of the predominant rock types present is the Tertiary Clear Lake volcanics olivine basalt. This resistant unit caps the many resistant knobs and ridges throughout the property such as Snell Peak, Goat Hill, Jim Davis Peak, and similar topographic high points. The valley floors throughout the project area, such as Bohn Valley and the low areas directly south of McCreary Lake, are blanketed by Quaternary alluvium, the youngest unit consisting of unconsolidated gravel, sand, silt, and clay (**Appendix GEOTECH**).

Topography

Elevations in the region range from 660 feet to 4,300 feet at the summit of Mount Saint Helena, which is just outside the Lake County boundary in Sonoma County (Middletown Area Plan, 2010). The Guenoc Valley Site is within the Guenoc Valley, with elevations ranging from approximately 600 to 1,600 feet above mean sea level (amsl). The property extends primarily over a relatively level valley floor as well as rugged, moderately to steeply sloping terrain. One of the predominant rock types present is the Tertiary Clear Lake volcanics olivine basalt. This resistant unit caps the many resistant knobs and ridges throughout the property such as Snell Peak, Goat Hill, Jim Davis Peak, and similar topographic high points. Slopes on the Guenoc Valley Site range from approximately 0 to 74%. Low-lying regions include agricultural fields on the western portion of the site, the golf course on the southern area of the site and Bohn Valley in the center.

Seismicity

The Guenoc Valley Site lies within the San Andreas transform fault system. **Figure 3.6-1** shows fault activity in the region. U.S. Geological Survey (USGS) generally considers faults active if there has been movement within the last 10,000 years (USGS, 2019a). The USGS Earthquake Hazards Program (**Figure 3.6-1**) shows the active and inactive faults in the region. Major faults in the region include the Hunting Creek Fault, Maacama Fault, and the Rodgers Creek Fault. The Guenoc Valley Site is not within an Alquist-Priolo Fault Zone; the closest Alquist-Priolo Fault Zone is the Hunting Creek Fault Zone, approximately 1.5 miles away from the eastern-most border of the site (California Geological Survey [CGS], 2018). The Maacama Fault is the next closest Alquist-Priolo Fault Zone and is approximately 12.2 miles from the Guenoc Valley Site (CGS, 2018). As shown on **Figure 3.6-1**, there are other smaller unnamed faults throughout the region, including one potentially on the Guenoc Valley Site. However, latest movement for these faults may have been between 1.6 million years ago to 130,000 years ago, so these faults are not considered active. Additionally, RGH Consultants prepared a preliminary geotechnical study report dated May 2019, included as **Appendix GEOTECH**. RGH Consultants did not observe landforms within the Guenoc Valley Site that would indicate the presence of active faults.



SOURCE: USGS Earthquake Hazards Program, 7/26/2010; California Geological Survey, 2005; AES, 11/13/2019

Figure 3.6-1
Fault Map

Seismic Shaking

A common measure of earthquake intensity and effects due to ground shaking is the Modified Mercalli Intensity (MMI) Scale. The range of MMI values and a description of intensity factors are displayed in **Table 3.6-1**. The MMI values for intensity range from I to XII, with intensity descriptions ranging from an event not felt by most people (I) to nearly total damage (XII). Between these two extreme ranges, intensities that range from IV to XI have the potential to cause moderate to significant structural damage.

TABLE 3.6-1
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Acceleration
I.	Not felt except by a very few persons under especially favorable circumstances.	< 0.0015*g*
II.	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	< 0.0015*g*
III.	Felt quite noticeably indoors, especially on upper floors of buildings, but many persons do not recognize it as an earthquake. Standing cars may rock slightly. Vibration similar to the passing of a truck Duration estimated.	< 0.0015*g*
IV.	During the day felt indoor by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably.	0.015*g*-0.02*g*
V.	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.	0.03*g*-0.04*g*
VI.	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.	0.06*g*-0.07*g*
VII.	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving cars.	0.10*g*-0.15*g*
VIII.	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, and walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving cars disturbed.	0.25*g*-0.30*g*
IX.	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	0.50*g*-0.55*g*
X.	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 0.60*g*
XI.	Few, if any, masonry structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 0.60*g*
XII.	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 0.60*g*
Source: Bolt, 1988.		

USGS has mapped earthquake shaking potential in the U.S. as ground motion with two percent exceedance probability in 50 years. The Guenoc Valley Site has shaking potential of up to 0.8 gravity (g) (USGS, 2014). This means that there is a two percent probability that the peak acceleration experienced would be 0.8 g from a seismic event in 50 years. From the MMI scale, the intensity value would be XII (refer to **Table 3.6-1**). The potential for a major earthquake in the Middletown Planning Area is moderate to high (Middletown Area Plan, 2010).

Liquefaction

Liquefaction is the sudden loss of soil strength caused by seismic forces acting on water-saturated, granular soil, leading to a "quicksand" condition generating various types of ground failure. Estimating the potential for liquefaction must account for soil types, soil density, groundwater table depth, and the duration and intensity of ground-shaking. Liquefaction can occur during seismic events with a MMI intensity value of VII or higher. Lake County is not located within a Seismic Hazards Program designated Liquefaction Zone (CGS, 2018). However, the site contains several isolated liquefaction study zones, including Bohn Valley, the flat, low-lying area south of McCreary Lake, and areas in the far northeastern corner of the property (**Appendix GEOTECH**). Therefore, there may be a moderate potential for liquefaction at the site within these areas. A final site-specific geotechnical study would be needed to accurately characterize liquefaction potential.

Landslides

Landslides are a downslope movement of rock, debris, or soil, including movement by falls, topples, slides, spreads, and flows. Landslides occur when forces acting downslope exceed the strength of the earth materials on the slope. These downslope forces can be caused by rainfall, snowmelt, changes in water level, stream erosion, changes in groundwater, earthquakes, volcanic activity, disturbance from human activities, or a combination of these factors (Highland and Bobrowsky, 2008). The entire southern portion of Lake County has a moderate landslide incidence (USGS, 2018).

In the RGH Consultant's preliminary geotechnical report (**Appendix GEOTECH**), potential landslide locations were identified using published landslide maps and observations in the field during reconnaissance and subsurface exploration. Published landslide maps from 1976 indicate possible landslide locations that overlap with planned development, including the primary access road and near Bohn Ridge Resort Community (**Appendix GEOTECH**). RGH Consultants confirmed landslide deposits throughout the site, which may overlap with planned development, especially Primary Access Road Option 1 (**Appendix GEOTECH**). However, all the landslides investigated are less than 5 feet thick and are dormant. RGH Consultants indicated that design level geotechnical studies are necessary to further assess presence/absence of landslides.

Soil Characteristics and Constraints

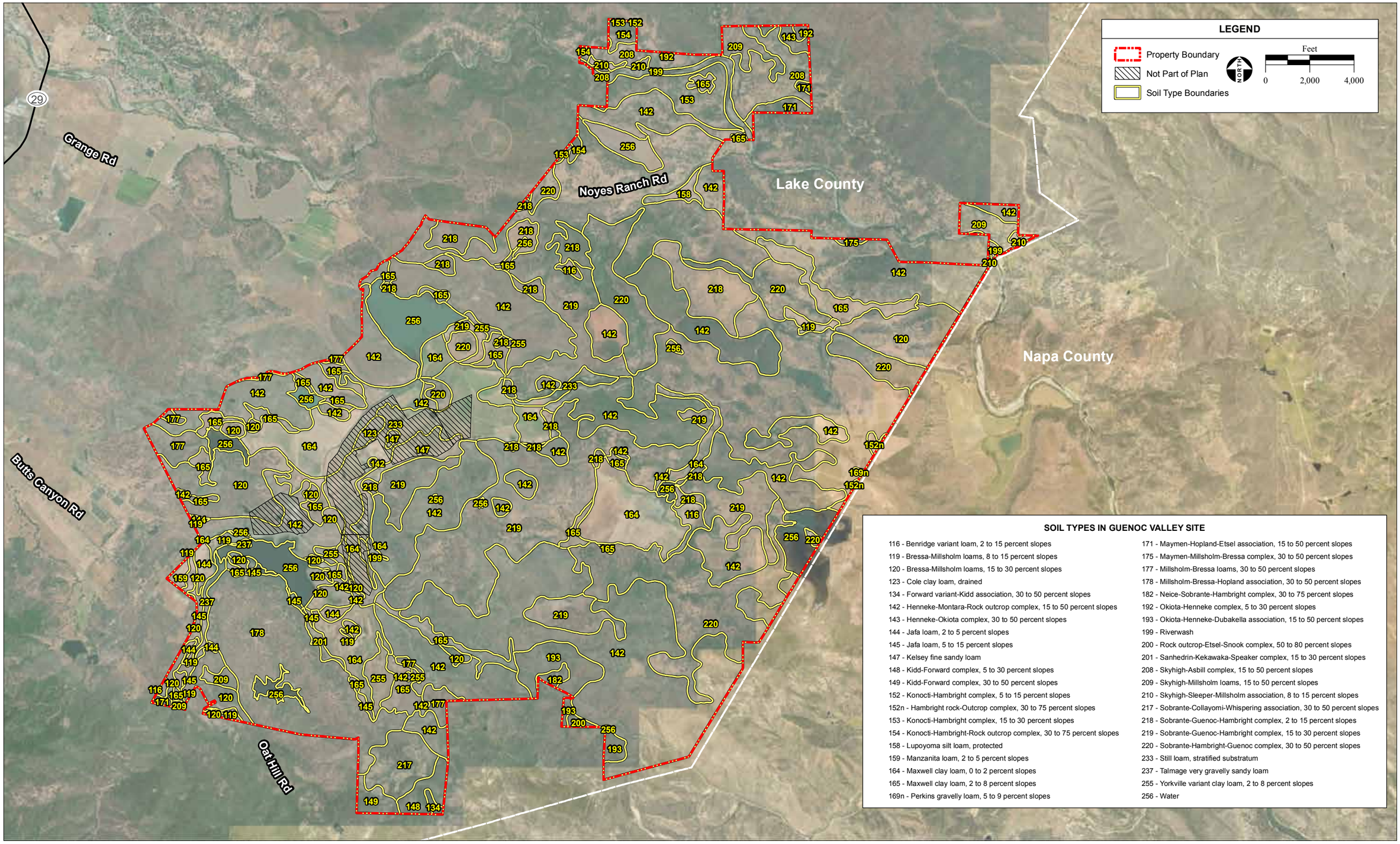
Soils on the Guenoc Valley Site have varying characteristics. The Natural Resources Conservation Service (NRCS) Web Soil Survey Application provides information about soil characteristics on a broad scale. Web Soil Survey maps out soil types by "map unit." Soil map units on the Guenoc Valley Site are shown in **Table 3.6-2** and **Figure 3.6-2**. The dominant soil texture on the Guenoc Valley Site is loam. Loamy soils typically have 25% clay, 40% silt, and 45% sand. The soil ranges from less than one foot to over six feet in thickness

above the bedrock. Additionally, NRCS rates erosion hazards based on slope, soil erodibility, and index of rainfall erosivity. The erosion potential on the Guenoc Valley Site ranges from slight to severe, with the severe areas covering most of the southern portion of the site (NRCS, 2019a).

TABLE 3.6-2
GUENOC VALLEY SITE SOIL MAP UNITS

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
116	Benridge variant loam, 2 to 15 percent slopes	56.5	0.30%
119	Bressa-Millsholm loams, 8 to 15 percent slopes	77.8	0.50%
120	Bressa-Millsholm loams, 15 to 30 percent slopes	682	4.10%
123	Cole clay loam, drained	23.4	0.10%
134	Forward variant-Kidd association, 30 to 50 percent slopes	10.1	0.10%
142	Henneke-Montara-Rock outcrop complex, 10 to 50 percent slopes, MLRA 15	4,856.20	29.40%
143	Henneke-Okiota complex, 10 to 50 percent slopes	28.9	0.20%
144	Jafa loam, 2 to 5 percent slopes	61.1	0.40%
145	Jafa loam, 5 to 15 percent slopes	53	0.30%
147	Kelsey fine sandy loam	126.1	0.80%
148	Kidd-Forward complex, 5 to 30 percent slopes	67.4	0.40%
149	Kidd-Forward complex, 30 to 50 percent slopes	47.2	0.30%
152	Konocti-Hambright complex, 5 to 15 percent slopes	0.8	0.00%
152n	Hambright rock-Outcrop complex, 30 to 75 percent slopes	12.4	0.10%
153	Konocti-Hambright complex, 15 to 30 percent slopes	182.6	1.10%
154	Konocti-Hambright-Rock outcrop complex, 30 to 75 percent slopes	44.3	0.30%
158	Lupoyoma silt loam, protected	32.2	0.20%
159	Manzanita loam, 2 to 5 percent slopes	11.3	0.10%
164	Maxwell clay loam, 0 to 2 percent slopes	918.1	5.60%
165	Maxwell clay loam, 2 to 8 percent slopes	594.4	3.60%
169n	Perkins gravelly loam, 5 to 9 percent slopes	2.4	0.00%
171	Maymen-Hopland-Etsel association, 15 to 50 percent slopes	50	0.30%
175	Maymen-Millsholm-Bressa complex, 30 to 50 percent slopes	7.2	0.00%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
177	Millsholm-Bressa loams, 30 to 50 percent slopes	133	0.80%
178	Millsholm-Bressa-Hopland association, 30 to 50 percent slopes	799.8	4.80%
182	Neice-Sobrante-Hambright complex, 30 to 75 percent slopes	20.3	0.10%
192	Okiota-Henneke complex, 5 to 30 percent slopes	12.5	0.10%
193	Okiota-Henneke-Dubakella association, 15 to 50 percent slopes	174	1.10%
199	Riverwash	101.2	0.60%
200	Rock outcrop-Etsel-Snook complex, 50 to 80 percent slopes	11.5	0.10%
201	Sanhedrin-Kekawaka-Speaker complex, 15 to 30 percent slopes	21.5	0.10%
208	Skyhigh-Asbill complex, 15 to 50 percent slopes	277.2	1.70%
209	Skyhigh-Millsholm loams, 15 to 50 percent slopes	161.2	1.00%
210	Skyhigh-Sleeper-Millsholm association, 8 to 15 percent slopes	25	0.20%
217	Sobrante-Collayomi-Whispering association, 30 to 50 percent slopes	154.7	0.90%
218	Sobrante-Guenoc-Hambright complex, 2 to 15 percent slopes	461.2	2.80%
219	Sobrante-Guenoc-Hambright complex, 15 to 30 percent slopes	3,721.10	22.50%
220	Sobrante-Hambright-Guenoc complex, 30 to 50 percent slopes	1,226.50	7.40%
233	Still loam, stratified substratum	547.2	3.30%
237	Talmage very gravelly sandy loam	34.2	0.20%
255	Yorkville variant clay loam, 2 to 8 percent slopes	91	0.60%
256	Water	614.7	3.70%
SOURCE: NRCS 2019a			



SOURCE: USDA NRCS Soil Survey of Lake County, 9/16/2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 11/5/2019

Figure 3.6-2
Soils Map - Guenoc Valley Site

Lake County, including the Middletown Planning Area, contains serpentine soils. These soils contain naturally occurring asbestos (NOA), a cancer-causing agent when airborne. NOA is further addressed under **Section 3.3**, air quality, and **Section 3.8,** hazards and hazardous materials.

Physical soil constraints to development on the Guenoc Valley Site 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-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. Approximately 13.5% of the Guenoc Valley Site has a high shrink-swell potential (NRCS, 2019a). Most of the areas containing expansive soils are and would continue to be vineyards or grazing space.

Additionally, a shallow depth to bedrock can create issues related to building support structures deep within the soil. Some of the soils have a depth of less than one foot (NRCS, 2019a).

The RGH Consultants also sampled soil in test pits around the Guenoc Valley Site for the geotechnical study report (**Appendix GEOTECH**). They found medium to high expansive soil in some of the test pits, specifically near the Maha Farm resort community. Additionally, some undocumented fills were located along existing roads or building areas, which have unknown bearing capacity and unpredictable settlement (**Appendix GEOTECH**).

Corrosive Soils

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. Approximately 56% of the Guenoc Valley Site has soils that have a moderate or high risk of corroding steel. Approximately 2% of the Guenoc Valley Site has a risk of concrete corrosion (NRCS, 2019a).

Agricultural Soils

There are six farmland designations established by the DOC: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, and Other. These classifications combine the actual farming use of the land with the technical soil ratings that determine a land area's suitability for farming. Soils that qualify as Prime Farmland are high quality and have sufficient moisture content to produce sustained yields. Roughly 5% of the Guenoc Valley Site is classified as Prime Farmland (NRCS, 2019a).

The NRCS rates the suitability of soils for agriculture using different metrics including the California Revised Storie Index. This rating system uses six grades ranging from excellent (1) to non-agricultural (6). The rating is based on factors such as degree of soil profile development, texture of the surface layer, steepness of the slope, soil pH, and drainage characteristics. Approximately 14.4 percent of the Guenoc Valley Site is rated excellent (1) or good (2) for irrigated agricultural use.

The Irrigated Land Capability Classification system is another rating method used by the NRCS. This system analyzes suitability of soils for most kinds of field crops on a scale of 1 to 8. Class 1 soils have few limitations that restrict their use for irrigated agricultural use. Class 8 soils have limitations that preclude commercial plant production and restrict use for grazing and wildlife habitat. Approximately 5% of the Guenoc Valley Site is rated at Class 1 or 2.

This section focuses on soil suitability; refer to **Section 3.2, Land Use and Agriculture,** for a discussion of the agricultural use of the land and impacts to designated farmland.

Middletown Housing Site

Elevation on the Middletown Housing Site ranges from approximately 1,095 feet amsl on the western portion of the site to 1,100 feet amsl on the eastern portion. The Middletown Housing Site is not located within an Alquist-Priolo Fault Zone. The Hunting Creek Fault Zone is approximately 13.9 miles away and the Maacama Fault Zone is approximately 10.8 miles away (CGS, 2018). The Middletown Housing Site also has a two percent probability of a peak ground acceleration of 0.8g in 50 years, which could create significant damage to buildings. The Middletown Housing Site is primarily comprised of sandy loams. The portion of the site adjacent to Dry Creek is xerofluvents, which is a mix of stream channel and flood plain deposits. There would be no development within the xerofluvent soil as it is within the regulatory floodplain. **Table 3.6-3** and **Figure 3.6-3** display the Web Soil Survey map units on the Middletown Housing Site. (NRCS, 2019b).

TABLE 3.6-3
MIDDLETOWN HOUSING SITE SOIL MAP UNITS

Map Unit Symbol	Map Unit Name	Acres in AOI	Approximate Percent of AOI
147	Kelsey Fine Sandy Loam	6.6	52.3%
237	Talmage very gravelly sandy loam	4.7	37.3%
248	Xerofluvents, very gravelly	1.3	10.4%
SOURCE: NRCS, 2019b			

Most of the Middletown Housing Site has a high potential to corrode steel. Approximately half of the site has a moderate potential to corrode concrete and the other half has a low potential. Additionally, the whole site, aside from the xerofluevent map unit, has a relatively low erosion potential and low shrink-swell potential (NRCS, 2019b).

As discussed in **Section 1.4**, the Middletown Housing Site was previously approved for a housing subdivision. During this approval process, a preliminary geotechnical study was completed for the site (RGH Consultants, 2006). This study identified potentially weak soils and liquefaction potential.



SOURCE: WRA, Inc., 2009, 2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 11/5/2019

Figure 3.6-3
Soils Map - Middletown Housing Site

Off-Site Infrastructure Improvements

The Off-Site Well Site is assumed to have geologic and soil properties similar to the Guenoc Valley Site and Middletown Housing Site. No development of structures is proposed on this site. The off-site pipeline corridor along the shoulder of Butts Canyon Road would have imported fill materials related to the construction of Butts Canyon Road. Off-Site improvements, including the well site, are at least 11 miles from the nearest Alquist-Priolo Fault Zone (see **Figure 3.6-1**).

3.6.3 REGULATORY CONTEXT

Federal

Earthquake Hazards Reduction Act

In 1997, the U.S. Congress passed the Earthquake Hazards Reduction Act to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program has been reviewed and reauthorized periodically by Congress, with the last reauthorization occurring in 2004 (NEHRP, 2016).

NEHRP's mission includes developing effective practices and policies for earthquake loss reduction, and acceleration of their implementation; improving techniques for reducing earthquake vulnerabilities of facilities and systems; improving earthquake hazards identification and risk assessment methods and their use; and improving the understanding of earthquakes and their effects (NEHRP, 2016). The NEHRPA assigns the Federal Emergency Management Agency (FEMA) several planning, coordinating, and reporting responsibilities. Other NEHRP agencies include the National Institute of Standards and Technology (NIST), National Science Foundation (NSF), and USGS.

Paleontological Resources

Paleontological resources are classified as non-renewable scientific resources and are protected by several federal and state statutes, most notably by the 1906 Federal Antiquities Act (PL 59-209; 16 United States Code 431 et seq.; 34 Stat. 225), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. Because the Proposed Project does not include any federal lands, this statute does not apply.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed by the California Legislature in 1972 to mitigate the hazard of surface faulting to structures. The act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The act addresses only the hazard of surface fault rupture and does not include other earthquake hazards. Local agencies must regulate most development in fault zones established by the State Geologist. Before a project can be permitted in a designated Alquist-Priolo Fault Study Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, Sections 2690-2699.6) directs the Department of Conservation to create Seismic Hazard Zone Maps identifying areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. The Act specifies that permitting authorities must regulate certain development projects within seismic hazard zones and withhold development permits until geologic investigations are performed.

National Pollutant Discharge Elimination System (NPDES)

The State Water Resources Control Board (SWRCB) administers regulations and permitting for the United States. There are nine Regional Water Quality Control Boards (RWQCBs) that implement the SWRCB's jurisdiction. The NPDES Stormwater Program requires that any construction or demolition activities, including but not limited to clearing, grading, grubbing, or excavation, that results in a ground disturbance of 1.0 acre is subject to the SWRCB's NPDES General Permit No. 2009-0009-DWQ, amended by 2010-0014-DWQ and 2012-0006-DWQ, for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). The Guenoc Valley Site and Middletown Housing Site are within the jurisdiction of the Central Valley RWQCB. The Construction General Permit requires that the implementation of Best Management Practices (BMPs) be employed year-round to reduce sedimentation and discharge of pollutants into surface waters. Compliance with the Construction General Permit conditions requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) that addresses BMPs for control of erosion and sediment during construction activities. These elements are further explained within **Section 3.9**, **Hydrology and Water Quality**.

California Building Standards Code (CBSC)

The State of California provides minimum standard for building design through the California Building Standards Code (CBSC; California Code of Regulations, Title 24). Part 2 of the CBSC is the California Building Code (CBC). Where no other building codes apply, Chapter 18 of the CBC regulates soils and foundations. The CBC also applies to building design and construction in the state and is based on the International Building Code (IBC) used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions with numerous more detailed and/or more stringent regulations.

Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates soils and foundations, and regulates the preparation of a preliminary soil report, geohazard report, and geotechnical reports. Chapter 18 also regulates analysis of expansive soils and the determination of the depth to groundwater table. There are varying seismic design categories that require analysis of slope instability, liquefaction, total and differential settlement, surface displacement due to faulting or seismically induced lateral spreading or lateral flow, and lateral earth pressures on retaining walls. It also requires addressing mitigation measures to consider in structural design, which may include ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration, earthquake magnitude, and source characteristics consistent with the maximum considered earthquake ground

motions. Peak ground acceleration must be determined as specified in CBC Chapter 18. Finally, Appendix Chapter J of the 2016 CBC regulates grading, excavation, and earthwork construction.

Part 5 of the CBSC is the California Plumbing Code. Specifically, chapter 6 provides requirements for the building of water supply and distribution systems. This chapter indicates that water pipelines must be less than 12 inches below the finish grade.

Regional

Lake County Municipal Code

The Lake County Municipal Code (County Code) was adopted in its entirety by the Board of Supervisors of the County of Lake. There are 30 chapters within the County Code, including Chapter 9 Health and Sanitation and Chapter 30 Grading Ordinance. The Health and Sanitation Chapter, Section 21 outlines regulations for Septic Tanks and Absorption Facilities. Construction of septic tanks and subsurface disposal systems requires a Sanitation Permit from the County Health Officer. Sanitation permits may not be given for a variety of reasons, including if the system would create a public health hazard or if discharge or drainage of effluent empties, flows, seeps, drains, or condenses into or otherwise pollute waterways.

Lake County produced a grading ordinance in 2007 to regulate activities involving excavation, grading, and earthwork construction and to establish an administrative procedure for permits and enforcement. The goals of the Grading Ordinance are "to minimize hazards to life and property; protect against soil erosion; protect waterways; protect fish, wildlife, and sensitive vegetation; maintain consistency with the General Plan; protect cultural resources; and protect air quality from dust and asbestos." The ordinance is enforced by the County Planning Division through issuance of grading permits. Developers are required to get a grading permit before grading and fees will be doubled if the permit is not obtained before-hand (County of Lake, 2017).

Lake County General Plan 2008

A goal stated in the General Plan is to reduce the risk of life, property, and governmental costs due to seismic and geologic hazards. Several policies are provided as a guide to implement this goal. The General Plan also includes a policy to address dust mitigation in areas with serpentine soils. The following general plan policies from the Health and Safety Element and Open Space and Recreation Element are applicable to the Proposed Project. A discussion of the project's consistency with these policies is provided in **Appendix GPCT**.

Policy HS-2.1: Areas in excess of 30 percent slope or in mapped naturally occurring asbestos areas may require submittal of engineered plans for all construction and grading, at the discretion of the Community Development Department. These plans shall address roads, utility corridors, and similar off-site improvements as well as erosion and dust control. Development in other areas possessing potential landslide risk, regardless of slope, shall require engineered plans and/or geotechnical study prior to discretionary approval or approval of grading or building permits.

Policy HS-2.2: The siting of residential, commercial, recreational, or industrial structures on or adjacent to known active or potentially active fault zones should be avoided. In areas of known seismic

hazards, building intensity should be dictated by a scale of acceptable risks as shown in Table 7-1.

Policy HS-2.3: The County shall not allow development on existing unconsolidated landslide debris.

Policy HS-2.10: The County shall limit construction of critical transportation structures across the trace of a known active or potentially active fault to those which cannot be reasonably constructed at another location.

Policy HS-2.11: The County shall require that critical facilities be designed and constructed to remain functioning after the Maximum Probable Earthquake and to resist collapse in the event of the Maximum Credible Earthquake as specified in a detailed Geologic/Seismic report based on a site-specific investigation. An example includes designing utilities crossing fault zones to minimize damage by utilizing such measures as flexible units, valving, redundant lines, or automatic valves operated by differential pressure.

Policy OSC-2.11: Man-made slopes should be revegetated to reflect natural hillside conditions in the surrounding area, to the extent feasible and in accordance with the County's Grading Ordinance

Lake County Building Permits

The Lake County Building and Safety Division issues building permits for development within the County. The building permit applications require information about the development such as site plans, construction plans, and fire suppression plans. The site plan must be stamped by the County Department of Environmental Health if septic/leach field systems are proposed. The Building and Safety Division also requires compliance with the CBC. If the development is residential, the County requires that no work shall be done until there is written approval from a Building Inspector. These required building inspections include foundation, plumbing, and framing inspections.

Middletown Area Plan 2010

The Middletown Area Plan also includes policies related to limiting damage from seismic and geologic hazards. These policies specifically address development on shrink-swell soils and landslide areas, and informing property owners about their risks. The relevant policies within the Middletown Area Plan are:

Policy 3.1.1a: Development should be focused in areas of low to moderate erosion hazard. Substantial development on hillsides or other areas with high erosion hazard is discouraged.

Policy 3.1.1b: The County shall strive to improve its mapping and identification of areas prone to geologic hazard as new information becomes available.

Policy 3.1.2a: New development in areas that are prone to geologic hazards, on hillsides or other areas with high erosion potential shall be designed, constructed and maintained such that:

- Development does not cause or worsen natural hazards such as erosion, sedimentation, fire or water quality concerns;

- Erosion and sediment control measures, including temporary vegetation sufficient to stabilize disturbed areas, shall be included;
- Risk to life and property from slope failure, landslides and flooding is minimized; and
- The character and visual quality of the hillside is maintained.

Policy 4.1.1a: Require site-specific soils analysis of lands identified as having high shrink-swell characteristics before development is allowed to determine which soils can adequately support structures and that foundations are designed to withstand expansive soils.

Policy 4.1.1b: Provide property owners with information to assist them in addressing their risks from landslides

Policy 4.1.1d: Land division and commercial development should be strongly discouraged on lands with slopes averaging 30 percent or more, in landslide areas and areas of unstable slopes and soils as designated by the State Department of Mines and Geology and the United States Geological Survey.

3.6.4 IMPACTS

Method of Analysis

Potential impacts to geology and soils were analyzed through the review and evaluation of available documents. The impact analysis focuses primarily on geological impacts related to soil erosion, soil stability, and nearby seismic activity. The evaluation is based on review of project plans, including grading plans; federal, state, and local regulations and guidelines; and relevant specific and general plans. NRCS Web Soil Survey information was reviewed to identify constraints present in the project area. Additionally, USGS fault maps were consulted to identify potential faults and seismic hazards from a regional perspective.

Thresholds of Significance

For purposes of this analysis, the following thresholds of significance, derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines, have been used to determine whether implementation of the Proposed Project would result in significant geology, soils, and seismicity impacts.

Based on Appendix G of the State CEQA Guidelines, an impact is considered significant if implementation of the Proposed Project would do any of the following:

- Directly or indirectly cause potential substantial risk of loss, injury or death involving: rupture of a known earthquake fault, seismic ground shaking, seismic-related ground failure including liquefaction, or landslides;
- Result in substantial soil erosion or the loss of topsoil
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property

- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

Impacts

IMPACT 3.6-1	DIRECTLY OR INDIRECTLY CAUSE POTENTIAL SUBSTANTIAL RISK OF LOSS, INJURY OR DEATH DUE TO SEISMIC RELATED HAZARDS		
	Guenoc Valley Site	**Other Phase 1 Areas**	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially Significant	Potentially Significant	Less than Significant
Mitigation Measures	MM 3.6-1: Final Design-Level Geotechnical Report(s)	MM 3.6-1: Final Design-Level Geotechnical Report(s)	None Required
Significance After Mitigation	Less than Significant	Less than Significant	N/A

Guenoc Valley Site - Phase 1 and Future Phases

As stated above, no active faults cross the Guenoc Valley Site and it is not within an Alquist-Priolo Fault Zone, therefore fault rupture through the site is not anticipated (**Appendix GEOTECH**). However, as stated in **Section 3.6.2**, there is still a risk of strong seismic shaking and consequently, seismic related hazards. The preliminary geotechnical report for the Guenoc Valley Site has identified Bohn Valley, the flat, low-lying area south of McCreary Lake, and areas in the far northeastern corner of the property as having the potential for liquefaction (**Appendix GEOTECH**). Additionally, seismically-induced landslides are more likely to occur on areas with previously identified unstable slopes. As discussed above, landslide areas may be present on the Guenoc Valley Site. Impacts associated with loss, injury or death from seismic related hazards on the Guenoc Valley Site are considered **potentially significant**.

To reduce the risk of seismic-related safety hazards to acceptable levels, the CBC requires design standards to mitigate for seismic risk in all areas of California. As discussed above, the County Building Department ensures that building plans were prepared by State licensed professionals and that they meet requirements of the CBC and local design codes. The CBC provisions are intended to reduce the potential for substantial risk of loss, injury, or death related to seismic hazards. Regular monitoring and enforcement of the CBC requirements regarding seismic and geologic safety by the County through the building permit and plan check processes will ensure that new development and construction meet all seismic and geologic safety standards, thereby protecting the public by reducing the risk of building damage or collapse. The preliminary geotechnical report concluded that it is geotechnically feasible to develop the Proposed Project as described in **Section 2.5**. However, this report indicates that this conclusion must be verified with detailed site-specific subsurface exploration, laboratory testing, and engineering evaluations provided in a

design-level geotechnical report. A design-level geotechnical report is also required by the CBC and the County's building permit. **Mitigation Measure 3.6-1** will ensure that recommendations within the design-level geotechnical report are incorporated into the project plans. The County building permit official would ensure that all buildings comply with **Mitigation Measure 3.6-1** as part of the building permit process. Additionally, the Proposed Project would be consistent with General Plan Policy HS-2.11 and would ensure critical facilities be designed to resist collapse as specified in a geotechnical report. Compliance with the CBC, the County's building permit process, the General Plan, and implementation of **Mitigation Measure 3.6-1** would reduce potential risk related to seismic hazards to a **less-than-significant** level.

Off-Site Workforce Housing

The Middletown Housing Site also does not contain any active faults and it is not within an Alquist-Priolo Fault Zone, therefore fault rupture through the site is not anticipated. The risk of seismic shaking and ground related failure is similar to the Guenoc Valley Site; there is potentially weak soils and potential for liquefaction Middletown Housing Site (RGH Consultants, 2006). This finding indicates **potentially significant seismic-related impacts** on the Middletown Housing Site. Compliance with the CBC, the County's building permit process, the General Plan, and preparation of geotechnical report(s) as described in **Mitigation Measure 3.6-1,** would reduce potential risk related to seismic hazards to a **less-than-significant** level.

Off-Site Infrastructure

Off-Site improvements, including the Off-Site Well Site, are at least 11 miles from the nearest Alquist-Priolo Fault Zone (see **Figure 3.6-1**). The California Plumbing Code requires water pipelines to be at least 12 inches below the finished grade, which would make the pipeline less susceptible to damage from seismic hazards. The pipeline trench is proposed to be 40 inches deep. Compliance with the California Plumbing Code would reduce the potential for damage to the pipeline during a seismic event. Because the off-site well and pipeline would not expose people to substantial risk of loss or injury during a seismic event, this impact is considered **less-than-significant**.

IMPACT 3.6-2	**SUBSTANTIAL SOIL EROSION OR LOSS OF TOPSOIL**		
	Guenoc Valley Site	**Other Phase 1 Areas**	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
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

Guenoc Valley Site – Phase 1 and Future Phases

Soil erosion is the result of naturally occurring physical and chemical forces that break down, remove, and transport soil materials from the ground surface that results in deposition in a remote location. Common mechanisms of soil erosion include natural occurrences, such as wind and storm water runoff, as well as human activities that may include changes to drainage patterns and the removal of vegetation. Erosion poses a hazard because it removes soils, which can undermine roads and buildings and produce unstable slopes, and it results in deposition of soil in reservoirs, lakes, drainages, and on roads.

Erosion potentials on the Guenoc Valley Site range from slight to severe. Development within the Guenoc Valley Site would require grading and leveling the site to accommodate the residential, commercial, roads, and other uses as described in **Section 2.5.2.10**, **Project Description** due to hilly terrain. It is estimated that approximately 10 million cubic yards of earthwork would be necessary to construct Phase 1 of the Proposed Project (**Appendix GRADING**). In steeper areas that require road cuts, finished slopes would have a maximum slope of 2 (horizontal):1 (vertical). Retaining walls would be used where necessary to minimize the extent of road cuts. Retaining walls would incorporate cutoff swales above the walls and vegetated roadside swales at the roadside. Cut and fill quantities would be approximately balanced for Phase 1 and future phases.

Grading activities are necessary to prepare the Guenoc Valley Site for infrastructure but may accelerate soil erosion to levels higher than normal during construction. Construction activities, including grading, clearing, and landscaping, would result in the temporary disturbance of soil and would expose disturbed areas to potential storm events, which could generate accelerated runoff, localized erosion, and sedimentation during the time when soils remained exposed. Construction activities could also expose soil to wind erosion effects that could adversely affect both on-site and nearby soils and the re-vegetation potential of the area. The project would be required to obtain coverage under the NPDES Construction General Permit and implement a SWPPP during construction activities. The Construction General Permit conditions require that the SWPPP includes 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. The Proposed Project will obtain a grading permit from the County prior starting any earthwork. As the Proposed Project will require a grading permit and a SWPPP, impacts related to soil erosion and loss of topsoil are **less-than-significant** for Phase 1 and future phases.

Off-Site Workforce Housing

The Off-Site Workforce Housing plans include bioswales and rain gardens to limit stormwater runoff and erosion. However, construction activities such as grading on the Middletown Housing Site could accelerate erosion. This construction would involve disturbance of over an acre of soil so would require compliance with the NPDES Construction General Permit, including preparation of a SWPPP, and would require a County grading permit prior to development. Compliance with the County's grading permit and implementation of a SWPPP would result in **less-than-significant** impacts related to soil erosion or loss of topsoil.

Off-Site Infrastructure

Construction and operation of the off-site well would not result in disturbance of an acre of soil and no land would be graded. The only potential for erosion would be from any vehicles or equipment related to constructing a well or rehabilitating the existing well. This equipment would likely not create more erosion than the existing agricultural operations on the site. Therefore, there would be a **less-than-significant** impact related to soil erosion or loss of topsoil as a result in installing the proposed well.

The off-site well pipeline would occur within or directly adjacent to the right-of-way along Butts Canyon Road and thus would be on previously disturbed or paved soils. This construction would involve disturbance of over an acre of soil so would require compliance with the NPDES Construction General Permit, including preparation of a SWPPP, and would require a County grading permit prior to development. Compliance with the County's grading permit and implementation of a SWPPP would result in **less-than-significant** impacts related to soil erosion or loss of topsoil.

IMPACT 3.6-3	**DEVELOPMENT ON EXPANSIVE SOILS OR ON UNSTABLE SOILS**		
	Guenoc Valley Site	**Other Phase 1 Areas**	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially Significant	Potentially Significant	Less than Significant
Mitigation Measures	MM 3.6-1: Final Design-Level Geotechnical Report(s)	MM 3.6-1: Final Design-Level Geotechnical Report(s)	None Required
Significance After Mitigation	Less than Significant	Less than Significant	N/A

Guenoc Valley Site – Phase 1 and Future Phases

The NRCS indicates that the soils on the Guenoc Valley Site range from low to high shrink-swell capacity (NRCS, 2019a). Shrink-swell capacity is the indicator of expansive soils. The physical forces resulting from the shrink-swell processes of soils can exert pressure on foundations and infrastructure lines, which could result in pipeline and foundation damage. RGH Consultants also encountered some expansive soils and fills during soil testing (**Appendix GEOTECH**). Other soil constraints on the Guenoc Valley Site include corrosivity to steel and steep slopes. Although no active landslide locations were identified within project development areas in most cases, portions of the Guenoc Valley Site would be considered susceptible to landslides due to the sloping topography. Areas near the Primary Access Road Option 1 had notable landslide deposits. Additionally, the Primary Access Road Option 2 would involve cuts into the hillside near Butts Canyon Road, which may result in slope instability. This is considered a **potentially significant impact**.

As indicated above, **Mitigation Measure 3.6-1** requires that a site-specific geotechnical evaluation must be submitted by project developers as part of the building permit process. The geotechnical evaluation would be prepared in accordance with the CBC and would identify locations where special construction and design methods would be needed and provide recommendations for alleviating constraints due to high shrink-swell, corrosion, or other potential soils constraints in both the Guenoc Valley Site. The developer would be required to comply with the recommendations set forth in the geotechnical evaluation, pursuant to the County's building permit process. The preliminary geotechnical report recommended that any expansive soils identified in a final design geotechnical report be capped during grading and/or by utilizing foundation systems that gain support below the unstable soils or are designed to move with the soils. This report also recommended that buildings be located outside unstable areas and steep slopes with a setback of approximately 50-feet (**Appendix GEOTECH**). Additionally, the Proposed Project would be consistent with General Plan Policy HS-2.3 and would not develop on unconsolidated landslide debris. With implementation of mitigation, including adherence to the recommendations in final geotechnical reports, and compliance with the County's building permit and CBC, there would be **less-than-significant** impacts related to direct or indirect risks to life or property as a result of development on expansive or unstable soils.

Off-Site Workforce Housing

The Middletown Housing Site contains soils that have a low shrink-swell potential (NRCS, 2019b). No landslides have been mapped on the site. As mentioned above, the preliminary geotechnical study prepared for the Middletown Housing Site by RGH Consultants (2006) identified potentially weak soils. This is a **potentially significant impact**. However, the study concluded that it is feasible to develop the property with one and two-story residential homes and provided the following recommendations:

- Soils could be strengthened by excavating weak soils and replacing them with engineered fill or by implementing a foundation system that gains support below weak surface soils.
- Foundation support can be obtained from spread footings that bottom on the engineered fill

The Middletown Housing Site would require fill to raise the site at least two feet above the base flood elevation (see **Section 2.6.1**). This would be completed with engineered fill. Design-level geotechnical reports would be prepared for the development as Mitigation Measure 3.6-1. Additionally, prior to pouring concrete, building foundations would be inspected by a Building Inspector as part of the building permit process. With implementation of mitigation, including adherence to the recommendations in final geotechnical reports, and compliance with the County's building permit and CBC, there would be **less-than-significant** impacts related to direct or indirect risks to life or property as a result of development on expansive or unstable soils.

Off-Site Infrastructure

Construction of the off-site well and water pipeline may occur on expansive or unstable soils. As mentioned above, final design-level geotechnical evaluations would be prepared prior to construction per County regulations and the CBC. With adherence to the recommendations in final geotechnical reports, and compliance with the County's building permit and CBC, there would be **less-than-significant** impacts related to direct or indirect risks to life or property as a result of development on expansive or unstable soils.

IMPACT 3.6-4	HAVE SOILS INADEQUATE TO SUPPORT SEPTIC OR ALTERNATIVE WASTEWATER SYSTEMS	
	Guenoc Valley Site	**Other Phase 1 Areas**
	Phase 1 and Future Phases	**Off-Site Workforce Housing**
Significance Before Mitigation	Less than Significant	No Impact
Mitigation Measures	None Required	None Required
Significance After Mitigation	N/A	N/A

Guenoc Valley Site – Phase 1 and Future Phases

The proposed wastewater infrastructure plan is described in **Appendix WW**. 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. The soils on the Guenoc Valley Site have limitations for septic systems. Many of the soils have high slopes, shallow depths to bedrock, and moderately high shrink-swell potentials. However, each residential property would be evaluated for suitability of soil for septic systems and would connect to the sewer systems onsite if the soil was deemed unsuitable. There are three types of residential septic systems proposed for the larger and remote lots which cannot be readily served by the more centralized treatment under both Phase 1 and future phases. The type of system used will depend on the type of land use, site-specific soil and groundwater conditions, and distance or adjacencies to other properties or land uses. The types of wastewater systems that may be utilized for the residential areas include the following and are described further in **Appendix WW.**

- *Residential System Type 1A – Standard Septic System*. A Type 1A system is a standard septic system consisting of a septic tank and subsurface disposal system that would be used on residential parcels that have suitable soil and groundwater conditions and meets setback requirements.
- *Residential System Type 1B – On-Site Enhanced Treatment System*. A Type 1B system would include an on-site enhanced treatment system that would provide pretreatment of the wastewater before it is disposed onsite in a subsurface disposal system. The enhanced treatment system would be required to address site-specific issues, such as marginal soil conditions, high groundwater, or other site constraints that would not allow for a standard septic system to be utilized.
- *Residential System Type 1C – Septic Tank Effluent Sewer Systems*. A Type 1C system would include an effluent sewer system to connect a residential parcel to a community wastewater treatment and recycled water system. The effluent sewer system is made up of an interceptor tank (septic tank) and a small-diameter collection pipeline that are designed to convey only the liquid portion of the household wastewater for treatment and disposal or reuse. The septic tank would be located close to the house and would be periodically pumped by a vacuum truck and taken to a municipal treatment plant.

Additionally, on-site septic systems would comply with the Lake County Rules and Regulations for on-site Sewage Disposal (County Code) and the California On-Site Wastewater Treatment Systems Policy (discussed in **Section 3.9 Hydrology**). These regulations require a sanitation permit. Before installing a septic system, the property owner must secure a sanitation permit through the County's Environmental Health Department. This permit process would involve a site visit from a County Health Officer. Approval of this permit by the County would indicate that the soils and ground slopes are adequate to support the septic system as designed. Per the County Code, sanitation permits may not be given if discharge or drainage of effluent empties, flows, seeps, drains, or condenses into or otherwise pollute any watercourse or any stream, river, lake or tributary or other water used for domestic or agricultural purposes. Adherence to these regulatory requirements would ensure a **less-than-significant** impact related to developing septic systems on inadequate soils.

Off-Site Workforce Housing

The Off-Site Workforce Housing would not rely on septic systems or leach fields as it would connect to the municipal wastewater system in Middletown. Thus, there is **no impact**.

IMPACT 3.6-5	**DIRECTLY OR INDIRECTLY DESTROY A UNIQUE PALEONTOLOGICAL RESOURCE OR SITE OR UNIQUE GEOLOGIC FEATURE**		
	Guenoc Valley Site	**Other Phase 1 Areas**	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.6-2: Worker Training, Cease Work, and Consult with Qualified Paleontologist	MM 3.6-2: Worker Training, Cease Work, and Consult with Qualified Paleontologist	MM 3.6-2: Worker Training, Cease Work, and Consult with Qualified Paleontologist
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

Guenoc Valley Site – Phase 1 and Future Phases

No specific unique paleontological or geological resources have been identified on the Guenoc Valley Site (UCMP, 2019), and much of the project geology consists of igneous rock not likely to contain fossil resources. However, paleontological specimens may exist in areas with sedimentary or metamorphic deposits, which typically are located in the lower-lying portions of the Guenoc Valley Site.

If exposed, fossils in these formations could be damaged or destroyed during site preparation similar to archaeological resources. If such resources are encountered during construction, they could be damaged, destroyed, or removed, resulting in a loss of data potential. This is a **potentially significant impact.**

Mitigation Measure 3.6-2 requires that a qualified professional paleontologist (as defined by the Society of Vertebrate Paleontology 2010) provide awareness training for construction personnel involved in earth-moving activities. If evidence of paleontological resources is uncovered during project development, **Mitigation Measure 3.6-2** requires that all work cease within 50 feet of the find so that fossils are not further damaged by equipment and that the qualified paleontologist be retained to assess the find. With mitigation, impacts to unique paleontological resources are reduced to a **less-than-significant** level.

Off-Site Workforce Housing

No specific unique paleontological or geological resources have been identified on the Middletown Housing Site (UCMP, 2019). As with the Guenoc Valley Site, although it is unlikely, unknown paleontological specimens may be discovered during construction and potentially damaged, which is a **potentially significant impact**. **Mitigation Measure 3.6-2** would reduce impacts to unique paleontological resources to a **less-than-significant** level.

Off-Site Infrastructure Improvements

No specific unique paleontological or geological resources have been identified on the Off-Site Well Site (UCMP, 2019). As with the Guenoc Valley Site, although it is unlikely, unknown paleontological specimens may be discovered during construction and potentially damaged, which is a **potentially significant impact**. **Mitigation Measure 3.6-2** would reduce impacts to unique paleontological resources to a **less-than-significant** level.

IMPACT 3.6-6	**CUMULATIVE GEOLOGY AND SOILS IMPACTS**			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.6-1: Final Design-Level Geotechnical Report(s), and MM 3.6-2: Worker Training, Cease Work, and Consult with Qualified Paleontologist	MM 3.6-1: Final Design-Level Geotechnical Report(s), and MM 3.6-2: Worker Training, Cease Work, and Consult with Qualified Paleontologist	MM 3.6-1: Final Design-Level Geotechnical Report(s), and MM 3.6-2: Worker Training, Cease Work, and Consult with Qualified Paleontologist	MM 3.6-1: Final Design-Level Geotechnical Report(s), and MM 3.6-2: Worker Training, Cease Work, and Consult with Qualified Paleontologist
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant

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.

Cumulative development in the Middletown Planning Area and Lake County would increase the number of people living, working, and traveling through the region who would be exposed to seismic hazards or hazards associated with soil constraints (e.g., expansive soils). However, impacts associated with geologic faults, seismic hazards, and slope stability are based on existing site-specific conditions that are situated within the subsurface materials that underlay the project site. These inherent conditions are an end result of natural historical events that occur through vast periods of geologic time and are not based on cumulative development. With proper evaluation of these conditions, compliance with existing codes and standards, and implementation of **Mitigation Measure 3.6-1**, the Proposed Project's contribution to significant impacts related to the area's geology would be **less-than-significant**. No additional mitigation for cumulative development would be required.

Cumulative development in the Middletown Planning Area and Lake County would involve grading activities that would remove surface vegetation, alter topography, and potentially expose soils to greater erosion potential. The magnitude of this impact would be greatest during construction, particularly if development were to occur simultaneously with proposed developments immediately adjacent to the project boundaries, including the Hidden Valley Community and the Valley Oaks Planned Development. However, implementation of the County's Grading Ordinance and use of NPDES Construction General Permit-mandated BMPs during construction would ensure the project's contribution would not be cumulatively considerable, and the cumulative impact is **less-than-significant**.

Paleontological resources have been recorded near the project area, and project construction could result in the damage or destruction of as-yet unknown paleontological resources. This is considered a potentially significant cumulative impact. Numerous state, federal, and local laws, regulations, and ordinances seek to protect paleontological resources. These would apply to development of the Proposed Project. Implementation of **Mitigation Measure 3.6-2** would reduce the Proposed Project's contribution to potential cumulative impact to **less-than-significant** levels.

3.6.5 MITIGATION MEASURES

MM 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, (i.e., 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 conditions, covenants, and restrictions (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 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 on-going 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.

MM 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, 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 GAS EMISSIONS

3.7.1 INTRODUCTION

This section provides a description of greenhouse gases (GHG) in the project area and describes the changes to GHG and their influence on climate change that would result from implementation of the Proposed Project. Following an overview of the GHG setting in **Section 3.7.2** and the relevant regulatory setting in **Section 3.7.3**, project-related impacts and recommended mitigation measures are presented in **Section 3.7.4** and **Section 3.7.5**, respectively.

3.7.2 ENVIRONMENTAL SETTING

Existing Climate Setting

"Global warming" and "climate change" are common terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century. Natural processes and human actions have been identified as impacting climate. The International Panel on Climate Change (IPCC) has concluded that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. Since the 19th century however, increasing GHG concentrations resulting from human activity such as fossil fuel combustion, deforestation and other activities are believed to be a major factor in climate change. GHGs in the atmosphere naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space—a phenomenon sometimes referred to as the "greenhouse effect". Some GHGs occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have trapped solar radiation and decreased the amount that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

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. 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. Other human-generated GHGs include fluorinated gases such as SFCs, PFCs, and SF_6, which have much higher heat-absorption potential than CO_2, and are byproducts of certain industrial processes.

CO_2 is the reference gas for climate change, as it is the GHG emitted in the highest volume. The effect that each of the GHGs have on global warming is the product of the mass of their emissions and their global warming potential (GWP). GWP indicates how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. For example, CH_4 and N_2O are substantially more potent GHGs than CO_2, with GWPs of approximately 30 and approximately 275 times that of CO_2, which has a GWP of 1.

In emissions inventories, GHG emissions are typically reported as metric tons of CO_2 equivalents (CO_2e). CO_2e are calculated as the product of the mass emitted of a given GHG and its specific 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.

Greenhouse Gas Emissions Estimates

Global Emissions

Worldwide emissions of GHGs in 2014 were 49 billion tons of CO_2e per year (CAIT, 2019). This figure includes ongoing emissions from industrial and agricultural sources, but excludes emissions from land use changes.

U.S. Emissions

In 2017, the United States emitted about 6.46 billion tons of CO_2e per year. Of the five major sectors nationwide — residential and commercial, industrial, agriculture, transportation, and electricity— transportation accounts for the highest fraction of GHG emissions (approximately 29 percent), closely followed by electricity (approximately 28 percent); these emissions from energy are primarily generated from the combustion of fossil fuels (approximately 80 percent), and emissions from transportation are entirely generated from direct fossil fuel combustion (USEPA, 2019a).

State of California Emissions

In 2019, CARB published its latest annual GHG emissions inventory in *California Greenhouse Gas Emissions for 2000 to 2017, Trends of Emissions and Other Indicators*. In 2017, emissions from GHG emitting activities statewide were 424 million metric tons of CO_2 equivalent ($MMTCO_2e$), 5 $MMTCO_2e$ lower than 2016 levels and 7 $MMTCO_2e$ below the 2020 GHG Limit of 431 $MMTCO_2e$. Per capita GHG emissions in California dropped from a 2001 peak of 14.1 tonnes per person to 10.7 tonnes per person in 2017, a 24 percent decrease. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product (GDP)) is declining. From 2000 to 2017, the carbon intensity of California's economy has decreased by 41 percent from 2001 peak emissions while simultaneously increasing GDP by 52 percent. In 2017, GDP grew 3.6 percent while the emissions per GDP declined by 4.5 percent compared to 2016.

The transportation sector remains the largest source of GHG emissions in the State. Direct emissions from vehicle tailpipe, off-road transportation mobile sources, intrastate aviation, rail, and watercraft account for 40 percent of Statewide emissions in 2017. The annual increase in transportation emissions in 2017 has slowed down slightly compared to the previous 3 years. Emissions from the electricity sector account for 15 percent of the inventory and show another large drop in 2017 due to a large increase in renewable energy. For the first time since California started to track GHG emissions, California uses more electricity from zero-GHG sources (for the purpose of the GHG inventory, these include hydro, solar, wind, and nuclear energy) than from GHG-emitting sources for both in-state generation and total (in-state plus imports) generation in 2017. The industrial sector has seen a slight emissions decrease in the past few years, and remains at 21 percent of the inventory. Emissions from commercial, residential, and agriculture sectors have remained relatively constant in recent years.

Impacts from Climate Change

Ecosystem and Biodiversity Impacts

Climate change is having effects on diverse types of ecosystems and the effect is anticipated to become more severe over time (USEPA, 2016a). As temperatures and precipitation change, seasonal shifts in vegetation will occur; this is affecting the distribution of associated flora and fauna species. As the range of species shifts, habitat fragmentation will occur, with impacts on the distribution of certain sensitive species. The IPCC states that "a large fraction of both terrestrial and freshwater species faces increased extinction risk under projected climate change during and beyond the 21st century, especially as climate change interacts with other stressors, such as habitat modifications, over exploitation, and invasive species" (IPCC, 2014). Shifts in existing biomes could make ecosystems vulnerable to encroachment by invasive species. Forest dieback poses risks for carbon sequestration and storage, biodiversity, wood production, water quality, and economic activity. Wildfires, which are an important control mechanism in many ecosystems, have become more severe and more frequent, making it difficult for native plant species to repeatedly re-germinate. Continued emission of GHGs will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive, and irreversible impacts for people and ecosystems (IPCC, 2014).

Human Health Impacts

Climate change may increase the risk of vector-borne infectious diseases, particularly those found in tropical areas and spread by insects such as malaria, dengue fever, yellow fever, and encephalitis. Cholera, which is associated with algal blooms, could also increase. While these health effects would largely affect tropical areas in other parts of the world, effects are also impacting California. Warming of the atmosphere is expected to increase smog and particulate pollution, which could adversely affect individuals with heart and respiratory problems, such as asthma. Extreme heat events would also be expected to occur with more frequency and could adversely affect the elderly, children, and the homeless. Finally, the water supply impacts and seasonal temperature variations expected as a result of climate change could affect the viability of existing agricultural operations, making the food supply more vulnerable (USEPA, 2016b).

3.7.3 REGULATORY CONTEXT

Federal

The United States (U.S.) participates in the United Nations Framework Convention on Climate Change. In 1998 under the Clinton administration, the U.S. signed the Kyoto Protocol, which would have required reductions in GHGs; however, the protocol did not become binding in the U.S. as it was never ratified by Congress. Instead, the federal government chose voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. In 2002, the U.S. announced a strategy to reduce the GHG intensity of the American economy by 18 percent over a 10-year period from 2002 to 2012. In 2015, the U.S. submitted its "intended nationally determined contribution" to the framework convention, which targets to cut net GHG emissions by 26 to 28 percent below 2005 levels by 2025. The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the federal Clean Air Act and the 1990 amendments to it. On April 2, 2007, the U.S. Supreme Court ruled that CO_2 is an air pollutant as defined under the Clean Air Act, and that the EPA has the authority to regulate emissions of GHGs. The EPA made two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act, as follows:

- Endangerment Finding: The current and projected concentrations of the six key well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, they were a prerequisite for implementing GHG emissions standards for vehicles. In May 2010, the EPA in collaboration with the National Highway Traffic Safety Administration (NHTSA) finalized national GHG emission and fuel economy standards for light-duty vehicles for the model years 2012 to 2016. These standards were consistent with the standards adopted by California under the Pavley Regulations, described below. In August 2012, EPA and NHTSA extended the national GHG emission and fuel economy standards for light-duty vehicles for the model years 2017 to 2025. Combined with the 2012 to 2016 standards, the regulation will result in vehicles emitting 50 percent less than 2010 levels in in 2025. In August 2016, EPA and NHTSA finalized national GHG emission and fuel economy standards for medium- and heavy-duty vehicles that would cover model years 2018 to 2027 for certain trailers and model years 2021 to 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks.

State

California has been a leader among U.S. states in outlining and aggressively implementing a comprehensive climate change strategy that is designed to result in a substantial reduction in total statewide GHG emissions in the future. The climate change strategy for California is multifaceted and involves a number of state agencies implementing a variety of laws and policies. A brief summary of these laws and policies is listed below.

Assembly Bill 1493

Signed by the California Governor in 2002, Assembly Bill 1493 (AB 1493) requires CARB to adopt regulations requiring a reduction in GHG emissions emitted by cars in the state. AB 1493 is intended to apply to 2009 and later vehicles. On June 30, 2009, the USEPA granted a CAA waiver that California needed to implement AB 1493.

Executive Order S-3-05

Executive Order S-3-05 (EO S-3-05) was signed by the California Governor on June 1, 2005. EO S-3-05 established the following statewide emission reduction targets.

- Reduce GHG emissions to 2000 levels by 2010.
- Reduce GHG emissions to 1990 levels by 2020.
- Reduce GHG emissions to 80% below 1990 levels by 2050.

EO S-3-05 created a Climate Action Team (CAT) headed by the California Environmental Protection Agency (Cal/EPA) that included several other state agencies. The CAT is tasked by EO S-3-05 with outlining the effects of climate change on California and recommending an adaptation plan, as well as creating a strategy to meet the emission reduction targets.

California Global Warming Solutions Act of 2006 (AB-32)

Signed by the California Governor on September 27, 2006, Assembly Bill (AB) 32 codifies a key requirement of EO S-3-05, specifically the requirement to reduce GHG emissions in California to 1990 levels by 2020. AB 32 tasks CARB with monitoring state sources of GHGs and designing emission reduction measures to comply with emission reduction requirements. However, AB 32 also continues the efforts of the CAT to meet the requirements of EO S-3-05 and states that the CAT should coordinate overall state climate policy.

To accelerate the implementation of emission reduction strategies, AB 32 requires that CARB identify a list of discrete early action measures that can be implemented relatively quickly. In October 2007, CARB published a list of early action measures that it estimated could be implemented and would serve to meet about 25% of the required 2020 emissions reductions (CARB, 2007). To assist CARB in identifying early action measures, the CAT published a report in April 2007 that updated their 2006 report and identified strategies for reducing GHG emissions (CAT, 2007). In its October 2007 report, CARB cited the CAT strategies and other existing strategies that can be utilized to achieve the remainder of the emissions reductions (CARB, 2007a). AB 32 requires that CARB prepare a comprehensive “scoping plan” that identifies all strategies necessary to fully achieve the required 2020 emissions reductions. Consequently, in December 2008, CARB released its scoping plan to the public; the plan was approved by CARB on December 12, 2008 . An update to the Climate Change Scoping Plan occurred on May 22, 2014, which included new strategies and recommendations to ensure reduction goals of near-term 2020 are met with consideration of current climate science.

A second update to the Climate Change Scoping Plan was adopted on December 14, 2017. The 2017 Scoping Plan Update addresses the 2030 target established by Senate Bill 32, as discussed below, and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG by 2030 compared to 1990 levels. The key programs that the 2017 Scoping Plan Update builds on include the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, increasing the use of renewable energy in the state, and reduction of methane emissions from agricultural and other wastes (CARB, 2017).

Executive Order S-01-07

Executive Order S-01-07 was signed by the California Governor on January 18, 2007. It mandates a statewide goal to reduce the carbon intensity of transportation fuels by at least 10% by 2020. This target reduction was identified by CARB as one of the AB 32 early action measures in the October 2007 report (CARB, 2007).

Senate Bill 375

SB 375 was approved by the California Governor on September 30, 2008. SB 375 provides for the creation of a new regional planning document called a “Sustainable Communities Strategy” (SCS). An SCS is a

blueprint for regional transportation infrastructure and development that is designed to reduce GHG emissions from cars and light trucks to target levels set by CARB for 18 regions throughout California. Each of the various metropolitan planning organizations must prepare an SCS that is included in their respective regional transportation plan (RTP). An SCS would influence transportation, housing, and land use planning. CARB will determine whether the SCS will achieve regional GHG emissions reduction goals.

Senate Bill 605

On September 21, 2014, Governor Jerry Brown signed Senate Bill 605 which requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state no later than January 1, 2016. As defined in the statute, short-lived climate pollutant means "an agent that has a relatively short lifetime in the atmosphere, from a few days to a few decades, and a warming influence on the climate that is more potent than that of carbon dioxide." SB 605, however, does not prescribe specific compounds as short-lived climate pollutants or add to the list of GHGs regulated under AB 32. In developing the strategy, the CARB completed an inventory of sources and emissions of short-lived climate pollutants in the state based on available data, identified research needs to address any data gaps, identified existing and potential new control measures to reduce emissions, and prioritized the development of new measures for short-lived climate pollutants that offer co-benefits by improving water quality or reducing other air pollutants that impact community health and benefit disadvantaged communities.

The final strategy released by CARB in March 2017 focuses on methane, black carbon, and fluorinated gases, particularly hydrofluorocarbons, as important short-lived climate pollutants. The final strategy recognizes emission reduction efforts implemented under AB 32 (e.g., refrigerant management programs) and other regulatory programs (e.g., in-use diesel engines, solid waste diversion). The measures identified in the final strategy and their expected emission reductions will feed into the update to the CARB Scoping Plan.

Executive Order (EO) B-30-15

EO B-30-15 was signed by the Governor on April 29, 2015. It sets interim GHG targets of 40 percent below 1990 by 2030, to ensure California will meet its 2050 targets set by EO S-3-05. It also directs the CARB to update the Climate Change Scoping Plan. The 2030 Target Scoping Plan Concept Paper was released on June 17th, 2016.

Senate Bill (SB) 350

SB 350 codifies the GHG targets for 2030 set by EO B-30-15. To meet these goals, SB 350 also raises the California Renewables Portfolio Standard (RPS) from 33 percent renewable generation by 2020 to 50 percent renewable generation by December 31 2030.

Senate Bill (SB) 32

Additionally, SB 32, signed in 2016, further strengthens AB 32 with goals of reducing GHG emissions to 40 percent below 1990 levels by 2030. Based on GHG emissions inventory data compiled by CARB through 2017 and the emission limit of 431 $MMTCO_2e$ established in the Intergovernmental Panel of Climate Change (IPCC) Fourth Assessment Report, California emission reduction goals for near-term 2020 will be met.

California Renewable Portfolio Standards - SB 1078, SB 350, and SB 100

The California RPS program was established in 2002 by SB 1078 and requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide a certain percentage of their supply from renewable sources. The initial requirement was for at least 20 percent of electricity retail sales to be served by renewable resources by 2017. The RPS program was accelerated in 2015 with SB 350 which mandated a 50% RPS by 2030. In 2018, SB 100 was signed into law, which again increases the RPS to 60% by 2030 and requires all the state's electricity to come from carbon-free resources by 2045.

Title 20 Appliance Efficiency Regulations

California's Appliance Efficiency Regulations, CCR Title 20, contain standards for both federally regulated appliances and non-federally regulated appliances. The regulations are updated regularly to allow consideration of new energy efficiency technologies and methods. The current standards were adopted by the CEC in 2018. The standards outlined in the regulations apply to appliances that are sold or offered for sale in California. More than 23 different categories of appliances are regulated, including refrigerators, freezers, water heaters, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings.

California Energy Efficiency Standards (Title 24)

The State regulates energy consumption under Title 24 Building Standards Code, Part 6 of the California Code of Regulations (also known as the California Energy Code). The Title 24 Building Energy Efficiency Standards were developed by the California Energy Commission and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and nonresidential buildings. The California Energy Code is updated every three years, with the most recent iteration (2016) effective as of January 1, 2017, and the next version (2019) planned to go into effect on January 1, 2020. The California Energy Commission's long-term vision is that future updates to the California Energy Code will support zero-net energy for all new single-family and low-rise residential buildings by 2020 and new high-rise residential and nonresidential buildings by 2030. Refer to **Section 3.15** for additional information on Title 24 requirements.

California Green Building Standards Code (CALGreen)

Title 24 Building Standards Code, Part 11 of the California Code of Regulations is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality. Refer to **Section 3.15** for additional information on Title 24 requirements.

SB 743

SB 743 changes the way that public agencies must evaluate the transportation impacts of projects under CEQA. The bill required revisions to the CEQA Guidelines that would establish new criteria for determining the significance of a project's transportation impacts that will more appropriately balance the needs of

congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHG emissions. As required under SB 743, the Governor's Office of Planning and Research (OPR) developed potential metrics to measure transportation impacts that may include, but are not limited to, vehicle miles traveled (VMT), VMT per capita, automobile trip generation rates, or automobile trips generated. The new metric would replace the use of automobile delay and level of service (LOS) as the metric to analyze transportation impacts under CEQA. OPR recommends different thresholds of significance for projects depending on land use types. For example, residential and office space projects must demonstrate a VMT level that is 15 percent less than that of existing development to determine whether the mobile-source GHG emissions associated with the project are consistent with statewide GHG reduction targets. With respect to retail land uses, any net increase of VMT may be sufficient to indicate a significant transportation impact.

Local

To date, Lake County has not adopted any specific GHG reduction strategies or climate action plans. The Lake County Area Planning Council is considered a non-MPO Rural Regional Transportation Planning Agency, not required by state law to develop a SCS. However, the 2030 Lake County Regional Blueprint Plan (2010), does identify energy conservation and maintenance of clean air quality as driving principles for the future of Lake County. While the Lake County Regional Blueprint Plan does not specifically address GHG emissions, stated goals of the plan that would also reduce GHG emissions include: maintaining good air quality, encouraging energy conservation, developing renewable energy resources, and investing in alternative fuel buses and fleet vehicles as well as related infrastructure.

3.7.4 IMPACTS

Method of Analysis

Construction and operational GHG emissions were estimated using the California Emissions Estimator Model Version 2013.2 (CalEEMod) air quality model.

Construction GHG emissions from on- and off-road vehicle operation and stationary sources emissions from operation of air compressors and generators were estimated for each construction phase. Modeling assumed that Phase 1A would occur between April 2020 and December 2023. Additionally, construction of both on-site and Off-Site Workforce Housing and Infrastructure is conservatively assumed to occur concurrently with Phase 1A. Phase 1B and 1C would occur between December 2023 and November 2030. Construction of the Future Phases of the Proposed Project could occur after the completion of Phase 1, and for modeling purposes, is assumed to occur between November 2030 and December 2040. The model estimates emissions for a variety of sources, including transportation, electricity use, natural gas use, and solid waste disposal. Project-specific construction CalEEMod inputs are provided in the CalEEMod Inputs Table included as **Appendix AIR**.

Operational GHG emissions from build-out of the Proposed 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, water and wastewater processing, usage, and conveyance. Operational GHG emissions for Phase 1 of the Proposed Project were modeled for operational year 2022, as well as, year 2030 for comparison with full buildout of future phases of the Proposed Project.

Operational GHG emissions for the future phases of the Proposed Project were modeled for year 2030. 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 fact 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. Project-specific operational CalEEMod inputs are provided in the CalEEMod Inputs Table included as **Appendix AIR**.

Thresholds of Significance

Criteria for determining the significance of impacts due to GHG emissions have been developed 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 established CEQA thresholds for GHG emissions. However, the Bay Area Air Quality Management District (BAAQMD) has established GHG thresholds that are used by several air districts in Northern California. Other air districts that currently use BAAQMD's significance thresholds include the Northern Sonoma Air Quality Management District, the Placer County Air Quality Control District, the Yolo-Solano Air Quality Management District, and the Feather River Air Quality Management District. Consequently, the County, in its discretion, has deemed that the BAAQMD's GHG thresholds are appropriate to use to evaluate the significant of the Proposed Project's GHG emissions.

The quantitative thresholds developed by BAAQMD were formulated based on AB 32 and California Climate Change Scoping Plan reduction targets. Thus, a project cannot exceed a numeric BAAQMD threshold without also conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (the state Climate Change Scoping Plan). Therefore, if a project exceeds a numeric threshold and results in a significant cumulative impact, it would also result in a significant cumulative impact with respect to plan, policy, or regulation consistency, even though the project may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

BAAQMD provides multiple options in its 2017 CEQA Guidelines for analysis of GHG emissions generated from operations. At the time of this analysis, BAAQMD has not yet provided a construction-related GHG generation threshold, but it does recommend that construction-generated GHGs be quantified and disclosed. The thresholds suggested by BAAQMD are as follows:

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

It should be noted that BAAQMD's thresholds of significance were established based on meeting the 2020 GHG targets set forth in the AB 32 Scoping Plan. For developments that would occur beyond 2020, the service population threshold of significance was adjusted to a "substantial progress" threshold that was calculated based on the SB 32 target of 40 percent below 1990 levels and the forecasted 2030 service population (AEP, 2016). In the Center for Biological Diversity v. California Department of Fish and Wildlife, the CA Supreme Court stated that "residential and commercial development, which are designed to accommodate long-term growth in California's population and economic activity, this fact gives rise to an argument that a certain amount of greenhouse gas emissions is as inevitable as population growth. *Under this view, a significance criterion framed in terms of efficiency is superior to a simple numerical threshold because CEQA is not intended as a population control measure*." (emph. added) Therefore, consistent with the BAAQMD guidelines and the CA Supreme Court decision, this analysis uses a service population threshold to evaluate GHG emissions for the Proposed Project.

Impacts

IMPACT 3.7-1	**GENERATE GREENHOUSE GAS EMISSIONS EITHER DIRECTLY OR INDIRECTLY, THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT**	
	Phase 1 (including Off-Site Workforce Housing and Infrastructure)	**Future Phases**
Significance Before Mitigation	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.7-1: Operational GHG Emissions	MM 3.7-1: Operational GHG Emissions
Significance After Mitigation	Significant and Unavoidable	Significant and Unavoidable

Construction Emissions

Construction GHG emissions from the Proposed Project were estimated using the CalEEMod emissions model. Sources would include fossil fuel combustion by construction vehicles and equipment. Construction-related GHG emissions are presented in **Table 3.7-1**. All model inputs and outputs are provided in **Appendix AIR**. Construction of Phase 1 is estimated to generate approximately 17,019 MT CO_2e over the entire construction duration, and future phases could generate 5,490 MT CO_2e over the entire construction duration. As discussed earlier, BAAQMD has not established a quantitative threshold relative to construction-related emissions. Consistent with recommendations of other air districts throughout California, and in the absence of a construction-specific significance threshold, this analysis amortizes the total construction emissions over the assumed lifetime of the Proposed Project, and adds those emissions to the operational emissions (refer to **Table 3.7-2** below) (SMAQMD, 2009). Since the Proposed Project includes both residential and commercial land uses, which can range from an estimated operational life of 25 to 40 years, the analysis uses 30 years as a representative lifetime consistent with recommendations of other air districts throughout California (SMAQMD, 2009). As such, Phase 1 would result in total amortized

construction emissions of 568 MT CO_2e per year, and future phases could result in total amortized construction emissions of 183 MT CO_2e per year.

TABLE 3.7-1
CONSTRUCTION GHG EMISSIONS

Construction Phase	Total Emissions (MT CO_2e/year)	Amortized over 30 years (MT CO_2e)
Phase 1A (2020-2023)	13,284	443
Phase 1B and 1C (2023-2030)	3,735	125
Phase 1 Subtotal	*17,019*	*568*
Future Phases (2030-2040)	5,490	183
Total Construction Emissions	**22,509**	**750**
Source: CalEEMod 2016 (**Appendix AIR**).		

Operational Emissions

Operational GHG emissions associated with the Proposed Project would result from electrical and propane usage, water and wastewater transport (the energy used to pump water and wastewater to and from the project site), and solid waste generation. GHG emissions from electrical usage are generated when energy consumed on the site is generated by the electrical supplier. GHG emissions from propane are direct emissions resulting from on-site combustion for heating and other purposes. GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. Solid waste-related emissions are generated when the increased waste generated by a project is disposed in a landfill where it decomposes, producing methane gas.

GHG emissions from electrical usage, propane combustion, mobile transportation, water and wastewater conveyance, and solid waste were estimated using the CalEEMod model. CalEEMod assumes compliance with some, but not all, applicable State-level rules and regulations regarding energy efficiency, vehicle fuel efficiency, renewable energy usage, and other GHG reduction policies. The reductions obtained from each regulation and the source of the reduction amount used in this analysis are described below.

The following State regulations have been manually incorporated in the CalEEMod inputs:

- 2016 Title 24 Energy Efficiency Standards
- Green Building Code Standards (indoor water use)
- CalRecycle Waste Diversion and Recycling Mandate (75 percent)

In addition, the Proposed Project includes a number of project design features that would reduce GHG emissions from the proposed land uses. These include but are not limited to:

- The use of solar to meet the project's energy demands. Under all options for electrical supply, residential demand would be met through solar in accordance with the building code. However, commercial/resort demand could be supplemented by PGE supplies under Electricity Options 1 and 2. Under Electricity Options 3 and 4 behind the meter solar would meet supply energy for all commercial facilities.
- Recycling and reuse of all wastewater generated by commercial and resort uses, and most wastewater generated by residential uses. Recycled water would account for approximately 25% of the outdoor water supply (**Appendix WW**).
- The provision of workforce housing in close proximity to the proposed employment opportunities within the Guenoc Valley Site, as well as the provision of shuttles for employees would reduce vehicle miles traveled.
- The use of drought tolerant native vegetation in landscaping
- Passive site design and planning measures to minimize heating and HVAC needs
- Site design and lot layout to minimize the conversion of oak woodlands
- Electric fleet for the resort commercial uses
- Installation of 300 electric vehicle charging stations
- Providing on-site refuse collection bins for recyclable waste, compostable waste, and standard waste, in addition to on-site Compost and Recycling Centers.
- 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.

CalEEMod generally treats the above described energy and water conservation and waste diversion measures as "mitigation measures," even though they are required through regulation and components of the Proposed Project. Unmitigated GHG emissions are presented in **Table 3.7-2**.

TABLE 3.7-2
OPERATIONAL GHG EMISSIONS - UNMITIGATED

Category	Year 2022	Year 2030		
	Phase 1	Phase 1	Future Phases	Total All Phases
	MT CO_2e per year			
Area	8	8	15	23
Energy	9,302	9,302	6,994	16,296
Mobile	16,682	15,033	9,552	24,585
Waste	910	910	753	1,663
Water	343	343	502	845
Amortized Construction	750	567	183	750
Total Project Emissions	**27,995**	**26,162**	**17,999**	**44,162**
Service Population (Residents + Employees[1])	*1,580*	*1,580*	*2,990*	*4,570*
Service Population Project Emissions	***17.7***	***16.6***	***6.0***	***9.7***
BAAQMD Threshold (MT CO_2e/SP)[2]	4.6	2.6	2.6	2.6
Above Threshold?	Yes	Yes	Yes	Yes

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 Scoping Plan Update 40% Reduction Goal by 2030.

Source: CalEEMod 2016(**Appendix AIR**).

As shown in **Table 3.7-2**, the GHG emissions resulting from operation of the Proposed Project would exceed the BAAQMD service population thresholds. Therefore, operational GHG emissions would be a **significant impact**. In addition to the project design features described above, implementation of **Mitigation Measure 3.7-1** would reduce GHG emissions during operation of the Proposed Project as shown in **Table 3.7-3**. **Mitigation Measure 3.7-1** would reduce operational GHG emissions from energy use by requiring a commitment to 100 percent renewable energy for the Proposed Project. Additional measures provided below would reduce GHG emissions by requiring use of energy-efficient lightning, electric water heaters, and low-flow appliances throughout the Proposed Project. Commitment to transportation **Mitigation Measure 3.13-4** would also reduce project GHG emissions by reducing the overall mobile trips generated by the Proposed Project, as described in **Section 3.13**.However, as shown in **Table 3.7-3**, GHG emissions would remain above acceptable levels after mitigation. This would be a **significant and unavoidable** impact.

TABLE 3.7-3
OPERATIONAL GHG EMISSIONS - MITIGATED

Category	Year 2022	Year 2030		
	Phase 1	Phase 1	Future Phases	Total All Phases
	MT CO_2e per year			
Area	8	8	15	23
Energy	2,588	2,588	1,113	3,701
Mobile	16,682	15,033	9,552	24,584
Waste	489	489	587	1,076
Water	289	289	423	712
Amortized Construction	750	567	183	750
Total Project Emissions	**20,806**	**18,973**	**11,873**	**30,846**
Service Population (Residents + Employees[1])	*1,580*	*1,580*	*2,990*	*4,570*
Service Population Project Emissions	***13.2***	***12.0***	***4.0***	***6.7***
BAAQMD Threshold (MT CO_2e/SP)[2]	4.6	2.6	2.6	2.6
Above Threshold?	Yes	Yes	Yes	Yes

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 Scoping Plan Update 40% Reduction Goal by 2030.

Source: CalEEMod 2016(**Appendix AIR**).

Plan Consistency

IMPACT 3.7-2	CONFLICT WITH AN APPLICABLE PLAN, POLICY OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GREENHOUSE GASES	
	Phase 1 (including Off-Site Workforce Housing and Infrastructure)	**Future Phases**
Significance Before Mitigation	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.7-1: Operational GHG Emissions	MM 3.7-1: Operational GHG Emissions
Significance After Mitigation	Significant and Unavoidable	Significant and Unavoidable

To date, Lake County has not adopted any specific GHG reduction strategies or climate action plans. However, in developing its service population GHG threshold, BAAQMD used the requirements of AB 32 in determining the level at which its threshold should be set. Consequently, since the Proposed Project

would result in a major increase in GHG emissions above BAAQMD thresholds, it would conflict the AB 32 Scoping Plan for reducing GHG emissions. This would be a **significant impact**.

Implementation of **Mitigation Measure 3.7-1** would reduce GHG emissions during operation Proposed Project operation. However, it is expected that GHG emissions would remain above acceptable levels after mitigation. This would be a **significant and unavoidable** impact.

3.7.5 MITIGATION MEASURES

MM 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:

Transportation Demand Management Measures

Implement Mitigation Measure 3.13-4 to develop and implement a transportation demand management plan to achieve a reduction in vehicle miles traveled as a result of the Proposed Project. At a minimum these measures will include:

- Dedicate 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.
- Use of an electric fleet for internal transport 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;
- Use of drought-tolerant and native vegetation

Residential Measures

- Provide net zero renewable electrical energy through installation of solar photovoltaic systems consistent with the 2019 Building Energy Efficiency Standards. This may be achieved through the use of rooftop solar or proposed on-site photovoltaic systems, or the equivalent renewable energy source. It is the Proposed Project's goal to generate enough renewable electrical energy for the project's needs and to store and distribute throughout the site. This requires extensive regulatory review; therefore, renewable energy systems shall be required to be installed within one year of final, non-appealable regulatory approvals. Occupancy certificates may be issued and final

subdivision maps may be recorded prior to issuance of these regulatory approvals provided that regulatory review is ongoing at the time.

- 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

- Provide net zero renewable electrical energy for the Project's commercial/resort uses through installation of solar photovoltaic systems. This may be achieved through the use of rooftop solar or proposed on-site photovoltaic systems, or the equivalent renewable energy source. It is the Project's goal to generate enough renewable electrical energy for the Project's needs and to store and distribute it throughout the site. This requires extensive regulatory review; therefore, renewable energy systems shall be required to be installed within one year of final, non-appealable regulatory approvals. Occupancy certificates may be issued and final subdivision maps may be recorded prior to issuance of these regulatory approvals provided that regulatory review is ongoing at the time.
- 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.

3.8 HAZARDS AND HAZARDOUS MATERIALS

3.8.1 INTRODUCTION

This section provides a description of hazardous conditions in the project area and describes the changes to those conditions that would result from implementation of the Proposed Project. Following an overview of the hazardous resources setting in **Section 3.8.2** and the relevant regulatory setting in **Section 3.8.3**, project-related impacts, including cumulative impacts, and recommended mitigation measures are presented in **Section 3.8.4** and **Section 3.8.5**, respectively.

3.8.2 ENVIRONMENTAL SETTING

Hazardous Materials

As defined in California Health and Safety Code Section 25501, "hazardous material" can be any of the following:

A) A substance or product for which the manufacturer or producer is required to prepare a material safety data sheet pursuant to the Hazardous Substances Information and Training Act (Chapter 2.5 (commencing with Section 6360) of Part 1 of Division 5 of the Labor Code) or pursuant to any applicable federal law or regulation.
B) A substance listed as a radioactive material in Appendix B of Part 30 (commencing with Section 30.1) of Title 10 of the Code of Federal Regulations, as maintained and updated by the Nuclear Regulatory Commission.
C) A substance listed pursuant to Title 49 of the Code of Federal Regulations.
D) A substance listed in Section 339 of Title 8 of the California Code of Regulations.
E) A material listed as a hazardous waste, as defined by Sections 25115, 25117, and 25316.

Regional Setting

The Guenoc Valley Site and Off-Site Infrastructure Improvement Areas are located within a rural portion of unincorporated Lake County and surrounded by open space, rural residential area, and agricultural lands.

As discussed in **Section 3.6.2**, there are ultramafic, ultrabasic and serpentine soils throughout the region (note that the term ultrabasic is often used interchangeably with ultramafic). These rock types and soils can contain naturally occurring asbestos (NOA; Agency for Toxic Substances and Disease Registry, 2015). Asbestos refers to a group of fibrous silicate minerals that are capable of separating into filaments. These asbestos filaments can be carcinogenic when inhaled and cause health issues, such as lung cancer and mesothelioma. Since 1986, the California Air Resources Board (CARB) has recognized asbestos as a Toxic Air Contaminant (OEHHA, 2010). NOA can became airborne from ultramafic and serpentine rocks from several different methods. These methods include wreathing, erosion, and the cracking/crushing of the rock. CARB regulates construction, grading, and other activities that can cause NOA to become airborne (Caltrans, 2019). Both the Guenoc Valley Site and Off-Site Infrastructure Improvement Areas have patches of ultramafic and serpentine rock/soil (LCAQMD, 2007), and some of the Guenoc Valley Site soils, including soils within the proposed Maha Farm community area, have tested positive for chrysotile and antigorite fibers (**Appendix GEOTECH**). These fibrous silicate minerals are part of the asbestos group.

Lake County has rich geothermal resources due to being located within the Clear Lake Volcanic Field geothermal region of California. Accordingly, there are geothermal wells located throughout Lake County to harvest the geothermal energy present. A geothermal well is designed to transfer heat from the ground in order to be utilized for other purposes, such as heating water. For example, a geothermal well can be utilized to increase and decrease the temperature within a building (Office of Energy Efficiency and Renewable Energy, 2017). While no geothermal wells have been detected within the Middletown Housing Site and the Off-Site Infrastructure Improvement Area boundaries, at least 23 plugged and abandoned shallow temperature gradient test wells are located within the Guenoc Valley Site (DOC, 2016). These abandoned test wells can be seen in **Figure 3.8-1**.

Guenoc Valley Site Setting

Past and Existing Uses

Historically, the Guenoc Valley Site has been used for agricultural activities since approximately the 1850's. The first agricultural uses were for wine grape cultivation and raising horses with wine production also occurring on the property (**Section 3.5.2**). The site remains mostly undeveloped with scattered vineyards planted mainly along the valley floors. Typical quantities of agricultural pesticides and fertilizers have been stored and utilized within the site, in additional to chemicals to maintain and operate the farming equipment, such as lubricants and diesel fuel.

Septic Tanks

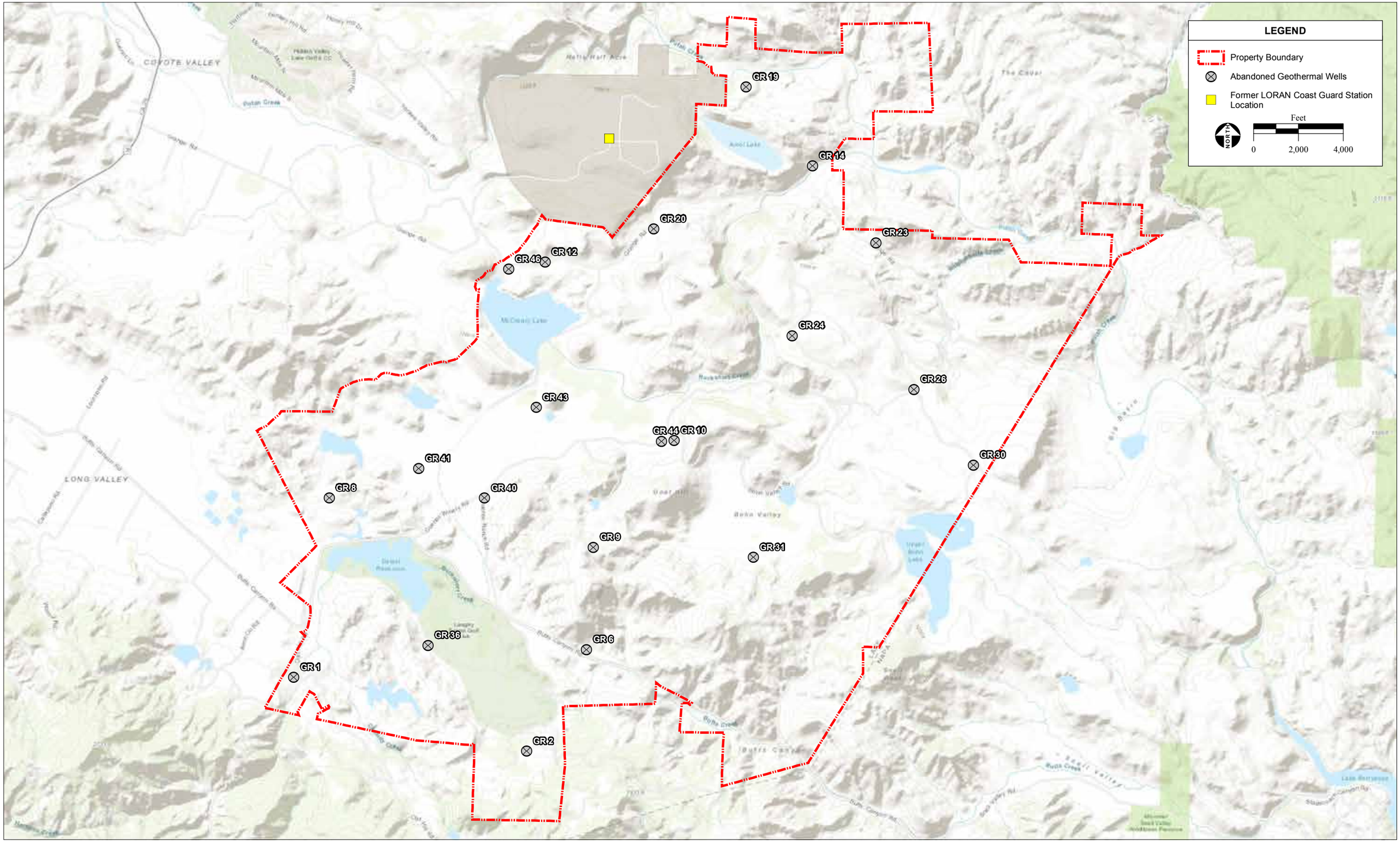
There are currently several tanks and leach fields within the Guenoc Valley Site, located within the proposed Back of House area along the existing entrance driveway to the property.

Adjacent Uses/Operations

The vicinity surrounding the Guenoc Valley Site is primarily undeveloped with small parcels of scattered agricultural lands, and no schools were identified within 0.25 miles of the site. The Langtry Estate & Vineyards, also known as Foley Family Farms Langtry, is the only business within close proximity to the Guenoc Valley Site. It is a winery with vineyards located within the exterior boundaries of the Guenoc Valley Site, but not part of the project site.

To the northwest of the Guenoc Valley Site, a former U.S. Coast Guard LORAN-C military station borders the site on the western border (**Figure 3.8-1**). The station was established in 1977 (Press Democrat, 2010) to become part of the radionavigation service for U.S. coastal waters and more. After the termination of the LORAN-C signal in 2010 due to it becoming an antiquated system of communication, the Middletown station was decommissioned the same year along with 28 stations countrywide (U.S. Coast Guard Navigation Center, 2012).

No private airstrips, public airports, or Airport Safety Hazard Areas have been identified in any airport land use plan within 2 miles of the project site. The nearest airport, 7-m Ranch Airport, is approximately 2.5 miles southwest of the Guenoc Valley Site.


LEGEND
Property Boundary
Abandoned Geothermal Wells
Former LORAN Coast Guard Station Location
Feet
NORTH
0
2,000
4,000
GR 19
GR 14
GR 20
GR 23
GR 48
GR 12
GR 24
GR 26
GR 43
GR 44
GR 10
GR 41
GR 30
GR 8
GR 40
GR 9
GR 31
GR 36
GR 6
GR 1
GR 2
COYOTE VALLEY
LONG VALLEY
Antelope Valley Lake Oaks G.C.
Antelope Valley Golf Club
Antelope Valley Golf Club
Antelope Valley Golf Club

Hazardous Material Records Review

Environmental Data Resources, Inc. (EDR) performed a search of standard environmental records or databases on hazardous materials that included both federal and State lists as well as local sources of information. This was utilized in order to determine if previously identified hazardous materials on or within 1 miles of the Guenoc Valley Site existed. Note that the EDR report included the property excluded from the project site, but located within the Guenoc Valley Site boundary (**Figure 2-1**); therefore, listings on this excluded property will appear as if within the project site boundary. The results of the record search are listed in **Table 3.8-1.** The databases indicated in the records may not necessarily indicate hazardous materials releases into the environment or violations, but may indicate hazardous materials handling, disposing and storing; registrations; or mitigations plans (more information about these databases can be found in **Appendix EDR**). Only the 22000 Butts Canyon Rd. records indicate a former release of hazardous materials within the Guenoc Valley Site. All other records are offsite. Additional details about the records in **Table 3.8-1** are given below by location, including details pertaining hazardous material releases or violations.

TABLE 3.8-1
ENVIRONMENTAL DATABASE LISTINGS FOR THE GUENOC VALLEY SITE WITHIN 1-MILE RADIUS

Address	Record Names	Distance to the Site (Mile)	Contaminant of Concern	Media Affected	Case Status	Databases
22000 Butts Canyon Rd.	Magoon Estate Limited, Guenoc Ranch, Langtry Farms LLC	Within project boundary	Gasoline	Aquifer used for drinking water supply	Case closed	LUST, SWEEPS UST, HIST UST, CUPA LISTINGS, RGA LUST, RCRA NonGen / NLR, HAZNET, HIST CORTESE, AST, FINDS, ECHO, CERS HAZ WASTE, CERS TANKS, CERS
21000 Butts Canyon Rd.	Guenoc Winery Inc.	Within project boundary, but not part of the project site	Not applicable	Not applicable	Not applicable	CERS HAZ WASTE, LDS, Cortese, CUPA Listing, ENF, WDS, CIWQS, CERS, FINDS
22627 Grange Rd. and E. Grange Rd./End of Grange Rd.	USCG Loran C Station, Loran C Station Middletown	0.190	Polychlorinated biphenyls	Soil	Not applicable	HAZNET, AST ENVIROSTOR, HIST UST
18975 Butts Canyon Rd.	Middletown Enterprises, Middletown Air Strip	0.374	Gasoline	Aquifer	Completed - case closed	LUST, SWEEPS UST, HIST UST, HIST CORTESE, CERS

Address	Record Names	Distance to the Site (Mile)	Contaminant of Concern	Media Affected	Case Status	Databases
19020 Butts Canyon Rd.	Geothermal, Inc, Butts Canyon Rd. Facility, Geothermal, Butts CA, Geothermal Industries	0.480	None specified	None specified	Open - closed/with monitoring	ENVIROSTOR, WMUDS/SWAT, HAZNET, NPDES, WDS, CIWQS, Toxic Pits, HIST CORTESE, SEMS-ARCHIVE, CORRACTS, RCRA-TSDF, RCRA, LDS, Cortese, ENF, CERS, HWP

Source: EDR Report, 2019 (**Appendix EDR**)

The following at the abbreviations for the databases: AST – Aboveground Storage Tank; CERS – California Environmental Reporting System; CIWQS – California Integrated Water Quality System; CORRACTS – Corrective Action Report; Cortese – Hazardous Waste & Substances Sites List; CUPA Listing – Certified Unified Program Agency Listing; ECHO – Enforcement & Compliance History Information; ENF – Enforcement Action Listing; FINDS – Facility Index System/Facility Registry System; HAZNET – Facility and Manifest Data; HIST AUTO – Historic Auto Stations; HIST CORTESE – Hazardous Waste & Substance Site List; HWP – EnviroStor Permitted Facilities Listing; LDS – Land Disposal Sites Listing; LUST – Leaking Underground Storage Tank; NLR – No Longer Regulated; NPDES – National Pollutant Discharge Elimination System; RCRA – Resource Conservation and Recovery Act; RCRA NonGen – Non Generators; RCRA-TSDF – RCRA Treatment, Storage and Disposal; RGA LUST – Recovered Government Archive Leaking Underground Storage Tank; SEMS-ARCHIVE – Superfund Enterprise Management System Archive; SWEEPS – Statewide Environmental Evaluation and Planning System; Toxic pit – Toxic Pits Cleanup Act Sites; UST – Active UST Facilities; WDS – Waste Discharge System; WMUDS/SWAT – Waste Management Unit Database

Guenoc Valley Site Records

22000 Butts Canyon Rd.: Magoon Estate Limited, Guenoc Ranch, Langtry Farms LLC (Langtry Vineyards winery)

The addresses of 21000 and 22000 Butts Canyon Road correspond to the same business, but this business has different locations and hence the different addresses. The location of this record is at the Langtry Vineyards winery operations at the proposed Back of House area within the Guenoc Valley Site. The site has records on numerous databases (**Table 3.8-1**). These databases primarily indicate registrations, permits and mitigation plans. The records indicate that hazardous materials are handled, stored, and generated at the site. The last violation was reported in 2018 for failure to keep the hazardous material business plan updated annually before the due date. This violation has occurred more than once in addition to other violations. However, none of the violations are related to a release of hazardous materials that has the potential to adversely affect use of the property. However, the LUST database indicates there was a hazardous release from a leaky underground storage tank that was readily addressed by the property owner/operators as indicated in agency communications. Gasoline was the contaminant of concern (COC)

and the underlying aquifer was the potential medial affected, but the case has been completed and closed since 2002 with no other records are available. An aboveground storage tank (AST) is also registered to the site, but no violations or contamination has been reported.

Nearby Records

21000 Butts Canyon Rd.: Guenoc Winery Inc. (Langtry Vineyards winery)

The addresses of 21000 and 22000 Butts Canyon Road correspond to the same business of Langtry LLC, but this business has different locations and hence the different addresses. The location of this listing is at the Langtry Vineyards winery site, which is not a part of the Guenoc Valley Site. This site was listed on numerous databases (**Table 3.8-1**). Cortese Listing indicates there were hazardous releases. There were several notice of violations (NOVs) administered by the Central Valley Regional Water Quality Control Board (CVRWQCB) over the years varying from failure to submit adequate documentation to adverse impacts to groundwater quality (CVRWQCB, 2006; CVRWQCB, 2007; EBA Engineering, 2018). Based on the observed groundwater impacts, a Cease and Desist Order was issued by the CVRWQCB in 2006 in response to winery wastewater being discharged into unlined evaporation/percolation ponds. In response, a surface impoundment was installed in order to reduce the potential for co-mingling of winery wastewater with groundwater. While the case is still open, as of 2018, groundwater monitoring has indicated that there appears to be no leaking from the surface impoundment, water quality characteristics of three of the four monitoring wells appear to represent background conditions, and water quality has improved in the fourth monitoring well. For a further discussion of the water quality issues associated with this record and its possible implications, refer to **Section 3.9, Hydrology and Water Quality**. The improved groundwater quality associated with the installation of the surface impoundment indicates that the current operation of the winery wastewater storage system does not adversely impact future uses within the Guenoc Valley Site Setting.

22627 Grange Rd. and E. Grange Rd./End of Grange Rd.: US Coast Guard Loran Station

As described above, a former U.S. Coast Guard LORAN-C military station borders the site on the western border (**Figure 3.8-1**). The HAZ database indicated an unspecified organic liquid mixture and unspecified oil-containing waste associated with the station and indicates the presence of a hazardous waste generator. Furthermore, AST and HIST UST indicated an aboveground storage tank and historical underground storage tank registered to the station. These two listings relate to registered presence of hazardous materials and are not related to non-compliant release of hazardous materials into the environment. The site is listed on ENVIROSTOR as having been assessed for potential historical soil contamination related to polychlorinated biphenyls. The results indicated no further action was necessary and the case was closed. Accordingly, this listing does not indicate a hazardous materials release with the potential to adversely affect use of the property.

18975 Butts Canyon Rd.: Middletown Enterprise and Middletown Air Strip

Middletown Enterprises and Middletown Air Strip were both determined to pertain to the Middletown Air Strip. Middletown Air Strip, despite what the name suggests, refers to a road rather than an actual airstrip. Two LUST records indicates leaky underground storage tanks with gasoline possibly affecting aquifer water. However, both of these incidents of hazardous material releases are closed cases and no further action is required.

19020 Butts Canyon Rd.: Geothermal Inc., Butts Canyon Rd. Facility

A geothermal exploration company, Geothermal Inc., owned and operated a 40-acre landfill facility approximately 0.5 mile west of the Guenoc Valley Site, which later transferred ownership to Pacific Gas and Electric Company (PG&E). The facility accepted liquid and solid wastes produced by geothermal exploration, storing waste in seven unlined surface impoundment ponds that operated from 1976 to 1987. On June 22, 1984, the Regional Board issued a Cease and Desist requiring Geothermal Inc. to retrofit all surface impoundment ponds (California Water Boards, 2019a). Groundwater analyses from monitoring wells indicated that the wastes affected groundwater below the landfill with inorganic chemicals of concern including boron, sulfate, chloride, and total dissolved solids. PG&E conducted closure activities, including capping the landfill and planting eucalyptus trees to control groundwater levels, from 2003 to 2006. A monitoring report in 2012 indicated that during high precipitation events the groundwater might encroach within 5 feet of the waste within the capped landfill (California Water Boards, 2019b). As of December 30, 2014, the status of this landfill is listed as "Open - closed with monitoring" with semi-annual water quality reports being sent to the CVRWQCB[1]. A CVRWQCB tentative order that would update the plan for waste discharge requirements and a monitoring and reporting program for the former landfill site is currently awaiting approval (California Water Boards, 2019c). However, as noted in the tentative order, a Plume Delineation Report was submitted to the CVRWQCB in June of 2017. According to the report, the impacts to groundwater from the landfill is concentrated in the immediate vicinity of the closed landfill and the plume has not grown in over two decades(California Water Boards, 2019b). The plume is therefore approximately 0.75 mile west from the closest edge of the Guenoc Valley Site project boundary. The plume is currently contained within the landfill property and ongoing monitoring and mitigation actions are required by the CVRWQCB. For an additional discussion of water quality issues related to this groundwater, please refer **Section 3.9, Hydrology and Water Quality**.

Middletown Housing Site Setting

Past and Existing Uses

Currently the Middletown Housing Site is undeveloped and surrounded primarily by residential and commercial developments with open-space north of the site and the stream, Dry Creek, bordering the site's eastern boundary. No previous or current land use is known for the project.

Adjacent Uses/Operations

There are three schools located within 0.25 miles of the Middletown Housing Site:

- Minnie Cannon Elementary School is located at 20931 Big Canyon Rd., approximately 0.15 miles northeast of the site.
- Middletown High School is located at 20932 Big Canyon Rd., approximately 0.2 miles east of the site.
- Loconoma Valley High School is located at 20932 Big Canyon Rd., approximately 0.2 miles east of the site.

[1] The semi-annual monitoring reports are located under the Site Maps/Documents tab here: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=L10005342355

Aside from the schools listed above, there are no major operations and adjacent uses in terms of hazardous materials as the Middletown Housing Site is located within a rural area with primarily residential units surrounding it.

No private airstrips, public airports, or Airport Safety Hazard Areas have been identified in any airport land use plan within two miles of the project site. The near airport to the project site is the privately owned 7-m Ranch Airport that is approximately 3.8 miles southeast of the Middletown Housing Site.

Hazardous Material Records Review

EDR performed a search of standard environmental records or databases on hazardous materials that included both federal and State lists as well as local sources of information. This was utilized in order to determine if previously identified hazardous materials on or within 1 mile of the project site existed. The results of the record search are listed in **Table 3.8-2**. The databases indicated in the records may not necessarily indicate hazardous materials releases into the environment or violations, but may indicate hazardous materials handling, disposing and storing; registrations; or mitigations plans (more information about these databases can be found in **Appendix EDR**). None of the records listed within **Table 3.8-2** are within the boundary of the Middletown Housing Site, pertain to the Cortese List, or indicate a record with a hazardous material release with the potential to adversely affect use of the property. Therefore, only records within approximately 0.25 mile of the site will be discussed as records further than this are deemed to not pose a significant environmental risk.

TABLE 3.8-2
ENVIRONMENTAL DATABASE LISTINGS FOR THE MIDDLETOWN HOUSING SITE

Address	Record Names	Distance to the Site (Mile)	Contaminant of Concern	Media Affected	Case Status	Databases
21095 State Highway 175	South Lake County Fire Protection District, So Lake Co Fire Middletown Station 60, CA Dept. of Transp, Southlake Co Fire Protection District Middletown	0.111	Gasoline	Soil	Completed – case closed	RCRA NonGen / NLR, CERS HAZ WASTE, CUPA Listings, CERS, LUST, HIST CORTESE, CERS, AST
21071 Barnes St.	Middletown Automotive	0.112	Not applicable	Not applicable	Not applicable	CUPA Listings
Main & Steward Street	Pacific Bell	0.136	Not applicable	Not applicable	Not applicable	RCRA NonGen / NLR
20771 & 20931 Big Canyon Rd.	New Minnie Cannon Elementary	0.145	Arsenic, Arsenic Mercury, Naturally Occurring Asbestos, Nickel	Not applicable	No further action	ENVIROSTOR, SCH

Address	Record Names	Distance to the Site (Mile)	Contaminant of Concern	Media Affected	Case Status	Databases
20882 Big Canyon Rd.	Middletown Usd – Maintenance Grounds	0.175	Not applicable	Not applicable	Not applicable	CERS HAZ WASTE, CERS
20932 Big Canyon Rd.	Middletown USD-MHS-M, Middletown Unified School	0.178	Not applicable	Not applicable	Not applicable	AST, CUPA Listings, CERS HAZ WASTE, CERS TANKS, CERS
21347 Highway 175	AT&T CORP-TD061-MIDD	0.195	Not applicable	Not applicable	Not applicable	CUPA Listings
21137 Calistoga Rd.	George's Union 76	0.248	Gasoline	Aquifer	Completed - case closed	SWEEPS UST, HIST UST, LUST, HIST CORTESE,
21157 Calistoga Street	John Kenny Antiques	0.254	Waste Oil / Motor / Hydraulic / Lubricating	Aquifer	Completed - case closed	LUST, CERS
21010 Highway 29	Jolly Kone Restaurant	0.267	Not reported	Not reported	Completed - case closed	LUST, CERS
15784 Douglas St.	Area #1 Road Yard	0.35	Diesel	Soil	Completed - case closed	LUST, HIST CORTESE, CERS
21218 Calistoga Rd.	Fire Station #60	0.38	Gasoline	Soil	Completed - case closed	LUST, CUPA Listings, HIST CORTESE, CERS
21268 Calistoga St.	Redbud Community Hos-Middletown Clinic	0.421	None specified	None specified	No action required	ENVIROSTOR
	Source: EDR Report, 2019 (**Appendix EDR**) The following at the abbreviations for the databases: AST – Aboveground Storage Tank; CERS – California Environmental Reporting System; CUPA Listing – Certified Unified Program Agency Listing; HIST CORTESE – Hazardous Waste & Substance Site List; LUST – Leaking Underground Storage Tank; NLR – No Longer Regulated; RCRA – Resource Conservation and Recovery Act; RCRA NonGen – Non Generators; SHC – School Property Evaluation Program; SWEEPS – Statewide Environmental Evaluation and Planning System; UST – Active UST Facilities					

21095 State Highway: South Lake County Fire Protection District, So Lake Co Fire Middletown Station 60, CA Dept. of Transp, Southlake Co Fire Protection District Middletown

The records pertaining South Lake County Fire District indicate an aboveground storage tank being onsite, and minor citations were cited for the chemical storage facilities onsite, such as not properly reporting

oxygen tanks in the inventory and not properly processing used oil filters. Ultimately, the South Lake County Fire District returned to compliance for each minor violation. No hazardous material releases were reported. The CA Dept. of Transp record reported a leaky underground storage tank, but the cleanup has been completed and the case closed since 1995 with no further action required.

21071 Barnes St.: Middletown Automotive

Middletown Automotive has a CUPA designation, but no records of hazardous materials releases were reported from any databases.

Main & Steward Street: Pacific Bell

Pacific Bell was once recorded as a hazardous material listing, but it is no longer designated as such according to its NRL (No Longer Regulated) listing. No other database records were found to indicate a hazardous material release or violations.

20771 & 20931 Big Canyon Rd.: New Minnie Cannon Elementary

The New Minnie Cannon Elementary record lists arsenic, arsenic mercury, NOA and nickel as COCs, but these COCs were determined to be a result of natural geological formations at this site and were below health screen levels (Lee and Harris, 2010). Consequently, “no further action” has been listed for New Minnie Cannon Elementary since 2010.

20882 Big Canyon Rd.: Middletown Usd – Maintenance-Grounds

Records indicate that this is a hazardous waste generate and has chemical storage facilities. However, no databases indicated a hazardous material release or violations.

20932 Big Canyon Rd.: Middletown USD-MHS-M, Middletown Unified School

Records indicates the presence of an AST and minor violations have been cited for improper storage and operations at the chemical storage facilities. However, compliance has been returned to since 2016. No other records indicate a hazardous material release or further violations.

21347 Highway 175: AT&T CORP-TD061-MIDD

AT&T CORP-TD061-MIDD has a CUPA designation and no records of hazardous materials releases were reported.

21137 Calistoga Rd.: George’s Union 76

Georges Union 76 has a LUST record that indicates a leak in the underground storage tank was discovered in 1993 with gasoline as the COC and the aquifer as the potential media affected. However, the cleanup was been completed and the case closed since 2002. Furthermore, this storage tank is now listed as a historical underground storage tank and thus indicates no further use, but records did not indicate if it has been removed or not.

Off-Site Infrastructure Improvement Areas Setting

Past and Existing Uses

Under the Proposed Project, the optional off-site well would be located in a rural area and the pipeline would extend along Butts Canyon Road. The majority of the property is relatively flat undeveloped grassland and is currently used for pasture. The well property also includes one house, shed, dirt road, and an irrigation pond.

Adjacent Uses/Operations

The vicinity surrounding the Off-Site Infrastructure Improvement Areas is primarily undeveloped with small parcels of scattered agricultural lands. One residence is adjacent to the southeast corner of the well property and the Middletown Mansion event center is located to the north. One school was identified within 0.25 mile of the project boundary to the west: Middletown Christian School, located at 20800 CA-29, approximately 0.23 mile away from the well site boundary. No private airstrips, public airports, or Airport Safety Hazard Areas have been identified in any airport land use plan within 2 miles of the Off-Site Infrastructure Improvements Areas. The nearest airport to the Off-Site Infrastructure Improvements Areas is the privately owned 7-m Ranch Airport that is more than 2 miles away.

Hazardous Material Records Review

EDR performed a search of standard environmental records or databases on hazardous materials that included both federal and State lists as well as local sources of information. This was utilized in order to determine if previously identified hazardous materials on or within 1 mile of the Off-Site Infrastructure Improvement Areas. The results of the record search are listed in **Table 3.8-3**. The databases indicated in the records may not necessarily indicate hazardous materials releases into the environment or violations, but may indicate hazardous materials handling, disposing and storing; registrations; or mitigations plans (more information about these databases can be found in **Appendix EDR**). Of the record results listed in **Table 3.8-3**, two are within the boundary of the project site but neither of them pertain to the Cortese List nor indicate hazardous materials release. The other records primarily do not indicate hazardous materials releases or active violations. The nearest record indicating an active status is Butts Canyon Rd. Facility, which is a former dump site associated with Geothermal Inc. (discussed more in the Guenoc Valley Site above, and **Section 3.9**, **Hydrology and Water Quality**). Only records within approximately 0.25 mile of the site will be discussed as records further than this are deemed to not pose a significant environmental risk.

TABLE 3.8-3
ENVIRONMENTAL DATABASE LISTINGS FOR THE OFF-SITE INFRASTRUCTURE IMPROVEMENT AREAS

Address	Record Names	Distance to the Site (Mile)	Contaminant of Concern	Media Affected	Case Status	Databases
11710 Butts Canyon Rd.	Middletown School District	Onsite/0.001	Gasoline	Soil	Case closed	LUST, CERS, HIST CORTESE
19020 Butts Canyon Rd.	Geothermal, Inc, Butts Canyon Rd. Facility, Geothermal,	Adjacent to	None specified	None specified	Open - closed/with monitoring	ENVIROSTOR, WMUDS/SWAT, HAZNET, NPDES, WDS, CIWQS, Toxic

Address	Record Names	Distance to the Site (Mile)	Contaminant of Concern	Media Affected	Case Status	Databases
	Butts CA, Geothermal Industries					Pits, HIST CORTESE, SEMS-ARCHIVE, CORRACTS, RCRA-TSDF, RCRA, LDS, Cortese, ENF, CERS, HWP, CHMIRS
17525 Butts Canyon Rd.	Up Ranch	0.011	Not applicable	Not applicable	Active	SWEEPS UST, HIST UST
17110 Butts Canyon Rd.	Middletown Usd Bus Yard, Middletown Unified School District	0.013	Not applicable	Not applicable	Active	AST, CERS HAZ WASTE, CERS TANKS, CERS, SWEEPS UST, CUPA Listings
19355 S Highway 29	Burns Enterprises, Middletown Dump Site	0.057	Not applicable	Not applicable	Closed	RCRA NonGen / NLR, CERS HAZ WASTE, CUPA Listings, CERS, SWF/LF
21010 Highway 29	Jolly Kone Restaurant	0.432	Not reported	Not reported	Completed –case closed	LUST, CERS
21268 Calistoga St.	Redbud Community Hos-Middletown Clinic	0.421	None specified	None specified	No action required	ENVIROSTOR
20771 & 20931 Big Canyon Rd.	New Minnie Cannon Elementary	0.509	Arsenic, Mercury	Not applicable	No further action	ENVIROSTOR, SCH

Source: EDR Report, 2019 (**Appendix EDR**)

The following at the abbreviations for the databases: AST – Aboveground Storage Tank; CERS – California Environmental Reporting System; CHMIRS – Hazardous Material Incident Report System; CIWQS – California Integrated Water Quality System; CORRACTS – Corrective Action Report; Cortese – Hazardous Waste & Substances Sites List; CUPA Listing – Certified Unified Program Agency Listing; ENF – Enforcement Action Listing; HAZNET – Facility and Manifest Data; HIST CORTESE – Hazardous Waste & Substance Site List; HWP – EnviroStor Permitted Facilities Listing; LDS – Land Disposal Sites Listing; LUST – Leaking Underground Storage Tank; NLR – No Longer Regulated; NPDES – National Pollutant Discharge Elimination System; RCRA – Resource Conservation and Recovery Act; RCRA NonGen – Non Generators; RCRA-TSDF – RCRA Treatment, Storage and Disposal; SCH – School Property Evaluation Program; SEMS-ARCHIVE – Superfund Enterprise Management System Archive; SWEEPS – Statewide Environmental Evaluation and Planning System; SWF/LF – Solid Waste Information System; Toxic pit – Toxic Pits Cleanup Act Sites; WDS – Waste Discharge System; WMUDS/SWAT – Waste Management Unit Database

19020 Butts Canyon Rd.: Geothermal Inc., Butts Canyon Rd. Facility

As discussed under the Guenoc Valley Site, this record pertains to the former geothermal exploration company, Geothermal Inc., and the landfill it formerly operated that accepted liquid and solid wastes produced by geothermal exploration (see above for a detailed discussion). This record has varying distances from the optional Off-Site Infrastructure Improvement Areas. The boundary of this former landfill is adjacent to proposed optional pipeline and approximately 2.56 miles from the well site boundary. For a detailed discussion of this record, refer to the discussion above under the records search for the Guenoc Valley Site.

11710 Butts Canyon Rd.: Middletown School District

The Middletown School District is reported to have had hazardous material release from a leak from an underground storage tank in 1993. Gasoline was reported to be the COC and the potential media affected was soil. However, the case was closed in 1995 and no other incidents have been reported.

19020 Butts Canyon Rd.: Not reported

A names record that is listed in the database CHMIRS. There are no reports of releases of hazardous materials or active violations.

18975 Butts Canyon Rd.: Middletown Enterprises, Middletown Air Strip

Please see the Guenoc Valley Site above for the discussion of these records.

17525 Butts Canyon Rd.: Up Ranch

The UP Ranch record indicates a historical underground storage tank (HIS UST), but whether this tank is still present or removed is not reported.

17110 Butts Canyon Rd.: Middletown Usd Bus Yard, Middletown Unified School District

The records indicate AST(s) at this site that stored petroleum. The records did not indicate a release of hazardous materials or active violations.

19355 S Highway 29: Burns Enterprises, Middletown Dump Site

The Burns Enterprise is a solid waste disposal site that is a non-hazardous waste generator. Minor violations for failure to label hazardous material containers properly were reported in 2017, but the site did return to compliance the same year. No other violations have been reported since.

Wildfire

The Guenoc Valley Site, Middletown Housing Site, and the Off-Site Infrastructure Improvement Areas are all located within Fire Hazard Severity Zones by the California Department of Forestry and Fire Protection Fire Hazard Severity Zone map (Cal Fire, n.d.). The Guenoc Valley Site is classified as moderate, high, and very high fire hazard severity; the Middletown Housing Site is classified as moderate; and the Off-Site Infrastructure Improvement Areas are classified as moderate. A Fire Mitigation Plan was prepared for the Guenoc Valley Site that outlines development standards, sustainable fire prevention techniques, and best

practices for the protection and management of the landscape. An analysis of potential exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires is included in **Section 3.16**, **Wildfire**.

3.8.3 REGULATORY CONTEXT

Federal

Several federal agencies regulate hazardous materials. These include the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (DOT). Applicable federal regulations are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR). Title 40 CFR addresses emergency planning and notification, hazardous material management plans, soil and water pollution remediation and reporting, and community right-to-know reporting. Any investigation and/or cleanup of soil contamination by the applicant would be subject to standards set forth in Title 40 CFR. Title 49 CFR applies to motor carriers that transport hazardous materials and includes safety regulations including proper handling and identification of the materials as hazardous by placards.

Hazardous Materials Handling and Transport

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous wastes is EPA, under the authority of the Resource Conservation and Recovery Act (RCRA). RCRA is an all-encompassing federal regulatory program for hazardous substances that is administered by EPA. In 1992, the California Department of Toxic Substances Control (DTSC) received authorization from the EPA to implement RCRA Subtitle C requirements and the associated regulations. Receiving authorization from EPA means that DTSC is the primary authority enforcing the RCRA hazardous waste requirements in California. Under RCRA, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous wastes. The Hazardous and Solid Waste Amendments of 1984, amended the RCRA to prohibit the use of certain techniques to dispose of various hazardous substances.

The Federal Emergency Planning and Community Right to Know Act of 1986 (EPCRA) 42 U.S. Code of Regulations (U.S.C.) Sections 11001-11050, is Title III of CERCLA, which is commonly referred to as “Superfund” and is administered by EPA. EPCRA imposes hazardous-materials planning requirements to help protect local communities in the event of accidental release of hazardous substances. EPA has delegated RCRA authority to the State of California. This authority is administered by the DTSC.

CERCLA created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified.

The law authorizes two kinds of response actions: Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response. Long-term remedial response actions, that permanently and significantly reduce the dangers associated with releases or threats of releases of

hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on EPA's National Priorities List (NPL).

CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the NPL.

Worker Safety Requirements

OSHA is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementing workplace training, exposure limits, and safety procedures for the handling of hazardous substances and hazardous materials (as well as other hazards). OSHA also establishes criteria by which each state can implement its own health and safety program.

Regulation of Polychlorinated Biphenyls (PCBs) and Lead-Based Paint

The Toxic Substances Control Act (TSCA) of 1976 (Title 15 U.S.C. Section 2605) banned the manufacture, processing, distribution, and use of polychlorinated biphenyls (PCBs) in totally enclosed systems. PCBs are considered hazardous materials because of their toxicity. Research has shown that PCBs can cause cancer in animals and have effects on the immune, reproductive, nervous, and endocrine systems. Furthermore, studies have shown evidence of similar effects in humans (USEPA, 2019b). The EPA Region 9 PCB Program regulates remediation of PCBs in several states, including California. Title 40 CFR Section 761.30 (a)(1)(vi)(A) states that all owners of electrical transformers containing PCBs must register their transformers with EPA. Specified electrical equipment manufactured between July 1, 1978, and July 1, 1998, that does not contain PCBs must be marked by the manufacturer with the statement “No PCBs” (Section 761.40[g]). Transformers and other items manufactured before July 1, 1978, and containing PCBs must be marked as such.

The Residential Lead-Based Paint Hazard Reduction Act of 1992 amended the TSCA to include Title IV, Lead Exposure Reduction. EPA regulates building renovation activities that could create lead-based paint hazards in target housing and child-occupied facilities and has established standards for lead-based paint hazards and lead dust cleanup levels in most pre-1978 housing and child-occupied facilities.

Asbestos

The federal Clean Air Act (CAA) was enacted in 1970. The CAA required EPA to establish primary and secondary national ambient air quality standards. The CAA also required each state to prepare an air quality control plan, referred to as a State Implementation Plan. Section 112 of the CAA defines “hazardous air pollutants” and sets threshold limits. Asbestos is a federal hazardous air pollutant (40 CFR Part 61, Subpart M [National Emission Standards for Hazardous Air Pollutants, Asbestos]).

Clean Water Act

Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program is administered by the State Water Resources Control Board and is discussed in more detail in **Section 3.9, Hydrology and Water Quality**. The NPDES permitting system covers various

discharges, including discharges of groundwater to surface waters. A dewatering permit is needed should groundwater be encountered during construction. Similar to other discharge permits, there are general permits for groundwater discharge and site-specific permits with Waste Discharge Requirements.

State

California Building Code and California Fire Code

Prior to issuance of building permits and during occupancy of the Proposed Project, the Lake County Building Division and Fire Department would be responsible for reviewing plans for facilities proposing to use hazardous materials to ensure that applicable California Building Code and California Fire Code standards are included in project design. These standards address, among other elements, proper storage and secondary containment for hazardous materials and fire-safe construction and materials. Use of appropriate design features would help reduce the potential for accidental releases of hazardous materials that could affect occupants or require emergency response services.

Hazardous Materials Handling

The California Environmental Protection Agency (Cal/EPA) and the Governor's Office of Emergency Services (Cal OES) establish regulations governing the use of hazardous materials in California. Within Cal/EPA, DTSC has primary regulatory responsibility for hazardous waste management. Enforcement of regulations can be delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Law. Along with DTSC, the Regional Water Quality Control Board (RWQCB) is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. The project site is within the jurisdiction of the CVRWQCB. The RWQCB's regulations are contained in Title 27 of the California Code of Regulations (CCR). DTSC, the RWQCB, and/or a local agency or a designated Certified Unified Program Agency (CUPA) typically oversee investigation and cleanup of contaminated sites.

In January 1996, Cal/EPA adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The six program elements are hazardous waste generators and hazardous waste on-site treatment, underground storage tanks, above-ground storage tanks, hazardous material release response plans and inventories, risk management and prevention programs, and California Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by the CUPA. The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction. In Lake County, the Lake County Division of Environmental Health is designated as the CUPA.

The California Highway Patrol (CHP) and California State Department of Transportation (Caltrans) are the enforcement agencies for hazardous materials transportation regulations. Hazardous materials and waste transporters are responsible for complying with all applicable packaging, labeling, and shipping regulations. California Vehicle Code Section 31303 regulates the transport of hazardous materials.

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires preparation of hazardous materials business plans and disclosure of hazardous materials inventories. A business plan includes an inventory of hazardous materials handled, facility floor plans

showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for managing hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state. Local agencies administer these laws and regulations.

Worker Safety Requirements

California OSHA (Cal OSHA) has primary responsibility for developing and enforcing workplace safety regulations within California. Cal OSHA regulations pertaining to the use of hazardous materials in the workplace (Title 8 CCR) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans. Cal OSHA enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparing health and safety plans to protect workers and employees at hazardous materials sites. The hazard communication program requires that employers make Material Safety Data Sheets (MSDSs) available to employees and document employee information and training programs.

Emergency Response to Hazardous Materials Incidents

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private agencies. Response to hazardous materials incidents is one part of this plan. The plan is administered by the state Cal OES, which coordinates the responses of other agencies including Cal/EPA, CHP, California Department of Fish and Wildlife (CDFW), and the RWQCB.

Hazardous Materials Transport

As noted above, the federal DOT regulates transportation of hazardous materials between states. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are CHP and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers for transportation of hazardous waste on public roads.

Title 6 CFR regulates the transport of hazardous materials in California. Employers must provide for and require that their drivers participate in a driver testing and training program to include an actual road test for each new driver employed.

California Accidental Release Prevention (Cal ARP) Program

The goal of the California Accidental Release Prevention (Cal ARP) Program is to reduce the likelihood and severity of consequences of extremely hazardous materials releases. Any business that handles regulated substances (chemicals that pose a major threat to public health and safety or the environment because they are highly toxic, flammable, or explosive, including ammonia, chlorine gas, hydrogen, nitric acid, and propane) is required to prepare a risk management plan. A risk management plan describes current and past practices and releases, the impact of the releases may be, and the business does or plans to do to prevent releases and minimize their impact if they occur.

Government Code Section 65962.5 (Cortese List)

The provisions of Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the legislator who authored the legislation that enacted it). The Cortese List is a planning document used by state and local agencies to comply with the California Environmental Quality Act (CEQA) requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires Cal/EPA to develop an updated Cortese List annually, at a minimum. DTSC is responsible for a portion of the information contained in the Cortese List. Other California state and local government agencies are required to provide additional hazardous material release information for the Cortese List.

Multi-Hazard Mitigation Plan

The federal Disaster Mitigation Act required all state emergency services agencies to issue Multi-Hazard Mitigation Plan by November 1, 2004 in order for the states to receive federal grant funds for disaster assistance and mitigation under the Stafford Act (44 CFR 201.4). These plans must be updated every three years. The overall intent of the Multi-Hazard Mitigation Plan is to reduce or prevent injury and damage from natural hazards, such as earthquakes, wildfires, and flooding. California's most recent California Multi-Hazard Mitigation Plan was approved by FEMA on September 28, 2018.

Asbestos Abatement

The California Air Resources Board (CARB) Asbestos Program oversees implementation of and compliance with the National Emission Standard for Hazardous Air Pollutants (NESHAP) for asbestos, and investigates all related complaints, as specified by California Health and Safety Code Section 39658 (b)(1). Demolition and renovation notification through CARB is required within Lake County since PCAPCD does not have an asbestos program in place. CARB reviews and investigates each notification, and if it is determined that a structure contains ACMs, demolition or renovation of the structure must be compliant with NESHAP standards for demolition and renovation (40 CFR 61.145).

Asbestos Airborne Toxic Control Measures

CARB has adopted two Airborne Toxic Control Measures (ATCMs) for naturally-occurring asbestos: Surfacing Applications, and Construction, Grading, Quarrying, and Surface Mining Operations. The ATCM for Surfacing Application prohibits the sale or use of restricted materials for unpaved surfacing that have asbestos above 0.25 percent. This ATCM applies to any person who sells, supplies, offers for sale or supply, transports, or applies restricted material, ultramafic rock and serpentine rock. For the Construction, Grading, Quarrying, and Surface Mining Operations ATCM, the ATCM requires that the best available dust mitigations measures should be used in areas with NOA in addition to the other requirements set in the ATCM. This ATCM is applicable to road construction and maintenance, construction and grading operations, and quarries and surface mines that are occurring in areas with NOA. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally-occurring asbestos on the site. The ATCM also applies if ultramafic rock, serpentine, or asbestos is found during operations or other activities.

Lead-Based Paint

Title 17, Division 1, Chapter 8, of the CCR requires that work on any structure built prior to January 1, 1978 use lead-safe practices. Such practices include containment of the work area and cleaning of the work area after completion of the Proposed Project. This section also covers accreditation of training providers and certification of individuals to perform lead abatement. Cal OSHA provides construction and general industry lead standards within Title 8 of the CCR, which contains occupational health requirements for lead abatement. DTSC regulations for hazardous waste are provided within Division 4.5, Title 22 of the CCR. Demolition or renovation of structures with lead-based paint would be required to comply with procedures within Title 22.

Local

Lake County

The Lake County Division of Environmental Health is the CUPA for all of Lake County. This Division manages the permitting and inspection of hazardous waste generators, hazardous waste on-site treatment, aboveground storage tanks, underground storage tanks, and hazardous materials handlers in accordance with the California Health and Safety Code. From businesses, the Lake County CUPA requires and inspects business plans for hazardous material release response plans and inventories. Furthermore, County offers assistance with different types of disasters and accidents that may pose a threat to public health and safety, including hazardous material spills.

Lake County Local Hazard Mitigation Plan

Lake County is responsible for maintaining the County's Local Hazard Mitigation Plan (LHMP). The most recent version of the LHMP was updated in 2018. Preparation of the LHMP included a risk assessment to determine the County's vulnerability to hazards, which influenced the development of goals and mitigation actions.

General Plan

The General Plan, Health and Safety Element addresses the hazardous materials and emergency response planning for the County. Applicable general plan policies related to the Proposed Project are listed below. **Appendix GPCT** analyzes the Proposed Project's consistency with the General Plan pursuant to the CEQA Guidelines Section 15125(d); however, the determination of the Proposed Projects consistency with the General Plan ultimately rests with the Lake County Board of Supervisors.

Policy HS-1.1: The County shall permit development only in areas where the potential danger to the health and safety of people can be mitigated to an acceptable level.

Policy HS-1.3: The County shall ensure all buildings for human habitation are designed in compliance with the Uniform Building Code and other requirements based on risk (e.g., seismic hazards, flooding), type of occupancy, and location (e.g., floodplain, fault).

Policy HS-1.6: The County shall continue to implement its comprehensive grading ordinance in order to address dust mitigation including special mitigation for development within Naturally Occurring Asbestos areas.

Policy HS-3.10: The County shall require dust-suppression measures for grading activities, and asbestos dust hazard mitigation plans for projects located in Naturally Occurring Asbestos Areas.

Policy HS-3.11: The County shall require that all projects requiring a grading permit or a building permit that would result in earth disturbance, in areas likely to contain naturally occurring asbestos, utilize approved asbestos dust mitigation measures as required by the LCAQMD, CARB and the Lake County Community Development Department

Policy HS-4.2: The County shall ensure that development within the airport approach and departure zones are in compliance with Part 77 of the Federal Aviation Administration Regulations (FAA regulations that address objects affecting navigable airspace).

Policy HS-5.1: The County shall strive to ensure that hazardous materials are used, transported, and disposed within the County in a safe manner and in compliance with local, state, and federal safety standards. Investigations and enforcement action shall be taken as necessary for any illegal hazardous waste disposal or other violations of federal, state, or local hazardous materials laws and regulations.

Policy HS-5.2: The County shall work with Caltrans and the Highway Patrol to ensure that hazardous materials transported within the County are restricted to routes that have been designated for such transport.

Policy HS-5.5: The County shall prevent incompatible land uses within close proximity to hazardous waste properties.

Policy HS-5.6: The County shall review new development proposals to ensure that soils, surface water and groundwater are protected from contamination.

Policy HS-5.11: The County shall require that developers have Phase I or Phase II environmental site assessments performed during the design phase on sites known to contain hazardous materials or which had previously been utilized for the handling or storage of hazardous materials.

Policy GR-2.4: The County will encourage the development and testing of new technologies to further reduce environmental impacts. Additionally, Naturally Occurring Asbestos shall be avoided where feasible, or otherwise mitigated as necessary to minimize the release of asbestos dust.

Policy PFS-5.4: The County shall require the proper disposal and recycling of hazardous materials and should investigate hazardous waste disposal needs for anticipated geothermal and agricultural toxic wastes.

Policy T-3.2: The County shall promote compatible land use planning in areas surrounding airports. Land uses involving the concentration of people and/or hazardous materials should not be developed in the approach pattern. Federal and state regulations governing operations and land use restrictions related to airports shall be supported by the County.

3.8.4 IMPACTS

Method of Analysis

The presence of hazardous materials or other safety hazards is a part of everyday life that could affect residents, workers, and visitors within and adjacent to the project site. Some of these activities can pose a risk of exposure to people or the environment due to accidental releases, such as spills, or as a result of soil or groundwater contamination related to past uses. Transportation of hazardous materials through or near the project areas could also pose hazards.

Potential hazardous materials and hazards impacts were analyzed through review and evaluation of available documents. The impact analysis focuses on potential effects of hazardous materials or waste associated with current and past conditions at the project site, as well as nearby properties and associated hazards that might have an adverse impact on the site. The evaluation is based on review of project plans, and applicable regulations and guidelines. In determining the level of significance, the analysis assumes that the Proposed Project would comply with relevant federal and state laws and regulations, General Plan policies, ordinances, and Improvement standards. Therefore, such policies, ordinances, and standards are not identified as mitigation measures. Impacts related to risks from wildland fires are addressed in **Section 3.16**, **Wildfire**.

Thresholds of Significance

Criteria for determining the significance of impacts associated with hazards and hazardous materials have been developed based on Appendix G of the CEQA *Guidelines*. Impacts would be considered significant if the Proposed Project would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or to the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Effects Found Not to be Significant

The Guenoc Valley Site is not within 0.25 mile of an existing or proposed school. Accordingly, the Guenoc Valley Site will not be further addressed under this threshold of significance.

The Guenoc Valley Site, Middletown Housing Site and Off-Site Infrastructure Improvements Areas are not within an airport land use plan or within 2 miles of a public airport. Therefore, the Proposed Project would not result in a safety hazard for people residing or working in the vicinity of a public airport and no impact would occur. This issue will not be further addressed in this EIR.

Effects Addressed in Wildfire Section

Lake County adopted an Emergency Operations Plan (EOP) in May 2018, and the initial study (IS), included as **Appendix IS**, found that the Guenoc Valley Site, Middletown Housing Site and Off-Site Infrastructure Improvement Areas would not impair the implementation of this plan. This issue will be further addressed in **Section 3.16**, **Wildfire**, but not further in this section.

The Guenoc Valley Site and Middletown Housing Site are classified as moderate, high, and very high fire hazard severity by the California Department of Forestry and Fire Protection Fire Hazard Severity Zone map. A Fire Mitigation Plan is being prepared which will outline development standards, sustainable fire prevention techniques, and best practices for the protection and management of the landscape. An analysis of potential exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires will be included in **Section 3.16, Wildfire**, but not further in this section.

Impacts

IMPACT 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		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially significant	Potentially significant	Less than significant	Less than significant
Mitigation Measures (MM)	MM 3.8-1: Hazardous Materials Best Management Practices	MM 3.8-1: Hazardous Materials Best Management Practices	None required	None required
Significance After Mitigation	Less than significant	Less than significant	N/A	N/A

Guenoc Valley Site: Phase 1 – Project Level Analysis

Construction

Hazardous materials would be used in varying amounts during construction. During grading and construction activities, it is anticipated that limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, and paints, would be brought onto the Guenoc Valley Site. Temporary storage units (e.g., bulk aboveground storage tanks, 55-gallon drums, sheds/trailers) would likely be used by various contractors for fueling and maintenance purposes. The transportation, and handling and transfer from one container to another of these chemicals has the potential for an accidental release. Given the size and scale of construction activities proposed under Phase 1, this is considered a **potentially significant impact**.

Temporary construction workforce camps along with supporting facilities (e.g. commercial kitchens) would be utilized during the development of the Guenoc Valley Site. These would likely require hazardous materials common to residential and commercial areas, such as cleaners and propane fuel. The majority of the hazardous materials that would be used within the workforce camps are expected to be minimal and would not meet the definition of a regulated hazardous waste generator under RCRA. Other hazardous materials, such as propane, could become an environmental and health risk if not properly managed, stored and/or transported.

Construction contractors would be required to comply with applicable federal and State environmental and workplace safety laws. These would ensure that construction personnel would handle hazardous materials in a consistently safe manner that would prevent accidental releases. This includes compliance with Title 49 CFR that would reduce any impacts associated with the potential for accidental release during construction or occupancy by transporters delivering hazardous materials to the project site or picking up hazardous waste. These regulations establish standards through which hazardous materials will be transported within and adjacent to the project site. Lake County's General Plan Health and Safety Element also has several polices that address the safe transportation, handling and disposal of hazardous materials in Lake County, including HS-5.1, HS-5.2, and HS-5.6 (see **Appendix GPCT**). In addition, Mitigation Measure 3.8-1 requires best management practices to prevent co-mingling of construction-related hazardous substances with surface waters, including stormwater runoff.

Compliance with OSHA, Cal OSHA, and DTSC requirements for employee training and monitoring would ensure that construction workers are properly trained about hazardous materials in their work environment. The use, storage, transport, and disposal of hazardous materials is thoroughly regulated at the federal, state, and local levels to ensure public and environmental health and protection. Therefore, with mitigation and through adherence to regulatory requirements, construction of the Proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and this impact is **less than significant with mitigation**.

Operation

The types of hazardous materials that would be present during occupancy of the residential and commercial land uses are expected to consist of household and maintenance products (e.g., paints, solvents, cleaning supplies, pool chemicals, and pesticides). No industrial uses are proposed within the project site. The quantities of hazardous materials that would be used within the project site are expected to be minimal and

would not meet the definition of a regulated hazardous waste generator under RCRA. Furthermore, the residential and commercial uses proposed within the Guenoc Valley Site would generate household hazardous wastes such as used paints, automotive fluids, unused or unwanted pesticides and herbicides, and electronic waste that would require disposal. A resulting increase in hazardous materials disposal would occur in residential trash pick-ups, dumpsters, transfer stations, and landfills. Because residential and commercial development would comply with applicable requirements and regulations, operational activities of the land uses proposed within the project site would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This is a **less-than-significant** impact.

On-Site wastewater treatment areas are proposed for the wastewater treatment requirements of the Guenoc Valley Site. As described in **Section 2.5.2.5**, several types of wastewater systems are planned for the proposed development, including septic systems and sanitary sewer and community wastewater treatment and recycled water systems. These systems could potentially involve chemicals for maintenance and treatment purposes, but this would depend on the final designs selected. If wastewater system chemicals were required, then regular transportation of these chemical to the Guenoc Valley Site would be required. Furthermore, personnel would have to handle, store and dispose of these chemicals. Chemicals stored onsite would be of a sufficient quantity to service the Guenoc Valley Site development and nothing more in order to avoid excessive bulk storage. Therefore, only the regular transport, handling and storing of a relatively small quantity would be required. These chemicals would be stored in secure locations and handled properly by only qualified personnel. Their usage, storage and transportation would be compliant with manufacturer guidelines in addition to applicable federal, State and local regulations, such as OSHA and RCRA. Therefore, the chemical requirement needs of the proposed on-site wastewater treatment systems would be **less than significant**.

Development of the Guenoc Valley Site involves several different components that would require the handling, storage and transportation of a relatively small quantity of fuel, such as the floatplane dock, on-site emergency generators, on-site fire station, and commercial business. Fuels that would be required would include gasoline, propane, diesel, and jet fuel. These combustible chemicals could pose a risk to the environment and people if they were not handled, stored, and transported appropriately. The transportation of fuel would be infrequent and follow appropriate regulations for transportation for each fuel-type required onsite. Furthermore, the County General Plan Health and Safety Element has policies to ensure safe transportation, including designating appropriate routes for hazardous material transport. In regards to the handling and storage of the fuel onsite, personnel would be required to be properly trained, as specified in OSHA and Cal OSHA policies, on the handling of chemicals. This would reduce the potential risk personnel would encounter from handling these chemicals. Finally, the fuels would be stored in appropriate containers and safe locations, such as storage tanks, as required by appropriate regulations in order to prevent accidental releases or combustion of these fuels. Therefore, potential impacts associated with on-site fuel requirements would be **less than significant**.

Guenoc Valley Site: Future Phases – Programmatic Analysis

As discussed in **Section 2.5.3**, future phases of development within the Guenoc Valley Site may include additional resort facilities, residential development, resort amenities, agriculture and essential accessory uses. Since these are additional development of components proposed in Phase 1, the discussion for Phase 1 construction and operations in relation to hazardous materials is also applicable to future phases.

Construction

Similar to Phase 1, the routine transport routine transport, use, or disposal of hazardous materials during construction activities associated with future phases would be considered a **potentially significant** impact. Mitigation Measure 3.8-1 would reduce this effect to **less than significant with mitigation**.

Operation

Similar to Phase 1, residential and commercial development, including future wastewater or water treatment facilities, and fuel storage, would comply with applicable requirements and regulations to prevent accidental releases of hazardous materials into the environment. Therefore, operation of future phases of the Proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and this impact is **less than significant**.

Off-Site Workforce Housing – Project Level Analysis

Construction

The hazardous materials involvement required for the construction of the Off-Site Workforce Housing would be similar to the development on the Guenoc Valley Site, although the construction area would be smaller in scale and no demolition or temporary construction workforce camping would occur onsite. Therefore, the hazardous material risks to the environmental and construction personnel health would be similar. The use, storage, transport, and disposal of hazardous materials associated with construction activities would be thoroughly regulated at the federal, state, and local levels to ensure public and environmental health and protection. Therefore, construction of the Off-Site Workforce Housing would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and this impact is **less than significant**.

Operation

The proposed Off-Site Workforce Housing would not involve the transport, use, or disposal of a significant quantity of hazardous materials. The use, storage, transport, and disposal of hazardous materials is thoroughly regulated at the federal, state, and local levels to ensure public and environmental health and protection. Therefore, operational activities associated with Off-Site Workforce Housing would not create a significant hazard to the public or the environment and this impact is **less than significant.**

Off-Site Infrastructure Improvements – Project Level Analysis

Construction

Similar to construction activities at the Guenoc Valley Site, hazardous materials would be used in varying quantities during construction of the option off-site well and associated pipeline. Therefore, the hazardous material risks to the environmental and construction personnel health would be similar. The use, storage,

transport, and disposal of hazardous materials associated with construction activities would be thoroughly regulated at the federal, state, and local levels to ensure public and environmental health and protection. Therefore, construction of Off-Site Infrastructure Improvements would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and this impact is **less than significant**.

Operation

The operation of the off-site well and associated pipeline would require very little hazardous materials if any at all as an electrical pump would be used for extracting the groundwater. The limited quantity of hazardous materials that may be used for maintenance would be handled, stored, disposed of, and transported according to applicable federal, State, and local regulations and guidelines. Therefore, the operation of the off-site well and associated pipeline would be **less than significant**.

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**			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially significant	Potentially significant	Potentially significant	Potentially significant
Mitigation Measures	MM 3.8-2: Prepare a Hazardous Materials Contingency Plan, MM 3.8-3: Minimize Potential for Accidental Release of Hazardous Materials during Demolition, MM 3.8-4: Reporting Geothermal Wells, MM 3.8-5: Asbestos Dust Mitigation Plan	MM 3.8-2: Prepare a Hazardous Materials Contingency Plan, MM 3.8-3: Minimize Potential for Accidental Release of Hazardous Materials during Demolition, MM 3.8-4: Reporting Geothermal Wells, MM 3.8-5: Asbestos Dust Mitigation Plan	MM 3.8-2: Prepare a Hazardous Materials Contingency Plan	MM 3.8-2: Prepare a Hazardous Materials Contingency Plan, MM 3.8-5: Asbestos Dust Mitigation Plan, MM 3.8-6: Conduct Shallow Groundwater Characterization Plan for Construction of Off-Site Water Pipeline
Significance After Mitigation	Less than significant	Less than significant	Less than significant	Less than significant

Guenoc Valley Site: Phase 1 – Project Level Analysis

Contaminated Soil and/or Groundwater

There are two recorded locations within the external boundaries of the Guenoc Valley Site involving hazardous materials, both of which are associated with the Langtry Vineyards winery operations. These locations correspond to the existing winery headquarters and bottling operations, which are excluded from the Guenoc Valley Site, as well as the winery equipment storage area and operations at the proposed Back of House planning area. The record associated with the existing winery which is not within the project site, involved co-mingling of winery wastewater with groundwater. While this site is listed on the Cortese list due to the CDO described in **Section 3.8.2**, the area is not within the project site and proposed area of development. Thus the Proposed Project would not involve construction activities on a site listed pursuant to Government Code Section 65962.5 (Cortese List). Furthermore, as noted above in **Section 3.8.2**, current groundwater monitoring related to this site indicates that the groundwater quality in this area is consistent with or better than background conditions. The other listed location is at the winery operations at the proposed Back of House area within the Guenoc Valley Site. This site is not listed on the Cortese List, and there are no records related to a release of hazardous materials that has the potential to adversely affect use of the property. Accordingly, the Langtry Vineyards winery does not pose a significant health risk to people in terms of reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Additionally, no active hazardous materials records, apart from the Geothermal Inc. site, were found within 1.0 mile of the Guenoc Valley Site boundary. As discussed above, groundwater contamination associated with the Geothermal Inc. site on Butts Canyon Road has been shown through testing to be contained mostly within the landfill property (California Water Boards, 2019b), and ongoing monitoring and mitigation actions are being required by the CVRWQCB. Given that this site and the delineated boundaries of the associated groundwater plume is 0.75 miles west from the Guenoc Valley Site boundary, it does not pose a significant health risk to people in terms of reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

The disturbance of undocumented hazardous wastes could also result in hazards to the environment and human health. Adverse impacts could result if construction activities inadvertently disperse contaminated material into the environment. For example, if contaminated groundwater were present, dewatering activities during construction could cause contaminated groundwater to be released into downstream surface water. If soils containing PCBs were present, they could be disturbed during site grading. Potential hazards to human health include ignition of flammable liquids or vapors, inhalation of toxic vapors in confined spaces such as trenches, and skin contact with contaminated soil or water. Incorporation of standard Best Management Practices (BMPs) and coordination with regulatory agencies would reduce the potential for negative effects that could result from construction. However, because the Guenoc Valley Site could be affected by undocumented contamination that has not been characterized or remediated, this would be a **potentially significant** impact. Implementation of **Mitigation Measure 3.8-2** would require the Applicant to prepare a hazardous material contingency plan and to comply with regulatory requirements governing the clean-up of hazardous wastes, including removing contaminated soils and groundwater, if found, to the point where there is no unacceptable risk of exposure. Therefore, construction impacts would be considered **less than significant after mitigation**.

Demolition of Structures

Construction workers could be exposed to hazardous materials through demolition of three existing structures on the project site within the proposed back of house area. The age of the two cottage-style residences and metal pre-fabricated barn structure proposed for demolition indicates that ACMs and lead-based paints could be present in those structures. Indiscriminate and unmitigated demolition or renovation of structures containing ACMs and lead-based paint could create asbestos dust, lead paint chips, and lead dust, which pose inhalation hazards for construction workers and the surrounding public. In addition, collection and disposal of ACMs and lead paint debris by untrained personnel could cause asbestos and lead paint dust emissions to be transported offsite, resulting in the release of hazardous material into the environment. This is considered a **potentially significant** impact. Mitigation Measure 3.8-3 would require documentation of project compliance with the CARB and NESHAP requirements for asbestos abatement in structures containing ACMs, as well as implementation of DTSC and Cal OSHA requirements for removing structures with lead-based paint, to prevent release into the environment. Therefore, this impact would be reduced to **less than significant after mitigation**.

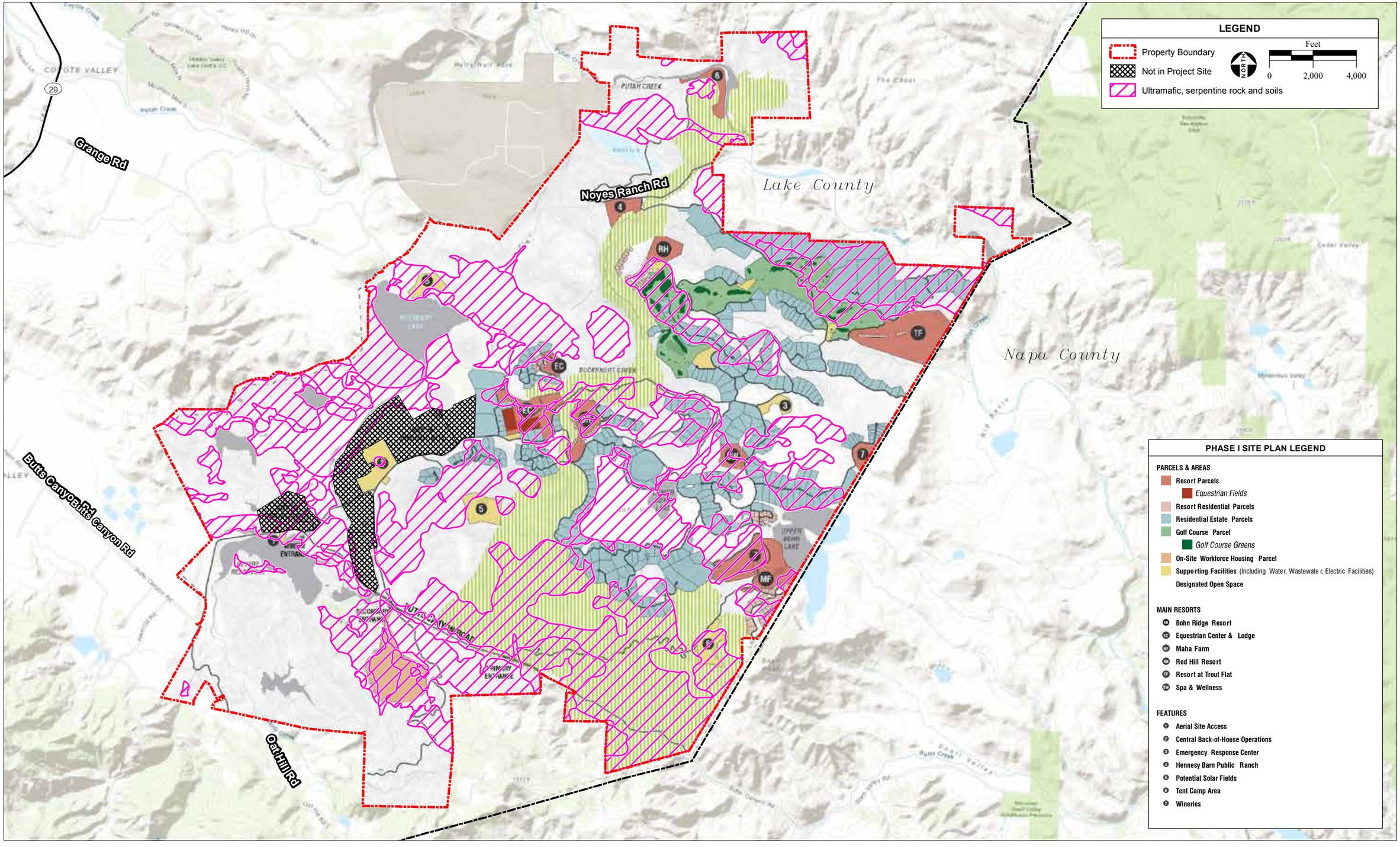
Abandoned Geothermal Wells

As discussed in **Section 3.8.2**, there are 23 plugged and abandoned shallow temperature gradient wells located within the Guenoc Valley Site (**Figure 3.8-1**). If the seals of these wells were accidentally disturbed or damaged during construction activities, it could be potentially significant environmental risk. Furthermore, if a geothermal well that was not documented was discovered, this could also be a potentially significant environmental risk if the seal was disturbed and was not reported to the appropriate authorities, such as the California Department of Conservation. This is a **potentially significant** impact. **Mitigation Measure 3.8-4** would require that the abandoned wells are identified on the project construction plans and disclosed to future property owners so that they can be avoided as necessary. For an inadvertent discovery of a new well, **Mitigation Measure 3.8-4** would require that any newly discovered well is reported to the proper authorities so that safety procedures for abandonment and avoidance are followed. Therefore, this impact would be reduced to **less than significant** with mitigation.

Naturally Occurring Asbestos

Construction

As discussed in **Section 3.6.2** and **Section 3.8.2**, the Guenoc Valley Site contains NOA due to the presence of the ultramafic rock and serpentine rock/soils throughout the region. **Figure 3.8-2** shows the extent of these rock and soil types within the Guenoc Valley Site in relation to the Phase 1 site plan. While development areas throughout the Guenoc Valley Site are located on ultramafic rock and serpentine rock/soil, Maha Farm is the only development area that was confirmed to contain small amounts of NOA (**Appendix GEOTECH**). However, this does not necessarily mean that NOA is only present in that area because testing was limited (Figure 5, **Appendix GEOTECH**). Therefore, NOA could be potentially located in any areas with ultramafic rock and serpentine rock/soils. The NOA in these areas could become airborne from soil-disrupting construction-related activities. These activities include grading and the movement of equipment, materials, and personnel in dusty environments, such as dusty roads. Airborne NOA could cause a health problem for construction workers or other personnel in the vicinity of the construction sites. Federal and State regulations are in place to prevent health risks concerning NOA. The CAA designates asbestos as a hazardous air pollutant and therefore the EPA regulates this substance. The Asbestos ATCM



SOURCE: CA Division of Mines and Geology/USGS State Geologic Map Compilation (SGMC), 8/2017; SWA Group, 10/2019; DigitalGlobe Aerial Photograph, 6/2018; AES, 10/30/2019

Figure 3.8-2
Ultramafic, Serpentine Rock and Soils and the Phase I Site Plan

for Construction, Grading, Quarrying, and Surface Mining Operations requires dust mitigation measures for areas of NOA and an asbestos dust mitigation plan for construction or grading operations greater than 1 acre **(Section 3.8.3)**. Since construction activities are proposed within areas of the site known to contain ultramafic rock and serpentine rock/soils and therefore possibly NOA, the release of airborne NOA during construction activities is considered a **potentially significant impact**.

The County General Plan Policy GR-2.4 states that either NOA shall be avoided where feasible or appropriate mitigation will be developed to minimize the health risks associated with NOA. In accordance with this and other applicable regulations, such as the ATCM mentioned above and the Lake County Grading Ordinance discussed in **Section 3.6.3**, **Mitigation Measure 3.8-5** would require that an asbestos dust mitigation plan be developed and implemented in accordance with the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. This plan would be submitted to the Lake County Air Pollution Control District for approval before proceeding with construction of the Proposed Project. Implementation of the plan would ensure that construction personnel are not exposed to a significant risk from airborne NOA. Therefore, this impact would be reduced to **less than significant** with mitigation.

Operation

The health risk from airborne NOA during operation would be minimal as no more rock crushing activities would be required (e.g. grading) and little soil-disrupting activities would occur. Multiple resort residential parcels and residential estate parcels would be located on the ultramafic rock and serpentine rock/soil throughout Guenoc Valley Site (**Figure 3.8-2**). However, the probability of NOA becoming airborne is low because little soil-disrupting activities would occur once the landscaping at these parcels are established. Further, implementation of the Dust Mitigation Plan discussed above and required under Mitigation Measure 3.8-5, would require that disturbed surfaces containing NOA be stabilized with vegetative cover, 3 inches of non-asbestos containing material, or paving.

The primary soil disrupting activities that would occur would be from the on-site agricultural operations at Maha Farm. As discussed above, the Maha Farm area does contain ultramafic rock and serpentine rock/soil and therefore possibly NOA; however, agricultural activities are exempt from NOA ATCMs. Agricultural operations would consist primarily of grazing lands, orchards, and vineyards, which do not require annual tilling or other agricultural operations that would require intensive soil disturbance. The potential for release of NOA from the agricultural operations is consistent with existing conditions and the Proposed Project would not 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. Therefore, a **less-than-significant** impact would occur.

Guenoc Valley Site: Future Phases – Program Level Analysis

As discussed in **Section 2.5.3**, future phases of development at the Guenoc Valley Site could include additional resort facilities, residential development, resort amenities, agriculture and essential accessory uses. As discussed above, future phases would not involve construction activities on a site listed pursuant to Government Code Section 65962.5 (Cortese List). Similar to Phase 1, future phases could 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 from:

1) Potential inadvertent disturbance of undocumented contamination that has not been characterized or remediated during construction activities
2) Potential demolition of structures that could contain ACMs and lead-based paints
3) Potential upset conditions from disturbance or damage to abandoned geothermal wells
4) Potential release of airborne NOA during construction activities

This is a potentially **significant impact**. Similar to Phase 1, mitigation measures 3.8-2 through 3.8-5 would reduce this impact to **less than significant with mitigation**.

Off-Site Workforce Housing – Project Level Analysis

Contaminated Soil and Groundwater

The records searches discussed in **Section 3.8.2** for the Middletown Housing Site did not indicate the presence of any active hazardous materials records within the project boundary. Furthermore, no active hazardous materials records were found within 1.0 mile of the project boundary. Therefore, the possibility of encountering an existing hazardous material site or causing hazardous material release due to existing conditions is improbable. However, because the Middletown Housing Site could be affected by undocumented contamination that has not been characterized or remediated, this would be a **potentially significant** impact. Implementation of **Mitigation Measure 3.8-2** would require the Applicant to prepare a hazardous material contingency plan and to comply with regulatory requirements governing the clean-up of hazardous wastes, including removing contaminated soils and groundwater, if found, to the point where there is no unacceptable risk of exposure. Therefore, construction impacts would be considered **less than significant after mitigation**.

Existing Hazards

Abandoned Geothermal Wells

There are no current or abandoned geothermal wells on or near the Middletown Housing Site, and it is highly unlikely to discover one in the middle of the Community of Middletown. Therefore, **no impact** would occur from abandoned geothermal wells.

Naturally Occurring Asbestos

While serpentine soil is located throughout the Lake County region, serpentine soil is not reported for the Middletown Housing Site (LCAQMD, 2007). Therefore, **no impact** would occur from NOA.

Off-Site Infrastructure Improvements – Project Level Analysis

Contaminated Soil and Groundwater

Construction

The records searches discussed in **Section 3.8.2** for the Off-Site Infrastructure Improvement Areas did not indicate the presence of any active hazardous materials records within the boundary of the optional Off-Site Infrastructure Improvement Areas, but the Geothermal Inc. record is directly adjacent to the water supply pipeline. According to the Plume Delineation Report submitted to the CVRWQCB in June of 2017, the groundwater contamination plume at the Geothermal Inc. site is contained within the boundaries of the

geothermal landfill. The contaminated groundwater is approximately at the shallowest 2 feet below ground level directly beneath the landfill site (California Water Boards, 2019b). The trench that would be excavated for the pipeline would be 24-inches wide and 40-inches deep (**Section 2.5.2.5**). Because the trench depth may be lower than the depth to groundwater, dewatering will be required along with the appropriate NPDES Permit. However, because the pipeline trench is relatively close to the landfill site, there is the potential the spoils from dewatering may include contaminants associated with the landfill plume, which would require appropriate treatment and discharge to prevent surface contamination. This is a ***potentially significant impact***. In order to ensure pipeline installation does not result in environmental contamination from potential dewatering activities, prior to obtaining a dewatering permit under the NPDES permitting process, Mitigation Measure 3.8-6 requires that shallow groundwater samples will be collected to determine if the quality allows for a general permit, or if a site-specific dewatering permit is necessary due to the results (aka contaminant levels). With the implementation of the mitigation measure, confirmation would be obtained as to the appropriate method to dispose of dewatering spoils from pipeline construction. Therefore, construction impacts would be considered less than **significant after mitigation**.

Operation

The project boundary of the proposed potable water well site that would serve the Proposed Project is approximately 2.5 miles to the west of the former geothermal landfill and the documented contaminated groundwater plume. However, the plume is relatively shallow compared to the depth required for the potable water wells (300-500 feet). The potential for a well at this depth to affect shallow groundwater movement 2.5 miles away is minimal. Furthermore, there are three wells located between the proposed non-potable water well site and the landfill (California Department of Water Resources, 2018a). The cone of depression from the proposed non-potable water well would offset the eastern directional forces from these wells further reducing the potential to impact the landfill plume. Therefore, operation of the off-site well would not cause intrusion of the contaminated groundwater plume into nearby drinking water wells, including the water supply wells for the community of Middletown, which are approximately 5 miles away. This impact is **less than significant**.

Existing Hazards

Abandoned Geothermal Wells

According to the **Figure 3.8-1**, there are no current abandoned geothermal wells on or near the Off-Site Infrastructure Improvement Areas. The potential for discovery of an unknown abandoned geothermal well at the well property or along the pipeline alignment is low, given that the well site has historically been plowed and used as irrigated pasture land and the pipeline corridor is within a public road right of way. Therefore, construction of the Off-Site Infrastructure Improvements would not cause a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving geothermal wells; this impact is **less than significant**.

Naturally Occurring Asbestos

As discussed in **Section 3.8.2**, the Off-Site Infrastructure Improvement Areas contain NOA because of the serpentine soils throughout the region. The potential health risk from construction activities would be similar as those discussed for the Guenoc Valley Site. The release of airborne NOA during construction activities is considered a **potentially significant** impact. **Mitigation Measure 3.8-5** would require that an asbestos dust mitigation plan be developed and implemented in accordance with the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. This plan would be submitted to the Lake County Air Pollution Control District for approval before proceeding with construction of the Off-Site Infrastructure Improvements. Implementation of the plan would ensure that construction personnel are not exposed to a significant risk from airborne NOA. Therefore, this impact would be reduced to less than **significant with mitigation**.

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**			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Middletown Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Not applicable	Not applicable	Less than significant	Less than significant
Mitigation Measures	Not applicable	Not applicable	None required	None required
Significance After Mitigation	Not applicable	Not applicable	N/A	N/A

Off-Site Workforce Housing – Project Level Analysis

There are three schools within 0.25 miles of the Middletown Housing Site: Minnie Cannon Elementary School, Middletown High School, and Loconoma Valley High School. These schools are approximately 0.15 mile, 0.2 mile, and 0.2 mile from the project boundary, respectively. As described in **Impact 3.8-1**, the Middletown Housing Site would be developed with residential areas and the quantities of hazardous materials that would be used within the project site during construction or operation are expected to be minimal. Therefore, development of the Middletown Housing Site would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. This impact would be **less than significant**.

Off-Site Infrastructure Improvements – Project Level Analysis

There is one school within 0.25 miles of the Off-Site Infrastructure Improvements: Middletown Christian School, approximately 0.23 mile away. As described in **Impact 3.8-1**, the Off-Site Infrastructure Improvements would require small quantities of hazardous materials during construction and an even lesser quantity, if any, during operation. There is the chance that NOA could be disturbed during construction and then be transported offsite via wind. However, as discussed under **Impact 3.8-2**, Mitigation Measure 3.8-5 would reduce the potential environmental risk from airborne NOA to **less-than-significant** levels. There

would be no risk from NOA during operations as no soil disrupting activities would occur except for possible maintenance of the well and pipeline. Therefore, development of the Off-Site Infrastructure Improvements would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. This impact would be **less than significant**.

IMPACT 3.8-4	**POTENTIAL FOR CUMULATIVE EFFECTS ASSOCIATED WITH HAZARDS AND HAZARDOUS MATERIALS**			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Less than significant	Less than significant	Less than significant	Less than significant
Mitigation Measures	None required	None required	None required	None required
Significance After Mitigation	N/A	N/A	N/A	N/A

As described in **Section 4.0**, hazardous material, human health, and safety impacts are typically site-specific and not cumulative by nature. This also applies to the hazards identified for the Proposed Project, such as NOA and abandoned geothermal wells. Therefore, the cumulative setting for hazardous materials is limited to the development areas and the area immediately surrounding these areas. The development areas are surrounded by residential and small agricultural uses as well as undeveloped, naturally vegetated land. The development of the Guenoc Valley Site, Off-Site Workforce Housing, and Off-Site Infrastructure Improvements would all involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and, depending on the project, during operation. Impacts related to these activities are extensively regulated by federal, state, and local agencies, and it is assumed that related projects in the area would also comply with these hazardous materials regulations. For the naturally occurring hazard, NOA, this is only a health risk if the NOA becomes airborne, and any future projects would have to comply with applicable regulations concerning NOA, such as the Asbestos ATCM for Surfacing Applications, and Construction, Grading, Quarrying, and Surface Mining Operations. Currently, there are no planned or reasonably foreseeable projects in the cumulative setting area that would involve significant amounts of hazardous materials. Therefore, cumulative impacts from hazards and hazardous materials are considered **less than significant** and no mitigation is required.

3.8.5 MITIGATION MEASURES

MM 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 Clean Water Act (CWA), a Stormwater Pollution Prevention Plan shall be prepared for construction activities. Hazardous materials control measures identified in the SWPPP shall include, but not be limited to, the 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 Clean Water Act (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 WWTP in accordance with the requirements of the NPDES permit.

MM 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 USTs, 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, 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 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.

MM 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 [ppm] in areas where children are likely to be present). If lead contaminated soil is to be removed, the project applicant shall submit a soil management plan to Lake County Division of Environmental Health.

MM 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 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 six feet below ground, a permit from the Division is required before work can start.

MM 3.8-5 Asbestos Dust Mitigation Plan

Prior to construction activities, an Asbestos Dust Mitigation Plan shall be prepared and submitted to the 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 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;
        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 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 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:
    a. A maximum vehicle speed limit of 15 miles per hour or less; and
    b. 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 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;
    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 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 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 miles per hour or greater from causing visible dust emissions.
8) If deemed applicable by 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.

MM 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 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.

3.9 HYDROLOGY AND WATER QUALITY

3.9.1 INTRODUCTION

This section provides a description of existing hydrologic conditions in the project area and analyzes potential changes to those conditions as a result of implementation of the Proposed Project. This section also evaluates the risk of flooding on the Guenoc Valley Site, Middletown Housing Site, and off-site well location and analyzes the water supply and demand for the Proposed Project. Following an overview of the hydrology and water quality environmental setting in **Section 3.9.2** and the relevant regulatory setting in **Section 3.9.3**, project-related impacts and recommended mitigation measures are presented in **Sections 3.9.4** and **3.9.5**, respectively.

3.9.2 ENVIRONMENTAL SETTING

Surface Water

Regional

The 16,000-acre Guenoc Valley Site is located approximately 15 miles southeast of Clear Lake, the largest natural freshwater lake in California, and approximately 15 miles northwest of Lake Berryessa.

The project area is located within the Upper Putah Creek watershed, which spans an area of approximately 177,233 acres. The Upper Putah Creek watershed is within the Westside Subregion of the Sacramento River Basin (Basin). The Basin covers approximately 27,000 square miles. The region includes all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties. The Sacramento Valley and the Sacramento River are at the center of the Basin. Total water use in the Sacramento River Basin is about 18 billion cubic meters per year (USGS, 2000).

Climate of the area consists of hot dry summers and cool, moist winters. Annual precipitation averages approximately 44.1 inches, with little snowfall (WRCC, 2016).

Local

The Guenoc Valley Site, Middletown Housing Site, and Off-Site Well Location are located within the Putah Creek drainage, which collects water from the Mayacamas Mountains and other regions of southern Lake County. Putah Creek runs approximately 6.7 miles along the northeastern portion of the project site and drains into Lake Berryessa, southeast of the project site. Another major creek in the project area is Bucksnort Creek, which enters the Guenoc Valley Site near the southwest corner of the property and flows in a southwest to northeast direction approximately 7 miles through the property before discharging into Putah Creek. Over the past 40 years, Bucksnort Creek and several of the intermittent streams were entitled to be dammed to create reservoirs for water storage and use in irrigation. Major reservoirs on the site are: McCreary Lake, Detert Reservoir, Upper Bohn Reservoir, Lower Bohn Reservoir, Lake Bordeaux, and Lake Burgundy.

Little, if any, stormwater runoff occurs within the Putah Creek drainage area during the months of June, July, August, and September. Additionally, runoff expectancy from normal precipitation in May and

November is low. The upper portions of Bucksnort Creek and its tributary streams are seasonal, with typically no storm runoff occurring during June, July, August, and September. The USGS has a stream gauge on Putah Creek to the northwest of the project boundary near McCreary Lake (gauge number 11453500). The drainage area for this gauge is roughly 72,320 acres. Average discharge per month for the past ten years (2010 – 2018) ranges from 1.6 cubic feet per second (ft^3/s) in September to 520 ft^3/s in February (USGS, 2019b).

The Middletown Housing Site is bordered by Dry Creek to the west, which begins in the Mayacamas Mountains and drains into Putah Creek just north of Middletown. Dry Creek is seasonal, with typically no storm runoff occurring during summer months.

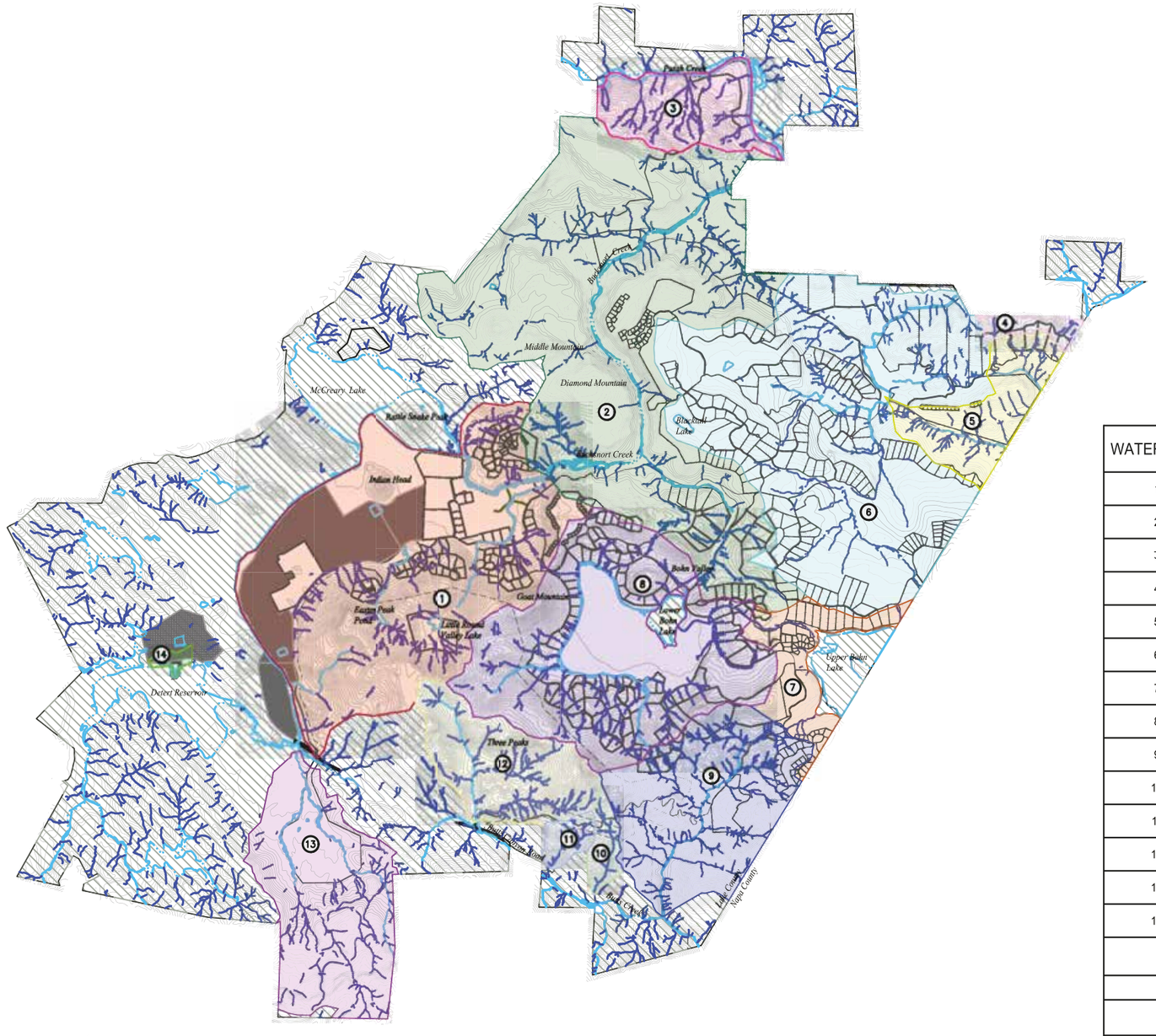
Surface Water Quality

Section 303(d) of the federal Clean Water Act requires states to monitor water pollution and report to the EPA every two years. Waters that do not meet water quality standards are labeled impaired and are placed on a State list. To improve water quality conditions, states often develop Total Maximum Daily Load (TMDL) cleanup plans. There are currently no listed impaired waters on the Guenoc Valley Site or associated TMDL cleanup plans (SWRCB, 2019a). The lower portion of Putah Creek is listed as impaired for mercury under Section 303(d). The portion of Putah Creek that is listed is 30 miles downstream of the project site. Elevated mercury levels are also present in Lake Berryessa approximately 5 miles downstream of the project site, and Upper Putah Creek is a known source of mercury contributing to downstream impairments (Sparks, 2016). The source of the impairment is mercury in water and sediment transported from the upper watershed where it naturally occurs and from old abandoned mine sites. Numerous historic mercury mines are located in the upper watershed. Mercury enters surface waters as the result of natural weathering, leaching of mining waste and venting of geothermal springs. Mercury accumulates in fish as methylmercury, which is highly toxic and may expose people who eat fish to a wide range of health hazards. A TMDL cleanup plan has not been completed for Putah Creek (SWRCB, 2019a).

Existing Drainage Conditions

Natural drainage consists of overland flow that concentrates on natural drainage elements such as swales and ravines. The Phase 1 area of the Guenoc Valley Site is broken into 14 watersheds, which are bounded by Bucksnort Creek on the west, Putah Creek on the north, Upper Bohn Lake on the east, and Butts Canyon Road on the south. These watersheds are largely contained within the bounds of the project limits and discharge to ponds, drainages, and creeks that eventually flow offsite to regional drainages. A Stormwater Design Report was commissioned for the Proposed Project (**Appendix SW**) and provides further details on all watersheds, drainage patterns, and stormwater management design criteria for the Guenoc Valley Site. See **Figure 3.9-1** for an overview of the watersheds on the Guenoc Valley Site.

Bucksnort Creek is the primary drainage within the Guenoc Valley Site, and most of the sub-watersheds within the site drain to it. Bucksnort Creek flows north from the southwest side of the site through Detert Reservoir on to McCreary Lake, eventually discharging into Putah Creek.



WATERSHED	WATERSHED NAME	WATERSHED HATCH	AREA (AC)
1	EASTER PEAK		1,933
2	BUCKSNORT CREEK		2,600
3	WILDERNESS		330
4	UPPER TROUT FLAT		54
5	TROUT FLAT		328
6	BUTCHERKNIFE		2,097
7	UPPER BOHN		263
8	BOHN VALLEY		1,383
9	MCCAIN CANYON		788
10	WEST MCCAIN CANYON		67
11	SOUTH THREE PEAKS		59
12	THREE PEAKS		445
13	BUCKSNORT SOUTH		775
14	WATERSHED FOR FLOAT PLANE DOCK		19
	WATERSHED AREAS BEYOND PH1 (WATERBODIES INCL.)		5,402
		TOTAL PH1 WATERSHED AREA	11,141
		TOTAL PROJECT BOUNDARY AREA	16,543

SOURCE: Sherwood Design Engineering, 9/26/2019; AES, 12/10/2019

Figure 3.9-1
Watersheds Within Phase 1 Development Areas

The Easter Peak, Bucksnort Creek and Bohn Valley Watersheds (Lower Bohn Reservoir) are located in the center of the Guenoc Valley Site and are composed of large areas of wooded hillsides which include drainages, gullies, and perennial streams that drain into Bucksnort Creek. In addition, there are large areas of vineyards in the flat portion of Easter Peak Watershed.

The Bohn Valley watershed is located in the center of the property and drains to Lower Bohn Lake at the center. This roughly circular watershed is composed of medium to steep slopes which drain toward a vineyard planted at the flat basin above the lake. The slopes surrounding the watershed are heavily forested and have deep drainages. This watershed drains generally north and into Bucksnort Creek.

The Upper Bohn Watershed is located on the eastern site boundary and flows into small drainages that discharge into Upper Bohn Lake. Below Upper Bohn Dam, off the project site, the North and South Dams drain east to Rotan Creek and an unnamed tributary hence to Putah Creek.

The Wilderness Watershed (Camping Area) is located at the north tip of the property. This watershed is sparsely forested, hilly terrain which slopes steeply down to Putah Creek.

The Butcherknife Creek Watershed is located in the central and northern portions of the site and is composed primarily of grassed hills and oak woodlands, which sheet flow into a series of tributary drainages that discharge into Putah Creek.

The Trout Flat and Upper Trout Flat Watersheds are located at the eastern site boundary. They are composed of hillsides with loose soils and erosion channels. These drainages generally flow from west to east and discharge into Putah Creek beyond the eastern limits of the site boundary.

The McCain Canyon and West McCain Canyon Watersheds are located in the southeast corner of the property. These watersheds are dominated by steep slopes, which drain into McCain Creek. The creek flows south until it discharges into Butts Creek at the southern end of the property where it parallels Butts Canyon Road.

The Three Peaks and South Three Peaks Watersheds are located at the south and center of the property. This watershed is composed of steeply sloped and sparsely vegetated hillsides, which sheet flow into drainages throughout this portion of the property. The drainages converge at the south of the property and discharge into Butts Creek prior to flowing east.

The Bucksnort South Watershed is located on the south side of Butts Canyon Road. The main portion of this watershed is an abandoned golf course and is relatively flat. The south side of the watershed is a steep hillside that drains into small streams which flow through the old golf course area.

Lastly, there is a small watershed associated with Detert Reservoir which discharges through the old golf course area into Bucksnort Creek. This watershed, including Detert Reservoir, parallels Butts Canyon Road as it enters to property from the north.

Drainage on the Middletown Housing Site consists of sheet flow over the generally flat site toward Dry Creek, which drains to Putah Creek approximately 1,800 feet north of the site.

Drainage on the off-site well location consists of sheet flow over the generally flat site toward an unnamed drainage to the northeast, which drains to Putah Creek approximately 0.5 mile north of the site.

Flood Hazard

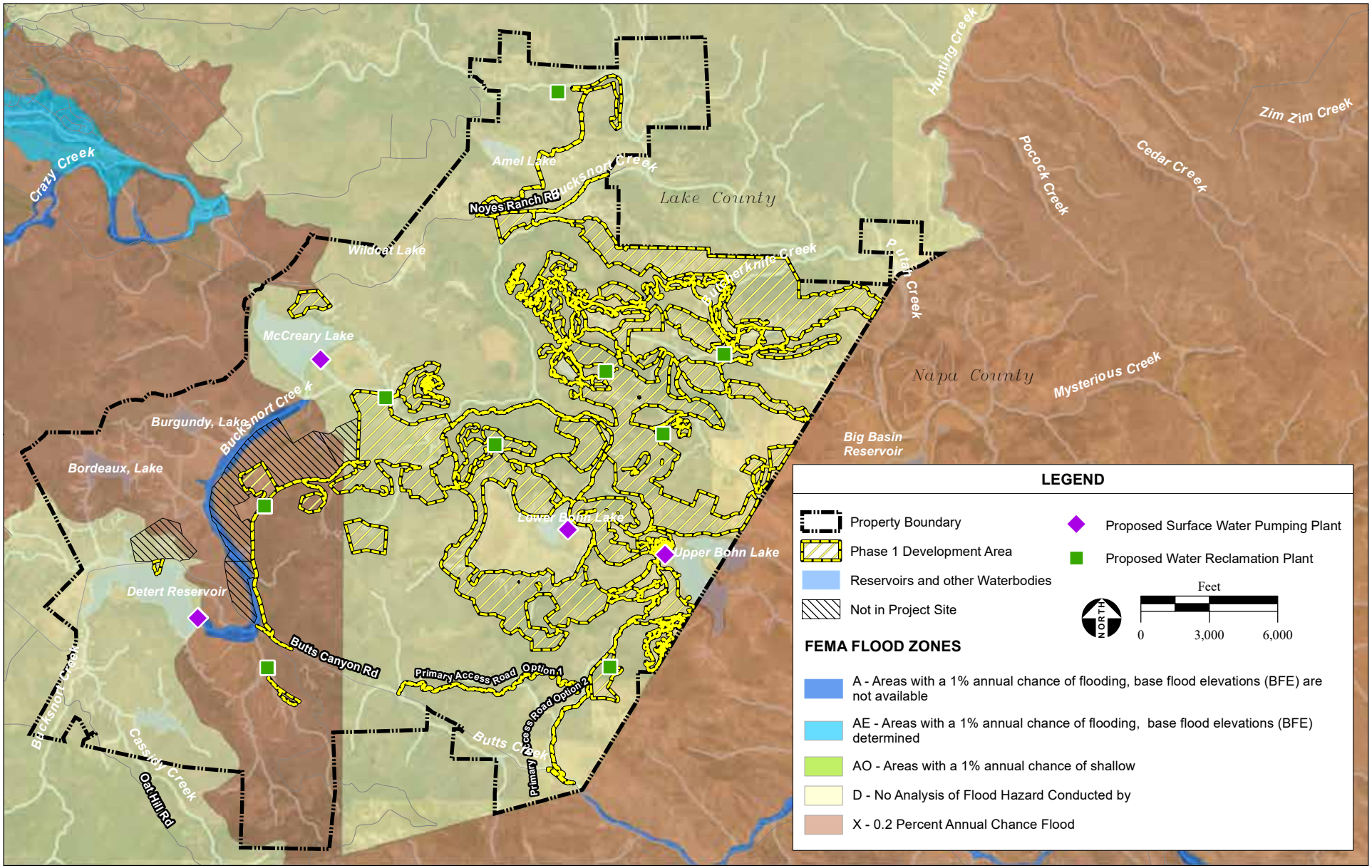
The Federal Emergency Management Agency (FEMA) oversees the delineation of flood hazard zones as it relates to the National Flood Insurance Program (NFIP) and the provision of federal disaster assistance. FEMA manages the NFIP and publishes the Flood Insurance Rate Maps (FIRMs), which show the expected 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.

As shown in **Figure 3.9-2**, most of the project site is within Zone D which designates areas where FEMA has conducted no analysis. A smaller portion of the project site is within Zone X, which designates areas determined by FEMA to be outside of the 0.2% annual chance floodplain. A small area surrounding a portion of Bucksnort Creek, which connects McCreary Lake to Detert Reservoir is classified as Zone A, an area subject to inundation by the 1% annual chance flood (100-year flood). However, FEMA has not analyzed flood hazards on the project site along other sections of Bucksnort Creek or along Putah Creek. As a result, the full extent of the 100-year floodplain on the project site is not known.

The currently effective FIRM maps for the Guenoc Valley Site are numbers 06033C0868D, 06033C0869D, 06033C0900D, 06033C0960D, 06033C1000D; September 30, 2005.

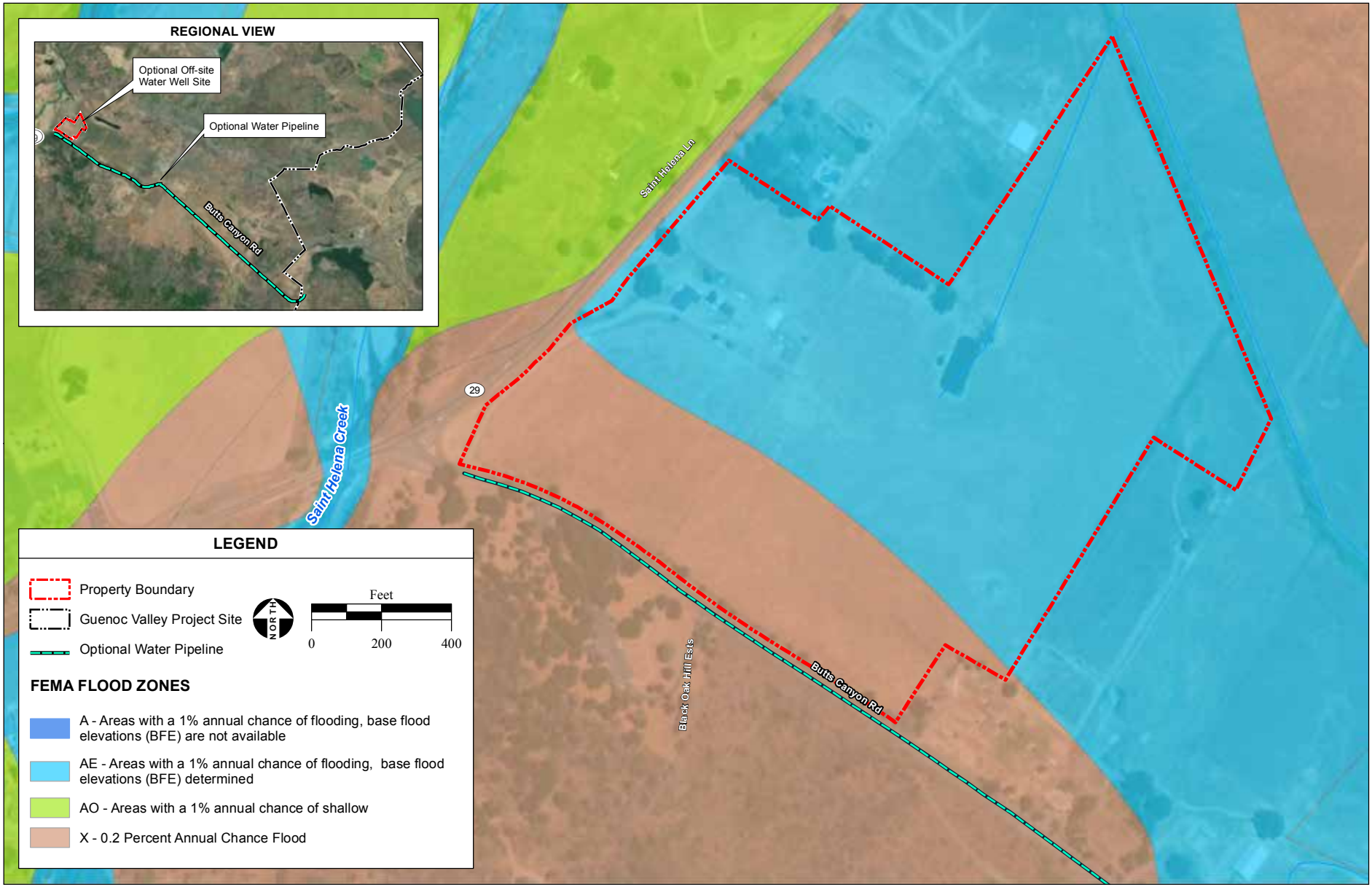
The Middletown Housing Site is bordered by Dry Creek on the west and the western portion of the project site is mapped by FEMA as Zone AE, which designates areas subject to inundation by the 1-percent-annual-chance flood event where Base Flood Elevations (BFEs) are shown (**Figure 2-16**). Along the western edge of the property, within the Zone AE, is a Regulatory Floodway. FEMA designates Regulatory Floodways as the channel of a river and adjacent land areas that must remain undeveloped to allow for the base flood waters to flow without obstruction. Most of the site is mapped as Zone AO, which designates areas subject to inundation by 1-percent-annual-chance shallow flooding (100-year floodplain) where average depths are between one and three feet. FEMA maps the flooding depth in this area of the project site as two feet. The currently effective FIRM map for the Middletown Housing Site is number 06033C0863D; September 30, 2005.

The off-site water well location is mapped by FEMA as partly within a Zone AE (100-year floodplain) associated with an unnamed drainage that is tributary to Putah Creek (**Figure 2-5**). The remainder of the site is mapped as Zone X which designates areas determined by FEMA to be outside of the 0.2% annual chance floodplain (refer to **Figure 3.9-3**). The currently effective FIRM map for the off-site water well location is number 06033C0863D; September 30, 2005.



SOURCE: FEMA FIRM effective 9/29/2005; DigitalGlobe Aerial Photograph, 6/2018; AES, 1/24/2020

Figure 3.9-2
FEMA Floodzone Map



SOURCE: DigitalGlobe Aerial Photograph, 11/2018; WRA Environmental, 8/2019; FEMA FIRM effective 9/2005; Lotusland Investment Holdings, Inc. 7/2019; USGS, 2019; Lake County GIS, 2019; AES, 1/3/2020

Figure 3.9-3

FEMA Flood Zones - Off-Site Well Location

Tsunamis and Seiches

Tsunamis are long-wavelength, long-period sea waves generated by an abrupt movement of large volumes of water. These waves can be caused by underwater earthquakes, landslides, volcanic eruptions, meteoric impacts, or onshore slope failures. These tidal phenomena typically affect low-lying areas along the coastline. The project area is located approximately 36 miles from the Pacific Ocean and is therefore not subject to tsunamis.

A seiche is a standing wave in a completely or partially enclosed body of water. Areas located along the shoreline of a lake or reservoir are susceptible to inundation by a seiche. High winds, seismic activity, or changes in atmospheric pressure are typical causes of seiches. The size of a seiche and the affected inundation area is dependent on different factors including size and depth of the water body, elevation, source, and if human made, the structural condition of the body of water in which the seiche occurs. Seiches have the potential to occur within the reservoirs on the Guenoc Valley Site.

Groundwater

The Guenoc Valley Site lies partly within the Coyote Valley and Collayomi Valley Groundwater Basins. According to California Department of Water Resources (DWR) mapping, the Coyote Valley Groundwater Basin includes Guenoc Valley which lies within the project site and the Collayomi Valley Groundwater Basins overlaps the southwestern edge of the project site southeast of Detert Reservoir. Approximately 1,340 acres (8 percent of the project site) is within the Coyote Valley basin and approximately 100 acres (less than 1 percent of the project site) is within the Collayomi Valley basin. Over 90 percent of the project site is located outside of a defined groundwater basin. The Middletown Housing Site and off-site water well location are within the Collayomi Valley Groundwater Basin.

The surface area of the Coyote Valley basin is approximately 10 square miles. Putah Creek primarily recharges the groundwater in this basin (DWR, 2004). The surface area of the Collayomi Valley basin is also approximately 10 square miles. It is the source of water supply for Middletown and the surrounding areas. DWR estimates a groundwater storage capacity of 29,000 acre-feet, with a useable storage capacity of 7,000 acre-feet (DWR, 2004). The project area also overlies the Clear Lake Volcanics groundwater source area, which provides groundwater resources but is not a valley or basin. The groundwater is stored in fractures, joints, and weathered zones that formed between volcanic eruptions (LCWPD, 2006a).

Groundwater production on the Guenoc Valley Site has historically been used for domestic and stockwatering purposes. Most notable are springs located near the southwestern border of the property that provide approximately 12 gallons per minute (gpm), a well located near Bucksnort Creek that yields 15 to 20 gpm, and two additional wells located in the Tephra Ridge region that provide 50 gpm and 25 gpm (Hanson, 1999). Numerous additional test wells have been recently developed throughout the project site to find potential groundwater supply for the Proposed Project, which are discussed in more detail in the **Appendix WSA**. The on-site test wells yield between 1 and 248 gpm.

Groundwater Recharge

Under natural conditions, groundwater recharge results from infiltration of precipitation (rain and snow). The rate and quantity of water reaching the saturation zone depends on factors that include the amount and

duration of precipitation, soil type, moisture content of the soil, and vertical permeability of the unsaturated zone. Water-bearing geological formations within the Coyote Valley Basin include Holocene alluvium consisting of sand and gravel, and Plio-Pleistocene volcanics consisting of tuffaceous deposits, gravel, silt, and sand. Groundwater levels in the Coyote Valley Basin are shallow in the spring, decrease over summer, and recover during the winter. Water levels in the basin are between 10 to 15 feet below ground surface on average in the spring and groundwater levels have generally been stable throughout the valley (LCWPD, 2006b).

Recharge occurs in the Collayomi basin next to Putah, Dry, and Saint Helena Creeks, as well as from infiltration of irrigation water and rainfall. Water-bearing geological formations within this basin include quaternary alluvium, consisting of clay, silt, and gravel. Groundwater levels in the Collayomi Valley Basin are shallow in the spring and fluctuate over the irrigation season. In the spring, water levels in this basin range from 3 to 15 feet fellow ground surface and groundwater levels have been generally constant over the last 40 years. Groundwater levels in the Collayomi Valley Basin recover each wet season and there is no indication of increasing or decreasing trends in groundwater levels (LCWPD, 2006b).

Groundwater Quality

Lake County inventoried all available information regarding groundwater basins during the development of their Groundwater Management Plan (2006). Data from the California Department of Health Services was analyzed for constituents of concern and compared to secondary water quality thresholds (SWQLs), which is the point at which water many begin to have an effected taste or odor. DWR monitors a number of wells for water quality in the Coyote and Collayomi Valley Groundwater Basins. However, monitoring is not extensive enough to determine trends in groundwater quality. Studies indicate that iron and manganese have been detected above SWQLs in both basins. Chromium and Sulfide were identified as a constituent of concern in the Coyote Valley Basin and Collayomi Valley Basin, respectively. Sulfide boron, aluminum, and nickel were detected in a water supply well in Collayomi Valley, and chromium was detected in a water supply well in Coyote Valley. Some of the constituents are believed to be related to geothermal water intrusion into the groundwater basins. The County currently has goals to consistently monitor the basins to improve water quality (LCWPD, 2006b).

Groundwater quality from wells recently developed on the Guenoc Valley Site generally meets all drinking water standards. Samples from a few test wells, drilled to inform siting of production wells, have contained elevated levels of barium, boron, iron and zinc, which can be easily treated for potable water. Two potable water production wells have been developed on the Guenoc Valley Site – Camping Area Production Well 1 and Farmstead Production Well 1. Water from these wells meets all State and federal drinking water standards. The water quality from wells on the Guenoc Valley Site are discussed in detail in **Appendix WSA**.

A potential contaminant source to groundwater in the vicinity of the Guenoc Valley Site is a decommissioned geothermal landfill facility. A geothermal exploration company, Geothermal Inc., owned and operated a 40-acre landfill facility immediately west of the Guenoc Valley Site boundary at 19020 Butts Canyon Road, which later transferred ownership to Pacific Gas and Electric Company (PG&E). The facility accepted liquid and solid wastes produced by geothermal exploration, storing waste in seven unlined surface impoundments, and operated from 1976-1987. On June 22, 1984, the Regional Board issued a Cease and

Desist requiring Geothermal Inc. to retrofit all surface impoundments (California Water Boards, 2019a). As of December 30, 2014, the status of this landfill is "Closed with monitoring" (Geotracker, 2015)[1]. Updated waste discharge requirements and a monitoring and reporting program are currently being determined by the California Regional Water Quality Control Board and are in the public hearing process (California Water Boards, 2019c). See **Section 3.8, Hazards and Hazardous Materials**, for more information.

3.9.3 REGULATORY CONTEXT

Federal

Floodplain Development

FEMA determines floodplain boundaries for purposes of flood insurance requirements, and distributes FIRMs, which are used in the NFIP. These maps identify the locations of special flood hazard areas within the 100-year floodplain, and in some cases also identify a regulatory floodway. FEMA allows non-residential development in the floodplain; however, construction activities are restricted within the flood hazard areas depending on the potential for flooding within each area.

Clean Water Act

The federal Clean Water Act (CWA) (33 USC § 1251-1376), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Important sections of the Act are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
- Section 401 (Water Quality Certification) requires an applicant for any federal permit that proposes an activity, which may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the Act.
- Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program also extends to non-point source discharges, including storm water discharges from certain sites, and is administered by the State Water Resources Control Board (SWRCB) and applicable RWQCB, as discussed in the State section below.
- Section 404 establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is jointly administered by the United States Army Corps of Engineers (USACE) and the United States Environmental Protection Agency (EPA).

NPDES Waste Discharge Regulations

The federal CWA established the NPDES program to protect the water quality of receiving waters. Under the CWA, United States Environmental Protection Agency (EPA) is required to establish technology based effluent limitations for point sources that are to be incorporated into NPDES permits. In addition, NPDES permits must be consistent with applicable state water quality standards. Under the CWA, Section 402, discharging pollutants to receiving waters is prohibited unless the discharge is in compliance with an

[1] The semi-annual monitoring reports are located under the Site Maps/Documents tab here: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=L10005342355

NPDES permit. For California, the EPA determined that the state's water pollution control program had sufficient authority to manage the NPDES program under California law in a manner consistent with the CWA. Therefore, implementation and enforcement of the NPDES program is conducted through the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs), as discussed below.

Municipal Stormwater

In November of 1990, Phase I of the NPDES program was issued addressing storm water discharges from Municipal Separate Storm Sewer System (MS4s) serving populations over 100,000 and industrial activities including discharges from construction activities disturbing five acres or more. On December 8, 1999, the EPA published the NPDES Phase II regulations in the Federal Register as required by Section 402(p) of the CWA. NPDES Phase II regulations require small MS4s, those serving a population of less than 100,000 and located in an urbanized area to obtain a municipal storm water permit.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.) provides the basis for water quality regulation within California. The Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. The RWQCBs implement waste discharge requirements within the applicable region under the authority of the SWRCB.

The SWRCB and the RWQCB are responsible for ensuring implementation and compliance with certain provisions of the CWA and the Porter-Cologne Water Quality Control Act

Basin Plan

The project site is located within the jurisdiction of the Central Valley RWQCB (CVRWQCB) (Region 5). The CVRWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction. Water quality objectives for the Sacramento River Basin are specified in the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin (Basin Plan) prepared by the RWQCB in compliance with the federal CWA and the State Porter Cologne Act. The Basin Plan establishes water quality objectives and implementation programs to meet stated objectives and to protect the beneficial uses of water in the Sacramento and San Joaquin River Basins. Because Lake County is located within the CVRWQCB's jurisdiction, all discharges to surface water or groundwater are subject to the Basin Plan requirements.

On January 20, 2005, the SWRCB adopted sustainability as a core value for all RWQCB activities and programs, and directed RWQCB staff to consider sustainability in all future policies, guidelines, and regulatory actions. Low Impact Development (LID) is a way to implement sustainable stormwater management. LID focuses on designing stormwater to be infiltrated, filtered, and stored or evaporated onsite instead of draining offsite. This method mimics predevelopment hydrology to benefit water supply and contribute to water quality protection (SWRCB, 2019b).

Antidegradation Policy

The SWRCB Antidegradation Policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Water in California (SWRCB Resolution No. 68-16), restricts degradation of surface and ground waters. Specifically, this policy protects water bodies where existing quality is higher than necessary for the protection of beneficial uses and requires that existing high quality be maintained to the maximum extent possible. Under the Antidegradation Policy, any actions that can adversely affect water quality in all surface and ground waters must: (1) be consistent with maximum benefit to the people of California; (2) not unreasonably affect present and anticipated beneficial use of the water; and (3) not result in water quality less than that prescribed in water quality plans and policies.

General Permit for Construction Storm Water Discharges

SWRCB Order 2009-0009-DWQ, SWRCB NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities ("General Permit"), 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.

Under the 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 Storm Water Pollution Prevention Plan (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, best management practices (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.

Dewatering Permit

Construction activities such as excavation and trenching in areas with shallow groundwater that require dewatering are subject to construction dewatering permit requirements. Coverage for dewatering discharges to land must be obtained under SWRCB General Water Quality Order (Low Risk General Order) 2003-0003 or the RWQCB's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) RS-2013-0145. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the RWQCB prior to beginning discharge. If it is necessary to discharge groundwater from construction dewatering to surface waters, projects are required to obtain coverage under an NPDES permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for Limited Threat Discharges to Surface Water (Limited Threat General Order R5-2016-0076). A Notice of Intent must be submitted to the RWQCB to obtain coverage under the Limited Threat General Order.

General Permit for Municipal Stormwater

NPDES Phase II regulations require that cities and counties develop and implement programs and measures to reduce the discharge of pollutants in stormwater discharges to the maximum extent possible, including best management practices, control techniques, system design and engineering methods, and other measures as appropriate. As part of permit compliance, these permit holders have created stormwater management plans (SWMPs) for their respective locations. These plans outline the requirements for municipal operations, industrial and commercial businesses, construction sites, and planning and land development. The requirements may include multiple measures to control pollutants in stormwater discharges. During implementation of specific projects under the program, project applicants will be required to follow the guidance contained in the SWMPs, as defined by the permit holder in that location.

As a Phase II community, Lake County is currently required to operate under an NPDES Municipal Stormwater Permit administered by the State of California. Lake County's original SWMP was submitted in October 2003. In July 2004, Lake County was permitted to discharge from the MS4s under the General Permit. On February 5, 2013, the SWRCB adopted the final draft of the more prescriptive General Permit for Waste Discharge Requirements for Storm Water Discharges from MS4s, order Number 2013-0001-DWQ, known as the MS4 Permit for Phase II communities. With the adoption of the new State General Phase II Stormwater Permit, all Phase II communities are subject to the new permit requirements.

The SWRCB is advancing LID in California as a means of complying with municipal stormwater permits. LID incorporates site design, including, among other things, the use of vegetated swales and retention basins and minimizing impermeable surfaces, to manage stormwater and maintain a site's predevelopment runoff rates and volumes.

Drinking Water Regulations

The State of California's Code of Regulations contains many provisions related to drinking water. The regulations are extensive and encompass all aspects related to the development of a safe source of water, protecting the source, sizing and constructing new water systems, permitting, operating and monitoring, operator certification, and other provisions. California drinking water laws are contained in Title 17 and Title 22 Code of Regulations and are put into effect by the SWRCB, Division of Drinking Water.

Recycled Water Policy

The Statewide Recycled Water Policy was originally approved on May 14, 2009. An amendment to the Policy was approved on April 25, 2013. The Policy specifies the following goals for California regarding recycled water:

- Increase the use of recycled water over 2002 levels by at least one million acre-feet per year (AFY) by 2020 and by at least two million AFY by 2030.
- Increase the use of stormwater over use in 2007 by at least 500,000 AFY by 2020 and by at least one million AFY by 2030.
- Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020.

- Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

In the Policy, the SWRCB acknowledges the potential for salts and nitrogen compounds to be of concern relative to the use of recycled water and its potential impacts on groundwater quality because high levels of salts and nutrients can make groundwater unsuitable for drinking. The policy therefore calls for the preparation of salt and nutrient management plans to aid in management of these compounds relative to groundwater quality when evaluating and approving recycled water projects. The Policy also acknowledges concerns regarding constituents of emerging concern (CECs). In response, it requires regular monitoring for CECs consistent with recommendations by the California Department of Public Health and the 'blue-ribbon' advisory panel that was convened by the SWRCB to guide future actions relating to CECs. CECs are a concern for groundwater recharge project, but not for recycled water irrigation projects.

Title 17 Code of Regulations

The California Department of Public Health (CDPH) is responsible for developing criteria for regulating the use of recycled water in California. The RWQCBs promulgate requirements for individual projects in conformance with the CDPH regulations. Title 17 states "that the water supplier will protect the public water supply from contamination by implementation of cross connection control program". Sections 7601-7605 describe the measures required to prevent contamination of potable water from recycled water.

Title 22 California Code of Regulations

As stated above, CDPH is responsible for developing criteria for regulating the use of recycled water in California. Article 4 in Title 22 of the California Code of Regulations sets water quality standards and treatment reliability criteria for recycled water. Title 22 establishes regulatory requirements for use of recycled water to protect its beneficial uses for land applications and/or industrial uses.

According to Title 22 of the California Code of Regulations (CCR), developed and implemented by CDPH, recycled water can be used for irrigation, wetlands, restricted and non-restricted recreational impoundments, landscape impoundments, industrial or commercial cooling or air conditioning, toilet flushing and industrial and construction applications (22 CCR).

Title 22 establishes quality and treatment standards for the beneficial use of recycled water. The recycled water quality standards (organized with the highest level of treatment first and the lowest level of treatment last) are as follows:

Disinfected tertiary recycled water: A filtered and subsequently disinfected wastewater that meets the following criteria:

- The filtered wastewater has been disinfected by either:
  - A chlorine disinfection process following filtration that provides a contact time (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or

  - A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

- The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed [a most probable number (MPN)] of 2.2 per 100 milliliters [mL] utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

Disinfected secondary-2.2 recycled water: Recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed an MPN of 2.2 per 100 mL utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period.

Disinfected secondary-23 recycled water: Recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed an MPN of 23 per 100 mL utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 mL in more than one sample in any 30-day period.

Undisinfected secondary recycled water (also known as oxidized wastewater): Wastewater in which the organic matter has been stabilized, is non-putrescible, and contains oxygen.

Water Reclamation Requirements

In 2016, the SWRCB adopted water reclamation requirements for recycled water use (General Order WQ 2016-0068-DDW). This General Order establishes standard conditions for recycled water use and allows an Administrator to issue water-recycling permits. Only treated municipal wastewater for non-potable uses can be permitted, such as landscape and crop irrigation, or decorative waterscapes (SWRCB, 2016). The General Order is enforced through the RWQCB and the SWRCB, Division of Drinking Water. The necessary plans and technical documents to permit all planned water recycling facilities under the General Water Recycling Permit would be prepared for the Proposed Project.

On-Site Wastewater Treatment Systems Policy

In June 2012, the SWRCB adopted Resolution No. 2012-0032, which includes the Water Quality Control Policy for Siting, Design, Operation and Maintenance of On-Site Wastewater Treatment Systems (OWTS Policy). The goal of the OWTS Policy is to correct and prevent system failures due to poor siting and design, and excessive OWTS densities. The OWTS Policy recognizes that Local Agencies, typically county health departments, have greatest regulatory expertise; they will remain as leads. Local Agencies have historically focused on public health. The OWTS Policy adds new focus on water quality protection, and has a risk-based approach for new, replacement, and failing OWTS. Four risk tiers require increasing Regional Board oversight of Local Agencies:

Tier 0: Existing OWTS

- Applies to properly functioning systems that do not need corrective action and are not near an impaired water body subject to TMDL, local agency's special provisions, or located within 600 feet of a water body listed on OWTS Policy Attachment 2.
- Maximum flow rate is 10,000 gpd.

Tier 1: Low Risk New or Replacement OWTS

- Applies to new or replacement OWTS that comply with conservative siting and design standards described in the OWTS Policy.
- Tier 1 applies when a Local Agency Management Program (LAMP) has not been approved by the Regional Water Board.
- Maximum flow rate is 3,500 gpd.

Tier 2: Local Agency Management Program for New or Replacement OWTS

- Applies to new or replacement OWTS that comply with the siting and design standards in an approved LAMP. LAMPs are developed by Local Agencies based on local conditions; siting and design standards may differ from Tier 1 standards.
- Maximum flow rate is 10,000 gpd.

Tier 3: Advanced Protection Management Program

- Applies to OWTS located near impaired surface water bodies that are subject to a Total Maximum Daily Load (TMDL) implementation plan, a special provision contained in a LAMP, or is located within 600 feet of a water body listed on OWTS Attachment 2.
- Supplemental treatment requirements may apply to a Tier 3 system.
- Maximum flow rate is 10,000 gpd.

Tier 4: OWTS Requiring Corrective Action

- Applies to systems that are not properly functioning (failing).
- Failure may be indicated by surfacing effluent, wastewater backing up in plumbing fixtures, OWTS component/piping structural failure, or significant groundwater or surface water degradation

Lake County does not have an approved LAMP and therefore Lake County regulates OWTS under Tier 1. Sections 7 and 8 of the OWTS Policy specify minimum siting, design and construction standards to protect water quality. These standards include setback distances from surface waters and wells, minimum depths to groundwater, and maximum application rates. Section 7 also includes maximum allowable density of single-family dwelling units. Under Tier 1, influent to an OWTS may not exceed 3,500 gpd.

General Waste Discharge Requirements for Small Domestic Wastewater Treatment Facilities

The SWRCB has adopted General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems (Order WQ 2014-0153-DWQ). This general order provides for domestic wastewater

systems with a monthly average flow rate of 100,000 gpd or less. The category of Small Domestic Systems covered by this general order is not limited to individual residences, but also includes systems for schools, campgrounds, small commercial or residential subdivisions, restaurants, resort hotels/lodges and other non-industrial uses. The Proposed Project would be required to prepare and submit a Report of Waste Discharge (ROWD) for each of the planned wastewater facilities on the property. Upon review of the ROWD, and with the determination that coverage under this general order is appropriate, the RWQCB's Executive Officer will issue a Notice of Applicability when coverage under this general order has been authorized. The general order contains effluent limitations, operational requirements, discharge specifications and monitoring and reporting requirements that every system must meet. In addition, the NOA contains site-specific monitoring and reporting requirements.

General Waste Discharge Requirements for Aggregate and/or Concrete Facilities

The SWRCB is developing general WDRs for aggregate processing facilities and/or concrete manufacturing facilities wastewater systems. This general order will be applicable statewide and is intended to streamline and improve permitting consistency. A draft of the general order was released on October 24, 2019. The draft general order includes discharge prohibitions and discharge specifications that all facilities must meet. Coverage under the general order will not be available until it is adopted by the SWRCB. Once available, applicants of new facilities will be required to prepare and submit a ROWD. Upon review of the ROWD and with the determination that coverage under this general order is appropriate, the RWQCB's Executive Officer will issue a Notice of Applicability. The NOA will contain necessary site-specific Mitigation and Reporting Program (MRP) requirements.

California Well Standards

California Well Standards (1991), published by the DWR, define well siting and design characteristics, and are usually incorporated into County codes. Domestic well setbacks from potential sources of contamination are contained in the California Well Standards. Domestic wells are required to be built with certain features, including a minimum 50-foot sanitary seal to exclude shallow waters which may contain contaminants from surface activities, and a base on the ground surface to exclude potential floodwaters. The California Well Standards also require certain plumbing features such as check valves, flow meters, and sample taps (DWR, 1991). The wells drilled and constructed on the project site for domestic use would conform to the California Well Standards.

California Division of Safety of Dams

The California Water Code entrusts the regulatory Dam Safety Program to the Department of Water Resources, Division of Safety of Dams (DSOD). DSOD provides oversight to the design, construction, and maintenance of over 1,200 jurisdictional sized dams in California. DSOD ensures dam safety by:

- Reviewing and approving dam enlargements, repairs, alterations, and removals to ensure that the dam appurtenant structures are designed to meet minimum requirements.
- Performing independent analyses to understand dam and appurtenant structures performance. These analyses can include structural, hydrologic, hydraulic, and geotechnical evaluations.
- Overseeing construction to ensure work is being done in accordance with the approved plans and specifications.

- Inspecting each dam on an annual basis to ensure it is safe, performing as intended, and is not developing issues. Roughly 1/3 of these inspections include in-depth instrumentation reviews of the dam surveillance network data.
- Periodically reviewing the stability of dams and their major appurtenances in light of improved design approaches and requirements, as well as new findings regarding earthquake hazards and hydrologic estimates in California.

Dams under DSOD jurisdiction include artificial barriers, together with appurtenant works, which are 25 feet or more in height or have an impounding capacity of 50 acre-feet or more. Any artificial barrier not in excess of six feet in height, regardless of storage capacity, or that has a storage capacity not in excess of 15 acre-feet, regardless of height, is not considered jurisdictional. There are six jurisdictional dams on the project site: Upper Bohn Lake (Eaton H. Magoon Lake), Detert Reservoir (Guenoc Lake), Langtry Lake, Bordeaux Lake, Burgundy Lake and McCreary Lake.

In 2017, the California Legislature passed Senate Bill (SB) 92 requiring owners of state jurisdictional dams, except those classified as low hazard dams, to develop inundation maps and emergency action plans. DSOD approves inundation maps, and the Governor's Office of Emergency Services (Cal OES) approves emergency action plans.

The department classifies the downstream hazard potential of all state jurisdictional dams based on a "sunny-day loading condition," which assumes the maximum possible stored water elevation and non-flood seasonal inflow. The hazard classifications are defined as follows:

1. Low Hazard Potential. No probable loss of human life and low economic and environmental losses. Losses are expected to be principally limited to the owner's property.
2. Significant Hazard Potential. No probable loss of human life but can cause economic loss, environmental damage, impacts to critical facilities, or other significant impacts.
3. High Hazard Potential. Expected to cause loss of at least one human life.
4. Extremely High Hazard Potential. Expected to cause loss of at least one human life and one of the following:
    a. Result in an inundation area with a population of 1,000 persons or more, or
    b. Result in the inundation of facilities or infrastructure, the inundation of which poses a significant threat to public safety as determined by the department on a case-by-case basis.

On the project site, Upper Bohn Lake (Eaton H. Magoon Lake) is classified as having a High Hazard Potential. DSOD has approved an inundation map for this dam. The Upper Bohn Lake dam inundation area is east of the project site along Routan Creek and an unnamed tributary to Putah Creek and Lake Berryesa. Detert Reservoir (Guenoc Lake) is classified as having a Significant Hazard Potential and an inundation map must be approved by DSOD by January 1, 2021. All other jurisdictional dams on the project site are classified as Low Hazard Potential and inundation maps and emergency action plans are not required.

Sustainable Groundwater Management Act

The intent of the Sustainable Groundwater Management Act (SGMA; Water Code § 10720 et seq.) is to "enhance local management of groundwater consistent with rights to use or store groundwater… [and] to

preserve the security of water rights in the state to the greatest extent possible consistent with the sustainable management of groundwater." According to DWR mapping, the Collayomi Valley Groundwater Basins overlaps the southwestern edge of the project site southeast of Detert Reservoir, and the Coyote Valley Groundwater Basin includes Guenoc Valley which lies within the project site. Most of the project site is located outside of a defined groundwater basin. The Coyote Valley and Collayomi Valley Groundwater Basins have been identified under SGMA to be very low priority (DWR, 2019a). SGMA applies to all groundwater basins identified by DWR, and encourages, but does not require, very low priority basins to be managed under a Groundwater Sustainability Plan (GSP). In 2006, The Lake County Watershed Protection District prepared the "Lake County Groundwater Management Plan" (GMP) which included all of the groundwater basins in the County. In the absence of a GSP, the GMP is the governing groundwater management plan. The LCGWMP does not provide guidelines for the review of specific land use projects, but rather focuses on County-wide initiatives to better understand and manage groundwater. The GMP includes the following plan components:

- Groundwater Monitoring – work with DWR and other stakeholders to monitor groundwater levels and quality as well as land subsidence.
- Inter-Agency Coordination – continue to work with DWR, SWRCB, USGS and other local agencies to manage groundwater.
- Water Well Policies – support policies and programs in the County that address wellhead and recharge protection, proper construction and abandonment of well, and projection of the County's groundwater resources.
- Management of Groundwater Projects – review proposals for projects that involve conjunctive use, groundwater recharge or storage or remediation of contamination.

Local

Lake County Code of Ordinances

Water resources and safety in Lake County are regulated by the Lake County Code of Ordinances (Code). Chapter 9 of the Code - Health and Sanitation, Article VIII, contains regulations for wells and the preservation of groundwater. Per the Code, a well permit must first be obtained from the Health Officer and filed with the Lake County Health Department prior to construction. Chapter 9 of the Code also outlines regulations for the sanitary disposal of sewage. Approval of a new wastewater system must be obtained from the County Health Officer demonstrating that the system would comply with local permitting requirements. Chapter 25 of the Code - Floodplain Management, outlines floodplain management regulations to minimize flood losses, including regulation of erosion, alteration of floodplains, control of grading and dredging, and regulation of the construction of flood barriers. Chapter 28 of the Code – Groundwater, regulates the extraction and exportation of groundwater from Lake County. Chapter 29 of the Code – Stormwater Management Ordinance, regulates stormwater for the purpose of reducing pollutants in stormwater discharges and by prohibiting non-stormwater discharges.

Lake County General Plan

The General Plan contains goals and policies related to water resources. Applicable General Plan Water Resources Element and Health and Safety Element policies related to the Proposed Project are listed below.

Policy WR-1.1: In known groundwater recharge areas, the predominant land use and resource activities should allow for the continued recharge of the groundwater basin and protect groundwater quality. Clustered development should be encouraged to promote open space and maintain infiltration. Regulations may include, but are not limited to, the limitation of structural coverage and impervious surfaces and prohibition of uses with the potential to discharge harmful pollutants, increase erosion, or create other impacts degrading water quality. The County will, wherever feasible, incorporate groundwater recharge strategies into land use practices, project siting and design. The use of permeable surfacing materials shall be strongly encouraged in these areas.

Policy WR-2.1: All proposed land use and development plans should be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. Effects include, but are not limited to: soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris by runoff from the site.

Policy WR-2.2: The County shall continue to monitor and enforce provisions to control non-point source water pollution contained in the United States Environmental Protection Agency NPDES program.

Policy WR-2.3: The County shall continue to enforce provisions to control erosion and sediment from construction sites.

Policy WR-2.4: The County shall continue to require the use of feasible and practical BMPs to protect surface water and groundwater from the adverse effects of construction activities and urban runoff.

Policy WR-2.5: The County shall ensure the design of facilities and management of stormwater runoff in a safe and environmentally sustainable manner. This will be accomplished through the proper siting, design and operation and maintenance of storm drainage collection and drainage facilities so as to protect the people, property, and environment including the quality of runoff water and receiving water.

Policy WR-3.2: The County shall review new development proposals to ensure the intensity and timing of growth will be consistent with the availability of adequate water supplies. Projects must provide evidence of water availability prior breaking ground for construction.

Policy WR-5.1: The County shall require the use of water conservation techniques appropriate for new development. Such techniques include, but are not limited to; requiring low flow plumbing fixtures on new construction the use of high efficiency irrigation systems, use of gray-water for landscaping, the integration of storm water runoff into passive groundwater recharge, the use (when feasible) of reclaimed water resources for reasonable and beneficial use and the use of drought-tolerant vegetation.

Policy WR-5.5: The County shall require the use of water-conserving appliances and fixtures in all new development, as mandated by State law.

Policy WR-5.9: To augment groundwater supplies and to conserve potable water for domestic purposes, the County should seek opportunities to expand the use of reclaimed wastewater for all beneficial uses.

Policy HS-6.1: All development within the designated floodway or floodplain zones shall conform to Federal Emergency Management Administration regulations and the Lake County Flood Plain Management Plan

Policy HS-6.2: The 100-year floodplain zones (as designated on maps prepared by the Federal Emergency Management Administration, refer to Figure 7-2) should be protected and maintained through strict limitation on land use. To carry out this policy, the following guidelines on development should be observed:

- Critical facilities (those facilities which should be open and accessible during emergencies) should not be permitted.
- Passive recreational activities (those requiring non-intensive development, such as hiking, horseback riding, picnicking) are permissible.
- New development and divisions of land, especially residential subdivisions, shall be developed to minimize flood risk to structures, risk to infrastructure, and ensure safe access during flood conditions.
- The County shall impose stringent controls on approvals of septic systems where there is a substantial likelihood of infiltration of floodwater into the systems, and/or the discharge from the systems into floodwaters.

Policy HS-6.6: Prior to the approval of urban development project sites and projects within floodplain areas, the project applicant shall demonstrate that such development will not adversely impact downstream properties or contribute to flooding hazards.

Lake County Rules and Regulations for On-Site Sewage Disposal

The Lake County Rules and Regulations for On-Site Sewage Disposal (County of Lake, 2010) are rules adopted in per the County Code to prescribe requirements for on-site sewage disposal systems. This document provides design criteria for standard on-site sewage disposal subsurface systems (LCR 1-130) as well as alternative systems that maybe used in the Project area including subsurface drip disposal systems (LCR 1-155), pressurized distribution systems (LCR 1-160), aerobic systems (LCR 1-195), sand filter systems (LCR 1-190 & LCR 1-200), other media filter (LCR 1-210-215) systems, steep slope systems (LCR 1-220), holding tanks (LCR 1-270), and experimental systems (LCR 1-290).

Middletown Area Plan

The Middletown Area Plan (2010) is a guide for long-term growth and development in the Middletown Planning Area, of which the Proposed Project lies, and is a compliment to the Lake County General Plan. The Middletown Area Plan has the objective of maintaining and ensuring there are adequate water resources for sustainable long-term beneficial uses within the Middletown Planning Area. Policy 3.2.1a of the Middletown Area Plan states that new development should be designed to conserve water through the use of drought resistant vegetation and low flow plumbing features. Policy 3.2.1b encourages groundwater monitoring within the planning area. Policy 3.2.1c states that projects shall implement appropriate erosion control measures that reduce soil stability problems and landslide hazards, especially as it affects waterways. Furthermore, the Middletown Area Plan labels the Langtry/Guenoc region as a Special Study Area, which is guided by Policies 6.3.1a through 6.3.2c. These policies generally encourage the retention of agricultural uses and low-impact planned development. These policies are under the jurisdiction of the Lake County Community Development Department and Department of Public Works.

3.9.4 IMPACTS

Method of Analysis

The Proposed Project was analyzed by comparing baseline conditions, as described in the Environmental Setting, to conditions during construction and/or operations of the Proposed Project. Analysis focused on issues related to surface hydrology, flood hazards, groundwater supply, and surface and groundwater quality.

The following technical studies prepared for the Proposed Project are referenced in this section and included as appendices to this EIR:

- **Appendix GRADING**: Earthwork Plan
- **Appendix SW**: Stormwater Design Report
- **Appendix STORMMID**: (Middletown Housing Site) Stormwater Design Report
- **Appendix WSA**: Water Supply Assessment
- **Appendix CCWD**: (Middletown Housing Site) CCWD Conditional Will Serve Letter
- **Appendix SCA**: Middletown Sewer Capacity Analysis

As described in **Section 2.5.3**, this section analyzes a full buildout year for Phase 1 and future phases of 2030, although construction of future phases is actually anticipated to end in 2040. A buildout year of 2030 was conservatively analyzed because the overall volume of water demand and wastewater generation estimates over the course of time would be greater with a buildout year of 2030 instead of 2040.

Thresholds of Significance

Criteria for determining the significance of impacts to hydrology and water quality have been developed based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Impacts associated with hydrology and water quality would be considered significant if the Proposed Project would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - result in substantial erosion or siltation on- or off-site;
    - substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite-;
    - create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
    - impede or redirect flood flows;
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

This analysis assumes that development within the project site would comply with the County's General Plan policies and Design Standards; therefore, such policies and standards are not specifically identified as mitigation.

Impacts

IMPACT 3.9-1	VIOLATE ANY WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS OR OTHERWISE SUBSTANTIALLY DEGRADE SURFACE OR GROUND WATER QUALITY.			
	Guenoc Valley Site		Other Phase 1 Areas	
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.9-1: Storm Water Pollution Prevention Plan, MM: 3.9-2 Aggregate/ Concrete Monitoring and Reporting Program	MM 3.9-1: Storm Water Pollution Prevention Plan	MM 3.9-1: Storm Water Pollution Prevention Plan	MM 3.9-1: Storm Water Pollution Prevention Plan
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant

Guenoc Valley Site and Off-site Infrastructure Improvement Areas: Phase 1 – Project Level Analysis

Construction

General Construction and Dewatering

Development of Phase 1 would involve the construction of roadways, buildings, parking lots, infrastructure, new homes and landscaping. Construction would take place within a development area of approximately 3,950 acres (**Table 2-2**) and approximately 10 million cubic yards of fill would be moved within the Guenoc Valley Site (**Appendix GRADING**). Construction of roads would occur in areas of steep terrain and would require numerous stream and drainage crossings.

As part of Phase 1, an off-site well may be established near the intersection of Butts Canyon Road and SR-29 (see **Figure 2-5**) to provide water for the Proposed Project. An optional water pipeline would be located along Butts Canyon Road within the public right-of-way from the well location to the project site. It is assumed that the pipeline would be constructed by excavating an open trench within or adjacent to the road.

Grading, excavation, and other construction-related activities associated with Phase 1 could cause soil erosion at an accelerated rate during storm events. Sediment from erosion could have adverse effects on receiving water quality at the project site and downstream, including Bucksnort Creek, Putah Creek and Lake Berryessa. Such effects could include increased turbidity, which could result in adverse impacts on fish and wildlife, habitat, and impaired recreation and aesthetic values. Another potential source of water quality degradation during construction activities is heavy machinery and other construction equipment. Construction equipment spills could result in the release of polluting constituents, such as heavy metals, oil, grease, and other petroleum hydrocarbons, to Bucksnort Creek, Putah Creek and other on-site channels.

During project construction, if groundwater is encountered during excavation at the construction sites, would be controlled by a system of dewatering sumps and pumps. In addition, surface runoff could collect in excavated areas, adding to the total volume of water that would need to be removed. Water produced during construction dewatering would contain sediment and may contain construction-related contaminants that could degrade water quality if the water were discharged directly to surface water. The discharge of such water could exceed Basin Plan objectives, resulting in a **potentially significant impact** on water quality.

The potential water quality impacts from erosion and sediment and pollutant discharge during project construction would be substantial because of the extent of construction earth moving and soil disturbance activities, and the large quantity of materials being handled and transported. Potential water quality impacts from erosion and sediment and pollutant discharge during project construction would be mitigated through the implementation of a SWPPP that contains, at a minimum, the project-specific BMPs set forth in **Mitigation Measure 3.9-1**. A SWPPP would be required for all construction-related activities on the Guenoc Valley Site and for the off-site water well and associated pipeline. Implementation of **Mitigation Measure 3.9-1**, which includes BMPs that have been demonstrated to be effective at achieving Basin Plan water quality objectives and maintaining beneficial uses, would reduce construction-related water quality impacts related to erosion and sediment and pollutant discharges to a **less-than-significant level**.

Aggregate and Concrete Production

Approximately 10.36 million cubic yards of cut and 10.32 million cubic yards of fill will be required for development of the first phase. To facilitate the reuse of fill material onsite, a rock crushing facility will be operated on the project site north of Upper Bohn Lake where an existing rock crushing operation is located. The proposed rock crushing operation will remain in the same location and will cover approximately 20 acres. The aggregate and sand produced at the site will be stored on the site, as well as trucked to the Golf Course and the Equestrian and Polo Center where it will be stock piled for later use. Aggregate used for concrete and sand will be washed at the rock crushing facility. A new containment pit will be excavated adjacent to the crusher. Wash water will be recycled in an existing pit. After the water is washed over the aggregate or sand, it will be reclaimed into the adjacent pit and re-used for the wash operation.

Aggregate wastewater can contain mercury and high suspended solids concentrations. Mercury is a naturally occurring element that has historically been mined in the Middletown area. Mercury is toxic in all chemical forms, but methylmercury is the form that poses the highest risk to the environment due to its toxicity and ability to bioaccumulate in aquatic organisms. Methylation is the process that converts inorganic

mercury into methylmercury. Studies have shown that methylation can occur in the water column and in sediment, both by biological and abiotic processes. Mercury strongly adsorbs to soil particulates. Because mercury is primarily immobilized through adsorption and sedimentation, containing aggregate wastewater in appropriately designed and maintained ponds minimizes the potential for mercury to degrade water quality (SWRCB, 2019c).

A portable concrete batch plant would be located at the rock crushing facility. The batch plant would produce concrete for use in the construction of Phase 1. Operation of the plant would generate concrete wastewater primarily from washing, rinsing, moisture management, residual waste management, and dust control activities. Other sources of concrete wastewater include truck rinsing and washing and loadout area washing. The primary constituents of concern in concrete wastewater are alkalinity (high pH), hexavalent chromium, salinity, and suspended solids. Cementitious materials such as Portland cement can increase the pH of water to 12 or more, which can be caustic and corrosive. Discharge of high pH wastewater can alter soil chemistry, degrade water quality, and if discharged to surface water, impact aquatic life. Chromium is a naturally occurring metal found in trace amounts in geologic materials like those quarried for cement. Chromium generally exists in either trivalent or hexavalent states. The hexavalent state is more toxic. Because the cement manufacturing process converts trivalent chromium to hexavalent chromium during the raw material roasting process, hexavalent chromium is also found in concrete. Salinity is a measure of dissolved solids in water. Concrete manufacturing increases salinity by dissolving soluble salts that exist in aggregate soil particles, dissolving soluble constituents that exist in Portland cement and admixtures, and through evapoconcentration of wastewater in ponds. Suspended solids are small particles that remain in suspension in water. Discharge of suspended solids to surface waters can impact wildlife habitat. Because contaminants may be adsorbed to suspended solids, controlling off-site discharges of turbid wastewater is important (SWRCB, 2019c).

Operation of the aggregate and concrete production during Phase 1 has the potential to **significantly impact** water quality from the release of mercury, chromium and wastewater with elevated pH and suspended solids. Potential water quality impacts would be mitigated through permitting requirements established by the RWQCB. It is expected that the facility would be permitted under the General WDRs for Aggregate and/or Concrete Facilities (general order) or if the general order has not been approved, the RWQCB may permit the facility under a MRP. Regardless of the specific permitting structure, the RWQCB will set discharge prohibitions that contain, at a minimum, the project-specific stipulations set forth in **Mitigation Measure 3.9-2**. Implementation of **Mitigation Measure 3.9-2**, and other permitting requirements which would be established by the RWQCB, would reduce water quality impacts related to operation of the aggregate and concrete facility to a **less-than-significant level**.

Operation

Wastewater Treatment

As described in **Section 2.5.2.5**, the Proposed Project would include wastewater service areas that would collect and treat wastewater from commercial uses, supporting uses and some residential areas. These areas would be served by sanitary sewer collection systems and centralized water reclamation plants (WRPs). Residential uses may be connected to one of these service areas or may be served by individual onsite residential systems.

Water Reclamation Plants and Recycled Water Use

The WRPs would consist of small package plants at the Maha Farm, Redhill/Renaissance Golf Course, Resort at Trout Flat, Central Back of the House, Equestrian Center, Bohn Ridge Resort, the Spa, On-Site Workforce Housing, and the Camping Area. **Figure 2-12** shows the approximate locations of nine systems. Overall, approximately 191 acre-feet per year of wastewater would be treated at the water reclamation plants. Based on an estimated reuse potential of 85 percent, approximately 163 acre-feet per year of recycled water would be available for reuse at buildout of Phase 1. This would represent between 17% to 18% of the total non-potable water demand for Phase I.

The small biological package style treatment systems would include either a membrane biological reactor (MBR), a multi-stage trickling filter with a membrane filtration system, or packed-bed textile filter. All of the wastewater systems would also include advance filtration and disinfection systems and inline water quality monitoring systems to comply with the State of California's Recycled Water Laws. The treatment systems would be designed to meet Title 22 recycled water regulations for tertiary level disinfected recycled water that can be used for unrestricted irrigation and recreational use of the water.

The WRPs would be permitted under the General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems (Order WQ 2014-0153-DWQ). This general order contains effluent limitations, operational requirements, discharge specifications and monitoring and reporting requirements that every system must meet. In addition, each wastewater treatment facility would be issued a Notice of Applicability by the RWQCB that contains site-specific monitoring and reporting requirements.

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). 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 WRPs would be designed, constructed and operated in accordance with these requirements and as planned would not require any special consideration or variance for approval and permitting. The WRPs as planned would be also consistent with the State's Water Recycling Policy. The WRPs would produce an effluent with a total nitrogen concentration less than 10 mg/L and the effluent would be disinfected prior to reuse for primary for landscape irrigation purposes.

Recycled wastewater would be distributed through a "non-potable" water distribution system. The "non-potable" water distribution system would also convey untreated surface water from the reservoirs on the site and groundwater from on-site wells. The recycled water system would be required by the State to incorporate and maintain reliability features to ensure the safe performance of the recycled water system, such as State-approved backflow preventer devices to avoid cross-connection and contamination of the surface reservoirs and wells by recycled water.

Recycled water would be used for landscape irrigation, vineyard and orchard irrigation and frost protection, make up water to ornamental water features, dust control, fire protection, and vehicle washing. Over irrigation could potentially increase the runoff of recycled water in nearby drainages. Title 22 recycled water use requirements prohibit the over-application of recycled water to the extent that it would cause ponding

and runoff into adjacent surface water bodies. These policies minimize the potential for the runoff of recycled water applied through irrigation.

Constituents associated with recycled water that have the potential to degrade groundwater include salinity, nutrients, pathogens (represented by coliform bacteria), disinfection by-products (DBPs), constituents of emerging concern (CECs) and endocrine disrupting chemicals (EDCs).

Salinity is measured in water through various measurements, including but not limited to, total dissolved solids (TDS) and electrical conductivity. Excessive salinity can impair the beneficial uses of water. Elevated salinity levels in recycled water can impair groundwater. However, recycled water would only make up a portion of the non-potable water used for irrigation. Other sources would include surface water, agricultural water supply wells and precipitation. The blending of sources of irrigation water (e.g. recycled water blended with stormwater) would generally reduce concentrations of, and/or loading rates of salinity constituents. As a result, salinity increases in use areas where the irrigation water is a blend of water sources are less likely to impair an existing and/or potential beneficial use of groundwater.

Nitrogen is a nutrient that may be present in recycled water at a concentration that can degrade groundwater quality. The WRPs would produce an effluent with a total nitrogen concentration less than 10 mg/L, which is the Safe Drinking Water Act maximum contaminant level for nitrate (as nitrogen). Application of recycled water at agronomic rates and considering soil, climate, and plant demand minimizes the movement of nutrients below the plants' root zone. When applied to cropped (or landscaped) land, some of the nitrogen in recycled water would be taken up by the plants, lost to the atmosphere through volatilization of ammonia or denitrification, or stored in the soil matrix. As a result, nitrogen increases are unlikely to impair an existing and/or potential beneficial use of groundwater.

Pathogens in the recycled water would be removed through disinfection at the WRPs. DBPs consist of organic and inorganic substances produced by the interaction of chemical disinfectants with naturally occurring substances in the water source. Common disinfection by-products include trihalomethanes, haloacetic acids, bromate, and chlorite. DBPs present in recycled water receive additional treatment when applied to land. Biodegradation, adsorption, volatilization, and other attenuative processes that occur naturally in soil would reduce the concentrations and retard migration of DBPs in the subsurface.

CECs in recycled water as they pertain to the State Water Board’s Recycled Water Policy are defined to be chemicals in personal care products, pharmaceuticals including antibiotics, antimicrobials; industrial, agricultural, and household chemicals; hormones; food additives; transformation products, inorganic constituents; and nanomaterials. Many of the CECs are so new that standardized measurement methods and toxicological data for interpreting their potential human or ecosystem health effects are unavailable. Monitoring of health-based CECs or performance indicator CECs is not required by the Water Boards for recycled water used for landscape irrigation due to the low risk of ingestion of the water.

Endocrine disrupting chemicals are mostly man-made, found in various materials such as pesticides, metals, additives, or contaminants in food, and personal care products. Human exposure to EDCs occurs via ingestion of food, dust and water, via inhalation of gases and particles in the air, and through the skin. Perchlorate is an endocrine disrupting chemical that may be present in hypochlorite solutions, which is a type of disinfectant used for wastewater. Formation of perchlorate in hypochlorite solution can be minimized

when proper manufacturing, handling, and storage conditions are followed. The blending of sources of irrigation water would further reduce any concentration of perchlorate present in recycled water and would unlikely to affect beneficial uses or degrade groundwater quality.

Residential Wastewater Systems

There are three types of residential wastewater systems planned for the larger and more remote lots which cannot be readily served by the more centralized treatment systems. The type of system used would depend on site-specific soil and groundwater conditions, and distance to other properties or land uses. Type 1A system is a standard septic system consisting of a septic tank and subsurface disposal system that would be used on residential parcels that have suitable soil and groundwater conditions and meets setback requirements. A Type 1B system would include an on-site enhanced treatment system (such as an aerobic treatment, textile filter, sand filter or other alternative treatment system) that would provide pretreatment of the wastewater before it is disposed onsite in a subsurface disposal system. The enhanced treatment system would be required to address site-specific issues, such as marginal soil conditions, high groundwater, or other site constraints that would not allow for a standard septic system to be utilized. Type 1C system would include an effluent sewer system to connect a residential parcel to a community wastewater treatment and recycled water system. The effluent sewer system is made up of an interceptor tank (septic tank) and a pump tank that contains a duplex pump system that would be connected to a small-diameter pressure pipeline that conveys only the liquid portion of the household wastewater for treatment at one of the proposed WRPs. The systems would be designed to conform with Lake County and State of California Standards.

The SWRCB has found that on-site wastewater treatment systems work well for the removal of pathogens, and to a lesser extent some but not all other contaminants, when they are installed in areas with appropriate geology, soils, and hydrologic conditions (SWRCB, 2012). Attenuation and removal of pathogenic bacteria, viruses, and protozoa in the soil is accomplished through such mechanisms as microbial predation, filtration/adsorption, and inactivation (die-off). OWTS Policy Tier 1 requires that a minimum of five feet of soil separate the bottom of the dispersal system from groundwater, which the SWRCB stipulates to provide for the complete removal of pathogens.

While some nitrogen removal occurs as effluent passes through the soil column, potential impacts of elevated nitrogen levels to the receiving groundwater are mitigated through OWTS Policy's limitation on average residential densities. The limits on residential densities are based on average annual rainfall. Higher precipitation results in greater dilution of effluent in the groundwater therefore allowing greater density of on-site wastewater treatment systems in areas of higher precipitation. Based on the average annual precipitation in Middletown of 44 inches, the allowable density is one single-family dwelling unit per 0.5 acre. The proposed residential densities would be substantially lower than this threshold. The proposed residential lots where residential wastewater systems may be used would range from 1 to 55 acres. Additionally, most of the smaller parcels would be served by a WRP, and most other parcels would use a Type 1C system where the liquid portion of the effluent would be treated at one of the proposed WRFs. As a result, the Proposed Project would have lower residential densities using on-site wastewater treatment systems than the allowable densities in the OWTS Policy, which have been set to limit nitrate as nitrogen in groundwater to less than in less than 10 mg/L, which is the drinking water standard.

Wastewater Conclusion

The recycled water systems would be permitted under the State's Water Reclamation Requirements for Recycled Water Use (Order WQ 2016-0068-DDW). The recycled water systems as planned would be consistent with the regulations and standard covered under the State's recycled regulations and associated standards contained in Title 22 Public health rules. The treatment and disposal systems would be designed, constructed and operated in accordance with these requirements and as planned would not require any special consideration or variance for approval and permitting. The WRPs and residential septic systems would also be designed to conform to Lake County and State of California permitting requirements. The proposed treatment and disposals systems are demonstrated to be effective at achieving removing pollutants from wastewater, meeting Basin Plan water quality objectives and maintaining beneficial uses. Impacts to surface and groundwater quality would be **less than significant**.

Interference with Existing Groundwater Contamination

A former geothermal landfill, owned and monitored by PG&E, (Geothermal Inc. landfill) is located at 19020 Butts Canyon Road, between the Guenoc Valley Site boundary and the Off-Site Well Site. As discussed in **Section 3.8.2**, there is a plume of contaminated water associated with ponds formerly used to store waste from geothermal exploration. Groundwater analyses from monitoring wells have found elevated levels of boron, sulfate, chloride, and total dissolved solids. The landfill has been capped and closed and eucalyptus trees were planted to control groundwater levels. As noted in the tentative order, a Plume Delineation Report was submitted to the CVRWQCB in June of 2017. According to the report, the impacts to groundwater from the landfill is concentrated in the immediate vicinity of the closed landfill. The report also found that the plume has not grown in over two decades and that the outer-most plume boundaries have remained the same (California Water Boards, 2019b). The plume is therefore approximately 0.75 miles from the closest edge of the Guenoc Valley Site and 2.5 miles from the Off-Site Well Site. Based on the information provided in the Waste Discharge Requirements of the new tentative order (California Water Boards, 2019b) and review of the monitoring reports[2], the plume is expected to stay in the vicinity of the landfill and not impact wells supplying water to the Proposed Project. As addressed under **Impact 3.9-2** below, with the implementation of **Mitigation Measure 3.9-3**, use of groundwater for the Proposed Project would not cause drawdown or depletion of groundwater supplies. Based on the sustainable operation of Project wells, distance to the former landfill, and continued monitoring by the CVRWQCB of the landfill site, operation of the wells on the Guenoc Valley Site or the Off-Site Well Site would not influence groundwater levels or movement in the vicinity of former landfill. Likewise, operation of the Guenoc Valley Site wells or the off-site well would not cause intrusion of the contaminated groundwater plume into nearby drinking water wells, including the water supply wells for the community of Middletown. Impacts associated with potential interference with existing groundwater contamination would be **less than significant**.

[2] The semi-annual monitoring reports and plume delineation report are located under the Site Maps/Documents tab here:
https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=L10005342355

Guenoc Valley Site: Future Phases – Programmatic Analysis

Construction

General Construction and Dewatering

Future phases of development would involve the construction of structures, roadways, parking lots, and infrastructure. As outlined in **Section 2.5**, **Table 2-1**, future phases may include approximately 200 hotel units, 300 resort residential units, 1,000 residential estate villas and 400 workforce co-housing bedroom units. Resort amenities such as outdoor entertainment, sports and recreation facilities may be expanded by up to 658 acres. Agriculture and agricultural accessory areas may be expanded by up to 48 acres, and other accessory uses may be expanded by up to 28 acres. Construction of these facilities would require grading, excavation, and other construction-related activities that could cause soil erosion at an accelerated rate during storm events. Sediment from erosion could have adverse effects on receiving water quality at the project site and downstream, including Bucksnort Creek, Putah Creek and Lake Berryessa. Such effects could include increased turbidity, which could result in adverse impacts on fish and wildlife, habitat, and impaired recreation and aesthetic values.

Another potential source of water quality degradation during construction activities is heavy machinery and other construction equipment. Construction equipment spills could result in the release of polluting constituents, such as heavy metals, oil, grease, and other petroleum hydrocarbons, to Bucksnort Creek, Putah Creek and other on-site channels.

As described under the Phase 1 analysis, water produced during construction dewatering would contain sediment and may contain construction-related contaminants that could degrade water quality if the water were discharged directly to surface water. The discharge of such water during the construction of future phases could exceed Basin Plan objectives, resulting in a **potentially significant impact** on water quality.

Potential water quality impacts from erosion and sediment and pollutant discharge during project construction would be mitigated through the implementation of a SWPPP that contains, at a minimum, the project-specific BMPs set forth in **Mitigation Measure 3.9-1**. Implementation of **Mitigation Measure 3.9-1**, which includes BMPs that have been demonstrated to be effective at achieving Basin Plan water quality objectives and maintaining beneficial uses, would reduce construction-related water quality impacts related to erosion and sediment and pollutant discharges to a **less-than-significant** level.

Aggregate and Concrete Production

The proposed on-site rock crushing operation and portable concrete batch plant analyzed under Phase 1 may be used under future phases. The aggregate and concrete production may occur either at the location identified under Phase 1 or at another location on the project site. As described under Phase 1, operation of the aggregate and concrete production during future phases has the potential to **significantly impact** water quality from the release of mercury, chromium and wastewater with elevated pH and suspended solids. Potential water quality impacts would be mitigated through permitting requirements established by the RWQCB. It is expected that the facility would be permitted under the General WDRs for Aggregate and/or Concrete Facilities (general order). Consistent with the general order, the RWQCB will set discharge prohibitions that contain, at a minimum, the project-specific stipulations set forth in **Mitigation Measure 3.9-2**. Implementation of **Mitigation Measure 3.9-2**, and other permitting requirements which would be

established by the RWQCB, would reduce water quality impacts related to operation of the aggregate and concrete facility to a **less-than-significant** level.

Operation

Water Reclamation Plants and Recycled Water Use

Development of future phases would expand the number of hotel units, resort residential units, residential estate villas and workforce co-housing bedroom units as well as resort amenities. As a result, additional wastewater would be generated on the project site. As described in **Section 2.5.3**, wastewater facilities for Phase 1 would be sized to accommodate future development. No additional water reclamation facilities are expected to be developed in future phases. However, the future wastewater flow is estimated to increase the total amount of wastewater to approximately 354 acre-feet per year. Operation of the water reclamation plants would continue to be permitted under the General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems (Order WQ 2014-0153-DWQ). The recycled water systems would continue to be permitted separately from the treatment plants under the State's Water Reclamation Requirements for Recycled Water Use (Order WQ 2016-0068-DDW). As described under Phase 1, 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.

Residential Wastewater Systems

As outlined in **Section 2.5**, **Table 2-1**, future phases may include approximately 1,000 residential estate villas. As with the residential estate villas proposed under Phase 1, the larger and more remote lots which cannot be readily served by the more centralized treatment would have on-site residential wastewater systems. Three types of residential wastewater would be used depending on site specific soil and groundwater conditions, and distance to other properties or land uses. Type 1A system is a standard septic system consisting of a septic tank and subsurface disposal system. The Type 1B system would include an on-site enhanced treatment system (such as an aerobic treatment, textile filter, sand filter or other alternative treatment system) that would provide pretreatment of the wastewater before it is disposed onsite in a subsurface disposal system. The Type 1C system would include an effluent sewer system to connect a residential parcel to a community wastewater treatment and recycled water system. The systems would be designed to conform with Lake County and State of California Standards. Currently, Lake County regulates residential septic systems with effluent flows of 3,500 gpd or less under Tier 1 of the State's OWTS Policy. As described under Phase 1, the State's OWTS Policy includes conservative siting and design standards to ensure the complete removal of pathogens and limitations on average residential densities to ensure the levels of nitrogen and other constituents in the receiving groundwater do not exceed drinking water standards.

Conclusion

As described under Phase 1, the WRPs and residential septic systems would be designed to conform to Lake County and State of California permitting requirements. The proposed treatment and disposals systems are demonstrated to be effective at achieving removing pollutants from wastewater, meeting Basin Plan water quality objectives and maintaining beneficial uses. With adherence to regulatory requirements, impacts to surface and groundwater quality would be **less than significant**.

Off-Site Workforce Housing – Project Level Analysis

Construction

Development associated with the off-site workforce housing, including the construction of single-family units and duplexes, would involve the construction of structures, roadways, landscaping, parking lots, utilities and infrastructure, which would require grading, excavation, and other construction-related activities on and off the site that could cause soil erosion at an accelerated rate during storm events. As with development of the first and future project phases, sediment from erosion could have adverse effects on receiving water quality and construction equipment spills could potentially release pollutants. Water produced during construction dewatering would contain sediment and may contain construction-related contaminants that could degrade water quality if the water were discharged directly to surface water. The most notable water body near the Middletown Housing Site is Dry Creek, which borders the western boundary of the project site. This is a **potentially significant impact**. Implementation of **Mitigation Measure 3.9-1**, which includes BMPs that have been demonstrated to be effective at achieving Basin Plan water quality objectives and maintaining beneficial uses, would reduce construction-related water quality impacts related to erosion and sediment and pollutant discharges to a **less-than-significant** level.

Operation

As described in **Section 2.6.1**, wastewater service would be provided by connection to an existing sewer main in Santa Clara Road. Wastewater generated from the housing development would be treated at the Middletown WWTP. The Middletown WWTP currently experiences average daily dry weather flows of 0.10 million gallons, and is permitted for a 30-day average daily dry weather flow which does not exceed 0.15 million gallons (Harter, 2019). The projected flow from the Middletown Housing Site to the Middletown WWTP from buildout of the off-site workforce housing is 0.01 million gallons (**Appendix SCA**), which would increase the total average daily dry weather flows to 0.11 million gallons, resulting in flows lower than the permitted 0.15 million gallons. Wastewater flows from the proposed housing development would not impact the ability of the Middletown WWTP to comply with the waste discharge requirements set by the RWQCB. Impacts to surface and groundwater quality would be **less than significant**.

Impact Summary

In summary, the Proposed Project, including Phase 1, future phases, Off-site Workforce Housing, and Off-site Infrastructure Improvements, would not violate any water quality standards or WDRs or otherwise substantially degrade surface or ground water quality. The construction and operation of each component would comply with permit requirements established by the SWRCB and CVRWQCB to protect water quality. In addition, specific discharge prohibitions are identified in Mitigation Measures 3.9-1 and 3.9-2 to ensure all impacts would be **less than significant**.

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.			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially Significant	Less than Significant	Less than Significant	Potentially Significant
Mitigation Measures	MM 3.9-3: Off-Site Groundwater Well Safe Yield Analysis and Monitoring	None Required	None Required	MM 3.9-3: Off-Site Groundwater Well Safe Yield Analysis and Monitoring
Significance After Mitigation	Less than Significant	Less than Significant	N/A	Less than Significant

Guenoc Valley Site and Off-site Infrastructure Improvement Areas: Phase 1 – Project Level Analysis

Phase 1 of the Proposed Project has the potential to impact groundwater supplies through groundwater use or by decreasing the amount of groundwater recharge. As described in **Section 2.5.2.5**, two separate water supply systems would be developed for Phase 1: a potable water system primarily used to supply all the drinking, interior, and recreation water demands features (i.e. swimming pools) and a separate non-potable water system to meet all the non-drinking water and primarily exterior water demands for irrigation, non-recreational water features (i.e. fountains and other features), fire protection water and construction related water demands. The separate water systems would be constructed within three zones; the Guenoc Valley Zone, the Upper Bohn Lake Zone, and the Camping Area Zone.

The potable water system would be supplied by a series of groundwater supply wells. Each potable water zone would have between two to four wells so that at any given time only one or two wells would be in operation, allowing the other wells to be "rested" for several months. This will allow management of the wells to avoid overdrafting the groundwater basin. The non-potable water system would be supplied by a combination of surface water from the on-site reservoirs, recycled from the on-site water recycling plants, and groundwater supply wells. Water supplies from existing on-site reservoirs are licensed with the SWRCB, Division of Water Rights and can only be used on designated place of use (POU) land within the Guenoc Valley Site (see **Figure 2-3** for POU locations).

Water Demand

The potable and non-potable water demand has been estimated for Phase 1 and future phases. The Water Supply Assessment (WSA) provides a detailed analysis of the potable water demand for Phase 1 (**Appendix WSA**, Table 5-1). The potable water demand for Phase 1 is summarized in **Table 3.9-1**. As shown, Phase 1 would have 249 acre-feet per year of potable water demand. As noted above, all potable water would be supplied by a series of groundwater supply wells on the project site.

TABLE 3.9-1
SUMMARY OF DAILY AND ANNUAL POTABLE WATER DEMANDS

Phase	Average Daily Water Demand (gallons/day)	Average Daily Water Demand (ac-ft/day)	Maximum Day Water Demand (gallons/day)	Maximum Annual Water Demand (ac-ft/day)	Average Annual Water Demand (gallons/yr)	Average Annual Water Demand (ac-ft/yr)
Phase 1	224,436	0.7	462,425	1.4	81,277,648	249
Future Phases	211,894	0.7	406,669	1.2	141,969,180	436
Total Estimated Potable Water Demand	**436,330**	**1.3**	**869,093**	**2.7**	**223,246,828**	**685**

SOURCE: Appendix WSA

The WSA provides a detailed analysis of the non-potable water demand for Phase 1 (**Appendix WSA**, Table 5-4). The total non-potable water demand for Phase 1 and future phases is summarized in **Table 3.9-2**. As shown, Phase 1 would have 1,027 acre-feet per year of non-potable water demand. As noted above, non-potable water would be supplied by a combination of surface water from the on-site reservoirs, recycled water from the on-site water recycling plants, and groundwater supply wells.

TABLE 3.9-2
SUMMARY OF NON-POTABLE NET WATER DEMANDS BY SOURCE

Phase	Non-Potable Demand in Place of Use (ac-ft/yr)	Non-Potable Demand outside Place of Use (ac-ft/yr)	Average Annual Demand (ac-ft/yr)
Phase 1	545	482	1,027
Future Phases	1,187	759	1,946
Project Area Existing Vineyard (not part of Project)	1,115	18	1,133
Adjacent Vineyard (not part of Project)	390	-	390
Total Non-Potable Demand	**3,237**	**1,259**	**4,496**

SOURCE: Appendix WSA

Groundwater Availability

To evaluate the long-term availability of on-site groundwater to supply project needs, the WSA modeled groundwater conditions using the Basin Characterization Model (BCM) of California developed by the U.S. Geological Survey. The BCM simulates watershed hydrologic processes from 1900 to 2016 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 groundwater water availability analysis uses BCM outputs for a "hot and low rainfall" scenario developed in a recent study of climate change vulnerability in northern San Francisco Bay Area counties. BCM outputs resulting from the "hot and low rainfall" scenario represents the largest departure from recent, observed climate conditions out of six future scenarios evaluated for the northern Bay Area counties. For the "hot and low rainfall" scenario, mid-century averages (i.e., 2040 to 2069) include a 21% reduction in average annual precipitation, an 11% increase in minimum monthly winter temperatures, and an 8% increase in the maximum monthly summer temperatures. The evaluation of future groundwater availability presented in the WSA and summarized here incorporates the "hot and low rainfall" scenario. Additional details on the BCM are provided in **Appendix WSA**, Section 4.3.

Results of the groundwater availability analysis for current and projected future conditions for the project site are presented in **Table 3.9-3**. The results of the BCM analysis reflect the variability in groundwater flowing into the deep groundwater zone on an annual basis for current conditions (water years 1988 to 2016) and projected future conditions (water years 2020 to 2040). The amount of groundwater varies with water year conditions. Although the flow is reduced in years with reduced rainfall, one benefit of using groundwater as a source of supply is the ability to manage the use of groundwater in conjunction with other available supplies. For all phases of the Proposed Project, the availability of surface water and recycled water sources provides for some flexibility in the use of groundwater for non-potable uses in years when surface water availability is greater. Likewise, in years when surface water supplies are decreased due to water year conditions, groundwater use can be increased, provided that the long-term use of groundwater does not exceed the long-term average availability.

TABLE 3.9-3
CURRENT AND FUTURE GROUNDWATER SUPPLY AVAILABILITY (ACRE-FEET)

Year Type	Normal Year	Dry Year	Critical Dry Year
Current Availability (2020 – 2029)	8,700	6,570	4,800
Projected Future Availability (2030 – 2040)	6,200	4,950	3,740

Values reflect average annual inflows to the deep groundwater zone calculated by post-processing BCM model outputs for current conditions and for future conditions. Future year conditions take into account potential impacts of Climate Change (see Appendix WSA).

SOURCE: Appendix WSA

Water Supply Sufficiency

Groundwater from on-site wells would be used to supply potable water and supplement non-potable water to proposed land uses on the project site. While groundwater would supply all of the potable water needs, because surface water and recycled water would be used for non-potable water, to analyze the sufficiency of the water supply, both potable and non-potable demand and all water sources must be considered together. The water demand for non-potable water is broken into POU water demand and Non-POU water

demand. POU water demand would be met by existing surface water entitlements and non-POU water demand would be met by groundwater and recycled water.

The WSA assumes that the Proposed Project would achieve full build-out conditions of Phase 1 within the first five years (by 2025). The projected timing to build-out of the future phases (2030) is used in the WSA to provide a conservative estimate of future demands. As shown in **Tables 3.9-4** and **3.9-5**, it is assumed that 800 acre-feet/year of groundwater would be available to meet potable water demands and 7,900 acre-feet/year of groundwater would be available to meet non-potable water demands. However, as shown in **Tables 3.9-4** and **3.9-5**, the available potable water would exceed demand by 542 acre-feet/year in 2020 and 106 acre-feet/year in 2040, and non-potable water supply would exceed demand in POU by 3,920 acre-feet/year in 2020 and by 2,733 acre-feet/year in 2040 and demand outside POU by 7,467 acre-feet/year in 2020 and by 4,362 acre-feet/year in 2040. As a result, the actual amount of non-potable groundwater use is expected to be significantly less than the available supply.

In addition, as shown in **Table 3.9-6**, availability of water supplies during dry water years is projected to exceed projected water demands. The water supply is projected to result in surpluses through 2040 without causing overdraft of groundwater supplies.

TABLE 3.9-4
NORMAL WATER YEAR POTABLE WATER SUPPLIES AND DEMANDS THROUGH 2040 (ACRE-FEET)

	2020	2025	2030	2035	2040
Supply (Developed Groundwater Wells)*	**800**	**800**	**800**	**800**	**800**
Demand					
Existing Uses (winery and houses)	9	9	9	9	9
Phase 1	249	249	249	249	249
Future Phases (maximum)	0	0	436	436	436
Total (Total Demand)	**258**	**258**	**694**	**694**	**694**
Surplus	**542**	**542**	**106**	**106**	**106**

***** 800 acre-feet/year is the assumed amount of potable water supplied by groundwater wells on the project site. Non-potable groundwater supply is shown in Table 3.9-5.
SOURCE: Appendix WSA

TABLE 3.9-5

NORMAL WATER YEAR NON-POTABLE WATER SUPPLIES AND DEMANDS THROUGH 2040 (ACRE-FEET)

	2020	2025	2030	2035	2040
Supply					
Local Surface Water (existing entitlement)	7,360	7,360	7,360	7,360	7,360
Groundwater	7,900	7,900	5,400	5,400	5,400
Recycled Water	163	163	326	326	326
Total Supply	**15,423**	**15,423**	**13,086**	**13,086**	**13,086**
Demand in POU					
Existing Uses (vineyard irrigation)	1,390	1,390	1,390	1,390	1,390
Project Area Vineyard (not part of Project)	1,115	1,115	1,115	1,115	1,115
Adjacent Vineyard (not part of Project)	390	390	390	390	390
Phase 1	545	545	545	545	545
Future Phases	0	0	1,187	1,187	1,187
Total Demand	**3,440**	**3,440**	**4,627**	**4,627**	**4,627**
Surplus in POU	**3,920**	**3,920**	**2,733**	**2,733**	**2,733**
Demand outside POU					
Existing Uses	105	105	105	105	105
Project Area Vineyard (not part of Project)	9	18	18	18	18
Phase 1	482	482	482	482	482
Future Phases	0	0	759	759	759
Total Demand	**596**	**605**	**1,364**	**1,364**	**1,364**
Surplus outside POU	**7,467**	**7,458**	**4,362**	**4,362**	**4,362**

SOURCE: Appendix WSA

TABLE 3.9-6

NORMAL, DRY, AND MULTIPLE-DRY YEARS WATER SUPPLY SUFFICIENCY FOR 2020 AND 2040

	Annual Water Supply and Demand (acre-feet)				
	Normal Year	Critical Dry Year	Multiple Dry Years		
			2	3	4
2020					
Potable Supply Total	800	800	800	800	800
Potable Demand Total[1]	258	258	258	258	258
Potable Surplus	**542**	**542**	**542**	**542**	**542**
Non-Potable Supply in POU[2]	7,360	4,200	4,600	4,600	4,600
Non-Potable Demand in POU	3,440	3,440	3,440	3,440	3,440
Non-Potable Surplus in POU	**3,920**	**760**	**1,160**	**1,160**	**1,160**
Non-Potable Supply outside POU[2]	7,900	4,000	5,770	5,770	5,770
Non-Potable Demand outside POU	596	596	596	596	596
Non-Potable Surplus outside POU	**7,304**	**3,404**	**5,174**	**5,174**	**5,174**
2040					
Potable Supply Total	800	800	800	800	800
Potable Demand Total[3]	694	694	694	694	694
Potable Surplus	**106**	**106**	**106**	**106**	**106**
Non-Potable Supply in POU[2]	7,360	5,200	5,600	5,600	5,600
Non-Potable Demand in POU	4,627	4,627	4,627	4,627	4,627
Non-Potable Surplus in POU	**2,733**	**573**	**973**	**973**	**973**
Non-Potable Supply outside POU[2]	6,526	4,066	5,276	5,276	5,276
Non-Potable Demand outside POU	1,364	1,364	1,364	1,364	1,364
Non-Potable Surplus outside POU	**5,162**	**2,702**	**3,912**	**3,912**	**3,912**

[1] Includes Phase 1 water demand and existing demands planned to continue

[2] Reflects current groundwater and surface water supplies and water year supply variability including ongoing and approved increased vineyard development under the appropriative surface water rights

[3] Includes Phase 1 and future phases water demand and existing demands planned to continue

SOURCE: Appendix WSA

Groundwater Recharge

Groundwater supply is partly dependent on recharge by percolation of rainwater through permeable surfaces. Groundwater recharge in the project area occurs primarily along stream channels such as Bucksnort Creek and Putah Creek. While construction of Phase 1 would result in the development of approximately 460 acres of impervious surfaces it would be distributed throughout the 16,000-acre project site and stormwater drainage 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 (**Appendix SW**). The proposed drainage plan will ensure that stormwater will be retained on the project site and existing rates of infiltration of stormwater into groundwater would not be substantially altered. Any dewatering required during construction would be short-term and would not have the potential to substantially interfere with groundwater levels. As a result, Phase 1 of the Proposed Project would not substantially alter groundwater recharge on the project site.

Off-Site Groundwater Well

As described in **Section 2.5.2.5**, a groundwater well may be developed during Phase 1 to provide supplemental groundwater as a source of water for agricultural irrigation, fire protection and make up water for recreational water features and ponds. The well would be developed on property located near the intersection of Highway 29 and Butts Canyon Road. The proposed well is expected to yield flows over 1,000 gpm and would provide water to the project site via a new pipeline constructed along Butts Canyon Road. The well would be located within the Collayomi Valley Groundwater Basin. Saint Helena Creek is approximately 400 feet from the western edge of the well site, and Putah Creek is approximately 1,500 feet from the western edge of the well site.

Use of the proposed high capacity groundwater well has the potential to draw down the Collayomi Valley Groundwater Basin. Based on a review of regional studies and local well data, the groundwater basin has been characterized not as a uniform alluvium aquifer, but as a series of layers and lenses of permeable or semi-permeable materials that are partially interconnected (Wagner and Bonsignore, 2019). Accordingly, the nature and extent of the aquifer that would be utilized is not well defined and the amount of water that could be withdrawn without substantially decreasing groundwater supplies has not been determined. Operation of the proposed high capacity groundwater well has the potential to decrease groundwater levels, and impede sustainable groundwater management of the basin. This is considered to be a **potentially significant** impact. With implementation of **Mitigation Measures 3.9-3**, which requires limiting pumping to an established safe yield as determined by a Registered Professional Engineer and monitoring of pumping and groundwater levels, these impacts would be reduced to a **less-than-significant** level.

Conclusion

With implementation of **Mitigation Measures 3.9-3**, construction and operation of Phase 1 of the Proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. Impacts to groundwater would be **less than significant**.

Guenoc Valley Site: Future Phases – Programmatic Analysis

Future phases of the Proposed Project have the potential to impact groundwater supplies through groundwater use or by decreasing the amount of groundwater recharge. As described under Phase 1, two separate water supply systems would be developed in Phase 1: a potable water system and a separate non-potable water. These systems would be expanded under future phases to meet increased water demand for expanded facilities. Future phases would result in the potential development of a maximum of 200 hotel units, 300 resort residential units, 1,000 residential estate villas and 400 workforce co-housing bedroom units. Resort amenities such as outdoor entertainment, sports and recreation facilities may be expanded by up to 658 acres. Agriculture and agricultural accessory areas may be expanded by up to 48 acres, and other accessory uses may be expanded by up to 28 acres.

Water Demand

The WSA provides a detailed analysis of the potable water demand for future phases (**Appendix WSA**, Table 5-2). The potable water demand for future phases is summarized in **Table 3.9-1**. As shown, future phases would have 436 acre-feet per year of potable water demand. At maximum buildout of Phase 1 and future phases, total potable water demand would be 685 acre-feet per year. As with Phase 1, all potable water would be supplied by a series of groundwater supply wells on the project site.

The non-potable water demand for future phases is summarized in **Table 3.9-2**. As shown, future phases would have 1,946 acre-feet per year of non-potable water demand. At the maximum buildout of Phase 1 and future phases, total non-potable water demand (including vineyards on and off the project site) would be 4,496 acre-feet per year. As with Phase 1, non-potable water would be supplied by a combination of surface water from the on-site reservoirs, recycled water from the on-site water recycling plants, and groundwater supply wells.

Groundwater Availability

To evaluate the long-term availability of on-site groundwater to supply project needs, the WSA modeled groundwater conditions using the BCM described under Phase 1. Results of the groundwater availability analysis for current and projected future conditions for the project site are presented in **Table 3.9-3**. The evaluation of future groundwater availability presented in the WSA and summarized here incorporates expected changes in regional hydrology associated with climate change, including decreased precipitation and increased temperatures.

Water Supply Sufficiency

The sufficiency of groundwater and other water supply sources has been analyzed by the WSA as summarized under Phase 1. For purposes of the water supply analysis it is assumed that build-out of future phases would occur by 2030. As show in **Tables 3.9-4** and **3.9-5**, the availability of water supplies for normal water years is projected to exceed projected water demands, for buildout of the Proposed Project. In addition, as shown in **Table 3.9-6**, availability of water supplies for a critically dry water year or multiple dry years is projected to exceed projected water demands. The Proposed Project's water supply is projected to result in surpluses through 2040 without causing overdraft of groundwater supplies.

Groundwater Recharge

Future phases of development would result in an increase of impervious surfaces associated with additional hotel units, residences and workforce co-housing and expanded resort amenities such as outdoor entertainment, sports and recreation facilities. As described in **Section 2.5.3**, future phases would be designed to route stormwater drainage to 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. Stormwater would be retained on the project site and existing rates of infiltration of stormwater into groundwater would not be substantially altered. Any dewatering required during construction would be short-term and would not have the potential to substantially interfere with groundwater levels. As a result, future phases of the Proposed Project would not substantially alter groundwater recharge on the project site.

Off-Site Groundwater Well

As described under Phase 1, a high capacity off-site well may be developed to provide groundwater as a primary source of non-potable water to the project site. Operation of the proposed high capacity groundwater well to support future phases of development has the potential to decrease groundwater, interfere with groundwater recharge and impede sustainable groundwater management of the basin. This is considered to be a **potentially significant impact**. With implementation of **Mitigation Measures 3.9-3**, which requires limiting pumping to an established safe yield as determined by a Registered Professional Engineer and monitoring of pumping and groundwater levels, these impacts would be reduced to a **less-than-significant** level.

Conclusion

With implementation of **Mitigation Measures 3.9-3**, construction and operation of future phases of the Proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. Impacts to groundwater would be **less than significant**.

Off-Site Workforce Housing – Project Level Analysis

Water Supply

As described in **Section 2.6.1**, water supply for the Middletown Housing Site would be provided by the Callayomi County Water District (CCWD or District). CCWD obtains its water supply from groundwater wells that draw on the Collayomi Valley Groundwater Basin. The basin consists of the alluvium deposits along Collayomi Valley and Long Valley, which are connected hydrologically. The maximum thickness of alluvium in the basin is approximately 350 feet deep in Collayomi Valley, and 475 feet deep in Long Valley. Recharge of the basin occurs from percolation of surface water from Putah, Dry and St. Helena Creeks, with some recharge also occurring from infiltration of irrigation water and rainfall. Water levels in the basin range from 3 to 15 feet below the ground surface, and spring groundwater levels have remained generally constant over the last 40 years. Total storage in the basin has been estimated at 36,000 to 37,000 acre-feet, with useable storage capacity estimated at 7,000 acre-feet (LCWPD, 2006a; DWR, 2004). The 2007 CCWD Water Master Plan estimated the District's water demand at buildout to be 603 AFY (CCWD, 2007).

Based on the average demand of residential units in the District of 369 gpd, the development of 49 equivalent single-family units would require approximately 18,100 gpd or 20 acre-feet per year.

Development of the off-site workforce housing would be dependent on water service from CCWD. The Middletown Housing Site is directly adjacent to, but outside of the District's service area and annexation of the site would need to be approved by Lake Local Agency Formation Commission (LAFCO) prior to the District extending service to the site. However, the Middletown Housing Site is within the District's sphere of influence (area identified for future annexation) and a formerly proposed housing development on the site was included in the 2007 Water Master Plan. The former housing development "Stonebrook Meadows Subdivision" was identified in the 2007 Master Plan as a 49-unit development that would have resulted in an average daily demand of 18,100 gpd. No deficiencies have been identified in the long-term availability of groundwater to serve the water demand of the District at buildout. Because a similarly sized housing project on the project site was incorporated into the District's buildout calculations within the 2007 Water Master Plan, service to the proposed Middletown Housing Site was accounted for in the District's plans. CCWD has indicated the ability to serve the project without any additional improvements to the water supply and distribution system (**Appendix CCWD**).

Groundwater Recharge

Development associated with the off-site workforce housing would result in an increase of impervious surfaces associated with the development of residences, a community center, a tennis court, roadways, and parking areas. As described in **Section 2.6.1**, rain gardens and larger stormwater detention and treatment areas would be constructed to ensure no significant increase in stormwater flows from the site.

Stormwater would be retained on the project site and existing rates of infiltration of stormwater into groundwater would not be substantially altered. Any dewatering required during construction would be short-term and would not have the potential to substantially interfere with groundwater levels. As a result, development of the proposed workforce housing would not substantially alter groundwater recharge on the Middletown Housing Site.

Conclusion

Construction and operation of the proposed workforce housing development would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. Impacts to groundwater would be **less than significant**.

Impact Summary

In summary, the Proposed Project, including Phase 1, future phases, Off-site Workforce Housing, and Off-site Infrastructure Improvements, would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Propose Project would impede sustainable groundwater management of the basin. Sustainable water supplies have been identified for each project component. With implementation of Mitigation Measure 3.9-3, which requires limiting pumping off the Off-Site Well to an established safe yield, all impacts would be **less than significant**.

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.			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Mitigation Measures	None Required	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A	N/A

Guenoc Valley Site and Infrastructure Improvement Areas: Phase 1 – Project Level Analysis

Development of Phase 1 would involve the construction of roadways, buildings, parking lots, infrastructure, lakes and landscaping which would alter existing landforms and have the potential to alter existing drainage patterns. The increase in impervious surfaces resulting from the construction of these facilities could increase the rate and amount of stormwater runoff and could introduce urban pollutants into local waterways. Pollutants typically associated with urban uses include oil and grease, coliform bacteria, petroleum hydrocarbons, nitrogen, phosphorus, heavy metals, pesticides, herbicides, and other constituents. There is the potential that urban runoff from the Proposed Project could contain levels of pollutants that could adversely affect water quality in the local streams or increase sediment loads.

As described in **Section 2.5.2.6**, the Proposed Project is designed according to the Bay Area Stormwater Management Agencies Association (BASMAA) Post-Construction Manual. The BASMAA Manual was developed to provide guidelines to assist applicants to incorporate LID features in a manner that demonstrates compliance with the NPDES permit requirements. Specifically, the BASMAA Manual addresses Provision E.12, "Post-Construction Stormwater Management Program," of the State's Phase II NPDES Permit for small MS4s. A Stormwater Design Report has been prepared for Phase 1 which describes the methods that would be used to minimize the impact of development (**Appendix SW**). Consistent with the BASMAA Manual, stormwater drainage areas 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. For the purposes of this analysis, the proposed development has been broken down into three types: roadways, residential estate parcels, and commercial areas.

Roadways

Construction of Phase 1 will include the expansion and improvement of the existing roadway network on the approximately 16,000-acre project site. In order to minimize the impact to undisturbed areas, the

roadway network being developed for the Proposed Project would primarily use the alignments of the existing network of ranch roads. These roads would be widened and improved to meet County requirements. In some areas, new roads would be constructed through undeveloped land. The roadway improvements would expand the acreage of roadways from approximately 34 acres to 151 acres. Because the development of these roadways would be dispersed throughout the entire development area, there would be minimal increases in impervious surfaces and runoff at any specific location. The proposed stormwater measures incorporated into the site design are illustrated on pages 128 and 130 – 131 of the Specific Plan of Development (SPOD) (**Appendix SPOD**). The incorporation of these features into the roadway network is shown on pages 133 – 137 of the SPOD.

Runoff from roads would be collected into roadside swales and ditches which would by dispersed by level spreaders into the adjacent landscape, which would function as treatment measures that remove sediment and pollutants before returning runoff to the natural drainage pattern, consistent with the BASMAA Manual. In steeper areas that require road cuts, finished slopes would have a maximum slope of 2 (horizontal):1 (vertical). Retaining walls would be used where necessary to minimize the extent of road cuts. Retaining walls would incorporate cutoff swales above the walls and vegetated roadside swales at the roadside. At stream crossings, roads would generally be sloped to a swale to convey stormwater to small sediment forebays prior to entering a drainage. Where feasible, larger gullies and streams would be crossed with arched open bottom culverts or bridges. At smaller water crossings, either piped culverts with riprap energy dispersers would be used, or pavement sections would be designed to allow water to flow through pervious base sections so as not to create damned conditions behind roads, thus reducing concentrated flow throughout.

Residential Areas

The first phase of the Proposed Project includes 401 residential estate villa parcels and 141 resort residential parcels dispersed in clusters throughout the development. These parcels would each include a single-family house with a driveway and exterior hardscape with an estimated 0.5-1.0 acre of impermeable area per parcel. In total, approximately 263 acres of impervious surfaces would be associated with residential development. The residential development would occur within clusters but would not be contiguous. Each residential parcel would be designed to incorporate stormwater mitigation within the parcel boundary. The specific measures would depend on the proposed residential design, site size and topography, and landscape design. Specific stormwater management features may include:

- Green/living roofs
- Rainwater harvesting
- Rain gardens and/or flow-thru planters
- Pervious hardscape materials that infiltrate runoff
- Landscape areas that serve as water quality mitigation for hardscape runoff
- Use of existing undisturbed landscape to treat hardscape runoff
- Dispersal of treated runoff to existing drainage pattern via sheet flow

Consistent with the BASMAA Manual, specific stormwater management features would be incorporated into the building and site plans for each residential parcel. The County will require conformance with the post-construction stormwater management requirements of the State Phase II MS4 Permit prior to issuing building permits for individual residential development.

Commercial Areas

The project includes 14 proposed commercial zones (includes hotel related facilities). These zones would be more densely developed and would contain a higher percentage of hardscape then the rest of the proposed site development. In total, approximately 80 acres of impervious commercial area would be developed in Phase 1. The commercial sites would use a combination of self-retaining landscape features and bio-retention areas to address stormwater runoff and comply with the post-construction requirements. Each of the commercial areas has multiple drainage management areas (DMAs) associated with it, which are cataloged in Table 2 in **Appendix SW**. Figures illustrating the layout of hardscape within the commercial areas and conceptual locations of mitigation strategies can be found in Appendix A – Commercial Area Drainage Management Areas of **Appendix SW**. The location, size, and type of mitigation strategies shown are conceptual and will be refined during the detailed design process. Consistent with the BASMAA Manual, specific stormwater management features would be incorporated into the building and site plans for each commercial development. The County will require conformance with the post-construction stormwater management requirements of the State Phase II MS4 Permit prior to issuing building permits for individual commercial development projects.

Conclusion

With the proposed stormwater measures incorporated into the site design, there would be no net increase of stormwater leaving the site for the 2-year 24-hour storm meeting the hydromodification requirements of the BASMAA Manual in compliance with the State Phase II MS4 Permit. The use of vegetated swales, sediment forebays, bio-retention areas, and self-treating areas would ensure that there would be no substantial sources of polluted runoff entering drainages and lakes on the project site. Impacts to site drainage would be **less than significant**.

Guenoc Valley Site: Future Phases – Programmatic Analysis

Future phases of development would involve the construction of structures, roadways, parking lots, and infrastructure, which would alter existing landforms and have the potential to alter existing drainage patterns. As outlined in **Section 2.5**, **Table 2-1**, future phases may include approximately 200 hotel units, 300 resort residential units, 1,000 residential estate villas and 400 workforce co-housing bedroom units. Resort amenities such as outdoor entertainment, sports and recreation facilities may be expanded by up to 658 acres. Agriculture and agricultural accessory areas may be expanded by up to 48 acres, and other accessory uses may be expanded by up to 28 acres. The increase in impervious surfaces resulting from the construction of these facilities could increase the rate and amount of stormwater runoff and could introduce urban pollutants into local waterways.

As described in **Section 2.5.3**, future phases would be designed according to the BASMAA Manual. Consistent with the BASMAA Manual, stormwater drainage 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, meeting the hydromodification requirements of the BASMAA Manual in compliance with the State Phase II MS4 Permit. Compliance with the BASMAA Manual and any subsequent design standards adopted by the County to comply with the State Phase II MS4 Permit are expected to ensure that there would be no net increase of stormwater leaving the site and no substantial sources of

polluted runoff entering drainages and lakes on the project site. Impacts to site drainage are expected to be **less than significant**.

Off-Site Workforce Housing – Project Level Analysis

Development associated with the off-site workforce housing would result in the conversion of undeveloped land to residences, a community center, a tennis court, roadways, and parking areas. The increase in impervious surfaces resulting from the construction of buildings and paved areas could increase the rate and amount of stormwater runoff that could carry urban pollutants into Dry Creek. Pollutants typically associated with residential urban uses include oil and grease, petroleum hydrocarbons, and other constituents.

As described in **Section 2.6.1**, rain gardens and larger stormwater detention and treatment areas would be constructed to ensure no significant increase in stormwater flows from the site. A Stormwater Design Report has been prepared for the Middletown Housing Site (**Appendix STORMMID**). The stormwater plan identifies four stormwater detention and treatment areas – two along Santa Clara Road, one near Dry Creek and one near the center of the residential area. These areas would accept and treat stormwater from the on-site roadways. Rain gardens are incorporated into the house lots to allow for retention and treatment of stormwater within the house lots.

With the incorporation of the proposed stormwater measures incorporated into the site design, there would be no net increase of stormwater leaving the site for the 2-year 24-hour storm meeting the hydromodification requirements of the BASMAA Manual in compliance with the State Phase II MS4 Permit. The use of detention and treatment areas, and rain gardens would ensure that there would be no substantial sources of polluted runoff entering drainages. Impacts to the existing stormwater drainage system would be **less than significant**.

Impact Summary

In summary, the Proposed Project, including Phase 1, future phases, Off-site Workforce Housing, and Off-site Infrastructure Improvements, would not substantially alter existing drainage patterns, result in erosion, siltation or flooding, exceed the capacity of stormwater drainage systems, or provide substantial additional sources of polluted runoff. The Proposed Project is designed according to the BASMAA Post-Construction Manual. The use of vegetated swales, sediment forebays, bio-retention areas, rain gardens and self-treating areas would ensure that there would be no substantial sources of polluted runoff from the Proposed Project. Impacts would be **less than significant**.

IMPACT 3.9-4	IN FLOOD HAZARD, TSUNAMI, OR SEICHE ZONES, RISK RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION.			
	Guenoc Valley Site		Other Phase 1 Areas	
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
Significance Before Mitigation	Potentially Significant	Potentially Significant	Less than Significant	Potentially Significant
Mitigation Measures	MM 3.9-4: Floodplain Analysis, MM 3.9-5: Inundation Mapping, MM 3.9-6: Incorporation of Floodplains and Dam Inundation Zones in Site Plans	MM 3.9-4: Floodplain Analysis, MM 3.9-5: Inundation Mapping, MM 3.9-6: Incorporation of Floodplains and Dam Inundation Zones in Site Plans	None Required	MM 3.9-6: Incorporation of Floodplains and Dam Inundation Zones in Site Plans
Significance After Mitigation	Less than Significant	Less than Significant	N/A	Less than Significant

Guenoc Valley Site and Off-site Infrastructure Improvement Areas: Phase 1 – Project Level Analysis

As shown in **Figure 3.9-2**, most of the Phase 1 development area is within Zone D and a smaller portion is within Zone X. While Zone X designates areas determined by FEMA to be outside of the 0.2% annual chance floodplain, Zone D designates areas where FEMA has conducted no analysis. Accordingly, FEMA has not delineated all of the floodplains that likely occur on the project site along Bucksnort Creek and Putah Creek. The portion of Bucksnort Creek between Detert Reservoir and McCreary Lake has a delineated 100-year floodplain. This floodplain extends up to 600 feet from the creek. However, downstream of McCreary Lake, the extent of floodplains along Bucksnort Creek has not been analyzed. Much of the topography along this segment is steep and therefore any associated floodplains would be very narrow. However, the area surrounding the proposed Equestrian Center is a low-lying alluvial plain. Facilities proposed to be located at the Equestrian Center include a lodge, clubhouse, arena, stables, water reclamation plant, and a surface water pump station. A water reclamation plant is also proposed west of the wilderness camp near Putah Creek in an area where flooding risks have not been analyzed by FEMA. Flooding along the smaller streams on the project site presents a lesser risk. Because of the limited catchment area of these streams, the potential for significant flooding is minor and any flooding that may occur would be directly adjacent to the streams.

The proposed off-site water well location is partly within a delineated 100-year floodplain. If the well is developed within the floodplain, the well and associated equipment could be subject to flooding.

Because the project area is not located near the coast, tsunamis do not present a hazard on the project site. While seiches have the potential to occur within reservoirs on the project site, due to the limited size of the reservoirs, any potential flooding associated with seiches would be restricted to the immediate shore of the reservoirs and would not pose a significant hazard.

The failure of a reservoir dam has the potential to result in a flooding hazard downstream. Potential hazards would be most significant along Bucksnort Creek where both Detert Reservoir and McCreary Lake hold up to 3,220 acre-feet and 2,098 acre-feet respectively. Failures of one or both dams have the potential to flood proposed developments located downstream. Failure of smaller reservoir dams within the project site, including Burgundy Lake, Bordeaux Lake, and Langtry Lake, also have the potential to flood proposed developments. With the exception of Detert Reservoir, these reservoir dams are identified by DSOD as having low downstream hazard potential. Accordingly, under SB 92, these dams currently do not require inundation maps. Detert Reservoir is designated as having a significant downstream hazard potential and therefore an inundation map must be approved by DSOD by January 1, 2021. Development of Phase 1 will introduce facilities that will increase hazards downstream of the dams at Detert Reservoir, McCreary Lake, Burgundy Lake, Bordeaux Lake and Langtry Lake. In the past few years the Detert and Upper Bohn Dams have both had improvements permitted and constructed. The outlet pipes in the dam at Detert Reservoir were replaced in 2018, and the dam at Upper Bohn Lake is currently being raised. Both improvement projects were approved by DSOD.

While the potential for the catastrophic failure of a dam is considered remote, the introduction of proposed Phase 1 developments will increase downstream hazards including facilities that if flooded could release pollutants to flood waters. These facilities may include wastewater treatment plants and water pumping plants with associated back-up generators, fuel tanks, and chemical storage. Other facilities may include lodges, restaurants, hotel units, residential units, arenas, and stables that may contain typical hazardous materials associated with operation and maintenance such as fuels, oil, chemicals, pesticides, fertilizer or cleaning products. Likewise, development of these facilities within the 100-year floodplain could also result in the release of pollutants to flood waters during a flood event. Likewise, if development of the off-site well occurs within the 100-year floodplain, flooding could impact a back-up generator and fuel tank (if provided). The potential for the proposed facilities to release pollutants to flood waters associated with a dam failure or other flood event is considered a **potentially significant impact**. With implementation of **Mitigation Measures 3.9-4** through **3.9-6**, which require mapping of floodplains and inundation zones and incorporation of these hazards in site plans, these impacts would be reduced to a **less-than-significant** level.

Guenoc Valley Site: Future Phases – Programmatic Analysis

As shown in **Figure 3.9-2**, most of the project site is within Zone D which designates areas where FEMA has conducted no analysis. A smaller portion of the project site is within Zone X, which designates areas determined by FEMA to be outside of the 0.2% annual chance floodplain. FEMA has only mapped 100-year floodplains on the project site as being along the portion of Bucksnort Creek between Detert Reservoir and McCreary Lake. However, FEMA has not analyzed flood hazards on the project site along other sections of Bucksnort Creek or along Putah Creek. As a result, the full extent of the 100-year floodplain on the project site is not known. Depending on the location of future development, facilities could be developed in areas subject to flooding. In addition, as described under the Phase 1 analysis, the failure of a reservoir

dam on the project site has the potential to flood proposed developments located downstream along Bucksnort Creek and Putah Creek.

Future phases are expected to include hotel and residential units, villas, outdoor entertainment, sports and recreation facilities, commercial and retail development, agricultural production facilities, and essential support facilities. These facilities may contain typical hazardous materials associated with operation and maintenance such as fuel, oil, chemicals, pesticides, fertilizer or cleaning products. The location of future phase development is not known, but it is possible that facilities could be developed in areas subjected to flooding. The potential for the proposed facilities to release pollutants to waters associated with a dam failure or other flood event is considered a **potentially significant impact**. With implementation of **Mitigation Measures 3.9-4** through **3.9-6**, which require hydraulic analysis of floodplains and inundation zones, and incorporation of these hazards in site plans, these impacts would be reduced to a **less-than-significant** level.

Off-Site Workforce Housing – Project Level Analysis

As described in **Section 3.9.2** above, the Middletown Housing Site is mapped within the 100-year floodplain. Development on the project site would avoid the Regulatory Floodway along the western edge of the property. Development would be restricted to the area of the project site mapped as Zone AO with a flooding depth of two feet. As described in **Section 2.6.1**, the housing development would be constructed on fill so that the finished lower floors of the residential buildings would be 5in. at least one foot above the base flood elevation This would ensure that the Project meets County requirements for buildings in flood zones. Elevation of the buildings would ensure that the proposed housing would not be subject to inundation, and the risk of release of pollutants would be **less than significant**.

Impact Summary

In summary, the Proposed Project, including Phase 1, future phases, Off-site Workforce Housing, and Off-site Infrastructure Improvements, would not risk release of pollutants due to project inundation. With implementation of Mitigation Measure 3.9-4, 3.9-5, and 3.9-6, which requires floodplain analysis, inundation mapping, and incorporation of floodplains and dam inundation zones in site plans, materials that could pollute flood waters would be adequately protected from release in flood waters or relocated out of the 100-year floodplain and inundation zones. Impacts would be **less than significant**.

IMPACT 3.9-5	CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF A WATER QUALITY CONTROL PLAN OR SUSTAINABLE GROUNDWATER MANAGEMENT PLAN?			
	Guenoc Valley Site		Other Phase 1 Areas	
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
Significance Before Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Mitigation Measures	None Required	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A	N/A

Guenoc Valley Site and Off-site Infrastructure Improvement Areas: Phase 1 – Project Level Analysis

The Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin (Basin Plan) establishes water quality objectives and implementation programs to meet stated objectives and to protect the beneficial uses of water in the Sacramento and San Joaquin River Basins. Because Lake County is located within the Sacramento River Basin, all discharges to surface water or groundwater are subject to the Basin Plan requirements.

As described under **Impacts 3.9-1** through **3.9-4**, the construction and operation of Phase 1 of the Proposed Project has the potential to conflict with the Basin Plan. However, construction and operation of the Proposed 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. Additionally, **Mitigation Measures 3.9-1** through **3.9-6** have been identified to address the potential hydrology and water quality impacts of Phase 1. These measures would ensure Phase 1 of the Proposed Project would not conflict with or obstruct implementation of the Basin Plan.

The project site lies partly within the Coyote Valley and Collayomi Valley Groundwater Basins. These groundwater basins 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. In the absence of a GSP, the LCGWMP is the governing groundwater management plan. The LCGWMP does not provide guidelines for the review of specific land use projects, but rather focuses on County-wide initiatives to better understand and manage groundwater. Accordingly, Phase 1 of the Proposed Project would not conflict with or obstruct implementation of a sustainable groundwater management plan. Impacts would be **less than significant**.

Guenoc Valley Site: Future Phases – Programmatic Analysis

As described under **Impacts 3.9-1** through **3.9-4**, the construction and operation of future phases of the Proposed Project have the potential to conflict with the Basin Plan. However, construction and operation of

the Proposed 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. Additionally, **Mitigation Measures 3.9-1** and **3.9-3** through **3.9-6** have been identified to address the potential hydrology and water quality impacts of future phases. These measures would ensure that future phases of the Proposed Project would not conflict with or obstruct implementation of the Basin Plan. As noted above, a GSP has not been prepared for the Collayomi Valley Groundwater Basin. In the absence of a GSP, the LCGWMP is the governing groundwater management plan. The LCGWMP does not provide guidelines for the review of specific land use projects, but rather focuses on County-wide initiatives to better understand and manage groundwater. Accordingly, future phases of the Proposed Project would not conflict with or obstruct implementation of a sustainable groundwater management plan. Impacts would be **less than significant**.

Off-Site Workforce Housing – Project Level Analysis

As described under **Impacts 3.9-1** and **3.9-3**, the construction and operation of the off-site workforce housing has the potential to conflict with the Basin Plan. However, construction and operation of the workforce housing 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. Additionally, **Mitigation Measure 3.9-1** has been identified to address the potential hydrology and water quality impacts. This measure would ensure that construction and operation of workforce housing would not conflict with or obstruct implementation of the Basin Plan.

The Middletown Housing Site lies within the Collayomi Valley Groundwater Basin and would be provided water supply from CCWD which draws on wells within this basin. As noted above, a GSP has not been prepared for the Collayomi Valley Groundwater Basin. In the absence of a GSP, the LCGWMP is the governing groundwater management plan. The LCGWMP does not provide guidelines for the review of specific land use projects, but rather focuses on County-wide initiatives to better understand and manage groundwater. Accordingly, the development of the proposed workforce housing would not conflict with or obstruct implementation of a sustainable groundwater management plan. Impacts would be **less than significant**.

Impact Summary

In summary, the Proposed Project, including Phase 1, future phases, Off-site Workforce Housing, and Off-site Infrastructure Improvements, would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Construction and operation of the Proposed 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. Additionally, Mitigation Measures 3.9-1 through 3.9-6 have been identified to address the potential hydrology and water quality impacts of the Proposed Project. A sustainable groundwater management plan has not been prepared for the affected basins. Impacts would be **less than significant**.

IMPACT 3.9-6	CUMULATIVE HYDROLOGY AND WATER QUALITY IMPACTS			
	Guenoc Valley Site		Other Phase 1 Areas	
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
Significance Before Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Mitigation Measures	None Required	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A	N/A

As described in **Section 4.2**, the cumulative geographic scope for hydrology and water quality is regional development in or near Middletown. A list of existing, planned, proposed, approved, and reasonably foreseeable regional development projects in the vicinity of the project site, is included in **Section 4.2.1**. These projects, which include residential development, commercial/retail development, and agricultural development would have the potential to impact hydrology and water quality during construction (mobilization of sediment and pollutants in surface water) and operation (use of groundwater, discharge of pollutants to surface and groundwater). Compliance with Federal, State and County land use and environmental regulations would typically reduce impacts from development to a less than significant level, and any residual impacts would tend to be localized.

While construction and operation of the Proposed Project has the potential to result in hydrology and water quality impacts, all impacts would be mitigated either through project design, compliance with Federal, State and County land use and environmental regulations, or mitigation measures identified in this section:

- Potential water quality impacts from erosion and sediment and pollutant discharge during project construction would be mitigated through the implementation of a SWPPP that contains, at a minimum, the project-specific BMPs set forth in **Mitigation Measure 3.9-1**.
- Operation of facilities on the project that have the potential to discharge pollutants to surface and groundwater – including the proposed aggregate and concrete facility, water reclamation plants and recycled water system would be operated under waste discharge requirements or monitoring and reporting programs issued by the RWQCB.
- The Proposed Project's water supply would use a combination of surface water, groundwater, and recycled water to meet project demand and the supply is projected to result in surpluses through 2040 without causing overdraft of groundwater supplies.
- With the proposed stormwater measures incorporated into the site design, there would be no net increase of stormwater leaving the site for the 2-year 24-hour storm meeting the hydromodification requirements of the BASMAA Manual in compliance with the State Phase II MS4 Permit. The use of vegetated swales, sediment forebays, bio-retention areas, and self-treating areas would ensure that there would be no substantial sources of polluted runoff entering drainages and lakes on the project site.

- With implementation of **Mitigation Measures 3.9-4** through **3.9-6**, which require hydraulic analysis of floodplains and inundation zones and incorporation of these hazards in site plans, the potential for the proposed facilities to release pollutants to waters associated with a dam failure or other flood event would be reduced to a less-than-significant level.

Compliance with these regulations and mitigation measures would ensure that impacts of the Proposed Project would not significantly contribute to cumulative hydrology and water quality impacts. The Proposed Project's cumulative hydrology and water quality impacts would be **less than significant** and no additional mitigation is required.

3.9.5 MITIGATION MEASURES

MM 3.9-1 Storm Water Pollution Prevention Plan (Impact 3.9-1)

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.

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.
- 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 project, remove or stabilize temporary stream crossings with banks graded to a stable angle.

MM 3.9-2 Aggregate/Concrete Monitoring and Reporting Program (Impact 3.9-1)

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.

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.

MM 3.9-3 Off-Site Groundwater Well Safe Yield Analysis and Monitoring (Impact 3.9-2)

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 five 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 five 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 come up with a Groundwater Management Plan in coordination with a geotechnical engineer for approval by the Community Development Director.

MM 3.9-4 Floodplain Analysis (Impact 3.9-4)

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 (LOMR) with the FEMA.

MM 3.9-5 Inundation Mapping (Impact 3.9-4)

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 DSOD.

MM 3.9-6 Incorporation of Floodplains and Dam Inundation Zones in Site Plans (Impact 3.9-4)

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.

3.10 NOISE

3.10.1 INTRODUCTION

This section provides a description of the existing noise environment of the project area and identifies noise levels expected to be generated by construction and operation of the Proposed Project. Following an overview of the noise setting in **Section 3.10.2** and the relevant regulatory setting in **Section 3.10.3**, project-related impacts and recommended mitigation measures are presented in **Section 3.10.4** and **Section 3.10.5**, respectively.

3.10.2 ENVIRONMENTAL SETTING

Characteristics of Environmental Noise

Noise is generally defined as a loud, unpleasant, unexpected, or undesired sound (Caltrans, 2013a). It is typically associated with human activity and can interferes with or disrupt normal activities. Exposure to high noise levels has been demonstrated to cause problems, such as reduced productivity and create physical and psychological stress. Repeated exposure to loud noise can cause permanent hearing loss and/or tinnitus (OSHA, n.d.). However, aside from the health effects, another human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise; the perceived importance of the noise, and its appropriateness in the setting; the time of day and the type of activity during which the noise occurs; and the sensitivity of the individual (Caltrans, 2013a).

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water, and are sensed by the human ear. Sound is generally characterized by frequency and intensity. Frequency describes the pitch of the sound and is measured in hertz (Hz) while intensity describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. Normal speech has a sound level of approximately 60 dB. Sound levels above approximately 120 dB, such as standing beside a siren, can cause pain and ear injury. Sound levels approaching 140 dB and higher, such as firecrackers, can cause severe pain and ear injury (Centers for Disease Control and Prevention, 2019). The average healthy ear may barely perceive noise level changes of 3.0 dB. A change in sound level of about 10 dB is usually perceived by the average person as a doubling or a halving of the sound's loudness (Caltrans, 2013a). However, due to the logarithmic nature of the dB unit, sound levels cannot be added or subtracted directly. Though, as a general rule, if a sound's intensity is doubled, the sound level increases by 3.0 dB regardless of the initial sound level. For example, 60 dB + 60 dB = 63 dB, and 80 dB + 80 dB = 83 dB.

Human hearing is limited to a select range of perceptible frequencies; it is less sensitive at low frequencies and high frequencies and more sensitive at mid-range frequencies. Human judgement tends to correlate to A-scale levels. When sound measurements are weighted to this, this is called A weighting and the dB level measured is called the A-weighted decibel (dBA; Caltrans, 2013a). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve. Although the dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noises include a mixture of noises from distant sources that create a relatively steady background noise in which no particular source is identifiable.

A single descriptor called the equivalent sound level (L_{eq}) may be used to describe sound that is changing in level. L_{eq} is the energy-mean dBA during a measured time interval. It is the "equivalent" constant sound level that would have to be produced by a given source to equal the acoustic energy contained in the fluctuating sound level measured (Caltrans, 2013a). In addition to the energy-average level, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum L_{eq} (L_{max}) and minimum L_{eq} (L_{min}) indicators that represent the root-mean-square maximum and minimum noise levels measured during the monitoring interval. The L_{min} value obtained for a particular monitoring location is often called the acoustic floor for that location.

Community noise equivalent level (CNEL) is a descriptor used to characterize average sound levels of a 24-hour period with weighting factors included for evening and nighttime sound levels. The Day-Night Average Noise Level (L_{dn}) descriptor defines noise exposure over a 24-hour period. It is calculated by adding a 10-dB penalty to sound levels at night (10:00 p.m. to 7:00 a.m.) to compensate for the increased sensitivity to noise during the quieter evening and nighttime hours (Caltrans, 2013a). Sound levels of typical noise sources and environments are provided in **Table 3.10-1** to provide a frame of reference.

TABLE 3.10-1
TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Rock Band	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1m (3.3 ft) Garage Disposal at 1 m (3.3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vaccum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3.3 ft)
Quiet Urban Nighttime	--40--	Theatre, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing
Source: Caltrans, 2013a		

Effects of Noise on People

The human response to environmental noise is subjective and varies considerably between individuals. The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in dBA, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

Vibration

Vibration, in the general sense, is the periodic oscillatory motion of particles from within a source (e.g. ground) that were in equilibrium (a balanced state; Encyclopedia Britannica, 2019). Vibration is like noise in that it involves a source (e.g. drilling), a transmission path, and a receiver, such as people and structures. While vibration is related to noise, noise is generally considered to be pressure waves transmitted through air whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration in addition to the amplitude and frequency of the source and the response of the system which is vibrating. If the amplitude is high enough, potential negative effects could occur as a result of ground vibration, such as structural and cosmetic damage to buildings and disrupting scientific/technological equipment (Caltrans, 2013b).

Vibration can be measured in terms of acceleration, velocity, or displacement with acceleration and velocity being the more common measurements. Acceleration is measured in inch per second per second while velocity is measured in inch per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities. Peak particle velocity is defined as the highest magnitude of a particle velocity that is associated with an event (Caltrans, 2013b).

Sensitive Receptors

Sensitive receptors are places where the occupants are more susceptible to the adverse effects of exposure to noise. For this EIR, County of Lake General Plan's definition of sensitive receptors is utilized. This means that sensitive receptors are defined to include residential areas, hospitals, convalescent homes and facilities, schools, and other similar land uses.

Regional Setting

Lake County is a mountainous area with scattered communities and agricultural lands. The County population in 2018 was approximately 64,382 people (US Census, 2018a). The Guenoc Valley Site, Middletown Housing Site and Off-Site Infrastructure Improvement Areas are within the Middletown Planning Area. The Middle Planning Area is reported to have a range of high 20's to low 30's dBA in background noise. The primary noise sources are construction, commercial truck traffic and geothermal related noise sources, such as well drilling. Because of the relative low background noise, the difference between this and legally permitted noise limits may be highly noticeable. Therefore, noise complaints may result even if the noise source is within legal limits (Middletown Area Plan, 2010).

Another source of noise in the region is from the agricultural activities and non-commercial vehicle traffic. Approximately 9,753 acres of agricultural lands existed in 2010 (Middletown Area Plan, 2010). Examples of noise generation include a tractor without a cab and a pig squeal, which these can emit noise at or above 100 dB (U.S. Department of Health and Human Services, n.d.). In the County of Lake, noise policies do not apply to agricultural-related practices in rural and agricultural lands (Middletown Area Plan, 2010). In addition to the agriculture, the region has non-commercial vehicle traffic because of the several State Routes (SRs) traversing through it: SR-29, SR-126, SR-20 and SR-53. In addition to these, there are also numerous rural roads through County of Lake, such as Butts Canyon Road.

Guenoc Valley Site

The Guenoc Valley Site is primarily rural and undeveloped with scattered agricultural lands on and offsite, primarily vineyards. The existing ambient noise environment at the Guenoc Valley Site is relatively low and defined primarily by occasional noise from agricultural equipment and vehicles operating within the site, wind, distant roadway traffic, aircraft over flights, bird and insect noise, and noises associated with woodland and brush vegetation. Butts Canyon Road borders the southwestern portion of the site and there are several bodies of water within the site, including Detert Reservoir, Amel Lake, McCreary Lake and Lower Bohn (see **Section 2.2.1** for a complete list). There are a few ranch homes within the Guenoc Ranch, including the Gebhard Lodge and the Lillie Langtry home. The only business establishment within the vicinity of the Guenoc Valley Site is the Langtry Estate and Vineyards Winery. The Langtry winery and associated vineyards, as well as the Lillie Langtry home, are located on a 502-acre island of property under separate ownership within the western portion of the site that is excluded from the Guenoc Valley Site. The Guenoc Valley Site is not within an airport land use plan. There is a private airstrip named 7-M Ranch approximately 1 mile west of the southern site boundary. It is anticipated that the airplanes used on this airstrip are very small private planes or agricultural aircrafts because this airstrip is not found on the FAA list of public and private facilities (FAA, n.d.).

The nearest off-site sensitive receptors consist of rural residential homes. The closest residential receptors to the site boundaries are as follows.

- Rural residential home located off of Butts Canyon Road, approximately 250 feet from the southern boundary of the site (approximately 4,695 feet from the proposed Float Plane Dock, and 3,500 feet from Detert Reservoir)
- Rural residential home located off of County Road 102 (Oat Hill Road) approximately 1,100 feet from the southern site boundary (approximately 3,200 feet to the south of the proposed On-Site Workforce Housing parcel)
- Rural residential homes located northwest of McCreary Lake, approximately 3,000 feet from the northwestern site boundary (approximately 4,000 feet from a potential solar field location)
- Rural residential homes in the Hidden Valley Lake subdivision, the closest of which is approximately 5,000 feet (nearly one mile) from the northwestern site boundary (and 6,000 feet from a potential solar field location)

Within Napa County, the nearest sensitive receptor is a residential unit approximately 3 miles southwest of the project boundary. The nearest non-residential sensitive receptor is Middletown Cemetery District, located approximately 5.25 miles west of the project boundary.

Middletown Housing Site

The Middletown Housing Site is undeveloped and located within a primarily urban area with residential units surrounding it. Just south of the site are the nearest streets, Park Ave and Sunset Ave, and SR-175 is also south of the site.

There are multiple different sensitive receptors located within 0.5 mile of the Middle Housing Site. The nearest residential unit is adjacent to the Middletown Housing Site on its southern border. There are several schools located less than a 1,000 feet northeast of the Middletown Housing Site, including Middletown High School (approximately 1,050 feet northeast), Loconoma Valley High School (approximately 1,050 northeast), Minnie Cannon Elementary School (approximately 800 feet northeast), and Middletown Christian School (approximately 2,000 east). Places of worship are located south and east of the Middletown Housing Site: First Baptist Church (approximately 900 feet south), Saint Joseph Roman Catholic Church (approximately 1,200 feet south east), The Rainbow Church of Living Light (approximately 1,100 feet east), California Tendai Buddhists (approximately 1,600 feet southeast), and Middletown Community Church (approximately 1,900 southwest). The nearest park, museum and library—Middletown Square Park, Gibson Museum, and Middletown Library—are located in the same area and are approximately 2,000 south east of the Middletown Housing Site. The nearest air facility is the 7-m Ranch private airstrip that is approximately 3.3 miles southeast of the Middletown Housing Site. The Middletown Housing Site is not within an airport use plan.

Off-Site Infrastructure Improvement Areas

The Off-Site Well Site is mostly undeveloped pastureland and contains one house, shed, dirt road, and irrigation pond. Butts Canyon Road borders the southwest portion of the well site while SR-29 borders the northwest portion of the site. The proposed pipeline corridor borders Butts Canyon Road on its route to the

Guenoc Valley Site. Standard ambient noise levels may vary for off-site infrastructure because the pipeline component traverses approximately 4.3 miles. Along this route, there are a few residential units adjacent to the road. The nearest residential unit to the Off-Site Well Site is adjacent to the southwest corner of the property boundary. The nearest non-residential sensitive receptor is the Middletown Mansion event center, just north of the property boundary. Additionally, the Middletown Cemetery District is located just across Butts Canyon Road to the southwest of the well site, approximately 50 feet. The nearest school, Middletown Christian School, is approximately 1,200 feet west of the well site boundary. No public airports, or Airport Safety Hazard Areas have been identified within 2 miles of the improvement areas. The nearest airport is the privately owned 7-m Ranch Airport that is consistently more than 2 miles away. The improvement areas are not within an airport land use plan.

Floatplane Noise

Floatplane operations generally consist of smaller and lighter aircraft operating with less frequency and less concentrated use. Also, because floatplanes do not utilize a specific runway and can use large portions of lakes, rivers, and bays for take-off and landings, the operations are usually not concentrated in one particular location, as they are for most land-based runways. Thus the flight paths change slightly depending on wind direction and intensity, and pilot preference. The result is that seaplane sounds tend to be more spread out and not concentrated at one specific runway site. Although relatively minimal when compared to commercial aircraft, floatplane takeoff and flyover noise can cause annoyance and sleep disturbance (Faegre, 2002).

As with other aircraft, floatplanes make their greatest noise on take-off, since it is at that point that a large amount of thrust is required to become airborne. In a seaplane, take-off is generally accomplished at full power in order to clear waves, swells, debris, or other water-related complications until reaching an altitude of 500 feet. Measured maximum noise levels of various floatplane aircraft are provided below in **Table 3.10-2**, at a standard distance of 1,000 feet during takeoff (Faegre, 2002).

TABLE 3.10-2
SEAPLANE TAKEOFF NOISE LEVELS

Type	hp	Propellers	L_{max} @ 1,000 feet
Taylorcraft	85	2	65 dBA
Seabee	215	2	81 dBA
Stinson	250	2	82 dBA
C-180	235	2	86 dBA
C-206	300	3	88 dBA
C-185	300	2	92 dBA
Source: Faegre, 2002			

Traffic Noise

To describe existing noise levels due to traffic, the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs to the model included traffic volumes provided by Abrams Associates as described in **Appendix TIS**. The noise model is used in conjunction with the

Calveno reference noise emission curves, and accounts for vehicle volume and speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the project site. The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To calculate L_{dn}, average daily traffic (ADT) volume data is adjusted based on the assumed day/night distribution of traffic on the project roadways.

Traffic noise levels were predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. **Table 3.10-3** summarizes the modeled traffic noise levels at the nearest sensitive receptors along each roadway segment in the Project area under existing conditions. **Appendix NOISE** provides the complete inputs and results of the FHWA traffic modeling.

3.10.3 REGULATORY CONTEXT

Federal

14 CFR Part 36 - Noise Standards

Planes landing at the proposed float plane dock would be small, propeller-driven airplanes in the commuter category. Section 36.301 of Appendix G to 14 CFR Part 36 establishes aircraft noise limits for the takeoff of such airplanes using the noise measurement standards set in Section G36.111 Flight Procedures. For single-engine planes receiving airworthiness before 2006 and multi-engine airplanes, the noise level must not exceed 76 dBA at a distance of 8,200 feet from the start of takeoff roll. For single-engine airplanes receiving airworthiness after 2006, the noise level must not exceed 70 dBA at a distance of 8,200 feet from the start of takeoff roll. Section 36.301 of Appendix F to 14 CFR Part 36 establishes aircraft noise limits for the flyover of such airplanes. For airworthiness received on or after October 10, 1973, the noise level of flyovers (as measured at an altitude of approximately 1,000 feet) must not exceed 68 dBA for airplanes weighing up to 1,320 pounds. For weights greater than 1,320 pounds up to and including 3,630 pounds the limit increases at the rate of 1 dB per 165 pounds to 82 dBA at 3,630 pounds, after which it is constant at 82 dBA. For airplanes for which application for airworthiness is made on or after January 1, 1975, the noise levels may not exceed the noise levels described above, except that 80 dBA may not be exceeded.

14 CFR § 91.119 - Minimum safe altitudes

Except when necessary for takeoff or landing, no person may operate an aircraft below an altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

TABLE 3.10-3
PREDICTED TRAFFIC NOISE LEVELS (EXISTING CONDITIONS WITH AND WITHOUT THE PROJECT)

Roadway	Segment	Existing (dBA L_{dn})
SR 53	North of SR 29	64.0
SR 29	SR 53 to N. Spruce Grove	63.4
SR 29	N. Spruce Grove to S. Spruce Grove	63.2
SR 29	S. Spruce Grove to Hidden Valley	59.1
SR 29	Hidden Valley to Hartmann	59.1
SR 29	Hartmann to Grange	55.3
SR 29	Grange to Butts Canyon	59.8
SR 29	Butts Canyon to Wardlaw	62.3
SR 29	Wardlaw to Young	60.5
SR 29	Young to Main	62.7
SR 29	Maint to Armstrong	62.4
SR 29	Armstrong to Douglas	62.4
SR 29	Douglas to Callayomi	62.3
SR 29	Callayomi to Lake	65.9
SR 29	Lake to Central Park	59.9
SR 29	South of Central Park	64.5
SR 29	West of SR 53	62.8
Morgan Valley Road	East of SR 53	60.0
N. Spruce Valley Road	East of SR 53	50.6
S. Spruce Valley Road	East of SR 53	57.1
Hidden Valley Road	East of SR 53	52.9
Hartmann Road	East of SR 53	56.4
Grange Road	East of SR 53	44.5
Butts Canyon Road	**SR 29 to Black Oak Hill**	**54.1**
Butts Canyon Road	Black Oak Hill to Oat Hill	55.4
Butts Canyon Road	East of Oat Hill	45.6
SR 175	SR 29 to Santa Clara	58.5
SR 175	West of Santa Clara	61.3
Pope Valley Road	West of Howell Mountain	51.0
Tubbs Road	South of SR 29	53.5
Tubbs Road	North of SR 128	59.7
Source: **Appendix NOISE**		

State

State Building Code, Title 24, Part 2

The State Building Code, Title 24, Part 2 of the California Code of Regulations (CCR) establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room. Title 24 also mandates that for structures containing noise-sensitive uses where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable

noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

Local

County of Lake General Plan

The County of Lake General Plan Noise Element provides the following key terms within this section.

Community Noise Equivalent Level (CNEL): used to characterize average sound levels over a 24-hour period, with weighting factors included for evening and nighttime sound levels. L_{eq} values (equivalent sound pressure levels measured over a 1-hour period - see below) for the nighttime period (10:00 p.m. to 7:00 a.m.) are reduced by 10 dBA in residential and agricultural areas, and by 5 dBA in commercial and industrial areas. For a given set of sound measurements, the CNEL value will usually be about 1 dB higher than the L_{dn} value (average sound exposure over a 24-hour period – see below). In practice, CNEL and L_{dn} are often used interchangeably.

Day-Night Average Sound Level (L_{dn}): average sound exposure over a 24- hour period. L_{dn} values are calculated from hourly L_{eq} values, with the L_{eq} values for the nighttime period (10:00 p.m. to 7:00 a.m.) decreased by 10 dB to reflect the greater disturbance potential from nighttime noises.

Equivalent Sound Level (L_{eq}): the level of a steady-state sound that, in a stated time period and at a stated location, has the same sound energy as the time-varying sound (approximately equal to the average sound level). The equivalent sound level measured over a 1-hour period is called the hourly L_{eq} or L_{eq} (h).

Sensitive Receptors: sensitive receptors are defined to include residential areas, hospitals, convalescent homes and facilities, schools, and other similar land uses.

Noise Element Policies

Policy N-1.1 The County shall consider the compatibility of proposed land uses, utilizing the standards in Table 8-1 (incorporated as **Table 3.10-4**; General Plan Noise Element), with the noise environment when preparing or revising community plans and when reviewing development proposals. Where proposed land uses are likely to produce noise levels exceeding the “normally acceptable” criteria (e.g. “conditionally acceptable”, normally unacceptable”), the County shall require an acoustical analysis prior to development approval to ensure noise mitigation measures are included. Land uses should be prohibited from locating in areas with a noise environment within the “unacceptable” range.

TABLE 3.10-4
TABLE 8-1 OF THE COUNTY OF LAKE GENERAL PLAN

Land Use	Noise Level (CNEL)						
	45-50	**51-55**	**56-60**	**61-65**	**66-70**	**71-75**	**>76**
Residential - Low-Density Single Family, Duplex, Mobile Homes							
Residential - Multiple Family, Group Homes							
Motels/Hotels							
Schools, Libraries, Churches, Hospitals, Extended Care Facilities							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							
	Normally Acceptable. Specified land use is satisfactory, based on the assumption that any buildings involved are of normal, conventional construction, without any special noise insulation requirements.						
	Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features have been included in the design.						
	Normally Unacceptable. New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor area must be shielded.						
	Unacceptable. New construction or development should not be undertaken.						
Source: 2008 County of Lake General Plan (General Plan, 2008).							

Policy N-1.2 The County shall prohibit the development of new commercial, industrial, or other noise generating land uses adjacent to existing residential uses, and other sensitive noise receptors such as schools, health care facilities, and libraries if noise level (CNEL) is expected to exceed 55 dBA during daytime (7 a.m. to 10 p.m.) or 45 dBA during nighttime (10 p.m. to 7 a.m.), measured at the property line of the noise sensitive land use, unless effective mitigation measures are incorporated into the project design.

Policy N-1.3 Indoor noise levels for residential uses shall not exceed 45 dBA CNEL.

Policy N-1.4 The County should encourage proper site planning, architectural layout, and use of building materials as methods of noise attenuation. The following techniques should be considered to reduce noise impacts.

- Increase the distance between noise source and receiver through the use of building setbacks and/or dedication of noise easements.
- Place noise tolerant land uses such as parking lots, maintenance facilities, and utility areas between noise source and receiver.
- Use noise tolerant structures, such as garages or carports, to shield noise-sensitive areas.
- Orient buildings to shield outdoor spaces from a noise source.
- Use berming and heavy landscaping to reduce noise levels.
- Cluster office, commercial, or multiple family residential structures to reduce interior open-space noise levels.
- Locate automobile and delivery access to commercial or industrial uses abutting residential parcels at the maximum practical distance from residential uses.
- Use multi-glazed or multi-pane windows, tight-fitting doors, and dense building materials where feasible.

Policy N-1.5 The County shall consider the compatibility of existing and proposed land uses located near highways and major roads. Noise abatement measures should be implemented in these circumstances to reduce noise impacts. These measures could include:

- Erection of walls or landscaped berms;
- Restriction of building multistory dwellings within fixed distances of major roads unless setbacks are increased and additional insulation used;
- Use of open space as a buffer; and,
- Incorporation of site planning or architectural treatments, and alternative technologies (e.g., muffle geothermal-related noise emission).

Where possible, less intrusive noise mitigation (e.g., landscaped berms, open space buffers) should be encouraged rather than sound walls to preserve view corridors.

Policy N-1.6 Ensure that new development in the vicinity of airports will be compatible with existing and projected noise levels as set forth in the Lake County Airport Land Use Commission (ALUC) Airport Land Use Compatibility Plan.

Policy N-1.7 The County shall require contractors to implement noise-reducing mitigation measures during construction when residential uses or other sensitive receptors are located within 500 feet.

Policy N-1.10 The County shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code.

Policy N-1.13 The County shall incorporate policies pertaining to outdoor entertainment venues into the zoning ordinance ensuring the continued operation of existing venues and siting criteria for new developments.

Policy N-1.14 The County shall utilize existing ordinances to establish limits on boating noise, with specific allowances for tournament races or similar events.

Transportation and Circulation Element Policies

Policy T-1.9 To reduce heavy truck traffic in residential areas and near noise sensitive land uses, the County shall ensure truck routes are designated in a manner such that traffic noise impacts are minimized.

Policy T-1.10 The County shall utilize road construction methods that seek to reduce air, water, and noise pollution associated with road and highway development.

County of Lake Zoning Ordinance

County Lake Zoning Ordinance in Section 41.11, Noise, stimulates certain performance standards for noise. Maximum sound emissions for any use shall not exceed equivalent sound pressure levels in decibels, A-Weighted Scale, for any one (1) hour (hourly L_{eq}) as shown in **Table 3.10-5**. In the event the receiving property or receptor is a dwelling, hospital, school, library or nursing home, even though it may be otherwise zoned for commercial or industrial and related uses, maximum one-hour equivalent sound pressure received shall be those listed in **Table 3.10-5** on the right-most column. Furthermore, if the receiving property is a commercial or industrial property, then the following additional decibels are permitted:

- Commercial: 5 dBA
- Industrial: 10 dBA

TABLE 3.10-5
MAXIMUM dBA FOR HOURLY L_{eq}

Time of Day	Receiving Property Zoning District			
	Residential	Commercial	Industrial	Dwelling, Hospital, School, Library or Nursing Home within Industrial or Commercial
7 a.m. to 10 p.m.	55 dBA	60 dBA	65 dBA	57 dBA
10 p.m. to 7 a.m.	45 dBA	55 dBA	60 dBA	50 dBA
Source: Lake County, 2014				

In addition to this, there are exceptions to the local noise for the following situations and sources of noise when sensible practices are adhered:

- Emergency equipment operated on an irregular or unscheduled basis.
- Warning devices operated continuously for no more than five (5) minutes.
- Bells, chimes, or carillons.
- Non-electronically amplified sounds at sporting, amusement, and entertainment events.
- Construction site sounds between 7:00 a.m. and 7:00 p.m.
- Lawn and plant care machinery fitted with correctly functioning sound suppression equipment and operated between 7:00 a.m. and 8:00 p.m.
- Aircraft when subject to federal or state regulations.
- Agricultural equipment when operated on property zoned for agricultural activities.

Upon written application from the owner or operator of an industrial or commercial noise source, the Zoning Administrator or Planning Commission, as part of a use permit approval, may conditionally authorize exceptions to local noise emission standards in the following situations:

- Infrequent noise.
- Noise levels at or anywhere beyond the property lines of the property of origin when exceeded by an exempt noise, as listed above, in the same location.
- If after applying Best Available Control Technology, a use existing prior to the effective date of this ordinance is unable to conform to the standards established by this section.

Middletown Area Plan

Section 4.5 of the Middletown Area Plan provides the following policies that are relevant to noise:

Noise Policies

Policy 4.5.2a New multi-family residential subdivisions proposed within the 55 and above dBA contours along Highway 29 shall be required to complete acoustical analysis and utilize noise mitigating construction techniques adequate to meet general plan noise standards.

Policy 4.5.2b Noise-generating uses adjacent to residences, parks, schools, health care facilities and similar uses shall comply with the county's noise compatibility criteria set forth in the general plan and the zoning ordinance.

Policy 4.5.2c Require buffer zones between incompatible land uses to minimize noise conflicts.

Policy 4.5.2d The County shall review the locations of new development proposals for proximity to mines and quarries and for potential noise conflicts.

3.10.4 IMPACTS

This section identifies any impacts to the existing noise environment that could occur from construction, operation, and/or maintenance of the Proposed Project.

Method of Analysis

Construction Noise

Construction noise was analyzed using data compiled for various pieces of construction equipment at a representative distance of 50 feet. Construction activities are discussed relative to the applicable County General Plan, County Zoning Ordinance, and Middletown Area Plan policies.

Stationary Noise

Noise impacts associated with proposed commercial and residential heating, ventilation, and air conditioner (HVAC); commercial loading docks; outdoor recreation, grounds keeping equipment; entertainment special events; agricultural equipment and harvests uses within the project sites were analyzed using previously collected data for similar uses.

Traffic Noise

To describe with project noise levels due to increased traffic as a result of the Proposed Project, the 2013 Caltran's Technical Noise Supplement to the Traffic Noise Analysis Protocol was utilized. Section 2 of the protocol provides equations to calculate increases in ambient noise levels due to increases in traffic volumes. The protocol states that the increase in the ambient noise level is equal to 10 times log (with project traffic volume/existing traffic volume). Furthermore, **Table 3.10-6** provides estimates when combining sounds. These estimates will be utilized when estimating sound increase anticipated from the increase in traffic. For instance, a doubling of sound (adding two sound measurements with the same value) would equal a 3 dBA increase in sound, which is a noticeable difference in sound levels to the human ear.

TABLE 3.10-6
CRITERIA FOR ADDING TWO NOISE MEASUREMNENTS

When two decibel values differ by	Add the following amount to the higher value
0 or 1 dBA	3 dBA
2 or 3 dBA	2 dBA
4 to 9 dBA	1 dBA
10 dBA or more	0 dBA
Source: Caltrans, 2013a	

The existing and with project traffic volumes are provided in the Traffic Impact Analysis (TIA) by Abrams Associates that is provided in **Appendix TIA**. The scenarios used in this traffic study are the following:

- Scenario 1: *Existing Conditions* – Level of Service (LOS) based on existing peak hour volumes and existing intersection configurations.
- Scenario 2: *Existing Plus Project* – Existing traffic volumes plus trips from Phase 1 of the proposed project.
- Scenario 3: *Baseline (No Project) Conditions* – The Baseline scenario is based on the existing volumes plus growth in background traffic (for three years) plus the traffic from all reasonably foreseeable developments that could substantially affect the volumes at the project study intersections.

- Scenario 4: *Baseline Plus Project Conditions* – This scenario is based on the Baseline traffic volumes plus the trips from Phase 1 of the proposed project.
- Scenario 5: *Cumulative Conditions* – This scenario includes year 2040 cumulative volumes based on planned and approved projects, the Lake County Traffic Model, and the Napa-Solano Travel Demand Model.
- Scenario 6: Cumulative Plus Phase 1 Conditions – This scenario includes year 2040 cumulative volumes based on the Countywide Travel Demand Model plus the trips from Phase 1 of the proposed project.
- Scenario 7: Cumulative Plus Phase 2 Conditions – This scenario includes year 2040 cumulative volumes based on the Countywide Travel Demand Model plus the trips from Phase 1 and Phase 2 of the proposed project

The calculated increases in ambient noise levels assume that traffic speed and mix stays static.

Noise levels were predicted at sensitive receptors located at the closest typical setback distance along project-area roadway segments.

Thresholds of Significance

Criteria for determining the significance of impacts associated with noise are based on Appendix G of the CEQA Guidelines. The Proposed Project would result in a significant impact to noise if it would result in:

A) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
B) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?
C) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2.0 miles of a public airport or public use airport, would the project expose people residing in or working in the project area to excessive noise levels?

Summary of Applicable Noise Standards

The noise standards applicable to the Proposed Project include the relevant portions of the County of Lake General Plan, Lake County Zoning Ordinance, and the Middletown Area Plan described in the Regulatory Framework section above. In accordance with Policy N-1.1 of the County of Lake's (County) General Plan, **Table 3.10-4** shall be utilized for the determining the maximum allowable noise in addition to the County Zoning Ordinance standards in **Table 3.10-5**.

Table 3.10-4 (Lake County Table 8-1 of the General Plan Noise Element) establishes a normally acceptable exterior noise level standard of 55 dBA L_{dn} for residential uses. Therefore, any increase in traffic which causes noise levels at a sensitive receptor to exceed 55 dBA L_{dn}, would be significant. Where noise levels already exceed 55 dBA L_{dn}, a determination of significance is based upon the magnitude of the increase.

The potential increase in traffic noise from the project is a factor in determining significance. **Table 3.10-7** is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 3.10-7
SIGNIFICANCE OF CHANGES IN CUMULATIVE NOISE EXPOSURE

Ambient Noise Level Without Project (L_{dn} or CNEL)	Change in Ambient Noise Level Due to Project
<60 dB	+5.0 dB or more
60 to 65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more
Source: FICON	

Based on the **Table 3.10-7** data, an increase in the traffic noise level of 3.0 dB or more would be significant where the pre-project noise levels are within 60-65 dB L_{dn}. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 65 dB L_{dn}. The rationale for the **Table 3.10-7** criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

Impacts Found to Be Less Than Significant

As described within the Initial Study included as **Appendix IS**, the Proposed Project will not be a significant source of groundborne vibration or groundborne noise. Therefore, this item is not discussed further in this analysis.

Impacts

IMPACT 3.10-1	CONSTRUCTION ACTIVITIES COULD GENERATE SUBSTANTIAL TEMPORARY INCREASES IN AMBIENT NOISE LEVELS IN THE VICINITY OF THE PROJECT IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant	Significant
Mitigation Measures	MM 3.10-1: Restrict Construction Times in Areas in Proximity to Sensitive Receptors, MM 3.10-2: Construction Noise Reduction	MM 3.10-1: Restrict Construction Times in Areas in Proximity to Sensitive Receptors, MM 3.10-2: Construction Noise Reduction	MM 3.10-1: Restrict Construction Times in Areas in Proximity to Sensitive Receptors, MM 3.10-2: Construction Noise Reduction	MM 3.10-1: Restrict Construction Times in Areas in Proximity to Sensitive Receptors, MM 3.10-2: Construction Noise Reduction
Significance After Mitigation	Less than significant	Less than significant	Less than significant	Less than significant

Phase 1 Construction Activities – Project Level Analysis

Phase 1 construction activities would add to the noise environment in the vicinity of the Guenoc Valley Site. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise-sensitive areas. The majority of construction activities associated with Phase 1 would take place more than a mile away from off-site sensitive receptors. Only the following construction activities would take place within a mile of sensitive receptors.

- Construction activities at the proposed Back of House area would occur within 300 feet of a residence located within the area excluded from the site, and 3,700 feet of the Langtry Winery, a commercial business (while the Lillie Langtry home is directly adjacent to this area, it is unoccupied);
- Construction of the float plane dock would occur within approximately 4,695 feet from a residence on Butts Canyon Road;
- Construction of the proposed On-Site Workforce Housing would occur within 3,200 feet of a residence located to the southwest; and
- Construction of the potential solar field location near McCreary Lake would occur within 4,000 feet of a residence.

Table 3.10-8 includes the range of maximum noise levels for equipment commonly used in general construction projects at full-power operation at a distance of 50 feet, and at the nearest distances to residential sensitive receptors. The County zoning ordinance indicates that construction site sounds during daytime hours (defined as between 7:00 a.m. and 7:00 p.m) may be exempted from local noise thresholds when sensible practices are adhered to.

The three closest residential receptors to the proposed Phase 1 development areas include a ranch home within 300 feet of the proposed back of house area, rural residential home located approximately 3,200 feet to the south of the proposed On-Site Workforce Housing parcel, and rural residential homes located northwest of McCreary Lake, approximately 4,000 feet from a potential solar field location. Construction noise level predictions at these receptors assumes a standard spherical spreading loss of 6 dBA per doubling of distance. The equipment noise levels in **Table 3.10-8** include consideration of screening that would be provided by intervening topography that would break line of sight of the project work areas (conservatively assumed provide a minimum of 10 dBA of noise level reduction). For the receptor closest to the construction activities, worst-case project construction equipment noise exposure is expected to range up to 70 dBA L_{eq}, which would exceed both the County daytime standard of 55 dBA hourly L_{eq} for residential uses, and nighttime standard of 45 dBA L_{eq}. Worst-case project construction equipment noise exposure at the other nearest receptors is expected to range from less than 20 dBA to approximately 54 dBA. These levels are below the County's Zoning Ordinance daytime standard of 55 dBA hourly L_{eq} for residential uses, but could exceed the nighttime standard of 45 dBA L_{eq}. Therefore, construction activities could potentially expose sensitive receptors to noise levels in excess of the applicable noise standards; this is a temporary **significant impact**. **Mitigation Measure 3.10-1** requires that construction activities with the potential to exceed nighttime noise standards at residential uses are limited to daytime hours of 7 a.m. to 7 p.m., consistent the requirements of the Lake County Zoning Ordinance as described above. This measure would minimize the potential for sleep disturbance and would reduce the potential for construction noise to result in a nuisance, since project construction-related noise would be less noticeable during the day due to greater ambient noise levels. Additionally, **Mitigation Measure 3.10-2** requires noise impacts from construction equipment be reduced consistent with the County zoning ordinance by requiring that measures be taken to reduce noise from construction equipment. As a result, this impact is considered to be **less than significant** within mitigation.

TABLE 3.10-8

TYPICAL CONSTRUCTION EQUIPMENT NOISE

Equipment Description	Specification Maximum Noise Level at 50 Feet, dBA	Predicted Maximum Noise Level, dBA		
		At 300 Feet	At 3,200 Feet	At 5,280 Feet (1-mile)
Auger drill rig	85	70	49	44
Backhoe	80	65	44	39
Bar bender	80	65	44	39
Boring jack power unit	80	65	44	39
Compactor (ground)	80	65	44	39
Compressor (air)	80	65	44	39
Concrete batch plant	83	68	47	42
Concrete mixer truck	85	70	49	44
Concrete pump truck	82	67	46	41
Concrete saw	90	75	54	49
Crane (mobile or stationary)	85	70	49	44
Dozer	85	70	49	44
Dump truck	84	69	48	43
Excavator	85	70	49	44
Flatbed truck	84	69	48	43
Front end loader	80	65	44	39
Generator (more than 25 kVA)	82	67	46	41
Grader	85	70	49	44
Hydra break ram	90	75	54	49
Jackhammer	85	70	49	44
Mounted impact hammer	90	75	54	49
Paver	85	70	49	44
Pickup truck	55	40	<20	<20
Pneumatic tools	85	70	49	44
Pumps	77	62	41	36
Rock drill	85	70	49	44
Scraper	85	70	49	44
Soil mix drill rig	80	65	44	39
Tractor	84	69	48	43
Vacuum street sweeper	80	65	44	39
Vibratory concrete mixer	80	65	44	39

Notes: kVA = kilo-volt-ampere.
Source: FHWA, 2006.

In addition to on-site activities, noise would be generated by the increased truck traffic on area roadways that would be transporting construction material and equipment. As discussed in **Section 3.13.4**, under **Impact 3.13-1**, it is estimated that during the maximum peak construction period material import and export could generate approximately 150 truck trips per day. The construction personnel would be required to

commute very limitedly due to the temporary construction workforce camp that would be provided onsite. Nonetheless, this would constitute an increase in noise on public roads, such as Butts Canyon Rd. and Highway 29. However, this noise increase due to increased traffic would be of a short duration, likely occur primarily during daytime hours, and truck contractors would adhere to all applicable state and federal regulations in addition to the local regulations regarding noise. For example, the County General Plan has a policy in place to reduce the impacts associated with heavy truck traffic, **Policy T-1.9**. As described above in **Section 3.10.3** for **Policy T-1.9**, the County designates roads for heavy truck traffic in a way that minimizes the impacts on sensitive land uses and residential areas. Therefore, noise impacts from short term construction related traffic would be **less than significant**.

Future Phases

Construction of future phases would add to the noise environment in the vicinity of the Guenoc Valley Site. Construction related noise sources would be similar under those described above for Phase 1 and shown in **Table 3.10-8**. While the location of development under future phases has not been established, it is possible that construction activities may occur in closer proximity to the nearest off-site sensitive receptors, resulting in even greater noise levels. Therefore, construction activities could potentially expose sensitive receptors to noise levels in excess of the applicable noise standards; this is a **potentially significant** impact. **Mitigation Measure 3.10-1** requires that construction activities within the potential to exceed nighttime noise standards at residential uses are limited to daytime hours of 7 a.m. to 7 p.m., consistent the requirements of the Lake County Zoning Ordinance as described above. This measure would minimize the potential for sleep disturbance and would reduce the potential for construction noise to result in a nuisance, since project construction-related noise would be less noticeable during the day due to greater ambient noise levels. Additionally, **Mitigation Measure 3.10-2** requires noise impacts from construction equipment be reduced consistent with the County zoning ordinance by requiring that measures be taken to reduce noise from construction equipment. As a result, this impact is considered to be **less than significant** within mitigation.

Middletown Housing Site

Implementation of the Proposed Project would result in short-term construction activities associated with the residential development on the Middletown Housing Site. Construction related noise sources would be similar under those described in the Phase I discussion above. However, the construction would be of a substantially smaller size and therefore not generate the same degree of noise. Furthermore, unlike the Guenoc Valley Site, the Middletown Housing Site has close-by sensitive receptors, such as residential areas and schools.

As discussed in Phase 1 above, activities involved in construction would generate maximum noise levels, as indicated in **Table 3.10-8**, ranging from 55 to 90 dBA at a distance of 50 feet. The nearest sensitive receptor's property boundary borders the Middletown Housing Site boundary on the southern border. Noise levels at this receptor would exceed both the County daytime standard of 55 dBA hourly L_{eq} for residential uses, and nighttime standard of 45 dBA L_{eq}. Therefore, the increase in noise from construction could potentially expose sensitive receptors to noise levels in excess of the applicable noise standards. This constitutes a temporary **significant impact**. **Mitigation Measure 3.10-1** requires that construction activities within the potential to exceed nighttime noise standards at residential uses are limited to daytime hours of

7 a.m. to 7 p.m., consistent the requirements of the Lake County Zoning Ordinance as described above. This measure would minimize the potential for sleep disturbance and would reduce the potential for construction noise to result in a nuisance, since project construction-related noise would be less noticeable during the day due to greater ambient noise levels. Additionally, **Mitigation Measure 3.10-2** requires noise impacts from construction equipment be reduced consistent with the County zoning ordinance by requiring that measures be taken to reduce noise from construction equipment. As a result, this impact is considered to be **less than significant** within mitigation.

Construction related traffic could contribute to additional noise on the local roadways in County. However, this impact would be similar to the one discussed under the Phase 1 except truck loads would be significantly less than the Guenoc Valley Site due to the reduced project size. Like the Guenoc Valley Site, all construction-related traffic would be required to adhere to applicable State, federal and local regulations, such as **Policy T-1.9** from the County General Plan that would ensure that heavy truck traffic would impact residential areas and noise sensitive land uses. Therefore, noise impacts from short term construction related traffic would be **less than significant**.

Off-Site Infrastructure Improvement Areas

Implementation of the Proposed Project could result in short-term construction activities associated with Off-Site Infrastructure Improvement Areas. These construction activities could potentially expose sensitive receptors to noise levels in excess of the applicable noise standards and/or result in a noticeable increase in ambient noise levels. Construction related noise sources would be similar under those described in the Phase I discussion above. However, the construction would be of a substantially smaller size and therefore not generate the same degree of noise. As discussed in Phase 1 above, activities involved in construction would generate maximum noise levels, as indicated in **Table 3.10-8**, ranging from 55 to 90 dBA at a distance of 50 feet. The nearest sensitive receptor's property boundary borders the boundary of the Off-Site Well Site on the northern border. Additionally, construction of the pipeline along Butts Canyon Road would occur within 100 feet of sensitive receptors along this road. The increase in noise from construction could potentially expose sensitive receptors to noise levels in excess of the applicable noise standards. This constitutes a temporary **significant impact**. **Mitigation Measure 3.10-1** requires that construction activities within the potential to exceed nighttime noise standards at residential uses are limited to daytime hours of 7 a.m. to 7 p.m., consistent the requirements of the Lake County Zoning Ordinance as described above. This measure would minimize the potential for sleep disturbance and would reduce the potential for construction noise to result in a nuisance, since project construction-related noise would be less noticeable during the day due to greater ambient noise levels. Additionally, **Mitigation Measure 3.10-2** requires noise impacts from construction equipment be reduced consistent with the County zoning ordinance by requiring that measures be taken to reduce noise from construction equipment. As a result, this impact is considered to be **less than significant** within mitigation.

IMPACT 3.10-2	OPERATIONAL ACTIVITIES COULD GENERATE A SUBSTANTIAL TEMPORARY OR PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE VICINITY OF THE PROJECT IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Less than significant	Potentially significant	Less than significant	Less than significant
Mitigation Measures	None	MM 3.10-3: Future Phases Noise Control	None	None
Significance After Mitigation	N/A	Less than significant	N/A	N/A

Phase 1 – Project Level Analysis

Various sources of noise would be generated as a result of the operation of the commercial, residential and recreational development proposed in Phase 1. The sources determined to be the primary generators of noise are discussed in greater detail below.

Amphitheater

Under Phase 1, an amphitheater would be constructed as part of the outdoor entertainment resort amenities. This amphitheater would be approximately 18,000 square feet and located in the area near the Upper Bohn Lake edge at Maha Farm (**Figure 2-8**). The amphitheater would operate as a special event facility and would be built to seat approximately 500 guests. Events for the amphitheater would primarily be for entertainment purposes, and these events would increase noise in the surrounding area. For example, concerts and music festivals can generate 94 to 110 dBA (U.S. Department of Health and Human Services, 2019). Events at the amphitheater would be periodical in nature and not daily.

There are no existing sensitive receptors within a range of the amphitheater that would be adversely impacted by its events. The nearest proposed sensitive receptor to the amphitheater would be the residential resort parcel located approximately 350 feet to the south of the amphitheater. When using the inverse square law to calculate the sound change over distance and starting at a distance of approximately 7 feet from the noise source of 94 to 110 dBA, the noise at the edge of the residential resort parcel would be approximately 61 to 77 dBA. This would be an exceedance of the acceptable residential level of 55 dBA CNEL for the County General Plan or the 55 dBA hourly L_{eq} for the County Zoning Ordinance if it persisted for sufficient time period. However, these residential resort parcels are not considered “existing” residential uses according to the County General Plan as they would be developed during implementation of Phase 1. Furthermore, the residential resort parcels would be vacation rentals and not continuously occupied year-round with people who would be sensitive to the amphitheater noise. Regardless, applicable federal, State and local regulations and ordinances would be adhered to reduce the impacts from noise. On the local level, these include applying for a noise exception for infrequent noise during the use permit approval process as specified in the County Zoning Ordinance and performing a detailed analysis of noise reduction

features that can be incorporated into the design features. Hence, noise generated by the proposed amphitheater would be **less than significant**.

Float Plane Dock and Helipad

Air transportation and/or arrival will be provided via a proposed helipad and float plane dock with kiosk and internal transportation services to be established at Detert Reservoir. It is anticipated that the average use of the float plane dock for inbound or outbound flights would be approximately two to three times a week with more frequent use occurring during special events, such as polo field tournaments. Additionally, an emergency heliport will be centrally located at the on-site Emergency Response and Fire Center. The nearest sensitive receptor to Detert Reservoir is a residential unit that is approximately 3,500 feet to the west. The floatplane noise at this receptor will be dependent upon the aircraft that is landing and departing. Given the infrequent use, it is not expected that floatplane traffic would substantively change the CNEL or L_{eq} at the nearest sensitive receptors. Further, in the County Zoning Ordinance, noise exceptions are made for aircraft when subject to State and federal regulations and sensible practices are adhered. Since the nearest receptor is located approximately 3,500 feet to the west, and the inbound and outbound flights would be only two to three a week unless there is a special event, these are deemed sensible practices that would qualify for exceptions to the County Zoning Ordinance. Furthermore, before aircraft are even permitted to fly, applicable State and federal regulations concerning noise standards must be adhered to. Therefore, the floatplane dock and operations would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan and noise ordinance, or applicable standards of other agencies. This impact is **less than significant**.

The helipad would only be used for emergency aircraft. Therefore, according to CA Pub Util Code § 21662.4, noise generated emergency aircraft are exempt from all local ordinances that restrict flight departures and arrivals to particular hours of the day or night, that restrict the departure or arrival of aircraft based upon the aircraft s noise level, or that restrict the operation of certain types of aircraft.

Recreational Activities

Recreation features, such as trails, docks, beaches, vista points, picnic areas, swimming, boating, and fishing opportunities, would be provided at Upper Bohn Lake. These activities would not generate substantial noise with the possible exception of boating. The nearest off-site sensitive receptor is located over a mile away to the south. Due to the great distance, this impact would be **less than significant**.

Other recreational activities, such as golfing and polo tournaments, would not generate excessive noise. For instance, recreational trails are considered to be compatible with residential uses and are not substantial noise generators. Typical noises that would be generated by private-use trail users include people talking while walking, jogging, bicycling, occasional shouts from children and adults, and music from portable stereos and radios. Such noises would generally be of a short duration, since trail users would be traveling and not remaining in one location for extended periods of time. Additionally, people are typically familiar with and tolerant of noise from trails and recreational activities in residential areas, which is not typically considered a nuisance. Therefore, impacts relating to other recreational activities would be **less than significant** and no mitigation is necessary.

Agriculture

Under Phase 1, up to 14.4 acres of vegetable gardens, farming islands, and orchards would be located at the Maha Farm area and sheep and goats would be used close to development areas to aid in reducing vegetation cover and fire risk. Occasional noise from agricultural machinery could be a nuisance to nearby sensitive receptors. However, it is anticipated that agricultural and pasturing areas would be primarily maintained without large agricultural machinery (e.g. tractor), especially for the agricultural lands that are interspersed within the Maha Farm commercial area. Furthermore, noise from agricultural activities are not considered a nuisance per the County's noise ordinance. Therefore, this impact is considered **less than significant**.

Commercial

The main source of commercial noise under Phase 1 would be within the Maha Farm area. The primarily source noise would be due to operations of roof-mounted air handling units associated with building HVAC equipment. The noise levels produced by HVAC systems vary with the capacities of the units as well as with individual unit design. As discussed for the amphitheater, there are no nearby sensitive receptors that would be affected by this. As a result, this impact is considered to be **less than significant**.

Future Phases

Similar to Phase 1, future phases of development could include increases in resort facilities, residential development, resort amenities, agriculture, and essential accessory uses. The developments could potentially constitute an almost doubling of the Guenoc Valley Site residential, recreational and commercial areas (e.g. outdoor entertainment), and new significant sources of noise could result from this. This would be a **potentially significant impact** for sensitive receptors within the range of influence for new noise sources. However, Future Phases would be obliged to follow applicable State, federal and local regulations and ordinances concerning noise. Furthermore, in accordance with **Mitigation Measure 3.10-3**, for new sources of noise located in close proximity to sensitive receptors, an acoustical sound analysis would be conducted to determine the compatibility of the proposed land uses with sensitive receptors and recommendations will be adhered to. Consequently, this impact would be reduced to **less than significant**.

Middletown Housing Site

Since the Middletown Housing Site would only be developed with residential uses and a community center, the noise levels generated onsite would not exceed residential areas surrounding the site. Furthermore, the residential area would follow all applicable State, federal and local regulations concerning noise and be built to appropriate noise standards, such as State Building Code, Title 24, Part 2. Therefore, this impact is **less than significant**.

Off-Site Infrastructure Improvement Areas

The operation of the well and associated pipeline would not generate substantial noise when operating as the well pump would be housed in an enclosed structure. Therefore, the impact is **less than significant**.

IMPACT 3.10-3	TRAFFIC NOISE COULD GENERATE A SUBSTANTIAL TEMPORARY OR PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE VICINITY OF THE PROJECT IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES	
	Phase 1 (including Off-Site Workforce Housing)	**Future Phases**
Significance Before Mitigation	Significant	N/A – Addressed under Cumulative
Mitigation Measures	None	N/A – Addressed under Cumulative
Significance After Mitigation	Significant and Unavoidable	N/A – Addressed under Cumulative

Phase 1 – Project Level Analysis

Implementation of the Proposed Project would result in an increase of average daily vehicle trip (ADT) volumes on the local roadway network. The increased traffic volumes would result in an increase in noise levels from traffic sources along affected roadway segments. **Table 3.10-9** shows the noise levels associated with traffic on the local roadway network under Existing No Project and Existing Plus Phase 1 conditions.

Table 3.10-9 indicates that some noise sensitive receptors located along the project-area roadways within the County are currently exposed to exterior traffic noise levels exceeding the County's 55 dB L_{dn} exterior noise level standard for residential uses under existing conditions without the Proposed Project. These receptors would continue to experience elevated exterior noise levels with implementation of the Proposed Project. As shown in **Table 3.10-9**, Phase 1 would not result in a significant increase in traffic noise levels along the majority of potentially affected roadway segments. However, Phase 1 would cause traffic noise levels at the nearest sensitive receptors along the segment of Butts Canyon Road from SR-29 to Black Oak Hill Road to increase from an acceptable level to above the County's threshold of 55 dba. This is a **significant impact**.

Access to existing residential receptors located adjacent to Butts Canyon Road is provided directly from driveways extending from the roadway. Therefore, the use of noise barriers to mitigate traffic noise is not feasible because the access driveway opening would negate any noise reduction that could otherwise be achieved by a sound wall. Thus, this impact is considered **significant and unavoidable**.

TABLE 3.10-9
PREDICTED TRAFFIC NOISE LEVELS (EXISTING CONDITIONS WITH AND WITHOUT THE PHASE 1)

Roadway	Segment	Existing (dBA L_{dn})	Existing + Phase 1 (dBA L_{dn})	Change (dBA L_{dn})	Significance Threshold	Significant increase?
SR 53	North of SR 29	64.0	64.3	0.3	+3.0 dB	No
SR 29	SR 53 to N. Spruce Grove	63.4	64.1	0.7	+3.0 dB	No
SR 29	N. Spruce Grove to S. Spruce Grove	63.2	63.9	0.7	+3.0 dB	No
SR 29	S. Spruce Grove to Hidden Valley	59.1	59.8	0.7	+5.0 dB	No
SR 29	Hidden Valley to Hartmann	59.1	59.9	0.8	+5.0 dB	No
SR 29	Hartmann to Grange	55.3	55.9	0.6	+5.0 dB	No
SR 29	Grange to Butts Canyon	59.8	60.4	0.6	+5.0 dB	No
SR 29	Butts Canyon to Wardlaw	62.3	62.8	0.5	+3.0 dB	No
SR 29	Wardlaw to Young	60.5	61.0	0.5	+3.0 dB	No
SR 29	Young to Main	62.7	63.2	0.5	+3.0 dB	No
SR 29	Maint to Armstrong	62.4	62.8	0.3	+3.0 dB	No
SR 29	Armstrong to Douglas	62.4	62.8	0.3	+3.0 dB	No
SR 29	Douglas to Callayomi	62.3	62.6	0.3	+3.0 dB	No
SR 29	Callayomi to Lake	65.9	66.3	0.4	+1.5 dB	No
SR 29	Lake to Central Park	59.9	60.2	0.3	+5.0 dB	No
SR 29	South of Central Park	64.5	64.8	0.3	+3.0 dB	No
SR 29	West of SR 53	62.8	63.0	0.2	+3.0 dB	No
Morgan Valley Road	East of SR 53	60.0	60.2	0.2	+3.0 dB	No
N. Spruce Valley Road	East of SR 53	50.6	50.8	0.2	+5.0 dB or > 55 dB	No
S. Spruce Valley Road	East of SR 53	57.1	57.3	0.2	+5.0 dB	No
Hidden Valley Road	East of SR 53	52.9	53.4	0.5	+5.0 dB or > 55 dB	No
Hartmann Road	East of SR 53	56.4	56.4	0.0	+5.0 dB	No
Grange Road	East of SR 53	44.5	44.5	0.0	+5.0 dB or > 55 dB	No
Butts Canyon Road	**SR 29 to Black Oak Hill**	**54.1**	**58.5**	**4.4**	**+5.0 dB or > 55 dB**	**Yes**
Butts Canyon Road	Black Oak Hill to Oat Hill	55.4	59.7	4.3	+5.0 dB	No
Butts Canyon Road	East of Oat Hill	45.6	50.4	4.8	+5.0 dB or > 55 dB	No
SR 175	SR 29 to Santa Clara	58.5	59.2	0.7	+5.0 dB	No
SR 175	West of Santa Clara	61.3	61.9	0.6	+3.0 dB	No
Pope Valley Road	West of Howell Mountain	51.0	52.1	1.1	+5.0 dB or > 55 dB	No
Tubbs Road	South of SR 29	53.5	53.7	0.2	+5.0 dB or > 55 dB	No
Tubbs Road	North of SR 128	59.7	59.8	0.1	+5.0 dB	No

Note: Where existing noise levels are less than 60 dB an increase of 5 dB would be a significant increase. Additionally, any increase causing noise levels to exceed the County's Normally Acceptable 55 dB L_{dn} noise level standard at an existing outdoor activity area of a residential use would also be significant. Where existing noise levels exceed 60 dB but are less than 65 dB, an increase of 3 dB or more would be significant. Where existing noise levels exceed 65 dB, an increase of 1.5 dB or more would be significant.

Source: **Appendix NOISE**

IMPACT 3.10-4	EXPOSE PEOPLE RESIDING IN OR WORKING IN THE PROJECT AREA TO EXCESSIVE NOISE LEVELS AS A RESULT OF BEING LOCATED IN THE VICINITY OF A PRIVATE AIRSTRIP OR AIRPORT LAND USE PLAN	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**
Significance Before Mitigation	Potentially Significant	No Impact
Mitigation Measures	MM 3.10-4: Restrict Aircraft and Non-Emergency Helicopter Flight Times	N/A
Significance After Mitigation	Less than significant	N/A

Phase 1 and Future Phases

The Guenoc Valley Site is not located within the vicinity of an airport land use plan or within 2.0 miles of a public airport but is within approximately one mile of a private airstrip. However, it is anticipated that the airplanes used on the 7-M private airstrip are very small private planes or agricultural aircrafts because this airstrip is not found on the FAA list of public and private facilities (FAA, n.d.). This private airstrip would not significantly expose people residing or working in the project area to excessive noise levels.

Air transportation and/or arrival will be provided via a proposed float plane dock to be established at Detert Reservoir. Although waterbodies for floatplane landing and takeoffs are not technically considered "airstrips", this EIR does consider whether floatplane transportation to the site would expose people residing in or working in the project area to excessive noise levels. It is anticipated that the average use of the float plane dock for inbound or outbound flights would be approximately two to three times a week with more frequent use occurring during special events, such as polo field tournaments. Additionally, an emergency heliport will be centrally located at the on-site Emergency Response and Fire Center. The nearest sensitive receptor to Detert Reservoir is a residential unit that is approximately 3,500 feet to the west. The floatplane noise at this receptor will be dependent upon the aircraft that is landing and departing. As discussed in **Section 3.10.2** above, floatplane noise is greatest at takeoff and can potentially range from 65 to 92 dBA L_{max} at a distance of 1,000 feet. While single event noise from floatplane takeoff and flyovers would be a sudden increase in noise, they would occur infrequently and would be brief in nature and therefore only constitute an occasional annoyance. Furthermore, the nearest existing sensitive receptor is separated by hilly and forested landscape that would act as a partial sound barrier. Regardless, depending on the flight path and trajectory of takeoffs, these single noise event levels could potentially cause sleep disturbance at the nearest receptors. This is considered a **potentially significant impact**. **Mitigation Measure 3.10-4** would limit inbound and outbound non-emergency flights to the hours of 7 a.m. to 9 p.m. to minimize the potential for adverse noise effects and sleep disturbance. With mitigation, this impact would be reduced to **less than significant**.

Off-Site Workforce Housing

The Middletown Housing Site is not located within the vicinity of a private airstrip, an airport land use plan or within 2.0 miles of a public airport. Therefore, the Off-site Workforce Housing will not expose people residing in or working in the project area to excessive aircraft related noise levels. ***No impact*** would occur.

IMPACT 3.10-5	CUMULATIVE TRAFFIC NOISE COULD GENERATE A SUBSTANTIAL TEMPORARY OR PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE VICINITY OF THE PROJECT IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES
	Phase 1 and Future Phases (including Off-Site Workforce Housing)
Significance Before Mitigation	Significant
Mitigation Measures	None available
Significance After Mitigation	Significant and Unavoidable

Phase 1 and Future Phases

Table 3.10-10 shows the noise levels associated with traffic on the local roadway network under Cumulative No Project and Cumulative Plus Project (both Phase 1 and Future Phases) conditions.

Table 3.10-10 indicates that, under cumulative conditions without the Proposed Project, noise sensitive receptors located along the majority of the project-area roadways within the County are predicted to be exposed to exterior traffic noise levels exceeding the County's 55 dB L_{dn} exterior noise level standard for residential uses. These receptors would experience elevated exterior noise levels with implementation of the Proposed Project. As shown in **Table 3.10-10**, the Proposed Project would cause significant increases in traffic noise levels at the nearest sensitive receptors along the segment of Butts Canyon Road from SR-29 to the project driveways. This is a ***significant impact***.

Access to existing residential receptors located adjacent to Butts Canyon Road is provided directly from driveways extending from the roadway. Therefore, the use of noise barriers to mitigate traffic noise is not feasible because the access driveway opening would negate any noise reduction that could otherwise be achieved by a sound wall. Thus, this impact is considered ***significant and unavoidable***.

TABLE 3.10-10
PROJECTED TRAFFIC NOISE LEVELS CUMULATIVE CONDITIONS WITH AND WITHOUT THE PROPOSED PROJECT (PHASE 1 AND FUTURE PHASES)

Roadway	Segment	Cumulative (dBA L_{dn})	Cumulative + Future Phases (dBA L_{dn})	Change (dBA L_{dn})	Significance Threshold	Significant increase?
SR 53	North of SR 29	65.1	65.7	0.6	+1.5 dB	No
SR 29	SR 53 to N. Spruce Grove	65.3	66.4	1.1	+1.5 dB	No
SR 29	N. Spruce Grove to S. Spruce Grove	65.2	66.3	1.1	+1.5 dB	No
SR 29	S. Spruce Grove to Hidden Valley	61.0	62.1	1.1	+3.0 dB	No
SR 29	Hidden Valley to Hartmann	61.2	62.4	1.2	+3.0 dB	No
SR 29	Hartmann to Grange	57.1	58.2	1.1	+5.0 dB	No
SR 29	Grange to Butts Canyon	61.3	62.5	1.2	+3.0 dB	No
SR 29	Butts Canyon to Wardlaw	63.8	64.7	0.9	+3.0 dB	No
SR 29	Wardlaw to Young	62.0	62.9	0.9	+3.0 dB	No
SR 29	Young to Main	64.2	65.1	0.9	+3.0 dB	No
SR 29	Maint to Armstrong	63.6	64.3	0.7	+3.0 dB	No
SR 29	Armstrong to Douglas	63.6	64.3	0.7	+3.0 dB	No
SR 29	Douglas to Callayomi	63.5	64.2	0.7	+3.0 dB	No
SR 29	Callayomi to Lake	67.1	67.8	0.7	+1.5 dB	No
SR 29	Lake to Central Park	61.1	61.8	0.7	+3.0 dB	No
SR 29	South of Central Park	65.7	66.3	0.6	+1.5 dB	No
SR 29	West of SR 53	63.9	64.3	0.4	+3.0 dB	No
Morgan Valley Road	East of SR 53	60.9	61.3	0.4	+3.0 dB	No
N. Spruce Valley Road	East of SR 53	51.6	52.1	0.5	+5.0 dB or > 55 dB	No
S. Spruce Valley Road	East of SR 53	58.0	58.2	0.2	+5.0 dB	No
Hidden Valley Road	East of SR 53	59.5	59.8	0.3	+5.0 dB	No
Hartmann Road	East of SR 53	57.0	57.0	0.0	+5.0 dB	No
Grange Road	East of SR 53	45.0	45.0	0.0	+5.0 dB or > 55 dB	No
Butts Canyon Road	**SR 29 to Black Oak Hill**	**56.2**	**62.1**	**5.9**	**+5.0 dB**	**Yes**
Butts Canyon Road	**Black Oak Hill to Oat Hill**	**57.5**	**63.3**	**5.8**	**+5.0 dB**	**Yes**
Butts Canyon Road	**Oat Hill Road to Project Drive**	**47.9**	**54.1**	**6.2**	**+5.0 dB or > 55 dB**	**Yes**
SR 175	SR 29 to Santa Clara	60.2	61.3	1.1	+3.0 dB	No
SR 175	West of Santa Clara	63.5	64.5	1.0	+3.0 dB	No
Pope Valley Road	West of Howell Mountain	53.5	54.7	1.2	+5.0 dB or > 55 dB	No
Tubbs Road	South of SR 29	54.5	55.0	0.5	+5.0 dB or > 55 dB	No
Tubbs Road	North of SR 128	60.5	60.8	0.3	+3.0 dB	No

Note: Where existing noise levels are less than 60 dB an increase of 5 dB would be a significant increase. Additionally, any increase causing noise levels to exceed the County's Normally Acceptable 55 dB L_{dn} noise level standard at an existing outdoor activity area of a residential use would also be significant. Where existing noise levels exceed 60 dB but are less than 65 dB, an increase of 3 dB or more would be significant. Where existing noise levels exceed 65 dB, an increase of 1.5 dB or more would be significant.

Source: **Appendix NOISE**

3.10.5 MITIGATION MEASURES

MM 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.

MM 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 wildlife within the site, construction contractors shall be required to implement the following measures. These measures would be incorporated into the construction plan:
    - 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.
    - Impact tools (i.e., 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.
    - 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
    - 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):
    - 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.

MM 3.10-3 Future Phases Noise Control (Impact 4.6-2)

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.

MM 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 9 p.m. every day of the week with exceptions for emergency situations only.

3.11 POPULATION AND HOUSING

3.11.1 INTRODUCTION

This section provides a description of population and housing conditions in the project area and describes the changes to those conditions that would result from implementation of the Proposed Project. Following an overview of population and housing statistics in **Section 3.11 .2** and the relevant regulatory setting in **Section 3.11 .3**, project-related impacts and recommended mitigation measures are presented in **Section 3.11 .4** and **Section 3.11 .5**, respectively.

3.11.2 ENVIRONMENTAL SETTING

Regional Population

Lake County (County) and the Cities of Lakeport and Clearlake constitute the Lake Area Planning Council (LAPC), a slow-growing region in Northern California. According to the U.S. Census Bureau's American Community Survey 5-Year Estimates, the County population in 2018 was 64,382 (US Census, 2018a). The project site is located within Lake County Census Tracts 12 and 13 (Census Tracts), which include the communities of Middletown and Hidden Valley. The Census Tracts had an estimated population of 10,163 in 2017 (US Census Bureau, 2018b).

TABLE 3.11 -1
LAKE COUNTY POPULATION AND GROWTH RATES

Jurisdiction	2014	2015	2016	2017	Growth Rate (%)
Clearlake	15,121	15,097	15,070	15,061	-0.4
Lakeport	4,746	4,740	4,754	4,766	+0.4
Unincorporated Lake County	44,342	44,321	44,252	44,268	-0.2
Unincorporated Lake County Census Tract 12 (Middletown)	3,563	3,516	3,344	3,315	-7.5
Unincorporated Lake County Census Tract 13 (Hidden Valley)	7,858	7,765	7,303	6,848	-14.7
Lake County Total	**64,209**	**64,158**	**64,076**	**64,095**	**-0.17**

Source: U.S. Census Bureau, 2017

Employment

In 2017, Lake County's total population age 16 and over was 52,552 and the labor force participation rate, (the number of people available to work as a percentage of the population over 16) was 48.6 percent. Additionally, the unemployment rate was 11.2 percent (US Census, 2018c). In the same year, the total population age 16 and over within Census Tracts 12 and 13's was 8,230 and the labor participation rates were 48 and 57 percent, respectively. The unemployment rate for Census Tracts 12 and 13 was 13.2 and 4.9 percent, respectively (US Census 2018c).

A few of Lake County's top employers include Adobe Creek Packing Co, Twin Pine Casino & Hotel, Clearlake Family Health Center, Bruno's Shop Smart, Hardester's Market & Hardware, and Evergreen Lakeport Healthcare. Middletown's top employers include Hardester's Market and Hardware, Middletown School District, and Twin Pine Casino and Hotel (EDD, 2020). Agricultural activities within the Guenoc Valley Site, including Langtry Vineyards, currently provide employment opportunities at the winery and for maintenance of the vineyards and ranch areas.

Housing

In 2017, Lake County had a total of 35,747 housing units (US Census, 2018a) with an average household size of 2.39[1] persons (US Census 2018d; US Census 2018e). In the same year, the Census Tracts contained 5,028 housing units (US Census, 2018f) with an average household size of 2.54[1] persons (US Census 2018g; US Census 2018h). The State has a vacancy rate of 4.8 percent with approximately 1,108,171 vacant housing units (U.S. Census, 2018i). While the County has a higher homeowner and rental vacancy rate than the State with a 9.5 percent vacancy rate with and a total vacancy of approximately 9,420 housing units (US Census, 2018j). Census Tracts 12 and 13 have higher vacancy rates than both the State and County with respective vacancy rates of 18.3 percent and 22.5 percent (U.S. census, 2018i).

3.11.3 REGULATORY CONTEXT

State Housing Policies

State law requires each local government in California to adopt a comprehensive, long-term general plan for the physical development of their city or county. The housing element is one of the seven mandated elements of the local general plan. State law requires local government plans to address the existing and projected housing needs of all economic segments of the community through their housing elements. The purpose of the housing element is to identify the community's housing needs, to state the community's goals and objectives with regard to housing production, rehabilitation, and conservation to meet those needs, and to define the policies and programs that the community will implement to achieve the stated goals and objectives.

State law also sets out a process for determining each local jurisdiction's fair share of regional housing needs, called the Regional Housing Needs Allocation (RHNA). As a first step in the process, the California Department of Housing and Community Development assigns each regional council of governments a needed number of new housing units for that region, including affordable housing.

LACP Regional Housing Needs Plan

A RHNP is mandated by the State of California (Government Code Section 65584) for regions to use the RHNA to address housing issues and needs based on future growth projections for the area. The RHNP for the Lake County region is developed by the LAPC and allocates the regional housing need to the City of Clearlake, the City of Lakeport, and unincorporated areas of Lake County.

The latest RHNP was adopted in September 2013; however, in August 2018 the California Department of Housing and Community Development released new RHNA numbers for the LAPC. LAPC has

[1] Calculated using population in housing units divided by total occupied housing units.

subsequently drafted a Regional Housing Needs Assessment for the time period of December 2018 through August 2027, based on the most recent RHNA. As shown in **Table 3.11 -2**, the Regional Housing Needs Assessment requires the region to allocate approximately 460 very low-income units, 310 low-income units, 300 moderate-income units, and 835 above-moderate income units from 2018 to 2027 in the upcoming RHNP (Lake APC, 2018).

TABLE 3.11 -2
REGIONAL HOUSING NEEDS ASSESSMENT DECEMBER 2018 – AUGUST 2027

Jurisdiction	Very Low	Low	Moderate	Above Moderate	Total Housing Units
Clearlake	97	65	72	200	435
Lakeport	31	21	21	58	132
Lake County	332	224	207	576	1,341
Total	**460**	**310**	**300**	**835**	**1,908**
Source: Lake APC, 2018					

Local

Lake County General Plan (2008)

The Lake County General Plan (General Plan) provides projections for population growth into the year 2030. As shown in **Table 3.11 -3**, the General Plan estimates that a total of 101,557 people would be living within the County in the year 2030, which is approximately 16 percent more people than the County's 2020 population estimate of 85,346 people (Lake County, 2008), and approximately 58% more than the current population of 64,095 (based on 2017 census data). It should be noted that the General Plan population projections for the years 2010 and 2015, as presented in **Table 3.11 -3**, are both higher than the U.S. Census Bureau's 2017 population estimate for the County as shown in **Table 3.11 -1**.

TABLE 3.11-3
LAKE COUNTY POPULATION PROJECTIONS

Jurisdiction	2010	2015	2020	2025	2030
Middletown	1,407	1,554	1,715	1,894	2,091
Unincorporated Lake County	16,274	16,893	17,536	18,204	18,897
Total Lake County	71,901	78,311	85,346	93,071	101,557
Source: Lake County, 2008					

The General Plan, Housing Element addresses the housing needs of the County. Applicable general plan policies related to the Proposed Project are listed below. **Appendix GPCT** analyzes the Proposed Project's consistency with the General Plan pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15125(d); however, the determination of the Proposed Projects consistency with the General Plan ultimately rests with the Lake County Board of Supervisors.

Policy HE-1.9: The County shall place a priority on the development of new rental housing.

Policy HE-1.14: The County shall promote infill development on appropriate sites in existing neighborhoods and reuse underutilized parcels throughout the county.

Policy HE-1.15: The County shall ensure that infill development maintains or enhances the positive qualities of the surrounding neighborhoods.

Policy HE-7.3: The County shall encourage the jobs/housing linkages through the development of housing near jobs. The County shall attempt to increase the supply of affordable housing and support efforts to match job income and housing affordability levels.

Lake County Zoning Ordinance

The Lake County Zoning Ordinances guide growth within the County. The Lake County Zoning Ordinance designations on the Guenoc Valley Site include Agriculture (A), Rural Lands (RL), and Rural Residential (RR). The designation Rural Residential has a housing density of between 1 dwelling units per 5 acres to 1 dwelling unit per 10 acres depending on the average cross slope percent of the area. As calculated in the Middletown Area Plan, the current zoning designations of the Guenoc Valley Site would allow for approximately 800 residential units. The Middletown Housing Site is zoned as Single Family Residential (R1) and Suburban Reserve (SR). The Single Family Residential density has a maximum density of 1 dwelling unit per 6,000 square feet. The current zoning designations of the Middletown Housing Site allow for approximately 90 residential units.

Middletown Area Plan (2010)

The Middletown Area Plan (Area Plan) is a specific plan that guides growth in the Middletown community and surrounding areas, including the Guenoc Valley Site. The Area Plan estimates that the population of the planning area will increase by 3,944 from 2010 to 2030, and that occupied housing units would increase by 1,517 during the same time period.

The Area Plan describes the potential maximum overall residential density within the Guenoc Valley Site to be approximately 800 units and suggests that amendments to zoning designations for more residential development would be considered. The 800 dwelling units is based off the Middleton Area Plan Land Use map which is consistent with the 2008 Lake County General Plan. In addition, the Plan states that the concept for future development includes “mutually beneficial land uses that ultimately support long-term agricultural operations and development, ranching and expanded winery uses, and businesses related to the golf course and resort commercial operations and supporting residential development.”

3.11.4 IMPACTS

Method of Analysis

This section addresses the population and housing impacts of the Proposed Project. Impacts associated with growth inducement are also discussed in **Section 4.0**, **CEQA Considerations**. Under CEQA, a lead agency should not assume that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment (CEQA Guidelines, § 15126.2, subd. [d]). As a result, the prospect of

growth, by itself, does not create an adverse effect on the environment. Instead, growth may result in physical impacts to various kinds of natural or environmental resources, such as air, water, or land.

The Proposed Project would amend the existing zoning designation of the Guenoc Valley Site from Agriculture (A), Rural Lands (RL), and Rural Residential (RR), which allows for the development of resort amenities and 800 rural residential homes within the site, to "Gueonc Valley District," which would permit the development of up to 850 hotel and resort residential units, 1400 residential estate villas, 500 workforce bedroom units, resort amenities, and accessory uses within the Guenoc Valley Site. This development would occur over multiple phases. Phase 1 would include the development of 401 residential estate villas, workforce housing, and resort amenities, which is analyzed in this EIR on a project level. Future phases are anticipated but are not specifically planned and would occur based on market demand; these phases are analyzed on a program level. The increased population in the County resulting from the Proposed Project is estimated by multiplying the total number of proposed residential units by the average number of residents per dwelling unit in the County which is estimated to be 2.39 persons per household. The population increase from the proposed workforce housing is conservatively estimated based on the number of bedrooms for each unit, versus the average household size. The proposed hotel and resort residential units are not expected to directly increase the housing stock or population in the region as they would be utilized by resort patrons, and not permanent residents. **Table 3.11-4** illustrates the estimated increase in population resulting from the proposed residential uses within the Guenoc Valley Site and Middletown Housing Site.

TABLE 3.11-4
PROPOSED PROJECT POPULATION ESTIMATES BASED ON RESIDENTIAL UNITS

Location	Residential Units	Workforce Bedrooms[1]	Population Generated[2]
Guenoc Valley Site Phase 1	401	100	1,059
Guenoc Valley Site Future Phases	1,000	400	2,790
Off-Site Workforce Housing	-	221	221
Total	**1,401**	**721**	**4,070**

1. The numbers in this table represent the number of workforce housing *bedrooms* that are proposed. Under Phase 1, workforce housing would consist of up to 35 housing units (with 100 bedrooms) within the Guenoc Valley site, and 50 housing units (with 221 bedrooms) within the Middletown Housing Site.
2. Assumes 2.39 persons per residential unit within the Guenoc Valley Site, and 1 person per bedroom for the workforce housing.

Thresholds of Significance

Criteria for determining the significance of population and housing impacts have been developed based on Appendix G of the CEQA Guidelines. For the purposes of this EIR, population and housing impacts are considered significant if the Proposed Project would:

A) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere;
B) Induce substantial, unplanned population growth in an area, either directly (for example by proposing new homes and businesses) or indirectly (for example through the extension of roads or other infrastructure).

Effects Not Significant

The Proposed Project would have no impact related to the following criteria; therefore, this issue is not evaluated further in this Draft EIR:

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere. The Proposed Project will not displace existing housing because the Guenoc Valley Site and the land surrounding the site is undeveloped and has no established community. Similarly, the Middletown Housing Site is undeveloped and therefore will not displace existing housing.

Impacts

IMPACT 3.11-1	INDUCE SUBSTANTIAL UNPLANNED POPULATION GROWTH		
	Phase 1	Future Phases	Off-Site Workforce Housing
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

Guenoc Valley Site: Phase 1 – Project Level Analysis

Construction

Construction of Phase 1 of the Proposed Project is anticipated to commence in 2020 and end in 2030 depending on the housing market and demand. At the height of construction, a construction workforce of approximately 750 workers would be required (**Appendix CP**). Given the amount of construction workers required and the available workforce within the project region, it is expected that approximately 50 percent of the construction workers would come from the local labor force (**Appendix CP**). As discussed in **Section 2.5.1.10**, workforce housing camps would be temporarily established within the Guenoc Valley Site to accommodate the approximate 375 construction workers from outside of the region. These temporary camps would be located within the designated development footprint of the Phase 1 site plan, adjacent to areas under construction to minimize driving within the ranch to the actual work site.

In addition, given the number of construction workers and the extended duration of construction activities, it can be reasonably expected that some construction workers may permanently relocate to the project region; however, 9,420 housing units are estimated to be vacant within the County. Any induced housing growth would be consistent with the County's zoning designations, and would therefore be considered planned. Furthermore, due to the 2015 Valley Fire, as seen in **Table 3.11-1**, there was a significant decrease in population after 2015 which placed the County's population below the General Plan's population projections, as presented in **Table 3.11-3**. Therefore, any minor increase in population growth from construction employment opportunities at the site would not cause an exceedance of the County's anticipated population growth of approximately 16,000 people between 2020 and 2030. For these reasons, the construction labor force required under of Phase 1 of the Proposed Project would not induce substantial unplanned population growth and this impact would be less than significant.

Direct Population Growth from Proposed Residential Housing

Under the existing Middleton Area Plan, the Guenoc Valley Site would be expected to accommodate approximately 800 residential units. Assuming a household size of approximately 2.39 persons, development within the Guenoc Valley Site envisioned under the existing Middleton Area Plan would result in approximately 1,912 residents. Phase 1 of the Proposed Project involves the development of 401 residential estates, and 35 workforce housing units (with 100 bedrooms) which would result in approximately 1,059 residents. This would be less than the overall amount of residential development and associated population growth envisioned in the Middletown Area Plan for the Guenoc Valley Site. Additionally, Phase 1 includes the development of 50 off-site workforce housing units in Middletown with an estimated population of 221. Therefore, the total direct population growth from proposed residential development under Phase 1 could be 1,280. The population of the County in 2017 was 64,095. With the addition of Phase 1 population growth from proposed housing, the County's total population could increase by 1,280 persons to 65,375. This would represent an approximate 2 percent increase in the County's 2017 population and a 1.2 percent increase in housing units within the County (based on 2017 housing inventory; refer to **Section 3.11.3)**. After the 2015 Valley Fire, as seen in **Table 3.11-1**, there was a significant decrease in population after 2015 which placed the County's population below the General Plan's population projections, as presented in **Table 3.11-3**. The population increase from Phase 1 would not cause the County to exceed its planned population projection of 85,346 for the year 2020 or 101,557 for the year 2030 (refer to **Section 3.11.3**).

Therefore, the Proposed Project would not directly induce substantial new unplanned population growth in Lake County, and this impact would be less than significant.

Indirect Population Growth from Increase in Employment Opportunities

Phase 1 of the Proposed Project would create an employment center by employing approximately 300, year round, full time hospitality, maintenance, and administrative employees. Although some of these employees would come from the regional workforce, given the limited rural population of the area, it is possible that a significant portion would relocate from neighboring regions. To accommodate the anticipated increase in housing demand resulting from generated employment opportunities at the site, the Proposed Project includes options for both on- and off-site workforce housing. Fifty off-site workforce housing units (with 221 bedrooms) are proposed within the town of Middletown that could accommodate up to 221 employees and household members. Additionally, 35 on-site workforce housing units (with 100 bedrooms)

may be developed within the Guenoc Valley Site that could to accommodate up to 100 project employees and household members.

However, it can be reasonably expected that some project employees may relocate to the project region and would not reside in the proposed workforce housing. As stated above, approximately 9,420 housing units are estimated to be vacant within the County. Any induced housing development from the approximately 300 employment positions generated by the Proposed Project would be consistent with the County's zoning designations, and would therefore be considered planned. Furthermore, due to the 2015 Valley Fire, as seen in **Table 3.11-1**, there was a significant decrease in population within the Census Tracts after 2015 which placed the County's population below the General Plan's population projections, as presented in **Table 3.11-3**. Therefore, any minor increase in population growth from employment opportunities at the site would not cause an exceedance of the County's anticipated growth of approximately 16,000 people between 2020 and 2030. For these reasons, housing growth from employment opportunities generated by Phase 1 of the Proposed Project would not generate substantial unplanned growth in the County and this impact is less than significant.

Indirect Population Growth from Infrastructure Improvements

The Proposed Project would increase the number of roadways on the Guenoc Valley Site. These on-site roads would only be used by resort employees, resort visitors, or residents; the roads would not extend past the Guenoc Valley Site. Therefore, the development of new roadways would not result in indirect population growth and this impact would be less than significant.

Utilities including water supply, and electrical infrastructure, may be extended along Butts Canyon Road to serve the Guenoc Valley Site. These utilities would be sized to accommodate the demands of Phase 1 and Future Phases of the Proposed Project, and would not be utilized by off-site areas. Furthermore, the areas surrounding the Guenoc Valley Site already have electrical service and therefore, any minor off-site electrical upgrades would not extend electricity supply an area without existing electricity.

The proposed on-site water and wastewater systems would be operated as an independent system, either through a new private utility, or through an established utility district or company. Given the remote location of the site, it is unlikely that the system could be expanded to serve off-site development, and is therefore unlikely to remove an impediment to growth or cause substantial unplanned growth in the County.

Therefore, the Proposed Project would not result in indirect population growth as a result of the extension of utilities infrastructure to the Guenoc Valley Site. This impact would be less than significant and no mitigation is required.

Guenoc Valley Site: Future Phases – Programmatic Analysis

Construction

Depending on the housing market, construction activities related to potential future phases of the Proposed Project are anticipated to begin sometime after 2030. Depending on the scale of development proposed under subsequent phases, construction could require a significant construction workforce, similar to Phase 1. It can be reasonably expected that some of these construction workers may permanently relocate to the region. Approximately, 9,420 housing units were estimated to be vacant within the County based on the

2017 housing stock (refer to **Section 3.11.2**), which would be significant more than enough to accommodate the construction workforce under future phases. Any induced housing growth would be consistent with the County's zoning designations, and would therefore be considered planned. Furthermore, due to the 2015 Valley Fire, as seen in **Table 3.11-1**, there was a significant decrease in population after 2015 which placed the County's population below the General Plan's population projections, as presented in **Table 3.11-3**. Therefore, any minor increase in population from construction employment opportunities at the site would not cause an exceedance of the County's anticipated growth of approximately 16,000 people between 2020 and 2030. For these reasons, the construction labor force required under future phases of the Proposed Project would not induce substantial unplanned population growth and this impact would be less than significant.

Direct Population Growth from Proposed Residential Housing

Under the existing Middleton Area Plan, the Guenoc Valley Site would be expected to accommodate approximately 800 residential units and 1,900 residents. Under the proposed Guenoc Valley District zoning designation, the Guenoc Valley Site could be developed with up to 1,400 residential estates, and 500 workforce bedroom units. Buildout of the residential uses within the Guenoc Valley Site under the Proposed Project, including Phase 1 combined with Future Phases, could result in a population increase of 3,849 residents, which is almost double what would be expected under the existing General Plan and Middletown Area Plan for the Guenoc Valley Site. With the additional of population growth resulting from the proposed 50 off-site workforce housing units, the total direct population increase resulting from the Proposed Project would be 4,070 (**Table 3.11-4**). The 2017 County population of 64,095 would increase to 68,165 as a result of residential development from the buildout of the Proposed Project. The Proposed Project (Phase 1 plus Future Phases, plus Off-Site Workforce Housing) would result an approximately 6 percent increase in the County's 2017 population and a 5.3 percent increase in housing units within the County (based on 2017 housing inventory; refer to **Section 3.11.2**). The population increase from buildout of the Proposed Project represents 20.6 percent of the County's population projection increase of 16,000 from 2020 to 2030. After the 2015 Valley Fire, as seen in **Table 3.11-1**, there was a significant decrease in population after 2015 which placed the County's population below the General Plan's population projections, as presented in **Table 3.11-3**. The population increase from buildout of the Proposed Project would not cause the County to exceed its planned population projection of 85,346 for the year 2020 or 101,557 for the year 2030 (refer to **Section 3.11.3**). Therefore, the Proposed Project would not directly induce substantial new unplanned population growth in Lake County, and this impact would be less than significant.

Indirect Population Growth from Employment and Infrastructure Improvements

Future Phases would not include the extension of utility infrastructure beyond that discussed above for Phase 1. Therefore, the Proposed Project would not result in indirect population growth as a result of the extension of utility infrastructure to the project site. This impact would be less than significant and no mitigation is required.

Future Phases would include further employment opportunities and thus, generate additional growth. However, the increase population growth from employment would be accommodated through the proposed on-site workforce housing allowance, which is factored into the population estimates for the Proposed Project. Accordingly the effects of the population growth due to employment opportunities is addressed

above under "Direct Population Growth from Proposed Residential Housing." This impact would be less than significant and no mitigation is required.

Off-Site Workforce Housing – Project Level Analysis

Construction

Construction of off-site workforce housing would require a moderate construction workforce. It can be reasonably expected that some of these construction workers may permanently relocate to the project region; however, 9,420 housing units are estimated to be vacant within the County. Any induced housing growth would be consistent with the County's zoning designations, and would therefore be considered planned. Furthermore, due to the 2015 Valley Fire, as seen in **Table 3.11-1**, there was a significant decrease in population after 2015 which placed the County's population below the General Plan's population projections, as presented in **Table 3.11-3**. Therefore, any minor increase in population from construction employment opportunities at the site would not cause an exceedance of the County's anticipated growth of approximately 16,000 people between 2020 and 2030. Therefore, construction labor force required for construction of the off-site workforce housing would not induce substantial new unplanned population growth in Lake County; this impact would be less than significant.

Direct Population Growth from Proposed Residential Housing

Based on the existing Lake County Zoning designation of Single Family Residential, the Middletown Housing Site has the capacity to accommodate 92 units or based on the average Lake County household, 220 residents. The Proposed Project involves the development of 50 workforce housing units with 221 bedrooms within the Middletown Housing Site, which could accommodate up to 221 employees and household residents. The potential population of 221 persons residing at the Middletown Housing Site would be generally consistent with the anticipate population that would be expected at the site under the current zoning designation. This represents an approximately 0.34 percent increase in the County's 2017 population. The estimated population and housing increase generated by the Proposed Project is aligned with the zoning designation of the Middletown Housing Site and the General Plan's predicted growth for Lake County. Therefore, the proposed Off-Site Workforce Housing would not directly induce substantial new unplanned population growth in the Lake County; this impact would be less than significant.

Indirect Population Growth from Infrastructure Improvements

The Proposed Project would include road and utility improvements on and in the vicinity of the Middletown Housing Site. However, the Middleton Housing Site is surrounded by residential developments and is considered an infill project. Therefore, the Proposed Project would not result in indirect population growth as a result of the extension of utility infrastructure to the Guenoc Valley Site. This impact would be less than significant and no mitigation is required.

Summary

The Proposed Project, including Phase 1, Future Phases and Off-Site Workforce Housing, could result in direct population growth within the County of approximately 4,070 persons from residential development, and indirect population growth from employment opportunities. The anticipated population growth of the Proposed Project would be within the County's population projections. Furthermore, there is adequate housing within the County to house the population that generated by the Proposed project that is relocating due to employment opportunities. With the rezoning and amendment to the General Plan, the Proposed

Project's planned housing would be aligned with the County's planned growth. The Proposed Project would not induce substantial unplanned population growth and would therefore, result in a less than significant impact and no mitigation is required.

IMPACT 3.11-2	POTENTIAL FOR CUMULATIVE EFFECTS ASSOCIATED WITH POPULATION AND HOUSING			
	Phase 1	Future Phases	Off-Site Workforce Housing	Off-Site Infrastructure
Significance Before Mitigation	Less than significant	Less than significant	Less than significant	Less than significant
Mitigation Measures	None required	None required	None required	None required
Significance After Mitigation	N/A	N/A	N/A	N/A

The cumulative setting for population and housing is defined as planned and approved growth in the County as described in **Section 4.2**. As presented in **in Section 4.2, t**he County General Plan anticipates that the annual population growth rate in the County is approximately 2.5 percent, with population expected to increase from 53,309 residents in 2000 to 101,557 residents by 2030; extrapolating this growth rate would result in a population of approximately 115,973 in 2040. Given the current population of 64,095 as of 2017, this would equate to population increase of approximately 37,462 persons (an increase of 58%) by the year 2030. Due to a population decline and a decrease in population growth following the 2015 Valley Fire, the County is not on track to meet its projected population. A list of reasonably foreseeable cumulative projects within the County is provided in **Section 4.2.1**. These projects include primarily wineries, vineyards, cannabis farms, and commercial developments; at this time, there is only one pending reasonably foreseeable residential development project in the County besides the Proposed Project: the Valley Oaks Planned Development Project, located approximately 3.3 miles northwest of the Guenoc Valley Site. The Valley Oaks Project would result in a zoning amendment that would increase the residential density on the site, and proposes to construct 380 residential parcels for senior housing. Assuming an average population of 2 persons per senior housing unit, this project would increase population in the County by potentially 760 persons. When combined with the proposed project, the cumulative increase in population would be 4,430. This increase would still be significantly below the County's General Plan population projections of 85,346 for 2020, and 101,557 for 2030. It is possible that future residential growth could occur in the County consistent with allowable uses in the General Plan and Middletown Area Plan. After the General Plan amendment and rezoning are approved, the Proposed Project would be consistent with County planning documents such as the General Plan, Zoning Ordinances, and the Middletown Area Plan. Similar to the Proposed Project, the cumulative projects would be required to adhere to all applicable planning documents and therefore the population increase generated by those projects would be considered planned growth. Accordingly, cumulative projects, including the Proposed Project, would not generate substantial unplanned population growth in County, and cumulative impacts associated with population and housing are considered less than significant.

3.11.5 MITIGATION MEASURES

None.

3.12 PUBLIC SERVICES

This section provides a description of public services available to the project area and addresses the potential for the Proposed Project to result in the need for new or expanded public service facilities in order to maintain performance objectives, the construction of which could cause environmental impacts. Public services include law enforcement (**Section 3.12.1**), fire protection and emergency medical services (**Section 3.12.2**), public schools (**Section 3.12.3**), and parks and recreational facilities (**Section 3.12.4**). Following an overview of the existing setting and relevant regulatory setting for each public service, project-related impacts are identified.

3.12.1 LAW ENFORCEMENT

Following an overview of the environmental setting in **Section 3.12.1.1** and the relevant regulatory setting in **Section 3.12.1.2**, project-related impacts and recommended mitigation measures are presented in **Sections 3.12.1.3** and **3.12.1.4**, respectively.

3.12.1.1 Law Enforcement Environmental Setting

The Lake County Sheriff's Office (LCSO; Sheriff's Office) is responsible for providing law enforcement services to the unincorporated areas of Lake County. The California Highway Patrol (CHP) has authority to patrol Highways in the County. The Guenoc Valley Site and the Middletown Housing Site are served by the Sheriff's Office's main station located in Lakeport and its substation located in Lucerne, both approximately 40 miles from the Guenoc Valley Site and approximately 30 miles from the Middletown Housing Site. The Sheriff's Office also acts as the County coroner and serves all civil paperwork in the County. Additionally, the Sheriff's Office is responsible for coordinating search and rescue efforts through its staff and volunteers of the search and rescue program.

LCSO is authorized to have a force of 60 sworn officers and 80 non-sworn employees headquartered at 1220 Martin Street in Lakeport, approximately 42 miles from the southern boundary of the Guenoc Valley Site. Sworn officers are responsible for emergency and law-enforcement activities, jail management, court security, Search and Rescue, and Civil Process. Non-sworn employees are responsible for other duties including dispatch, record maintenance, and administrative tasks. Funding for law enforcement services comes from the County's General Fund and public safety grants (Macedo, 2019).

A beat is an area routinely patrolled by the same deputies. The Sheriff's Office has divided the County into seven major patrol beats, some are further divided into sub-beats. The areas surrounding the Guenoc Valley Site and the Middletown Housing Site are part of Beat 7A, the Middletown/Hidden Valley beat (Lake County Sheriff's Office, 2019).

In addition to routine patrol, traffic enforcement, and responding to calls for service, LCSO assigns a beat officer to neighborhood areas on a long-term basis. A beat is an area routinely patrolled by the same deputies. The Sheriff's Office has divided the County into seven major patrol beats, some are further divided into sub-beats. The area surrounding the Guenoc Valley Site and Middletown Housing Site is part of Beat 7A, the Middletown/Hidden Valley beat (Lake County Sheriff's Office, 2019).

The LCSO has not adopted a police-to-population ratio, but strives to maintain their existing ratio of 0.9 officers per 1,000 residents (Macedo, 2019; US Census, 2018j). LCSO also has not adopted a formal response time standard, but aims to respond to emergency calls as soon as possible (Macedo, 2019).

3.12.1.2 Law Enforcement Regulatory Setting

Local

Lake County General Plan (2008)

The Lake County General Plan (General Plan), Public Facilities and Services Element addresses law enforcement for the County. Applicable general plan policies related to the Proposed Project are listed below. **Appendix GPCT** analyzes the Proposed Project's consistency with the General Plan pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15125(d); however, the determination of the Proposed Project's consistency with the General Plan ultimately rests with the Lake County Board of Supervisors.

- Policy PFS-1.4: The County shall seek to minimize vulnerability of its public service facilities to natural and man-made hazards and threats.
- Policy PFS-8.7: The County shall promote public safety programs, including neighborhood watch programs, child identification and fingerprinting, public awareness and prevention of fire hazards, and other public education efforts.

3.12.1.3 Law Enforcement Impacts

Method of Analysis

The analysis of law enforcement impacts is based upon consultations with County and LCSO staff, and review of other relevant documents. Although there is not a County adopted police-to-population ratio, for purposes of this analysis, a ratio of 0.9 officers per 1,000 residents is used as a threshold to determine adequate service based on department policy.

Thresholds of Significance

Criteria for determining the significance of impacts associated with law enforcement services were developed based on Appendix G of the CEQA Guidelines. The Proposed Project would result in a significant impact to law enforcement services if it would:

- Result in substantial adverse physical impacts associated with the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection.

IMPACT 3.12-1	RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE NEED FOR NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL IMPACTS, IN ORDER TO MAINTAIN ACCEPTABLE SERVICE RATIOS, RESPONSE TIMES, OR OTHER PERFORMANCE OBJECTIVES FOR POLICE PROTECTION		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

Guenoc Valley Site Phase 1 and Off-Site Workforce Housing – Project Level Analysis

Lake County Sheriff's Office

The increased residential population resulting from Phase 1 of the Proposed Project would create additional demand for law enforcement services. Phase 1 would create additional residential areas within the County's Middletown/Hidden Valley patrol beat. As discussed further in **Section 3.11**, Population and Housing, Phase 1 could contribute a total of 1,059 permanent residents to the Guenoc Valley Site, and 221 permanent residents to the Middletown Housing Site (for a total potential increase of 1,280 residents). Based on a desired ratio of 0.9 officers per 1,000 residents, less than 2 new officers would be required. More administrative staff may be needed to support the additional police force.

Revenues generated by sales tax and property taxes associated with development of the Proposed Project would increase the County's General Fund, a portion of which could pay for the additional law enforcement personnel needed to serve the Proposed Project. Expansion of the LCSO Headquarters would likely not be needed for the additional police staff and is not proposed as part of the Proposed Project.

As described in **Section 3**, the Proposed Project includes the development of an on-site emergency response and fire center to provide a headquarters space and storage for fire and law enforcement personnel. Approximately 500 square feet of the emergency response and fire center would be dedicated to the LCSO for law enforcement services. The fire response portion of the emergency response center would ultimately become the SLCFPD Station #61. The addition of on-site emergency response resources would ensure that, in the event of an emergency, adequate response times would be met. The potential environmental effects that could occur as result of construction and operation of the on-site emergency response center are addressed throughout this EIR. The proposed emergency response center itself is not located in an area with known cultural resources or sensitive biological habitats.

Therefore, Phase 1 would not result in substantial adverse physical impacts associated with the need for new or physically altered law enforcement facilities in order to maintain acceptable performance objectives for police protection. This impact is **less than significant**.

California Highway Patrol

The CHP based out of the Clear Lake Area handles enforcement of traffic investigations, traffic control, and other related traffic incidents within Lake County. State services are funded in part by property taxes. Development of the Proposed Project would increase property taxes paid to the State of California that could go toward CHP staffing levels.

The Proposed Project would not generate a level of traffic that require the construction or expansion of any new CHP facilities that may have a significant effect on the environment. Therefore, impacts associated CHP services and facilities are considered **less than significant**.

Future Phases – Programmatic Analysis

Under the proposed Guenoc Valley District zoning designation, the Guenoc Valley Site could be developed with up to 1,400 residential estates, and 500 workforce bedroom units. As discussed further in **Section 3.11**, Population and Housing, buildout of the residential uses under the Proposed Project, including Phase 1 combined with Future Phases, could result in a population increase of 4,070 residents (1,280 residents under Phase 1 and 2,790 residents under future phase). Based on a desired ratio of 0.9 officers per 1,000 residents, approximately 4 new officers would be required (approximately 2 officers would be needed with Phase 1 and approximately 2 additional officers could be needed under buildout of future phases). More administrative staff may be needed to support the additional police force. Revenues generated by sales tax and property taxes associated with development of future phases would contribute toward the additional law enforcement personnel needed to serve the Proposed Project. Additionally, as future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals. Expansion of the LCSO Headquarters or other physical improvements are not anticipated as a result of the potential increase in law enforcement needs associated with the Proposed Project. This impact is **less than significant**.

IMPACT 3.12-2	**CUMULATIVE INCREASED DEMAND FOR POLICE PROTECTION SERVICES**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

The cumulative setting area for law enforcement services includes the current Lake County boundaries, and includes the growth and reasonably foreseeable County development projects listed in **Section 4.2**.

The demands for law enforcement services from the LCSO that will arise from the approval of the Proposed Project, in addition to the demands for services for other proposed and/or approved projects in Lake County, would increase service demands on LCSO. The additional responses to calls for emergency and non-emergency services that would arise from the Proposed Project and other planned developments under buildout conditions, would have a cumulative impact upon availability of services by LCSO. Under the Lake County General Plan, new development is required to pay the cost of providing public services that are needed to serve the new development. Such fees are necessary for the development of law enforcement facilities, purchase of equipment, etc. Existing and future businesses and area residents would be also be responsible (through taxes and other County assessments) for providing adequate funding for the operation of potential future expanded law enforcement services.

In the future, the construction of new or expanded law enforcement facilities within the County is likely. Details regarding the location of new or expanded facilities to serve cumulative conditions are not currently available, so specific impacts associated with development of facilities are speculative. CEQA review would be required for the development of new or expanded facilities. The physical environmental effects of the future construction of new or expanded police facilities may include impacts to biological resources, air quality, water quality, traffic, cultural resources, and noise. Implementation of the Proposed Project would not directly result in the need for additional police or law enforcement facilities, and its cumulative contribution to the overall need (facilities to support up to 4 additional officers), would be minimal. Therefore, the Proposed Project's contribution to this cumulative impact is considered **less than significant** and no mitigation is required.

3.12.1.4 Law Enforcement Mitigation Measures

None required.

3.12.2 FIRE PROTECTION

Following an overview of the environmental setting in **Section 3.12.2.1** and the relevant regulatory setting in **Section 3.12.2.2**, project-related impacts and recommended mitigation measures are presented in **Sections 3.12.2.3** and **3.12.2.4**, respectively.

3.12.2.1 Fire Protection Environmental Setting

South Lake County Fire Protection District's (SLCFPD) service area covers approximately 285 square miles and includes the communities of Middletown, Anderson Springs, Cobb, Loch Lomond, and Hidden Valley, as well as numerous small developments and individual dwellings (SLCFPD, 2018). SLCFPD provides both ambulance and fire response service within the district boundaries. The District also serves a portion of the geothermal geysers industry facilities on the western boundary of the District. SLCFPD, in cooperation with California Department of Forestry and Fire Protection (Cal Fire), provides fire protection and emergency medical services to the southern portion of the County. SLCFPD and Cal Fire provide services from their respective Middletown fire stations, located on Highway 175, approximately 4 miles west of the Guenoc

Valley Site. The Middletown station serves as the SLCFPD headquarters, and is primarily staffed by administrative personnel with the presence of emergency personnel being variable. SLCFPD currently staffs two other stations located in Cobb (Station 62) and Hidden Valley (Station 63), manned 24 hours per day with two response personnel at each location (SLCFPD, 2019a).

Approximately fifteen local residents currently volunteer with SLCFPD, and are paid on an hourly, as-needed basis. SLCFPD staffs approximately 25 paid full-time employees. SLCFPD contracts through Cal Fire for staffing as needed; currently 7 of the full-time employees are Cal Fire contract staff. SLCFPD is funded primarily through county secured and unsecure tax rolls (SLCFPD, 2019b).

There are approximately 10,000 residents within the jurisdictional boundaries of SLCFPD who place approximately 1,200 emergency calls to SLCFPD per year (SLCFPD, 2019b).

SLCFPD defines their response times as the time elapsed between the receipt of an emergency call and action on said call. Current response times are approximately two minutes during daytime hours, and three minutes during nighttime hours for all calls (SLCFPD, 2019b). Because of the rural character of the region, arrival time is variable on the location of the service need, as illustrated in **Table 3.12-1**.

TABLE 3.12-1
RESPONSE STANDARDS

Areas Within a 5-Minute Travel Time of a Fire Station	Remainder of the District
Advanced Life Support (ALS) ambulance unit will arrive at 95% of emergency medical calls within 10 minutes of receipt of call at the fire station; AND The first engine will arrive at the scene of 90% of fire incidents within five minutes of receipt of call at the fire station. The balance of the "first alarm assignments" will arrive within 10 minutes.	ALS ambulance unit will arrive at 90% of emergency medical calls within 15 minutes of receipt of call at the fire station; AND The first engine will arrive at the scene of 90% of fire incidents within 15 minutes of receipt of the call at the fire station. The balance of resources required for "first alarm assignment" will arrive within 25 minutes.
Source: SLCFPD, 2018	

Mutual Aid Agreements

When the demand for fire protection services is greater than SLCFPD can provide, fire protection services are sourced from other local agencies, pursuant to the California Fire Assistance Agreement (CFAA). The CFAA provides guidelines for reimbursement for such services. The Guenoc Valley Site and the Middletown Housing Site are within the California Department of Forestry's State Responsibility Area (SRA), and therefore Cal Fire would provide wildfire fire response and mutual aid services as needed.

Conversely, SLCFPD regularly provides mutual aid services to nearby districts, including Napa County. Specifically, SLCFPD is commonly the first responder to calls on Pope Valley Road within Napa given the distance to the nearest Napa Fire Station from this area.

Lake County Fires

Cal Fire delineates fire hazard severity zones in California based on factors including fuels, terrain, and weather (Lake County, 2007). The Guenoc Valley Site includes moderate, high, and very high fire hazard

severity zones, and the Middletown Housing Site is fully within a moderate fire hazard severity zone. For this reason, intense fire protection measures have been incorporated into the project design. These fire protection measures are outlined in **Section 2.5.2.3**.

3.12.2.2 Fire Protection Regulatory Setting

Federal

National Fire Protection Association Standards

The National Fire Protection Association (NFPA), established in 1896, provides codes and standards to eliminate death, injury, property, and economic loss due to fire, electrical, and other related hazards. The NFPA's fire protection codes and standards are accepted as the national fire code to be used as reference for determination by state fire marshals.

State

Fire Safe Regulations (Public Resources Code 4290)

Public Resources Code 4290 grants Cal Fire the authority to adopt regulations implementing minimum fire safety standards related to defensible space in SRAs and land in very high fire hazard severity zones. The regulations include standards for fire equipment access, road signs, private water supply for emergency fire use, and fuel breaks.

California Fire Code

The California Fire Code 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.

Local

Lake County General Plan (2008)

The General Plan, Public Facilities and Services Element addresses fire protection services for the County. The General Plan, Public Facilities and Services Element addresses law enforcement for the County. Applicable general plan policies related to the Proposed Project are listed below. **Appendix GPCT** analyzes the Proposed Project's consistency with the General Plan pursuant to the CEQA Guidelines Section 15125(d); however, the determination of the Proposed Project's consistency with the General Plan ultimately rests with the Lake County Board of Supervisors.

- Policy PFS-1.3: The County shall ensure that proposed developments do not create significant adverse impacts on existing natural or man-made infrastructure of the County and that the necessary man made infrastructure to support the project will be in place, bonded for, or other guarantee acceptable to the Approval Authority prior to the filing of final maps or granting of other entitlements.
- Policy PFS-8.1: The County shall promote expansion of fire protection service to continue to meet County needs.

- Policy PFS-8.3: The County shall require that all road networks (public and private) are designed to provide for safe and ready access for emergency fire equipment and provide an alternate route for evacuations.
- Policy PFS-8.4: The County shall ensure that all roads and buildings are properly identified by name or number with signs which are non-combustible and are clearly visible from main roadways.
- Policy PFS-8.5: The County shall continue to support the fire mitigation fee ordinance.
- Policy PFS-8.7: The County shall promote public safety programs, including neighborhood watch programs, child identification and fingerprinting, public awareness and prevention of fire hazards, and other public education efforts.
- Policy PFS 8.8: The County shall encourage the locations of fire and police stations to enable the minimum acceptable response time to service calls.

Middletown Area Plan (2010)

The Middletown Area Plan identifies fire hazard zones within the Middletown planning area and provides current fire protection resources, including programs and policies that would reduce the risk of fire hazard of new development within the planning area, such as California's Fire Safe Regulations (Public Resources Code 4290), the California Fire Code, building and fire codes within the Lake County Code of Ordinances, and the Lake County Community Wildfire Protection Plan.

Lake County Community Wildfire Protection Plan (2009)

The Lake County Community Wildfire Protection Plan identifies risks and hazards from wildfire, provides community priorities for conservation-based fuel reduction, coordinates fire prevention strategies across property boundaries, and encourages integration of private land management goals within the County. An action plan is provided to implement policies identified in the plan.

Lake County Code of Ordinances

Chapter 17 of the Lake County Code of Ordinances provides fire protection standards for the subdivision of land and specified design standards for street improvements, location of fire hydrants, and fire protection equipment access easements. Chapter 27 of the Lake County Code of Ordinances established the Lake County Capital Fire Facility and Equipment Plan and authorized County fire districts to collect fire mitigation fees on new development within the County.

3.12.2.3 Fire Protection Impacts

Method of Analysis

The analysis of fire protection service impacts is based upon consultations with County and SLCFPD staff, and review of other relevant documents. The SLCFPD does not have an adopted ratio of fire protection personnel to resident population. Instead, the impact analysis is based on the ability of the SLCFPD to maintain their current Insurance Service Office (ISO) rating.

The ISO fire insurance rating consists of an evaluation of equipment, access, structures and available water supply for a fire district. The ISO rating scale ranges from 1 to 9 and is used as a basis for fire insurance rates. The total ISO is a split classification based on the distance from between a property to the responding

fire station or whether the property is within 1,000 feet of a creditable water supply. The fire insurance rating for the communities of Middletown and Hidden Valley Lake is 4/4Y (Insurance Service Office, 2014).

Thresholds of Significance

Criteria for determining the significance of impacts associated with law enforcement services were developed based on Appendix G of the CEQA Guidelines. The Proposed Project would result in a significant impact to fire protection services if it would:

- Result in substantial adverse physical impacts associated with the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection.

IMPACT 3.12-3	**RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE NEED FOR NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL IMPACTS, IN ORDER TO MAINTAIN ACCEPTABLE SERVICE RATIOS, RESPONSE TIMES, OR OTHER PERFORMANCE OBJECTIVES FOR FIRE PROTECTION**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

Phase 1 and Off-Site Workforce Housing – Project Level Analysis

The Guenoc Valley Site is located in a high fire hazard area as classified by Cal Fire. Development in wildland hazard areas is required to meet safety and design standards described in the Lake County Community Wildfire Protection Plan. Measures beyond the minimum fire safety regulations have been proposed by the development and are outlined in the Guenoc Valley Emergency Action and Fire Management Plan (**Appendix FIRE**).

Proposed fire management facilities are shown in **Figure 2-10**, and include extensive fuel breaks along roadways and drainages, six 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 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.

Approximately 27 miles of fuel breaks will be incorporated throughout the Guenoc Valley Site by removing and reducing fire prone vegetation within fifty feet from both edges of each proposed roadway. 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 all buildings (commercial and residential) with independent water connections. It is expected that phasing would ensure that the Proposed Project will not create traffic congestion during construction or operation that would substantially impede fire protection response times on public streets. The potential environmental effects that could occur as result of construction and operation of the on-site fire station are addressed throughout this EIR. The proposed fire station itself is not located in an area with known cultural resources or sensitive biological habitats.

The SLCFPD receives approximately 1,200 emergency calls per year from the 10,000 residents within the jurisdictional boundaries for SLCFPD. The addition of approximately 1,280 residents resulting from implementation of Phase 1 of the Proposed Project would translate to the generation of approximately 154 extra emergency calls per year, which is within SLCFPD's ability to serve. SLCFPD's Battalion Chief has confirmed SLCFPD's willingness and ability to provide fire protection and emergency medical services to the Guenoc Valley Mixed-Use Development Project, stating that the Guenoc Valley Mixed-Use Development Project would not result in the need to expand existing facilities, upgrade infrastructure, or add employees to the existing stations (SLCFPD, 2019b). For all of these reasons, the impact on fire protection services from the Proposed Project would be considered **less than significant**.

Future Phases – Programmatic Analysis

Development in wildland hazard areas would continue to meet safety and design standards in future phases. The Guenoc Valley Emergency Action and Fire Management Plan would remain in effect through future phases and would be appropriately updated to incorporate future development (**Appendix FIRE**). The on-site emergency infrastructure and staffing would be expanded to accommodate future development,

ensuring that response times are met and emergency response teams from surrounding areas are able to meet their respective standards. Additionally, at the time future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals. For all of these reasons, the impact on fire protection services from future phases would be considered less than significant.

IMPACT 3.12-4	**CUMULATIVE INCREASED DEMAND FOR FIRE PROTECTION SERVICES**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

The cumulative setting area for fire protection services includes the jurisdictional boundaries of the LCFPD, and includes the growth and reasonably foreseeable County development projects listed in **Section 4.2**.

The demands for fire protection services from the LCFPD that will arise from the approval of the Proposed Project, in addition to the demands for services for other proposed and/or approved projects in Lake County, would increase service demands on LCFPD. The additional responses to calls for emergency and non-emergency services that would arise from the Proposed Project and other planned developments under buildout conditions, would have a cumulative impact upon availability of services by LCFPD. Under the Lake County General Plan, new development is required to pay the cost of providing public services that are needed to serve the new development. Such fees are necessary for the development of fire protection facilities, purchase of equipment, etc. Existing and future businesses and area residents would be also be responsible (through taxes and other County assessments) for providing adequate funding for the operation of potential future expanded fire protection services.

In the future, the construction of new or expanded fire protection facilities within the County is likely. Details regarding the location of new or expanded facilities to serve cumulative conditions are not currently available, so specific impacts associated with development of facilities are speculative. CEQA review would be required for the development of new or expanded facilities. The physical environmental effects of the future construction of new or expanded fire protection facilities may include impacts to biological resources, air quality, water quality, traffic, cultural resources, and noise. Implementation of the Proposed Project would not directly result in the need for additional fire protection facilities, and its cumulative contribution to the overall need for additional facilities would be minimal given the proposed on-site emergency and fire response center and extensive wildfire prevention features incorporated into the project design. Therefore,

the Proposed Project's contribution to this cumulative impact is considered **less than significant** and no mitigation is required.

3.12.2.4 Fire Protection Mitigation Measures

None required.

3.12.3 SCHOOLS

Following an overview of the environmental setting in **Section 3.12.3.1** and the relevant regulatory setting in **Section 3.12.3.2**, project-related impacts and recommended mitigation measures are presented in **Sections 3.12.3.3** and **3.12.3.4**, respectively.

3.12.3.1 Schools Environmental Setting

Middletown Unified School District

The Middletown Unified School District (MUSD) serves transitional kindergarten through 12th grade. MUSD operates two elementary schools, a middle school, two high schools, and two charter schools. The MUSD currently operates a total of eight schools: Cobb Mountain Elementary School, Coyote Valley Elementary School, Minnie Cannon Elementary School, Middletown Middle School Loconoma Valley High, and Middletown High School as well as California Connection Academy and Lake County International Charter School. The MUSD Board of Trustees adopted a Facilities Master Plan in January 2019. The Facilities Master Plan calls for new security fencing, building modernization, and new construction (MUSD, 2018). The plan also calls for older portable classrooms to be replaced by permanent structures.

Enrollment and Capacity

The enrollment in the MUSD for the 2019-2020 school year was approximately 1,770 with capacity for approximately 100 additional students assuming facility upgrades (California Department of Education, 2019).

Student Generation Rates

When analyzing the impacts of potential residential development, student generation rates are used to estimate the number of students a school district can expect from a planned development. These estimations are used to determine infrastructure needs, including if and when new school facilities will be needed, potential boundary adjustments, and the addition of new classrooms to existing sites. School districts often calculate student generation rates for each grade level or grade level ranges. No student generation rates are available for MUSD, so student generation rates from the nearby Santa Rosa City School District (SRCSD) have been reviewed. SRCSD uses a blended transitional kindergarten (TK) through sixth grade of 0.147 students per household, and a blended seventh through twelfth grade factor of 0.148 students per household (Santa Rosa City Schools, 2019).

Developer Impact Fees

MUSD collects residential and commercial developer fees for all schools in the district at a rate of $2.97 per square foot (California Department of Education, 2019).

3.12.3.2 Schools Regulatory Setting

State

California Education Code 17620

Provides California school districts with the authority to impose fees or other requirement against any construction within the boundaries of the district for the purpose of funding the construction or reconstruction of school facilities, subject to any limitations set forth in Chapter 4.9 (commencing with Section 65995) of Division 1 of Title 7 of the Government Code.

Proposition 1A/Senate Bill (SB) 50

Prop 1A/Senate Bill (SB) 50 has resulted in State preemption of school mitigation. Satisfaction of the statutory requirements by a developer is deemed to be "full and complete mitigation." According to Government Code section 65996, except for development fees authorized by Education Code section 17620 or pursuant to provisions for interim facilities appearing at Government Code section 65970 through 65981, no "fee, charge, dedication, or other requirement" shall be "levied or imposed in connection with, or made a condition of, a legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property or a change in governmental organization or reorganization" (Gov. Code, § 65995, subd. [a]). These development fees authorized by SB 50 are "deemed to provide full and complete school facilities mitigation" (Gov. Code, § 65996, subd. [b]). The law does identify, however, certain circumstances under which the statutory fee can be exceeded. As described below, these increases require preparation and adoption of a "needs analysis," eligibility for state funding, and other provisions.

SB 50 establishes three levels of development fees that may be levied upon new construction. Level 1 fees are the maximum amount of fees that can be imposed on new development as set by the State Allocation Board. A school district imposing the development impact fees must show "that a valid method was used for arriving at the fee in question, 'one which established a reasonable relationship between the fee charged and the burden imposed by the development'" (*Shapell Industries, Inc.* v. *Governing Bd.* [1991] 1 Cal.App.4th 218, 235). Level 1 fees are intended to be increased every two years at the January meeting of the State Allocation Board, at which time the increase will become effective (Gov. Code, § 65995, subd. [b][3]). The State Allocation Board last increased development fees on January 24, 2018 to $3.79 per square foot for residential development and $0.61 per square foot for commercial and industrial development (California Department of General Services, 2019).

In general, Level 2 and Level 3 fees apply to new residential construction only. Level 2 fees allow the school district levying the fees to increase development fees beyond the statutory levels to no more than 50 percent of construction costs, under certain circumstances stated in Government Code Section 65995.5 (b)(3). This assumes that State funds will cover the remaining 50 percent. Level 3 fees allow the school district to impose 100 percent of the cost of the school facility or mitigation when State funds for new school facility construction have been exhausted (Gov. Code, § 65995.7.). Both Level 2 and Level 3 funds only may be levied if the school districts have conducted and adopted a school facility needs analysis.

All fees are levied at the time the building permit is issued. District certification of payment of the applicable fee is required before the City or County can issue a building permit.

Class Size Reduction Program

The Class Size Reduction program, which was established by the state in 1996, is intended to improve education, especially in reading and mathematics, of children in kindergarten through third grade. Under this program, the State of California will provide districts with $650 per student for each K-3 classroom with 20 or fewer students (U.S. Department of Education, 2019). It should be noted that it is within the school district's discretion whether it will opt into the program and receive the associated funding, and thus the program is not a requirement.

Department of Education Standards

The California Department of Education has published the Guide to School Site Analysis and Development in order to establish a valid technique for determining acreage for new school development. Rather than assigning a strict student/acreage ratio, this guide provides flexible formulas that permit each district to tailor its answers as necessary to accommodate its individual conditions. The Department of Education then recommends that a site utilization study be prepared for the site, based on these formulas.

Safe Routes to Schools

Safe Routes to School is an international movement that has taken hold in communities throughout the United States. The concept is to increase the number of children who walk or bicycle to school by funding projects that remove the barriers that currently prevent students from doing so. Barriers include lack of infrastructure, unsafe infrastructure, and lack of programs that promote walking and bicycling.

Education/encouragement programs are aimed at children, parents, and the community. The State adopted a funding program through Streets and Highways Code Sections 2330-2334 to implement a competitive "Safe Routes to School" grant program, administered by Caltrans and the CHP, which allows local governments to compete for funding for construction of bicycle and pedestrian safety projects that will allow more children to walk or bike to school safely (Streets and Highways Code Section 2333.5). Assembly Bill (AB) 57 extended the program indefinitely.

Local

Lake County General Plan (2008)

The General Plan, Public Facilities and Services Element addresses schools in the County. Applicable general plan policies related to the Proposed Project are listed below. **Appendix GPCT** analyzes the Proposed Project's consistency with the General Plan pursuant to the CEQA Guidelines Section 15125(d); however, the determination of the Proposed Project's consistency with the General Plan ultimately rests with the Lake County Board of Supervisors.

- Policy PFS-9.1 The County should work closely with local school districts to develop solutions to the burden of overcrowded schools and to the financial constraints on constructing new facilities.
- Policy PFS-9.2 The County should encourage the development of joint school facilities, recreational facilities, and educational and service programs between school districts and other public agencies.

3.12.3.3 School Impacts

Method of Analysis

The estimated demand for school services due to the Proposed Project is based on the additional number of students generated by development of residential uses in the Guenoc Valley Site and the Middletown Housing Site. The student generation rates used for this analysis are described in **Section 3.12.3.1**, Schools Environmental Setting. To quantify the total number of students, the increase in the number of households under the Proposed Project was multiplied by the applicable student generation rates.

Thresholds of Significance

Criteria for determining the significance of impacts associated with school facilities were developed based on Appendix G of the CEQA Guidelines. The Proposed Project would result in a significant impact if it would:

- Result in substantial adverse physical impacts associated with the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for schools.

IMPACT 3.12-5	**RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE NEED FOR NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL IMPACTS, IN ORDER TO MAINTAIN ACCEPTABLE PERFORMANCE OBJECTIVES FOR SCHOOLS**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

Phase 1 and Off-Site Workforce Housing – Project Level Analysis

This section describes the need for existing school facilities to accommodate any increases in public school enrollment due to the Proposed Project. As described in **Section 2.5** and **Table 3.12-2**, Phase 1 of the Proposed Project could generate as many as 486 new permanent residential units within the Guenoc Valley Site and Middletown Housing Site. Based on student enrollment rates from a nearby school district, these units are estimated to generate approximately 71 TK through sixth grade students, and approximately 72 seventh through twelfth grade students, totaling an increase of student enrollment of approximately 143 students within the MUSD.

TABLE 3.12-2
ESTIMATED STUDENT GENERATION OF PHASE 1

Housing Type	Households	Student Generation (TK-6) (students)	Student Generation (7-12) (students)	Total Student Generation
Guenoc Valley Site – Phase 1				
Residential Estate Villas	401	58.9	59.3	118.2
Workforce Co-Housing	35	5.1	5.2	10.3
Middletown Housing Site (Off-Site Workforce Housing)				
Single Family Units and Duplexes	50	7.4	7.4	14.8
Total	**486**	**71.4**	**71.9**	**143.3**

Notes: No student generation rates are available for MUSD, so student generation rates from the nearby SRCSD were used. Student generation estimations are based on blended student generation rates of 0.147 students per household for TK through sixth grade, and a 0.148 students per household for seventh through twelfth grade.
Source: Santa Rosa City Schools, 2019

These estimates are likely conservative as many of the residential estates are anticipated to be vacation homes. As described in **Section 3.12.3.1**, MUSD includes eight schools to accommodate the future demand that would be generated by residential development in this area.

Although the addition of 143 students to MUSD exceeds the available capacity of 100 students described in **Section 3.12.3.1**, under Section 65996 of the California Government Code, the payment of school impact fees shall be deemed to provide full and complete school facilities mitigation. Existing developer impact fee requirements are described in **Section 3.12.3.1**. With the payment of school impact fees, this is considered a **less-than-significant** impact.

Future Phases – Programmatic Analysis

As described in **Section 2.0** and **Table 3.12-3**, future phases of the Proposed Project could generate as many as 1,000 new permanent residential units and 400 workforce bedroom units within the Guenoc Valley Site. Based on student enrollment rates from a nearby school district, these households are estimated to generate approximately 176 TK through sixth grade students, and approximately 163 seventh through twelfth grade students, totaling approximately 339 additional students enrolled within the MUSD. This level of additional enrollment could require that additional classrooms are added to existing campuses, but is not expected to require the addition of a new school site within the MUSD.

TABLE 3.12-3
ESTIMATED STUDENT GENERATION OF FUTURE PHASES [1]

Housing Type	Households	Student Generation (TK-6) (students)	Student Generation (7-12) (students)	Total Student Generation
Guenoc Valley Site				
Residential Estate Villas	1,000	147	148	295
Workforce Co-Housing	200[2]	29.4	14.8	44.2
Total	**1,200**	**176.4**	**162.8**	**339.2**

Notes: 1 - No student generation rates are available for MUSD, so student generation rates from the nearby SRCSD were used. Student generation estimations are based on blended student generation rates of 0.147 students per household for TK through sixth grade, and a 0.148 students per household for seventh through twelfth grade. 2 - Future phases include the potential development of 400 workforce co-housing bedroom units at the Guenoc Valley Site. Student generation is estimated using household counts instead of bedroom units. Therefore, for the purpose of this analysis, it has been conservatively assumed that two bedroom units would comprise one household.
Source: Santa Rosa City Schools, 2019

At the time future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals. This environmental review will include project design and mitigation measures, if necessary, to address potential impacts to schools resulting from implementation of future phases of the Proposed Project. Under Section 65996 of the California Government Code, the payment of the developer impact fees for any future residential development in MUSD would fully mitigate the impacts of new development on school facilities. For these reasons, the impact on schools from future phases would be considered **less than significant**.

IMPACT 3.12-6	**CUMULATIVE INCREASED DEMAND FOR SCHOOL SERVICES**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

Cumulative conditions for public school facilities include all proposed, planned, and approved projects within the boundaries of the MUSD. As described above, MUSD facilities are nearing capacity. Currently no additional facilities are planned within the MUSD.

As indicated in **Impact 3.12-5**, Phase 1 of the Proposed Project is estimated to generate approximately 143 student enrollments at area schools and future phases could generate up to 339 additional students. Other future development and anticipated population growth in this school district may require improvement, expansion, and construction of new public school facilities and services to accommodate existing and projected future enrollment. New schools or expansion of schools have the potential to create environmental effects, such as increased traffic. However, new school sites require rigorous environmental review prior to construction, which would identify and lessen any cumulative related impacts.

Per California Government Code Sections 65995(h) and 65996(b), payment of school mitigation fees has been deemed by the State legislature to constitute full and complete mitigation of impacts of a development project on the provision of adequate school facilities. Therefore, the existing fee mechanisms would fully mitigate the environmental effects of the increased population and the public school-related impacts of future development. Although the Proposed Project would generate student enrollments at area schools, both the Proposed Project and future development would be required to fully mitigate impacts to schools by way of developer fees. Therefore, this impact is considered to be **less than significant**.

3.12.3.4 Schools Mitigation Measures

None required.

3.12.4 PARKS AND RECREATION

Following an overview of the environmental setting in **Section 3.12.4.1** and the relevant regulatory setting in **Section 3.12.4.2**, project-related impacts and recommended mitigation measures are presented in **Sections 3.12.4.3** and **3.12.4.4**, respectively.

3.12.4.1 Parks and Recreation Environmental Setting

The Guenoc Valley Site and the Middletown Housing Site have relatively easy access to local recreational opportunities, such as Clearlake and other community programs and facilities. The following discussion focuses on the existing parks and recreational facilities provided by the County.

The County currently operates 32 park and recreation facilities, including 1,500 acres on Mount Konocti. Facilities include picnic areas, equestrian trails, hiking trails, fishing spots, playgrounds, water recreation, sports fields, boat launch facilities, barbecue grills, and art installations.

The County operates two facilities in the Middletown area. The Middletown Pool/Tennis Park includes a swimming pool, playground, and tennis court on one acre. Middletown Trailside Park is 107 acres of open space with hiking, biking, and equestrian trails.

3.12.4.2 Parks and Recreation Regulatory Setting

State

The Quimby Act (Act; California Government Code Section 66477) permits local jurisdictions to require the dedication of land or the payment of fees in-lieu of land for parks and recreational purposes as a condition

for approval of a new development's tentative or parcel map. The Act sets the requirement at three to five-acres per 1,000 residents, based on the existing park-to-population ratio of the surrounding community.

Local

Lake County General Plan (2008)

The General Plan, Open Space, Conservation, and Recreation Element addresses parks and recreation for the County. Applicable general plan policies related to the Proposed Project are listed below. **Appendix GPCT** analyzes the Proposed Project's consistency with the General Plan pursuant to the CEQA Guidelines Section 15125(d); however, the determination of the Proposed Project's consistency with the General Plan ultimately rests with the Lake County Board of Supervisors.

- Policy OSC-6.5: The County should encourage private interests to establish new commercial recreation opportunities and to rehabilitate and restore existing older resorts. Such facilities include, but are not limited to destination resorts, lakefront resorts, dance halls, health and athletic clubs, equestrian facilities, and recreational camps.
- Policy OSC-6.7: The County shall support the continued maintenance and improvement of existing recreational facilities and expansion of new recreational opportunities on county, state, and federal lands.
- Policy OSC-6.13: An integrated multi-purpose trail system should be developed that provides access to recreational facilities, as well as offering a recreational experience apart from that available at the neighborhood and community parks.
- Policy OSC-6.16: Create trail linkages and loops with other public facilities (such as parks, open spaces, trail systems of other jurisdictions), communities, points of interest, visitor attractions and/or with educational or historical significance.
- Policy OSC-6.18: Create trails of different lengths and terrains to provide a variety of recreational experiences. Allow for different styles of trails (nature, hiking, equestrian, etc.) to stem off of the main system.
- Policy OSC-6.20: Provide lighting, Rest Areas, and Signage to maintain safe trails. Determine the safest areas for trail locations. Encourage local law enforcement agencies to use the trail system as part of their physical training.

Middletown Area Plan (2010)

The Middletown Area Plan identifies areas of the Middletown planning area that could be developed into park or recreational facilities. The plan also identifies strategies to increase park access and improve existing parks within the planning area, such as developing trails and roadways consistent with the County's bikeway plan, requiring equestrian amenities on new development projects when feasible, and clustering development to provide adequate open space or areas.

Lake County Code of Ordinances

Pursuant to the Quimby Act, Chapter 17 of the Lake County Code of Ordinances regulates the subdivision of land within the County. As part of the subdivision ordinance, new subdivisions are required to either dedicate land, pay a fee in lieu thereof, or both, at the option of the County, for park or recreational purposes. Planned developments may receive a credit against the amount of land required to be dedicated

for the value of private open space within the development which is usable for active recreational purposes.

Park Facility Funding

Parks and recreation facilities are funded through County general funds, geothermal energy revenues, state and federal grants, and park fees paid by new subdivisions

3.12.4.3 Parks and Recreation Impacts

Method of Analysis

The amount and type of park acreage included in the Proposed Project was compared to the standards established in the Chapter 17, Article 6 of the Lake County Code of Ordinances, which requires that development projects provide five acres of park area per 1,000 residents, or provide in-lieu payments for park shortfalls. In order to be considered under this requirement, recreational facilities included as components of the Proposed Project must be consistent with the standards set forth in Chapter 17 of the Lake County Code of Ordinances regarding location and infrastructure.

Thresholds of Significance

Criteria for determining the significance of impacts associated with recreational facilities were developed based on Appendix G of the CEQA Guidelines. The Proposed Project would result in a significant impact if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

IMPACT 3.12-7	**INCREASE THE USE OF EXISTING NEIGHBORHOOD AND REGIONAL PARKS OR OTHER RECREATIONAL FACILITIES SUCH THAT SUBSTANTIAL PHYSICAL DETERIORATION OF THE FACILITY WOULD OCCUR OR BE ACCELERATED OR INCLUDE RECREATIONAL FACILITIES THAT MIGHT HAVE AN ADVERSE PHYSICAL EFFECT ON THE ENVIRONMENT**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

Guenoc Valley Site Phase 1 and Off-Site Workforce Housing – Project Level Analysis

As described in **Section 3.11**, based on an average household size of 2.39 persons per household for residential units and one person per unit for workforce housing units, the Proposed Project would result in a population increase of approximately 221 residents within the Middletown Housing Site, and approximately 1,059 residents within the Guenoc Valley Site. With this estimated population increase, the Lake County Code of Ordinances standard of five acres of park area per 1,000 residents requires a total of 6.4 credited acres of parkland in the Guenoc Valley Site. As described in **Section 2.5.2**, the Proposed Project includes recreational areas such as a golf course, equestrian areas, bicycle and pedestrian trails, and open space. Although the on-site trails and open space areas would be maintained by the development's homeowners association, these areas will not meet the criteria of park area as defined by the General Plan and Lake County Code of Ordinances. Therefore, Phase 1 would result in a shortfall of approximately 6.4 acres of parkland.

The parkland dedication shortfall would be addressed either by the Applicant's in-lieu fee payments to the Lake County Planning Commission pursuant to Chapter 17 of the Lake County Code of Ordinances, by the dedication of on-site recreation areas within the Phase 1 boundaries as a County park facility consistent with the criteria set forth in the General Plan and the Lake County Code of Ordinances, or a combination of in-lieu payments and dedicated park areas. Any in-lieu shortfall fee will be determined based on actual land cost estimates. These in-lieu fees will be used by the County for the maintenance and improvement of existing recreational facilities and expansion of new recreational opportunities on county, state, and federal lands. For these reasons, adequate park facilities would be provided, avoiding any adverse effects on existing neighborhood or regional parks or other recreation facilities, and this impact is considered to be **less than significant**.

Future Phases – Programmatic Analysis

Utilizing the previously mentioned method of calculating estimated generated population, the approximately 1,000 residential estate villas units, and 400 workforce cohousing units that could be developed under the proposed Guenoc Valley District zoning designation would generate an estimated population of 2,790 residents from future phases. Therefore, pursuant to Chapter 17 of the Lake County Code of Ordinances, future phases would be required to incorporate 13.95 acres of credited park area, pay park in-lieu fees, or a combination of both. As future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals. For all of these reasons, the impact on parks from future phases would be considered **less than significant**.

IMPACT 3.12-8	CUMULATIVE INCREASED DEMAND FOR PARKS AND RECREATION		
	Guenoc Valley Site		Other Phase 1 Areas
	Phase 1	Future Phases	Off-Site Workforce Housing
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

The cumulative setting area for recreational facilities includes the current Lake County boundaries, and includes the growth and reasonably foreseeable County development projects listed in **Section 4.2.** Future development in the region will continue to place additional pressures on existing recreational facilities and will create the need for new and expanded recreational facilities. The Proposed Project includes private recreational amenities such as a golf course, and private trails, which would decrease the demand resulting from the project on existing public parks and recreational facilities. Additionally, the Proposed Project would be required to meet County parkland requirements by payment of in-lieu park fees.

Cumulatively, the effects of development, including multiple small projects, can lead to increased rates of deterioration of parks and result in the need to upgrade and/or repair existing parks and establish additional parks within the County. The County has accounted for the effects of increased development on parks and recreation facilities through policies identified in the Lake County General Plan. In order to offset the effects of a project on parks and recreational facilities, residential project applicants are required to mitigate for the effects of a project through dedication of parkland or payment of in-lieu fees. The use of in-lieu fees allows the Parks Department to locate neighborhood and community parks in areas that would maximize their potential to serve as many residents as possible. Thus, while growth will permanently increase the use of parks under cumulative conditions, the effects of such growth will be mitigated by in-lieu fees and land dedications that would be required from future residential projects. Therefore, the cumulative effects associated with parks and recreational facilities would be **less than significant**.

3.12.4.4 Parks and Recreation Mitigation Measures

None required.

3.13 TRANSPORTATION AND TRAFFIC

3.13.1 INTRODUCTION

This section provides a description of transportation and traffic conditions in the project area and describes the changes to those conditions that would result from implementation of the Proposed Project. Following an overview of the transportation and traffic setting in **Section 3.13.2** and the relevant regulatory setting in **Section 3.13.3**, project-related impacts and recommended mitigation measures are presented in **Section 3.13.4** and **Section 3.13.5**, respectively.

Information in this section is summarized from the Traffic Impact Analysis (TIA) prepared for the Proposed Project by Abrams Associates (Abrams Associates, 2019; **Appendix TIA**).

3.13.2 ENVIRONMENTAL SETTING

Existing Circulation Network

The routes to and from the project site are described below. **Figure 3.13-1** shows the project study area and study intersections locations.

State Route 29 (SR 29) is long north-south highway between Vallejo in the south and Upper Lake in the north. Within Lake County it extends north through the community of Middletown, to the community of Lower Lake, then proceeds north-west through the community of Kelseyville and the County of Lakeport, terminating at the junction of Route 20 in the community of Upper Lake.

State Route 175 (SR 175) is an east-west two-lane highway that extends west from SR 29 in Middletown. It continues west to terminate at U.S. 101 in Hopland.

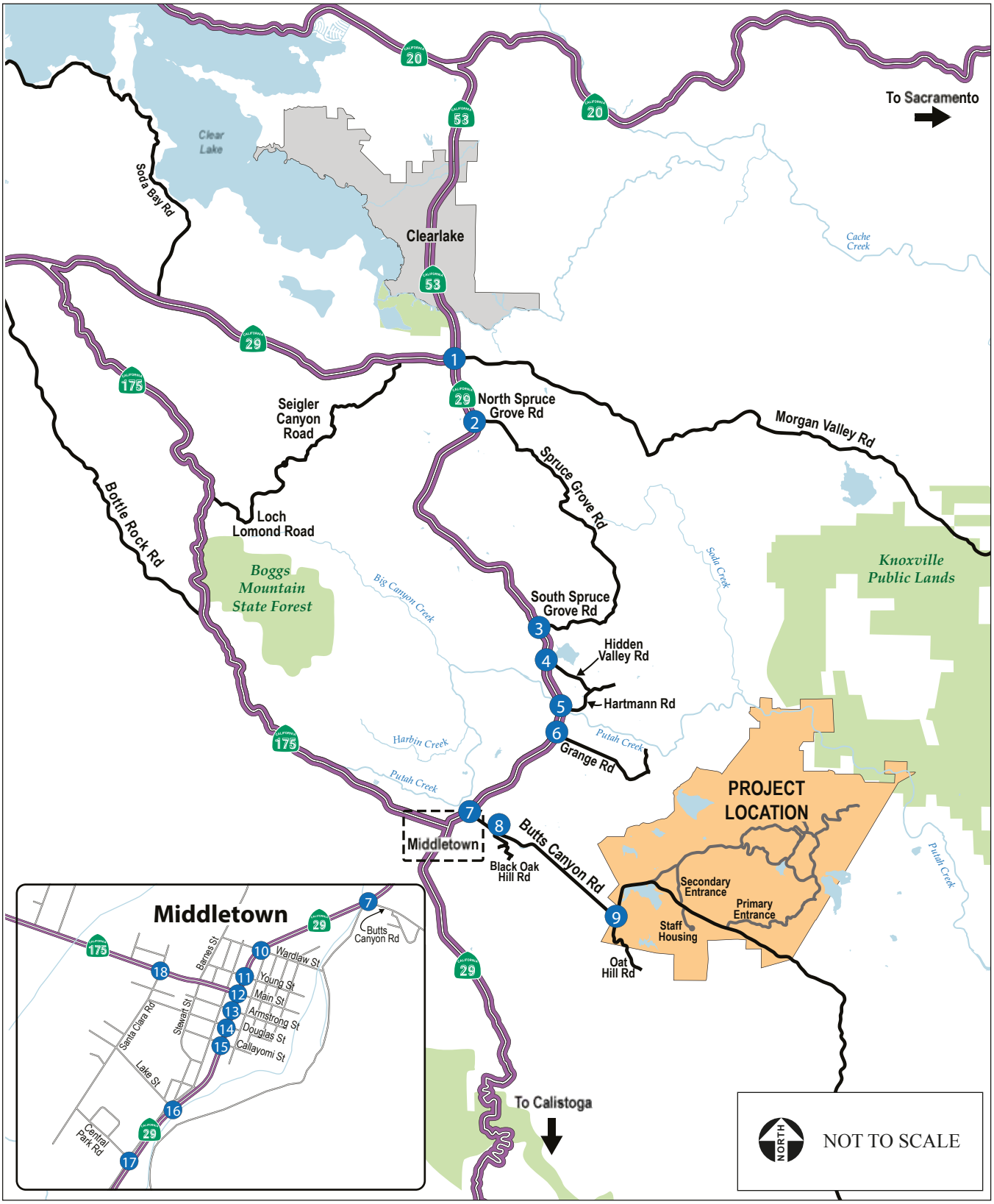
Butts Canyon Road is an east-west roadway that is designated by the Lake County General Plan as a major collector road. It extends east from SR 29 and eventually becomes Pope Valley Road in Napa County. Within the study area, Butts Canyon Road has two travel lanes and a speed limit of 55 mph.

Spruce Grove Road is designated by the Lake County General Plan as a major local road. It extends east from SR 29 on the north and eventually reconnects with SR 29 on the near the Hidden Valley Lake Community. Spruce Grove has two travel lanes and a speed limit of 35 mph.

Hidden Valley Road is an east-west two-lane private roadway that serves the gated Hidden Valley Lake Community. It has two lanes and extends east from SR 29 on the north and terminates at Hartmann Road to the west.

Hartmann Road is designated by the Lake County General Plan as a minor collector road. It extends east from SR 29 on the north and eventually reconnects with SR 29 on the near the Hidden Valley Lake Community. Hartmann Road has two travel lanes and a speed limit ranging from 30 to 35 mph.

Grange Road is a two-lane east-west roadway that is designated by the Lake County General Plan as a local road. It extends east from SR 29 and terminates to the east near the project site.



SOURCE: Abrams Associates, Traffic Engineering, 10/8/2019; AES, 10/31/2019

Figure 3.13-1
Study Intersections

Study Intersections

Based on the project's trip generation and the potential for traffic impacts, a list of project study intersections was prepared in coordination with County staff. **Figure 3.13-1** shows the location of the project study intersections. 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. There are two options for the primary access road. The Primary Access Road Option 1 entrance would be located approximately 2 miles south of the existing Langtry Winery Entrance. The Primary Access Road Option 2 would be located at McCain Canyon, about 2.6 miles south of the existing Langtry Winery Entrance. Secondary access would be provided through improvements to the existing intersection and roadway located a little less than a mile south of the Langtry Winery entrance. There are twenty-four study intersections that were analyzed.

1. State Route 29 / State Route 53 & Main Street
2. State Route 29 & Spruce Grove Road (North)
3. State Route 29 & Spruce Grove Road (South)
4. State Route 29 & Hidden Valley Road
5. State Route 29 & Hartmann Road
6. State Route 29 & Grange Road
7. State Route 29 & Butts Canyon Road
8. Butts Canyon Road & Black Oak Hill Drive
9. Butts Canyon Road & Oat Hill Drive
10. State Route 29 (Calistoga Road) & Wardlaw Street
11. State Route 29 (Calistoga Road) & Young Street
12. State Route 29 (Calistoga Road) & State Route 175 / Main Street
13. State Route 29 (Calistoga Road) & Armstrong Road
14. State Route 29 (Calistoga Road) & Douglas Street
15. State Route 29 (Calistoga Road) & Callayomi Street
16. State Route 29 (Calistoga Road) & Lake Street
17. State Route 29 (Calistoga Road) & Central Park Road
18. State Route 175 & Santa Clara Road
19. Pope Valley Road & Howell Mountain Road
20. State Route 29 & Tubbs Lane
21. State Route 128 & Tubbs Lane
22. Butts Canyon Road & Winery Entrance
23. Butts Canyon Road & Secondary Entrance / Staff Housing
24. Butts Canyon Road & Primary Entrance

Pedestrian and Bicycle Facilities

Bicycle and pedestrian facilities in the project study area are currently very limited with no bike lanes or sidewalks provided in the vicinity of the Proposed Project. Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the three classes.

Class I – Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.

Class II – Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.

Class III – Provides a route designated by signs or permanent markings and shared with pedestrians and motorists.

Class II bicycle lanes have been striped in downtown Middletown on State Route 29 (Calistoga Street) from Young Street to 350 feet south of Callayomi Street. It should be noted that Butts Canyon Road is also planned to be a Class III bikeway in the Lake County Regional Bikeway Plan.

Transit Service

Bus transit service in the project area is provided by Lake Transit. Lake Transit operates local bus routes from Ukiah and Calistoga to Lake County and the Clear Lake area. The routes that run closest to the project site are Routes 2 and 3. Route 2 runs three buses per day from about 6:30 AM to 4:00 PM. It operates along Highway 175 from Kit's Corner to Middletown. Route 3 runs four buses per day from about 7:00 AM to 6:30 PM. It operates along State Route 29 from Clear Lake to the hospital on Deer Park Road in St. Helena. The nearest bus stop is located about six miles from the project site in Middletown.

Existing Traffic Volumes

The existing intersection geometry and traffic volumes at each of the project study intersections can be seen in Figure 3 and Figure 4 of the TIA (**Appendix TIA**). Traffic counts at the study intersections were conducted in May of 2019 at times when local schools were in session, and additional counts were also conducted in June and July of 2019 to capture summer conditions. **Table 3.13-1** summarizes the associated LOS computation results for the existing weekday AM and PM peak hour conditions.

TABLE 3.13-1
EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS

Intersection		Control	Peak Hour	Existing	
				Delay	LOS
1	STATE ROUTE 29 / STATE ROUTE 53 & MAIN STREET	Signalized	AM	17.6	B
			PM	19.0	B
2	STATE ROUTE 29 & SPRUCE GROVE ROAD (NORTH) *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.5 18.3	A C
			PM	1.4 28.2	A D
3	STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH) *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	3.8 16.1	A C
			PM	3.4 27.1	A D
4	STATE ROUTE 29 & HIDDEN VALLEY ROAD	Side Street	AM	1.8 17.7	A C

	Intersection	Control	Peak Hour	Existing	
				Delay	LOS
	OVERALL DELAY *SIDE STREET DELAY*	Stop	PM	0.9 16.8	A C
5	STATE ROUTE 29 & HARTMANN ROAD	Roundabout	AM	9.2	A
			PM	14.7	B
6	STATE ROUTE 29 & GRANGE ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.4 27.4	A D
			PM	0.8 31.8	A D
7	STATE ROUTE 29 & BUTTS CANYON ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.0 15.4	A C
			PM	2.9 22.9	A C
8	BUTTS CANYON ROAD & BLACK OAK HILL DRIVE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.4 9.2	A A
			PM	0.3 9.5	A A
9	BUTTS CANYON ROAD & OAT HILL DRIVE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.5 9.2	A A
			PM	0.2 9.5	A A
10	STATE ROUTE 29 (CALISTOGA ROAD) & WARDLAW STREET	Signalized	AM	8.7	A
			PM	6.6	A
11	STATE ROUTE 29 (CALISTOGA ROAD) & YOUNG STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.2 18.8	A C
			PM	0.5 22.0	A C
12	STATE ROUTE 29 (CALISTOGA ROAD) & STATE ROUTE 175 / MAIN STREET	Signalized	AM	7.1	A
			PM	7.6	A
13	STATE ROUTE 29 (CALISTOGA ROAD) & ARMSTRONG ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.2 14.5	A B
			PM	1.4 20.1	A C
14	STATE ROUTE 29 (CALISTOGA ROAD) & DOUGLAS STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.4 16.4	A C
			PM	0.3 18.5	A C
15	STATE ROUTE 29 (CALISTOGA ROAD) & CALLAYOMI STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.2 14.9	A B
			PM	0.3 18.2	A C
16	STATE ROUTE 29 (CALISTOGA ROAD) & LAKE STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.3 14.5	A B
			PM	0.2 16.5	A C
17	STATE ROUTE 29 (CALISTOGA ROAD) & CENTRAL PARK ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.3 13.4	A B
			PM	0.4 18.8	A C
18	STATE ROUTE 175 & SANTA CLARA ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.6 10.3	A B
			PM	1.4 10.8	A B

Intersection		Control	Peak Hour	Existing	
				Delay	LOS
19	POPE VALLEY ROAD & HOWELL MOUNTAIN ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.8 9.3	A A
			PM	3.9 9.5	A A
20	STATE ROUTE 29 & TUBBS LANE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	2.4 13.7	A B
			PM	**> 50.0** **> 50.0**	**F** **F**
21	STATE ROUTE 128 & TUBBS LANE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	17.3 26.0	C D
			PM	15.8 46.9	B E

Note: Delay results are presented in terms of seconds per vehicle.
Source: Abrams Associates, 2019.

As shown in **Table 3.13-1**, all of the project study intersections currently have acceptable conditions (LOS D or better) during the weekday AM and PM peak hours with the exception of Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would both exceed the LOS D threshold established in Napa County's General Plan. See **Section 3.13.4** for a description of the applicable intersection thresholds.

3.13.3 REGULATORY CONTEXT

Federal

There are no known federal standards that would directly affect the transportation and traffic aspects of the Proposed Project.

State

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. The Guide for the Preparation of Traffic Impact Studies provides consistent guidance for Caltrans staff who review local development and land use change proposals. The Guide also informs local agencies about the information needed for Caltrans to analyze the traffic impacts to state highway facilities.

California Senate Bill 743

On September 27, 2013, California Governor Jerry Brown signed SB 743 into law. SB 743 required changes to the CEQA Guidelines regarding the analysis of transportation impacts. Existing rules treat auto delay and congestion as an environmental impact. Instead, SB 743 requires the CEQA Guidelines to prescribe an analysis that better accounts for transit and reducing greenhouse gas emissions. The OPR selected VMT as a replacement measure in the currently proposed CEQA Guidelines. VMT is suggested not only

because it satisfies the explicit goals SB 743, but also because VMT is already used in CEQA to study GHG and energy impacts. VMT is also currently used in planning for regional sustainable community strategies. Therefore, according to OPR, the proposal is not adding a new CEQA requirement; instead, it suggests replacing LOS with an analysis that is already widely used in CEQA.

In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the Guidelines section implementing SB 743. Along with the updated guidelines, OPR published the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR Technical Advisory), which contains technical recommendations from OPR for assessment of VMT, thresholds of significance, and mitigation measures. While the newly adopted CEQA Guidelines allow for the immediate use of VMT analysis, jurisdictions have until July 2020 to analyze VMT and update their procedures, if necessary. In that case, those agencies may continue to evaluate transportation impacts by measuring congestion. The County does not currently have adopted CEQA thresholds for VMT analysis.

Local

Lake County General Plan (2008)

The Transportation and Circulation Element included in the Lake County General Plan was prepared pursuant to Section 65302(b) of the California Government Code. The Transportation and Circulation Element addresses the location and extent of existing and planned transportation routes, terminals, and other local public utilities and facilities. The General Plan identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the County will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multi-modal transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the County. Applicable goals and polices are as follows:

GOAL T-1 ***Roads and Highways.*** To provide and plan for a unified, coordinated, and cost-efficient countywide road and highway system that ensures safety, maintains adequate levels of service, and the efficient movement of people and goods.

Policy T-1.2 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 Caltrans and County standards.

Policy T-1.5 ***Roadways in Residential Areas.*** The following standards should be applied to the development of roads within residential areas:

- Avoid locating facilities providing through-traffic access in residential areas.
- Access to subdivisions proposing more than four lots should be via a paved road constructed to county standards.

- Access to projects proposing four or fewer parcels at densities less than one dwelling unit per five acres should at a minimum be via a road improved with processed gravel consistent with county standards.
- Roadways shall not be located on naturally occurring asbestos when feasible alternative locations exist, or shall be adequately constructed and surfaced with non-asbestos materials in compliance with local and state requirements.
- Adequate right-of-way to contain road improvements should be offered for dedication.
- Parcels reconfigured through the lot line adjustment process shall contain adequate, safe, all-weather access. In cases where existing road access is not in conformance with current County standards prior to the adjustment, the level of conformity with those standards shall not be further reduced once the lot line adjustment is recorded. Lot line adjustments determined to increase development potential, including potential for future subdivision may be conditioned to require public right-of-way dedication if inadequate access exists or would force future access to a different street.

Policy T-1.7 ***Impact of New Development on Roadways.*** Facilities constructed or utilized for new development shall comply with County standards in order to minimize initial and subsequent maintenance costs.

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.

GOAL T-2 ***Public Transportation.*** To support the development of a safe and efficient public transportation system in order to reduce congestion, provide a convenient alternative to the private automobile and to meet the needs of residents and visitors.

Policy T-2.4 ***Land Use Pattern that Supports Public Transit.*** The County should encourage potential transit destinations, including employment centers, schools, personal services, administrative and professional offices, and social/recreational centers, to be clustered within a convenient walking distance of one another and to a transit stop.

GOAL T-4 ***Bicycles and Trails.*** To encourage the development of a safe, continuous, and easily accessible trails system that facilitates the use of viable transportation alternatives in a safe and financially feasible manner.

Policy T-4.1 ***Consider Non-Motorized Transportation Modes in Planning and Development.*** The County should consider incorporating facilities for non-motorized users, such as bike routes and pedestrian improvements, when constructing or improving transportation facilities and when reviewing new development proposals. For subdivisions with a density of one or more dwelling units per acre, these facilities will be required.

Policy T-4.2 ***Provisions for Bicycle Use.*** Where feasible, the County shall require local government agencies and businesses to include bicycle access and provisions for safe bicycle parking facilities at office buildings, schools, shopping centers, and parks.

Middletown Area Plan (2010)

The Community Development Section of the Middletown Area Plan includes the following objectives and policies relevant to transportation and traffic impacts from land use development within the Middletown Planning Area:

OBJECTIVE 5.3.1 Development of safe and adequate public access for motor vehicles, bicycles, equestrians and pedestrians shall be encouraged for the orderly growth and development of the Middletown Planning Area.

Policy 5.3.1a Construction of improvements to intersections that warrant improvements in order to serve additional development shall be required as a condition of new commercial or residential development approvals having an impact upon traffic flows. Projects found to impact intersections that are close to reaching warrants for improvements shall be required to contribute pro-rata shares toward future improvement costs.

Policy 5.3.1b Future encroachments onto highways and collector roads from private properties should be discouraged when other access is possible. New collector streets shall be designed to minimize direct residential and commercial access in an effort to reduce "traffic friction" along collector street alignments. Use of non-access strips and frontage streets shall be considered for subdivisions when new collector streets are required.

OBJECTIVE 5.3.2 Develop parking and pedestrian amenities that improve the aesthetics and safety of the downtown areas and encourage walkability, day and night.

Policy 5.3.2b Improve parking, walkways, bicycle facilities and multi-use trails and provide for periodic reviews of the circulation plan during the planning period.

OBJECTIVE 5.3.3 Improve access to public transportation.

Policy 5.3.3a Consider transit access and compatibility during the review and approval process for commercial and residential development in the Planning Area.

Policy 5.3.3b Encourage bus stops near population centers in the Planning Area to facilitate public transit use.

3.13.4 IMPACTS

Method of Analysis

This section identifies any impacts to transportation operations that could occur from construction and operation of the Proposed Project.

Level of Service

Existing operational conditions at the twenty-one (21) study intersections have been evaluated according to the requirements set forth by the Lake County General Plan. Analysis of traffic operations was conducted using the 6th Edition of the *Highway Capacity Manual* (*HCM*) LOS methodology with Synchro software. Level of service is an expression, in the form of a scale, of the relationship between the capacity of an intersection (or roadway segment) to accommodate the volume of traffic moving through it at any given time. The level of service scale describes traffic flow with six ratings ranging from A to F, with "A" indicating relatively free flow of traffic and "F" indicating stop-and-go traffic characterized by traffic jams. As the amount of traffic moving through a given intersection or roadway segment increases, the traffic flow conditions that motorists experience rapidly deteriorate as the capacity of the intersection or roadway segment is reached. Under such conditions, there is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays that lead to traffic congestion. This near-capacity situation is labeled LOS E. Beyond LOS E, the intersection or roadway segment capacity has been exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it.

Signalized Intersections

Project-related operational impacts on the signalized study intersections in the Lake County are considered significant if project-related traffic causes the LOS rating to deteriorate from LOS C to LOS D, E or F. However, based on the Transportation Concept Report for State Route 29 (dated August 2013) the concept LOS for SR 29 between Calistoga and Lower Lake is LOS E. Project-related operational impacts on signalized study intersections in the Napa County are considered significant if project-related traffic causes the LOS rating to deteriorate from LOS D to LOS E or F. In addition, in Napa County project impacts are also considered significant if a signalized intersection already operates at LOS E or F during one or more peak hours without project trips, and the addition of project trips increases the total entering volume by one percent or more. **Table 3.13-2** summarizes the relationship between LOS, average control delay, and the volume to capacity ratio at signalized intersections.

TABLE 3.13-2
SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description of Operations	Average Delay (sec/veh)	Volume to Capacity Ratio
A	Insignificant Delays: No approach phase is fully used and no vehicle waits longer than one red indication.	≤ 10	< 0.60
B	Minimal Delays: An occasional approach phase is fully used. Drivers begin to feel restricted.	> 10 to 20	> 0.61 to 0.70
C	Acceptable Delays: Major approach phase may become fully used. Most drivers feel somewhat restricted.	> 20 to 35	> 0.71 to 0.80
D	Tolerable Delays: Drivers may wait through no more than one red indication. Queues may develop but dissipate rapidly without excessive delays.	> 35 to 55	> 0.81 to 0.90
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues from upstream.	> 55 to 80	> 0.91 to 1.00
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80	> 1.00

Source: Abrams Associates, 2019 (**Appendix TIA**).

Unsignalized Intersections

Project-related operational impacts on unsignalized intersections in Lake County are considered significant if project generated traffic causes the average of all movements to deteriorate from LOS C or better to LOS D, E or F. For unsignalized intersections where the overall LOS would already exceed County standards (LOS C) it was considered a significant impact if Caltrans peak hour traffic signal warrants would be met. Project-related operational impacts on the unsignalized intersections in Napa County are considered significant if project generated traffic causes the average of all movements to deteriorate from LOS D or better to LOS E or F. In addition, in Napa County project impacts are also considered significant if an unsignalized intersection already operates at LOS E or F during one or more peak hours without project trips and the project contributes either one percent or more of the total entering traffic for all-way stop-controlled intersections or ten percent or more of the traffic on a side-street approach for side-street stop-controlled intersections. **Table 3.13-3** summarizes the relationship between LOS and average control delay at unsignalized intersections.

TABLE 3.13-3
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description of Operations	Average Delay (seconds/vehicle)
A	No delay for stop-controlled approaches.	0 to 10
B	Operations with minor delays.	> 10 to 15
C	Operations with moderate delays.	> 15 to 25
D	Operations with some delays.	> 25 to 35
E	Operations with high delays and long queues.	> 35 to 50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50

Source: Abrams Associates, 2019 (**Appendix TIA**).

Transit, Bicycle, and Pedestrian Facilities

Potential impacts to transit, bicycle, and pedestrian facilities were evaluated based on the compliance of the Proposed Project with applicable programs, plans, ordinances, or policies related to transit, bicycle, and pedestrian facilities.

Vehicle Miles Traveled

One performance measure that can be used to quantify the travel from a project is VMT. VMT is a particularly useful metric for evaluating the impacts of growth on GHG emissions because it can be used to estimate fuel consumption by motor vehicles. Increases in VMT cause proportional increases in GHG emissions and air pollution. The County does not currently have adopted CEQA thresholds for VMT analysis; therefore, this information is provided for informational purposes only.

One limitation of VMT measurements is the inability to easily observe or measure them; therefore, VMT must be estimated. Methods do not exist that can reliably measure the trip distances of all vehicles on a given day. VMT is typically an output from area wide travel demand models and is calculated based on the number of vehicles multiplied by the distance traveled by each vehicle. As such, the VMT estimate is dependent on the level of detail in the travel demand model. The volume of traffic and distance traveled depends on land use types, density, and location as well as the supporting transportation system, including availability of various travel modes. A travel demand model attempts to represent this relationship when forecasting vehicle trips and VMT. This analysis uses the MTC Travel Model to estimate VMT per capita for the Proposed Project.

Analysis Scenarios

The traffic associated with the Proposed Project has been evaluated under existing and future conditions. The following scenarios are analyzed within this EIR:

- Existing Scenario

- Existing plus Project Phase 1 Scenario
- Baseline (2022) Scenario
- Baseline plus Project Phase 1 Scenario
- Cumulative (2040) Scenario
- Cumulative plus Project Phase 1 Scenario
- Cumulative plus Future Phases Scenario

Existing Scenario

The existing traffic volumes and intersection operations at each of the project study intersections are shown in **Section 3.13.2**.

Existing plus Project Phase 1 Scenario

In the existing plus project phase 1 scenario, Phase 1 is assumed to be instantaneously built and added to existing conditions. The existing plus project analysis represents an unlikely condition, given the magnitude of planned development in the project region. In reality, the Phase 1 will develop over a period of years (as dictated by market absorption rates), thus other development outside the Guenoc Valley Site would also occur in this same time frame. Refer to Appendix TIA for further discussion of the existing plus project scenario. It should be noted that all impacts and mitigation measures identified under the existing plus project phase 1 scenario are also addressed under the baseline plus project scenario.

Baseline (2022) Scenario

The baseline scenario evaluates the existing conditions with the addition of traffic from reasonably foreseeable projects in the area and general baseline growth in traffic. For this analysis the baseline volumes were developed based on the assumption that the project completion date would be 2022 with an average traffic growth of 1% per year. The trips added by near-term development during this time were based on the forecast trip generation for a list of approved projects identified by the County and include 54 homes being constructed in the Hidden Valley community and also another 500 homes that would potentially be located to the east of SR 29, south of the Hidden Valley area. These are projects anticipated to be completed in the next five years that could potentially affect the traffic volumes at the project study intersections. The traffic volumes for each of the study intersections for the baseline scenario are shown in Figure 8 of the TIA. Under baseline (2022) traffic conditions, all of the study intersections would continue to have acceptable conditions under the baseline scenario during the weekday AM and PM peak hours with the exception of Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would both continue to exceed their established thresholds.

Baseline plus Project Phase 1 Scenario

The baseline plus project traffic forecasts were developed by adding traffic from Phase 1 to the baseline traffic volumes. The traffic volumes for each of the study intersections for the baseline plus project scenario are shown in Figure 9 of the TIA. Impacts to LOS operations under the baseline plus project scenario are analyzed below.

Cumulative (2040) Scenario

For the cumulative scenario, the intersection traffic volumes were based on the existing turning movements plus incremental growth in background traffic (0.66 percent per year) based on the Lake County Traffic Model and the Solano Napa County Travel Demand Model. Figure 10 of the TIA presents the cumulative build-out traffic volumes for the project study intersections. Under cumulative (2040) traffic conditions, the project study intersections would continue to have acceptable conditions during the weekday AM and PM peak commute hours with the exception of Intersection #5 (State Route 29 at Hartmann Road), Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would all exceed their established thresholds.

Cumulative plus Project Phase 1 Scenario

The cumulative plus project phase 1 traffic forecasts were developed by adding traffic from Phase 1 to the cumulative traffic volumes. Figure 11 of the TIA presents the cumulative build-out traffic volumes including the traffic from the Proposed Project. Impacts to LOS operations under the cumulative plus project phase 1 scenario are analyzed below.

Cumulative plus Future Phases Scenario

The cumulative plus future phases traffic forecasts were developed by adding traffic from Phase 1 and future phases to the cumulative traffic volumes. Figures presenting the cumulative build-out traffic volumes including future phases of the Proposed Project are included in the technical appendix to the TIA (**Appendix TIA**). Impacts to LOS operations under the cumulative plus future phases scenario are analyzed below.

Trip Generation and Distribution

With full buildout of future phases, the Proposed Project could result in the development of up to 900 hotel and resort residential units, 1,400 residential estates, 300 workforce housing units, resort amenities, and other accessory uses within the project site. However, analysis of existing and baseline impacts is based on Phase 1 and the resulting trip generation calculations are shown in **Table 3.13-4**, using trip generation rates from the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 10th Edition. The total trip generation reflects all vehicle trips that would be counted at the project driveways. Trip generation calculations for the future phases of the Proposed Project are shown in **Table 3.13-5**.

Since the Proposed Project has various retail, restaurants and resort amenities that would be geared towards guests, adjustments were applied to account internal trips. It was also assumed that 40% of patrons and employees would arrive via private auto due to the planned use of airport shuttles and other buses. Please note the ITE trip generation rates are based on surveys of hotels that had an average occupancy rate of 88%. Based on data from the analytics firm STR, in Napa County the average hotel occupancy rate in 2017 was 71%. For this analysis it was assumed there would be similar occupancy levels for the Proposed Project. Therefore, based on the forecast occupancy rates a 19% reduction was applied to the ITE trip generation results. To be conservative, the trip generation also includes traffic from the proposed on-site work force housing as well as potential traffic from the alternative off-site housing in Middletown. For the purposes of determining the reasonable worst-case impacts on the surrounding streets from a project, the trips generated by this proposed development are estimated for the peak commute hours of 7:30 a.m. and 8:30 a.m. and 4:30 p.m. and 5:30 p.m., which represent the peak of "*adjacent street traffic.*"

The trip distribution assumptions have been based on the Proposed Project's proximity to the access routes into Lake County, the existing directional split at nearby intersections, and the overall land use patterns in the area. The trip distribution percentages assumed in this analysis are presented **Figure 3.13-2**. Figure 6 of the TIA shows the project traffic that would be added at each of the study intersections.

TABLE 3.13-4
PHASE 1 PROJECT TRIP GENERATION CALCULATIONS

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
MAHA FARM MARKETPLACE									
Retail Trip Rates	820		37.75	0.58	0.36	0.94	1.83	1.98	3.81
Retail Trip Generation		30,000 sq. ft.	1,133	17	11	28	55	59	114
Reduction for Internal Trips (50%)			566	9	5	15	27	30	57
Net New Off-Site Retail Trips			566	9	4	13	28	29	57
Restaurant Trip Rates	931		83.84	0.38	0.35	0.73	5.23	2.57	7.80
Restaurant Trip Generation		11,800 sq. ft.	989	4	4	9	62	30	92
Reduction for Internal Trips (50%)			495	2	2	4	31	15	46
Net New Off-Site Restaurant Trips			495	2	2	4	31	15	46
Subtotals for the Maha Farm Marketplace			***1,061***	***11***	***6***	***17***	***59***	***44***	***103***
MAHA FARM RESORT									
Resort Hotel Trip Rates	330		5.71	0.23	0.09	0.32	0.18	0.23	0.41
Resort Hotel Trip Generation		91 units[1]	520	21	8	29	16	21	37
Reduction for Arrivals by Shuttle (45%)[2]			234	10	3	13	7	8	17
Reduction for Forecast Occupancy Rates (19%)[3]			54	2	1	3	2	2	4
Net New Off-Site Maha Farmstead Resort Trips			231	9	4	13	7	10	17
Subtotals for the Maha Farm Resort			***231***	***9***	***4***	***13***	***7***	***10***	***17***
MAHA FARM WINERY									
Restaurant Trip Rates	931		83.84	0.38	0.35	0.73	5.23	2.57	7.80
Sales Center Restaurant Trip Generation		23,000 sq. ft.	1,928	9	8	17	120	59	179
Reduction for Internal Trips (50%)			964	4	4	8	60	30	90
Net New Off-Site Sales Center Restaurant Trips			964	5	4	9	60	29	89
Winery Trip Rates	970		45.96	1.45	0.62	2.07	3.66	3.65	7.31
Winery at Maha Farm Trip Generation		13,000 sq. ft.	597	18	9	27	48	47	95
Reduction for Internal Trips (50%)			299	9	4	13	24	24	48
Net New Off-Site Winery Trips			298	9	5	14	24	23	47
Winery Trip Rates	970		45.96	1.45	0.62	2.07	3.66	3.65	7.31
Maha Farm Estate Winery Trip Generation		5,000 sq. ft.	230	7	3	10	18	18	37
Reduction for Internal Trips (50%)			115	4	1	5	9	9	18
Net New Off-Site Winery Trips			115	3	2	5	9	9	18
Subtotals for the Maha Farm Winery			***1,378***	***17***	***11***	***28***	***93***	***61***	***154***
MAHA FARM GARDEN									

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Farm Garden Trip Rates	110		4.96	0.62	0.08	0.70	0.08	0.55	0.63
Farm Garden Trip Generation		35,000 sq. ft.	174	22	3	25	3	19	22
Reduction for Internal and Shuttle Trips (66%)			115	14	2	17	2	13	15
Net New Off-Site Farm Garden Trips			59	7	1	8	1	7	8
Subtotals for the Maha Farm Garden			***59***	***7***	***1***	***8***	***1***	***7***	***8***
EQUESTRIAN CENTER AND HOTEL									
Resort Hotel Trip Rates	330		5.71	0.23	0.09	0.32	0.18	0.23	0.41
Resort Hotel Trip Generation		13 units[1]	74	3	1	4	2	3	5
Reduction for Arrivals by Shuttle (45%)[2]			33	1	1	2	1	1	2
Reduction for Forecast Occupancy Rates (19%)[3]			8	0	0	0	0	0	0
Net New Off-Site Equestrian Center Hotel Trips			33	2	0	2	1	2	3
Restaurant Trip Rates	931		83.84	0.38	0.35	0.73	5.23	2.57	7.80
Restaurant Trip Generation		10,600 sq. ft.	889	4	4	8	55	28	83
Reduction for Internal Trips (50%)			444	2	2	4	27	14	41
Net New Off-Site Restaurant Trips			444	2	2	4	28	14	42
Subtotals for the Equestrian Center			***478***	***4***	***2***	***6***	***29***	***16***	***45***
RED HILL ESTATES									
Resort Hotel Trip Rates	330		5.71	0.23	0.09	0.32	0.18	0.23	0.41
Resort Hotel Trip Generation		81 units[1]	463	19	7	26	15	18	33
Reduction for Arrivals by Shuttle (45%)[2]			208	8	3	12	7	8	15
Reduction for Forecast Occupancy Rates (19%)[3]			48	2	1	3	1	2	3
Net New Off-Site Red Hill Estates Trips			206	8	3	11	7	8	15
Subtotals for the Red Hill Estates			***206***	***8***	***3***	***11***	***7***	***8***	***15***
RENAISSANCE GOLF COURSE									
Golf Course Trip Rates	430		30.38	1.39	0.37	1.76	1.54	1.37	2.91
Golf Course Trip Generation		18 holes	547	25	7	32	28	25	53
Reduction for Internal Trips (66%)			361	17	4	21	18	17	35
Net New Off-Site Golf Course Trips			186	9	2	11	10	8	18
Subtotals for the Renaissance Golf Course			***186***	***9***	***2***	***11***	***10***	***8***	***18***
BOHN RIDGE RESORT									
Resort Hotel Trip Rates	330		5.71	0.23	0.09	0.32	0.18	0.23	0.41
Resort Hotel Trip Generation		61 units[1]	348	15	5	20	11	14	25
Reduction for Arrivals by Shuttle (45%)[2]			157	7	2	9	5	6	11
Reduction for Forecast Occupancy Rates (19%)[3]			36	2	1	2	1	2	3
Net New Off-Site Bohn Ridge Trips			155	7	2	9	5	6	11

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Subtotals for the Bohn Ridge Resort			***155***	***7***	***2***	***9***	***5***	***6***	***11***
RESORT AT TROUT FLAT									
Resort Hotel Trip Rates	330		5.71	0.23	0.09	0.32	0.18	0.23	0.41
Resort Hotel Trip Generation		27 units[1]	154	6	2	9	5	6	11
Reduction for Arrivals by Shuttle (45%)[2]			69	3	1	4	2	3	5
Reduction for Forecast Occupancy Rates (19%)[3]			16	1	0	1	1	1	1
Net New Off-Site Trout Flat Trips			69	3	1	4	2	3	5
Subtotals for the Resort at Trout Flat			***69***	***3***	***1***	***4***	***2***	***3***	***5***
CAMPING AREA									
Resort Hotel Trip Rates	330		5.71	0.23	0.09	0.32	0.18	0.23	0.41
Resort Hotel Trip Generation		20 units[1]	114	4	2	6	4	5	8
Reduction for Arrivals by Shuttle (45%)[2]			51	2	1	3	2	2	3
Net New Off-Site Camping Area Trips			63	2	1	3	2	3	5
Subtotals for the Camping Area			***63***	***2***	***1***	***3***	***2***	***3***	***5***
RESIDENTIAL ESTATE VILLAS									
Single Family Home Rates			8.42	0.18	0.53	0.71	0.60	0.36	0.96
Residential Estate Villas Trips		401 units[1]	3,376	36	106	142	120	72	192
Reduction for Internal Trips (30%)			1,013	11	33	44	36	22	58
Net New Off-Site Residential Estate Villa Trips			2,363	25	73	98	84	51	135
Subtotals for the Residential Estate Villas			***2,363***	***25***	***73***	***98***	***84***	***51***	***135***
ENTOURAGE HOTEL									
Resort Hotel Trip Rates	330		5.71	0.23	0.09	0.32	0.18	0.23	0.41
Resort Hotel Trip Generation		50 units[1]	286	12	5	16	9	12	21
Reduction for Arrivals by Shuttle (45%)[2]			128	5	2	7	4	5	9
Net New Off-Site Entourage Hotel Trips			157	7	2	9	5	7	12
Subtotals for the Entourage Hotel			***157***	***7***	***2***	***9***	***5***	***7***	***12***
ON-SITE WORK FORCE HOUSING									
ITE Low-Rise Apartment Trip Rates (per unit)	220		7.32	0.11	0.35	0.46	0.35	0.21	0.56
Work Force Housing Trip Generation		35 units[1]	256	2	6	8	6	4	10
Reduction for Internal Trips (66%)			169	1	4	5	4	2	6
Net New Off-Site Work Force Housing Trips			87	1	2	3	2	1	3
Subtotals for the On-Site Work Force Housing			***87***	***1***	***2***	***3***	***2***	***1***	***3***
SUBTOTALS FOR THE PROJECT SITE			***6,493***	***110***	***110***	***220***	***306***	***225***	***531***

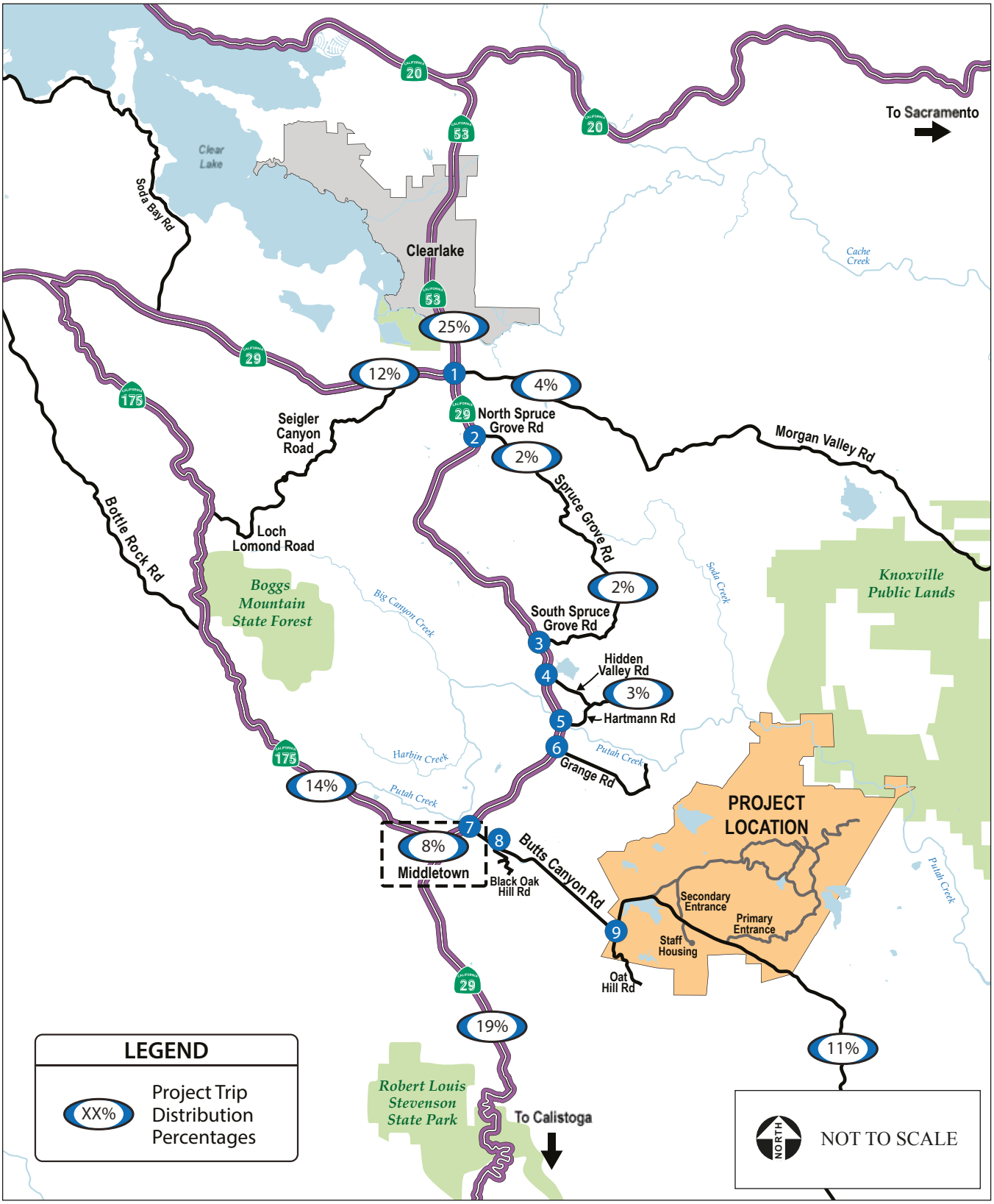
Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
OFF-SITE WORK FORCE HOUSING IN MIDDLETOWN									
ITE Low-Rise Apartment Trip Rates (per unit)	220		7.32	0.11	0.35	0.46	0.35	0.21	0.56
Work Force Housing Trip Generation		50 units	366	5	18	23	18	10	28
Reduction for Shuttle Trips (40%)			146	2	7	9	7	4	11
Net New Middletown Work Force Housing Trips			220	3	11	14	11	6	17
Subtotals for Middletown Work Force Housing			***220***	***3***	***11***	***14***	***11***	***6***	***17***

Source: ITE Trip Generation, 10th Edition, 2017. Abrams Associates, 2019 (**Appendix TIA**).
Notes:
1 The hotel room totals include the cottages and the private villas.
2 Based on the assumptions in the preliminary analysis of the parking requirements it is assumed that 40% of patrons would arrive via private auto due to the planned use of airport shuttles and other buses. However, the ITE hotel trip rates are based on surveys of mostly suburban hotels where it is estimated about 10% of trips are accommodated by guest transportation services and airport shuttles. Therefore, a 45% reduction was applied to account for the planned shuttle service for patrons and employees of the Proposed Project.
3 The ITE trip generation rates are based on surveys of hotels that were reported to have an average occupancy rate of 88%. Based on data from the analytics firm STR, in Napa County the average hotel occupancy rate in 2017 was 71%. For this analysis it was assumed there would be similar occupancy levels for the Proposed Project. Therefore, based on the forecast occupancy rates a 19% reduction was applied to the ITE trip generation results. (Sonoma Co. hotel revenue grows 30%, North Bay Journal 2/21/18).

TABLE 3.13-5

FUTURE PHASES TRIP GENERATION CALCULATIONS

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Retail Trip Rates	820		37.75	0.58	0.36	0.94	1.83	1.98	3.81
Retail Trip Generation		16,000 sq. ft.	604	9	6	15	29	32	61
Reduction for Internal Trips (50%)			302	5	3	8	14	16	30
Net New Off-Site Retail Trips			302	5	3	8	15	16	31
Restaurant Trip Rates	931		2.60	0.08	0.07	0.15	0.19	0.10	0.29
Restaurant Trip Generation		50 seats	130	4	4	8	10	5	15
Reduction for Internal Trips (50%)			65	2	2	4	4	3	7
Net New Off-Site Restaurant Trips			65	2	2	4	6	2	8
Resort Hotel Trip Rates	330		5.71	0.23	0.09	0.32	0.18	0.23	0.41
Resort Hotel Trip Generation		565 units[1]	3,226	130	51	181	102	130	232
Reduction for Arrivals by Shuttle (45%)[2]			1,452	58	23	81	46	58	104
Reduction for Forecast Occupancy Rates (19%)[3]			337	14	5	19	11	13	24
Net New Off-Site Hotel and Villa Trips			1,437	58	23	81	45	59	104
Winery Trip Rates	970		45.96	1.45	0.62	2.07	3.66	3.65	7.31
Winery Trip Generation		5,000 sq. ft.	230	7	3	10	18	18	37
Reduction for Internal Trips (50%)			115	3	2	5	9	9	18
Net New Off-Site Winery Trips			115	4	1	5	9	9	18
Agricultural Trip Rates	110		4.96	0.62	0.08	0.70	0.08	0.55	0.63
Agricultural Trip Generation		25,000 sq. ft.	124	15	3	18	2	14	16
Reduction for Internal and Shuttle Trips (66%)			82	10	2	12	1	9	10
Net New Off-Site Agricultural Trips			42	5	1	6	1	5	6
Golf Course Trip Rates	430		30.38	1.39	0.37	1.76	1.54	1.37	2.91
Golf Course Trip Generation		18 holes	547	25	7	32	28	25	53
Reduction for Internal Trips (66%)			361	17	4	21	19	16	35
Net New Off-Site Golf Course Trips			186	9	2	11	9	9	18
Single Family Home Rates			8.42	0.18	0.53	0.71	0.60	0.36	0.96
Single Family Home Trips		1,000 units	8,420	180	530	710	600	360	960
Reduction for Internal Trips (30%)			2,526	55	159	213	180	108	288
Net New Single Family Trips			5,894	125	371	496	420	252	672
Subtotals for the Second Phase			***8,041***	***208***	***402***	***610***	***505***	***352***	***857***
ON-SITE WORK FORCE HOUSING									
ITE Low-Rise Apartment Trip Rates (per unit)	220		7.32	0.11	0.35	0.46	0.35	0.21	0.56
Work Force Housing Trip Generation		200 units[4]	732	11	35	46	35	21	56
Reduction for Internal Trips (66%)			483	7	23	30	23	14	37
Net New Off-Site Work Force Housing Trips			249	4	12	16	12	7	19
SUBTOTALS FOR THE SECOND PHASE			***8,290***	***212***	***414***	***626***	***517***	***359***	***876***
SUBTOTALS FOR THE FIRST PHASE			***6,493***	***110***	***110***	***220***	***306***	***225***	***531***
TOTAL TRIPS FROM BOTH PHASES			**14,783**	**322**	**524**	**846**	**823**	**584**	**1,407**



SOURCE: Abrams Associates, Traffic Engineering, 10/8/2019; AES, 10/31/2019

Figure 3.13-2
Trip Distribution

Assumed Improvements

The Proposed Project would construct two new entrance roadways to the Guenoc Valley Site extending from Butts Canyon Road. There are two options for a proposed new main primary entrance intersection: The Primary Access Road Option 1 entrance would be located approximately 2 miles south of the existing Langtry Winery Entrance. The Primary Access Road Option 2 would be located at McCain Canyon, approximately 2.6 miles south of the existing Langtry Winery Entrance. A secondary access road and intersection would be located approximately half way between the Langtry Winery entrance and the primary entrance (see **Figure 2-11**). Both intersections would include turning lanes and deceleration/acceleration lanes as needed.

Thresholds of Significance

Criteria for determining the significance of transportation impacts have been developed based on Appendix G of the California Environmental Quality Act (CEQA) *Guidelines* and relevant agency thresholds. Impacts associated with transportation would be considered significant if the Proposed Project would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

Applicable Circulation System Plan Thresholds

Lake County

The goal of the Lake County is to maintain a LOS C during the peak hours, according to the General Plan. The County does not have plans, ordinances, or policies establishing measures of effectiveness for the performance of other parts of its circulation system. The applicable measures of effectiveness are summarized below:

- Signalized Intersections: Project-related operational impacts on the signalized study intersections in the Lake County are considered significant if project-related traffic causes the LOS rating to deteriorate from LOS C to LOS D, E or F. However, based on the Transportation Concept Report for State Route 29 (dated August 2013) the concept LOS for SR 29 between Calistoga and Lower Lake is LOS E.
- Unsignalized Intersections: Project-related operational impacts on unsignalized intersections in Lake County are considered significant if project generated traffic causes the average of all movements to deteriorate from LOS C or better to LOS D, E or F. For unsignalized intersections where the overall LOS would already exceed County standards (LOS C) it was considered a significant impact if Caltrans peak hour traffic signal warrants would be met.

Napa County

The applicable measures of effectiveness for Napa County are summarized below.

- Signalized Intersections: Project-related operational impacts on signalized study intersections in the Napa County are considered significant if project-related traffic causes the LOS rating to deteriorate from LOS D to LOS E or F. In addition, in Napa County project impacts are also considered significant if a signalized intersection already operates at LOS E or F during one or more peak hours without project trips, and the addition of project trips increases the total entering volume by one percent or more.
- Unsignalized Intersections: Project-related operational impacts on the unsignalized intersections in Napa County are considered significant if project generated traffic causes the average of all movements to deteriorate from LOS D or better to LOS E or F. In addition, in Napa County project impacts are also considered significant if an unsignalized intersection already operates at LOS E or F during one or more peak hours without project trips and the project contributes either one percent or more of the total entering traffic for all-way stop-controlled intersections or ten percent or more of the traffic on a side-street approach for side-street stop-controlled intersections.

Vehicle Miles Traveled Thresholds

CEQA Guidelines § 15064.3, subdivision (b) states that VMT exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the area compared to existing conditions also have a less than significant transportation impact.

The County does not currently have adopted CEQA thresholds for VMT analysis. However, the OPR Technical Advisory, discussed above, provides recommended methodology and thresholds of significance that may be used to evaluate VMT. Based on OPR's extensive review of the applicable research, and in light of an assessment by the California Air Resources Board quantifying the need for VMT reduction in order to meet the State's long-term climate goals, OPR recommends a threshold of significance of achieving a 15 percent reduction in per capita VMT over existing conditions.

Project Level Impacts

Construction Traffic

IMPACT 3.13-1	CONFLICT WITH PROGRAM, PLAN, ORDINANCE, OR POLICY ADDRESSING ROADWAYS DURING CONSTRUCTION
Significance with Policies and Regulations	Less Than Significant
Mitigation Measures	None Required
Significance After Mitigation	N/A

The increase in traffic as a result of demolition and construction activities associated with the Proposed Project has been quantified assuming a worst-case single phase construction period of 36 months.

Heavy Equipment

Approximately twenty pieces of heavy equipment are estimated to be transported on and off the Guenoc Valley Site each month throughout the demolition and construction of the Proposed Project. Heavy equipment transport to and from the site could cause traffic impacts in the vicinity of the project site during construction. However, each load would be required to obtain all necessary permits, which would include conditions.

Construction Material Import/Export

The Proposed Project would also require removal of existing debris as well as the importation of construction material, including raw materials for the building pads, the buildings, the parking area, and landscaping. During the maximum peak construction period, it is estimated material import and export could generate approximately 150 truck trips per day.

Construction Employees

The weekday work is expected to begin around 7:00 AM and end around 4:00 PM. The construction worker arrival peak would occur between 6:30 AM and 7:30 AM, and the departure peak would occur between 4:00 PM and 5:00 PM. These peak hours are slightly before the countywide commute peaks. It should be noted that the number of trips generated during construction would not only be temporary, but would also be substantially less than the Proposed Project at buildout.

Traffic Control Plan

Prior to issuance of grading and building permits, the project applicant would be required to submit a Traffic Control Plan. The requirements within the Traffic Control Plan include, but are not limited to, the following: truck drivers would be notified of and required to use the most direct routes , as determined by the County Engineering Department; all site ingress and egress would occur only at the main driveways to the project site and construction activities may require installation of temporary (or ultimate) traffic signals as determined by the County Engineer; specifically designated travel routes for large vehicles would be monitored and controlled by flaggers for large construction vehicle ingress and egress; warning signs indicating frequent truck entry and exit would be posted on Butts Canyon Road; and any debris and mud on nearby streets caused by trucks would be monitored daily and may require instituting a street cleaning program. Furthermore, under the provisions of the Traffic Control Plan, if importation and exportation of material becomes a traffic nuisance, then the County Engineer may limit the hours the activities can take place.

With implementation of the project-specific Traffic Control Plan and approval from the County Engineer, traffic associated with construction of the Proposed Project would not conflict with any program, plan, or policy addressing the circulation system. This would be a **less-than-significant impact**.

Baseline Conditions plus Phase 1 Project Impacts

IMPACT 3.13-2	CONFLICT WITH PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING ROADWAYS DURING OPERATION ASSUMING FUTURE BASELINE PLUS PROJECT CONDITIONS
Significance with Policies and Regulations	Potentially Significant
Mitigation Measures	MM 3.13-1: Implement Improvements at SR-29 and Butts Canyon Road
Significance After Mitigation	Less Than Significant

The baseline plus proposed project traffic forecasts were developed by adding traffic from Phase 1 to the baseline traffic volumes. As shown in **Table 3.13-4**, the Phase 1 of the Proposed Project could generate 6,493 daily trips with 220 trips occurring in the AM peak hour and 531 trips generated during the PM peak hour. The traffic volumes for each of the study intersections for the baseline plus project scenario are shown in Figure 9 of the TIA. **Table 3.13-6** summarizes the LOS results for the baseline and baseline plus project weekday AM and PM peak hour conditions.

TABLE 3.13-6
BASELINE PLUS PHASE 1 PROJECT CONDITIONS

	Intersection	Control	Peak Hour	Baseline		Baseline Plus Project	
				Delay	LOS	Delay	LOS
1	STATE ROUTE 29 / STATE ROUTE 53 & MAIN STREET	Signalized	AM	18.7	B	19.0	B
			PM	20.3	C	21.5	C
2	STATE ROUTE 29 & SPRUCE GROVE ROAD (NORTH) *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.4 25.9	A D	1.4 29.7	A D
			PM	1.5 46.9	A E	1.9 > 50.0	A F
3	STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH) *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	4.6 26.3	A D	5.4 33.5	A D
			PM	6.2 > 50.0	A F	14 > 50.0	B F
4	STATE ROUTE 29 & HIDDEN VALLEY ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	2.8 25.8	A D	3.2 30.9	A D
			PM	1.9 32.1	A D	3.4 > 50.0	A F
5	STATE ROUTE 29 & HARTMANN ROAD	Roundabout	AM	12.1	B	14.0	B
			PM	24.7	C	39.2	E
6	STATE ROUTE 29 & GRANGE ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.5 41.9	A E	0.6 > 50.0	A F
			PM	1.0 > 50.0	A F	1.5 > 50.0	A F
7	STATE ROUTE 29 & BUTTS CANYON ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.2 17.6	A C	4.5 37.9	A E
			PM	4.1 33.2	A D	**> 50.0** **> 50.0**	**F** **F**
8	BUTTS CANYON ROAD & BLACK OAK HILL DRIVE	Side Street	AM	0.3 9.4	A A	0.2 10.6	A B

	Intersection	Control	Peak Hour	Baseline		Baseline Plus Project	
				Delay	LOS	Delay	LOS
	OVERALL DELAY *SIDE STREET DELAY*	Stop	PM	0.3 9.7	A A	0.1 14.1	A B
9	BUTTS CANYON ROAD & OAT HILL DRIVE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.4 9.3	A A	0.2 10.8	A B
			PM	0.1 9.7	A A	0.1 14.4	A B
10	STATE ROUTE 29 (CALISTOGA ROAD) & WARDLAW STREET	Signalized	AM	10.2	B	11.4	B
			PM	7.5	A	8.6	A
11	STATE ROUTE 29 (CALISTOGA ROAD) & YOUNG STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.2 23.2	A C	1.2 26.3	A D
			PM	0.5 28.2	A D	0.5 37.7	A E
12	STATE ROUTE 29 (CALISTOGA ROAD) & STATE ROUTE 175 / MAIN STREET	Signalized	AM	8.2	A	8.9	A
			PM	9.5	A	12.0	B
13	STATE ROUTE 29 (CALISTOGA ROAD) & ARMSTRONG ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.1 15.7	A C	1.1 16.3	A C
			PM	1.5 22.9	A C	1.5 26.8	A D
14	STATE ROUTE 29 (CALISTOGA ROAD) & DOUGLAS STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.4 18.2	A C	0.4 19.3	A C
			PM	0.3 21.0	A C	0.3 24.3	A C
15	STATE ROUTE 29 (CALISTOGA ROAD) & CALLAYOMI STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.2 16.2	A C	0.2 18.3	A C
			PM	0.3 20.5	A C	0.4 26.9	A D
16	STATE ROUTE 29 (CALISTOGA ROAD) & LAKE STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.3 16.6	A C	0.3 17.3	A C
			PM	0.2 19.9	A C	0.2 22.6	A C
17	STATE ROUTE 29 (CALISTOGA ROAD) & CENTRAL PARK ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.3 14.9	A B	0.3 15.7	A C
			PM	0.4 23.2	A C	0.5 29.4	A D
18	STATE ROUTE 175 & SANTA CLARA ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.5 11.2	A B	0.5 11.6	A B
			PM	1.1 12.4	A B	1.1 13.3	A B
19	POPE VALLEY ROAD & HOWELL MOUNTAIN ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.7 9.7	A A	1.8 9.9	A A
			PM	3.9 10.1	A B	3.9 10.5	A B
20	STATE ROUTE 29 & TUBBS LANE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	2.7 15.9	A C	3.1 17.0	A C
			PM	**> 50.0** **> 50.0**	**F** **F**	**> 50.0** **> 50.0**	**F** **F**
21	STATE ROUTE 128 & TUBBS LANE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	**29.6** **44.2**	**D** **E**	**34.8** **> 50.0**	**D** **F**
			PM	**36.2** **> 50.0**	**E** **F**	**> 50.0** **> 50.0**	**F** **F**

Note: Delay results are presented in terms of seconds per vehicle.
Source: Abrams Associates, 2019.

As shown in **Table 3.13-6**, all of the study intersections would continue to have acceptable conditions under the baseline plus project scenario during the weekday AM and PM peak hours with the exception of Intersection #7 (State Route 29 at Butts Canyon Road), Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would all exceed their established thresholds. At Intersections #20 and #21 in Napa County, the Proposed Project would not increase the traffic on the side street approaches by more than 10 percent at either of these intersections. Therefore, the Proposed Project's contribution to congestion at these intersections would be considered less than significant.

The addition of project traffic at Intersection #7 would be considered a **significant impact** in the baseline plus project scenario. The traffic study identified the following improvements to return the LOS operations at this location to an acceptable level:

State Route 128 at Butts Canyon Road (Intersection #7) – Installation of a three-way traffic signal with crosswalks.

Implementation of the above identified improvements, as required by **Mitigation Measure 3.13-1**, would reduce the impacts at Intersection #7 to a **less-than-significant** level in the baseline plus project scenario. Therefore, with mitigation, the Proposed Project would not conflict with applicable plans, programs, plans, ordinances or policies addressing the circulation system.

Transit Impacts

IMPACT 3.13-3	CONFLICT WITH PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING TRANSIT DURING OPERATION
Significance with Policies and Regulations	Less Than Significant
Mitigation Measures	None Required
Significance After Mitigation	N/A

The Proposed Project would not result in degradation of the level of service (or a significant increase in delay) on any roadway segments currently being utilized by bus transit in the area and, as such, no significant impacts to bus transit are expected. The Proposed Project not be expected to significantly impact the operating capacity any existing Lake Transit bus routes. The Proposed Project could potentially help support existing bus services with additional transit ridership and would not conflict with any transit plans or goals of the County or Lake Transit. Although the Proposed Project does have the potential to increase patronage on bus lines in the area, no significant effects on transit capacity are anticipated given that the additional ridership would be added primarily in the non-peak directions. Further, the Proposed Project would include private shuttle services for employees in the Middletown area to the Guenoc Valley Site, which could offset demands on public transit. As a result, the Proposed Project would not be expected to result in any significant impacts to bus transit service in the area.

Pedestrians, Bicycles and Non-Motorized Vehicular Travel

IMPACT 3.13-4	CONFLICT WITH PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING BICYCLE, OR PEDESTRIAN FACILITIES DURING OPERATION
Significance with Policies and Regulations	Less Than Significant
Mitigation Measures	None Required
Significance After Mitigation	N/A

The County does not have level of service standards for pedestrian or bicycle facilities. Nevertheless, use of existing facilities by the users of the Proposed Project would not be expected to overcrowd those facilities or decrease their performance or safety. The Proposed Project will add some pedestrians and bicyclists in the area but the volumes added would not be expected to significantly impact any existing facilities. In relation to the existing conditions, the Proposed Project would not cause substantial changes to the pedestrian or bicycle traffic in the area and would not significantly impact or require changes to the design of any existing bicycle or pedestrian facilities. However, consistent with the County and County General Plans, the Proposed Project could be asked to contribute to additional pedestrian and bicycle improvement measures in the vicinity of the Proposed Project.

Vehicle Miles Traveled

IMPACT 3.13-5	CONFLICT OR BE INCONSISTENT WITH CEQA GUIDELINES § 15064.3, SUBDIVISION (B)
Significance with Policies and Regulations	Potentially Significant
Mitigation Measures	MM 3.13-4: Implement a Transportation Demand Management (TDM) Program
Significance After Mitigation	Significant and Unavoidable

Neighborhoods within various jurisdictions are expressed geographically in transportation analysis zones, or TAZs. TAZs are used in transportation planning models for transportation analysis and other planning purposes. Based on the MTC Travel Model, the Lake County regional average daily VMT per capita is estimated to be 31.1 in the year 2020 and 30.1 in the year 2040. Project residents are estimated to have similar travel behavior as other residents in the TAZ closest to a project; thus, the VMT per capita estimated by the MTC Model for the TAZ closest to a project site would represent the approximate VMT per capita that would be generated by a project.

Table 3.13-7 summarizes the 2020 and 2040 VMT for TAZ 1312, the TAZ which is closest where to the Proposed Project is located, and provides a comparison to regional and county wide averages. It is expected that, as shown for the TAZ, the Proposed Project would have a higher VMT per capita than the Lake County or Bay Area region averages under both 2020 and 2040 conditions; this is due to the rural

nature of the project setting and associated longer distances required for travel to work, schools, shopping centers, and other purposes.

TABLE 3.13-7
DAILY VEHICLE MILES TRAVELED PER CAPITA

Area	2020	2040
TAZ 1312 (Project)	37.5	34.6
Lake County	31.1	30.1
Bay Area	15.0	13.8
Source: MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita; accessed September, 2019. Abrams Associates, 2019 (**Appendix TIA**).		

While the County does not currently have adopted CEQA thresholds for VMT analysis; the Proposed Project would not meet the recommended OPR threshold of a 15 percent reduction in per capita VMT over existing conditions. This would be a **significant impact.** The VMT generated by the Proposed Project could be reduced by implementation of the TDM program required by **MM 3.13-4**. Additionally, the Proposed Project includes a number of measures that would reduce VMT, including the establishment of workforce housing in proximity to the employment centers within the Guenoc Valley Site, and the provision of shuttle service for employees from the Middletown area. However, due to its hospitality focus and rural setting, implementation of the TDM program would not reduce the project-related VMT to 15% below the regional average. Therefore, this impact is considered **significant and unavoidable**.

Safety

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)**
Significance with Policies and Regulations	Less Than Significant
Mitigation Measures	None Required
Significance After Mitigation	N/A

The Proposed Project was not found to cause (or substantially increase) any safety hazards due to any design features or incompatible uses. Although the Proposed Project would increase vehicle and vehicle and pedestrian traffic in the project vicinity, it is not expected to significantly impact or change the design of any existing transportation facilities or create any new safety problems in the area. No site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. Detailed LOS calculations for each of the proposed entrances under all plus project scenarios are included in the appendix. The existing intersections that would provide access to the project are forecast to continue to have acceptable operations with the existing side street stop controls. There are two options for a proposed new main primary entrance intersection: The Primary Access Road Option 1

entrance would be located approximately 2 miles south of the existing Langtry Winery Entrance. The Primary Access Road Option 2 would be located at McCain Canyon, approximately 2.6 miles south of the existing Langtry Winery Entrance. Both options are forecast to have acceptable operations with side-street stop control. Additionally, separate eastbound left turn pockets would be provided at all three of the resort entrances to ensure safe traffic operations. Therefore, based on the County's significance criteria the Proposed Project's impacts on transportation safety would be less than significant and no mitigation would be required.

Emergency Access

IMPACT 3.13-7	RESULT IN INADEQUATE EMERGENCY ACCESS
Significance with Policies and Regulations	Less Than Significant
Mitigation Measures	None Required
Significance After Mitigation	N/A

Sufficient emergency access is determined by factors such as number of access points, roadway width, and proximity to fire stations. The land use plan for the Proposed Project would include three entrances on Butts Canyon Road. All lane widths within the Proposed Project would meet the minimum width that can accommodate an emergency vehicle; therefore, the width of the internal roadways would be adequate. In addition, with the proposed mitigations the addition of traffic from project traffic would not result in any significant changes to emergency vehicle response times in the area. Therefore, development of the Proposed Project would have less-than-significant impacts regarding emergency vehicle access.

Cumulative Impacts

IMPACT 3.13-8	CONFLICT WITH PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING ROADWAYS DURING UNDER CUMULATIVE CONDITIONS	
	Phase 1	**Future Phases**
Significance with Policies and Regulations	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.13-1: Implement Improvements at SR-29 and Butts Canyon Road, MM 3.13-2: Pay Fair Share towards Lake County Intersection Improvements	MM 3.13-1: Implement Improvements at SR-29 and Butts Canyon Road, MM 3.13-2: Pay Fair Share towards Lake County Intersection Improvements, MM 3.13-3: Conduct Traffic Study and Implement Mitigation for Future Phases
Significance After Mitigation	Less Than Significant	Significant and Unavoidable

Phase 1 – Project Level Analysis

Table 3.13-8 summarizes the LOS results for the cumulative plus project phase 1 traffic conditions at each of the project study intersection. Figure 11 of the TIA presents the cumulative build-out traffic volumes including the traffic from the Proposed Project.

TABLE 3.13-8
CUMULATIVE PLUS PHASE 1 PROJECT CONDITIONS

Intersection		Control	Peak Hour	Cumulative		Cumulative Plus Phase 1 Project	
				Delay	LOS	Delay	LOS
1	STATE ROUTE 29 / STATE ROUTE 53 & MAIN STREET	Signalized	AM	20.6	C	21.0	C
			PM	23.5	C	26.4	C
2	STATE ROUTE 29 & SPRUCE GROVE ROAD (NORTH) *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.6 36.9	A E	1.7 42.5	A E
			PM	2.0 > 50.0	A F	3.2 > 50.0	A F
3	STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH) *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	9.1 >50.0	A F	13.1 > 50.0	B F
			PM	21.7 > 50.0	C F	**42.5** **> 50.0**	**E** **F**
4	STATE ROUTE 29 & HIDDEN VALLEY ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	14.1 > 50.0	B F	**20.4** **> 50.0**	**C** **F**
			PM	17.8 > 50.0	C F	**38.5** **> 50.0**	**E** **F**
5	STATE ROUTE 29 & HARTMANN ROAD	Roundabout	AM	19.5	C	24.5	C
			PM	**> 50.0**	**F**	**> 50.0**	**F**
6	STATE ROUTE 29 & GRANGE ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.7 > 50.0	A F	0.8 > 50.0	A F
			PM	1.9 > 50.0	A F	3.2 > 50.0	A F
7	STATE ROUTE 29 & BUTTS CANYON ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.2 21.3	A C	6.6 > 50.0	A F
			PM	5.0 42.9	A E	**> 50.0** **> 50.0**	**F** **F**
8	BUTTS CANYON ROAD & BLACK OAK HILL DRIVE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.3 9.6	A A	0.2 11.0	A B
			PM	0.2 10.0	A B	0.1 14.6	A B
9	BUTTS CANYON ROAD & OAT HILL DRIVE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.4 9.5	A A	0.2 11.0	A B
			PM	0.1 10.0	A B	0.1 15.0	A C
10	STATE ROUTE 29 (CALISTOGA ROAD) & WARDLAW STREET	Signalized	AM	17.9	B	21.8	C
			PM	9.4	A	13.3	B
11	STATE ROUTE 29 (CALISTOGA ROAD) & YOUNG STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.5 31.7	A D	1.6 36.5	A E
			PM	0.7 40.0	A E	0.7 > 50.0	A F
12	STATE ROUTE 29 (CALISTOGA ROAD) & STATE ROUTE 175 / MAIN STREET	Signalized	AM	10.1	B	11.2	B
			PM	13.2	B	19.5	B
13	STATE ROUTE 29 (CALISTOGA ROAD) & ARMSTRONG ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.3 18.2	A C	1.3 19.3	A C
			PM	1.9 30.8	A D	2.0 37.7	A E

	Intersection	Control	Peak Hour	Cumulative		Cumulative Plus Phase 1 Project	
				Delay	LOS	Delay	LOS
14	STATE ROUTE 29 (CALISTOGA ROAD) & DOUGLAS STREET	Side Street Stop	AM	0.4 21.3	A C	0.4 22.8	A C
	OVERALL DELAY *SIDE STREET DELAY*		PM	0.4 26.3	A D	0.3 30.9	A D
15	STATE ROUTE 29 (CALISTOGA ROAD) & CALLAYOMI STREET	Side Street Stop	AM	0.2 18.6	A C	0.2 21.4	A C
	OVERALL DELAY *SIDE STREET DELAY*		PM	0.4 24.6	A C	0.5 34.6	A D
16	STATE ROUTE 29 (CALISTOGA ROAD) & LAKE STREET	Side Street Stop	AM	0.3 17.7	A C	0.3 18.6	A C
	OVERALL DELAY *SIDE STREET DELAY*		PM	0.2 22.8	A C	0.2 26.2	A D
17	STATE ROUTE 29 (CALISTOGA ROAD) & CENTRAL PARK ROAD	Side Street Stop	AM	0.3 16.0	A C	0.3 16.7	A C
	OVERALL DELAY *SIDE STREET DELAY*		PM	0.4 27.1	A D	0.6 34.1	A D
18	STATE ROUTE 175 & SANTA CLARA ROAD	Side Street Stop	AM	0.5 11.6	A B	0.5 12.0	A B
	OVERALL DELAY *SIDE STREET DELAY*		PM	1.2 13.1	A B	1.1 14.1	A B
19	POPE VALLEY ROAD & HOWELL MOUNTAIN ROAD	Side Street Stop	AM	1.8 9.7	A A	1.9 9.9	A A
	OVERALL DELAY *SIDE STREET DELAY*		PM	4.0 10.0	A B	3.9 10.4	A B
20	STATE ROUTE 29 & TUBBS LANE	Side Street Stop	AM	3.0 17.4	A C	3.418.8	A C
	OVERALL DELAY *SIDE STREET DELAY*		PM	**> 50.0** **> 50.0**	F F	**> 50.0** **> 50.0**	F F
21	STATE ROUTE 128 & TUBBS LANE	Side Street Stop	AM	**> 50.0** **> 50.0**	F F	**> 50.0** **> 50.0**	F F
	OVERALL DELAY *SIDE STREET DELAY*		PM	**> 50.0** **> 50.0**	F F	**> 50.0** **> 50.0**	F F

Note: Delay results are presented in terms of seconds per vehicle.
Source: Abrams Associates, 2019.

As shown in **Table 3.13-8**, all of the signalized study intersections would continue to have acceptable conditions during the weekday AM and PM peak commute hours with the exception of Intersection #3 (State Route 29 at Spruce Grove Road South), Intersection #4 (State Route 29 at Hidden Valley Road), Intersection #5 (State Route 29 at Hartmann Road), Intersection #7 (State Route 29 at Butts Canyon Road), Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would all exceed their established thresholds. At Intersections #20 and #21 in Napa County the Proposed Project would not increase the traffic on the side street approaches by more than 10 percent at either of these intersections, and therefore the Proposed Project's contribution to congestion at these intersections would be considered less than significant.

The addition of project traffic at Intersection #7, Butts Canyon Road and SR-29, would be considered a **significant impact** in the cumulative plus project phase 1 scenario. Impacts to Intersection #7 were also identified in the baseline plus project scenario. Implementation of **MM 3.13-1**, described above, would also

reduce the impacts to this intersection in the cumulative plus project phase 1 scenario to less than significant.

The addition of project traffic at Intersections #3, #4, #5 would be considered a **significant impact** in the cumulative plus project phase 1 scenario. The traffic study identified the following improvements to return the LOS operations at these location to an acceptable level:

State Route 29 at Spruce Grove Road South (Intersection #3) – Installation of a three-way traffic signal with crosswalks.

State Route 29 at Hidden Valley Road (Intersection #4) – Installation of a three-way traffic signal with crosswalks.

State Route 29 at Hartmann (Intersection #5) – Installation of a three-way traffic signal with crosswalks.

Implementation of the above identified improvements, as required by **MM 3.13-2**, would reduce the impacts at Intersection #3, #4, and #5, respectively, to a less-than-significant level in the cumulative plus project phase 1 scenario. Therefore, with mitigation, the Phase 1 would not conflict with applicable plans, programs, plans, ordinances or policies addressing the circulation system, and impacts would be reduced to **less than significant**.

Future Phases – Program Level Analysis

Table 3.13-9 summarizes the LOS results for the cumulative plus future phases traffic conditions at each of the project study intersection with the addition of traffic from Phase 1 and Future Phases of the Proposed Project. Figures presenting the resulting project trip generation with Future Phases as well as the cumulative build-out traffic volumes including Future Phases of the Proposed Project are included in the technical appendix to the TIA (**Appendix TIA**).

TABLE 3.13-9
CUMULATIVE PLUS FUTURE PHASES PROJECT CONDITIONS

Intersection		Control	Peak Hour	Cumulative		Cumulative Plus Future Phases	
				Delay	LOS	Delay	LOS
1	STATE ROUTE 29 / STATE ROUTE 53 & MAIN STREET	Signalized	AM	20.6	C	22.2	C
			PM	23.5	C	35.5	D
2	STATE ROUTE 29 & SPRUCE GROVE ROAD (NORTH) *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.6 36.9	A E	2.3 > 50.0	A F
			PM	2.0 > 50.0	A F	11.5 > 50.0	B F
3	STATE ROUTE 29 & SPRUCE GROVE ROAD (SOUTH) *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	9.1 >50.0	A F	34.4 > 50.0	D F
			PM	21.7 > 50.0	C F	**> 50.0** **> 50.0**	F F
4	STATE ROUTE 29 & HIDDEN VALLEY ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	14.1 > 50.0	B F	**49.1** **> 50.0**	E F
			PM	17.8 > 50.0	C F	**> 50.0** **> 50.0**	F F

	Intersection	Control	Peak Hour	Cumulative		Cumulative Plus Future Phases	
				Delay	LOS	Delay	LOS
5	STATE ROUTE 29 & HARTMANN ROAD	Roundabout	AM	19.5	C	43.4	E
			PM	**> 50.0**	**F**	**> 50.0**	F
6	STATE ROUTE 29 & GRANGE ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.7 > 50.0	A F	1.2 > 50.0	A F
			PM	1.9 > 50.0	A F	7.5 > 50.0	A F
7	STATE ROUTE 29 & BUTTS CANYON ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.2 21.3	A C	**> 50.0** **> 50.0**	F F
			PM	5.0 42.9	A E	**11.9** **> 50.0**	B F
8	BUTTS CANYON ROAD & BLACK OAK HILL DRIVE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.3 9.6	A A	0.1 17.6	A C
			PM	0.2 10.0	A B	0.1 36.1	A E
9	BUTTS CANYON ROAD & OAT HILL DRIVE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.4 9.5	A A	0.1 18.8	A C
			PM	0.1 10.0	A B	0.1 37.8	A E
10	STATE ROUTE 29 (CALISTOGA ROAD) & WARDLAW STREET	Signalized	AM	17.9	B	46.3	D
			PM	9.4	A	33.0	C
11	STATE ROUTE 29 (CALISTOGA ROAD) & YOUNG STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.5 31.7	A D	2.1 > 50.0	A F
			PM	0.7 40.0	A E	1.1 > 50.0	A F
12	STATE ROUTE 29 (CALISTOGA ROAD) & STATE ROUTE 175 / MAIN STREET	Signalized	AM	10.1	B	17.5	B
			PM	13.2	B	41.9	D
13	STATE ROUTE 29 (CALISTOGA ROAD) & ARMSTRONG ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	1.3 18.2	A C	1.2 23.2	A C
			PM	1.9 30.8	A D	2.6 > 50.0	A F
14	STATE ROUTE 29 (CALISTOGA ROAD) & DOUGLAS STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.4 21.3	A C	0.4 27.7	A D
			PM	0.4 26.3	A D	0.4 41.4	A E
15	STATE ROUTE 29 (CALISTOGA ROAD) & CALLAYOMI STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.2 18.6	A C	0.3 27.7	A D
			PM	0.4 24.6	A C	0.8 > 50.0	A F
16	STATE ROUTE 29 (CALISTOGA ROAD) & LAKE STREET *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.3 17.7	A C	0.3 21.5	A C
			PM	0.2 22.8	A C	0.2 33.3	A D
17	STATE ROUTE 29 (CALISTOGA ROAD) & CENTRAL PARK ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.3 16.0	A C	0.4 19.6	A C
			PM	0.4 27.1	A D	0.9 > 50.0	A F
18	STATE ROUTE 175 & SANTA CLARA ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	0.5 11.6	A B	0.5 13.2	A B
			PM	1.2 13.1	A B	1.2 16.2	A C
19	POPE VALLEY ROAD & HOWELL MOUNTAIN	Side Street	AM	1.8 9.7	A A	2.0 10.3	A B

Intersection		Control	Peak Hour	Cumulative		Cumulative Plus Future Phases	
				Delay	LOS	Delay	LOS
	ROAD *OVERALL DELAY* *SIDE STREET DELAY*	Stop	PM	4.0 10.0	A B	4.1 11.3	A B
20	STATE ROUTE 29 & TUBBS LANE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	3.0 17.4	A C	4.4 23.8	A C
			PM	**> 50.0** **> 50.0**	F F	**< 50.0** **< 50.0**	**F** **F**
21	STATE ROUTE 128 & TUBBS LANE *OVERALL DELAY* *SIDE STREET DELAY*	Side Street Stop	AM	**48.8** **> 50.0**	E F	**< 50.0** **< 50.0**	**F** **F**
			PM	**> 50.0** **> 50.0**	F F	**< 50.0** **< 50.0**	**F** **F**

Note: Delay results are presented in terms of seconds per vehicle.
Source: Abrams Associates, 2019.

As shown in **Table 3.13-9**, all of the signalized study intersections would continue to have acceptable conditions during the weekday AM and PM peak commute hours with the exception of Intersection #3 (State Route 29 at Spruce Grove Road South), Intersection #4 (State Route 29 at Hidden Valley Road), Intersection #5 (State Route 29 at Hartmann Road), Intersection #7 (State Route 29 at Butts Canyon Road), Intersection #20 (State Route 29 at Tubbs Lane) and Intersection #21 (State Route 128 at Tubbs Lane) which would all exceed their established thresholds.

The addition of traffic from Future Phases at Intersections #3, #4, #5, and #7 would be considered significant impacts in the cumulative plus future phases scenario. Impacts to Intersections #3, #4, #5, and #7 were also identified in the cumulative plus project phase 1 scenario. Implementation of **MM 3.13-2**, described above, would also reduce the impacts at Intersections #3, #4, and #5 to a less-than-significant level in the cumulative plus future phases scenario.

As shown in **Appendix TIA**, Intersection #7 would continue to experience unacceptable operations in the cumulative plus future phases scenario after implementation of **MM 3.13-1**. This would be considered a significant impact. The traffic study identified the following improvements to return the LOS operations at Intersection #7 to an acceptable level:

State Route 29 at Butts Canyon Road (Intersection #7) – Construction of an additional through lane on both State Route 29 approaches.

The addition of project traffic in the cumulative plus future phases 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 traffic study identified the following improvements to return the LOS operations at these locations to an acceptable level:

State Route 29 at Tubbs Lane (Intersection #20) – Installation of a three-way traffic signal with crosswalks.

State Route 128 at Tubbs Lane (Intersection #21) – Installation of a three-way traffic signal with crosswalks.

Implementation of the above identified improvements would reduce the impacts at Intersection #7, #20 and #21 in the cumulative plus future phases scenario. However, improvements to these locations cannot be guaranteed as the improvements would be outside the jurisdiction of Lake County.

Future Phases of the Proposed Project would be subject to additional environmental review in accordance with CEQA. Implementation of **MM 3.13-3** 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. However, because certain improvements that may be required under Future Phases, including improvements to intersections 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. This impact is considered **significant and unavoidable**.

3.13.5 MITIGATION MEASURES

MM 3.13-1 Implement Improvements at SR-29 and Butts Canyon Road

Prior to issuance of grading permits for Phase 1, the Developer shall enter into an agreement with Caltrans to mitigate the above-identified impacts to the intersection of SR-29 and Butts Canyon Road as follows:

- 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).

MM 3.13-2 Pay Fair Share towards Caltrans Intersection Improvements

The Developer shall enter into an agreement with Caltrans 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)
- State Route 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 Intersection Control Analysis (ICE).* (required under cumulative plus Phase 1)
- State Route 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 Intersection Control Analysis (ICE).* (required under cumulative plus Phase 1)
-

MM 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 and/Caltrans.

MM 3.13-4 Implement a Transportation Demand Management (TDM) 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 County shall verify compliance with the plan prior to issuance of occupancy permits for the Proposed Project. The following strategies shall be identified within the TD 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 could potentially provide a frequent direct weekday shuttle service specifically for employees during the peak morning and evening commute periods. This could operate between the 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.

- *Carpool and Ride-Matching Assistance Program* – 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* – 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 management shall monitor and provide adequate carpool spaces to meet or exceed potential demand.

- *Dedicated Parking Spaces for Car Share Services* – Setting aside parking spaces to be dedicated for use by car share services to serve employees. This could 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. A review of over 25 studies from Europe and the U.S. where car sharing services are available, found that in North America, on average, 20% of respondents gave up a privately owned vehicle and 40% avoided purchasing one, which results in an average of five privately owned vehicles replaced per every car sharing vehicle. However, it should be noted that this data is for residential projects and the effects, while still significant, would most likely be less for a commercial project.

- *OnSite Sales of Transit Passes* – The building management shall offer direct on-site sales of transit passes purchased and sold at a bulk group rate.

- *TDM Coordinator* – Management shall designate a "*TDM coordinator*" to coordinate, monitor and publicize TDM activities. The effectiveness of providing a TDM Coordinator on automobile ownership is not known at this time. It is assumed the applicant may instruct the management company to designate their on-site manager as the TDM coordinator.

- *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 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* - At the time of occupancy for Phase I (or at the time of hiring for later phases), 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.

3.14 UTILITIES

This section provides a description of the availability of utilities on the Guenoc Valley Site and Middletown Housing Site and describes the changes to those conditions that would result from implementation of the Proposed Project. Utilities include wet utilities (potable and non-potable water, wastewater, and stormwater facilities [**Section 3.14.1**]), solid waste (**Section 3.14.2**), and dry utilities (electrical, gas, and telecommunication facilities [**Section 3.14.3**]). Following an overview of the existing utilities and relevant regulatory setting for each, potential project-related impacts are identified and recommended mitigation measures are presented.

3.14.1 WATER SUPPLY, WASTEWATER SERVICE, AND STORMWATER COLLECTION AND TREATMENT

Following an overview of the environmental setting in **Section 3.14.1.1** and the relevant regulatory setting in **Section 3.14.1.2**, potential project-related impacts and recommended mitigation measures are presented in **Sections 3.14.1.3** and **3.14.1.4**, respectively.

3.14.1.1 Environmental Setting

Water Supply

Refer to **Section 3.9.2** for the detailed environmental setting for surface water supply, groundwater supply, and recycled water supply at the Guenoc Valley Site and Middletown Housing Site.

Wastewater Service

Lake County Sanitation District Utility Areas

The Lake County Sanitation District has three utility areas that provide water and wastewater services in more densely populated areas. To service these areas, the County has 5 regional wastewater systems. The nearest wastewater system to the Guenoc Valley Site, the Middletown wastewater system, located approximately 9 miles from the site, has the capacity to serve approximately 500 residential connections in the Middletown and the Harbin Hot Springs areas (Lake County, 2019). The Middletown wastewater system is located in Utility Area 3 and consists of over 10 miles of gravity collection system, 3 lift stations, and over 3 miles of force main to the Middletown Wastewater Treatment Plant.

The Middletown Wastewater Treatment Plant (MWWTP) was constructed in the 1990s and is currently operating near capacity. The facility has a facultative pond with a dry/wet flow of 0.128/0.24 MGD, three secondary ponds, a sodium hypochlorite (chlorine) feed system and contact basin, an effluent storage reservoir, an effluent pump station, and a spray irrigation system (Lake LAFCO, 2010; Lake County, 2019). After treatment, the effluent is conveyed through the pump station and disposed of via injection into the Southeast Geyser Effluent Pipeline for reuse in the nearby Geysers geothermal steamfield (Lake LAFCO, 2010). This system is subject to the requirements of RWQCB Board Order 97-249, which sets the average daily dry weather flow of 0.15 mgd and a peak wet weather flow at 0.5 mgd from the treatment system(CVRWQCB, 1997).

Currently, the MWWTP has limited capacity to remove screenings and solids and provide marginal treatment of influent biochemical oxygen demand (BOD), therefore improvements have been proposed by the Lake County Sanitation District as of May 28, 2019 (Lake County, 2019b). In addition to the aforementioned deficiencies, other areas for improvement include more capacity in the chlorine contact channel for greater contact time at higher flow rates, installing a complete supervisory control and data acquisition (SCADA) system, a backup generator, increased pump capacity for effluent conveyance, and repairing or replacing liners in all four ponds. Since these improvements are required to ensure environmental protection, future retrofitting of the MWWTP is likely to include construction of a headworks, pond repair, installation of additional aeration capability, renovation of flow patterns, expansion of the disinfection system, and installation of additional monitoring and control systems.

Lake County also has a wastewater recycling system. The treated effluent is used for geothermal power production (injection/re-use). There is 50 miles of effluent pipeline with an average flow rate of 5,800 gpm recycling about 85% of the wastewater collected from the County wastewater systems. The recycling program uses solar powered treatment and pumping and creates geothermal power through injection wells just south of Cobb Mountain.

Guenoc Valley Site Existing Infrastructure

The Guenoc Valley Site and surrounding areas are not currently served by municipal sewer and wastewater treatment. The existing ranch homes and agricultural operations buildings within the Guenoc Valley Site have on-site wastewater systems that consist of septic tanks with leach field disposal. The Langtry Winery, which is located within the island of property that is not a part of the project site, utilizes a self-contained pond system for the treatment and disposal of processed wastewater generated by the winery operations adjacent to the site. There is no other existing wastewater infrastructure within or adjacent to the Guenoc Valley Site.

Middletown Housing Site Existing Infrastructure

A Grading, Drainage, and Utility Plan was prepared for the Middletown Housing Site, which details the existing sewer system infrastructure in the vicinity of the site (Sherwood, 2019). The plan illustrates an existing sanitary sewer line paralleling the eastern site boundary, with an associated sewer pump at the northern end of the line and two existing sewer manholes evenly spaced along the line, accessible via the planned project entrance. The plan also illustrates sewer system easements located along the eastern and southern site boundaries.

Storm Water Drainage

Refer to **Section 3.9.2** for the detailed environmental setting for storm water drainage at the Guenoc Valley Site and Middletown Housing Site.

3.14.1.2 Regulatory Setting

Water Supply

Refer to **Section 3.9.3** for the detailed regulatory setting for surface water supply, groundwater supply, recycled water supply, and water demand at the Guenoc Valley Site and Middletown Housing Site.

Wastewater Service

Federal

National Pollutant Discharge Elimination System

Federal and state laws relating to wastewater primarily focus on the regulation of pollutant discharges that could contaminate surface waters or groundwater. As such, the federal Clean Water Act and National Pollutant Discharge Elimination System (NPDES), as well as the state Porter-Cologne Water Quality Control Act, all regulate wastewater treatment and the discharge of treated effluent (See **Section 3.9.3**, Hydrology and Water Quality, Regulatory Setting). The MWWTP was originally permitted under NPDES Order R5-1997-0249 and was amended by the revised waste discharge requirements of RWQCB Board Order 97-249 (California Water Boards, n.d.).

State

General Waste Discharge Requirements

In 2006 the State Water Resources Control Board adopted discharge requirements for sanitary sewer systems that convey untreated or partially treated wastewater further than one mile (Order NO. 2006-0003-DWQ) (California Water Boards, 2006). This order aims to reduce sanitary sewer overflows (SSO) in the State by enforcing sanitary system owners to develop and implement system-specific Sewer System Management Plans (SSMP), which delineate appropriate operation, maintenance, and management protocols for the sanitary system while including risk management and cost benefit analyses. In addition, this order requires compliance reporting of SSOs to provide information for the public and to the State to identify potential environmental impacts. Similar to NPDES permitting, permit coverage is provided for sanitary sewer systems that are obligated under this order.

State Water Reclamation Requirements for Recycled Water Use

In 2016 the State Water Resources Control Board adopted the State's first General Order (Order WQ 2016-0068-DDW) for Water Reclamation Requirements for Recycled Water Use. The General Order establishes standard conditions for recycled water use and conditionally delegates authority to an Administrator to manage a Water Recycling Program and issue Water Recycling Permits to recycled water users. Only treated municipal wastewater for non-potable uses can be permitted, such as landscape irrigation, crop irrigation, dust control, industrial/commercial cooling, decorative fountains, etc. Potable reuse activities are not authorized under this General Order, which is promulgated under the California Regional Water Quality Control Board and the State Resources Water Control Board-Division of Drinking Water. The Maha Development will prepare the necessary plans and technical documents to permit all planned water recycling facilities under the General Order.

California Water Code

Several sections of California Water Code, Division 7 pertain to the project. Chapter 4, Article 4 specifies the general requirements for the project to obtain Wastewater Discharge Requirements for the proposed discharge of wastewater, and provides regulations pertaining to the use of recycled water. Chapter 4, Article 7 specifies the use of recycled water in lieu of potable water for various water demands, such as, landscape irrigation, irrigation of golf courses and other uses. The Maha Development will be required to prepare and submit a Report of Waste Discharge for the planned wastewater facilities on the property.

California Code of Regulations

Title 17

Article 2 sets requirements for back flow preventers to prevent cross connection or contamination of water systems. The regulations include the requirements for back flow preventer approval, construction of backflow preventers, location of backflow preventers, the type of protection required and the testing and maintenance of backflow preventers.

The Maha Development will need to employ backflow protection measures to prevent the cross connection and/or contamination of surface water resources or non-domestic water wells. In most cases a reduced pressure principal backflow prevention (RP) type backflow prevention assembly can be used to isolate the recycled water from the other sources of non-potable.

Title 22, Division 4 – Environmental Health

Chapter 3 defines the type of recycled water and other related topics. Article 3 specifies the water quality requirements for the use of recycled water for irrigation. Article 4 defines the use area requirements where recycled water can be applied and the setbacks from domestic supply wells for landscape irrigation and for storage of recycled water. Article 6 outlines sampling and analysis requirements. Article 7 outlines the requirement for an engineering report and operational requirements. Article 8 outlines general requirements of design and Article 10 specifies reliability requirements for full treatment.

The Maha Development project will be required to prepare and submit an engineering report that describes the proposed recycled water system and what provisions for reliability and safety will be incorporated in the recycled water system.

The Maha Development project will need to install a water reclamation system that will need to be designed to provide disinfected tertiary recycled water that has filter effluent that does not exceed 2 NTU and influent turbidity does not exceed 5 NTU for more than 15 minutes and never exceeds 10 NTU, and there is a capability to automatically activate chemical addition or diver wastewater should the filter influent turbidity exceed 5 NTU for more than 15 minutes.

General Waste Discharge Requirements for Sanitary Sewer Systems

The General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems was adopted by the SWRCB in May 2006 (California Water Boards, 2019d). These WDRs require local jurisdictions to develop a SSMP that addresses the necessary operation and emergency response plans to reduce sanitary sewer overflows. An SSMP must include the following elements:

- Goal
- Organization
- Legal Authority
- Operation and Maintenance Program
- Design and Performance Provisions
- Overflow Emergency Response Plan
- Fats, Oils, and Grease (FOG) Control Program

- System Evaluation and Capacity Assurance Plan
- Monitoring, Measurement, and Program Modifications
- SSMP Program Audits
- Communication Program

During the project permitting and approval stage, Maha development will prepare and have Lake County approve a SSMP as part of the Wastewater System Plan and Technical Reports described in **Section 2.7.2**.

Local

County of Lake Code of Ordinances

Chapter 9 – Health and Sanitation

The Lake County Code that pertains to wastewater is Chapter, Article 3. These requirements specify that any construction, addition to, alteration of, or modification of a wastewater system for the disposal, treatment or discharge of sewage requires securing a sanitation permit from the County Health Officer. Costs incurred by the County shall be borne by the sub-divider and shall be paid to the Director of Public Works prior to final approval of any improvement work, and inspection fees deposits as determined by the Public Works Department and adopted by the Board of Supervisors.

Under this Article the sub-divider must obtain approval of a new wastewater system from the County health officer demonstrating that the new wastewater system will comply with the local permitting requirements.

Chapter 17 – Subdivision Regulations

The Lake County Codes that pertain to sanitary sewer includes several sections of Chapter 17, Article 5. These requirements specify that all sanitary sewer improvement shall conform to the County's "Standard Improvement Specifications." These requirements also state that all sanitary sewer facilities shall not be installed until all plans for such work have been submitted to, approved and signed by the Director of Public Works and by local and state agency. All sanitary sewer improvements shall be installed under the inspection and approval of the Director of Public Works or his duly authorized representative. Costs incurred by the County shall be borne by the sub-divider and shall be paid to the Director of Public Works prior to final approval of any improvement work, and inspection fees deposits as determined by the Public Works Department and adopted by the Board of Supervisors.

Under Article 5 the sub-divider must obtain approval of a new sanitary sewer system from the County health officer demonstrating that the new wastewater system will comply with the local permitting requirements. When a new wastewater system is proposed the sub-divider shall demonstrate that the proposed design has been approved by the County Health Office and the Director of Public Works.

When connection to an existing sanitary sewer system is not feasible, the sub-divider shall provide evidence to the County Health Officer certifying that the site has ground slopes and soil conditions for satisfactory disposal by septic tanks or other approved method.

Article 5 further states that the SWRCB requirements for proposed waste discharge shall be complied with pursuant to Section 13260 of the State Water Code, where applicable, before the Planning Commission approves the phased tentative maps for the project.

Wastewater system plans and related technical reports will be submitted to all required County and the State agencies for approval, prior to installing the wastewater system improvements. Maha development corporation will pursue approval from the SWRCB once the project has been approved under the requirements of the California Environmental Quality Act (CEQA).

Some portions of the project, such as the large parcels, may pursue individual on-site septic systems, and in this circumstance the individual landowner would pursue a permit from Lake County. In other circumstances a landowner of a residential lot may connect to the sanitary sewer system if the soil conditions are not suitable for an individual on-site septic system.

Lake County Rules and Regulations for On-Site Sewage Disposal

The Lake County Rules and Regulations for On-Site Sewage Disposal are rules adopted in 2010 per the County of Lake Code of Ordinances to prescribe the requirements for on-site sewage disposal systems. This document provides design criteria for standard on-site sewage disposal subsurface systems as well as alternative systems that maybe used in the Project area including subsurface drip disposal systems, pressurized distribution systems, aerobic systems, sand filter systems, other media filter systems, steep slope systems, holding tanks, and experimental systems.

Public Utilities Code

The Maha Resort in the Guenoc Valley is planning to form a privately held public utility company that will operate and maintain the water and sewer facilities at the property. Regulated water utilities are considered to be professional water service providers that own water and wastewater utilities, partner with municipalities to form public-private partnerships, or operate and maintain water and wastewater systems as contracted services providers.

In California, these professional water service providers who own and operate utilities are regulated by the California Public Utilities Commission (CPUC). The CPUC establishes rates and terms of service, as well as provides safety and security oversight and, with the SWRCB, shares water quality and compliance responsibilities. In the course of regulating these public utilities, the CPUC reviews company costs, audits system needs, holds hearings on general rate cases, applications for capital projects and other formal proceedings, and render decisions that govern the utility's relationship with its customers. The new utility will be regulated by the CPUC. The new water and wastewater utility will initially be a Class C system serving less than 2,000 service connections, and eventually, when future phases of development occur, it will likely be a Class B system that will serve between 2,000 to 10,000 service connections in the long-term.

Public utilities are organized as private corporations, with their stock owned by shareholders for investment purposes. Public utilities are subject to comprehensive regulation by the CPUC regarding water supplies, capital improvements, service quality and water rates.

The Maha Development Corporation will form a privately held water and wastewater public utility company to own, operate and maintain the systems. The Maha Development Corporation will prepare the necessary legal, technical and financial reports needed to form the new utility entity. The new utility company will be permitted and regulated by the CPUC, the SWRCB, and the RWQCB.

Lake County General Plan (2008)

The General Plan, Public Facilities and Services Element and the Water Resources Element address wastewater services for the County. Applicable general plan policies related to the Proposed Project are listed below. **Appendix GPCT** analyzes the Proposed Project's consistency with the General Plan pursuant to the CEQA Guidelines Section 15125(d).

- Policy PFS-2.5: Development proposals that include general plan amendments and rezoning proposals that would result in increased water and wastewater demands above that projected by existing land use and zoning maps will be required to implement mitigation strategies to offset impacts to existing water and wastewater systems. Implementation of these strategies will become conditions of tentative maps and other entitlements.
- Policy PFS-2.6: The County shall not approve new use permits or subdivisions unless an adequate supply of quality water and wastewater treatment capacity is available or will be developed prior to breaking ground for construction.
- Policy PFS-2.7: The County shall give priority to water conservation measures over development of additional water sources where mutually exclusive.
- Policy PFS-3.1: The County shall develop, periodically review, and enforce adequate standards for septic tanks to protect water quality and public health. Use of individual septic systems shall be discouraged for larger residential and commercial developments and also for smaller developments where a public wastewater treatment facility is reasonably available. Larger developments should only occur where public wastewater treatment facilities with adequate capacity are available to serve the development.
- Policy PFS-3.2: The County should promote and support programs to educate homeowners on the care and maintenance of septic systems.
- Policy PFS-3.3: County should investigate alternative rural wastewater systems before investing in a costly conventional sewage system. For individual homes, such systems include elevated leach fields, sand filtration systems, evapotranspiration beds, osmosis units and holding tanks. In addition, composting toilets should be considered by the County for some situations, if determined to be appropriate and found not to pose a health risk. For clusters of homes, alternative systems include communal septic tank/leach field systems, package treatment plants, lagoon systems, and land treatment.
- Policy PFS-3.4: The County shall require that developers meet all County wastewater requirements for adequate collection, treatment, and disposal prior to breaking ground for construction.
- Policy PFS-3.5: The County shall minimize wastewater flows through water conservation efforts. Consideration should be given to allow use of gray water for landscape irrigation.
- Policy PFS-3.6: The County will promote the development of sewer systems and connection of land uses to sanitary sewer systems where (a) failing septic tanks, leach field, and package systems constitute a threat to water quality and public health that cannot be remedied otherwise;

or (b) future development will exceed acceptable standard for septic tanks (such as density or flow of effluent into the groundwater).

- Policy PFS-3.7: The County shall reduce the potential for future land use conflicts near sewer treatment facilities by minimizing development potential on surrounding parcels through zoning and land use designations that limit residential density and/or commercial intensity. Proposals for land division adjacent to sewer treatment facilities should not be approved unless large parcels can be provided with adequate, on-site buffers.
- Policy WR-5.8: The County shall take appropriate measures in the issuance of discretionary entitlements and the application of zoning districts to seek out opportunities to expand the utilization of reclaimed wastewater (tertiary treated and secondary treated) for other reasonable and beneficial uses. Those uses include, but are not limited to: groundwater recharge, irrigation of agricultural lands, irrigation of landscaped areas, geothermal recharge, and environmental restoration and enhancement projects.
- Policy WR-5.9: To augment groundwater supplies and to conserve potable water for domestic purposes, the County should seek opportunities to expand the use of reclaimed wastewater for all beneficial uses.

Lake County Water System Design and Construction Standards

The Lake County Water System Design and Construction Standards provides criteria for the design of water utilities projects, including sewer systems. Compliance with these standards reduces impacts related to wastewater conveyance by ensuring that water distribution and wastewater collection and conveyance facilities are properly sized to convey the flows from development associated with the Proposed Project.

Stormwater Drainage

Refer to **Section 3.9.3** for the detailed regulatory setting for stormwater drainage at the Guenoc Valley Site and Middletown Housing Site.

3.14.1.3 Impacts

Method of Analysis

The analysis of water supply, wastewater, and stormwater collection and treatment is based upon consultation with County personnel, review of technical studies prepared for the Proposed Project, and review of other relevant documents as cited herein. The following technical studies prepared for the Proposed Project are referenced in this section and included as appendices to this EIR.

- **Appendix WATER**: Water Infrastructure Plan and Demand Memorandum
- **Appendix WSA**: Water Supply Assessment
- **Appendix WW**: Wastewater Feasibility Study
- **Appendix SW**: Stormwater Design Report
- **Appendix SCA**: (Middletown Housing Site) Sanitary Sewer Impact Analysis
- **Appendix STORM-MID**: (Middletown Housing Site) Stormwater Design Report
- **Appendix CCWD**: (Middletown Housing Site) CCWD Conditional Will Serve Letter

Thresholds of Significance

Criteria for determining the significance of impacts associated with utilities were developed based on Appendix G of the CEQA Guidelines. The Proposed Project would result in a significant impact to water supply, wastewater and stormwater collection and treatment if it would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage facilities, the construction or relocation of which could cause significant environmental effect;
- Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years; or
- Result in a determination by the waste water treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Impacts

IMPACT 3.14-1	**REQUIRE OR RESULT IN THE RELOCATION OR CONSTRUCTION OF NEW OR EXPANDED WATER, WASTEWATER TREATMENT OR STORM WATER DRAINAGE FACILITIES, THE CONSTRUCTION OR RELOCATION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL EFFECTS**			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Off-Site Infrastructure Improvements**	**Future Phases**	**Off-Site Workforce Housing**
Significance Before Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Mitigation Measures	None Required	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A	N/A

Water Supply

Guenoc Valley Site Phase 1 – Project Level Analysis

As discussed in detail in **Section 3.12**, Phase 1 would generate an estimated permanent population of 1,040 residents, with an additional 820 resort residential visitors at any given time. The addition of 1,860 permanent and temporary residents would increase the demand for water supply. As described in **Section 2.5.2.5**, an independent water and wastewater system would be developed to serve the Guenoc Valley Site. The new water/wastewater system would either be owned and operated by a newly established private utility, or would be sold to and operated by an existing utility company or district.

As described in **Appendix WATER**, potable and non-potable water supply would be provided via a combination of sources including water supply wells for domestic purposes, reliance on existing surface water rights, reclaimed water from on-site treatment, and irrigation wells. The potable water distribution system will include a pressure piped network of main and submain lines to convey potable water to the commercial and residential parcels, and will include strategically placed water storage tanks and booster pump station stations to maintain pressure in the system to meet maximum water demands. The non-potable water distribution system will be constructed to supply fire, irrigation and make up water demands for the Guenoc Valley Site, and will include surface water pumping plants and water reclamation plants throughout the site.

The majority of improvements will be co-located in areas of other existing and planned improvements, such as installing the conveyance pipelines in the existing and proposed roads and driveways. In some instances, such as water tanks, utility infrastructure will be placed in small areas set back from development. Pipelines would be located in road right-of-ways and utility easements.

No municipal water supply systems would be affected by the development of the Guenoc Valley Site as no connections are proposed. **Section 2.5.2.5** and **Figure 2-12** provides an overview of the planned water system to serve the Proposed Project. Potential environmental effects that could occur as result of constructing these on-site water supply facilities have been analyzed in this EIR as part of the Proposed Project. These effects include impacts to biological resources and habitats, as well as temporary water quality, air quality, and noise impacts from construction activities. As discussed in the respective EIR chapters, potentially significant impacts related to these issue areas resulting from the Proposed Project would be reduced to less than significant levels within the implementation of mitigation. Further, the proposed water infrastructure itself has been designed to minimize environmental effects through the reuse of treated wastewater, and the footprint of these facilities has been minimized by locating pipelines within roadway corridors, and in areas with no known cultural or sensitive biological resources. The environmental effects from construction of water supply facilities under Phase 1 would be **less-than-significant**.

Off-Site Infrastructure Improvements – Project Level Analysis

A new off-site well and associated pipeline may be established on the Off-Site Well Site in the Collayomi Valley Aquifer (see **Figure 2-5**) to provide water for the Proposed Project. This high production well will be used as a primary source of non-potable water to supply irrigation, fire protection and make up water for water features and ponds, if required (**Appendix WATER)**. The optional water pipeline would be located along Butts Canyon Road within the public right-of-way to allow for access and maintenance of facilities. The existing well adjacent to the Off-Site Well Site may be used or an optional well would be constructed on the site. Dedicated easements would be recorded for water facilities on private property accessible to the utility district personnel for maintenance, repair, and servicing of equipment.

The construction of these off-site infrastructure improvements is analyzed throughout this EIR as part of the Proposed Project. These effects include temporary impacts from construction activities associated with water quality, air quality, noise and traffic. As discussed in the respective EIR chapters, potentially significant impacts related to these issue areas resulting from the Proposed Project would be reduced to less than significant levels within the implementation of mitigation. The environmental effects from

construction of the off-site water infrastructure would be ***less than significant***. Effects to water supply and groundwater from use of the off-site well are addressed in **Section 3.9.4, Impact 3.9.2**.

Off-Site Workforce Housing – Project Level Analysis

An 8-inch domestic water conveyance pipeline exists within State Route 175 (SR-175), adjacent to the Middletown Housing Site, to distribute water to the region, but currently there is no water distribution infrastructure located within the Middletown Housing Site to connect the proposed development to the existing pipeline. As such, the Proposed Project would require the installation of new service connections to the Middletown Housing Site from the existing water main in SR-175 owned and operated by Callayomi County Water District within the public right-of-way.

The capacity of the 8-inch water line in SR-175 is adequate to provide for water demand generated by the Middletown Housing Site (CCWD, 2019). A water distribution pipeline would be built to serve the Middletown Housing Site from the existing water line. The new pipeline would be located in Santa Clara Road along the eastern boundary of the Middletown Housing Site, and would extend west to serve the proposed development. The pipeline would connect to the existing water main at the project's intersections with Park Avenue and Santa Clara Road, as illustrated in the Grading, Drainage, and Utility Plan (Sherwood, 2019). Off-Site water facilities would be located within the public right-of-way wherever feasible to allow for access and maintenance of facilities unless otherwise approved. CCWD has indicated the ability to serve the project without any additional improvements to the water supply and distribution system (**Appendix CCWD**).

Construction of these improvements is not expected to result in significant environmental impacts, because the area of improvements would be relatively small and located within a previously disturbed road right way and utility corridor. Temporary construction impacts from pipeline trenching activities associated with noise, air quality and traffic would be temporary and regulated by County ordinances, further described in **Section 3.10, Section 3.3**, and **Section 3.13** respectively, of this EIR. The Proposed Project would result in **less than significant** impacts associated with construction of new water facilities to serve the Middletown Housing Site and no mitigation is required.

Future Phases – Programmatic Analysis

Future phases will include additional hotel rooms, resort residential units, residential estates, new roads and utility infrastructure, which could require or result in the relocation or construction of new or expanded water service facilities. **Appendix WATER** estimates the water demand from future phases to average 248 acre-feet per year of potable water, and 759 acre-feet per year of non-potable water. Water supply for future phases would be served by extension of the independent water system developed under Phase 1, however, the exact number and location of the anticipated improvements are unknown at this time. As future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals with appropriate mitigation measures developed. Similar to Phase 1, it is anticipated that water supply facilities would be located predominantly within roadway corridors, and that temporary construction effects associated with biological resources, cultural resources, noise and air quality would be reduced through the mitigation measures required for future phases in the respective sections of this EIR. For these reasons,

the environmental effects from construction of water supply facilities under future phases would be ***less than significant***.

Wastewater Service

Guenoc Valley Site Phase 1 – Project Level Analysis

As discussed in detail in **Section 3.12**, Phase 1 would generate an estimated permanent population of 1,040 residents, with an additional 820 resort residential visitors at any given time. The addition of 1,860 permanent and temporary residents would increase the demand for wastewater services. As described in detail in **Section 2.5** and **Appendix WW**, the proposed wastewater management systems for Phase 1 at the Guenoc Valley Site includes a sanitary sewer collection system, small natural or package styled wastewater treatment and reuse systems, recycled water distribution and reuse systems, and small on-site wastewater systems.

The majority of improvements will be co-located in areas of other existing and planned improvements, such as installing the sewer collection and conveyance pipelines in the existing and proposed roads and driveways. In some instances, such as the small water reclamation plants, utility infrastructure will be placed in small areas typically less than a quarter acre; these areas will require some site improvements including limited grading, drainage improvements, and paving to create suitable areas for the addition of utility infrastructure including storage tanks and small buildings to house treatment and pumping equipment and related appurtenances. Pipelines would be located in road right-of-ways and utility easements.

The majority of wastewater generated at the Guenoc Valley Site will be treated to meet the State's recycled water requirements for tertiary treated wastewater that will produce an effluent with a total nitrogen concentration less than 10 mg/L, and the effluent will be disinfected prior to being reused primarily for landscape irrigation purposes. A permitted recycled water system will be required by the State to incorporate and maintain reliability features to ensure the safe performance of the recycled water system. Residential on-site wastewater systems will rely on shallow subsurface disposal systems that will be designed to meet local and state standards for setbacks to surface and groundwater in order to protect these resources on the Guenoc Valley Site.

No municipal wastewater systems would be affected by the development of the Guenoc Valley Site as no connections are proposed. **Section 2.5** and **Figure 2-12** provides an overview of the planned wastewater system to serve the Proposed Project. Potential environmental effects that could occur as result of constructing these on-site wastewater collection facilities have been analyzed in this EIR as part of the Proposed Project. These effects include impacts to biological resources and habitats, as well as temporary water quality, air quality, and noise impacts from construction activities. As discussed in the respective EIR chapters, potentially significant impacts related to these issue areas resulting from the Proposed Project would be reduced to less than significant levels within the implementation of mitigation. Further, the proposed wastewater infrastructure itself has been designed to minimize environmental effects through the reuse of treated wastewater, and the footprint of these facilities has been minimized by locating pipelines within roadway corridors, and in areas with no known cultural or sensitive biological resources. The environmental effects from construction of wastewater treatment and collection facilities under Phase 1 would be **less-than-significant**.

Off-Site Workforce Housing – Project Level Analysis

As described in **Section 3.14.1.1**, several sewer conveyance pipelines exist around the perimeter of the Middletown Housing Site to transport wastewater from the region to the Middletown WWTP, but currently there is no wastewater collection infrastructure located within the Middletown Housing Site to connect the proposed development to the existing pipelines. **Appendix SCA** confirms that the existing sewer system including gravity mains, pump stations, and force mains, have the capacity to support Phase 1 of development at the Middletown Housing Site. The Proposed Project will need to install a new wastewater collection pipe system at the Middletown Housing Site to secure the new development's connection to the Middletown WWTP. As described in detail in **Section 2.5** and **Appendix WW**, the proposed wastewater management systems for Phase 1 at the Middletown Housing Site includes a sanitary sewer collection system to collect the wastewater before conveying it to the Middletown WWTP via the existing pipelines.

Construction of these improvements is not expected to result in significant environmental impacts, because the area of improvements would be relatively small and located within a previously disturbed road right way and utility corridor. Temporary construction impacts from pipeline trenching activities associated with noise, air quality and traffic would be temporary and regulated by County ordinances, further described in **Section 3.10, Section 3.3**, and **Section 3.13** respectively, of this EIR. The Proposed Project would result in **less than significant** impacts associated with construction of new wastewater collection facilities to serve the Middletown Housing Site and no mitigation is required.

Future Phases – Programmatic Analysis

Future phases will include additional hotel rooms, resort residential units, residential estates, new roads and utility infrastructure, which could require or result in the relocation or construction of new or expanded wastewater treatment facilities. Wastewater treatment for future phases would be served by extension of the independent wastewater system developed under Phase 1; however, the exact number and location of the anticipated improvements are unknown at this time. Therefore, as future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals with appropriate mitigation measures developed. Similar to Phase 1, it is anticipated that wastewater collection facilities would be located predominantly within roadway corridors, and that temporary construction effects associated with biological resources, cultural resources, noise and air quality would be reduced through the mitigation measures required for future phases in the respective sections of this EIR. For these reasons, the environmental effects from construction of wastewater facilities under future phases would be **less than significant**.

Storm Water Drainage

Guenoc Valley Site Phase 1 – Project Level Analysis

Development of the Proposed Project would add impervious surfaces to the Guenoc Valley Site due to residential and commercial development in currently undeveloped areas, which would increase the amount of surface run-off at the Guenoc Valley Site. Therefore, operation of the Proposed Project would require the construction of new or expanded storm water drainage facilities.

Appendix SPOD includes a Grading and Drainage Plan for the Guenoc Valley Site, which illustrates the existing drainage pattern and a preliminary layout of a proposed combination of stormwater management

facilities throughout the Guenoc Valley Site including vegetated roadside swales, contour/cutoff swales, checkdams for microdetention and sediment control, raingardens for stormwater treatment, open bottom culverts, and level spreaders. Additionally, culvert and bridge crossings will be implemented to minimize resident and visitor interaction with stormwater management. **Appendix SW** describes these stormwater management facilities in more detail.

Potential environmental effects that could occur as a result of constructing these stormwater management features have been analyzed in this EIR as part of the Proposed Project. These effects include impacts to biological resources and habitats, as well as temporary water quality, air quality, and noise impacts from construction activities. As discussed in the respective EIR chapters, potentially significant impacts related to these issue areas resulting from the Proposed Project would be reduced to less than significant levels within the implementation of mitigation. The environmental effects from construction of stormwater management features under Phase 1 would be **less-than-significant**.

Off-Site Workforce Housing – Project Level Analysis

Development of the Off-Site Workforce Housing would add impervious surfaces to the Middletown Housing Site due to residential development in currently undeveloped areas, which would increase the amount of surface run-off at the Middletown Housing Site. Therefore, operation of the Proposed Project would require the relocation or construction of new or expanded storm water drainage facilities.

A Grading, Drainage, and Utility Plan and a Stormwater Design Report were prepared for the Middletown Housing Site, which include the preliminary layout and description of a proposed combination of stormwater management facilities throughout the Middletown Housing Site including multiple swales and stormwater detention and treatment areas, complimented by low slope hardscapes to minimize erosion (Sherwood, 2019; **Appendix STORMMID**).

Potential environmental effects that could occur as result of constructing these stormwater management features have been analyzed in this EIR as part of the Proposed Project These effects include impacts to biological resources and habitats, as well as temporary water quality, air quality, and noise impacts from construction activities. As discussed in the respective EIR chapters, potentially significant impacts related to these issue areas resulting from the Proposed Project would be reduced to less than significant levels within the implementation of mitigation. The environmental effects from construction of stormwater management features for the Off-Site Workforce Housing would be **less-than-significant**.

Future Phases – Programmatic Analysis

Future phases will include additional hotel rooms, resort residential units, residential estates, new roads and utility infrastructure, which could require or result in the relocation or construction of new or expanded storm water drainage facilities. Storm water drainage facilities for future phases would be similar to those developed for Phase 1 and would be designed to adequately serve the development that is included in future phases, however, the exact number and location of the anticipated improvements are unknown at this time. As future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals with appropriate mitigation measures developed. Similar to Phase 1, it is anticipated that temporary construction effects associated with biological resources, cultural resources, noise and air

quality would be reduced through the mitigation measures required for future phases in the respective sections of this EIR. For these reasons, the environmental effects from construction of storm water drainage facilities under future phases would be ***less than significant***.

IMPACT 3.14-2	**HAVE INSUFFICIENT WATER SUPPLIES AVAILABLE TO SERVE THE PROJECT AND REASONABLY FORESEEABLE FUTURE DEVELOPMENT DURING NORMAL, DRY AND MULTIPLE DRY YEARS**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

The impact analysis of water supply sufficiency is based on a Water Supply Assessment (WSA) completed for the Proposed Project (**Appendix WSA**). The evaluation of specific impacts to groundwater supplies is included in **Section 3.9**, **Impact 3.9-2**. The analysis presented here references and expands upon the analysis in Section 3.9 to address the sufficiency of the overall water supply.

Guenoc Valley Site Phase 1 – Project Level Analysis

Proposed Water Supply System and Sources

As described in **Section 2.5.2.5**, two separate water supply systems would be developed for Phase 1: a potable water system primarily used to supply all the drinking, interior, and recreation water demands features (i.e. swimming pools) and a separate non-potable water system to meet all the non-drinking water and primarily exterior water demands for irrigation, non-recreational water features (i.e. fountains and other features), fire protection water and construction related water demands. The separate water systems would be constructed within three zones; the Guenoc Valley Zone, the Upper Bohn Lake Zone, and the Camping Area Zone.

The potable water system would be supplied by a series of groundwater supply wells. The non-potable water system would be supplied by a combination of surface water from the on-site reservoirs, recycled water from the on-site water recycling plants, and groundwater supply wells. Water supplies from existing on-site reservoirs are licensed with the SWRCB, Division of Water Rights, and can only be used on designated place of use (POU) land within the Guenoc Valley Site (see **Figure 2-3** for POU locations). Currently, the appropriative water rights for the property allow for the diversion to storage of 10,394.5 acre-feet per year and withdrawals from storage of up to 8,599.5 acre-feet per year, which may be used for irrigation purposes. In addition, riparian rights allow for the direct diversion of 5.35 cubic feet per second for use on lands along Bucksnort Creek in Guenoc Valley.

Water Demand

The WSA provides a detailed analysis of the potable and non-potable water demand for Phase 1 (**Appendix WSA**, Table 5-1 and Table 5-4). The potable and non-potable water demands for Phase 1 are summarized in **Tables 3.9-1** and **3.9-2**. As shown, Phase 1 would have 249 acre-feet per year of potable water demand and 1,027 acre-feet per year of non-potable water demand.

Water Supply Sufficiency

To evaluate the long-term sufficiency of the Proposed Project's water supply, the WSA modeled groundwater conditions using the Basin Characterization Model (BCM) of California developed by the U.S. Geological Survey. Recognizing that climate change presents the potential to alter water availability in the future, the groundwater water availability analysis uses BCM outputs for a "hot and low rainfall" scenario developed in a recent study of climate change vulnerability in northern San Francisco Bay Area counties. For the "hot and low rainfall" scenario, mid-century averages (i.e., 2040 to 2069) include a 21% reduction in average annual precipitation, an 11% increase in minimum monthly winter temperatures, and an 8% increase in the maximum monthly summer temperatures. The evaluation of future groundwater availability presented in the WSA and summarized here incorporates the "hot and low rainfall" scenario. Additional details on the BCM are provided in **Appendix WSA**, Section 4.3.3.

For purposes of this analysis it is assumed that the Proposed Project would achieve full build-out conditions of Phase 1 within the first five years (by 2025). As shown in **Tables 3.9-4** and **3.9-5**, the availability of water supplies for normal water years is projected to exceed projected water demands, for both Phase 1 and future phases of development. In addition, as shown in **Table 3.9-6**, availability of water supplies for dry and multiple dry water years is projected to exceed projected water demands. Sufficient water supplies are available to serve Phase 1 into the foreseeable future and impacts would be ***less than significant***.

Middletown Housing Site Phase 1 – Project Level Analysis

As described in **Section 2.6.1**, water supply for the Middletown Housing Site would be provided by the Callayomi County Water District (CCWD or District). CCWD obtains its water supply from groundwater wells that draw on the Collayomi Valley Groundwater Basin. The basin consists of the alluvium deposits along Collayomi Valley and Long Valley, which are connected hydrologically. The maximum thickness of alluvium in the basin is approximately 350 feet deep in Collayomi Valley, and 475 feet deep in Long Valley. Primary recharge of the basin occurs from percolation of surface water from Putah, Dry and St. Helena Creeks, with some recharge also occurring from infiltration of irrigation water and rainfall. Water levels in the basin range from 3 to 15 feet below the ground surface, and spring groundwater levels have remained generally constant over the last 40 years. Total storage in the basin has been estimated at 29,000 acre-feet, with useable storage capacity estimated at 7,000 acre-feet (DWR, 2004). The 2007 CCWD Water Master Plan estimated the District's water demand at buildout to be 603 AFY (CCWD, 2007).

Based on the average demand of residential units in the District of 369 gpd, the development of 50 equivalent single-family units (49 residential units plus the community center) would require approximately 18,450 gpd or 21 acre-feet per year. Development of the work housing would be dependent on water service from CCWD. The Middletown Housing Site is directly adjacent to, but outside of the District's service area and annexation of the site would need to be approved by Lake Local Agency Formation Commission (LAFCO) prior to the District extending service to the site. However, the Middletown Housing Site is within

the District's sphere of influence (area identified for future annexation) and a formerly proposed housing development on the site was included in the 2007 Water Master Plan. The former housing development "Stonebrook Meadows Subdivision" was identified in the Master Plan as a 49-unit development that would have resulted in an average daily demand of 18,100 gpd. No deficiencies have been identified in the long-term availability of groundwater to serve the water demand of the District at buildout. Because a similarly sized housing project on the site was incorporated into the District's buildout calculations within the 2007 Water Master Plan, service to the proposed Middletown Housing Site was accounted for in the District's plans. CCWD has indicated the ability to serve the project without any additional improvements to the water supply and distribution system (CCWD, 2019). Based on the stability in groundwater levels within the Collayomi Valley Groundwater Basin in recent decades, which have included periods of drought, the basin is expected to provide sufficient water supply for the Proposed Project through normal, dry and multiple dry years. Sufficient water supplies are available to serve the Proposed Project and impacts would be ***less than significant***.

Future Phases – Programmatic Analysis

Future phases of the Proposed Project would expand development on the Guenoc Valley Site site and increase the demand for water. Future phases would result in the development of approximately 200 hotel units, 300 resort residential units, 1,000 residential estate villas and 400 workforce co-housing bedroom units. Resort amenities such as outdoor entertainment, sports and recreation facilities may be expanded by up to 658 acres. Agriculture and agricultural accessory areas may be expanded by up to 48 acres, and other accessory uses may be expanded by up to 28 acres. As described under Phase 1, two separate water supply systems would be developed in Phase 1: a potable water system and a separate non-potable water. These systems would be expanded under future phases to meet increased water demand for expanded facilities.

Water Demand

The WSA provides a detailed analysis of the potable and non-potable water demand for future phases (**Appendix WSA**, Table 5-2 and Table 5-4). The potable and non-potable water demands for future phases are summarized in **Tables 3.9-1** and **3.9-2**. As shown, the future phases would have 436 acre-feet per year of potable water demand and 1,132 acre-feet per year of non-potable water demand. At buildout of Phase 1 and future phases, total potable water demand would be 685 acre-feet per year and total non-potable water demand would be 2,973 acre-feet per year (for a combined non-potable demand of 4,495 acre-feet per year including vineyards on and off the Guenoc Valley Site that are within the POU).

Water Supply Sufficiency

The sufficiency of groundwater and other water supply sources has been analyzed by the WSA as summarized under Phase 1. For purposes of the water supply analysis it is assumed that build-out of future phases would occur by 2030. As show in **Tables 3.9-4** and **3.9-5**, the availability of water supplies for normal water years is projected to exceed projected water demands, for both Phase 1 and future phases of development. In addition, as shown in **Table 3.9-6**, availability of water supplies for dry and multiple dry water years is projected to exceed projected water demands. Sufficient water supplies are available to serve the Proposed Project at buildout into the foreseeable future and impacts would be ***less than significant***.

IMPACT 3.14-3	RESULT IN A DETERMINATION BY THE WASTE WATER TREATMENT PROVIDER, WHICH SERVES OR MAY SERVE THE PROJECT THAT IT HAS INADEQUATE CAPACITY TO SERVE THE PROJECT'S PROJECTED DEMAND IN ADDITION TO THE PROVIDER'S EXISTING COMMITMENTS		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

Guenoc Valley Site Phase 1 – Project Level Analysis

Phase 1 is expected to generate an average of 170,868 gpd of wastewater (**Appendix WW**). **Table 3.14-1** provides a breakdown of the wastewater flow estimates by land use description. As described in **Section 2.5.2** and Section 5 of **Appendix SPOD**, the Proposed Project would include the construction of on-site wastewater management systems designed to accommodate projected maximum daily flows. All greywater and wastewater would either be directed to an on-site WWTP where it would be treated to a tertiary level and then subsequently recycled onsite, or would be treated by a standard or enhanced individual septic system. No municipal wastewater systems would be affected by the development of the Guenoc Valley Site as no connections are proposed. This is a **less-than-significant impact**.

Off-Site Workforce Housing – Project Level Analysis

The MWWTP currently experiences average daily dry weather flows of 0.10 million gallons, and is permitted for a 30-day average daily dry weather flow which does not exceed 0.15 million gallons (Harter, 2019). The projected flow from the Middletown Housing Site to the MWWTP from buildout of the Proposed Project is 0.01 million gallons (**Appendix SCA**), which would increase the total average daily dry weather flows to 0.11 million gallons, resulting in flows lower than the permitted 0.15 million gallons. Therefore, the addition of wastewater resulting from the buildout of the Middletown Housing Site would not cause total wastewater flows to exceed the existing treatment capacity of the MWWTP. Additionally, if any infrastructure improvements are identified as necessary to secure the MWWTP's ability to serve the Middletown Housing Site, fees paid by the new development will contribute toward funding those infrastructure improvements. This is a **less-than-significant** impact and no mitigation is required.

TABLE 3.14-1
WASTEWATER FLOW ESTIMATES

Description	Average Daily Flows	Maximum Daily Flows
On-Site Workforce Housing	8,064	11,520
Equestrian Center	29,805	65,535
Red Hill Estates	30,240	58,620
Bohn Ridge Resort	16,305	26,265
Resort at Trout Flat	14,280	23,060
Spa	4,785	7,355
Golf Course	3,360	6,780
Camping Area	3,960	6,360
Central Back-of-House Facilities	17,100	17,100
Emergency Center & Short Term Staff Accommodations	4,140	6,540
Maha Farm	38,829	85,315
Total Wastewater Flow (gpd)	***170,868***	***314,450***
Total Wastewater Flow (Acre-Feed per day)	***0.52***	***0.96***
Total Annual Wastewater Flow (Acre-feet per year)	***191.37***	***NA***

Source: **Appendix WW**

Future Phases – Programmatic Analysis

Development of future phases is anticipated to include additional hotel rooms, resort residential units, residential estates, expanded sport facilities and recreation opportunities. Based on preliminary programming for this future development, the wastewater flows estimates have been calculated to be approximately 163 acre-feet of wastewater per year at full buildout and full occupancy. The future wastewater flow is estimated to increase the total amount of wastewater to approximately 354 acre-feet per year and will increase the overall wastewater generated by approximately 40 percent (**Appendix WW**).

The on-site wastewater treatment infrastructure would be expanded to accommodate wastewater flows from future development. Additionally, as future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals. For all of these reasons, the impact on wastewater services from future phases would be considered **less than significant**.

IMPACT 3.14-4	CUMULATIVE WATER, WASTEWATER, AND STORM WATER DRAINAGE IMPACTS		
	Guenoc Valley Site		Other Phase 1 Areas
	Phase 1	Future Phases	Off-Site Workforce Housing
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

The cumulative geographic scope for water supply, wastewater collection and treatment, and stormwater drainage, as well as a list of existing, planned, proposed, approved, and reasonably foreseeable regional development projects in the project region, are included in **Section 4.2.1**. The Proposed Project, in combination with other development, would cumulatively increase the current demand for water supply, wastewater collection and treatment, and stormwater drainage. Water supply, wastewater collection and treatment, and stormwater drainage demand projections must be identified on a project-by-project basis.

Because the Guenoc Valley Site would be served by an independent system, it would not contribute to cumulative effects with other developments in the area as they would be served by separate systems. Therefore, cumulative effects associated with Phase 1 and Future Phases at the Guenoc Valley Site would be less than significant. However, development of the Middletown Housing Site when combined with other developments in the Middletown Service area and Callayomi Service area could result in the need for off-site infrastructure improvements. As discussed in **Section 3.14.1.1**, improvements to the MWWTP have been proposed including construction of a headworks, pond repair, installation of additional aeration capability, renovation of flow patterns, expansion of the disinfection system, and installation of additional monitoring and control systems. Potential future improvements to the Callayomi system include the replacement of the existing water distribution pipes and upgrades to existing fire hydrants (Lake LAFCO, 2013).

Additional improvements may be required as a result of cumulative effects associated with the Proposed Project and other regional development. Infrastructure improvements will be identified as needed, and fees paid by new development will contribute toward funding infrastructure improvements to meet growing regional demands. Any future infrastructure upgrades would be subject to CEQA review, including the implementation of mitigation to address any impacts resulting from the upgrades. The Middletown Housing Site's demand for domestic water supply and wastewater treatment would be comparatively small within the context of the Callayomi Service area and the Middletown Service area, respectively; therefore, the Proposed Project's contribution to cumulative water and wastewater impacts would be considered **less than significant** and no mitigation is required.

3.14.1.4 Wastewater System Mitigation Measures

None required.

3.14.2 SOLID WASTE

Following an overview of the environmental setting in **Section 3.14.2.1** and the relevant regulatory setting in **Section 3.14.2.2**, project-related impacts and recommended mitigation measures are presented in **Sections 3.14.2.3** and **3.13.2.4**, respectively.

3.14.2.1 Environmental Setting

Solid Waste Collection and Disposal

Solid waste generated in the in the areas of Lower Lake and Middletown is collected and hauled by the South Lake Refuse and Recycling and delivered to either the Eastlake Sanitary Landfill or the Quackenbush Mountain Compost Facility for processing and disposal (Lake County Integrated Waste Management, 2019).

The Eastlake Sanitary Landfill is located at 16016 Davis Avenue in Clearlake, approximately 13 miles north of the Proposed Project. The Eastlake Sanitary Landfill is a Class III mixed municipal solid waste landfill, and has an on-site recycling center. The Eastlake Sanitary Landfill is permitted to accept 200 tons of solid waste per day. The Eastlake Sanitary Landfill has a total capacity of 6,050,000 cubic yards (CalRecycle, 2019a). As of April 30, 2019, the Eastlake Sanitary Landfill had a remaining capacity of 502,000 cubic yards (SCS Engineers, 2019). Under existing conditions, the Eastlake Sanitary Landfill has an estimated remaining site life of 4.7 to 5.7 years. An expansion of the Eastlake Sanitary Landfill, which will add between 20 and 25 years to the landfill's life span, is in the design stage and is expected to be implemented by 2023 (Ewing, 2019). Recyclables captured at the Eastlake Sanitary Landfill include:

- metal - ferrous/metallic items;
- plastic - many grades;
- glass - all colors; and
- paper - newspaper, junk mail, phonebooks, magazines, scrap paper, paperboard and cardboard.

Compostable materials are delivered to the Quackenbush Mountain Compost Facility, formally named South Lake Resource Recovery and Compost. The facility includes a 17-acre mixed composting cell (agricultural, food wastes, green materials) with a permitted processing capacity of 260 tons per day, and a maximum capacity of 60,000 cubic yards. The facility also includes a 6.5-acre large volume construction and demolition materials cell with a processing capacity of 200 tons per day, and a maximum capacity of 24,000 cubic yards. Additionally, the facility is under review for a proposed large volume transfer and processing cell, which will redistribute excess construction and demolition materials, green materials, and wood waste (CalRecycle, 2019b).

3.14.2.2 Regulatory Setting

Federal

Resource Conservation and Recovery Act, Subtitle D

Title 40 of the Code of Federal Regulations (CFR), Part 258 (Resource Conservation and Recovery Act [RCRA]) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills. Federal requirements for disposal of biosolids are set forth in Title 40 CFR Part 503.

State

Department of Resources Recycling and Recovery

CalRecycle is the new home of California's recycling and waste reduction efforts. Officially known as the Department of Resources Recycling and Recovery, CalRecycle is a department within the California Natural Resources Agency and administers programs formerly managed by the State's Integrated Waste Management Board and Division of Recycling. CalRecycle is the State agency charged with the primary responsibility for permitting of solid waste facilities. CalRecycle operates through its designated Local Enforcement Agencies (LEAs), which typically are County Health Departments. Air pollution from solid waste facilities is regulated by local air pollution control districts or air quality management districts, while water pollution is regulated by both state and regional water quality control boards.

Integrated Waste Management Act

The California Integrated Waste Management Act, also known as Assembly Bill (AB) 939 (Public Resources Code Section 41780), was enacted in 1989 and contains regulations affecting solid waste disposal in California. AB 939 is designed to increase landfill life and conserve other resources through increased source reduction and recycling. AB 939 requires cities and counties to prepare Solid Waste Management Plans and adopt Source Reduction and Recycling Elements (SRRE) to implement AB 939's goals. These goals include diverting approximately 50 percent of solid waste from landfills and identifying programs to stimulate local recycling in manufacturing and the purchase of recycled products. The County's SRRE, which is part of the Lake County General Plan 2008, contains goals and policies for solid waste disposal.

The Legislature amended the California Integrated Waste Management Act in 2008 through Senate Bill (SB) 1016. Previously, the Act had required CalRecycle, at least once every two years, to review a jurisdiction's SRRE and household hazardous waste element. Under SB 1016, which repealed that requirement, CalRecycle instead was required to make a finding whether each jurisdiction was in compliance with AB 939's diversion requirements for calendar year 2006 and to determine compliance for the 2007 calendar year and later years based on the jurisdiction's change in its per capita disposal rate.

CalRecycle is also required to review a jurisdiction's compliance with those diversion requirements in accordance with a specified schedule, which would be conditioned upon the California Integrated Waste Management Board finding that the jurisdiction is in compliance with those requirements or has implemented its source reduction and recycling element and household hazardous waste element.
SB 1016 also requires CalRecycle to issue an order of compliance if it finds that the jurisdiction has failed to make a good faith effort to implement its source reduction and recycling element or its household

hazardous waste element pursuant to a specified procedure. CalRecycle is required to comply with certain requirements in making this determination, including considering the extent to which the jurisdiction has maintained its per capita disposal rate.

SB 1016 repeals this review schedule on January 1, 2018, and, after that date, requires CalRecycle to review each jurisdiction's source reduction and recycling element and household hazardous waste element at least once every 2 years.

Solid Waste Reuse and Recycling Access Act

Subsequent to the California Integrated Waste Management Act, additional legislation was passed to assist local jurisdictions in accomplishing the goals of AB 939. The California Solid Waste Reuse and Recycling Access Act (Public Resources Code, sections 42900-42911), enacted in 1991, requires jurisdictions to adopt ordinances that require development projects to provide adequate storage areas for collection and removal of recyclable materials.

Assembly Bill 341

AB 341, which was enacted in 2011, states that it is the policy goal of the state that not less than 75 percent of solid waste generated be reduced, recycled, or composted by the year 2020. The bill also requires that a business, defined to include a commercial or public entity that generates more than four cubic yards of commercial solid waste per week or is a multifamily residential dwelling of five units or more on and after July 1, 2012, arrange for recycling services. Jurisdictions, on and after July 1, 2012, are required to implement a commercial solid waste recycling program or revise their SRRE to meet this requirement. The County's SRRE includes this requirement and has a commercial solid waste recycling program in place.

Universal Waste Rule

Universal wastes are hazardous wastes that are widely produced by households and many different types of businesses. Universal wastes include televisions, computers and other electronic devices as well as batteries, fluorescent lamps, mercury thermostats, and other mercury containing equipment, among others. The hazardous waste regulations (California Code of Regulations [CCR], Title 22, Section 66261.9) identify seven categories of hazardous wastes that can be managed as universal wastes. Any unwanted item that falls within one of these waste streams can be handled, transported, and recycled following the simple requirements set forth in the universal waste regulations (CCR, Title 22, Division 4.5, Chapter 23).

California Green Building Standards Code

The California Green Building Standards Code (CalGreen Code) requires that at least 50 percent of weight of non-hazardous job site debris generated by new construction be recycled, reused, or otherwise diverted from landfill disposal. CalGreen Code requires submission of plans and verifiable post-project documentation to demonstrate compliance.

AB 32 - California Global Warming Solutions Act - Mandatory Commercial Recycling

The Mandatory Commercial Recycling measure, which is part of AB 32, focuses on increased commercial waste diversion as a method to reduce greenhouse gas emissions. The Mandatory Commercial Recycling

measure is designed to achieve a reduction in greenhouse gas emissions of five million metric tons of carbon dioxide equivalents.

The Mandatory Commercial Recycling regulation, adopted in 2012, establishes a statewide mandatory commercial recycling program which requires that business and multifamily residential dwellings (of five units or more) that generate four cubic yards or more of commercial solid waste per week to arrange for recycling services. In order to achieve the commercial recycling goal, an additional two million to three million tons of materials will need to be recycled from the commercial sector by 2020, according to CalRecycle (CalRecycle, 2019c).

Local

Lake County Public Services Department

The Integrated Waste Management Division of the Lake County Public Services Department has been certified by CalRecycle as the LEA to enforce state solid waste statutes and regulations within Lake County. The LEA's primary functions are permitting, inspection and enforcement at solid waste operations and facilities such as landfills/disposal sites (active and closed), including sites for disposal of construction/demolition debris and inert materials; transfer stations; and composting facilities. Additionally, the LEA oversees and organizes many recycling and waste reduction programs for Lake County residents, including a Household Hazardous Waste program.

Lake County Code of Ordinances

Chapter 9, Article II of the Lake County Code of Ordinances includes provisions regarding garbage and refuse, including proper disposal, hauling, and storage of solid waste, acceptable solid waste items for municipal management, solid waste facility hours, and more.

Lake County General Plan

The General Plan, Public Facilities and Services Element addresses solid waste services for the County. Applicable general plan policies related to the Proposed Project are listed below. **Appendix GPCT** analyzes the Proposed Project's consistency with the General Plan pursuant to the CEQA Guidelines Section 15125(d).

- Policy PFS-5.1: The County shall promote the maximum feasible use of solid waste reduction, recycling, and composting of wastes, strive to reduce commercial and industrial waste on an annual basis, and pursue a financing mechanism for solid waste reduction programs in order to meet the requirements of Public Resources Code 41780 and 41780.1.
- Policy PFS-5.2: Concurrent with the approval of new development, the County shall require evidence that capacity exists within the solid waste system for the processing, recycling, transmission, and disposal of solid waste.
- Policy PFS-5.3: The County shall ensure that all new facilities have the necessary provisions for solid waste storage, handling, and collection prior to issuing building permits.
- Policy PFS-5.4: The County shall require the proper disposal and recycling of hazardous materials and should investigate hazardous waste disposal needs for anticipated geothermal and agricultural toxic wastes.

- Policy PFS-5.5: The County shall use recycled materials and products where economically feasible.
- Policy PFS-5.6: Solid waste facility sites shall be protected from the encroachment of sensitive and/or incompatible land uses. Abandoned solid waste facilities should be converted to open space use.

3.14.2.3 Impacts

Method of Analysis

The analysis of solid waste impacts is based upon consultation with County staff, publically available documents including landfill operation permits, and review of other relevant documents.

Thresholds of Significance

Criteria for determining the significance of impacts associated with utilities were developed based on Appendix G of the CEQA Guidelines. The Proposed Project would result in a significant impact to solid waste services if it would:

- generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or
- fail to comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Impacts

IMPACT 3.14-5	**GENERATE SOLID WASTE IN EXCESS OF STATE OR LOCAL STANDARDS, OR IN EXCESS OF THE CAPACITY OF LOCAL INFRASTRUCTURE, OR OTHERWISE IMPAIR THE ATTAINMENT OF SOLID WASTE REDUCTION GOALS**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

Guenoc Valley Site Phase 1 and Off-Site Workforce Housing – Project Level Analysis

Construction

Construction of Phase 1 of the Proposed Project would result in a temporary increase in waste generation. Potential solid waste streams from construction are expected to include paper, wood, glass, aluminum and

plastics from packing materials; waste lumber; insulation; empty non-hazardous chemical containers; concrete; metal, including steel from welding/cutting operations; and electrical wiring.

As indicated above, the project will comply with CalGreen Code, which requires construction or demolition projects to demonstrate that at least 50 percent of the construction and demolition non-hazardous debris generated on the job site are reused, recycled, or otherwise diverted. The project applicant or their contractor will prepare a Construction Waste Management Plan (required by the County prior to issuance of a building permit for the project), describing anticipated construction and demolition waste and how the 50 percent diversion rate would be met. This plan will be submitted to the County of Lake Community Development Department for review. Therefore, the project would result in a **less-than-significant** impact related to generation of construction debris.

Operation

During operation, solid wastes would be generated by residences, restaurants, retail, and resort and hotel establishments. CalRecycle publishes both residential and business disposal rates. As illustrated in **Table 3.14-2**, solid waste generation from the operation of the various components of the Proposed Project is estimated to be approximately 3.7 tons per day. As described in **Section 2.5.2**, the Proposed Project would implement on-site reduction of solid waste through recycling and composting. Separate refuse collection bins for recyclable waste, compostable waste, and standard waste would be provided. All organic materials would be composted onsite in compliance with CA Air Resources Board, CA State Water Resources Control Board, and CALRecycle composting regulations. An Aerated Static Pile composting system is proposed and would be maintained by a specified compost manager. Solid waste requiring disposal would be collected and hauled by the South Lake Refuse and Recycling and delivered to the Eastlake Sanitary Landfill for processing and disposal. (Lake County Integrated Waste Management, 2019).

The Eastlake Sanitary Landfill had 502,000 cubic yards of remaining permitted capacity as of April of 2019. Under existing conditions, the Eastlake Sanitary Landfill has an estimated remaining site life of 4.7 to 5.7 years (SCS Engineers, 2019). The landfill is permitted to accept 200 tons of solid waste per day. The incremental addition of approximately 3.7 tons per day (1,350.5 tons per year) is within the capacity of this facility. The additional waste quantities generated by operation of the project would not exceed landfill capacity. An expansion of the Eastlake Sanitary Landfill, which will add between 20 and 25 years to the landfill's life span, is in the design stage and is expected to be implemented by 2023 (Ewing, 2019). Therefore, the project would result in a **less-than-significant** impact related to generation of operational solid waste.

TABLE 3.14-2
PHASE 1: SOLID WASTE GENERATION

Unit Type	Phase 1	Phase 1 Estimated Solid Waste [1]
Residential		
Dwelling Units [2]	486 units [3]	5,944 pounds/day
Commercial and Retail		
Restaurant [4]	143,211 square feet	716 pounds/day
Retail [5]	23,551 square feet	118 pounds/day
Resort and Hotel [6]	338 units	676 pounds/day
		Total: 7,454 pounds/day = 3.7 tons/day = 1,350.5 tons/year

Notes: 1 – Solid waste estimations are rounded to the nearest pound; 2 - Residential solid waste generation based on a factor of 12.23 pounds per household per day; 3 – Includes 401 residential estate units villas, 35 on-site workforce housing units, and 50 off-site workforce housing units; 4 – Restaurant solid waste generation based on a factor of 5 pounds per 1,000 square feet per day; 5 - Commercial solid waste generation based on a factor of 5 pounds per 1,000 square feet per day; 6 – Resort and hotel solid waste generation based on a factor of 2 pounds per unit per day
Sources: **Table 2-4**; **Table 3.12-4**; **Section 2.5.2**; CalRecycle, 2019d; Maha, 2019

Future Phases – Programmatic Analysis

As described in **Section 2.5.3** and **Table 3.14-3**, future phases could include the development of up to roughly 200 hotel units, 300 resort residential units, 1000 residential estate villas, and 400 workforce co-housing bedroom units, which would produce an estimated 7.8 tons per day of solid waste. It is anticipated that future phases of the Proposed Project would manage solid waste in a similar manner to Phase 1, including the implementation on-site reduction of solid waste through recycling and composting and providing separate refuse collection bins for recyclable waste, compostable waste, and standard waste. Solid waste requiring disposal would be collected and hauled by the South Lake Refuse and Recycling and delivered to the Eastlake Sanitary Landfill for processing and disposal. (Lake County Integrated Waste Management, 2019).

The Eastlake Sanitary Landfill had 502,000 cubic yards of remaining permitted capacity as of April of 2019. Under existing conditions, the Eastlake Sanitary Landfill has an estimated remaining site life of 4.7 to 5.7 years (SCS Engineers, 2019). The landfill is permitted to accept 200 tons of solid waste per day. The incremental addition of approximately 3.7 tons per day (1,350.5 tons per year) is within the capacity of this facility. The additional waste quantities generated by operation of the project would not exceed landfill capacity. An expansion of the Eastlake Sanitary Landfill, which will add between 20 and 25 years to the landfill's life span, is in the design stage and is expected to be implemented by 2023 (Ewing, 2019). Therefore, the project would result in a **less-than-significant** impact related to generation of operational solid waste.

As future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals. For this reason, the impact on solid waste from future phases would be considered **less than significant**.

TABLE 3.14-3
FUTURE PHASES: SOLID WASTE GENERATION

Unit Type	Future Phases	Future Phases Estimated Solid Waste [1]
Residential		
Dwelling Units [2]	1200 units [3]	14,676 pounds/day
Commercial and Retail		
Resort and Hotel [4]	500 units [5]	1000 pounds/day
		Total: 15,676 pounds/day = 7.8 tons/day = 2,860.9 tons/year

Notes: 1 – Solid waste estimations are rounded to the nearest pound; 2 – Residential solid waste generation based on a factor of 12.23 pounds per household per day; 3 – Includes up to 1000 residential estate units villas and 400 workforce co-housing bedroom units. Solid waste generation is estimated using household counts instead of bedroom units. Therefore, for the purpose of this analysis, it has been conservatively assumed that two workforce co-housing bedroom units would comprise one household; 4 – Resort and hotel solid waste generation based on a factor of 2 pounds per unit per day; 5 – Includes up to 200 hotel units and 300 resort residential units.
Sources: **Section 2.5.3**; CalRecycle, 2019d; Maha, 2019

IMPACT 3.14-6	**COMPLY WITH FEDERAL, STATE, AND LOCAL MANAGEMENT AND REDUCTION STATUTES AND REGULATIONS RELATED TO SOLID WASTE**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

Guenoc Valley Site Phase 1 and Off-Site Workforce Housing – Project Level Analysis

Construction

Phase 1 of the Proposed Project will comply with CalGreen Code, which requires construction or demolition projects to demonstrate that at least 50 percent of the construction and demolition non-hazardous debris generated on the job site are reused, recycled, or otherwise diverted. The project applicant or their contractor will prepare a Construction Waste Management Plan (required by the County prior to issuance of a building permit for the project), describing anticipated construction and demolition waste and how the 50 percent diversion rate would be met. This plan will be submitted to the County of Lake Community Development Department for review. Upon completion of project construction, a Debris Recovery Report must be submitted to indicate the actual debris that was generated from the project and its ultimate destination. Therefore, the project would result in a **less-than-significant impact** related to compliance with solid waste regulations.

Operation

During operation, Phase 1 of the Proposed Project would comply with local solid waste ordinances, and State standards for reducing solid waste. Because State and local laws and regulations are more stringent than Federal standards, State and local laws are the primary driver for the reduction in solid waste.

Specifically, the Proposed Project would be required to comply with the laws and regulations that aim to divert waste from landfills, including, but not limited to, AB 939, SB 1016, the County's Green Building Code, and the regulations set forth by the Lake County Solid Waste Management District, which all require reductions in waste. As described in **Section 2.5.2**, the Proposed Project would implement on-site reduction of solid waste through recycling and composting. Separate refuse collection bins for recyclable waste, compostable waste, and standard waste would be provided. All organic materials would be composted onsite in compliance with CA Air Resources Board, CA State Water Resources Control Board, and CALRecycle composting regulations. An Aerated Static Pile composting system is proposed and would be maintained by a specified compost manager. Additionally, the Proposed Project will be subject to the County's SRRE, which is part of the Lake County General Plan. This represents a **less-than-significant impact** regarding compliance with solid waste laws and regulations.

Future Phases – Programmatic Analysis

During construction and operation, future phases of the Proposed Project would comply with local solid waste ordinances, and State standards for reducing solid waste, as specified above. Recycling and composting facilities and programs included in Phase 1 would be extended to future phases. This represents a **less-than-significant impact** regarding compliance with solid waste laws and regulations.

IMPACT 3.14-7	**CUMULATIVE SOLID WASTE IMPACTS**		
	Guenoc Valley Site		**Other Phase 1 Areas**
	Phase 1	**Future Phases**	**Off-Site Workforce Housing**
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

The cumulative geographic scope for solid waste, as well as a list of existing, planned, proposed, approved, and reasonably foreseeable regional development projects in the project region, are included in **Section 4.2.1**. The Proposed Project would be required to comply with the laws and regulations that aim to divert waste from landfills, including, but not limited to, AB 939, SB 1016, the County's Green Building Code, and the regulations set forth by the Lake County Solid Waste Management District, which all require reductions in waste. Based on the 50 percent diversion reduction required by these policies, the projected solid waste generated by Phase 1 of the Proposed Project would be reduced to approximately 675 tons per year, and

solid waste generated by future phases would be reduced to approximately 1,430 tons per year, for a combined total of 2,105 tons per year at buildout of the Proposed Project. This additional solid waste may require additional collection personnel and equipment for solid waste to effectively be delivered and processed at the Eastlake Sanitary Landfill due to the increased generation of solid waste associated with the Proposed Project and cumulative projects. In addition, fees paid by new development go toward funding infrastructure improvements for solid waste services to meet growing regional demands. Under existing conditions, the Eastlake Sanitary Landfill has an estimated remaining site life of 4.7 to 5.7 years (SCS Engineers, 2019). An expansion of the Eastlake Sanitary Landfill, which will add between 20 and 25 years to the landfill's life span, is in the design stage and is expected to be implemented by 2023 (Ewing, 2019). Given legally required diversion rates, payment of fees, and the available landfill capacity, cumulative impacts associated with solid waste disposal are considered **less than significant** and no mitigation is required.

3.14.2.4 Solid Waste Mitigation Measures

None required.

3.14.3 ELECTRICAL, GAS, AND TELECOMMUNICATION UTILITIES

Following an overview of the environmental setting in **Section 3.14.3.1** and the relevant regulatory setting in **Section 3.14.3.2**, project-related impacts and recommended mitigation measures are presented in **Sections 3.14.3.3** and **3.14.3.4**, respectively.

3.14.3.1 Environmental Setting

Electricity Supply

Transmission

Guenoc Valley Site

Electricity is currently provided to the Guenoc Valley Site by Pacific Gas and Electric (PG&E) from its substation in Middletown. There are two PG&E distribution circuits that provide overhead electricity to eleven (11) existing service points within the Guenoc Valley Site (**Appendix ELEC**). The existing electrical infrastructure located at the Guenoc Valley Site consists of service points, easements, distribution circuits, meters, poles and related infrastructure owned and operated by PG&E. The existing service points include agricultural wells, pump stations and commercial structures served via overhead power lines that run through the Guenoc Valley Site. Power density is residential and low density rural residential (**Appendix ELEC**).

The existing circuits that serve the Guenoc Valley Site are presented in Table 2 of **Appendix ELEC**. Overhead 12 KV transmission lines currently supply existing loads through the area extending east from Butts Canyon Road through an existing power line easement. The power line easements are for existing agricultural and commercial loads and will be modified as part of the phased tentative maps.

Circuit 1102 enters the Guenoc Valley Site from the north and Circuit 1103 enters the Guenoc Valley Site from the west along Butts Canyon Road. Both circuits appear to merge at the north entry point enabling the

circuits to back each other up via emergency switching procedures by PG&E. The existing circuits currently serve a mix of customers, including residential, commercial, industrial, agricultural, and other customers. Circuit 1102 serves a total of 2,345 customers and Circuit 1103 serves a total of 158 customers (**Appendix ELEC**). Circuit 1102 has a power density of approximately 900 kVA (kilo Volts Amperes) per square mile with existing energy use on the circuit estimated to be 30,000 MWh/yr based on average annual energy demand of 1 kilowatt for each residence and 5.5 kilowatt for other customer service in the area. Circuit 1103 has a power density of 11 kVA (kilo Volts Amperes) per square mile with existing energy use on the circuit estimated to be 266 MWh/year (megawatt hour per year) based on an average annual energy demand throughout the year of 30 kilowatt. The existing electrical infrastructure is all overhead.

Middletown Housing Site

There is an existing overhead electrical line along the eastern boundary of the Middletown Housing Site, and an associated PG&E easement located along Santa Clara Road.

Substations

The closest substation is located in Middletown, west of the Guenoc Valley Site, and is owned by PG&E. The Middletown substation serves the cities of Middletown, Hidden Valley Lake, and Cobb (PGE, 2019).

Gas Service

There are no natural gas pipelines in Lake County

*Telecommunication Service*s

Telecommunication services are currently provided to the existing ranch homes and offices on the Guenoc Valley Site via AT&T.

No telecommunication services currently exist on the Middletown Housing Site. In Middletown, broadband service is provided by AT&T. This includes residential and commercial communication facilities consisting of telephone, cable television, and internet. Both networks are composed of copper and fiber-optic cable.

3.14.3.2 Regulatory Setting

Federal

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC), founded in 1977, regulates the interstate transmission and wholesale sale of natural gas, oil and electricity. FERC also reviews proposals to build interstate natural gas pipelines, natural gas storage projects, and liquefied natural gas terminals, in addition to licensing non-federal hydropower projects. Under the Energy Policy Act of 2005, FERC obtained the authority to mandate reliability standards on the users, owners and operators of the bulk power system, including municipal utilities, and rural electric cooperatives, and impose penalties for noncompliance; FERC's jurisdiction is expressly delineated in terms of the bulk power system, and expressly excludes facilities used in local distribution.

California Independent System Operator

The California Independent System Operator (CAISO) is a non-profit Independent System Operator (ISO) serving California. It oversees the operation of California's bulk electric power system, transmission lines, and electricity market generated and transmitted by its member utilities.

The California legislature created the CAISO in 1998 as part of the state restructuring of electricity markets. The legislature was responding to FERC recommendations following the passage of the federal Energy Policy Act of 1992, which removed barriers to competition in the wholesale generation of electricity business. FERC regulates CAISO.

State

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates the state's privately owned electric, natural gas, telecommunications, water, and transportation companies (collectively, "investor-owned utilities", or IOUs). CPUC responsibilities include the adoption of utility rate changes, rules on safety and service standards, implementation of conservation programs, and more.

Energy Efficiency Strategic Plan

In September of 2008, the CPUC adopted the Energy Efficiency Strategic Plan, presenting a single roadmap to achieve maximum energy savings across all major groups and sectors in California. This comprehensive plan for 2009 to 2020 is the state's first integrated framework of goals and strategies for saving energy, covering government, utility, and private sector actions, and holds energy efficiency to its role as the highest priority resource in meeting California's energy needs.

Microgrids Legislation

In September of 2019, California enacted a law, SB 1339, that requires the CPUC, in consultation with the California Energy Commission (CEC) and CAISO, to undertake a number of activities to develop policies related to microgrids, including the development of regulations, standards, and guidelines to facilitate the commercialization of microgrids for customers of large electric utilities. The legislation added Chapter 4.5, Sections 8370-8372 to California's Public Utilities Code. On September 19, 2019, the CPUC initiated a Microgrids Rulemaking to implement SB 1339.

California Energy Commission

The California Energy Commission, established in 1974, is the state's primary energy policy and planning agency. Some of the California Energy Commission's prominent responsibilities include adopting, implementing and updating California's "Building Energy Efficiency Standards" requirements.

Building Energy Efficiency Standards

California's Building Energy Efficiency Standards, also referred to as the California Energy Code (California Code of Regulations, Title 24), provide regulations for the new construction of, and additions and alterations to, residential and nonresidential buildings to conserve energy. These standards are updated every three years to consider and incorporate new energy efficiency technologies and methods. Local city and county

enforcement agencies have the authority to verify compliance with applicable building codes, including energy efficiency.

California Green Buildings Standards Code

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24, CCR), known as CalGreen Code. The 2010 edition of the code established voluntary standards on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air quality. The mandatory provisions of the code became effective January 1, 2011. CalGreen Code refers to the mandatory Building and Energy Efficiency Standards described above, and also includes voluntary Tier 1 and Tier 2 programs for cities and counties that wish to adopt more stringent Green Building requirements.

Public Utility Districts

The Public Utility District Act, found in California Public Utilities Code § 15501 *et seq.*, allows residents of an unincorporated area to form a public utility district (PUD) with the powers to establish, purchase, and operate public works to furnish its inhabitants with power and other utility services. Unlike IOUs, PUDs (also referred to as "public-owned utilities," or POUs) are not regulated by the CPUC. PUDs are organized in many different forms and are not subject to the same energy efficiency mandates as the IOUs. PUDs are non-profit public entities managed by locally elected officials/ public employees. They are subject to local public control and regulation. The initial set up of the PUD is accomplished through a petition process with the County's Board of Supervisors.

A PUD has a wide range of powers, including the provision of electric or other utility services, the construction of utility systems, and issuing bonds. The voters in a PUD can petition the PUD board to acquire utility works or a utility. PUDs may take by eminent domain any property necessary or convenient to the exercise its powers. Pursuant to Public Utilities Code Section 1402 et seq*.,* a PUD must petition the CPUC to determine the value of any PG&E property it seeks to acquire.

Electric Tariff Rule 21

The CPUC's Electric Rule 21 is a tariff that describes the interconnection, operating and metering requirements for generation facilities to be connected to an IOU's distribution system. The tariff provides customers wishing to install generating or storage facilities on their premises with access to the electric grid while protecting the safety and reliability of the distribution and transmission systems at the local and system levels. PG&E is responsible for administration of Rule 21 in its service territory and maintains its own version of the rule.

Rule 21 governs CPUC-jurisdictional interconnections, which include the interconnection of all net energy metering (NEM) facilities, "Non-Export" facilities, and qualifying facilities intending to sell power at avoided cost to the host utility. Rule 21 does not apply to the interconnection of generating or storage facilities intending to participate in wholesale markets overseen by FERC. These facilities must typically apply for interconnection under the FERC-jurisdictional "Wholesale Distribution Access Tariff" (when connecting to

the distribution system) or the "California Independent System Operator (CAISO) Tariff" (when connecting to the transmission system).

On June 23, 2016, the CPUC created a 25% cost envelope framework on cost estimations provided by PG&E for transmission and distribution upgrades related to new interconnections to the grid and required PG&E post a Cost Guide for the various transmission and distribution upgrades.

On July 13, 2017, the Commission issued an Order Instituting Rulemaking to Consider Streamlining Interconnection of Distributed Energy Resources and Improvements to Rule 21.

PG&E Gas Rules

PG&E's Gas Rules 15 and 16 provide policies and procedures for the extension of gas services and distribution mains necessary to furnish permanent services to customers. It outlines responsibilities for installation and extension of gas lines, as well as financial contributions by project applicants.

Local

Lake County General Plan

The General Plan, Public Facilities and Services Element addresses electricity, natural gas, and telecommunications for the County. Applicable general plan policies related to the Proposed Project are listed below. **Appendix GPCT** analyzes the Proposed Project's consistency with the General Plan pursuant to the CEQA Guidelines Section 15125(d).

- Policy PFS-6.1: The County shall coordinate with electricity providers in planning for the timely expansion of electrical facilities to meet future demand, and for projects affecting public health, schools, or for significant air emissions reductions.
- Policy PFS-6.2: The County shall coordinate with electricity providers to locate transmission systems that minimize environmental and other impacts.
- Policy PFS-6.3: The County shall require utility lines in new subdivisions to be placed underground, except where it is not feasible due to operational constraints.
- Policy PFS-6.5: The County shall coordinate with public utility providers to reserve adequate rights-of-way to facilitate expansion of services in a timely manner.
- Policy PFS-6.6: Extension of public facilities shall be designed to minimize or avoid potential adverse impacts to the watersheds within the County.

The County also has several programs that address energy conservation. Refer to **Section 3.16**, **Energy**, for a full description of the County's energy conservations plans, policies and programs.

3.14.3.3 Impacts

Method of Analysis

Evaluation of potential impacts on electrical, propane, and telecommunication services resulting from the Proposed Project was based on consultation with the service providers and County staff, review of California Energy Commission policies, State standards, and review of objectives, goals, and policies

identified in the Lake County General Plan. Axiom Engineers and Estriatus Law (2019) prepared an Electrical System Feasibility Report (included as **Appendix ELEC**) to analyze and estimate electrical power generation, demand and infrastructure options for the Proposed Project. The analysis focused on the methods of developing and providing electrical infrastructure, generation and resiliency to the Guenoc Valley Site and the Middletown Housing Site.

Four options to meet the electrical distribution requirements for Phase 1 of the Proposed Project are being considered. These options include various combinations of ownership, operation, and maintenance responsibility by the Applicant and PG&E, and describe that the Proposed Project may involve the development of a privately owned solar, storage and micogrids and a PUD to serve the Guenoc Valley Site. These options are described in detail in **Section 2.5.2.7** of the EIR and Section 3.1.2 of **Appendix ELEC**. Any electrical distribution, transmission and supply service from PG&E, a privately owned alternative energy project, or PUD may require improvements and upgrades to existing overhead lines and the addition of new overhead lines, utility panels, voltage switches, metering facilities and/or a transformer and line-up of switchgear and associated overhead and underground utility infrastructure. These improvements would involve extending new or upgrades lines along existing overhead utility poles, and within existing or newly created utility easements. The below impact analysis is focused solely on the environmental impacts of the electrical, propane, and telecommunications systems of the Proposed Project.

Thresholds of Significance

Criteria for determining the significance of impacts associated with utilities were developed based on Appendix G of the CEQA Guidelines. The Proposed Project would result in a significant impact to electrical, gas, and telecommunications utilities if it would:

- require or result in the relocation or construction of new or expanded electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effect.

Impacts

IMPACT 3.14-8	REQUIRE OR RESULT IN THE RELOCATION OR CONSTRUCTION OF NEW OR EXPANDED ELECTRIC POWER, NATURAL GAS, OR TELECOMMUNICATIONS FACILITIES, THE CONSTRUCTION OR RELOCATION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL EFFECT			
	Guenoc Valley Site		**Other Phase 1 Areas**	
	Phase 1	**Off-Site Infrastructure Improvements**	**Future Phases**	**Off-Site Workforce Housing**
Significance Before Mitigation	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Mitigation Measures	None Required	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A	N/A

Electric Power

Guenoc Valley Site Phase 1 – Project Level Analysis

As described previously, the Guenoc Valley Site is currently served by electricity systems that exist within and adjacent to the site. The development and implementation of the Proposed Project would increase the demand for electrical services.

As shown in **Table 3.14-4**, the increased demand for electrical service in Phase 1 is estimated to be approximately 4.8 MW peak demand, including infrastructure. Some on-site and off-site improvements to the existing electrical infrastructure at the Project might be required. Currently, the existing electrical infrastructure at the Project can accommodate up to 12.19 MW of circuit capacity and 19.73 MW of transformer capacity. These circuit and transformer capacities limit the amount of alternative energy that the existing electrical infrastructure can accommodate. Phase 1 of the Proposed Project will reuse portions of the existing overhead utility services and provide new services throughout the Guenoc Valley Site, as required. The electrical infrastructure at the Guenoc Valley Site will change from all overhead distribution service to a mix of overhead and underground service where required in subdivisions and where necessary to maintain the aesthetic and fire prevention goals of the Proposed Project. Approximately 18 miles of existing PG&E 12 KV circuit will either be removed, reused, or relocated. **Figure 2-14 and Figure 2-15** illustrate the existing on-site electric facilities as well as the proposed 12KV underground backbone configuration for the four electrical distribution options described in **Section 2.5.2.7**. The Proposed Project includes the installation of approximately 32 miles of new joint trench and underground electrical infrastructure in the proposed subdivisions to the extent feasible. Almost all of the Proposed Project's electrical utility routing will be installed with underground joint trench alongside communications, and in

some areas above ground routing may be utilized if aesthetically viable and not adjacent to flammable vegetation. All infrastructure is proposed within existing road corridors and the improvements will occur within the Guenoc Valley Site. The location of the proposed electric substations and the alignments of the 12kV power line easements will coincide with plan elements.

TABLE 3.14-4
PROPOSED PROJECT POWER DENSITY AND USAGE

Development Phase	Power Density (kVA/Sq mile)	Annual Consumption (MWh)	Peak Demand (MW)
Existing	11	266	0.4
Proposed Phase 1	114	25,824	3.7
Proposed Phase 1 Infrastructure	144	4,735	1.1
Proposed Future Phases	269	28,462	4.5
Proposed Phase 1 and Future Phases	269	59,021	9.7
Source: Axiom Engineers and Estriatus Law, 2019 (**Appendix ELEC**)			

As required by the California Energy Code, the Proposed Project will include either the installation of photovoltaic (PV) solar for every residential structure's needs either on the rooftops or through ground-mounted community solar systems. The installation of energy storage devices, with a range of battery types is being considered, at every location where PV solar is installed. The Proposed Project may request all solar to be installed at one or two central locations in lieu of individual solar electrical panels.

For all or certain commercial structures at the Project, solar plus storage micro-grids would be constructed. New meters and distribution lines would be connected to each of the 12 commercial facilities at the Proposed Project and to each of the 57 other resort accessory features consisting of water wells, waste water treatment plants, cell towers and IT features. All commercial facilities served by the privately owned micro-grids would be serviced through traditional solar Power Purchase Agreements or a PUD. The on-site micro-grid system(s) could function independent of PG&E, and could also still utilize PG&E as backup, energy storage, emergency services, and/or any other grid-tied services.

In order to accommodate increased circuit and transformer capacities, both on-site and off-site infrastructure improvements could be required, as follows: i) a new Trip Transfer Scheme would be required to enable PG&E to remotely turn off power flow from the Project to the utility for the purpose of ensuring safe working conditions for PG&E employees and contractors working on their equipment; (ii) transformer upgrades could be required; and (iii) potential switchboard improvements could be required to accommodate the increased capacity. The potential off-site improvements could include infrastructure improvements, as follows: (i) a potential replacement of the existing PG&E transformer located at PG&E's facility in Middletown to make it larger so that it can accommodate the increased capacity as a result of the Project; and (ii) a potential replacement of the existing overhead lines with new lines that can accommodate the increased capacity. The existing overhead service that could be upgraded runs along Butts Canyon Road and within easements adjacent to the road.

Any distribution options that include virtual net metering and net energy metering as part of the electrical infrastructure design will require new service requests for NEM and/or RES-BCT developments and on-site wire and control upgrades to the applicable areas of the Project's development area. The Applicant will be required to work through the PG&E interconnection process to increase capacity to the grid, including the on-site and off-site improvements described above, as applicable, if the alternative energy design requires any of the above on-site or off-site improvements to the existing electrical infrastructure.

Potential environmental impacts resulting from the installation of on-site solar and electrical distribution features have been analyzed in this EIR as part of the Proposed Project. These effects include impacts to biological resources and habitats, as well as temporary water quality, air quality, and noise impacts from construction activities. As discussed in the respective EIR chapters, potentially significant impacts related to these issue areas resulting from the Proposed Project would be reduced to less than significant levels within the implementation of mitigation. The environmental effects from construction of on-site solar, EV charging stations, and electrical distribution features under Phase 1 would be **less-than-significant**.

Off-Site Infrastructure Improvements – Project Level Analysis

Dependent on the electrical distribution option chosen (as described in **Section 2.5.2.7**), the potential off-site improvements could include infrastructure improvements including the replacement of the existing PG&E transformer located at PG&E's facility in Middletown to make it larger so that it can accommodate the increased capacity as a result of the Project; and the replacement of the existing overhead lines with new lines that can accommodate the increased capacity resulting from the Proposed Project. The existing overhead service that could be upgraded runs along Butts Canyon Road and within easements adjacent to the road. Any distribution options that include virtual net metering and net energy metering as part of the electrical infrastructure design will require new service requests and on-site wire and control upgrades to the applicable areas of the Proposed Project's development area as further described in **Appendix ELEC**. The Developer will be required to work through the PG&E interconnection process to increase capacity to the grid, including the off-site improvements described herein, if the chosen distribution option requires any of the described off-site improvements to the existing electrical infrastructure. Funding for continued electrical service is collected through company billings and developer fees, which fund service extension and infrastructure. As described above and in **Section 2.5.2.7**, potential off-site improvements would be limited to above-ground infrastructure and thus would not result in ground disturbance. Furthermore, the majority of improvements will be located within existing utility easements or co-located in areas of other existing and planned improvements (**Appendix ELEC**). Therefore, off-site infrastructure improvements would result in a **less-than-significant impact**, and no mitigation would be required.

Off-Site Workforce Housing – Project Level Analysis

Electricity for the Off-Site Workforce Housing would be obtained from PG&E. There is an existing overhead electrical line within Santa Clara Road, bordering the eastern project boundary of the Middletown Housing Site. However, Phase 1 of the Proposed Project would involve undergrounding the existing on-site line and constructing a distribution network throughout the Middletown Housing Site to provide electricity to the proposed housing units. On-Site electrical lines would be located within the public right-of-way (ROW) wherever feasible to allow for access and maintenance of facilities unless otherwise approved. Dedicated utility easements would provide access to County personnel, fire trucks, and equipment for maintenance, repair, and servicing of utility infrastructure.

The described electricity improvements would be constructed in areas of other existing and planned improvements where possible, including undergrounding the existing overhead electric line along Santa Clara Road during the infrastructure improvements for water and gas connections to avoid additional environmental impacts onsite. Funding for continued electrical service is collected through PG&E company billings and developer fees by PG&E, which fund service extension and infrastructure.

Potential environmental effects that could occur as result of constructing the electrical infrastructure at the Middletown Housing Site have been analyzed in this EIR as part of the Proposed Project. These effects include impacts to biological resources and habitats, as well as temporary water quality, air quality, and noise impacts from construction activities. As discussed in the respective EIR chapters, potentially significant impacts related to these issue areas resulting from the Proposed Project would be reduced to less than significant levels within the implementation of mitigation. The environmental effects from construction of electrical infrastructure under Phase 1 would be **less-than-significant**.

Future Phases – Programmatic Analysis

As the Future Phases of the Proposed Project are developed, the electrical infrastructure implemented in Phase 1 will be built upon with the goal of maintaining the Proposed Project's goals of reliability, clean power and resiliency. Development in future phases includes the potential for additional PV solar, energy storage, EV charging stations, and other energy generation technology to support the distribution option selected in Phase 1 and Future Phases. Infrastructure distribution systems to be built in Phase 1 of the Proposed Project will be designed to support future phases. As future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals. For this reason, the environmental impact of electrical systems from future phases would be considered **less than significant**.

Propane

Guenoc Valley Site Phase 1 – Project Level Analysis

As described previously, the Guenoc Valley Site is not currently served by propane or natural gas systems. Development of the Proposed Project would increase the demand for gas service. As described in **Section 3.14.3.1**, PG&E has no existing natural gas facilities in the region, so on-site storage and distribution of propane is planned. Commercial facilities would have centralized facilities and individual neighborhoods will either have central facilities with distribution in the connecting streets or each residence would be provided with a propane storage tank. Page 142 of **Appendix SPOD** illustrates the distribution of the proposed propane additions; no other off-site improvements are anticipated to be required. Funding for gas service is collected through company billings and developer fees, which fund service extension and infrastructure.

Potential environmental impacts resulting from the installation of on-site propane storage facilities have been analyzed in this EIR as part of the Proposed Project. These effects include impacts to biological resources and habitats, as well as temporary water quality, air quality, and noise impacts from construction activities. As discussed in the respective EIR chapters, potentially significant impacts related to these issue areas resulting from the Proposed Project would be reduced to less than significant levels within the implementation of mitigation. The environmental effects from construction of on-site propane storage facilities under Phase 1 would be **less-than-significant**.

Off-Site Workforce Housing – Project Level Analysis

As described previously, the Middletown Housing Site is not currently served by propane or natural gas systems. Development of the Proposed Project would increase the demand for gas service. As described in **Section 3.14.3.1**, PG&E has no existing natural gas facilities adjacent to the Middletown Housing Site, so on-site storage and distribution of propane is planned. The neighborhood will have a central facility with propane gas lines would be located within the public ROW wherever feasible to allow for access and maintenance of facilities unless otherwise approved. Dedicated utility easements would provide access to County personnel, fire trucks, and equipment for maintenance, repair, and servicing of utility infrastructure. No other off-site improvements are anticipated to be required. Funding for gas service is collected through company billings and developer fees, which fund service extension and infrastructure.

Potential environmental impacts resulting from the installation of on-site propane storage facilities have been analyzed in this EIR as part of the Proposed Project. These effects include impacts to biological resources and habitats, as well as temporary water quality, air quality, and noise impacts from construction activities. As discussed in the respective EIR chapters, potentially significant impacts related to these issue areas resulting from the Proposed Project would be reduced to less than significant levels within the implementation of mitigation. The environmental effects from construction of on-site propane storage facilities under Phase 1 would be ***less-than-significant***.

Future Phases – Programmatic Analysis

As the future phases of the Proposed Project are developed, the propane storage facilities implemented in Phase 1 will be built upon with the goal of maintaining the Proposed Project's goals of reliability, clean power and resiliency. Infrastructure systems to be built in the Phase 1 of the Project will support future phases; however, the location of the anticipated improvements are unknown at this time. Therefore, as future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals. For all of this reason, the environmental impact of propane systems from future phases would be considered **less than significant**.

Telecommunications

Guenoc Valley Site Phase 1 – Project Level Analysis

The development of the Proposed Project will create an increased demand for telecommunications services. Telecommunications for the Proposed Project would be obtained from AT&T and Comcast. A combination of fiber and wired lines, or an equivalent, for cable and internet will be included in the joint trench. Distribution lines to individual parcels will be extended from new infrastructure and will occur as development takes place. All phone and cable lines would be installed in roadway ROW, so there would not be any environmental impacts beyond the construction impacts identified in this EIR. Additionally, four cell phone towers will be built throughout the Guenoc Valley Site. Page 141 of **Appendix SPOD** illustrates the location of the proposed network distribution line and its associated network boxes, main points of entry, area distributions, and cell towers. Potential environmental effects that could occur as result of constructing the on-site AT&T infrastructure system are addressed throughout this EIR.

Funding for telecommunications service is collected through company billings and developer fees, which fund service extension and infrastructure. Therefore, the demand for telecommunication services is considered a **less-than-significant** impact.

Off-Site Workforce Housing – Project Level Analysis

Development of the Proposed Project will create an increased demand for telecommunications services at the Middletown Housing Site. Telecommunications for the Proposed Project would be obtained from AT&T and Comcast. A combination of fiber and wired lines, or an equivalent, for cable and internet will be included in the joint trench. Distribution lines to individual parcels will be extended from new infrastructure and will occur as development takes place. All phone and cable lines would be installed in roadway ROW, so there would not be any environmental impacts beyond the construction impacts identified in this EIR. Potential environmental effects that could occur as result of constructing the on-site AT&T infrastructure system are addressed throughout this EIR.

Funding for telecommunications service is collected through company billings and developer fees, which fund service extension and infrastructure. Therefore, the demand for telecommunication services is considered a **less-than-significant** impact.

Future Phases – Programmatic Analysis

As the Future Phases of the Proposed Project are developed, the telecommunications infrastructure implemented in Phase 1 will be built upon to meet growing demands. Infrastructure systems to be built in the Phase 1 of the Project will support Future Phases; however, the exact location of the anticipated improvements are unknown at this time. Therefore, as future phases progress and specific development plans are proposed, additional approvals would be required, and project-level environmental review would be performed based on specific development proposals. For all of this reason, the environmental impact of telecommunications systems from future phases would be considered **less than significant**.

IMPACT 3.14-9	CUMULATIVE ELECTRICITY, NATURAL GAS, AND TELECOMMUNICATION SERVICES IMPACTS		
	Guenoc Valley Site		Other Phase 1 Areas
	Phase 1	Future Phases	Off-Site Workforce Housing
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

The cumulative geographic scope for electricity, propane, and telecommunications services, as well as a list of existing, planned, proposed, approved, and reasonably foreseeable regional development projects in the vicinity of the Guenoc Valley Site and Middletown Housing Site, are included in **Section 4.2.1** The Proposed Project, in combination with other development within the cumulative area, would cumulatively increase the current demand for these services. Electricity, propane, fiberoptics, and telecommunications demand projections must be identified on a project-by-project basis. Individual regional projects would be responsible for paying development or user fees to receive electrical, natural gas, or telecommunication services; these fees would expand the capacity of providers as necessary to supply each individual project. As discussed above, the development of the Proposed Project would ultimately have less-than-significant impacts related to electricity, natural gas, and telecommunications services. The project's less-than-significant individual impacts, combined with past, present, and other foreseeable development in the area would not result in a considerable contribution to existing cumulative impacts. This impact is considered **less than significant** and no mitigation is required.

3.14.3.4 Electrical, Gas, and Telecommunication Utilities Mitigation Measures

None required.

3.15 ENERGY

3.15.1 INTRODUCTION

This section provides a description of energy consumption in the project area and describes the changes to those conditions that would result from implementation of the Proposed Project. Following an overview of the energy resource setting in **Section 3.15.2** and the relevant regulatory setting in **Section 3.15.3**, project-related impacts and recommended mitigation measures are presented in **Section 3.15.4** and **Section 3.15.5**, respectively.

3.15.2 ENVIRONMENTAL SETTING

State

Energy Profile

California had the 48th lowest per capita energy consumption rate in the country in 2017, with a yearly per capita consumption rate of 200 million British Thermal Units (BTUs). The transportation sector is the largest energy consumer in California, at approximately 40 percent of total energy consumption, with more registered vehicles than any other state and among the longest work commute times in the nation. Residential uses account for approximately 18.0 percent of statewide energy consumption, commercial uses consume about 18.7 percent, and industrial uses consume about 23.1 percent (EIA, 2018). California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Almost 75 percent of the electrical power needed to meet California's demand is produced in the state; with approximately 25 percent coming from generating facilities outside the State (EIA, 2018). In 2018, California's in-state electricity was derived from natural gas (24.1 percent), coal (0.1 percent), nuclear sources (10.2 percent), and renewable resources that include geothermal, biomass, hydroelectric resources, wind, and solar (65.5 percent) (EIA, 2018). In 2017, California ranked second in the nation in conventional hydroelectric generation and first as a producer of electricity from solar, geothermal, and biomass resources.

California's Electric Utility Industry

In California, load serving entities (or LSEs) represent the organizations that directly serve retail electric customers. The types of LSEs in California are: Investor-Owned Utilities (IOUs), Publicly Owned Load-Serving Entities, Rural Electric Cooperatives, Community Choice Aggregators and Electric Service Providers. Over a quarter of the IOU retail electric load is served by a combination of rooftop solar, CCAs and direct access providers. A CPUC staff white paper predicts that this number could grow to 85 percent in the next decade, which would represent as many as 15 million to 20 million customers.

Non-Utility Support for Renewable Energy Development

As renewable power continues to become more cost competitive and sustainability and environmental programs expand, corporations and other non-utility entities are accelerating their direct purchasing of renewable power. In IOU territories, corporations and other entities participate in the existing limited Direct Access programs, negotiate highly renewable products from their host utility, purchase unbundled RECs, and enter into virtual power purchase agreements (PPAs). The Business Renewables Center reports that

corporations purchased 6.43 GW of clean energy nationally through December 14, 2018, which exceeds both the 2.78 GW contracted in 2017 and nearly doubles the previous record of 3.22 GW contracted in 2015.

According to a National Renewable Energy Laboratory (NREL) analysis, California had 822 MW of renewable energy purchased by corporations as of September 2017. Furthering this trend towards direct corporate purchase of renewables, an analysis by Baker McKenzie found that in the United States in 2017, the volume of offtake agreements signed with corporations exceeded the total number of contracts signed with all other offtakers, including utilities. Globally, according to REN21, corporate entities actively sourced 465 TWh (terawatt hours) of renewable electricity through 2017.

Pacific Gas and Electric Company

Pacific Gas and Electric Company (PG&E) is an IOU that provides electricity and natural gas supplies and services throughout a 70,000 square miles service area that extends from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevada in the east. Lake County is within its service area for both kinds of energy. PG&E operates and maintains 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines, as well as, 42,141 miles of natural gas distribution pipelines and 6,438 miles of transmission pipelines (PG&E, 2018). Operating characteristics of PG&E's electricity supply and distribution systems are provided below.

PG&E Electric Utility Services

As part of its offering, PG&E provides both "bundled" services (i.e., electricity, transmission and distribution services) and "unbundled" services (solely transmission and distribution services) to approximately six million customers in its service territory, including residential, commercial, industrial, and agricultural consumers. In the case of PG&E's "unbundled" services, PG&E customers opt to purchase their electricity supply from another LSE, as described above or from privately owned generation resources, such as rooftop and ground mounted solar installations, storage and microgrid. In 2018, PG&E generated and/or procured a total of 48,832 gigawatt hours (GWh) of electricity. Of this total, PG&E owns 7,686 megawatts (MW) of generating capacity (**Table 3.15-1**). The remaining electrical power is purchased from other sources in and outside of California.

TABLE 3.15-1
PG&E 2018 OWNED ELECTRICITY GENERATING SOURCES

Source	Generating Capacity (Megawatts MW)
Nuclear	2,240
Hydroelectric	3,891
Fossil Fuel-Fired	1,400
Fuel Cell	3
Photovoltaic	152
Total	**7,686**
Source: PG&E, 2018 Annual Report.	

Public Utility District ("PUD") Electric Utility Operations

California's publicly owned utilities ("PUDs") are subject to local public control and regulation. PUDs are organized in various forms including municipal districts, city departments, irrigation districts or rural cooperatives. Municipal districts may include territories outside city limits. Cooperatives are owned by the customers they serve usually in rural areas. There are more than 40 PUDs in the state that account for approximately a quarter of statewide retail electricity consumption. Their energy efficiency programs are important in achieving the state's goals of revitalizing the economy and curbing climate change. Since 2006, POUs have spent $885 million on energy efficiency, resulting in 3,400 gigawatt hours (GWh) of reported electricity savings and 652 megawatts (MW) in peak demand reduction.

Renewable Energy Resources

California law requires IOUs, such as PG&E, to gradually increase the amount of renewable energy they deliver to their customers. In October 2015, the California Governor signed SB 350 into law. SB 350 became effective January 1, 2016, and increases the amount of renewable energy that must be delivered by most load-serving entities, such as PG&E, to their customers from 33% of their total annual retail sales by the end of the 2017-2020 compliance period, to 50% of their total annual retail sales by the end of the 2028-2030 compliance period. In September 2018, the California Governor signed SB 100 into law, increasing from 50% to 60% of California's electricity portfolio that must come from renewables by 2030; and established state policy that 100 percent of all retail electricity sales must come from California Renewables Portfolio Standard (RPS)-eligible or carbon-free resources by 2045.

TABLE 3.15-2
PG&E 2018 RENEWABLE ENERGY DELIVERIES

Source	Percent of Total Energy Portfolio
Biopower	4.4
Geothermal	3.7
Wind	10
RPS-Eligible Hydroelectric	2.7
Solar	18.1
Total	**38.9**
Source: PG&E, 2018 Annual Report.	

Renewable generation resources, for purposes of the RPS program, include bioenergy such as biogas and biomass, certain hydroelectric facilities (30 MW or less), wind, solar, and geothermal energy. During 2018, 38.9% of PG&E's energy deliveries were from renewable energy sources, exceeding the annual RPS target of 28% (**Table 3.15-2**).

Electricity Transmission

By December 31, 2018, PG&E owned approximately 18,000 circuit miles of interconnected transmission lines operating at voltages ranging from 60 kV to 500 kV. PG&E also operated 84 electric transmission substations with a capacity of approximately 65,000 MVA. PG&E's electric transmission system is interconnected with electric power systems in the Western Electricity Coordinating Council, which includes many western states, Alberta and British Columbia, and parts of Mexico.

PG&E Local Energy Infrastructure

PG&E's electric distribution network consists of approximately 107,000 circuit miles of distribution lines (of which approximately 20% are underground and approximately 80% are overhead), 50 transmission switching substations, and 769 distribution substations, with a capacity of approximately 32,000 MVA. These distribution substations serve as the central hubs for the PG&E's electric distribution network. Emanating from each substation are primary and secondary distribution lines connected to local transformers and switching equipment that link distribution lines and provide delivery to end-users. PG&E operates electric distribution control center facilities in Concord, Rocklin, and Fresno, California; these control centers form a key part of the PG&E's efforts to create a smarter, more resilient grid.

Electricity is a currently provided to the development area by PG&E from its substation in Middletown. There are two PG&E distribution circuits that provide overhead electricity to eleven (11) existing service points (**Appendix ELEC**). The existing electrical infrastructure located at the Guenoc Valley Site consists of service points, easements, distribution circuits, meters, poles and related infrastructure owned and operated by PG&E. There are no natural gas pipelines in the vicinity of the development.

Project Site Setting

Currently, energy consumption within the project site is limited to activities associated with the Ranch house and associated buildings in the northeast corner of the site. The amount of energy consumed is unknown, but is considered to be an extremely small quantity.

3.15.3 REGULATORY CONTEXT

Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (NECPA) serves as the underlying authority for federal energy management goals and requirements. Signed into law in 1978, it has been regularly updated and amended by subsequent laws and regulations. This act is the foundation of most federal energy requirements. NECPA established energy-efficiency standards for consumer projects and includes a residential program for low-income weatherization assistance, grants and loan guarantees for energy conservation in schools and hospitals, and energy-efficiency standards for new construction. Initiatives in these areas continue today.

National Energy Policy Act of 2005

The National Energy Policy Act of 2005 sets equipment energy efficiency standards and seeks to reduce reliance on nonrenewable energy resources and provide incentives to reduce current demand on these resources. For example, under the act, consumers and businesses can attain federal tax credits for purchasing fuel-efficient appliances and products, including hybrid vehicles; constructing energy-efficient buildings; and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

Executive Order 13834 (Efficient Federal Operations), signed in May 2018, directs federal agencies to meet the statutory requirements of the Energy Policy Act of 2005 in regard to energy use reductions, renewable energy and electricity consumption, and build energy management.

Energy Independence and Security Act of 2007

Signed into law in December 2007, this broad energy bill included an increase in auto mileage standards, and also addressed biofuels, conservation measures, and building efficiency. The U.S. Environmental Protection Agency (EPA) administers the Corporate Average Fuel Economy (CAFE) program, which determines vehicle manufacturers' compliance with existing fuel economy standards. The bill amended the CAFE standards to mandate significant improvements in fuel efficiency (i.e., average fleetwide fuel economy of 35 miles per gallon by 2020, versus the previous standard of 27.5 mpg for passenger cars and 22.2 mpg for light trucks).

Another provision includes a mandate to increase use of ethanol and other renewable fuels by 36 billion gallons by 2022, of which 21 million gallons is to include advanced biofuels, largely cellulosic ethanol, that have 50 to 60 percent lower GHG emissions. The bill also includes establishment of a new energy block grant program for use by local governments in implementing energy-efficiency initiatives, as well as a variety of green building incentives and programs, among other things.

Energy Star Program

In 1992, the EPA introduced Energy Star as a voluntary labeling program designed to identify and promote energy-efficient products to reduce GHG emissions. The program applies to major household appliances, lighting, computers, and building components such as windows, doors, roofs, and heating and cooling systems. Under this program, appliances that meet specifications for maximum energy use established under the program are certified to display the Energy Star label. In 1996, EPA joined with the Energy Department to expand the program, which now also includes qualifying commercial and industrial buildings, and homes.

State

Warren-Alquist Act

The 1974 Warren-Alquist Act established the California Energy Commission. The Act established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Legislature continues to amend the Act to address pressing energy needs and issues. The California Energy Commission publishes an updated version of the act every year. The 2019 edition of the Warren-Alquist Act was published in February 2019.

State of California Integrated Energy Policy

Senate Bill 1389 requires the California Energy Commission to adopt an Integrated Energy Policy Report (IEPR). The IEPR contains an assessment of major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors. The report provides policy recommendations to conserve resources, protect the environment, ensure reliable, secure, and diverse energy supplies, enhance the state's economy, and protect public health and safety.

The IEPR calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the IEPR identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for Zero Emission Vehicles and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

The Draft 2019 IEPR for submitted for public comment on November 8, 2019. The 2019 Integrated Energy Policy Report covers a broad range of topics, including decarbonizing buildings, integrating renewables, energy efficiency, energy equity, electricity reliability, climate adaptation activities for the energy sector, natural gas assessment, transportation energy demand forecast, and the California Energy Demand Forecast. The 2019 Integrated Energy Policy Report provides the results of the California Energy Commission's assessments of a variety of energy issues facing California. Many of these issues will require action if the state is to meet its climate, clean energy, air quality, and other environmental goals while maintaining reliability and controlling costs.

The Public Utility District Act

The Public Utility District Act, found in California Public Utilities Code § 15501 *et seq.*, authorizes the formation of PUDs and authorizes a PUD to acquire, construct, own, operate, or control works for supplying its inhabitants with light, water, power, heat, transportation, telephone service, or other means of communication, or means for the disposition of garbage, sewage, or refuse matter. The act provides for the manner of electing members of the board of directors of a district and generally specifies that, where a district formed and operated pursuant to the act is situated entirely in one county, the directors of the district are elected at large.

Microgrid Legislation (Senate Bill 1339)

In September 2018, California enacted a new law, Senate Bill (SB) 1339, that requires the California Public Utilities Commission (CPUC) to develop regulations, standards, and guidelines by December 1, 2020, to facilitate the commercialization of microgrids for customers of large electric utilities. To that end, SB 1339 directs the CPUC to address the following key issues: (1) how microgrids operate and their value; (2) improving the electrical grid with microgrids; (3) how microgrids can play a role in implementing policy goals; (4) how microgrids can support California's policies to integrate a high concentration of distributed energy resources on the electrical grid; (5) how microgrids operate in the current California regulatory framework; and (6) microgrid technical challenges. SB 1339 builds on years of stakeholder research on whether microgrids may help California meet its future energy goals and increase the resilience of the energy grid, in part due to the increasing potential for extended outages/grid denergization due to extreme weather events and wildfires.

California Public Utilities Code 218

A power purchase agreement (PPA) is a financial agreement where a developer arranges for the design, permitting, financing and installation of a renewable energy system on a customer's property at little to no cost. The developer sells the power generated to the host customer at a fixed rate that is typically lower

than the local utility's retail rate. This lower electricity price serves to offset the customer's purchase of electricity from the grid while the developer receives the income from these sales of electricity as well as any tax credits and other incentives generated from the system. PPAs typically range from 10 to 25 years and the developer remains responsible for the operation and maintenance of the system for the duration of the agreement. At the end of the PPA contract term, a customer may be able to extend the PPA, have the developer remove the system or choose to buy the solar energy system from the developer.

California allows third-party PPAs via a legislative decision. California Public Utilities Code Section 218 specifically allows certain ownership and technologies, and it promotes a clear path for long-term, customer-sited energy development. In fact, the code's definition specifically exempts an "Electrical Corporation" from regulation:

> …a corporation or person employing cogeneration technology or producing power from other than a conventional power source for the generation of electricity solely for… the use of or sale to not more than two other corporations or persons solely for use on the real property on which the electricity is generated.

This language first establishes solar as an option by stating that non-conventional power sources are exempt. The key for the third-party ownership model is that a corporation can sell electricity if it is used solely on the property where it is generated. In fact, the electricity can even be sold to two other corporations or persons who are also on that property, according to the legislation.

California's language has several interesting implications. First, it allows third-party owners to sell to residential customers on an individual basis. Also, the exemption presents the possibility of selling power to multi-family housing units, as well as multi-tenant commercial and industrial buildings that are net-metered (with restrictions on the pricing of the power). However, the issue of selling power to tenants when the system is not net-metered remains unsettled. The state requires third-party owners to set up new independent business units (such as LLCs, or limited liability companies) for each commercial system they install in order to comply with the rules and use/employ the third-party PPA model.

When deciding whether a competitive supplier is subject to regulation as a public utility, California applies a standard of "dedication to public service." While states have interpreted differently what it means to offer service "to or for the public," California has interpreted their statutes in a way that provides an exception for the provision of power sales to a subset of customers such as tenants. California has consistently used this standard when interpreting the intention of power providers.

California Energy Efficiency Standards (Title 24)

The Energy Efficiency Standards for Residential and Nonresidential Buildings specified in Title 24, Part 6 of the California Code of Regulations (CCR) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow for consideration and possible incorporation of new energy-efficiency technologies and methods. The California Energy Commission's most recent standards were adopted in 2019 are set to take effect January 1, 2020.

The new standards require solar photovoltaic systems for new homes and offer builders better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses. Single-family homes built with the 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards. Accounting for rooftop solar requirements, homes built under the 2019 standards will use about 53 percent less energy than those under the previous 2016 standards. Nonresidential buildings are expected to use about 30 percent less energy due mainly to lighting upgrades.

California Green Building Standards Code

The California Green Building Standards Code (CalGreen Code), specified in CCR, Title 24, Part 11, is a statewide regulatory code for all buildings, including residential and commercial. The regulations are intended to encourage more sustainable and environmentally friendly building practices, require low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment. The standards require that all new residential and non-residential development implements various energy conservation measures, including ceiling, wall, and concrete slab insulation; vapor barriers; weather stripping on doors and windows; closeable doors on fireplaces; insulated heating and cooling ducts; water heater insulation blankets; and certified energy efficient appliances. CalGreen Code is updated periodically and the latest update, CalGreen Code 2019 becomes effective January 1, 2020.

Renewables Portfolio Standard (RPS) Program

The California RPS program was established in 2002 by SB 1078 and requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide a certain percentage of their supply from renewable sources. The initial requirement was for at least 20 percent of electricity retail sales to be served by renewable resources by 2017. The RPS program was accelerated in 2015 with SB 350 which mandated a 50% RPS by 2030. In 2018, SB 100 was signed into law, which again increases the RPS to 60% by 2030 and requires all the state's electricity to come from carbon-free resources by 2045.

AB 1007 (Pavley)-Alternative Fuel Standards

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) required the California Energy Commission to prepare a state plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The California Energy Commission prepared the State Alternative Fuels Plan in partnership with the California Air Resources Board and in consultation with other state, federal, and local agencies. The final State Alternative Fuels Plan, published in December 2007, attempts to achieve an 80-percent reduction in greenhouse gas emissions associated with personal transportation, even as California’s population increases.

Appliance Efficiency Regulations

California’s Appliance Efficiency Regulations, CCR Title 20, contain standards for both federally regulated appliances and non-federally regulated appliances. The regulations are updated regularly to allow consideration of new energy efficiency technologies and methods. The current standards were adopted by the California Energy Commission in 2018. The standards outlined in the regulations apply to appliances that are sold or offered for sale in California. More than 23 different categories of appliances are regulated,

including refrigerators, freezers, water heaters, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings.

Local

Lake County General Plan (2008)

The Lake County General Plan 2030 includes the following goals and policies relevant to energy consumption from land use development within Lake County.

Open Space, Conservation and Recreation Element

Goal

OSC-5 To encourage energy conservation in new and existing developments throughout the County.

Policies

OSC-5.1 Energy Conservation Measures. The County shall require the use of energy conservation features and clean alternative energy use in new construction and renovation of existing structures in accordance with state law.

OSC-5.2 Streetscape Improvements for Energy Conservation. The County should encourage the planting of shade trees along streets within new residential subdivisions to reduce radiation heating. Use of native species shall be encouraged.

Housing Element

Goal

HE-6 To encourage energy efficiency in all new and existing housing.

Policies

HE-6.1 Energy Conservation. The County shall promote the use of energy conservation measures and energy production technology in residential units to conserve energy as well as reduce household utility costs.

HE-6.3 Energy Efficient Site Planning. The County shall encourage, where appropriate, energy efficient site planning in newly proposed land divisions to take advantage of the sun's natural heating abilities.

Middletown Area Plan (2010)

The Community Development Section of the Middletown Area Plan includes the following objectives and policies relevant to energy systems within the Middletown Planning Area.

Objectives

5.4.5 Ensure the orderly development of communication and energy systems in order to increase economic competitiveness, maintain an informed citizenry, and improve personal convenience for both residences and businesses.

Policies

5.3.1a Encourage the use of renewable energy devices and systems in both existing and new developments.

3.15.4 IMPACTS

Method of Analysis

This section identifies any energy impacts that could occur from construction and operation of the Proposed Project. The analysis provides construction and operational energy use estimates for the Proposed Project. The impacts are analyzed based on an evaluation of whether this energy use would be considered excessive, wasteful or inefficient taking into account the Proposed Project's energy efficiency features, as well as required compliance with applicable standards and policies aimed to reduce energy consumption including the County's Standard Conditions of Approval and the State's Title 24 Energy Efficiency Standards. Energy emissions detail supporting the Proposed Project estimates presented in this section is provided in **Appendix ELEC**.

Thresholds of Significance

For purposes of this EIR, a significant impact would occur if the Proposed Project could:

- result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; and
- conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Impacts

IMPACT 3.15-1	**SIGNIFICANT ENVIRONMENTAL IMPACTS DUE TO WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES DURING CONSTRUCTION**	
	Phase 1	**Future Phases**
Significance Before Mitigation	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.3-1: Measures to Reduce Short-term Construction Related Emissions, MM 3.7-1: Operational GHG Emissions	MM 3.3-1: Measures to Reduce Short-term Construction Related Emissions, MM 3.7-1: Operational GHG Emissions
Significance After Mitigation	Less Than Significant	Less Than Significant

Phase 1 and Future Phases – Construction Energy Requirements

Project construction would consume energy in two primary forms: (1) fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass. These are discussed below.

Energy Consumed by Construction Vehicles and Equipment

Fossil fuels used for construction vehicles and other equipment would be used during site clearing, grading, paving, and building. Fuel consumed during construction would be temporary in nature and would not represent a significant demand on available fuel, beyond normal construction fuel usage. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or State.

Additionally, project-related design features and mitigation measures would provide fuel and energy reduction during construction. Overall fuel and energy reductions are difficult to quantify; however, certain air quality (**Section 3.3**) emission reduction measures would also reduce fuel and electricity use during construction of the Proposed Project. As described in **Section 3.3.4**, construction of the Proposed Project would use all Tier 4 Final off-road equipment to the maximum extent feasible, except for paving equipment. This would significantly reduce fuel consumption and increase energy efficiency of construction equipment. **Mitigation Measure 3.3-1** would reduce energy consumption by requiring the contractor to minimize equipment idling time. These mitigation measures would reduce fuel and energy use during all stages of construction and avoid the wasteful, inefficient, or unnecessary consumption of fuel energy. Additionally, all diesel-fueled construction vehicles would be required to meet the latest emissions standards. Therefore, construction of the Proposed Project would not result in inefficient, wasteful, or unnecessary consumption of fuel energy as it would comply with relevant standards.

Bound Energy Contained in Construction Materials

Substantial amounts of energy may be consumed in the production, transportation, and installation of construction materials. Because the exact types of building materials to be used during construction are not known, it is not possible at this stage of the Proposed Project's planning to estimate and quantify the amount of energy that would be consumed in the production, transportation, and installation of construction materials. However, production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices and comply with the requirements within the 2019 Green Building Code. Construction materials for the project will be partially supplied by aggregate resulting from on-site earthmoving activities and job-specific borrow sites. As described in **Section 2.0**, the Proposed Project includes on-site rock crushing operations that would provide aggregate for use in construction and would reduce the need for imported construction material. Additionally, best practices will be employed when dealing with organic materials generated onsite in the effort to retain and compost onsite. To the extent feasibly possible, all construction debris will be sorted and disposed of, and a majority of construction debris will be recycled (**Appendix CP**). Therefore, construction of the Proposed Project would not result in inefficient, wasteful, or unnecessary consumption of energy from construction materials.

IMPACT 3.15-2	**SIGNIFICANT ENVIRONMENTAL IMPACTS DUE TO WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES DURING OPERATION**	
	Phase 1	**Future Phases**
Significance Before Mitigation	Potentially Significant	Potentially Significant

Mitigation Measures	MM 3.7-1: Operational GHG Emissions, MM 3.13-4: Implement a Transportation Demand Management (TDM) Program	MM 3.7-1: Operational GHG Emissions, MM 3.13-4: Implement a Transportation Demand Management (TDM) Program
Significance After Mitigation	Less Than Significant	Less Than Significant

Phase 1 and Future Phases – Operational Phase Energy Use

The operational phase would consume energy for multiple purposes including, but not limited to, building heating and cooling, refrigeration, lighting, electronics, office equipment, and commercial machinery (including kitchen appliances). Operational energy would also be consumed during each vehicle trip associated with these proposed uses. The following discussion of operational energy use begins with a discussion of on-site energy use and conservation measures, which is followed by a discussion of transportation energy use and conservation. **Table 3.15-3** presents the estimated energy use for the Proposed Project.

TABLE 3.15-3
ESTIMATED ENERGY USAGE AND DEMANDS OF THE PROPOSED PROJECT

Source	Annual Consumption (MWh)	Peak Demand (MW)
Phase 1 (including infrastructure)	30,559	4.8
Future Phases	28,462	4.5
Total	59,021	9.3

Notes: MWh = megawatt-hour, MW = megawatts.
Source: Axiom Engineers, 2019 (**Appendix ELEC**).

On-Site Renewable Energy Generation and Conservation Measures

In accordance with California Energy Code Title 24, the Proposed Project would be required to meet the 2019 Building Energy Efficiency Standards for residential and non-residential construction. This includes standards for water and space heating and cooling equipment; insulation for doors, pipes, walls and ceilings; and appliances, to name a few.

The Proposed Project would also be eligible for rebates and other financial and tax incentives from the CEC, CPUC, state and federal taxing authorities, PACE program administrators, and due to the purchase of energy-efficient appliances and systems, which would also further reduce the overall operational energy demand of the Proposed Project. As described in **Section 2.0**, the Proposed Project includes the implementation of ground-mounted solar arrays, energy storage, EV charging stations and micro-grids.

As discussed in **Section 3.7**, the Proposed Project includes a number of design measures that would reduce the energy demands of the Proposed Project. These design measures, as well as additional energy conserving measures, have been incorporated into **Mitigation Measure 3.7-1**. Further, Mitigation Measure 3.7-1 requires that the proposed solar energy plus storage and microgrid systems are designed to meet the entire energy demands of the Proposed Project. These measures would result in a net zero increase in demand for electricity, and would reduce the consumption of propane.

Transportation Energy Use

As shown in **Table 3.15-4**, using the average daily trips (ADT) and daily vehicle miles traveled (VMT) per capita from **Appendix TIA** and the CAFE standards from the National Highway Traffic Safety Administration (NHTSA), the Proposed Project could result in the annual consumption of approximately 2,221,828 gallons of gasoline under Phase 1 and an additional 2,617,360 gallons of gasoline under Future Phases.

TABLE 3.15-4
ESTIMATED TRANSPORTATION ENERGY USE

Unit	Phase 1	Future Phases	Total
Vehicle Miles Traveled per Capita[1]	37.5	34.6	--
Average Daily Trips[1]	6,493	8,290	14,783
VMT (Miles per Day)	243,488	286,834	530,322
Gallons of Gasoline per Year[2]	2,221,828	2,617,360	4,839,188

Notes:
1. Abrams Associates, 2019 (**Appendix TIA**).
2. Based on the NHTSA passenger car and light truck CAFE standards of 0.025 gallons/mile for model years 2017-2021 (USDOT, 2014).

As discussed in **Section 4.13**, the Proposed Project includes a number of components which result in an overall reduction in VMT. **Mitigation Measure 3.13-4** provides a menu of VMT reduction strategies that may be incorporated in the Transportation Demand Management (TDM) Program for the Proposed Project. Measures include providing EV charging stations, private shuttle services, a carpool and ride-matching assistance program, and preferential parking for carpoolers. The reduction in VMT due to implementation of the TDM program would result in a reduction in gasoline consumption.

Summary of Operational Energy Consumption

The Proposed Project will result in the consumption of energy, propane, and transportation fuel. This is a ***potentially significant*** impact. As discussed above, various proposed design features and mitigation measures would be implemented to ensure the more efficient use of energy resources during project operation. With mitigation, the Proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, this impact would be considered ***less than significant with mitigation***.

IMPACT 3.15-3	**CONFLICT WITH A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY**	
	Phase 1	**Future Phases**
Significance Before Mitigation	Less Than Significant	Less Than Significant
Mitigation Measures	None Required	None Required
Significance After Mitigation	Not Applicable	Not Applicable

The Proposed Project would be implemented in accordance with the 2019 Title 24 Building Energy Efficiency Standards and CalGreen Code. The new standards require solar photovoltaic systems for new homes and require use of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses. As shown in **Table 3.15-5**, below, the project is largely consistent with the applicable goals, policies of the Lake County General Plan and the Middletown Area Plan related to energy efficiency.

TABLE 3.15-5
APPLICABLE POLICIES OF THE LAKE COUNTY GENERAL PLAN AND THE MIDDLETOWN AREA PLAN

Plan Policies	Discussion of Project Consistency
Lake County General Plan	
Policy OSC 5.1: Energy Conservation Measures: The County shall require the use of energy conservation features and clean alternative energy use in new construction and renovation of existing structures in accordance with state law.	As described in **Section 2.0**, the Proposed Project includes the development of solar energy to meet the demand of all residential uses within the Guenoc Valley Site. Additionally, **Mitigation Measure 3.7-1** requires commitment to solar energy to meet the demand of all commercial facilities. Additionally, mitigation measures provided in **Section 3.7.5** would require the use of energy efficient lighting and appliances throughout the Proposed Project.
Policy OSC 5.2: Streetscape Improvements for Energy Conservation: The County should encourage the planting of shade trees along streets within new residential subdivisions to reduce radiation heating. Use of native species shall be encouraged.	As described in **Section 2.0**, the Proposed Project includes a detailed landscape plan which include the planting of shade trees and use of native species to preserve the existing natural and rural character.
Policy HE 6.1: Energy Conservation: The County shall promote the use of energy conservation measures and energy production technology in residential units to conserve energy as well as reduce household utility costs.	See consistency with Policy OSC 5.1 described above. The Proposed Project would comply with all Title 24 energy efficiency standards and all electricity would be provided from on-site solar arrays.
Policy HE 6.3: Energy Efficient Site Planning: The County shall encourage, where appropriate, energy efficient site planning in newly proposed land divisions to take advantage of the sun's natural heating abilities.	See consistency with Policy OSC 5.1 and Policy HE 6.1 described above.
Middletown Area Plan	
Policy 5.3.1a: Encourage the use of renewable energy devices and systems in both existing and new developments.	See consistency with Policy OSC 5.1 and Policy HE 6.1 described above.

The Proposed Project is generally consistent with the Lake County General Plan and the Middletown Area Plan policies for reducing energy consumption and promoting energy efficiency. In addition to compliance with Title 24 and CalGreen Code described above, the Proposed Project is generally consistent with the statewide energy goals and policies outlined in the 2019 IEPR to decarbonize the electricity sector through renewable energy and to move toward clean transportation through fleet electrification. Specifically, the Proposed Project would address these policies through implementation of net zero electricity demand (achieved through large-scale solar development) and commitment to a 100 percent electric fleet. This impact would therefore be ***less than significant***.

IMPACT 3.15-4	CUMULATIVE IMPACTS DUE TO INCREASED ENERGY USE	
	Phase 1	**Future Phases**
Significance Before Mitigation	Less Than Significant	Less Than Significant
Mitigation Measures	None Required	None Required
Significance After Mitigation	Not Applicable	Not Applicable

With regard to energy usage, the California Public Utilities Commissions' Long Term Procurement Plan (LTPP) proceedings were established to ensure a safe, reliable, and cost-effective electricity supply in California. A major component of the LTPP proceeding addresses the overall long-term need for new system reliability resources, including the adoption of system resource plans. These resource plans will allow the California Public Utilities Commission to comprehensively assess the impacts of state energy policies on the need for new resources. As discussed above, several aspects of the Proposed Project would help manage the amount and efficiency of energy consumption and would ensure that the related consumption is not inefficient, wasteful or unnecessary or place a significant demand on regional energy supplies. The large-scale development of solar energy included in the Proposed Project would result in a net zero increase in electricity demand under both Phase 1 and Future Phases. The project components would help reduce the project's overall energy demand and the project would result in less-than-significant individual impacts. Therefore, impacts to energy resources resulting from the Proposed Project, combined with other past, present, or reasonably foreseeable future projects, would not result in a cumulative impact to which the proposed project would have a cumulatively considerably contribution.

3.15.5 MITIGATION MEASURES

No energy mitigation measures are recommended for the Proposed Project, however the mitigation measures provided in **Section 3.3.5** and **Section 3.7.5** would promote energy efficiency and reduce energy consumption from the Proposed Project.

3.16 WILDFIRE

3.16.1 INTRODUCTION

This section provides a description of potential wildfire risks in the project area and describes the changes to those conditions that would result from implementation of the Proposed Project. Following an overview of existing fire risk in **Section 3.16.2** and the relevant regulatory setting in **Section 3.16.3**, project-related impacts and recommended mitigation measures are presented in **Section 3.16.4** and **Section 3.16.5**, respectively.

3.16.2 ENVIRONMENTAL SETTING

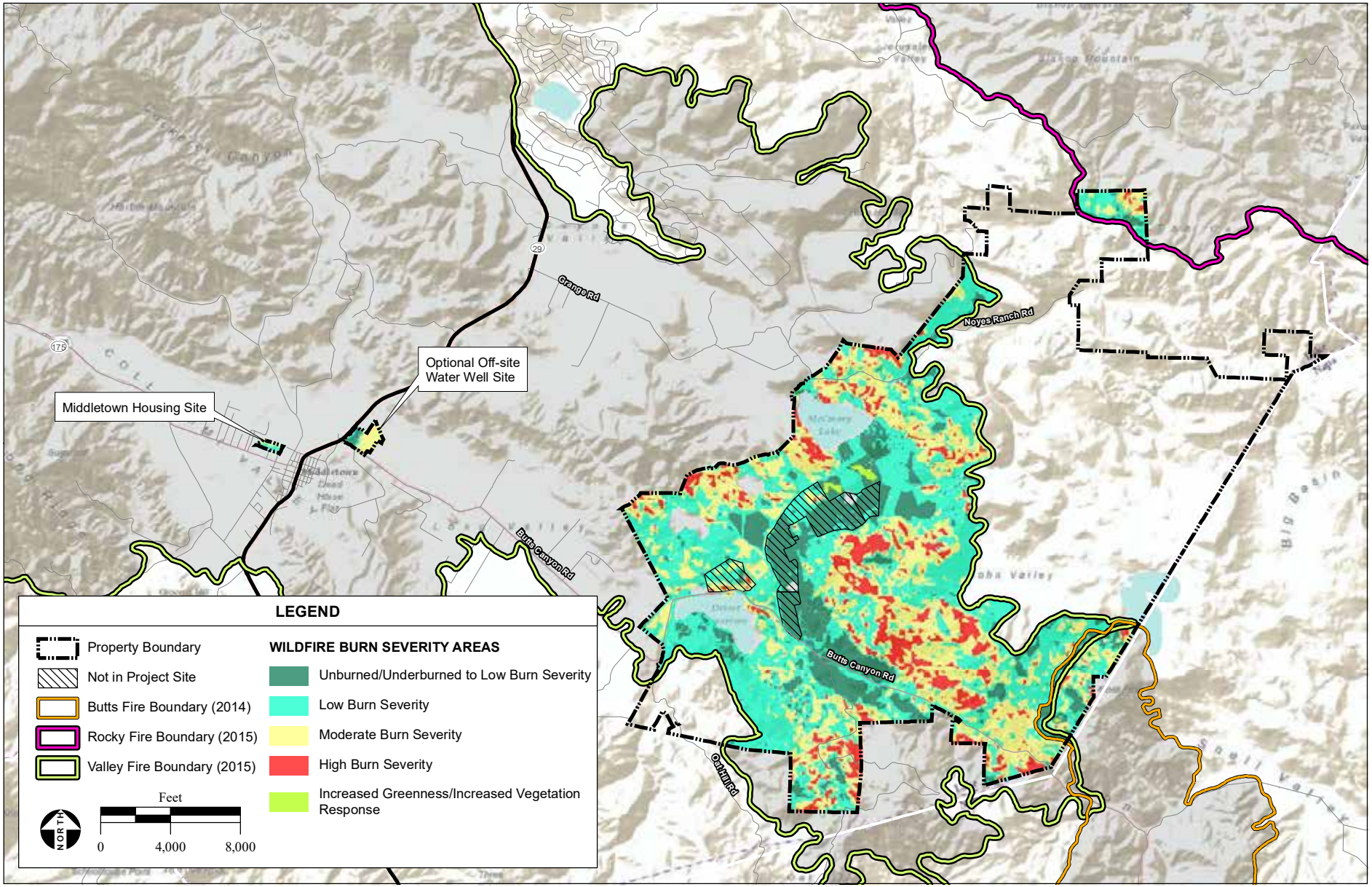
Guenoc Valley Site

As described in the Wildfire Prevention Plan (**Appendix FIRE**), the Guenoc Valley is within a fire prone region of California. The wildfire risk 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 risk of wildfire, particularly during windy days. Wildfires are recorded to have burned parts of the Guenoc Valley Site as early as the 1950s (**Appendix FIRE**). As shown on **Figure 3.16-1**, the Valley Fire in 2015 burned large portions of the southern portion of the site, particularly along Butts Canyon Road. **Figure 3.16-1** also shows the severity of the burned vegetation as a result of historical fires.

As described in **Section 3.4**, the Guenoc Valley Site is characterized by steep slopes and the presence of several vegetation communities, including annual grasslands, oak woodlands, and chaparral. Irrigated vineyards are also located throughout the project site, which are generally less prone to fires. The steep slopes on the Guenoc Valley Site are at a greater risk of quickly burning during a wildfire. Additionally, the direction that the slopes face (aspect) affects daily levels of solar exposure, humidity, and temperature, creating micro-climates throughout the day. South and southwestern facing slopes are the most likely to ignite and burn. The typical 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).

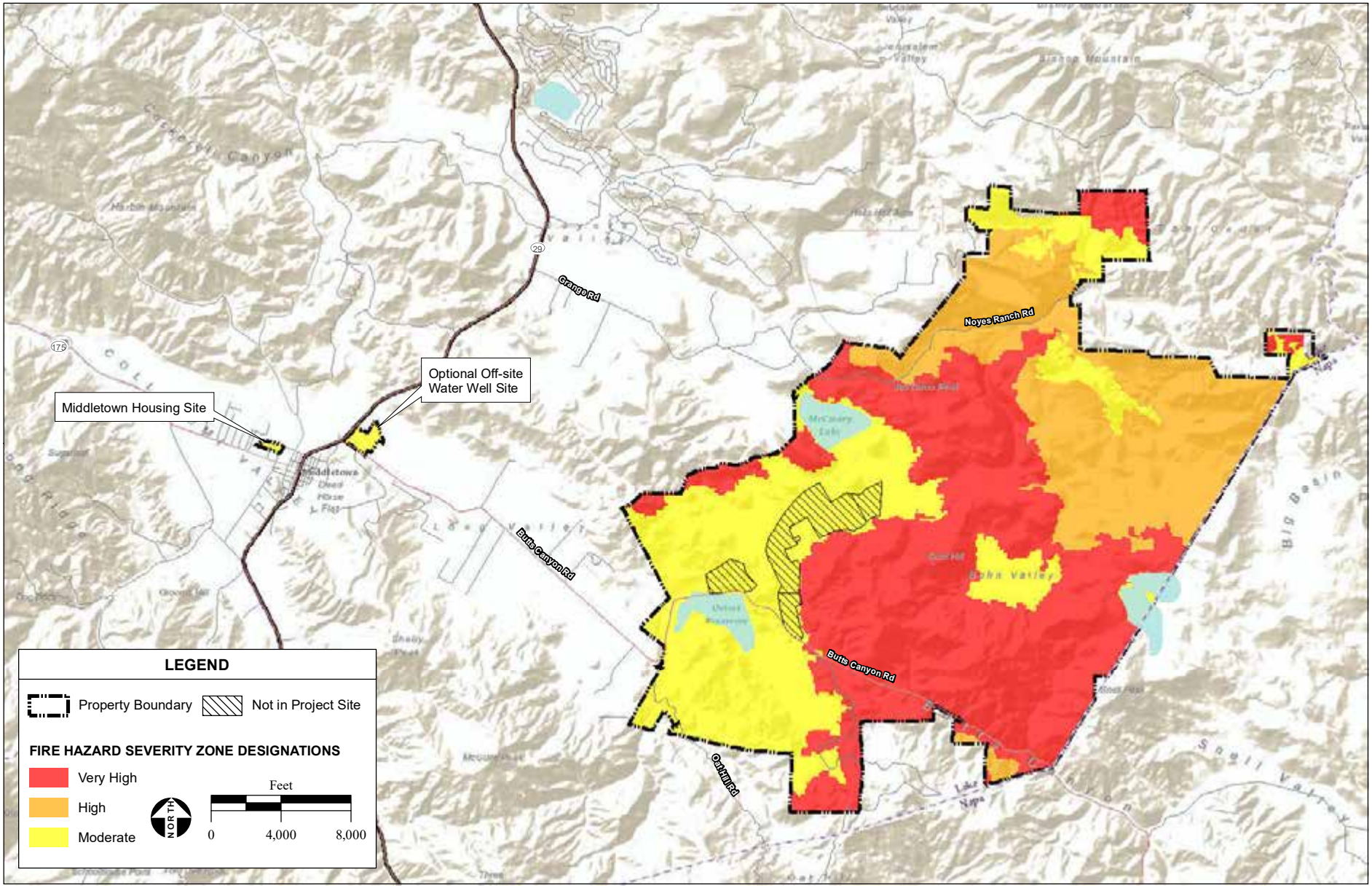
Windy conditions during the fire season can increase the likelihood of fires erupting, rapidly escalating, and increasing in intensity and scale. The Guenoc Valley Site is affected by the regional “Konocti Wind” patterns. In the morning, wind typically flows northward from the Bay Area. In the afternoon, 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 the Guenoc Valley Site. However, depending on various climatic conditions, regional wind patterns may vary seasonally and even daily. The Guenoc Valley Site is also subject to the Diablo Winds in the spring and the fall, which flow westward from hotter, drier, and higher pressure areas in Nevada and Utah towards lower pressure coastal zones. (**Appendix FIRE**)

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 (detailed further in **Section 3.16.3**). As shown on **Figure 3.16-2**, the Guenoc Valley Site is generally rated moderate severity in the southwest portion of the site where the topography is flatter and many vineyards are planted. The site is generally



SOURCE: USGS California MTBS Thematic Burn Severity Mosaic (2014-2015); AES, 2/12/2020

Figure 3.16-1
Wildfire Burn Severity



SOURCE: Calfire Fire Hazard Severity Zone Maps for Lake and Napa Counties, adopted 2007; AES, 2/12/2020

Figure 3.16-2
Fire Hazard Severity Zones

rated high severity on the north and northeast portions. It is rated very high severity in the southeast and central parts of the project site where there is a lot of chaparral vegetation, steep slopes, and exposure to high winds.

The areas surrounding the Guenoc Valley Site are generally pasture lands and open space. Less managed landscapes tend to have less wildfire prevention and maintenance practices implemented, which could result in more fuel for wildfires and higher risk for the Guenoc Valley Site. Additionally, due to climate change, the Guenoc Valley Site and surrounding areas may become more prone to wildfire hazard in the future.

Middletown Housing Site

The Middletown Housing Site has similar vegetation and climate to the Guenoc Valley Site. The vegetation is majority non-native annual grass and the site is relatively flat. The site is within the Cal Fire Fire Hazard Severity Zone Moderate, as shown on **Figure 3.16-2**. The Middletown Housing Site is surrounded by rural residential development to the east and south, which may reduce the risk of wildfire by implementing prevention techniques such as clearing. Additionally, Dry Creek adjacent to the site slightly reduces wildfire risk.

Off-Site Infrastructure Improvements Areas

The Off-Site Well Site has the same climate as the Guenoc Valley Site. The vegetation is primarily grassland and is actively grazed. The site is within the Cal Fire Hazard Severity Zone Moderate (see **Figure 3.16-2**). The surrounding areas are open space and rural residential. The water pipeline would extend approximately six miles to the Guenoc Valley Site within the shoulder of Butts Canyon Road. The pipeline would be underground.

3.16.3 REGULATORY CONTEXT

Federal

National Fire Protection Association

The National Fire Protection Association (NFPA) is an international nonprofit organization that provides codes, standards, research, training, education, and advocacy. Compliance with NFPA standards is voluntary unless federal or state agencies have incorporated wording from NFPA standards into their regulations. NFPA also has a Firewise USA program where communities can apply to be Firewise USA Sites. The application includes obtaining a wildfire risk assessment from the state forestry agency or fire department and developing an action plan. Firewise sites are required to annually invest the equivalent of at least one volunteer hour per dwelling unit in wildfire risk reduction actions.

State

California Fire Safe Regulations (Public Resources Code 4290)

California Department of Forestry and Fire Protection (Cal Fire) is responsible for protecting natural resources form fire on land designated as within the 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 4201-4204 specifies 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.”

Local

Lake County General Plan (2008)

The General Plan, Health and Safety Element addresses the potential wildfire risks of the County and includes goals and policies related to reducing hazards. The goals include minimizing loss of life, injury, or damage to property as a result of urban and wildland fire hazards. **Appendix GPCT** analyzes the Proposed Project’s consistency with the General Plan policies. The determination of the Proposed Projects consistency with the General Plan rests with the Lake County Board of Supervisors. The relevant policies are as follows:

Policy HS-7.1: The County shall consult with the appropriate fire service district or California Division 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.

Policy HS-7.2: In areas designated as high or extreme fire hazard, 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-7.3: The County shall actively support fuel modification and reduction programs on public and private lands throughout the County, and shall encourage methods other than burning in order to minimize air quality impacts.

Policy HS-7.4: 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 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 hazard areas by thinning, dicing, or controlled burning. Parks, golf courses, utility corridors, roads, and greenbelts should be located so that they may serve a double function as fuel breaks.

Policy HS-7.6: 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: 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.

Middletown Area Plan (2010)

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.

Lake County Community Wildfire Protection Plan (2009)

The Lake County Community Wildfire Protection Plan identifies risks and hazards from wildfire, provides community priorities for conservation-based fuel reduction, coordinates fire prevention strategies across property boundaries, and encourages integration of private land management goals within the County. An action plan is provided to implement policies identified in the plan. The action plan includes methods to reduce wildfire risk, enhance fire protection, development of evacuation routes, and promoting fire safe education. The action plan states that the Wildland Fire Management Plans required under General Plan Policy HS-7.4 should at least include fire-resistant landscaping, defensible space, and fire safe building. An evacuation route map is also provided in this action plan and shows that Butts Canyon Road adjacent to the Guenoc Valley Site is an evacuation route. State Route 29 and Highways 175 and 107 are also identified as evacuation routes.

Lake County Emergency Operations Plan (2017)

The Lake County Emergency Operations Plan contains an Urban & Wildland Interface Annex. This 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 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. Fire Services emergency related requests are answered by the Sheriff's Office Central Dispatch Center. This 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, this annex outlines the strategies and guiding principles fire fighters should use in the event of a wildfire and a structure assessment checklist.

3.16.4 IMPACTS

Method of Analysis

The analysis of wildfire impacts is based upon a review of project plans, maps, Cal Fire data and other available documents. The impact analysis also includes federal, state, and local regulations and guidelines and consultation with the Lake County Sheriff's Office.

Thresholds of Significance

The following thresholds of significance have been used to determine whether implementing the Proposed Project would result in a significant population and housing impact. These thresholds of significance are based on Appendix G of the State CEQA Guidelines and professional judgment. For purposed of this EIR, a significant impact would occur if implementation of the Proposed Project would do any of the following.

- Substantially impair an adopted emergency response plan or emergency evacuation plan
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of wildfire
- 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
- 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
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires

Impacts

IMPACT 3.16-1	**SUBSTANTIALLY IMPACT AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN**		
	Guenoc Valley Site	**Other Phase 1 Areas**	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Less than Significant	Less than Significant	No Impact
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

Guenoc Valley Site Phase 1 and Future Phases

The emergency response and evacuation plans in effect in Lake County are the Emergency Operations Plan and the Community Wildfire Protection Plan. As described above, the Emergency Operations Plan outlines emergency response procedures in effect in the County. The SLCFPD and Cal Fire would provide

emergency wildfire response. The Proposed Project includes measures to aid emergency response on the Guenoc Valley Site. These measures are included in **Appendix FIRE**, which is a Wildfire Prevention Plan prepared in collaboration with the County, Cal Fire, design and engineering teams, and grazing consultants. 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 and fire center, six Designated Meeting and Staging Areas, and emergency helipads. The emergency and fire center would include a structure to house firefighting equipment, as well as a headquarters space and storage for minor medical supplies. The County's emergency response protocols would not change due to development of the Proposed Project. The Lake County Sheriff's Office stated that the Proposed Project would not impact the Emergency Operations Plan (Macedo, 2019b).

The Community Wildfire Protection Plan identifies evacuation routes in the County. Butts Canyon Road is identified as an emergency evacuation route. Depending on where the fire is located, people at the Guenoc Valley Site would be directed to exit the site via the primary roadways to Butts Canyon Road or as a last resort would shelter in place at the six Designated Meeting and Staging Areas. As shown on **Figure 2-10**, the Proposed Project includes an extensive circulation system with roadways large enough for emergency access vehicles. In addition, these roadways would typically have 50 feet of defensible space cleared on each side of the roadway for a total fire break of 150 feet. Impacts to adopted emergency response or evacuation plans would be **less-than-significant**. Impacts related to traffic and emergency routes are addressed in **Section 3.13 Transportation and Traffic**.

Off-Site Workforce Housing

The Middletown Housing Site is within the Middletown Community Growth Boundary and is zoned for residential development. This area is in close proximity to other development and would not significantly change the County's emergency response systems as described in the Emergency Operations Plan. The Middletown Housing Site is in close proximity to many of the emergency evacuation routes identified in the Community Wildfire Protection Plan (i.e., Butts Canyon Road, State Route 29, and Highways 175 and 170). There would be **less-than-significant** impacts to adopted emergency response or evacuation plans.

Off-Site Infrastructure

The optional off-site pipeline would be constructed underground along the shoulder of Butts Canyon Road, so would not affect the ability of emergency access vehicles to drive on Butts Canyon Road. There would be **no impact** to emergency plans from the off-site well or pipeline.

IMPACT 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	**Other Phase 1 Areas**	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Less than significant	Less than Significant	No Impact
Mitigation Measures	None Required	None Required	None Required
Significance After Mitigation	N/A	N/A	N/A

Guenoc Valley Site Phase 1 and Future Phases

As discussed in Section 3.16.2, the Guenoc Valley Site contains wildfire risk factors, including chaparral and grassland vegetation, steep slopes, summers with low precipitation, and moderate wind speeds. As shown in **Figure 3.16-2** and discussed above, the southern and central portions of the site are within a Very High Fire Hazard Severity Zone and the rest of the site is within High and Moderate Fire Hazard Severity Zones. This indicates that Cal Fire has determined that a number of factors, such as terrain and weather, make the Guenoc Valley Site, highly susceptible to fire hazards.

The Wildfire Prevention Plan discussed in Impact 3.16-1 (**Appendix FIRE**) would ensure that wildfire risks are not exacerbated. In fact, the Wildfire Prevention Plan and the Proposed Project would reduce wildfire risks in the area by adding an additional fire response center, year round grazing and vegetation removal, fire breaks along project roadways in fire prone areas, and incorporating fire resistant landscaping. These measures would minimize the probability of uncontrolled spread of wildfire. The Wildfire Prevention Plan would be a condition of project approval of the Conditional Use Permit.

The Proposed Project would reduce the risk of wildfire from existing levels by implementing the Wildfire Prevention Plan; thus, this impact is **less-than-significant**. See Impact 3.16-5 for discussion of the potential of the Proposed Project to expose *people or structures* to risk of loss, injury or death involving wildland fires.

Off-Site Workforce Housing

The Middletown Housing Site is within a Moderate Fire Hazard Severity Zone, indicating that there is currently moderate wildfire risk and that it is a Wildland-Urban Interface Fire Area according to the CBC. The majority of the site is currently nonnative annual grassland, which is highly flammable, and is bordered to the north by open space grasslands. The off-site workforce housing would involve removal of this grassland and construction of structures built to the California Fire Code and CBC standards. Additionally, if the County determines that the site is in an area adjacent to open space with a high fuel source, a Wildland Fire Management Plan must be prepared according to the General Plan and Community Wildfire Protection

Plan. The off-site workforce housing would not exacerbate wildfire risk and therefore, this impact is **less than significant**.

Off-Site Infrastructure

The off-site well and pipeline would not have project occupants or contribute to the spread of wildfire. There is **no impact** related to the exacerbation of wildfire risk and exposing occupants to pollutants or uncontrolled wildfire.

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**		
	Guenoc Valley Site	**Other Phase 1 Areas**	
	Phase 1 and Future Phases	**Off-Site Workforce Housing**	**Off-Site Infrastructure**
Significance Before Mitigation	Potentially Significant	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.16-1: Fire Prevention during Construction	MM 3.16-1: Fire Prevention during Construction	MM 3.16-1: Fire Prevention during Construction
Significance After Mitigation	Less than Significant	Less than Significant	Less than Significant

Guenoc Valley Site Phase 1 and Future Phases

As discussed in **Section 2.5**, the Proposed Project includes installation of infrastructure such as roads, fuel breaks, wastewater collection systems, powerlines, and propane tanks. During infrastructure installation, construction equipment could temporarily increase fire risk, resulting in a **potentially significant impact**. Implementation of **Mitigation Measure 3.16-1** would reduce the probability of equipment accidentally igniting a fire during construction by requiring fully functioning spark arresters on appropriate equipment and requiring that vegetation be cleared prior to using spark-inducing equipment.

Operation and maintenance of infrastructure, with the exception of powerlines and propane tanks would have low impacts to the environment in terms of fire risk, because they would not be combustible or induce sparks. As discussed in **Appendix FIRE**, powerlines and propane tanks would be located underground, avoiding the potential for starting a fire. All infrastructure would be built according to applicable Federal and State regulations, such as, but not limited to, the Code of Federal Regulations and California Public Utility Codes for underground electrical facilities and gas lines. Furthermore, new and existing infrastructure would be properly maintained to reduce fire risk and vegetation would be managed according to the Wildfire Prevention Plan (**Appendix FIRE**), which would ensure that fuel levels remain low to the reduce the probability of igniting a fire. The addition of new roads throughout the Guenoc Valley Site could increase

fire risk by adding cars that could spark or cigarette litter. However, all primary roads would include at least 50 feet of fuel reduction zones on each side of the road, which would reduce this risk (see **Appendix FIRE**). Implementation of **Mitigation Measure 3.16-1**, conformance to regulatory requirements, and the Wildfire Prevention Plan would reduce the impact of fire risk from infrastructure to a **less-than-significant** level.

Off-Site Workforce Housing

Off-Site workforce housing would include the installation of infrastructure such as roads, powerlines, sewer lines, and water lines. Construction activities associated with the installation of this infrastructure may also cause a temporary increase in fire risk. This is a **potentially significant impact**. Implementation of **Mitigation Measure 3.16-1** would reduce the risk of igniting a fire during construction to less-than-significant levels. Additionally, the powerlines and gas lines would be underground to lower fire risks. This infrastructure would be build according to applicable Federal and State regulations for underground electrical facilities and gas lines. Implementation of **Mitigation Measure 3.16-1** and conformance to regulatory requirements would reduce the impact of fire risk from infrastructure to a **less-than-significant** level.

Off-Site Infrastructure

The off-site well and water pipeline installation may also cause a temporary increase in fire risk. This is a **potentially significant impact**. Implementation of **Mitigation Measure 3.16-1** would reduce the risk of igniting a fire during construction to **less-than-significant** levels. Operation of the well and water pipeline would not exacerbate wildfire risk.

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**	
	Guenoc Valley Site	**Other Phase 1 Areas**
	Phase 1 and Future Phases	**Off-Site Workforce Housing**
Significance Before Mitigation	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.16-2: Post Wildfire Emergency Response	MM 3.16-2: Post Wildfire Emergency Response
Significance After Mitigation	Less than Significant	Less than Significant

Guenoc Valley Site Phase 1 and Future Phases

After the event of a wildfire, the environment would be altered, especially vegetation cover. Vegetation typically absorbs rainfall and holds soil in place. The elimination of vegetation can reduce the ability of the soil to absorb water and cause sediments to flow down slopes. During rain events, these landscapes are very susceptible to flash flooding and sediment can collect in channels and cause mud or debris flows, a type of landslide (NOAA, 2015). Structures are most at risk from post-fire flooding and slope instability if

they are adjacent to steep slopes. The Guenoc Valley Site contains many steep slopes, (see page 10 of **Appendix FIRE**). The majority of the steep slopes are included in the dedicated open space area. However, some of the Phase 1 resort communities are located downslope from the steep slopes. Additionally, future phases may include the development of housing or structures downslope from steep slopes. This is a **potentially significant** impact.

Mitigation Measure 3.16-2 will require that after a wildfire, soil stabilization measures are implemented and included in a post wildfire emergency response plan (PWERP) approved by the South Lake County Fire Protection District (SLCFPD). Furthermore, the PWERP will specifically include an action to develop a long-term recovery and restoration plan to remediate the burned areas, and thus reduce potential hazards in the future to the public and property. Implementation of **Mitigation Measure 3.16-2** will reduce the impact to a **less-than-significant** level.

Off-Site Workforce Housing

Although there are no steep slopes on the Middletown Housing Site, the property is adjacent to Dry Creek and is already subject to flood hazards. Thus, after a wildfire, there may be **potentially significant impacts** related to flooding or debris flows. Implementation of **Mitigation Measure 3.16-2** will ensure that a PWERP is in place to stabilize the soil and prevent risks from post-fire drainage changes. With this mitigation, the impact is **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 FIRES**	
	Guenoc Valley Site	**Other Phase 1 Areas**
	Phase 1 and Future Phases	**Off-Site Workforce Housing**
Significance Before Mitigation	Potentially Significant	Potentially Significant
Mitigation Measures	MM 3.16-2: Post Wildfire Emergency Response	MM 3.16-2: Post Wildfire Emergency Response
Significance After Mitigation	Less than Significant	Less than Significant

Guenoc Valley Site Phase 1 and Future Phases

As described above, the Guenoc Valley Site contains Moderate to Very High Fire Hazard Severity Zones as designated by Cal Fire and large portions of the site have burned in historic wildfires. By establishing residential uses and commercial resort uses within this area, the Proposed Project could expose people and structures to a significant risk of loss involving wildland fires. This is a **potentially significant** impact. The Wildfire Prevention Plan (**Appendix FIRE**) is incorporated into the Proposed Project and includes extensive fire management techniques to significantly reduce the risk of wildfire ignition, spread, and damage. These techniques include fire breaks, active landscape management, and irrigated green belt. Typical fire breaks along roads would include 50 feet of fuel reduction zone on each side of the 25 foot

primary roads, totaling 125 feet of fire breaks along road. There would also be 100-foot fire breaks along particularly vulnerable areas along the Guenoc Valley Site boundary (as shown on **Figure 2-10**). Actively managed landscape areas would include year-round grazing and manual vegetation removal. Cattle, goats, and sheep would rotate throughout the Guenoc Valley Site to reduce overgrown flammable vegetation. Irrigated agricultural operations would interrupt potential wildfire movement throughout the site. Outdoor recreational amenities such as the golf course and equestrian fields would be regularly irrigated and provide an additional fire break. The reservoirs, ponds, and streams within the Guenoc Valley Site also reduce the spread of fires throughout the site. (**Appendix FIRE**)

All residential and commercial buildings would have defensible space zones ranging from a radius of 50 to 100 feet depending on surrounding vegetation and slopes. Within these zones, trees and shrubs would generally be vertically and horizontally separated to reduce "ladder fuel" conditions. Landscaping will prioritize fire resistant plants and avoid those with resinous, oily, or waxy leaves. Additionally, all buildings would comply with the California Fire Code and CBC, including the use of fire resistant building materials and fire suppression systems. All residential structures would be equipped with smoke detectors, fire sprinklers, window security quick-release where applicable, solid wood doors, and non-combustible metal and tempered glass doors and window in compliance with the CBC. Primary residential structures on dead-end roads that exceed 0.25 miles in length will be required to have exterior fire suppression systems as described in **Appendix FIRE.**

The proposed on-site emergency response and fire center includes a fire station, medical supplies, and an emergency helipad. The Proposed Project also includes six Designated Meeting and Staging Areas for residents, visitors, and employees to gather for safety and assistance. Fire hydrants will be located throughout the site and be designed to maintain a minimum of a two-hour flow. Surface water sources can also be drawn upon by fire engines or helicopter buckets in the case of a wildfire emergency.

Mitigation Measure 3.16-2 requires the preparation of a PWERP with post-fire response measures to reduce the risk of loss, injury or death as a result of wildfires. Implementation of the Wildfire Prevention Plan (**Appendix FIRE**), **Mitigation Measure 3.16-2**, and the California Fire Code will reduce the risks from wildfires to **less-than-significant** levels.

Off-Site Workforce Housing

As discussed above, the Middletown Housing Site has less of a risk for wildfires than the Guenoc Valley Site. However, it is still within a Moderate Fire Hazard Severity Zone designated by Cal Fire, so there is a **potentially significant** risk of loss, injury or death involving wildfires. **Mitigation Measure 3.16-2** requires the preparation of a PWERP with post-fire response measures including clearing of evacuation routes and post-fire stabilization. The proposed housing would comply with the California Fire Code and CBC and include fire resistant building materials and smoke detectors. Implementation of **Mitigation Measure 3.16-2** and compliance with the California Fire Code, CBC, General Plan, and Community Wildfire Protection Plan, reduces the direct and indirect risks to structures and risk of loss, injury, or death to **less-than-significant** levels.

IMPACT 3.16-6	CUMULATIVE IMPACTS
Significance Before Mitigation	Less than Significant
Mitigation Measures	None Required
Significance After Mitigation	N/A

For wildfire impact analysis, the immediate vicinity of the Guenoc Valley Site and Middletown Housing Site is considered the cumulative context because wildfires could spread from the borders of the sites. This entire region contains areas within Moderate, High and Very High Fire Hazard Severity Zones. Currently, the buildout of the Hidden Valley Community and the Valley Oaks Community are planned projects in this region. Development of these projects would introduce new people and infrastructure to the area. Increased development could potentially add more opportunities for igniting fires, more fuel, and make emergency response operations more complex. Any project implemented in this area will have to adhere to applicable State and local regulations with respect to fire zone designation. Furthermore, potential future projects will have to individually assess and mitigate potentially significant impacts related to building in the present and future environmental conditions that are conducive to starting and exacerbating wildfires (e.g. steep terrain). The Proposed Project will implement the Wildfire Prevention Plan and **Mitigation Measures 3.16-1** and **3.16-2** in order to reduce its potential for starting and exacerbating wildfires. Furthermore, these measures will ensure a thorough emergency response, safe evacuation routes, and the competent management of direct (e.g. smoke inhalation) and indirect effects associated with a wildfire (e.g. erosion). Because of the discussed factors, the Proposed Project in combination with future projects in the region will not create a significant impact. This cumulative impact is **less than significant**.

3.16.5 MITIGATION MEASURES

MM 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.
- 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.

MM 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 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.

SECTION 4.0

OTHER CEQA CONSIDERATIONS

4.0 OTHER CEQA CONSIDERATIONS

Section 15126 of California Environmental Quality Act (CEQA) Guidelines requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the Environmental Impact Report (EIR) identifies:

- Significant environmental effects of the Proposed Project (**Section 3.0**, **Environmental Analysis**);
- Significant environmental effects that cannot be avoided if the Proposed Project is implemented (**Section 4.3**).
- Significant irreversible environmental changes that would result from implementation of the Proposed Project (**Section 4.4**);
- Growth-inducing impacts of the Proposed Project (**Section 4.1.1**);
- Mitigation Measures proposed to Minimize Significant Effects (**Section 3.0**); and
- Alternatives to the Proposed Project (**Section 5.0, Alternatives**).

Section 15130 of the CEQA *Guidelines* requires that an EIR identify cumulative impacts of a project when the project's incremental effect is cumulatively considerable (**Section 4.2**).

Section 3.0, **Environmental Analysis**, provides a comprehensive presentation of the Proposed Project's environmental effects, proposed mitigation measures, and conclusions regarding the level of significance of each impact both before and after mitigation. **Section 5.0**, **Analysis of Alternatives**, presents a comparative analysis of alternatives to the Proposed Project. The other CEQA-required analyses described above are presented below, including indirect effects, a cumulative impact analysis, a description of significant and unavoidable impacts, and a description of significant irreversible environmental changes.

4.1 INDIRECT EFFECTS

An indirect impact is 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."

Section 15126.2 (d) CEQA *Guidelines* requires that an EIR discuss ways in which a Proposed Project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, the EIR must discuss the characteristics of the Proposed Project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or precedents that directly or indirectly encourage additional growth. Under CEQA, growth is not to be considered necessarily detrimental, beneficial, or of significant consequence. Induced growth would be considered a significant impact if it can be demonstrated that the potential growth, directly or indirectly, significantly affects the environment.

Growth Inducement Potential of the Proposed Project

In general, a project may foster growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public service, the provision of new access to an area, a change in zoning or general plan approval); or economic expansion in response to the project (e.g., changes in revenue base, employment expansion). These circumstances are further described below.

- **Elimination of Obstacles to Growth**: This refers to the extent to which a Proposed Project removes infrastructure limitations or provides infrastructure capacity, or removes regulatory constraints that could result in growth unforeseen at the time of project approval.
- **Economic Effects**: This refers to the extent to which a Proposed Project could cause increased activity in the local or regional economy. Economic effects can include such effects as the Multiplier Effect. A "Multiplier" is an economic term used to describe inter-relationships among various sectors of the economy. The multiplier effect provides a quantitative description of the direct employment effect of a project, as well as indirect and induced employment growth. The multiplier effect acknowledges that the on-site employment and population growth of each project is not the complete picture of growth caused by the project.

Elimination of Obstacles to Growth (Removal of Infrastructure Limitations or Provision of Capacity)

The elimination of physical obstacles to growth is considered a growth-inducing effect. A number of physical constraints to growth currently exist in the vicinity of the Proposed Project. In summary, the primary growth obstacles in the area today include:

- Limited capacity of the roadway system serving the Guenoc Valley and Middletown Housing sites;
- Absence of a public water supply system in the vicinity of the Guenoc Valley Site and limited capacity of the potable water system serving the Middletown Housing site;
- Absence of a public wastewater collection and treatment system in the vicinity of the Guenoc Valley Site and limited capacity of the wastewater system serving the Middletown Housing site;
- Limited capacity of the electric distribution system serving the Guenoc Valley and Middletown Housing sites; and
- Limited housing in the project area.

The Guenoc Valley Site and surrounding areas to the north, west, and south, are within the jurisdiction of the County, and are not served by urban infrastructure. The land use and zoning designations of the Guenoc Valley Site is an impediment to growth, which would be removed by amending the County General Plan and Special Study Area map of the Middletown Area Plan and by rezoning the Guenoc Valley Site from Rural Lands, Agriculture, Rural Residential, and an Agricultural Protection Zone to Guenoc Valley District (GVD). Development of the Proposed Project would either extend public services, or develop new infrastructure, to provide water, recycled water, sewer, electric, and telecommunication lines to the Guenoc Valley Site and Middletown Housing Site (see **Section 2.0**, **Project Description**, and **Section 3.14**, **Public Utilities**). Proposed infrastructure would be proportionate to the level of service necessary to accommodate the Proposed Project. All new infrastructure would be designed and judiciously sized to exclusively accommodate the demands of Phase 1 and Future Phases of the Proposed Project, resulting in the inability to service off-site areas, and eliminating the potential to induce growth.

The construction of new infrastructure and extension of existing infrastructure, would facilitate the expansion of urban development within the Guenoc Valley Site. While this would eliminate some of the infrastructure constraints that currently are obstacles to growth within the Guenoc Valley Site, it does not however foster growth outside of those boundaries. Since the surrounding area of the Guenoc Valley Site is undeveloped, new and existing infrastructure would only accommodate the needs of the Proposed Project. As a result, implementation of the Proposed Project is not anticipated to create or increase pressure on surrounding areas to develop or intensify and thus would not result in growth inducing impacts. Additionally, other areas to the north, northwest, and northeast of the Guenoc Valley Site are located in the County, and are subject to County General Plan and zoning requirements that would limit urban levels of growth; thus it is not anticipated that the Proposed Project would induce growth in these areas.

Economic Effects

In addition to the employment anticipated to be generated by the proposed land uses, additional local employment can be generated through what is commonly referred to as the "multiplier effect." Two different types of additional employment are tracked through the multiplier effect*. Indirect* employment includes those additional jobs that are generated through the expenditure patterns of direct employment associated with the Proposed Project. For example, workers in resort commercial operations would spend money in the local economy. The expenditure of the money from employees would result in additional jobs. Indirect jobs tend to be in relative proximity to the places of employment and residences.

In addition to direct and indirect employment, the multiplier effect also takes into effect *induced* employment. Induced employment follows the economic effect of employment beyond the expenditures of the employees within the Guenoc Valley Site to include jobs created by the stream of goods and services necessary to support businesses within the Proposed Project. For example, when a manufacturer buys products or sells products, the employment associated with those transactions is considered induced employment. The multiplier effect also considers the secondary effect of employee expenditures. Thus, it includes the economic effect of the dollars spent by the employees of the Proposed Project.

It is expected that a certain amount of growth may be induced due to the multiplier effect resulting from the employment generated by the Proposed Project. The Proposed Project would also foster greater economic opportunities in the immediate community, as well as Lake County, by attracting out-of-area visitors to the project area. Increased visitors can lead to opportunities for increased economic activity at existing local hotels, restaurants and other businesses. However, the actual environmental implications of this type of economic growth are too speculative to predict or evaluate, because they can be spread throughout Middletown, Lake County, and beyond.

4.2 CUMULATIVE IMPACT ANALYSIS

Cumulative impacts refer to the effects of two or more projects that, when combined, are considerable or compound other environmental effects. Cumulative impacts must consider the combined impact of past, present, and reasonably foreseeable future projects. When assessing a cumulative impact, an EIR must identify if the project makes a "cumulatively considerable" contribution to the cumulative impact. A project's contribution may be cumulatively considerable even if the project's individual impact is less than significant.

CEQA *Guidelines* Section 15130(b) requires that the discussion of cumulative impacts reflect the severity of the impacts and their likelihood of occurrence. The CEQA *Guidelines* state that the cumulative impact discussion does not need to provide as much detail as is provided in the analysis of project-only impacts and should be guided by the standards of practicality and reasonableness.

4.2.1 CUMULATIVE CONTEXT

The context for the cumulative impact analysis within this 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 County General Plan anticipates that the annual population growth rate in the County is approximately 2.5 percent, with population expected to increase from 71,901 residents in 2010 to 101,557 residents by 2030; extrapolating this growth rate would result in a population of approximately 115,973 in 2040. The County General Plan also anticipates that the annual population growth rate in the Middletown Planning area is approximately 3.5 percent, with population expected to increase from 1,407 residents in 2010 to 2,091 residents by 2030; extrapolating this growth rate would result in a population of approximately 2,448 in 2040 (Lake County, 2008).

The Middletown Area Plan (MAP) is a guide for long-term growth and development as a complement to the Lake County General Plan but focused on the Middletown Planning Area. The MAP estimates that population and household totals would increase with an annual 2% growth rate, adding 3,944 residents and 1,517 housing units from 2010 to 2030 (Middletown, 2010).

A brief description of reasonably foreseeable projects within a 5 mile radius of the Proposed Project is included below, and Table 4-1 includes a list of Lake County projects more than 5 miles from the Proposed Project.

- **Valley Oaks Planned Development**, located in Lake County 3.3 miles northwest of the Guenoc Valley Site. The proposed project is a request for a General Plan Amendment from the Agriculture and Rural Residential land use designations to the Suburban Residential and Community Commercial land use designations, a Sphere of Influence Amendment to the Hidden Valley Lake Community Services District (CSD), Annexation to the CSD, and a Rezoning from the Agriculture-Scenic Combining-Floodway Fringe Combining (A-SC-FF) and the Rural Residential-Scenic Comibining-Floodway Fringe Combining (RR-SC-FF) zoning districts to the "PDR" and "PDC" districts on a ±150 acre property located at 18196 and 18426 South State Highway 29, Middletown. The purpose of the requested General Plan Amendment, Sphere of Influence Amendment, Annexation, Zone change and Tentative Map, is to allow for the consideration of a well-planned senior community known as "Valley Oaks". As depicted on the "Valley Oaks" General Plan of Development (David Colombo Architect 10/17 /2013), "Valley Oaks" would be comprised of ±380 single-family residential parcels restricted for senior housing (age 55-years or older), a medium density (attached or detached) residential "bulk" parcel restricted for senior housing (age 55- years or older), a medium density senior housing parcel and a residential care parcel, 4 C-2 commercial parcels and integrated recreational and project open space (CEQAnet.gov, 2019b).

- **Hidden Valley Lake Subdivision**, located in Lake County 3.3 miles northwest of the Guenoc Valley Site. Hidden Valley Lake is the closest residential community to the Guenoc Valley Site. This community has approximately 920 undeveloped lots. The Hidden Valley Lake Community Service District provides water and wastewater services to the community and currently has a moratorium in place on water/wastewater connections to the district, with only 54 undeveloped lots currently served by meters. This EIR conservatively assumes that this moratorium will be lifted and all 920 lots may be constructed under cumulative conditions.

- **Middletown Muli-Use Path**, located in Lake County approximately 4.5 miles west of the Guenoc Valley Site, and approximately 0.7 miles south of the Middletown Housing Site. The project would construct a Class I multi-use path within the State Route 29 right of way from the intersection with Rancheria Road to the intersection with Central Park Road, in the community of Middletown located in southern Lake County. The path would be approximately one mile long and 20 feet wide. The proposed path consists of a four-foot gravel equestrian trail bordered by an eight-foot paved path, bordered by two-foot gravel shoulder, bordered by an earthen drainage swale (CEQAnet.gov, 2019c).

- **Gardiner Horse Facility**, located in Napa County 3.2 miles south-southeast of the Guenoc Valley Site. This project consists of approval of a use permit to operate a commercial facility for the board and care of horses and fostering of retired and rescued horses for a max of 30 horses. Activities would include horse training and lessons for horse owners and visitors, trail riding on the property, and on-site composting and use of manure (less than 1,00 cy). Employees would include two full-time workers and one trainer. Daily hours of operation: boarding 24 hours a day; employees 8:00 am - sunset; non-residence boarder access 8:00 am - sunset; training 9:00 am – sunset (CEQAnet.gov, 2019a).

- **AT&T Pope Valley Telecommunication Facility**, located in Napa County 3.75 miles south of the Guenoc Valley Site. AT&T is seeking the review and approval of a Conditional Use Permit to allow the construction, operation, and maintenance of an unmanned wireless telecommunications facility at this location. The proposed project consists of up to 12 panel antennas mounted on a 150 foot tall monopine, 15 remote radio units and four surge suppressors, a new equipment shelter, and fencing surrounding the tower and adjacent 8-ft. square compound (Napa County, 2019a).

TABLE 4-1
LAKE COUNTY DEVELOPMENT PROJECTS MORE THAN 5 MILES FROM THE GUENOC VALLEY SITE

Project Name	Type	Description	Acres	Location	Distance to Guenoc Valley Site
Tucker Lakebed Permit	Community Building	Construction of a church and assorted parking and office and multi-purpose space.		9729 Crestview Drive, Clearlake	19.7
Major Use Permit UP 18-12	Cannabis	Approval of up to 51,000 sf of mixed outdoor and indoor Commercial Cannabis grow site via Minor Use Permit 18-10, IS 18-16, and EA 18-06. Three 30' x 96' greenhouses will be used for the indoor grow areas (8,640 sf in indoor grow area). Water will be taken from an existing on-site well; septic will use an existing on-site septic system. Estimated monthly water usage is 83,000 gallons. The hours of operation would be Monday through Saturday 7:00 AM to 9:00 PM. There will be 5 employees working on 1 to 5 shifts at any given time. Minimal grading is required for this project. There are no mapped sensitive species on the site. The site is not in a flood plain.		38° 50' 27.7" - 122° 35' 49.02"	6.8
Major Use Permit UP 18-25 and 26	Cannabis	One A-Type 3 cultivation license [outdoor cultivation for adult use cannabis w/o the use of light deprivation and/or artificial lighting in the canopy area] about 22,000 sf in total canopy size and up to 65,000 sf of cultivation area, and one A-Type 3b indoor cultivation site with up to 43,560 sf of canopy area and up to 65,000 sf of cultivation area. The cultivation would occur on tax lot 54. The proposed grow area will be fully enclosed with a 7' tall chain link fence, metal gates and security locks, and the site and growing facility will be protected by security surveillance cameras. The parcel contains one dwelling unit (APN 54), a barn, a well, and several smaller out buildings. There is an existing medicinal grow area at the site of the new grow area that contains up to 48 plants. Annual water use is estimated to be 190,000 gallons according to the applicant.		38° 55' 10.0" - 122° 48' 28.28	19
Major Use Permit 18-20	Cannabis	One Type 3 Cultivation License [outdoor cultivation for adult use cannabis w/o the use of light deprivation and/or artificial lighting in the canopy area] about 22,000 sf in total canopy size. The cultivation would occur on tax lot 64. The proposed grow area will be fully enclosed with a 6' tall chain link fence, metal gates and security locks, and the site and growing facility will be protected by security surveillance cameras. The two parcels contain one dwelling unit (APN 64), a well, a 20' x 20' building to be used for drying the plants post-harvest; two 2500 gallon water tanks, and several smaller out buildings. There is an existing medicinal grow area at the site of the new grow area that contains up to 48 plants. Annual water use is estimated to be 1,600,000 gallons according to the applicant.		38° 53' 41.6" - 122° 39' 32.8"	11.8

Project Name	Type	Description	Acres	Location	Distance to Guenoc Valley Site
Major Use Permit 18-22	Cannabis	Approval of up to 73,560 sf (one acre) of outdoor Commercial Cannabis grow site via use permit 18-22; minor use permits 18-22, 23 and 24; IS 18-27, and Early Activations 18-18, 19, 20. Water will be taken from two existing on-site wells. The existing septic system serves the dwelling, however the dwelling will change from a traditional single family dwelling to a farm labor quarter, and the septic water usage is 65,000 gallons. The hours of operation would be Monday through Sunday 8:00 am to 6:00 pm. There will primarily be 4 employees working on 1 to 2 shifts Minimal grading is required for this project. There are no mapped sensitive species on the site. The site is not in a flood plain.		38° 53' 50.4" - 122° 29' 20.2"	6.9
Major Use Permit 18-22	Cannabis	Approval of up to 43,560 sf (one acre) of outdoor Commercial Cannabis grow site via Use Permit (UP) 18-15; Initial Study 18-20, and Early Activation 18-11. Water will be taken from an existing on-site well; septic will use an existing on-site septic system. Estimated monthly water usage is 65,000 gallons. The hours of operation would be Monday through Saturday 9:00 am to 5:00 pm. There will be 5 employees working on one to five shifts at any given time. Minimal grading is required for this project. There are no mapped sensitive species on the site. The site is not in a flood plain	1	38° 53' 38.5" - 122° 41' 58.0"	13.3
Dollar General Retail Store	Retail	The developer, Cross Development, is proposing a modification of a use permit for a 9,100 sf store to allow a 7,225 sf retail store for Dollar General. The project area is located at the northern entrance to downtown Middletown, near Middletown HS, with frontage along Hwy 29. This site is within the 100 year flood zone.		State Route 29 and Butts Canyon Rd, Middletown, CA	3.1
Redwood Credit Union - Lower Lake	Commercial	The project proposes construction of a new 4,995 sf building to house a Redwood Credit Union bank branch a well as retail space. The credit union anticipates utilizing about 3,385 sf of the building, thus leaving approx 1,610 sf of the building available for a future tenant. RCU desires to find a future tenant that is complimentary to services provided by the credit union. Possibilities might include insurance, financial advice, a title company, or other similar services. A small coffee shop or similar might also be considered. In addition, sidewalks, landscaping, parking spaces, a bike rack, a trash enclosure, and sewer and water connections are proposed to support the commercial uses.		38° 54' 33.5" - 122° 36' 43.4	11
Wild Diamond Vineyard Project	Vineyard	Wild Diamond Vineyards, LLC proposes to plant approximately 80 acres of new vineyards, construct a winery with the capacity to produce up to 52,800 cases of wine per year, a tasting room that will be open to the public, host 35 special events per year, and includes a self-guided interpretive center. Approval of the project would include a Major Use Permit for the agricultural related winery and tasting room and associated special winery events; a Grading Permit; and a Lot Line Adjustment between the Applicant's parcels to provide appropriate building setbacks.	80	38°50'00.3" - 122°33'39.2"	5.1
Sources: Napa County, 2019b; Lake County, 2016; CEQANet.gov, 2019a-c.					

4.2.2 GEOGRAPHIC SCOPE

The geographic scope of the cumulative impact analysis varies depending upon the specific environmental issue area being analyzed. For example, the scope of the cumulative impact analysis for aesthetics include the area that comprises the viewshed of and from a project site, whereas the scope of the cumulative impact analysis for air quality would analyze impacts in the air basin, which is a much larger area. **Table 4-2** summarizes the geographic scope of the cumulative impact analysis for each issue area.

The cumulative analysis assumes build out of the Proposed Project and Middletown Housing Site.

TABLE 4-2
GEOGRAPHIC SCOPE OF CUMULATIVE IMPACTS

Issue Area	Geographic Area (Based on Potential for Impacts)
Aesthetics	Regional development in southeastern Lake County; due to terrain, view sheds are primarily local
Land Use and Agriculture	Regional development in southeastern Lake County; compatibility limited to project sites and immediate vicinity
Air Quality	Lake County Air Basin
Biological Resources	Regional development in southeastern Lake County
Cultural Resources	Regional development in southeastern Lake County
Geology and Soils	Project sites and immediate vicinity
Greenhouse Gas Emissions	Global, regional, and local (Lake County Air Basin)
Hazards and Hazardous Materials	Project sites and immediate vicinity
Hydrology and Water Quality	Regional development in southeastern Lake County
Mineral Resources	Project sites and immediate vicinity
Noise	Project sites and 1,000 foot buffer, as well as roadways that would accommodate project related employee, truck, and residential traffic
Population and Housing	Lake County
Public Services	Middletown and local service providers including the school districts
Transportation and Traffic	Roadways that would accommodate project related employee, truck, and residential traffic
Utilities	Lake County
Energy	Statewide and regional development in Lake County, local energy providers and their customers

4.2.3 CUMULATIVELY CONSIDERABLE IMPACTS

CEQA *Guidelines* Section 15130(a) provides the following direction with respect to the cumulative impact analysis and the determination of significant effects.

1. A cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts.
2. When the combined cumulative impact associated with the project's incremental effect is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed further.

3. An EIR may determine that a project's contribution to a significant cumulative effect will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

The following is a list of the findings of the cumulative impact analysis by environmental topic as described in **Section 3.0**. Refer to **Section 3.0** for a detailed discussion of the nature and scope of cumulative impacts associated with the Proposed Project. The Proposed Project would make an unavoidable cumulatively considerable contribution to cumulative impacts related to traffic noise levels, greenhouse gases and transportation and traffic. The Proposed Project 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**.

Aesthetics

3.1-4 Cumulative impact on visual resources and creation of new sources of light and glare. Less than Significant.

Land Use and Agriculture

3.2-6 Contribute to adverse cumulative impacts associated with land use and agriculture and conversion of Important Farmland. Less than Significant with Mitigation.

Air Quality

3.3-6 Cumulative air quality impacts during construction and operation. Less than Significant with Mitigation.

Biological Resources

3.4-7 Contribute to the cumulative loss of special-status wildlife species or their habitat in the region. Less than Significant with Mitigation.

Cultural Resources

3.5-5 Cumulative impacts to cultural and paleontological resources. Less than Significant with Mitigation.

Geology and Soils

3.6-6 Cumulative effects associated with geology and soils. Less than Significant with Mitigation.

Greenhouse Emissions

3.7-1, 3.7-2 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant and/or cumulative impact on the environment; or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Significant and Unavoidable.

Hazards and Hazardous Materials

3.8-4 Cumulative hazards and hazardous materials impacts. Less than Significant.

Hydrology and Water Quality

3.9-6 Cumulative hydrology and water quality impacts. Less than Significant.

Noise

3.10-5 Cumulative noise impacts along Butts Canyon Road. Significant and Unavoidable.

Population and Housing

3.11-2 Contribute to adverse cumulative impacts associated with population and housing. Less than Significant.

Public Services

3.12-2 Contribute to adverse cumulative impacts associated with increased demand for police protection services. Less than Significant.

3.12-4 Contribute to adverse cumulative impacts associated with increased demand for fire protection services. Less than Significant.

3.12-6 Contribute to adverse cumulative impacts associated with increased demand for school services. Less than Significant.

3.12-8 Contribute to adverse cumulative impacts associated with parks and recreation. Less than Significant.

Transportation and Traffic

3.13.8 Increased traffic volumes at study area intersections outside Lake County jurisdiction under cumulative conditions. Significant and Unavoidable.

Utilities

3.14-4 Cumulative impact to water and wastewater systems. Less than Significant.

3.14-7 Cumulative impact to solid waste. Less than Significant.

3.14-9 Cumulative impact related to electricity, propane, and telecommunication services. Less than Significant.

Energy

3.15-4 Cumulative impact related to increased energy usage. Less than Significant.

Wildfire

3.16-6 Contribute to adverse cumulative impacts associated with wildfire risks. Less than Significant.

4.3 SIGNIFICANT AND UNAVOIDABLE IMPACTS

The following is a summary of significant unavoidable adverse impacts related to the Proposed Project as described in each issue area.

Proposed Project – Phase 1

3.1-1 Aesthetics: Degrade a scenic vista or the existing visual character or quality of public views - Project Specific Impact**.** The visual alteration of the Guenoc Valley Site resulting from construction of the Primary Access Road Option 2 at McCain Canyon would constitute a significant and unavoidable impact to the visual character and scenic views of the site.

3.2-3 Agricultural Resources: 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. Phase 1 of the Proposed Project would convert approximately 50.5 acres of Important Farmland to non-agricultural use.

3.7-1 Greenhouse Gas Emissions: Generate emissions of GHGs that may have a significant impact on the environment - Cumulative Impact. Phase 1 would result in emissions of GHGs that would contribute on a cumulative level to impacts associated with climate change.

3.7-2 Greenhouse Gas Emissions: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases – Cumulative impact. Phase 1 would result in a major increase in GHG emissions above BAAQMD thresholds and therefore conflict with the AB 32 Scoping Plan.

3.10-5 Noise: Substantial Increase in Traffic Noise – Project Specific and Cumulative Impact. The Proposed Project would cause a substantial increase in traffic related noise at sensitive receptors located along Butts Canyon Road between SR-29 and the project driveways.

3.13-8 Traffic: Generation of Vehicle Miles Traveled (VMT) above regional average – Project specific impact. Phase 1 would not meet the recommended OPR threshold of a 15 percent reduction in per capita VMT below the regional average.

Proposed Project – Future Phases

3.1-2 Aesthetics: Degrade a scenic vista or the existing visual character or quality of public views - Project Specific Impact**.** Depending on the location, scale, design, and density of the proposed

development, future phases under the proposed zoning designation of GVD could substantially alter the visual character or scenic vistas of the Guenoc Valley Site as viewed from public vantage points, from rural to urban development. The visual alteration of the Guenoc Valley Site under future phases is conservatively assumed to constitute a significant and unavoidable impact to the visual character and scenic views of the site.

3.2-3 Agricultural Resources: 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. Depending on the location, future phases under the GVD could convert Important Farmland to non-agricultural use.

3.7-1 Greenhouse Gas Emissions: Generate emissions of GHGs that may have a significant impact on the environment – Cumulative Impact. Future phases under the GVD would result in emissions of GHGs that would contribute on a cumulative level to impacts associated with climate change.

3.7-2 Greenhouse Gas Emissions: Generate emissions of GHGs that may have a significant impact on the environment – Cumulative Impact. Future phases under the GVD would result in emissions of GHGs that would contribute on a cumulative level to impacts associated with climate change.

3.10-5 Noise: Substantial Increase in Traffic Noise – Cumulative Impact. The Proposed Project would cause a substantial increase in traffic related noise at sensitive receptors located along Butts Canyon Road between SR-29 and the project driveways.

3.13-5 Traffic: Generation of VMT above regional average – Project specific impact. Future Phases would not meet the recommended OPR threshold of a 15 percent reduction in per capita VMT below the regional average.

3.13-6 Traffic: Intersection Level of Service – Cumulative impact. Future Phases of the Proposed Project would cause the level of service at three intersections outside Lake County jurisdiction to exceed acceptable levels.

4.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS

Section 15126.2 (c) of the CEQA Guidelines requires a discussion of any significant irreversible environmental change that would be caused by the Proposed Project. Generally, a project would result in significant irreversible changes if:

- The primary and secondary impacts would generally commit future generations to similar uses (such as highway improvement which provides access to a previously inaccessible area);
- The project would involve a large commitment of nonrenewable resources;
- The project would involve uses in which irreversible damage could result from potential environmental accidents associated with the project; or
- The proposed consumption of resources is not justified.

Implementation of the Proposed 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 following irreversible environmental changes.

- Conversion of undeveloped land. Undeveloped land would be converted to urban uses, thus precluding other alternate land uses in the future.
- Irreversible consumption of energy and natural resources associated with the future use of the project site.

Resources that will be permanently and continually consumed by project implementation include: water, electricity, propane, and fossil fuels. Wood products, asphalt, and concrete would be used in construction. With respect to operational activities, compliance with all applicable building codes, as well as mitigation measures, planning policies, and standard conservation features, would ensure that resources are conserved to the maximum extent possible. The Proposed Project would incorporate a number of sustainable practices that reduce the consumption of energy. Nonetheless, construction activities related to the Proposed Project would result in irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels, propane gas, and gasoline for automobiles and construction equipment.

The CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by environmental accidents associated with the Proposed Project. The Proposed Project would result in the use, transport, storage, and disposal of minor amounts of hazardous materials during construction and operation of the Proposed Project, as described in **Section 3.8**, **Hazards and Hazardous Materials**. However, all such activities would comply with applicable state and federal laws related to hazardous materials, which significantly reduces the likelihood and severity of accidents that could result in irreversible environmental damage. The Proposed Project does not include any uniquely hazardous uses that would require any special handling or storage. Further, no industrial uses that would use or store acutely hazardous materials are proposed under the Proposed Project.

As described above, implementation of the Proposed Project would result in the long-term commitment of resources to urban development. The most notable significant irreversible impacts of conversion of portions of the Guenoc Valley Site site to urban uses are a reduction in natural vegetation and wildlife communities, alteration of the visual character of the site, increased generation of pollutants, the use of non-renewable and/or slowly renewable natural and energy resources, such as lumber and other forest products and water resources during construction activities. These irreversible impacts, which are unavoidable consequences of growth, are described in detail in the appropriate sections of this EIR (see **Section 3.0**).

SECTION 5.0

ANALYSIS OF ALTERNATIVES

5.0 ANALYSIS OF ALTERNATIVES

5.1 INTRODUCTION

This chapter reviews alternatives to the Proposed Project considered during the preparation of this Environmental Impact Report (EIR). The purpose of the alternative analysis, according to California Environmental Quality Act (CEQA) *Guidelines* Section 15126.6(a), is to describe a range of reasonable alternative projects that could feasibly attain most of the objectives of the Proposed Project and to evaluate the comparative merits of the alternatives. CEQA *Guidelines* Section 15126.6(b) requires consideration of alternatives that could reduce to a less than significant level or eliminate any significant adverse environmental effects of the Proposed Project, including alternatives that may be more costly or could otherwise impede the Proposed Project's objectives.

An EIR need not consider every conceivable alternative to a project, nor is it required to consider alternatives that are infeasible. The range of alternatives evaluated in an EIR is governed by a "rule of reason," which requires the evaluation of alternatives "necessary to permit a reasoned choice." Alternatives considered must include those that offer substantial environmental advantages over the Proposed Project and may be feasibly accomplished in a successful manner considering economic, environmental, social, technological, and legal factors. When addressing feasibility, State CEQA Guidelines Section 15126.6 states that:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site already owned by the proponent).

In accordance with the CEQA *Guidelines*, the alternatives considered in this EIR include those that 1) could accomplish most of the basic objectives of the project, and 2) could avoid or substantially lessen one or more of the significant effects of the project. To provide the appropriate context for this alternatives analysis, the project objectives and key significant effects are summarized below in **Section 5.2**. Alternatives initially considered but eliminated from further consideration due to their inability to achieve the project objectives and/or to reduce environmental impacts associated with the Proposed Project are described in **Section 5.3**. Alternatives determined to achieve these criteria are discussed in **Section 5.4**. This discussion evaluates the capacity of selected project alternatives to accomplish the basic objectives of the project and provides a comparison of the potential environmental impacts expected to occur for each issue area. These comparisons are used in **Section 5.5** to determine the Environmentally Superior Alternative.

5.2 OVERVIEW OF THE PROPOSED PROJECT

5.2.1 PROJECT OBJECTIVES

To effectively evaluate the alternatives, the project objectives were used to determine the reasonableness and feasibility of each alternative. Objectives (as presented in **Section 2.0**, **Project Description**) considered for the purpose of alternative formulation are as follows.

- Develop a luxury international destination resort that generates financial profits for the investor.
- Propose a mix of resort, agriculture, and residential uses consistent with the Lake County General Plan policies, Zoning regulations, Middletown Area Plan, and economic development goals and policies.
- Become a "model project" of wildfire mitigation through innovative landscape management, dual purpose fire access roads, emergency action management, and animal husbandry practices with the intention to reduce the risk of fire.
- Meet Middletown Area Plan objectives by incorporating smart growth principles and low density development strategies while providing high end luxury accommodations and services.
- Provide sufficient workforce housing options and educational training programs to expand the existing high-end hospitality and construction employment opportunities within Lake County.
- Achieve a balance between the low densities consistent with a luxury resort and the project size required to be financially viable.
- Provide sufficient resort amenities to attract a diverse range of guests and residents.
- Propose a development project that is sustainable with landscape stewardship practices including native plants, mindful grading, green roofs, on-site water treatment and reuse, locally grown food and animal products, alternative energy production, and open space preservation.
- Plan for long term growth of the County with a significant fiscal contribution toward the County's community goals of new economic, employment, and housing opportunities.
- Ensure consistent and reliable electrical energy.

5.2.2 KEY IMPACTS OF THE PROPOSED PROJECT

The significant environmental impacts of the Proposed Project that the alternatives will seek to eliminate or reduce were determined and based upon the findings contained within each technical section evaluated in **Section 3.0**, **Environmental Analysis**, of this Draft EIR. Construction of the Proposed Project could result in potential short-term impacts associated with air quality, biological resources, cultural resources, geology and soils, hazardous materials, hydrology and water quality, noise, energy, and wildfire. Project design, regulatory requirements, and mitigation measures would reduce all potential short-term impacts associated with construction to a less-than-significant level. Operation and maintenance of the Proposed Project would result in potential impacts associated with aesthetics, land use and agriculture, air quality, biological resources, geology and soils, greenhouse gas (GHG) emissions, hazardous materials, hydrology and water quality, noise, transportation and traffic, and wildfire. Project design, regulatory requirements, and recommended mitigation measures would reduce most potential long-term impacts to a less than significant level. Impacts determined to be significant and unavoidable are listed in **Section 4.3** and include.

Proposed Project – Phase 1

3.1-1 Aesthetics: Degrade a scenic vista or the existing visual character or quality of public views - Project Specific Impact**.** The visual alteration of the Guenoc Valley Site resulting from construction of the Primary Access Road Option 2 at McCain Canyon would constitute a significant and unavoidable impact to the visual character and scenic views of the site.

3.2-3 Agricultural Resources: 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. Phase 1 of the Proposed Project would convert approximately 50.5 acres of Important Farmland to non-agricultural use.

3.7-1 Greenhouse Gas Emissions: Generate emissions of GHGs that may have a significant impact on the environment - Cumulative Impact. Phase 1 would result in emissions of GHGs that would contribute on a cumulative level to impacts associated with climate change.

3.7-2 Greenhouse Gas Emissions: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases – Cumulative impact. Phase 1 would result in a major increase in GHG emissions above BAAQMD thresholds and therefore conflict with the AB 32 Scoping Plan.

3.10-5 Noise: Substantial Increase in Traffic Noise – Project Specific and Cumulative Impact. The Proposed Project would cause a substantial increase in traffic related noise at sensitive receptors located along Butts Canyon Road between SR-29 and the project driveways.

3.13-5 Traffic: Generation of Vehicle Miles Traveled (VMT) above regional average – Project specific impact. Phase 1 would not meet the recommended OPR threshold of a 15 percent reduction in per capita VMT below the regional average.

Proposed Project – Future Phases

3.1-1 Aesthetics: Degrade a scenic vista or the existing visual character or quality of public views - Project Specific Impact. Depending on the location, scale, design, and density of the proposed development, future phases under the proposed zoning designation of Guenoc Valley District (GVD) could substantially alter the visual character or scenic vistas of the Guenoc Valley Site as viewed from public vantage points, from rural to urban development. The visual alteration of the Guenoc Valley Site under future phases is conservatively assumed to constitute a significant and unavoidable impact to the visual character and scenic views of the site.

3.2-3 Agricultural Resources: 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. Depending on the location, future phases under the GVD could convert Important Farmland to non-agricultural use.

3.7-1 Greenhouse Gas Emissions: Generate emissions of GHGs that may have a significant impact on the environment – Cumulative Impact. Future phases under the GVD would result in emissions of GHGs that would contribute on a cumulative level to impacts associated with climate change.

3.7-2 Greenhouse Gas Emissions: Generate emissions of GHGs that may have a significant impact on the environment – Cumulative Impact. Future phases under the GVD would result in emissions of GHGs that would contribute on a cumulative level to impacts associated with climate change.

3.10-5 Noise: Substantial Increase in Traffic Noise – Cumulative Impact. The Proposed Project would cause a substantial increase in traffic related noise at sensitive receptors located along Butts Canyon Road between SR-29 and the project driveways.

3.13-5 Traffic: Generation of VMT above regional average – Project specific impact. Future Phases would not meet the recommended OPR threshold of a 15 percent reduction in per capita VMT below the regional average.

3.13-8 Traffic: Intersection Level of Service – Cumulative impact. Future Phases of the Proposed Project would cause the level of service at the intersection of SR 29 and Butts Canyon Road and two intersections within the County of Napa to exceed acceptable levels.

5.3 APPROACH TO ALTERNATIVE ANALYSIS

In accordance with the alternatives analysis requirements of CEQA, two alternative projects and a no project alternative were identified and analyzed. Each alternative was chosen based on its ability to potentially reduce one or more environmental impacts, while still achieving some of the project objectives.

In accordance with the requirements of the CEQA Guidelines and relevant case law, the presentation and analysis of alternatives is not as detailed as that of the project. The presentation and analysis of alternatives, however, is designed to provide enough information to the public and decision-makers to allow for a reasoned, meaningful discussion of the relative merits of the alternatives versus the Proposed Project.

5.4 ALTERNATIVES ELIMINATED FROM CONSIDERATION

In addition to the alternatives evaluated in **Section 5.5** below, variations in the Proposed Project and an existing zoning alternative were considered for their potential to reduce the environmental impacts of the Proposed Project. These alternatives were preliminarily considered but eventually excluded from full comparative analysis within the EIR because they were determined to be infeasible, unable to meet the objectives of the Proposed Project, and/or were not likely to reduce significant environmental impacts of the Proposed Project. Alternatives considered, but rejected, are briefly discussed below.

All Residential Alternative: Replacing all proposed commercial, and business professional uses with residential use would not reduce any significant impacts of the Proposed Project, and could increase traffic, air quality, greenhouse gas (GHG) emissions, and noise impacts because there would be no internalization of vehicle trips if no commercial and/or employment generating uses were provided. This alternative also would not meet the project objectives of developing a luxury international destination resort that generates financial profits for the investor and providing sufficient resort amenities to attract a diverse range of guests and residents.

No Residential Alternative: Replacing all proposed residential uses with commercial uses would not reduce any significant impacts of the Proposed Project because commercial uses have higher trip generation rates than residential uses and thus would result in greater vehicle trips and associated traffic, noise, air pollutant and GHG emission impacts. Additionally, impacts associated with conversion of open space land to urban uses, including but not limited to, potential impacts associated with biological

resources, agricultural resources and stormwater runoff, would be similar. This alternative also would not meet the project objectives of providing a mix of resort, agriculture, and residential uses and providing workforce housing. This alternative also would provide more commercial square footage than the local market would be able to absorb, and would exceed demand, which would make the alternative infeasible.

Existing Zoning Project Alternative: Under the existing Agriculture, Rural Lands, and Rural Residential zoning designations on the Guenoc Valley Site, a total of up to 800 residential units would be permitted over the 16,000-acre site. However, these residential units would be restricted to a maximum density of one dwelling unit per 5 acres unless there would be significant environmental impacts, then one unit per 2.5 acres is allowed. This alternative was eliminated because it would not allow for clustered development and therefore would result in a larger project footprint and impacts to habitat and cultural resources. Additionally, this alternative would not meet the project objectives of developing a luxury international destination resort that generates financial profits for the investor and providing sufficient resort amenities to attract a diverse range of guests and residents.

5.5 ALTERNATIVES EVALUATED IN THIS DRAFT EIR

The following section describes each alternative considered within this EIR and describes the ability of each alternative to meet the project objectives.

5.5.1 ALTERNATIVE A – NO PROJECT/NO BUILD ALTERNATIVE

Description

As required by CEQA *Guidelines* Section 15126.6(e), a No Project Alternative has been evaluated. The evaluation of the No Project Alternative allows decision makers to compare the impacts of the Proposed Project against no development of the project. According to the CEQA *Guidelines* Section 15126.6(e)(2), the No Project Alternative shall discuss what would reasonably be expected to occur if the project were not approved. For purposes of this EIR, the No Project/No Development consists of existing conditions, with no future development on the Guenoc Valley Site. Under this alternative, existing County land use and zoning designations for the project site would remain in effect, and no development would occur. Ongoing agricultural activities and previously approved vineyard development would continue.

Ability to Meet Project Objectives

This alternative would not accomplish any of the basic project objectives.

5.5.2 ALTERNATIVE B: REDUCED DENSITY, SIMILAR DEVELOPMENT FOOTPRINT

Description

Under the Reduced Density, Similar Development Footprint Alternative (Alternative B), open space would remain the same as the Proposed Project, but residential densities would be reduced by approximately 20 percent to 1,100 units. It is assumed that this reduction would occur over both Phase 1 and future phases. As a result, the number of units and population associated with this alternative would be less than under the Proposed Project. The acreage of all other uses, including roads, agriculture, resort structures, and

recreational and supporting facilities would be identical to the Proposed Project. The Off-Site Workforce Housing in Middletown would also remain identical to the Proposed Project and therefore is not analyzed in **Section 5.6**.

Ability to Meet Project Objectives

Alternative B would partially achieve some of the objectives of the Proposed Project, such as providing a mix of agricultural, resort, and residential uses and providing resort amenities to attract a range of guests. It would not meet the objective of achieving a balance in housing densities consistent with a luxury resort.

5.5.3 ALTERNATIVE C – HIGH DENSITY, COMPACT DEVELOPMENT FOOTPRINT ALTERNATIVE

Description

Under the High Density/Compact Development Alternative (Alternative C), open space would be increased, and development areas would decrease, however, the overall number of residential units would remain the same. This would result in an increase of project density within a smaller site footprint. Both the Phase 1 and future phase development footprint would be reduced to the area of the lots within the Maha Farm and Bohn Ridge planning areas. All of the 400 hotel units would be combined into one large hotel and the 1400 residential estates and 450 resort residential units would have significantly reduced lot sizes. This would reduce the average lot size from 4.8 acres to 0.8 acres. Open space areas would increase proportionally. Many of the resort amenities would be reduced; however, the golf course would remain in its proposed location. The Off-Site Workforce Housing in Middletown would also remain identical to the Proposed Project and therefore is not analyzed in **Section 5.6**.

Ability to Meet Project Objectives

Alternative C would meet some of the basic objectives of the Proposed Project to minimize environmental impacts related to construction activities by utilizing existing facilities and infrastructure to the extent possible, and would create a mix of agriculture, resort, and residential uses. However, this alternative would not fully meet objectives related to the development of a luxury destination resort with sufficient amenities to attract a diverse range of guests and residents.

5.6 COMPARISON OF ALTERNATIVES

The following section provides a comparison of the environmental impacts associated with each of the project alternatives. The impacts of each of the alternatives are compared among the various environmental topic areas (air quality, biological resources, etc.) associated with the Proposed Project. Significant effects that would be caused by the choice of an alternative are discussed to the extent that the effects are different from the Proposed Project. As previously mentioned, the significant environmental impacts of the Proposed Project that the alternatives seek to eliminate or reduce were determined and based upon the findings contained within each technical section evaluated in **Section 3.0** of this Draft EIR. As summarized in **Section 5.2.2**, the Phase 1 and future phases of the Proposed Project may result in significant and unavoidable impacts associated with aesthetics, agricultural resources, GHGs, noise, and transportation

and traffic. All other impacts of the Proposed Project can be reduced to less than-significant-levels with the implementation of mitigation measures. The mitigation measures identified for the Proposed Project would apply to the alternatives analyzed, where impacts are similar in nature.

5.6.1 ALTERNATIVE A – NO PROJECT ALTERNATIVE

Under the No Project Alternative, the Guenoc Valley Site, Middletown Housing Site, and Off-Site Improvement Sites would remain as they currently are, with no further improvements to the sites or surroundings. This alternative would eliminate the potential operational impacts of the Proposed Project including effects associated with aesthetics, land use and agriculture, air quality, biological resources, cultural resources, geology and soils, GHG emissions, hazardous materials, hydrology and water quality, noise, transportation and traffic, and wildfire, and impacts associated with proposed construction activities.

Environmental Impacts

Impacts related to the Proposed Project identified in **Sections 3.0** and **4.0** would not occur under the No Project Alternative, because the Guenoc Valley and Middletown Housing Sites would remain in current agricultural use. The Proposed Project is generally consistent with the General Plan and Middletown Area Plan policies. Because the Middletown Area Plan Guenoc/Langtry Special Study Area incorporates projected regional growth, the No Project Alternative could divert projected growth to another location in the region, which could create additional unanticipated environmental impacts and potentially be inconsistent with Middletown Area Plan goals.

Mitigation That Would No Longer Be Required

None of the mitigation measures identified in this EIR would be required under Alternative A.

Significant and Unavoidable Impacts That Would No Longer Occur

None of the significant and unavoidable impacts identified in this EIR would occur under the No Project Alternative, including impacts associated with the Proposed Project's cumulative contribution to GHG emissions and environmental effects associated traffic noise. Based on impact analyses, the No Project Alternative would be environmentally superior to the Proposed Project, because no environmental impacts would occur.

5.6.2 ALTERNATIVE B – REDUCED DENSITY, SIMILAR DEVELOPMENT FOOTPRINT

Environmental Impacts

Aesthetics: Both the Proposed Project and Alternative B would result in aesthetic changes to the Guenoc Valley and Middletown Housing Sites. Scenic vistas would be similarly impacted on the Guenoc Valley Site due to construction of the Primary Access Road Option 2 and conservatively assumed to be impacted in future phases. Additional lighting compared to current conditions would be present under both the Proposed Project and Alternative B. While fewer housing units would be developed under Alternative B, the same amount of open space would be converted. Therefore, aesthetic impacts under Alternative B are considered similar to the Proposed Project.

Land Use and Agriculture: Under Alternative B, residential land uses would be developed at lower densities but the acreage of open space and commercial uses would be the same as under the Proposed Project. Land use compatibility impacts and loss of agricultural land would be the same as the Proposed Project. While mitigation measures would lessen effects, conversion of important farmland would be significant and unavoidable under both Alternative B and the Proposed Project. Therefore, land use impacts associated with Alternative B would be similar to the Proposed Project.

Air Quality: Construction and operation of the Proposed Project would generate air pollutant emissions associated with the use of motor vehicles from future residents, dust emissions during grading activities, new and increased usage of utilities, and the use of consumer products and landscaping equipment. Additionally, construction could result in exposure of nearby sensitive receptors to diesel particulate matter emissions. Under Alternative B, construction emissions would likely be similar to the Proposed Project due to the similar grading area, but operational emissions would be reduced, including mobile source emissions from vehicle trips, and area source emissions. Although the emissions resulting from Alternative B have not been quantified, similar to the Proposed Project, they would likely continue to exceed the BAAQMD thresholds for emissions of reactive organic gases (ROG), NOx, and PM10. Therefore, Alternative B would require less mitigation and would have a lesser impact on air quality.

Biological Resources: Impacts to biological resources under Alternative B would be similar to the Proposed Project. As with the Proposed Project, Alternative B would result in potential impacts to biological resources and nesting birds within the Guenoc Valley Site and Middletown Housing Site as a result of construction activities; mitigation measures would reduce all potential impacts to less than significant. Therefore, Alternative B would have similar impacts to biological resources when compared to the Proposed Project.

Cultural Resources: Several cultural resources and tribal cultural resources have been identified on the Guenoc Valley Site. Under the Proposed Project, these resources would be located within home and commercial sites, but are required to be avoided by construction or mitigated to a less than significant level through data collection efforts. Given the similar footprint, Alternative B would require the same mitigation as the Proposed Project, and would have a similar impact on cultural resources.

Geology, Soils, and Seismicity: The construction footprint of Alternative B would be the same as the Proposed Project. Thus, impacts associated with geology and soils would be similar and less than significant after implementation of the same mitigation as the Proposed Project.

Greenhouse Gas Emissions: Similar to the Proposed Project, Alternative B would result in emissions of GHGs from construction and operation, although to a lesser extent given the reduction in energy consumption and vehicle miles traveled. Although the amount of GHG emissions resulting from Alternative B has not been quantified, they would likely exceed the numerical threshold of 4.6 metric tons (MT) CO_2e/year/service population, although to a lesser extent than the Proposed Project. Alternative B would require less mitigation and would have a lesser impact associated with GHG emissions when compared to the Proposed Project; however, impacts would still be considered significant and unavoidable.

Hazards and Hazardous Materials: Alternative B will be similar to the Proposed Project with respect to hazardous materials used during construction, the creation of hazards, and exposure to asbestos dust. Construction of Alternative B would have a similar potential for accidental release of miscellaneous hazardous substances and disturbance of undocumented hazardous wastes as under the Proposed Project. Additionally, risk of releasing naturally occurring asbestos in the soil under Alternative B would be similar to the Proposed Project. With implementation of the same mitigation, impacts associated with hazardous materials and hazards under Alternative B would be similar to those under the Proposed Project.

Hydrology and Water Quality: Under Alternative B, the same amount of land would be designated as open space as in the Proposed Project and a smaller area of impervious surfaces would be constructed because of the lower residential density. However, groundwater recharge impacts would still be similar to the Proposed Project because the Proposed Project is already designed to have no net increase in stormwater leaving the site. Alternative B would also require the same construction water quality mitigation and flood hazard mitigation. Impacts would be similar to the Proposed Project and reduced to a less-than-significant level through mitigation measures.

Noise: The Proposed Project would result in a short-term increase in noise during the construction phase and would result in long-term noise increases related to traffic and operation. Similarly, Alternative B would have construction-related noise impacts and introduce long-term noise increases. However, because Alternative B would have fewer residential units, fewer trips would be generated and therefore traffic noise would be reduced. This reduction in traffic would reduce the increase in traffic noise along the segment of Butts Canyon Road; however. noise would not be reduced below the applicable threshold of 55 Ldn; therefore, similar to the Proposed Project, traffic noise would be significant and unavoidable.

Population and Housing: The Proposed Project would not result in significant impacts by increasing population growth directly or indirectly. Alternative B proposes less housing than the Proposed Project, which would correspondingly decrease the amount of population growth; it is assumed there would be reduced impacts related to substantial direct or indirect population growth. Impacts would be less than significant.

Public Services: The Proposed Project would result in less-than-significant impacts to law enforcement, fire protection, schools, and parks and recreation. Less housing is proposed under Alternative B so there would be reduced impacts related to public services in comparison to the Proposed Project. Impacts would be less than significant.

Transportation and Traffic: Alternative B would increase traffic on project area roadways above existing levels. However, Alternative B would add less traffic to local roadways than the Proposed Project because it would include fewer residential units. After mitigation, the Proposed Project was determined to have less-than-significant impacts to all study area intersections under existing conditions. Therefore, as Alternative B would generate less traffic than the Proposed Project, operational traffic and circulation impacts as a result of Alternative B would also be less than significant with mitigation.

The Proposed Project would have significant and unavoidable impacts to two Napa County intersections and the intersection of SR 29 and Butts Canyon Road under future phase cumulative conditions. **Table 5-1** shows the trips that would be generated by Alternative B. As shown in **Table 5-1**, Alternative B would only

reduce daily trips by approximately 11%. The same mitigation measures identified for the Proposed Project would be applicable to Alternative B. However, because certain improvements that may be required under Future Phases, including improvements to intersections in Napa County and along SR 29, may not be within the control of the County, these impacts would be the same as those under the Proposed Project and would remain significant and unavoidable.

TABLE 5-1

ALTERNATIVE B TRIP GENERATION RATES AND FORECASTS

Land Use	Dwelling Units	Trip Generation						
		Daily	AM Peak Hour			PM Peak Hour		
			Inbound	Outbound	Total	Inbound	Outbound	Total
Proposed Project								
Residential Estates	1401	8,257	150	444	594	504	303	807
Other	N/A	6,526	172	80	252	319	281	600
Total		**14,783**	**322**	**524**	**846**	**823**	**584**	**1,407**
Reduced Alternative*								
Residential Estates	1100	6,606	120	355	475	403	242	646
Other	N/A	6,526	172	80	252	319	281	600
Total		**13,132**	**292**	**435**	**727**	**722**	**523**	**1,246**

*values were calculated by multiplying residential estates trip generation forecasts by a factor of 0.8

Source: Abrams Associates, 2019

Additionally, the Proposed Project would result in significant and unavoidable conflicts with CEQA Guidelines § 15064.3, Subdivision (b) due to the inability of the Project to reduce VMT to 15% below the existing conditions. Alternative B would not impact per capita VMT since that value is not dependent on the number of residents. Impacts would be the same as those under the Proposed Project and would remain significant and unavoidable.

Utilities: Similar to the Proposed Project, Alternative B would generate demand for utilities services, including water supply, wastewater, and solid waste services. Under Alternative B there would be 20% fewer residential estates than the Proposed Project. This would result in proportional decreases in water demand since the residential estates have relatively high water demands. Because water supply needs would be less for Alternative B than for the Proposed Project, the demand for water treatment, storage, and conveyance and associated less-than-significant impacts would be less compared to the Proposed Project.

While the wastewater flow demands for Alternative B would be less than for the Proposed Project, the associated environmental impacts of Alternative B would be the same because on-site wastewater treatment plants would still be needed. There would still be less-than-significant impacts to municipal wastewater systems under Alternative B.

As there would be less residential estates, there would be less solid waste generated by Alternative B. Impacts related to solid waste generation would be less than significant because there is enough capacity for the Proposed Project and less waste would be generated.

Energy: Alternative B would result in an approximately 20 percent reduction in the level of residential development compared to the Proposed Project. Energy consumption associated with construction and residential development would also be necessary under Alternative B, but to a long-term lesser extent. Therefore, Alternative B would have a lesser impact associated with energy consumption when compared to the Proposed Project. There is capacity for the Proposed Project so impacts are less-than-significant.

Wildfire: Alternative B would involve construction over the same development footprint as the Proposed Project and would implement the same wildfire prevention techniques. Less-than-significant impacts would occur after incorporation of the same mitigation measures. Impacts related to wildfire would be similar to the Proposed Project.

Mitigation That Would No Longer Be Required

No mitigation measures would be eliminated; however, Alternative B would require less mitigation for air quality, greenhouse gas emissions, and traffic due to the reduced trips.

Significant and Unavoidable Impacts That Would No Longer Occur

All significant and unavoidable impacts related to aesthetics, agriculture, GHG emissions, noise, and transportation and traffic, would still occur.

5.6.3 ALTERNATIVE C – HIGH DENSITY, COMPACT DEVELOPMENT FOOTPRINT ALTERNATIVE

Environmental Impacts

Aesthetics: Both the Proposed Project and Alternative C would result in aesthetic changes to the Guenoc Valley Site. There would be slightly less alterations to the visual character of the site due to reduced development footprint of Alternative C and additional lighting would be present under both the Proposed Project and Alternative C. Unlike the Proposed Project, development for Phase 1 and future phases would occur within the Maha Farm and Bohn Ridge areas, which are not visible from Butts Canyon Road. Therefore, this alternative would avoid the potentially significant and unavoidable impact to scenic vistas in future phases of the GVD that could occur under the Proposed Project. However, there would still be a significant and unavoidable impact during Phase 1 due to construction of the Primary Access Road Option 2.

Land Use and Agriculture: Under Alternative C, the acreage of open space would be greater than the Proposed Project and residential acreage would be lower. Land use compatibility impacts would be less than the Proposed Project. Significant impacts to Prime Farmland identified under the Proposed Project would be avoided under Alternative C. However, there are approximately 51 acres of Unique Farmland within the Maha and Bohn Ridge Resort Community Areas, which would be impacted to a greater degree under Alternative C as a result of the higher lot density. Unique Farmland is considered Important Farmland, so this is still a significant and unavoidable impact. Therefore, impacts associated with conversion of Important Farmland would be similar to the Proposed Project.

Air Quality: Site grading represents the largest single source of particulate matter/dust emissions associated with construction. PM_{10} and $PM_{2.5}$ emissions from construction of Alternative C would be reduced compared to the Proposed Project because the graded area within the Guenoc Valley site would be reduced due to the increase in open space. The emissions of the other criteria pollutants would be similar to the Proposed Project because there would be a similar amount of building construction and related constructed activities. Construction emissions would be a potentially significant impact that can be reduced through the implementation of mitigation measures. Operational emissions would be similar to the Proposed Project due to the similar number of residential units. Air quality impacts would be less than the Proposed Project.

Biological Resources: Alternative C would result in fewer potential impacts to biological resources and nesting birds as less construction activities would occur within the Guenoc Valley Site. Therefore, Alternative C would have a lesser impact on biological resources than the Proposed Project. The same mitigation would still be necessary to reduce impacts to less-than-significant levels.

Cultural Resources: Several cultural resources and tribal cultural resources have been identified on the Guenoc Valley Site. Under the Proposed Project, these resources would be located within home and commercial sites, but are required to be avoided by construction. Given the smaller footprint, Alternative C would have a slightly lower chance of encountering subsurface cultural resources. This would still be a potentially significant impact that could be reduced to a less-than-significant level with mitigation.

Geology, Soils, and Seismicity: Alternative C would have a smaller development footprint than the Proposed Project. Impacts to geology, soils, and seismicity under Alternative C would be less than under the Proposed Project but would still need the same mitigation to be less than significant.

Greenhouse Gas Emissions: Similar to the Proposed Project, Alternative C would result in emissions of GHGs from construction and operation. Operational emissions would be similar to the Proposed Project due to the same number of residential units but construction emissions would be less due to the smaller grading area. Although the emissions resulting from Alternative C have not been quantified, it is expected that they would be similar to the Proposed Project, and thus would exceed the 4.6 MT CO_2e per service population per year threshold established to meet AB 52 goals. Therefore, Alternative C would have a lesser impact associated with GHG emissions as the Proposed Project but would still result in a significant and unavoidable impact.

Hazards and Hazardous Materials: Alternative C will be similar to the Proposed Project with respect to hazardous materials use during construction, the creation of hazards, and exposure to asbestos dust. Construction of Alternative C would have a similar potential for accidental release of miscellaneous hazardous substances and disturbance of undocumented hazardous wastes as under the Proposed Project. The risk of releasing naturally occurring asbestos in the soil under Alternative C would be slightly less than the Proposed Project due to the reduced development footprint. With implementation of the same mitigation, impacts associated with hazardous materials and hazards under Alternative C would be similar to those under the Proposed Project.

Hydrology and Water Quality: Under Alternative C, less area would be developed and converted to impervious surfaces and therefore would have less impacts to site drainage and hydrology than the Proposed Project. Alternative C would require the same construction water quality mitigation and flood

hazard mitigation. Impacts would be less than the Proposed Project and reduced to a less-than-significant level through mitigation measures.

Noise: The Proposed Project would result in a short-term increase in noise during the construction phase and would result in long-term noise increases related to traffic and operation. Similarly, Alternative C would have construction-related noise impacts and introduce long-term noise increases. Because Alternative C would have the same number of residential units, operational traffic noise would be the same as the Proposed Project. Noise on Butts Canyon Road from SR 29 to Black Oak Hill would not be reduced below the applicable threshold of 55 Ldn; therefore, similar to the Proposed Project, traffic noise would be significant and unavoidable.

Population and Housing: The Proposed Project would not result in significant impacts by increasing population growth directly or indirectly. Alternative C proposes the same amount of housing as the Proposed Project, which would result in similar direct or indirect population growth. Impacts would be less than significant.

Public Services: The Proposed Project would result in less-than-significant impacts to law enforcement, fire protection, schools, and parks and recreation. The same number of housing units is proposed under Alternative C so there would be similar impacts related to public services in comparison to the Proposed Project. Impacts would be less than significant.

Transportation and Traffic: Alternative C would generate the same number of trips as the Proposed Project due to the same number of residential units. Mitigation required under the Proposed Project would also be required to reduce impacts related to intersections and roadway improvements. There would be the same significant and unavoidable impacts as the Proposed Project to two Napa County intersections, and the intersection of SR 29 and Butts Canyon Road under future phase cumulative conditions. Alterative C would result in a similar per capita VMT as the Proposed Project and would also not meet the recommended 15 percent reduction. Thus, Alternative C would result in the same significant and unavoidable impacts as the Proposed Project.

Utilities: Alternative C would have the same potable water demand, wastewater generation, and solid waste generation as the Proposed Project due to the same number of residential units. Due to the reduced development footprint, there may be slightly less water demand for landscaping. Impacts would be less than significant.

Energy: Alternative C would result in approximately the same level of development as the Proposed Project. Demand for electricity and propane would be less than significant impact because there is adequate capacity in both systems. Alternative C would have a similar impact associated with energy consumption when compared to the Proposed Project.

Wildfire: Alternative C would have the same wildfire risk as the Proposed Project. With incorporation the same fire prevention mitigation measures as the Proposed Project, impacts would be less than significant.

Mitigation That Would No Longer Be Required

Mitigation would no longer be required for conversion of Prime Farmlands but would still be required for conversion of Unique Farmland. Due to the smaller development footprint, less mitigation would be necessary for impacts to air quality, greenhouse gas emissions, and cultural and biological resources.

Significant and Unavoidable Impacts That Would No Longer Occur

All significant and unavoidable impacts related to Important Farmlands, greenhouse gas emissions, noise, and traffic and transportation would still occur. There would still be significant and unavoidable aesthetic impacts in Phase 1 due to construction of Primary Access Road Option 2 but the potential for significant and unavoidable impacts to scenic vistas in future phases under Alternative C would be eliminated.

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA *Guidelines* Section 15126.6(d) requires an evaluation of alternatives to the Proposed Project. The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

Consistent with this CEQA requirement, a summary matrix has been prepared which qualitatively compares the effectiveness of each of the alternatives in reducing environmental impacts. This matrix, presented in **Table 5-2**, identifies whether each impact area of the project alternatives would have greater, lesser, or similar impacts compared with the Proposed Project.

TABLE 5-2
ENVIRONMENTAL IMPACT COMPARISON BETWEEN THE PROPOSED PROJECT AND ALTERNATIVES

Issue Area	Project Alternatives		
	Alternative A No Project	Alternative B Reduced Intensity	Alternative C Reduced Development Footprint
Aesthetics	Lesser	Similar	Lesser
Land Use and Agriculture	Lesser	Similar	Similar
Air Quality	Lesser	Lesser	Lesser
Biological Resources	Lesser	Similar	Lesser
Cultural Resources	Lesser	Similar	Lesser
Geology and Soils	Lesser	Similar	Lesser
Greenhouse Gasses	Lesser	Lesser	Lesser
Hazards and Hazardous Materials	Lesser	Similar	Similar
Hydrology and Water Quality	Lesser	Similar	Lesser
Noise	Lesser	Similar	Similar
Population and Housing	Lesser	Lesser	Similar
Public Services	Lesser	Lesser	Similar
Transportation and Traffic	Lesser	Lesser	Similar
Utilities	Lesser	Lesser	Similar
Energy	Lesser	Lesser	Similar
Wildfire	Lesser	Similar	Similar

Generally, the environmentally superior alternative is the alternative that would cause the least damage to the biological and physical environment. Since implementation of the No Project Alternative would result in fewer adverse environmental effects than would occur under the Proposed Project and other alternatives, Alternative A – No Project would be considered the environmentally superior alternative. However, the No Project Alternative would not achieve any of the project objectives.

If the No Project Alternative is the environmentally superior alternative, CEQA *Guidelines* Section 1526.6(e)(2) requires identification of an environmentally superior alternative among the other alternatives considered in the EIR. When comparing the remaining development alternatives, Alternative C – Reduced Intensity is considered to be the environmentally superior alternative. Under Alternative C, a smaller development footprint would result in fewer effects associated with aesthetics (specifically under future phases), biological resources, cultural resources, hydrology and water quality, and geology and soils. Additionally, emissions of criteria air pollutants and GHGs would be reduced during construction due to the reduced grading activities. Effects related to land use and agriculture, hazardous materials, noise, population and housing, pubic services, transportation and traffic, utilities, energy and wildfire would be similar to the Proposed Project. However, Alternative C does not meet all the project objectives, as show in **Table 5-3**.

5.8 COMPARATIVE EVALUATION OF THE PROJECT AND ALTERNATIVES TO SATISFY PROPOSED PROJECT OBJECTIVES

Table 5-3 below examines how Alternatives A, B, and C meet the Proposed Project's objectives.

TABLE 5-3
PROJECT OBJECTIVE ALTERNATIVES ANALYSIS

Project Objective	Alternative A	Alternative B	Alternative C
Develop a luxury international destination resort that generates financial profits for the investor	**Does not meet.** Alternative A does not meet this objective, as no development would occur.	**Partially meets.** Alternative B would include development of a luxury resort but the reduction in residential estates would generate fewer financial profits.	**Does not meet.** Alternative C would not provide enough resort amenities or large enough lots for a financially viable luxury resort.
Propose a mix of resort, agriculture, and residential uses consistent with the Lake County General Plan policies, Zoning regulations, Middletown Area Plan, and economic development goals and policies.	**Does not meet.** Under Alternative A, the project site would remain under its current use, and would not be developed with residential units.	**Meets.** Alternative B would result in a mix of resort, agriculture, and residential uses at densities consistent with relevant policies.	**Partially meets.** Alternative C would result in a mix of resort, agriculture, and residential uses but the density would be higher than encouraged under current policies.
Become a "model project" of wildfire mitigation through innovative landscape management, dual purpose fire access roads, emergency action management, and animal husbandry practices with the intention to reduce the risk of fire	**Does not meet.** Under Alternative A, the project site would remain under its current use, and would not include innovative wildfire prevention techniques.	**Meets.** Alternative B would include similar wildfire prevention techniques as the Proposed Project.	**Meets.** Alternative C would include similar wildfire prevention techniques as the Proposed Project.
Meet Middletown Area Plan objectives by incorporating smart growth principles and low density development strategies while providing high end luxury accommodations and services	**Does not meet.** Alternative A does not meet this objective, as no development would occur.	**Meets.** Alternative B would include low density development and similar high end luxury accommodations and services to the Proposed Project.	**Does not meet.** Alternative C density would be high density and would not provide as many luxury accommodations.
Provide sufficient workforce housing options and educational training programs to expand the existing high-end hospitality and construction employment opportunities within Lake County	**Does not meet.** Alternative A does not meet this objective, as no development would occur.	**Meets.** Alternative C includes a similar amount of workforce housing as the Proposed Project.	**Meets.** Alternative C includes a similar amount of workforce housing as the Proposed Project.
Propose a development project that is sustainable with landscape stewardship practices including native plants, mindful grading, green roofs, on-site water treatment and reuse, locally grown food and animal products, alternative energy production, and open space preservation	**Does not meet.** Alternative A does not meet this objective, as no development would occur.	**Meets.** Alternative B would include similar sustainability practices as the Proposed Project.	**Meets.** Alternative C would include similar sustainability practices as the Proposed Project and would preserve more open space.

Project Objective	Alternative A	Alternative B	Alternative C
Plan for long term growth of the County with a significant fiscal contribution toward the County's community goals of new economic, employment, and housing opportunities	**Does not meet.** Alternative A does not meet this objective, as no development would occur.	**Partially meets.** Alternative B would generate fewer financial profits and would not provide enough housing opportunities due to the reduced density.	**Partially meets.** Alternative C would generate fewer financial profits and would not provide as many economic and employment opportunities due to reduced resort amenities.
Ensure consistent and reliable electrical energy.	**Does not meet.** Alternative A would not result in the development of electrical infrastructure.	**Meets.** Alternative B would include solar panels.	**Meets.** Alternative C would include solar panels.

SECTION 6.0

REPORT PREPARATION

6.0 REPORT PREPARATION

6.1 LEAD AGENCY – COUNTY OF LAKE

Scott DeLeon, Interim Director, Community Development Department
Mark Roberts, Principal Planner, Community Development Department

6.2 EIR CONSULTANTS – ANALYTICAL ENVIRONMENTAL SERVICES (AES)

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Technical Staff:	Charlane Gross, M.A, RPA Marcus Barrango Darienne Highsmith Kristen Miner Emily Schoenborn Kelli Raymond Bryn Kirk Josh Ferris Trent Wilson Glenn Mayfield Dana Hirschberg

6.3 PROJECT APPLICANT

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6.4 TECHNICAL CONSULTANTS

Biological and Aquatic Resources

WRA, Inc. Environmental Consultants

Civil Engineering (Grading, Stormwater, Water & Wastewater Infrastructure)

Sherwood Engineers

Cultural Resources

Tom Origer & Associates

Electrical Utilities

Axiom Engineers
Estriatus law

Geotechnical

RGH Consultants

Noise Consultant

Saxelby Acoustics

Traffic Engineering Consultants

Abrams Associates

Water Supply and Groundwater Consultants

Luhdorff & Sclamanini Groundwater Engineers

SECTION 7.0

REFERENCES

7.0 REFERENCES

Agency for Toxic Substances and Disease Registry. 2015. Where is Asbestos Found? Available at: https://www.atsdr.cdc.gov/noa/where_is_asbestos_found.html. Accessed on October 30, 2019.

Alshuth, Taylor and Tom Origer. 2018. *Historical Resources Study for the Guenoc Valley Mixed Use Project-Phase I Near Middletown, Lake County, California*. Report prepared for Lotusland Investment Holdings.

Alshuth, Taylor and Tom Origer. 2019a. Second Addendum to *Historical Resources Study for the Guenoc Valley Mixed Use Project-Phase I Near Middletown, Lake County, California*. Report prepared for Lotusland Investment Holdings.

Alshuth, Taylor and Tom Origer. 2019b. Addendum to *Historical Resources Study for the Guenoc Valley Mixed Use Project-Phase I Near Middletown, Lake County, California*. Report prepared for Lotusland Investment Holdings.

Analytical Environmental Services (AES). 2008a. Open Space Plan for the Langtry Farms Water Rights Modification Project.

Analytical Environmental Services (AES). 2008b. Oak Tree Replacement Plan for the Langtry Farms Water Rights Modification Project.

Analytical Environmental Services (AES). 2009. Guenoc Water Rights Modification Project Final Environmental Impact Report.

Association of Environmental Professionals (AEP). 2016. *Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*. Available at: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf. Accessed December 2019.

Britannica.com, 2019. Lillie Langtry. Available at: https://www.britannica.com/biography/Lillie-Langtry. Accessed October 2019.

CAIT, 2019. CAIT Climate Data Explorer, Country Greenhouse Gas Emissions. 2019. Available online at: http://cait.wri.org. Accessed December 2019.

California Air Resource Board (CARB). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emission from Diesel-Fueled Engines and Vehicles*. October 2000. Available online at: https://www.arb.ca.gov/diesel/documents/rrpfinal.pdf. Accessed December 2019.

CARB. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. Available online at: http://www.arb.ca.gov/ch/handbook.pdf. Accessed December 2019.

CARB. 2006. Health Risk Assessment for On-Road Diesel Trucks, Appendix E, 2006. Available at: http://www.arb.ca.gov/regact/2008/truckbus08/appe.pdf. Accessed December 2019.

CARB. 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. Available online at: http://www.arb.ca.gov/cc/ccea/meetings/ea_final_report.pdf. Accessed: December 2019.

CARB. 2017. Climate Change Scoping Plan Update, 2017. Available online at: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed December 2019.

CARB. 2019a. *Area Designations Maps*. Available online at: http://www.arb.ca.gov/desig/adm/adm.htm. Accessed December 2019.

CARB. 2019b. *California Almanac of Emissions and Air Quality.* Available online at: https://www.arb.ca.gov/aqd/almanac/almanac.htm. Accessed December 2019.

Callayomi County Water District (CCWD), 2007. Water Master Plan.

CCWD, 2019. Personal Communication with Callayomi County Water District (John Wanger) and AES (Josh Ferris). December 30, 2019.

Climate Action Team (CAT). 2007. *Climate Action Team Proposed Early Actions to Mitigate Climate Change in California*. Climate Action Team. California. 2007..

DOC. 2004. A *Guide to the Farmland Mapping and Monitoring Program*. Available online at: http://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp_guide_2004.pdf

DOC. 2016. Well Finder, DOGGR GIS. Available online at: https://secure.conservation.ca.gov/GeoSteam/. Accessed October 2019.

California Department of Education. 2019. *LCOE Stats for Guenoc Development.*

California Department of Fish and Wildlife (CDFW). 2012. Staff Report on Burrowing Owl Mitigation. Available online at https://cdfgnews.wordpress.com/2012/03/07/revised-burrowing-owl-report-now-available/. Accessed January 2020.

CDFW. 2019. California Natural Diversity Database: RareFind 3, Version 3.0.5. Available online at: https://www.wildlife.ca.gov/Data/CNDDB. Accessed July 2019.

California Department of General Services. 2019. *Annual Adjustment to SFP Grants and Developer Fee History.* Available online at: https://www.dgs.ca.gov/OPSC/Resources/Page-Content/Office-of-Public-School-Construction-Resources-List-Folder/Annual-Adjustment-to-SFP-Grants-and-Developer-Fee-History. Accessed October 2019.

California Department of Transportation (Caltrans). 2013a. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September 2013. Available online at: https://www.dtsc-ssfl.com/files/lib_ceqa/ref_draft_peir/Chap4_10-Noise/Caltrans_2013a_Tech_Noise_Supplement.pdf. Accessed October 2019.

Caltrans. 2013b. *Transportation and Construction Vibration Guidance Manual*. Available online at: https://www.cityofdavis.org/home/showdocument?id=4521. Accessed January 2019.

Caltrans. 2019. Contaminants and Waste - Naturally Occurring Asbestos (NOA). Available online from: https://dot.ca.gov/programs/environmental-analysis/hazardous-waste/contaminants-waste/noa. Accessed October 2019.

California Department of Water Resources (DWR). 1991. *California Well Standards. Bulletin 74-90.* Available online at https://water.ca.gov/LegacyFiles/pubs/groundwater/water_well_standards__bulletin_74-90_/ca_well_standards_bulletin74-90_1991.pdf. Accessed August 2019.

DWR. 2004. California's Groundwater Bulletin 118.

DWR. 2019a. Basin Prioritization. SGMA Basin Prioritization Dashboard. Available online at: https://gis.water.ca.gov/app/bp-dashboard/p2/#. Accessed August 2019.

DWR. 2019b. The Water Rights Process. Available online at: https://www.waterboards.ca.gov/waterrights/board_info/water_rights_process.html. Accessed August 2019.

California Geological Survey (CGS). 2018. Seismic Hazard Zones. Available online at: https://maps.conservation.ca.gov/cgs/#datalist. Accessed November 2019.

California Office of Environmental Health Hazard Assessment (OEHHA), 2010. Asbestos Fact Sheet - Information on Health Risks from Exposures to Asbestos. May 8, 2010. Available online from: https://oehha.ca.gov/air/asbestos-fact-sheet-information-health-risks-exposures-asbestos. Accessed on October 2019.

California Water Indicators Portal (CWIP). 2019. California Watersheds – Upper Putah Creek. Available online at: https://indicators.ucdavis.edu/cwip/watersheds. Accessed May 2019.

CalEPA. 2019. State Water Resources Control Board. Impaired Water Bodies. Available online at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml. Accessed August 2019.

Cal Fire, n.d. Fire Hazard Severity Zones with Web AppBuilder for ArcGIS. Available online at: http://gispublic.co.lake.ca.us/portal/apps/webappviewer/index.html?id=e68893fda34e495ab5f053f6a96b305c. Accessed October 2019.

CalRecycle, 2019a. *SWIS Facility Detail: Eastlake Sanitary Landfill.* Available online at: https://www2.calrecycle.ca.gov/swfacilities/Directory/17-AA-0001. Accessed November 2019.

CalRecycle, 2019b. *SWIS Facility Detail: South Lake Resource Recovery and Compost.* Available online at: https://www2.calrecycle.ca.gov/swfacilities/Directory/17-AA-0014/. Accessed November 2019.

CalRecycle, 2019c. *Mandatory Commercial Recycling.* Available online at: https://www.calrecycle.ca.gov/recycle/commercial. Accessed November 2019.

CalRecycle, 2019d. *Estimated Solid Waste Generation Rates.* Available online at: https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates. Accessed November 2019.

California Emissions Estimator Model (CalEEMod). 2016. *CalEEMod 2016.3.2*. Available online at: http://www.caleemod.com/. Accessed December 2019.

California State Water Resources Control Board (SWRCB), 2009. Order WR 2009-0022-DWR. Order Denying Petitions for Extension of Time and Approving Petition for Change. Signed March 22, 2009. Available online at: https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2009/wro2009_0022.pdf

California State Water Resources Control Board (SWRCB), 2012. Onsite Wastewater Treatment System Policy Final Substitute Environmental Document. June 19, 2012.

California State Water Resources Control Board (SWRCB), 2016. State Water Resources Control Board Order WQ 2016-0068-DDW. Water Reclamation Requirements for Recycled Water Use. Adopted June 7, 2016. Available online at: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/requirements.html. Accessed August 2019.

California State Water Resources Control Board (SWRCB), 2019a. Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report). Available online at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml Accessed December 2019.

California State Water Resources Control Board (SWRCB), 2019b. Low Impact Development – Sustainable Storm Water Management. Available online at: https://www.waterboards.ca.gov/water_issues/programs/low_impact_development/. Accessed August 2019.

California State Water Resources Control Board (SWRCB), 2019c. Administrative Draft, General Waste Discharge Requirements for Aggregate and/or Concrete Facilities. Accessed October 2019

California Water Boards, n.d.. *Revised Monitoring and Reporting Program No. 97-249.* Available online at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/lake/97-249-revmrp.pdf. Accessed November 2019.

California Water Boards, 2006. *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.* Available online at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2006/wqo/wqo2006_0003.pdf. Accessed November 2019.

California Water Boards, 2019a. *Geothermal Inc. Landfill Informational Sheet.* Available online at: https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/pge_geothermal/pge_gi_lf_info.pdf. Accessed July 2019.

California Water Boards, 2019b. *Waste Discharge Requirements for PG&E Former Geothermal Inc. Facility Class II Landfill*. Available online at: https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/pge_geothermal/pge_gi_lf_wdr.pdf. Accessed November 2019.

California Water Boards, 2019c. *Cover Letter Notice, Tentative New Waste Discharge Requirements for PG&E Former Geothermal Inc. Facility Class II Landfill.* Available online at: https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/pge_geothermal/pge_gi_lf_cov.pdf. Accessed November 2019.

California Water Boards, 2019d. Sewer System Management Plan Development/Implementation. Available online at: https://www.waterboards.ca.gov/water_issues/programs/sso/#plan. Accessed November 2019.

Case, S. 1982. *Join me in Paradise: The History of Guenoc Valley*. Guenoc Winery, Middletown, California.

Center for Disease Control and Prevention, 2019. *What Noises Can Cause Hearing Loss?* Available online at: https://www.cdc.gov/nceh/hearing_loss/what_noises_cause_hearing_loss.html. Accessed October 2019.

Central Valley Regional Water Quality Control Board (CVRWQCB), 2006a. *Order No. R5-2006-0037, Waste Discharge Requirements For Guenoc Winery, Inc., Guenoc Winery, Lake County*. Available online from: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/lake/r5-2006-0037.pdf. Accessed October 2019.

CEQANet.gov, 2019a. Gardiner Horse Facility. Available online at: https://ceqanet.opr.ca.gov/2017062040. Accessed October 2019.

CEQANet.gov, 2019b. Valley Oaks Subdivision. Available online at: https://ceqanet.opr.ca.gov/2007032030/2. Accessed October 2019.

CEQANet.gov, 2019c. Middletown Multi-Use Path. Available online at: https://ceqanet.opr.ca.gov/2019069003/2. Accessed October 2019.

CNPS. 2019. California Native Plant Society list of Special-Status Plants. Available online at: http://rareplants.cnps.org/advanced.html. Accessed July 2019.

County of Lake. 2010. Lake County Rules and Regulations (LCR) for On-Site Sewage Disposal. Available online at:

http://www.lakecountyca.gov/Government/Directory/Environmental_Health/Programs/landdev.htm. Accessed August 2019.

County of Lake. 2017. *Grading in Lake County.* Available online at: http://www.lakecountyca.gov/Government/Directory/Community_Development/Planning/Grading.htm.

CVRWQCB, 1997. *Notice of Adoption of Revision Waste Discharge Requirements for Lake County Sanitation District.* Accessed December 2019.

CVRWQCB, 2006. *Order No. R5-2006-0038, Cease and Desist Order Requiring Guenoc Winery, Inc., Guenoc Winery, Lake County, to Cease and Desist From Discharging Contrary to Requirements*. Available online from: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/lake/r5-2006-0038.pdf. Accessed October 2019.

CVRWQCB, 2007. *Order No. R5-2007-0026, Waste Discharge Requirements for Langtry Farms, Limited Liability Company and Magoon Estates Limited for Operation of Class II Surface Impoundment Guenoc Winery Lake County.* Available online from: https://www.waterboards.ca.gov/rwqcb5/board_decisions/adopted_orders/lake/r5-2007-0026.pdf. Accessed October 2019.

EBA Engineering, 2018. Response to May 16, 2018 Notice of Violation for Operation of the Class II Surface Impoundment, Langtry Wineyard & and Winery, Lake County, California. July 30, 2018. Available online from: https://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5660966873/T10000009547.PDF. Accessed October 2019.

Employment Development Department (EDD), 2020. Major Employers in Lake County. Available online at: https://www.labormarketinfo.edd.ca.gov/majorer/countymajorer.asp?CountyCode=000033. Accessed February 2020.

Encyclopedia Britannica, 2019. Vibration. Available online from: https://www.britannica.com/science/vibration. Accessed October 2019.

Ewing, L. 2019. Personal Communication with Lake County Public Services Director (Lars Ewing) and AES (Darienne Highsmith). December 9, 2019. Email.

Faegre, A. 2002. *Seaplane Noise*. December 15, 2002. Available online at: http://www.faegre.org/files/AF-seaplane-noise-2002.pdf. Accessed November 2019.

Federal Aviation Administration (FAA). n.d. *Airport Contacts Information*. Available online at: https://www.faa.gov/airports/airport_safety/airportdata_5010/menu/contacts.cfm?Region=&District=&State=CA&County=LAKE&City=&Use=&Certification=. Accessed November 2019.

Federal Emergency Management Agency (FEMA). 2005. *Flood Insurance Rate Map (FIRM)*. Available online at: https://msc.fema.gov/portal/. Accessed October 2019.

Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model User's Guide*. January 2006. FHWA-HEP-05-054.

FemBio, 2019. Lillie Langtry. Available at: http://www.fembio.org/english/biography.php/woman/biography/lillie-langtry/. Accessed October 2019.

Freeman, 2019. Dark Skies Initiative Underway. Available online at: https://www.record-bee.com/2019/01/17/dark-skies-initiative-underway/. Accessed December 2019.

GeoTracker, 2015. Geothermal Inc. Landfill (Formerly Butts Canyon Rd Facility) (L1000005342355). Available online at https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=L10005342355. Accessed July 2019.

Hanson, 1999. *Magoon Estate Limited – Guenoc Ranch Development, Report on Water Resources*. James C. Hanson, Consulting Civil Engineer. March 1999.

Harter, S. 2019. Personal Communication with Lake County Special Districts (Scott Harter) and AES (Darienne Highsmith). December 16, 2019. Email.

Highland and Bobrowsky, 2008. *The Landslide Handbook- A Guide to Understanding Landslides*. Available online at: https://pubs.usgs.gov/circ/1325/. Accessed November 2019.

Insurance Service Office (ISO). 2014. *SLCFPD Public Protection Classification.* Marlton, New Jersey.

IPCC. 2014. *IPCC Fifth Assessment Report*, 2013. Synthesis Report Summary for Policymakers. Available online at: https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_SPM.pdf.

Lake APC, 2018. 2018 Draft RHNA Housing Units. Available online at: https://www.lakeapc.org/news/2018-draft-rhna-housing-units-numbers-released/. Accessed October 2018.

Lake County. 2007. *Fire Hazard Severity Zones in SRA.* Available online at: https://osfm.fire.ca.gov/media/6693/fhszs_map17.pdf. Accessed October 2019.

Lake County, 2008. General Plan. Available online at: http://www.lakecountyca.gov/Government/Directory/Community_Development/Planning/2008FinGP.htm. Accessed October 2019.

Lake County. 2014. *County of Lake Zoning Ordinance*. July 11, 2014. Available online at: http://www.lakecountyca.gov/Government/Directory/Community_Development/Planning/ZoneOrd.htm. Accessed October 2019.

Lake County. 2016a. *Staff Report, Stonebrook Meadows Subdivision Map Extension.*

Lake County 2016b. *Valley Oaks Planned Development*. Available online at: http://www.lakecountyca.gov/Government/Directory/Community_Development/Planning/documents/ValleyOaks.htm

Lake County, 2017. Article 41. Available online at: https://www.lakecountyca.gov/Assets/Departments/CDD/ZoningOrd/Zoning+Article+41.pdf. Accessed November 2019.

Lake County. 2019a. *Middletown Wastewater System.* Available online at: http://www.lakecountyca.gov/Government/Directory/Special_Districts/About_Us/Wastewater_Systems/Middletown_Wastewater_System.htm. Accessed October 2019.

Lake County, 2019b. *Middletown Wastewater Treatment Plant Improvements Notice of Exemption.* Available online at: https://ceqanet.opr.ca.gov/2019068022/2. Accessed November 2019.

Lake County Air Quality Management District (LCAQMD). 2006. *LCAQMD Rulebook 2006*. August 9, 2006. Available online at: https://ww3.arb.ca.gov/drdb/lak/curhtml/lcaqmdrulebook2006.pdf. Accessed December 2019.

LCAQMD. 2007. *Lake County California*. October 14, 2007. Available online at: http://www.lcaqmd.net/documents/AsbestosFormItems/LCserp.10.14.07.pdf. Accessed on October 2019.

Lake County Community Development Department, 2016. Draft Environmental Impact Report: Wild Diamond Vineyards (State Clearinghouse No. 2016022084). June 2016. Available online from: https://www.lakecountyca.gov/Assets/Departments/CDD/Wild+Diamond+Vineyards/Wild+Diamond+Draft+EIR+Volume+1.pdf. Accessed on November 2019.

Lake County Integrated Waste Management, 2019. *Who Picks up Your Garbage and Recycling?* Available online at: http://www.recycling.co.lake.ca.us/CurbsideService.htm. Accessed November 2019.

Lake County Sheriff's Office (LCSO). 2019. *Beat Map.* Available online at: http://www.lakesheriff.com/About/Beats.htm. Accessed October 2019.

Lake County Watershed Protection District (LCWPD). 2006a. Lake County Water Inventory and Analysis. March 2006. Available online at: http://www.lakecountyca.gov/Government/Directory/WaterResources/Programs___Projects/Groundwater_Management.htm. Accessed August 2019.

LCWPD. 2006b. Lake County Groundwater Management Plan. Available online at: http://www.lakecountyca.gov/Government/Directory/WaterResources/Programs___Projects/Groundwater_Management.htm. Accessed August 2019.

Lake LAFCO. 2010. Municipal Service Review for Services provided by the Lake County Sanitation District. Available online: https://www.lakelafco.org/uploads/1/1/4/5/11454087/lacosan-msr11-17.10_adopted.pdf. Accessed November 2019.

Lake LAFCO, 2013. *Callayomi County Water District Municipal Service Review and Sphere of Influence Update.* Available online at: https://www.lakelafco.org/adopted-service-reviews-and-spheres-of-influence.html. Accessed December 2019.

Larson, 2010. *Middletown LORAN Station's Closure Signals End of Era, Change in Technology*. Available online at: https://www.lakeconews.com/index.php/news/14067--middletown-loran-stations-closure-signals-end-of-era-change-in-technology. Accessed October 2019.

Lee and Harris Environmental Sciences LLC (Lee and Harris). 2010. *Preliminary Environmental Assessment Report*. May 6, 2010. Available online at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/6857426285/PEA%20Report%2020771%20Big%20Canyon%20Rd_Draft%20Final_6May10.pdf. Accessed on October 18, 2019.

Macedo, Chris. 2019a. Personal communication with the Lake County Undersheriff (Chris Macedo) and AES (Darienne Highsmith). October 17, 2019.

Macedo, Chris, 2019b. Personal communication with the Lake County Undersheriff (Chris Macedo) and AES (Mia Kawamoto). December 3, 2019.

Maha Guenoc Valley, 2018. Vision Book for Guenoc Valley Mixed Use Planned Development Project.

Middletown Area Plan. 2010. Prepared by the Lake County Community Development Department. Adopted August 17, 2010. Available online at: http://www.lakecountyca.gov/Assets/Departments/CDD/Area+Plans/Middletown+Area+Plan.pdf. Accessed September 2019.

Middletown Unified School District. 2018. *Draft Facilities Master Plan.* Available online at: https://cb7c3453-a-0ec0da9d-s-sites.googlegroups.com/a/middletownusd.org/musd/home/district-announcements/specialboardmeeting-january302019at600pm/MUSD%20Facility%20Master%20Plan.pdf?attachauth=ANoY7cpjUH36nZGrM_UxnlPwJQGzvkYN1dOfhguEk5Pat8K7uJcpgBElC4UaayHZd13Zkf9sxVfhNkPiv86MdyiZ97D40pD_xrtF8Yt5FL3wzw_4tz9gzK2vlQ_LM06q9-hm6vl7MTTV9DNVvxk7P7zK3FSmd6lThQXWSrYXj2He0eP1M29bN9gJ8GDWQGaG6D2mUF4KnFlptS4nGYCdKhVKuB9npzhQ-k2kylJQoKYkwTuZsjig9FWU-bSGSJr4w7N3MslRdMo1EyRfDp9QNP-8sWtu9NwCjvEl87qMbFfjmJt3OvFmWzQtQyoJTDfM9n08z5nUehsD&attredirects=0. Accessed October 2019.

Napa County, 2019a. AT&T Telecom Use Permit. Available online at: https://www.countyofnapa.org/DocumentCenter/View/12068/ATT-Pope-Valley-Telecom-Application-and-Narrative. Accessed October 2019.

Napa County, 2019b. Current Projects. Available online at: https://www.countyofnapa.org/1607/Current-Projects. Accessed January 2020.

National Earthquake Hazards Reduction Program (NEHRP). 2016. *About Us*. Available online at: http://www.nehrp.gov/about/history.htm.

National Oceanic and Atmospheric Administration (NOAA), 2015. Post Wildfire Flash Flood and Debris Flow Guide. Available online at: https://www.wrh.noaa.gov/lox/hydrology/files/DebrisFlowSurvivalGuide.pdf. Accessed November 2019.

Natural Resources Conservation Service (NRCS), 2019a. Web Soil Survey Report (Guenoc Valley Site). Available online at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

NRCS, 2019b. Web Soil Survey Report (Middletown Housing Site). Available online at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

Occupational Safety and Health Administration (OSHA). n.d. Occupational Noise Exposure, Health Effects. Available online at: https://www.osha.gov/SLTC/noisehearingconservation/healtheffects.html. Accessed October 2019.

Office of Energy Efficiency and Renewable Energy, 2017. 5 Things You Should Know about Geothermal Heat Pumps. August 1, 2017. Available online from: https://www.energy.gov/eere/articles/5-things-you-should-know-about-geothermal-heat-pumps. Accessed October 2019.

Pacific Gas and Electric (PG&E). 2018. *2018 Joint Annual Report to Shareholders.* Available online at: http://www.pgecorp.com/investors/financial_reports/annual_report_proxy_statement/ar_pdf/2018/2018_Annual_Report.pdf. Accessed December 2019.PG&E. 2019. *Local Capacity Area Substation List.* Available online at: https://www.pge.com/pge_global/common/pdfs/for-our-business-partners/energy-supply/standard-contracts-for-multiple-facilities-pursuant-to-ab-1613/lcr-substation-list.pdf. Accessed November 2019.

Pepperwood Preserve, 2018. Building Landscape Connectivity for Climate Adaptations: Mayacamas to Berryessa Connectivity Network (M2B) Final Report. Available online at: http://conservationcorridor.org/cpb/M2B-Final-Report.pdf.

Press Democrat, 2010. *Middletown's landmark Coast Guard tower silenced by GPS, technology.* April 14, 2010. Available online at: https://www.pressdemocrat.com/news/2245371-181/middletowns-landmark-coast-guard-tower. Accessed October 2019.

RGH, 2006. Preliminary Geotechnical Study Middletown Subdivision 21000 Santa Clara Road Middletown, CA. Prepared for Origin Construction, Inc. February 3, 2006.

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2009. CEQA Guide December 2009. Available online at:

http://www.airquality.org/landusetransportation/documents/ch6ghgfinal10-2016.pdf. Accessed December 2019.

Santa Rosa City Schools, 2019. *Facilities Master Plan.* Available online at: https://www.srcschools.org/cms/lib/CA02206835/Centricity/Domain/45/01_srcs_fmp_1.0_complete.pdf. Accessed October 2019.

Schultz, Erica, 2019. Preliminary Assessment of the Langtry Ranch Complex. Report prepared for AES.

SCS Engineers. 2019. *2019 Topography Update and Remaining Site Life Estimates.* Prepared for the County of Lake. April 30, 2019.

Sherwood, 2019. *Grading, Drainage, and Utility Plan.* Prepared by Sherwood Design Engineers for Lotusland Investment Holdings. Accessed November 26, 2019.

South Lake County Fire Protection District (SLCFPD). 2018. *Resolution No. 2017-18 20.* Lake County, California.

SLCFPD. 2019a. *Home.* Available online at: https://southlakecountyfire.org/. Accessed October 2019.

SLCFPD. 2019. Personal Communication with Battalion Chief of South Lake County Fire Protection District (Mike Wink) and AES (Darienne Highsmith). October 29, 2019.

SLCFPD. 2019c. Personal Communication with Battalion Chief of South Lake County Fire Protection District (Mike Wink) and AES (Darienne Highsmith). January 10, 2020.

Slosson and Associates, 1976. Geologic and Seismic Technical Background Report for Seismic Safety Element and Geologic Hazards Portion of Safety Element, General Plan, Lake County, California.

Society of Vertebrate Paleontology (SVP). 1995. *News Bulletin Number 163*. January 1995.

Sparks, G.C., 2016. Mercury and Methylmercury Related to Historical Mercury Mining in Three Tributaries to Lake Berryessa, Upper Putah Creek Watershed, California. Masters Thesis. Department of Geology, California State University, Sacramento.

Spencer et al., 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration. Available online at: https://www.wildlife.ca.gov/Conservation/Planning/Connectivity/CEHC. Accessed October 2019.

U.S. Census Bureau, 2017. ACS Demographic and Housing Estimates, 2011-2015 American Community Survey 5-Year Estimates. Available online at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_DP05&prodType=table. Accessed October 2019.

U.S. Census Bureau, 2018a. ACS Demographic and Housing Estimates, 2012-2016 American Community Survey 5-Year Estimates. Available online at: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml. Accessed June 2019.

U.S. Census Bureau, 2018b. Community Facts, Lake County, California. Available online at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_5YR_DP05&prodType=table. Accessed June 2019.

U.S. Census Bureau, 2018c. Employment Status. Available online at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S2301&prodType=table. Accessed October 2019.

U.S. Census Bureau, 2018d. Total Population in Occupied Housing Units by Tenure. Available online at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B25008&prodType=table. Accessed June 2019.

U.S. Census Bureau, 2018e. Occupancy Characteristics. Available online at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S2501&prodType=table. Accessed June 2019.

U.S. Census Bureau, 2018f. Housing Units Available online at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B25001&prodType=table. Accessed June 2019.

U.S. Census Bureau, 2018g. Housing Units. Available online at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B25001&prodType=table. Accessed June 2019.

U.S. Census Bureau, 2018h. Occupancy Characteristics. Available online at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S2501&prodType=table. Accessed June 2019.

U.S. Census, 2018i. Selected Housing Characteristics. Available online at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_DP04&prodType=table. Accessed October 2019.

US Census, 2018j. *QuickFacts: Lake County, California.* Available online at: https://www.census.gov/quickfacts/lakecountycalifornia. Accessed October 2019.

U.S. Coast Guard Navigation Center, 2012. LORAN-C GENERAL INFORMATION. Available online at: https://www.navcen.uscg.gov/?pageName=loranMain. Accessed October 2019.

U.S. Department of Education. 2019. *A Descriptive Evaluation of the Federal Class-Size Reduction Program.* Available online at: https://www2.ed.gov/rschstat/eval/other/class-size/index.html. Accessed October 2019.

U.S. Department of Health and Human Services, 2019. Healthy Hearing Tips for Hot Summer Concerts. May 31, 2019. Available online at: https://www.noisyplanet.nidcd.nih.gov/have-you-heard/healthy-hearing-tips-summer-concerts. Accessed October 2019.

U.S. Department of Health and Human Services, n.d. Keeping Noise Down on the Farm. Available online at: https://www.noisyplanet.nidcd.nih.gov/parents/keeping-noise-down-on-the-farm. Accessed October 2019. United States Environmental Protections Agency (USEPA), 2016a. Climate Impacts on Ecosystems. Available at: www3.epa.gov/climatechange/impacts/ecosystems.html. Accessed August 2016.

United States EPA. 2016b. *Climate Change on Human Health*. Available online at: www3.epa.gov/climatechange/impacts/health.html. Accessed December 2019.United States

USEPA. 2019a. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017*. 2019. Available online at: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017. Accessed December 2019.

USEPA. 2019b. Learn about Polychlorinated Biphenyls (PCBs). Available online at: https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs#healtheffects. Accessed September 2019.

University of California Museum of Paleontology (UCMP). 2019. *Paleontological Records Search*. Available online at: http://ucmpdb.berkeley.edu/. Accessed August 2019.

USGS. 2000. *Water Quality in the Sacramento River Basin. California, 1994-98.* Available online at: https://pubs.er.usgs.gov/publication/cir1215. Accessed May 2019.

USGS. 2014. Two-percent probability of exceedance in 50 years map of peak ground acceleration. Accessible online at: https://earthquake.usgs.gov/static/lfs/nshm/conterminous/2014/2014pga2pct.pdf

USGS. 2018. Landslide Susceptibility ArcMap. Accessible online at: https://www.arcgis.com/home/item.html?id=b3fa4e3c494040b491485dbb7d038c8a.

USGS. 2019a. Earthquake Glossary. Available online at: https://earthquake.usgs.gov/learn/glossary/?term=active%20fault. Accessed November 2019.

USGS. 2019b. National Water Information System: Web Interface. USGS 11453500 Putah C NR Guenoc CA. Available online at: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=11453500. Accessed May 2019.

USFWS. 2019a. Information for Planning and Conservation USFWS Official Species List for the Middletown Housing Site. Available online at: https://ecos.fws.gov/ipac/location/index. Accessed July 2019.

USFWS. 2019b. National Wetlands Inventory for the Middletown Housing Site. Available online at: https://www.fws.gov/wetlands/data/Mapper.html. Accessed July 2019.

Wagner and Bonsignore, 2019. Memorandum, Review of Groundwater Regulatory Issues 20740 S. State Highway 29 (Lake Co. APN 014-430-009) and 20830 S. State Highway 29 (APN 014-430-007) Middletown, Lake County, California. Accessed May 2019.

Western Regional Climate Center (WRCC). 2016. Middletown, CA: Period of Record Monthly Climate Summary. Available online at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5598. Accessed June 2019.

Wildlife Conservation Board (WCB). 2018. California Riparian Habitat Conservation Program. Available online at https://www.californialandcan.org/local-resources/California-Riparian-Habitat-Conservation-Program/14402. Accessed January 2020.

U.S. Energy Information Administration (EIA), 2018. California State Energy Profile 2018. Available online at: https://www.eia.gov/state/print.php?sid=CA. Accessed December 2019.

SECTION 8.0

ACRONYMS

8.0 ACRONYMS

AB	Assembly Bill
ADT	average daily traffic
ADT	average daily trips
ADT	daily average vehicle trip
AES	Analytical Environmental Services
AF	acre-feet
AFY	acre-feet per year
ALS	Advanced Life Support
ALUC	Airport Land Use Commission
amsl	above mean sea level
APE	Area of Potential Effect
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
ATCMs	Airborne Toxic Control Measures]
BAAQMD	Bay Area Air Quality Management District
BASMAA	Bay Area Stormwater Management Agencies Association
BBAT	Basin Boundary Assessment Tool
BCM	Basin Characterization Model
BFE	Base Flood Elevation
BML	Bureau of Land Management
BMP	Best Management Practice
BO	biological opinion
BOD	biochemical oxygen demand
BRA	Biological Resources Assessment
BRM	bedrock mortar
BTU	British Thermal Unit
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAISO	California Independent System Operator
Cal ARP	California Accidental Release Prevention
Cal Fire	California Department of Forestry and Fire Protection
Cal OES	Governor's Office of Emergency Services
Cal OSHA	California OSHA
Cal/EPA	California Environmental Protection Agency
CalEEMod	California Emissions Estimator Model
CALGreen Code	California Green Building Standards Code

CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	criteria air pollutant
CARB	California Air Resources Board
CARIDAP	Data Acquisition Program for Sparse Lithic Scatters
CARIDAP	California Archaeological Resource Identification and Data Acquisition Program for Sparse Lithic Scatters
CAT	Climate Action Team
CBC	California Building Code
CBSC	California Building Standards Code
CC&Rs	conditions, covenants, and restrictions
CCA	Customer Choice Aggregators
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCWD	Callayomi County Water District
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CEC	constituent of emerging concern
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFAA	California Fire Assistance Agreement
CFCP	California Farmland Conservancy Program
CFR	Federal Code of Regulations
CGS	California Geological Survey
CH_4	methane
CHP	California Highway Patrol
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalents
CPUC	California Public Utilities Commission
CPUD	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CSD	Community Service District

CUPA	Certified Unified Program Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Federal Clean Water Act
CWIP	California Water Indicators Portal
dB	decibel
dBA	A-weighted decibel
dbh	diameter at breast height
DBP	disinfection by-product
DDW	Division of Drinking Water
DMA	drainage management area
DOC	California Department of Conversation
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DSOD	Department of Water Resources, Division of Safety of Dams
DTSC	California Department of Toxic Substances Control
EDC	endocrine disrupting chemical
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EO	Executive Order
EOP	Emergency operation Plan
EPA	U.S. Environmental Protection Agency
EPCRA	Federal Emergency Planning and Community Right to Know Act
ERH	Emergency Ride Home
FAA	Federal Aviation Administration
FAR	floor-area ratio
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FICON	Federal Interagency Committee on Noise
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FOG	fats, oils, and grease
ft^3/s	cubic feet per second
FYLF	Foothill yellow-legged frog
g	gravity
GDP	gross domestic product
GHG	greenhouse gases

GMP ..... Groundwater Management Plan
gpm ..... gallons per minute
GPOD ..... General Plan of Development
GSP ..... Groundwater Sustainability Plan
GVD ..... Guenoc Valley District
GWh ..... gigawatt hours
GWP ..... global warming potential
HAPs ..... hazardous air pollutants
HCM ..... Highway Capacity Manual
HCP ..... Habitat Conservation Plan
HFC ..... hydrofluorocarbon
HIS UST ..... historic underground storage tank
HVAC ..... heating, ventilation, and air conditioner
Hz ..... Hertz
IBC ..... International Building Code
IDA ..... International Dark-Sky Association
IPaC ..... Information for Planning and Consulting
IPCC ..... Intergovernmental Panel of Climate Change
IPCC ..... International Panel on Climate Change
IS ..... Initial Study
ISO ..... Insurance Service Office
ITE ..... Institute of Transportation Engineer
kbtu/sf-yr ..... kilo-British thermal units per square foot per year
LAFCO ..... Lake County Local Agency Formation Commission
LAPC ..... Lake County Planning Commission
LCAB ..... Lake County Air Basin
LCAQMD ..... Lake County Air Quality Management District
LCR ..... Lake County Rules and Regulations
LCSO ..... Lake County Sheriff's Office
L_{dn} ..... Day-Night Average Noise Level
LEA ..... Local Enforcement Agency
L_{eq} ..... equivalent sound level
LID ..... Low Impact Development
LMAP ..... Local Agency Management Program
L_{max} ..... maximum L_{eq}
L_{min} ..... minimum L_{eq}
LOMR ..... Letter(s) of Map Revision
LORAN ..... long range navigation
LOS ..... level of service

LSAA ..... Lake and Streambed Alteration Agreement
LTPP ..... Long Term Procurement Plan
MACT ..... Maximum Achievable Control Technology
MAP ..... Middletown Planning Area
MBTA ..... Migratory Bird Treaty Act
mL ..... milliliter
MLD ..... Most Likely Descendent
MM ..... mitigation measure
MMI ..... Modified Mercalli Intensity
MMRP ..... Mitigation Monitoring and Reporting Plan
MMTCO_2e ..... million metric tons of CO2 equivalent
MPN ..... most probable number
MRP ..... Mitigation and Reporting Program
MS4s ..... Municipal Separate Storm Sewer System
MSDS ..... Material Safety Data Sheet
MT ..... metric ton
MUDS ..... Middletown Unified School District
MW ..... megawatt
MWWTP ..... Middletown Wastewater Treatment Plant
N_2O ..... nitrous oxide
NAAQS ..... National Ambient Air Quality Standards
NAHC ..... Native American Heritage Commission
NCP ..... National Contingency Plan
NECPA ..... National Energy Conservation Policy Act
NEHRP ..... National Earthquake Hazards Reduction Program
NEM ..... net energy metering
NESHAP ..... National Emission Standard for Hazardous Air Pollutants
NFIP ..... National Flood Insurance Program
NFPA ..... National Fire Protection Association
NHPA ..... National Historic Preservation Act
NHPA ..... National Historic Preservation Act
NHTSA ..... National Highway Traffic Safety Administration
NIST ..... National Institute of Standards and Technology
NMFS ..... National Marine Fisheries Service
NOA ..... natural occurring asbestos
NOP ..... Notice of Preparation
NOV ..... notice of violation
NO_x ..... nitrogen oxides
NPDES ..... National Pollutant Discharge Elimination System

NPL ..... National Priorities List
NRCS ..... Natural Resources Conservation Services
NRHP ..... National Register of Historic Places
NSF ..... National Science Foundation
NWIC ..... Northeast Information Center
O_3 ..... ozone
OEHHA ..... California Office of Environmental Health Hazard Assessment
ºF ..... Fahrenheit
OHWM ..... ordinary high water mark
OPR ..... Office of Planning and Research
OSHA ..... Occupational Safety and Health Administration
OSPP ..... Open Space Preservation Plan
OWTS ..... On-site Wastewater Treatment Systems
PCB ..... polychlorinated biphenyl
PCF ..... perfluorocarbon
Pd ..... lead
PG&E ..... Pacific Gas and Electric Company
PM ..... particulate matter
POU ..... Places of Use
PPA ..... Power Purchase Agreement
ppm ..... parts per million
PUD ..... public utility district
PV ..... photovoltaic
PWERP ..... post wildfire emergency response plan
QSP ..... Qualified SWPPP Practitioner
RCRA ..... Resource Conservation and Recovery Act
RHNA ..... Regional Housing Needs Allocation
ROG ..... Reactive Organic Gas
ROW ..... right-of-way
ROWD ..... Report of Waste Discharge
RP ..... reduced pressure principal backflow prevention
RPS ..... California Renewables Portfolio Standard
RTP ..... regional transportation plan
RWQCB ..... California Regional Quality Control Board
SB ..... California Senate Bill
SB ..... Senate Bill
SCADA ..... System Control and Data Acquisition
SCS ..... Sustainable Communities Strategy

SF_6 ..... sulfur hexafluoride
SFBAAB ..... San Francisco Bay Area Air Basin
SHPO ..... State Historic Preservation Office
SIP ..... State Implementation Program
SLCFPD ..... South Lake County Fire Protection District
SO_2 ..... sulfur dioxide
SO_x ..... sulfur oxides
SPOD ..... Specific Plan of Development
SR ..... State Route
SRA ..... State Responsibility Area
SRCSD ..... Santa Rosa City School District
SRRE ..... Source Reduction and Recycling Elements
SSC ..... species of special concern
SSMP ..... Sewer System Management Plans
SSO ..... sanitary sewer overflows
STEG ..... Septic Tank Effluent Gravity
STEP ..... Septic Tank Effluent Pumping
STP ..... Shovel Test Pit
SWMP ..... stormwater management plan
SWPPP ..... Stormwater Pollution Prevention Plan
SWQL ..... secondary water quality threshold
SWRCB ..... State Water Resource Control Board
TAC ..... Toxic Air Contaminants
TCR ..... Tribal Cultural Resource
TDM ..... Transportation Demand Management
TDS ..... total dissolved solids
THPO ..... Tribal Historic Preservation Officer
TIA ..... Traffic Impact Analysis
TK ..... transition kindergarten
TMDL ..... Total Maximum Daily Load
TOT ..... Transient Occupancy Tax
tpy ..... tons per year
TSCA ..... Toxic Substances Control Act
U.S.C ..... U.S. code of Regulations
United States ..... U.S.
UP ..... Use Permit
USACE ..... United States Army of Corps of Engineers
USFWS ..... U.S. Fish and Wildlife Service
USGS ..... United States Geological Survey

VMT.....vehicle miles traveled
VOC.....volatile organic compound
WAEEP .....Williamson Act Easement Exchange Program
WCB.....California Wildlife Conservation Board
WDR.....General Waste Discharge Requirements
WRP.....water reclamation plant
WSA.....Water Supply Assessment