APPENDIX ELEC

ELECTRICAL SYSTEM FEASIBILITY REPORT

MAHA

Guenoc Valley

Electrical System Feasibility Report

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1.0 INTRODUCTION

1.1 Project Background

The Maha Resort at Guenoc Valley (the "Project") sits on approximately 16,000 acres and is three miles southeast of Middletown on the southeast border of Lake County (Project Site). The Project has applied to the County of Lake for a development application. Pursuant to the California Environmental Quality Act ("CEQA") the application will include an Environmental Impact Report ("EIR"). The EIR will include a programmatic analysis (the "Programmatic Review") of the impacts to rezone the 16,000-acre Guenoc Ranch to "Guenoc Valley District ("GVD")." In addition to the programmatic level EIR to allow the rezone, the EIR will include a detailed, Project level analysis (the "Project Level Review") of the impacts at a Project level of the proposed first phase of development ("First Phase"), submitted as the Specific Plan of Development ("SPOD").

The Programmatic Review of the overall Project will occur in the EIR to assess the environmental impacts of the entire Project Proposal. Project Level Review will analyze the specific objectives and environmental impacts of the proposed first phase, as outlined in the SPOD. The Project Level Review EIR will analyze the environmental changes caused by a development including the construction and operation, whereas the Programmatic Review EIR will look at the impacts of the rezone classification rather than a Project specific analysis. Future phases of development ("Future Phases") will require additional CEQA review. Therefore, this technical feasibility analysis is broken into two sections, the first section includes the First Phase Project level impacts and the second section analyzes the potential development within the new zoning classification GVD. Construction and operations impacts are analyzed in a separate report.

The Project requests a general plan amendment and a rezone classification in separate phases. For a breakdown of the development intentions between the Project's First Phase SPOD and Future Phases for allowed uses please see the following table with data obtained from the Notice of Preparation.[1]

Table 1: Unit Breakdown as per GVD Zoning Permitted Use Table[2]

Use	First Phase (qty)	Future Phases (qty)
Hotel Units	225	155
Resort Residential	144	260
Residential Estate Villa	411	989
Workforce Co-Housing Bedrooms	300	200

[1] http://www.lakecountyca.gov/Government/Directory/Community_Development/Planning/GuenocValley.htm Notice of Preparation dated April 23, 2019, Table 1, Primary Permitted Uses, accessed 7/8/2019.

[2] This report is analyzing the total allowable development; therefore, it is conservative as it analyzes a greater density than is proposed in the SPOD.

First Phase of Project: The First Phase of the Project includes the construction of the roads and the utility infrastructure, approximately 225 hotel rooms, 144 resort residential units, and 411 residential villas, 300 workforce and staff housing, and the accessory to resort commercial structures. The section of the report that discusses the electrical system feasibility of the First Phase analyzes the electrical system feasibility of the First Phase of the development as identified in the SPOD.

Future Phases of Project: The Future Phases of the Project, to the extent allowed as part of the GVD, includes up to 155 hotel rooms, 260 resort residential units, 989 residential estate villas, 200 workforce co-housing bedrooms, and accessory to resort commercial structures. Any development proposed as part of the Future Phases will require additional CEQA review. The section of the report that discusses the electrical system feasibility of Future Phases analyzes the electrical system feasibility of the Future Phases of the development as identified in the proposed GVD.

1.2 Technical Assistance Overview

Our technical feasibility study analyzes the electrical system infrastructure options for the Project. In completing this study, our goal was to provide current and accurate information on the best methodology and approaches to developing the electrical infrastructure for the Project, including options for utility services, generation technologies, distribution strategies and demand needs with a focus on complying with all applicable energy codes and providing a safe, resilient electrical infrastructure system for the Project.

This report summarizes our work tasks completed for this Project, and provides options for next steps towards development of the Project's electrical infrastructure. First, we provide our assessment of the Project's existing on-site electrical infrastructure, including the existing demand needs and electrical distribution system that serves the 16,000 acre property. Second, we broke our study into two parts to analyze the Project's electrical infrastructure needs for the First Phase and Future Phases of the Project. For the First Phase, we first provide a set of Project design issues that must be addressed at the Project, and then, we provide four options for the Project's electrical distribution services. The first distribution option, referred to herein as "Option 1," is full electric distribution service by Pacific Gas and Electric Company ("PG&E"). The second distribution option, referred to herein as "Option 2," is private ownership of electric distribution service to all commercial properties and infrastructure and PG&E electric distribution services to all residential lots. The third distribution option, referred to as "Option 3," is the option to create a "Public Utility District"[3] with the entire Project operated as an independent microgrid from PG&E. Community shared solar electric generation and battery storage systems[4] are presented in this report as an

[3] https://calafco.org/sites/default/files/documents/2016%20Formation%20Guide%20WEB.PDF, accessed 7/8/2019.
[4] https://ww2.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf, page 42 accessed 7/25, 2019.

option to be considered in lieu of or in addition to roof mounted solar systems for the residential lots. Finally, a fourth option, referred to as "Option 4," is a hybrid of Options 2 and 3. Under this option, several privately owned solar plus storage micro-grids would be created to sell the electricity generated from those systems to the commercial lessors at the Project through traditional Power Purchase Agreements ("PPAs") until the formation of the Public Utility District is completed. Throughout this report in general, and specifically in discussing these Options in more detail in section 3.1.2, reference to Maha or the Developer will refer to either Maha or a third party independent power producer ("IPP") selected by Maha, where the IPP, rather than Maha, will create the Public Utility District and/or perform the power generation, delivery and distribution functions described in section 3.1.2, and elsewhere in this report.[5]

2.0 EXISTING POWER NEEDS & LOAD ANALYSIS

2.1 Existing Electrical Services & Infrastructure[6]

The First Phase of the Project's development area is made of 48 contiguous parcels all within Lake County. 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.[7] The existing electrical infrastructure located at the Project 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 Project. Power density is residential, low density rural residential.

The existing circuits that serve the Project are presented in the table below. Circuit 1102 enters the Project from the north and Circuit 1103 enters the Project 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.

[5] Maha is a real estate developer of resort, commercial and residential properties. It is actively reviewing the options that are the subject of this Report in order to provide a comprehensive electric infrastructure for the Project. Maha does not intend to become an electric utility subject to CPUC regulation, and will only perform such power supply and distribution services if it secures an appropriate ruling from the CPUC that such functions will not subject it to regulation as an electric utility under applicable California law. Otherwise, Maha intends to engage one or more IPPs and/or other third-party developer(s) with experience in solar power production, delivery and distribution, energy storage, micro-grids and/or Public Utility Districts, as applicable, to perform such functions for the Project.

[6] https://www.pge.com/b2b/energysupply/wholesaleelectricsuppliersolicitation/PVRFO/PVRAMMap/index.shtml, accessed 6/24/2019

[7] https://www.pge.com/b2b/energysupply/wholesaleelectricsuppliersolicitation/PVRFO/PVRAMMap/index.shtml, accessed 6/24/2019.

Table 2: Existing PG&E Circuits

Circuit	Transformer size (MVA)	Transformer demand (MVA)	Circuit Capacity (MVA)	Circuit Peak (MVA)
1102	19.20	9.54	12.19	9.72
1103	19.73	5.5	12.19	1.20

The existing PG&E services and infrastructure located on the Project's development area are as shown in Figure 1 below.

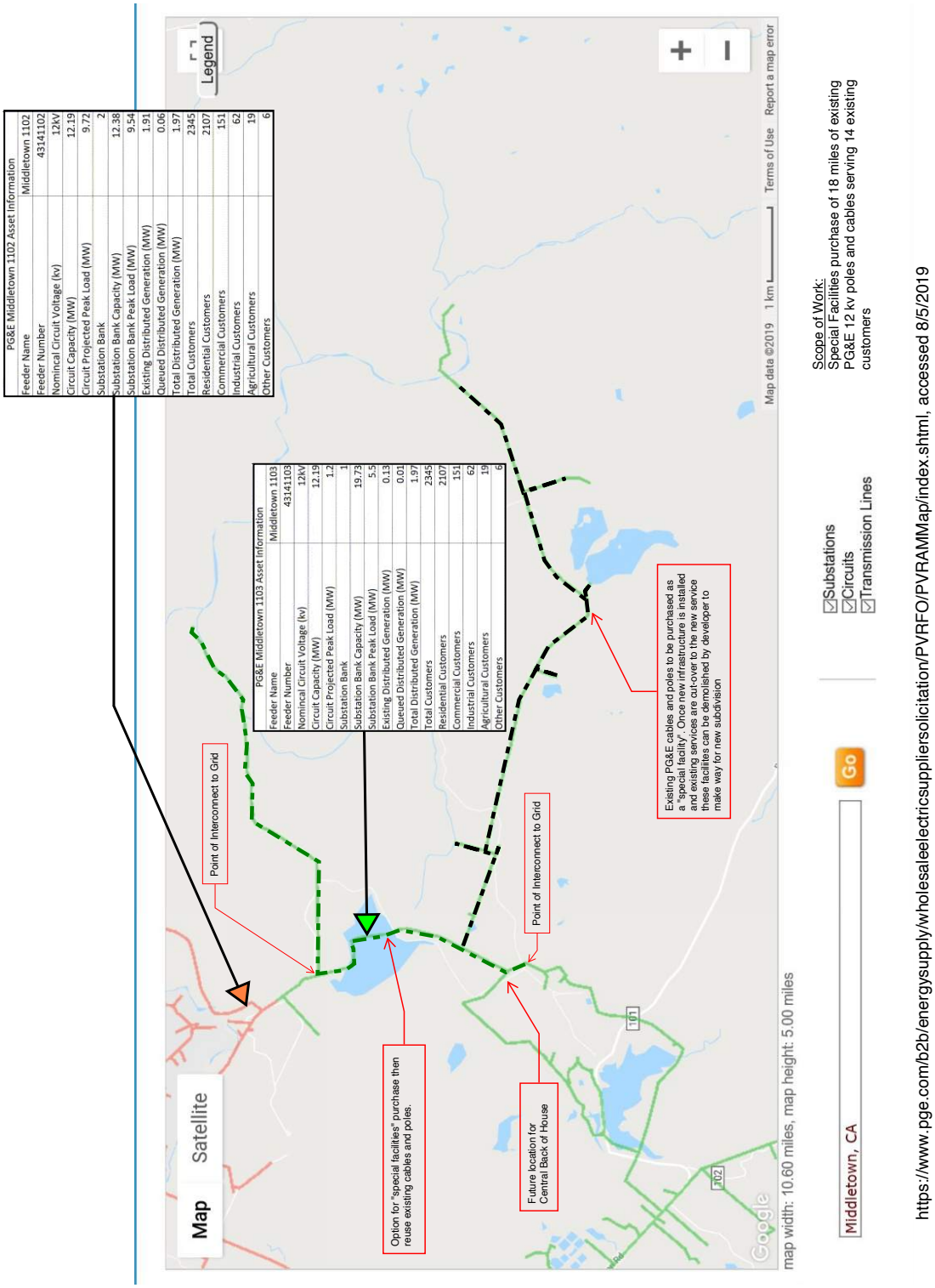

Figure 1. Existing PG&E Services

The existing electrical infrastructure on the Project's development area is all overhead.

2.2 Existing Energy Usage & Demands

The existing circuits serve a mix of customers as presented in Table 3 below.

Table 3: Existing PG&E Customers

Description	1102 circuit	1103 circuit
Residential Customers	2,107	104
Commercial Customers	151	27
Industrial Customers	62	5
Agricultural Customers	19	22
Other Customers	6	0
Total Customers	2,345	158

Based on publicly available PG&E data, Circuit 1103 has an approximate power density of 11 kva/Sq mile with existing energy use on the circuit estimated to be 266 MWh/year based on an average annual energy demand throughout the year of 30 KW. Circuit 1103 only services the Project Site and Circuit 1102 serves areas outside the Project Site. Circuit 1102 has a power density of approximately 900 kva/Sq mile with existing energy use on the circuit estimated to be 30,000 MWh/yr based on an average annual energy demand of 1 KW for each residence and 5.5 KW for each commercial, industrial, agricultural and other customer in the service area.

3 TECHNICAL FEASIBILITY OF ELECTRICAL SERVICE FOR PROJECT

3.1. Electrical Service Infrastructure for First Phase

3.1.1. Project Design Features

For the First Phase, the Project will reuse portions of the existing overhead utility services and provide new services throughout the Project, as required. The electrical infrastructure at the Project 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 Project. Approximately 18 miles of existing PG&E 12 KV circuit will either be removed, reused or relocated. The Project proposes the installation of approximately 32 miles of new joint trench and underground electrical infrastructure in the Project's proposed subdivisions. Almost all of the Project's electrical utility routing will be installed with an 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 Project Site.

The Project proposes the installation of distributed energy resources[8] combined as an interconnected system of loads and resources, including, but not limited to, distributed energy resources, energy storage, demand response tools or other management, forecasting and analytical tool that can be managed and isolated to withstand larger disturbances and maintain electrical supply to connected critical infrastructure. A key feature of the Project's electrical infrastructure is to ensure the Project's microgrid and resiliency strategies support reliability in anticipation of potential outage events and wildfires.

The building design for facilities in the Primary Permitted Uses Table[9] will meet energy code requirements and endeavor to target between 18 kbtu/sf-yr for ground coupled heat pumps to 30 kbtu/sf-yr to minimize the demands on the systems.

For the most part infrastructure will largely be installed underground in the subdivisions and resort properties with design features that reflect the vision of the Project exceeding minimum safety and efficiency.

As required by California law, the Project will include either the installation of 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. Eleven existing PG&E service points currently exist that can be utilized for development of the electrical infrastructure at the Project. The relocation of existing PG&E 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[10] off the PG&E system. For these individual areas any 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 in section 3.1.2 below. Electrical infrastructure will be routed in or along existing and/or newly developed roadways.

The following tables identifies the infrastructure systems that are part of the First Phase energy usage and demand analysis.

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[8] "Distributed energy resource" means an electrical generation or storage technology that complies with the emissions standards adopted by the State Air Resource Board pursuant to the distributed generation certification program requirements of Section 94203 of Title 17 of the California Code of Regulations, or any successor regulation.

[9] http://www.lakecountyca.gov/Government/Directory/Community_Development/Planning/GuenocValley.htm Notice of Preparation dated April 23, 2019, Table 1, Primary Permitted Uses, accessed 7/8/2019.

[10] https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_RULES_2.pdf, accessed 7/8/2019.

Table 4: First Phase Infrastructure Systems

Quantity	Description
24	Wastewater Treatment Facilities with back-up generators[11]
16	Water Systems with back-up generators[12]
3	Main Point of Entry to IT Carriers with back-up generators[13]
11	IT Area Distribution Facilities with back-up generators
4	Cellular/Radio Towers with back-up generators
1	Emergency Communication Systems
1	Centralized Fire Camera System
1	Centralized Alert (Nixle) System
9	Water Features and pools at 9 locations
500	Streetlight and pathway lighting
384	Public Area EV Chargers

3.1.2. Distribution Options

In addition to the Project design features described above, four options to meet the distribution requirements for First Phase of the Project are described in this section of the report and summarized in the table below[14].

Table 5: Summary of Options

Description	Distribution	Service Extensions	Responsible Party
Option 1	PG&E	PG&E	PG&E
Option 2	PG&E and Maha	PG&E and Maha	PG&E and Maha
Option 3	PG&E and Maha	Maha	PG&E and Maha
Option 4	PG&E and Maha	Maha	PG&E and Maha

Option 1

In this option, the Project's current utility provider, PG&E, would provide the

[11] http://www.lakecountyca.gov/Assets/Departments/CDD/Planning/Docs/Guenoc/Maha+SPOD.pdf, page 119 Wastewater Service Areas, accessed 7/8/2019.
[12] http://www.lakecountyca.gov/Assets/Departments/CDD/Planning/Docs/Guenoc/Maha+SPOD.pdf, page 113 Water Management Areas, accessed 7/8/2019.
[13] http://www.lakecountyca.gov/Assets/Departments/CDD/Planning/Docs/Guenoc/Maha+SPOD.pdf, page 141 Communications Proposed IT Network, accessed 7/8/2019.

[14] *See* p. 5, note 5, clarifying that references to functions to be performed by Maha in this section 3.1.2 may be performed by an IPP selected by Maha to perform the solar generation, delivery and distributions functions referenced in this Report.

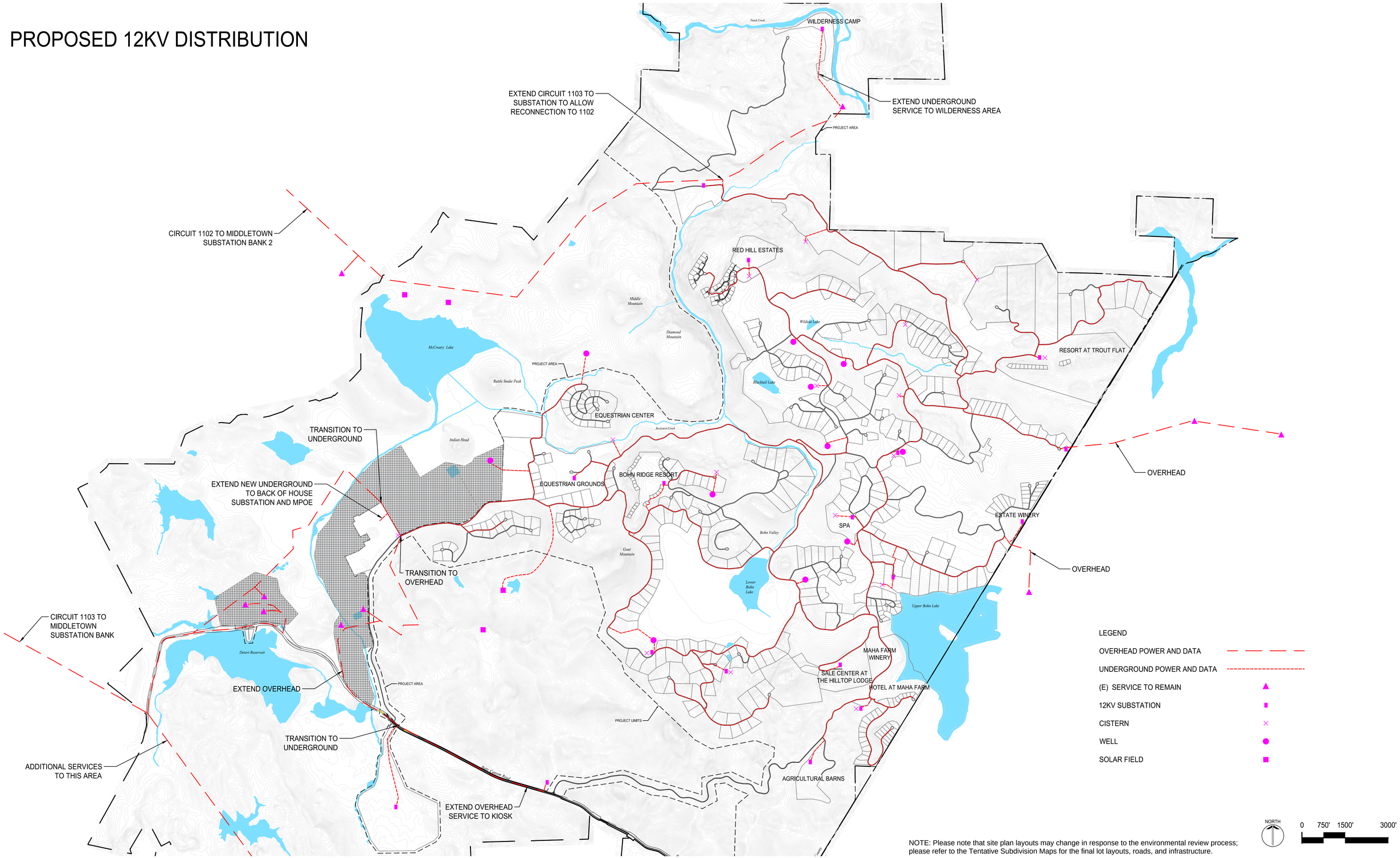
electrical distribution services (metering, distribution, etc.) to all facilities at the Project as shown in the Figure 2 on the following page.

PG&E would be responsible for Distribution Line[15] and Service Extensions[16] from their PG&E facilities both on and off the Project. PG&E will provide all electrical services, including distribution, lines, metering and supply to serve the proposed resort facilities, accessory infrastructure and residential lots. In this option, all PG&E facilities will run within public utility easements that extends 25' out on both sides and from the center of each roadway.

All commercial properties at the Project would be built "Solar Ready" pursuant to applicable California energy code.[17] Each residential structure would be either provided with rooftop solar or the ability to participate in alternative energy developments that 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. 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.

[15] https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_RULES_15.pdf, accessed 7/8/2019.
[16] https://www.pge.com/tariffs/tm2/pdf/ELEC_RULES_16.pdf, accessed 7/8/2019.
[17] Pursuant to Section 110.10 of the 2019 California Energy Code, California law contains certain mandatory requirements for "solar ready" non-residential buildings that include minimum solar zone areas and other requirements.

PROPOSED 12KV DISTRIBUTION



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.

In this option, the Project's current utility provider, PG&E, would provide the electrical distribution services (metering, distribution, etc.) to all residential structures at the Project as in Option 1. PG&E would provide Distribution Line and Service Extensions to serve all residential lots at the Project.

For the commercial and other accessory features at the Project, PG&E would only provide a single delivery point to the Project at the service entrance designated as "Back of House." From this point, the developer of the Project ("Developer") would construct, own and operate new meters and distribution lines to each of the 12 commercial facilities at the Project and to each of the 57 other resort accessory features consisting of water wells, waste water treatment plants, cell towers and IT features. This option would allow for the Developer to own and operate "behind the meter" solar plus storage microgrids for all commercial and resort accessory features. Four locations at the Project have been identified as available for ground mounted solar plus storage systems. (See Section 3.1.5 below.) The independent micro-grids 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 desired per the final Project's design.

Electrical facilities would be established for the purpose of undergrounding, metering and control at Back of House. This location would be a Service Delivery Point[18] for the Developer owned electrical facilities that could potentially include medium voltage switches, metering facilities and or a transformer and line-up of switchgear and associated overhead and underground utility infrastructure. These facilities would serve the commercial aspects of the GVD. In this option the Emergency Response Center would also be established as a Developer owned electrical facility for the purpose of metering and control of power to the commercial aspects at the Project.

From the electrical facilities, new circuits would be dedicated to serve infrastructure loads such as water wells, wastewater treatment facilities, cellular towers and similar facilities. Separate circuits that provide power to the individual Project commercial facilities. In this option back-up power would also be provided at each of the (2) main electrical facilities and provisions to load shed infrastructure circuits would be added to enable prolonged operation of the commercial facilities and infrastructure independent of PG&E. Operation and maintenance of the privately held electrical infrastructure would be by contractors hired through the Project.

Similar to Option 1, each residential structure at the Project would either be provided with rooftop solar or the ability to participate in alternative energy developments that

[18] https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_RULES_2.pdf, accessed 7/8/2019.

would interconnect into the PG&E systems electrical facilities in the vicinity of the Back of House area of the development, and or at the location of the existing overhead service north of McCreary Lake where the PG&E circuit passes through the Lake. 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.

Option 3

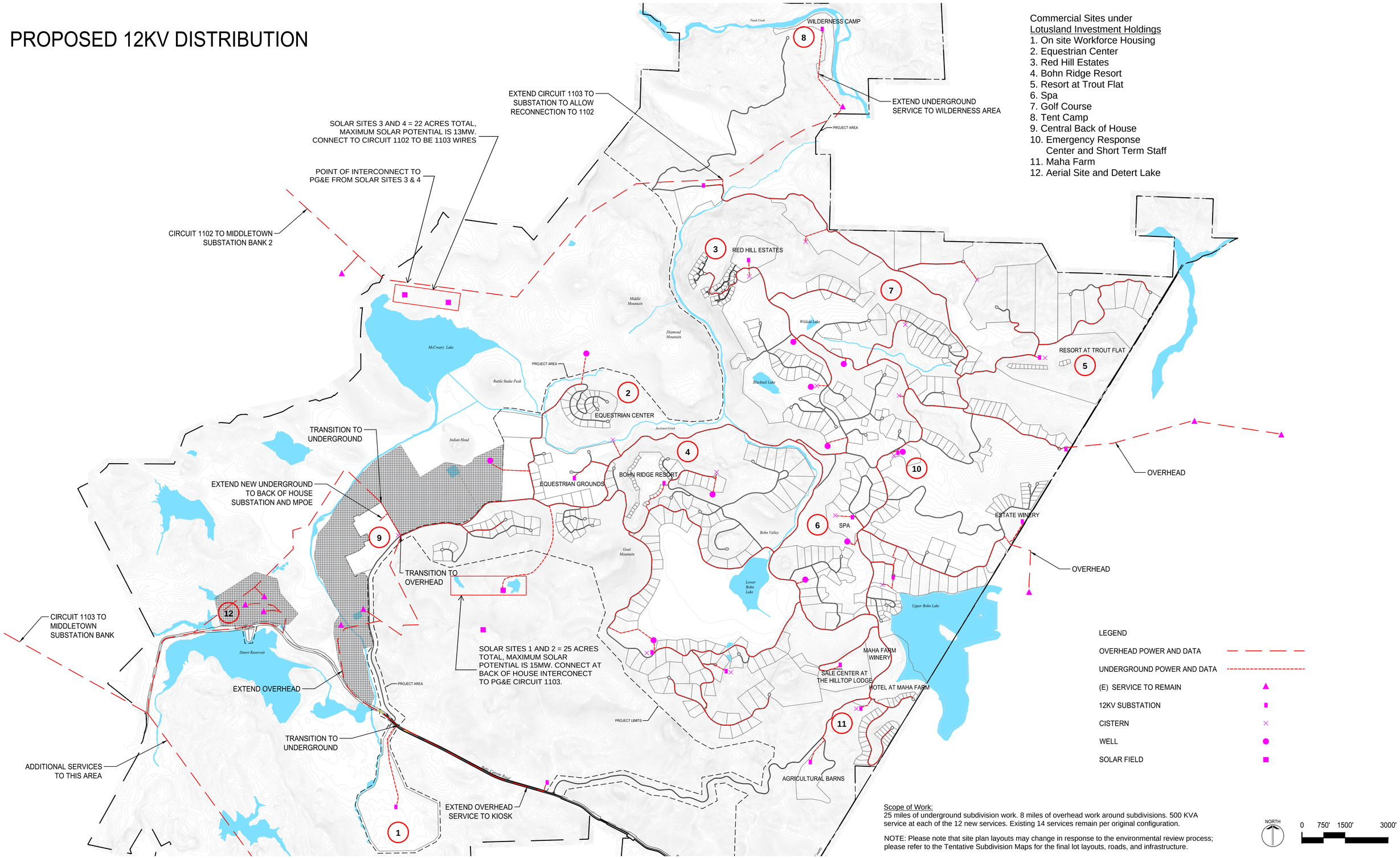
In this option, the Developer would create a "Public Utility District"[19] that would supply power, own all of the electrical infrastructure and provide related services to all of the residential, commercial and accessory buildings and features at the Project. This option includes behind the meter solar for commercial facilities at the central solar locations to enable community solar and community storage to meet the Project's aesthetic goal related to no solar on roofs. Between one to four ground mounted solar plus storage solar systems would be located at the Project, which collectively could generate enough electric supply for the Project's entire energy needs. Similar to Option 2, PG&E would provide a single delivery point to the Project at the service entrance designated as "Back of House."

The Project would establish all services from PG&E at Back of House. PG&E would be responsible for the Distribution Line Extensions up to this point. The Service Delivery Points within The Project would be by the Public Utility District created for that purpose. Like Option 2 the Emergency Response Center would be established as a Developer owned electrical facility for the purpose of metering and control of power to the common ownership facilities within The Project site.

In this option each residential structure would either be provided with rooftop solar or the ability to participate in alternative energy developments that 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. 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.

[19] https://calafco.org/sites/default/files/documents/2016%20Formation%20Guide%20WEB.PDF, accessed 7/8/2019.

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.

Option 4

This option would provide for a hybrid of Options 2 and 3, wherein Developer would create and own solar plus storage micro-grids that would be constructed for all or certain commercial structures at the Project similar to Option 2. PG&E would service all residential lots at the Project. All commercial facilities served by the privately owned micro-grids would be serviced through traditional solar Power Purchase Agreements ("PPAs") until the formation of the Public Utility District is completed. Under this option, the Project's electrical infrastructure would begin, at least in certain areas of the Project, while the extensive formation processes related to setting up a Public Utility District is accomplished. Option 4 would provide for a phased approach to the development of the Project's distribution infrastructure and include the potential sale of the solar plus storage systems to the Public Utility District at a later date, if desired.

3.1.3. Potential Electrical Infrastructure Improvements

Both 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. (See Table 2 above.) These circuit and transformer capacities limit the amount of alternative energy that the existing electrical infrastructure can accommodate. Thus, regardless of the distribution option selected above, both on-site and off-site improvements to the electrical infrastructure will be required if these "allowances" of the existing electrical infrastructure are exceeded.

In order to accommodate increased circuit and transformer capacities, both on-site and off-site infrastructure improvements would be required, as follows: i) a new Trip Transfer Scheme[20] 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.

[20] https://peguru.com/2011/04/direct-transfer-trip-scheme/#targetText=Direct%20Transfer%20Trip%20Scheme,is%20assigned%20to%20each%20event.

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 Net Energy Metering ("NEM") and/or RES-BCT[21] developments and on-site wire and control upgrades to the applicable areas of the Project's development area as further described in Section 3.1.6 below.

The Developer 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.

3.1.4. Acquisition and/or Reuse of Existing PG&E Easements & Property

Regardless of which distribution option is selected for the Project, certain rights to utilize, re-use and/or purchase existing PG&E easements and property located at the Project will need to be acquired. Several legal processes exist to accomplish this goal, depending on the distribution option elected.

Advice Letter Process (Options 1, 2 or 4)

In the event that Developer elects to pursue either of proposals set forth in Option 1 or 2, (and not form a Public Utility District), then Developer must negotiate with PG&E to purchase, terminate and/or use any PG&E easements and/or property, as desired. Subject to agreed terms being reached, then PG&E would need to file an advice letter or formal application to obtain advance California Public Utilities Commission ("CPUC") approval or file an application to request exemption of the transaction from Section 851 pursuant to Section 853(b). For instance, any such transactions for property of PG&E considered "necessary or useful in the provision of services to the public" require the consent of the CPUC. An exception for minor uses of utility property exempt from CEQA exists that do not require CPUC approval, but it is a factual determination as to whether this exception is met.[22] To obtain CPUC consent for all uses that do not meet the limited use exception requires either a formal application and order from the CPUC or following the utility advice letter procedure.

[21] https://www.pge.com/en_US/for-our-business-partners/interconnection-renewables/export-power/distributed-generation-handbook/net-energy-metering/res-bct-program.page.

[22] GO 69-C provides in pertinent part that " …public utilities covered by the provisions of section 851…are hereby authorized to grant easements, licenses or permits for use or occupancy on, over or under any portion of the operative property of said utilities for rights of way, private roads, agricultural purposes, or other limited uses of their several properties without further special authorization by this Commission whenever it shall appear that the exercise of such easement, license or permit will not interfere with the operations, practices and services of such public utilities to and for their several patrons or customers."

Pursuant to California Public Utilities Code Section 851, PG&E can sell, lease, assign, mortgage, or otherwise dispose of, or encumber the whole or any part of its properties if it received CPUC approval, which shall be obtained either through securing an order from the CPUC for transactions valued at five million dollars ($5,000,000) or more or through the advice letter procedure for transactions valued at five million dollars ($5,000,000) or less. The CPUC determines the types of transactions valued at five million dollars ($5,000,000) or less that qualify for advice letter handling. For a qualified transactions valued at five million dollars ($5,000,000) or less, the CPUC may designate a procedure different than the advice letter procedure if it determines that the transaction warrants a more comprehensive review. Absent protest or incomplete documentation, the CPUC must approve or deny the advice letter within 120 days of its filing by PG&E. It should be noted that although the CPUC has 120 days to assess whether a particular transaction is adverse to the public interest, the CPUC's average time for processing a Section 851 advice letter is approximately 90 days. The CPUC must reject any advice letter that seeks to circumvent the five million dollar ($5,000,000) threshold by dividing a single asset with a value of more than five million dollars ($5,000,000), into component parts, each valued at less than five million dollars ($5,000,000). Every sale, lease, assignment, mortgage, disposition, encumbrance, merger, or consolidation made other than in accordance with the advice letter and approval from the CPUC authorizing it is void.

The purpose of the CPUC review is to ensure that the proposed transaction is not adverse to the public interest – e.g., does not impair the ability of the utility to provide for safe and reliable service to customers at reasonable rates. If a transaction does not qualify for the advice letter process, utility transactions involving the transfer or dispositions of interests in property necessary or useful in the provision of services to the public generally require a formal application and a CPUC decision pursuant to Section 851. The advice letter process expedites and simplifies the CPUC's review and approval of non-controversial transactions by filing an advice letter and obtaining a CPUC resolution approving the transaction. Utilities still must file formal applications, rather than advice letters under the following circumstances: (i) to seek approval of transactions that require CEQA review by the CPUC as either a Lead Agency or a Responsible Agency,[23] or (ii) when a transaction will materially impact the ratebase of the utility, even if the transaction is valued at $5 million or less.

Formation of a Public Utility District (Option 3 or 4)

Alternatively, if Developer selects Option 3 or 4, many regulatory requirements would be required to set up the Public Utility District. Once established pursuant to "The Public

[23] Transactions subject to Section 851 which require CEQA review by the CPUC as either the Lead Agency or a Responsible Agency "jurisdictionally triggers" the CPUC's oversight and review responsibilities under CEQA and therefore does not qualify for advice letter treatment pursuant to Section 853(d). When acting as a Responsible Agency, the CPUC has significant duties under CEQA. For example, as a Responsible Agency, the CPUC must review the environmental documents prepared by the Lead Agency and make its own findings regarding whether the transaction will have significant environmental impacts, and whether these impacts can be mitigated. *State CEQA Guidelines Sections 15096(f) and (h)*. The CPUC may also require additional mitigation measures for significant adverse environmental impacts related to aspects of the Project that the CPUC decides to carry out, finance, or approve. *State CEQA Guidelines Section 15096(g).*

Utility District Act" set forth in California Public Utilities Code § 15501 *et seq.* (the "Act"), the Developer could pursue terminating and/or acquiring any existing PG&E easements and facilities located on the Project through the powers of a Public Utility District. The Act 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. The PUD may furnish those services outside its boundaries, but not in another municipality that furnishes the same service without its consent. The laws governing PUDs and their powers are similar to those for Municipal Utility Districts. 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. In addition, the voters in a PUD can petition the PUD board to acquire utility works or a utility. The PUD must obtain estimates of the cost of original construction of the existing facilities and completion by the PUD of similar facilities. The PUD may ask the CPUC to value existing utility facilities for the purpose of submitting estimates of the cost of acquiring them to the PUD 's voters at an election.

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. For instance, PUDs may take by eminent domain any property necessary or convenient to the exercise its powers. Section §16404 of the Act. Additionally, PUDs may acquire, construct, own, operate, control, or use, within or without or partly within and partly without the district, 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, and may do all things necessary or convenient to the full exercise of the powers granted in this article. Section §16461 of the Act. PUDs may also acquire, construct, own, complete, use, and operate a fire department, street lighting system, public parks, public playgrounds, golf courses, public swimming pools, public recreation buildings, buildings to be used for public purposes, and works to provide for the drainage of roads, streets, and public places, including, but not limited to, curbs, gutters, sidewalks, and pavement of streets. For purposes of this division, all of those projects shall be considered a public utility or public utility works. Section §16461 of the Act.

Pursuant to Public Utilities Code Section 1402 et seq.*,* a PUD can petition the CPUC to determine the value of utility property it seeks to acquire. A PUD may file a petition when it intends to (1) acquire public utility property by eminent domain or otherwise or (2) submit to its voters a proposition for such acquisition. The CPUC must give the utility an opportunity to show cause why it should not act on the petition. Otherwise, the CPUC must hold a hearing and determine the just compensation the PUD must pay the utility for the property. Within 20 days after the commission does this, the utility may file a written stipulation agreeing to accept the compensation set by the PUC with the political subdivision's governing body. Upon filing the stipulation, the political subdivision must proceed with all due diligence to provide the funding. When the political subdivision pays the compensation, the utility must provide it with the property deed. If the utility does not file the stipulation within 20 days, the PUD must (1) begin a court action (suit) to take the property or (2) submit a proposition to the voters to do so. The PUD must act within 60 days after the CPUC makes its determination. In the second case, if the voters approve the proposition, the PUD must file an action to take the property within 60 days of the vote

unless the utility and the PUD agree on terms for the acquisition.

The CPUC's finding on just compensation is final and may not be modified, reversed, or reviewed by any state court. If the court where the PUD pursues the condemnation proceeding decides that it has the right to take the utility's property, the court must enter a judgment in favor of the PUD fixing the compensation in the amount set by the CPUC. If the utility spent money on the property after the CPUC made its determination, it can go back to the CPUC within 30 days after the court enters its judgment to increase the compensation. Similarly, the PUD can go to the CPUC in this period if the property's value deteriorated after the CPUC made its original finding to reduce the compensation. The CPUC's decision on the extent to which the compensation should be adjusted is final. If the PUD does not act within 60 days after the CPUC makes its initial determination, the utility can petition the CPUC to determine that (1) the PUD failed to pursue diligently its rights; (2) its finding as to just compensation is no longer in force; and (3) the utility's reasonable expenditures in connection with the proceedings, which in the CPUC's opinion, could be assessed against the PUD.

3.1.5. First Phase Energy Usage and Demands

During the First Phase, the load on the Project's electrical infrastructure will increase over time. The combined impacts of the proposed power density, peak demand and annual energy usage are summarized in the table below. The resulting power density remains in the residential, low density rural area range of 10- 300 kva/Sq mile.

Table 6: Power Density and Usage

Power Density	Power Density (KVA/Sq mile)	Annual Consumption (MWh)	Peak Demand (MW)
Existing	11	266	0.4
Proposed First Phase	114	25,824	3.7
Proposed First Phase Infrastructure	144	4,735	1.1
Proposed Future Phases	269	28,462	4.5
Proposed First Phase and Future Phases	269	59,021	9.7

In response to the threat of wildfires fires started from overhead wires PG&E's Public Safety Power Shutoff Program[24] is in effect. This program shuts off power to customers under certain conditions related to humidity, wind speed, environmental conditions and on the ground observations. PG&E estimates a Public Safety Power Shutoff event to occur several times per year in PG&E's service area. Because the Project has significant areas within CPUC's Fire-Threat Map[25] areas ,it is anticipated the Project will be subject to

[24] https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/public-safety-power-shutoff-faq.page, accessed 7/8/2019.
[25] https://www.cpuc.ca.gov/FireThreatMaps/, accessed 7/8/2019.

multiple outages through the Fire Season.

For this reason and to support continuous service to the Project, each area of the Project could be provided with a standby generator to provide essential services to the individual resort properties, and infrastructure systems. In Electrical Infrastructure Options 2, 3 and 4, each switchboard will have standby power available in the event of an extended Public Safety Power Shutoff. When power from PG&E is turned off the standby power's control system will sense the loss of voltage and start the standby supply.

3.1.6. Standby Power

All distribution options include the development of standby power to enable prolonged electricity generation during times of limited on-site generation and/or to limit dependency on PG&E sources. The standby power sources could be batteries ("Energy Storage Systems") or generators with on-site fuel storage or a mix of Energy Storage Systems and generators. Potential fuel sources for the generators include diesel, propone, LNG or CNG. The number of generators required, if any, will be dependent on the types and capabilities of any Energy Storage System(s) included in the final design.

The standby power sources would be developed consisting of some level of generator(s) and/or Energy Storage System(s) with paralleling capabilities. Approximately 30,000 gallons of on-site fuel could be required for each generator depending on the quantity of battery storage containers refined in schematic design.

To cover each water and wastewater facility proposed in the SPOD, a potential total of forty 40-HP generators (30 kW), each with 96 hours of fuel storage could be required. These would be emergency generators with Automatic Transfer Switches or a form of Energy Storage System(s). The IT facilities could require a total of eight 125-kW generators (93 HP), and similarly each would require storage of 96 hours of standby fuel.

Since the standby power sources would only be utilized as necessary, the sources would not have set operating hours. All standby power sources would be tested monthly. The units over 50 HP will, by permit, be limited to 60 hours per year for testing not including emergency operations such as during a PG&E Emergency Power Safety Shutdown.

3.1.7. Alternative Energy Resources

A number of areas at the Project have been identified as appropriate for the development of solar energy systems for generation of the Project's energy needs, as indicated in Figure 4 below.

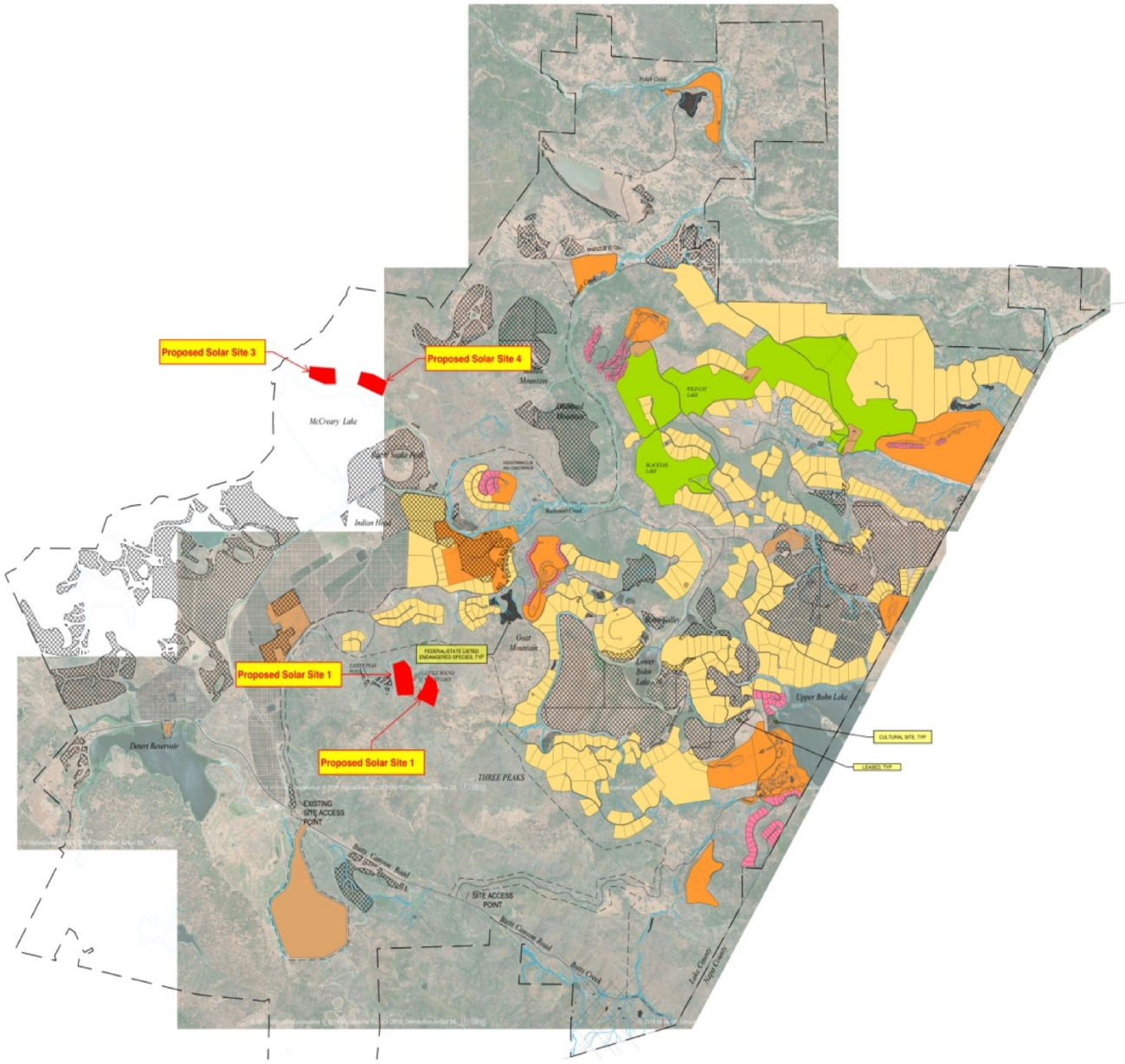


Figure 4. Proposed Solar Sites

Given that California law requires all new residential construction to contain rooftop solar or be provided solar from a community solar system, the development of either rooftop or ground-mounted community solar systems for the residential structures and the applicable contractual requirements related thereto will be a required part of any electrical infrastructure for the Project. Rooftop solar will be integrated into the building architecture as much as possible; in addition, up to four areas within the development area are identified for potential ground mounted solar arrays and associated

equipment.[26]

The maximum size of all ground mounted solar systems that could be built in the Project's development area are as shown in Table 7 below. The selection of the sizes of these ground mounted solar systems will be optimized to meet the needs of the projected energy demands and as the design progresses.

Table 7: Solar Site Maximum Potential

Solar Site	Gross Area (acres)	Maximum Size of Solar Array (MW-AC)
1	15	9
2	10	6
3	10	6
4	11	7
Total	46	28

Battery technology-based Energy Storage Systems will be collocated with the solar fields to optimize discharge and storage of energy. This enables sizing of both the solar arrays and the energy storage such that all energy generated by the solar systems are either used at the instant power is generated or the power is stored in the Energy Storage Systems for use later when the sun has set. Alternate uses of the Energy Storage Systems are to shape the loads, provide grid services, minimize demand and avoid costs that would otherwise be required.

[26] http://www.lakecountyca.gov/Assets/Departments/CDD/Planning/Docs/Guenoc/Maha+SPOD.pdf, page 11 Sustainability Efforts, accessed 7/8/2019.

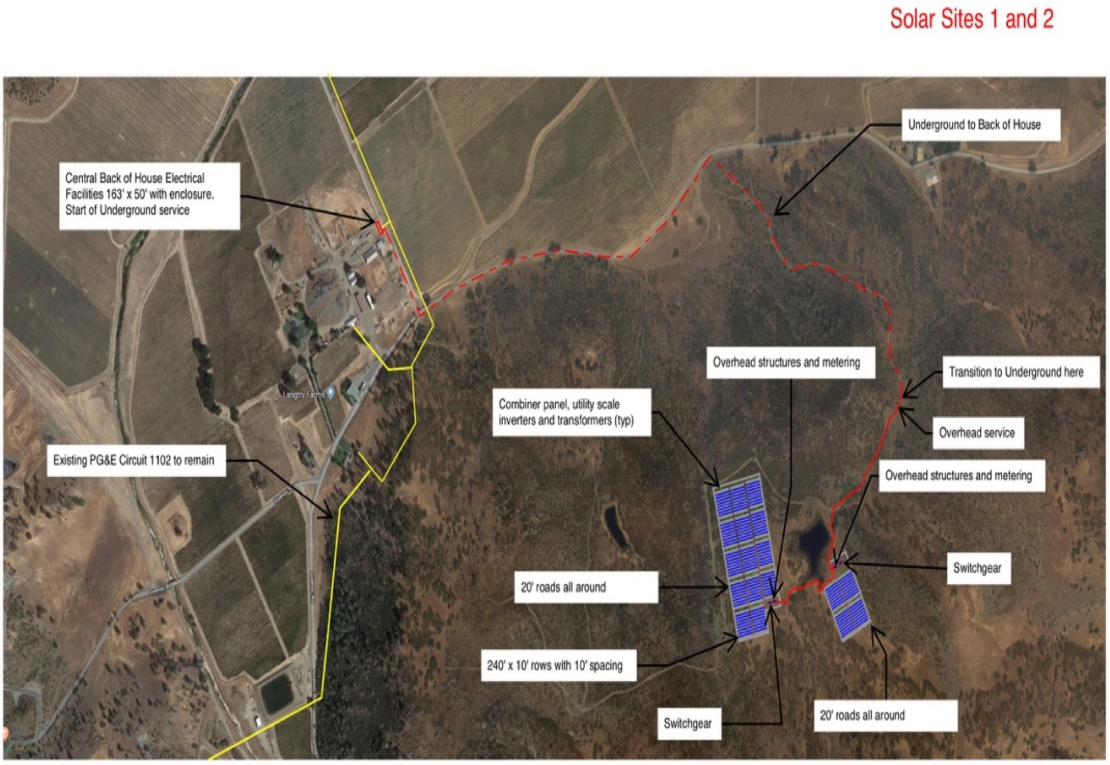


Figure 5. Solar Sites 1 and 2

The off-site improvements to the electrical infrastructure for these solar systems would require the installation of a Trip Transfer Scheme and include a Panel located at the Middletown Substation, as more fully described in Section 3.1.2 above. A telemetry cable would be required to be installed on existing PG&E poles down Butts Canyon to the point of interconnect. Another utility panel would be required to be installed at the point of interconnect on-site.

On the Project's development area north of McCreary Lake, two ground mounted solar systems could be constructed as shown in Figure 6. Each of the ground mounted solar systems on Solar Sites 3 and 4 could be located on the Project's development area and configured in the manner shown below.

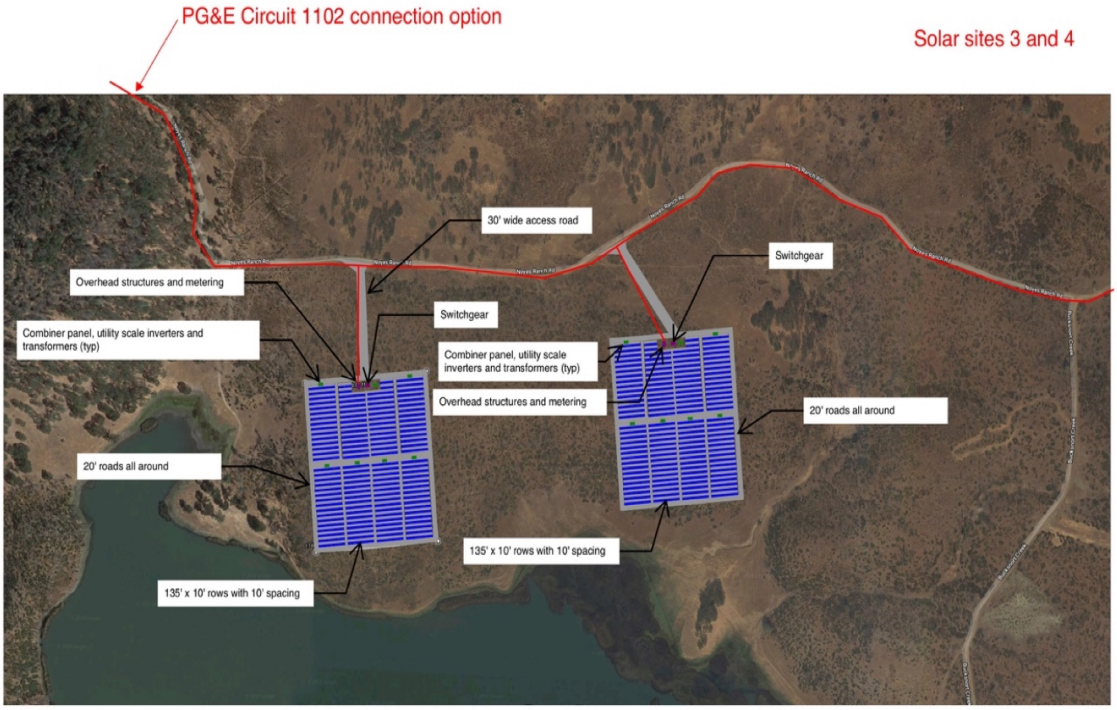


Figure 6. Solar Sites 3 and 4

If Developer elected to maximize the alternative energy resources in the Project's development area, then plans and specifications for approval of the balance of power on all Solar Sites 1 through 4 would add up to the limits of the alternative energy resources of 28 MW as described in Table 7 above. The Developer would be required to work through the PG&E interconnect process to increase capacity of the grid to support any off-site

export from the Project. Additionally, the Developer would be required to work through the CalISO interconnect process to enable power transmission to local utilities, as ultimately desired. The combined work to construct these solar resources would result in modifications to the PG&E infrastructure, as follows: (i) upgrade of the Middletown Transformer to a larger size as shown on Circuit 1103 per Table 2 above; (ii) upgrade electrical buss[27] at Middletown substation to accommodate increased capacity from the Project's solar systems; and (iii) upgrade of the wires on the poles in Butts Canyon per Table 2.

To the extent that Developer elects to construct any alternative energy resources on structures in a manner that relies upon net-energy metering ("NEM") or virtual net energy metering through PG&E, then, new service requests for NEM or RES-BCT developments on Butts Canyon would be required.

3.1.8. Microgrid Operation

A microgrid is a contained energy system capable of balancing captive supply and demand resources to maintain reliability. Microgrids have the following key elements and features:

- Defined by function, not size
- Incorporates multiple distributed technologies
- Maximizes reliability and efficiency
- Can include other utilities – steam, hot water, chilled water, network connectivity
- Can function in "islanded mode" disconnected from larger utility grid

The distribution Options 2, 3 and 4 all include the potential of all or portions of the electrical infrastructure at the Project being developed as alternative energy microgrid(s). Under normal conditions, the on-site micro-grid system(s) could be connected to PG&E with alternative energy systems operating to produce adequate power to both charge batteries and supply all of the power needs for the Project. In such case, the emergency and standby systems would be off unless otherwise needed.

If connected to PG&E, and in the event of a Public Safety Power Shutoff event, when PG&E secures power, the on-site energy systems will continue to serve the microgrid. The emergency and standby systems will operate in the event the microgrid is not available or the demands on the Project exceed available capacity. In distribution Options 2, 3 and 4 the standby systems will be designed to operate for up to five days with all other generation systems in the Project and GVD off.

[27] In electric power distribution, a busbar (also electrical buss) is a metallic strip or bar, typically housed inside switchgear, panel boards, and busway enclosures for local high current power distribution. They are also used to connect high voltage equipment at electrical switchyards, and low voltage equipment in battery banks. They are generally uninsulated, and have sufficient stiffness to be supported in air by insulated pillars. These features allow sufficient cooling of the conductors, and the ability to tap in at various points without creating a new joint.

3.1.9. Offtake of Export Energy & Ancillary Products

Any electricity generation and/or Energy Storage System products in excess of that required for the Project's energy demands, may be exported to a local municipality or Customer Choice Aggregator ("CCA")[28] or utility as determined appropriate. Such export of energy and/or ancillary products is a common feature of alternative energy projects and a component of microgrid operations when functioning in a grid-tied service area, especially due to the intermittent nature of alternative energy resources. Depending on the distribution option selected for the Project, the Developer may elect to connect the Project to the energy grid "in front" of the Project's development area revenue meter in order to enter into a front-of-meter contract to provide one or multiple functions to a CCA or utility, such as a generation resource, energy load or "sink." Front-of-meter contracts are frequent elements of alternative energy developments in California providing important streams of income for cash flow and assisting CCAs and utilities with respect to meeting California's Renewable Procurement Standards ("RPS") and managing intermittent supplies of alternative energy on the grid.[29]

A front-of-meter contract for the solar plus storage at the Project's development area could take the form of an Energy Capacity Sales Agreement or a Hybrid Power Purchase Agreement ("PPA"). Under a Capacity Sales Agreement, a utility or CCA would contract with the Developer for Resource Adequacy benefits or other capacity attributes solely from the Energy Storage System(s) located at the Project. The utility or CCA would purchase only the capacity and capacity attributes form the Energy Storage Systems leaving the Developer free to sell all of the Energy Storage System's and solar products, including energy, ancillary services, etc. to other parties, such as tenants at the Project's development area. The utility or CCA would pay a monthly capacity charge to the Developer, but no variable or energy charge. The Developer would retain the operational

[28] In 2002, California State Legislature passed Assembly Bill 117, enabling Community choice aggregation (CCA). CCA, also known as municipal aggregation, are programs that allow local governments to procure power on behalf of their residents, businesses, and municipal accounts from an alternative supplier while still receiving transmission and distribution service from their existing utility provider. In 2018, six of California's 19 CCAs had PPAs for new renewables.

[29] California's Renewables Portfolio Standard (RPS) was established in 2002 via SB 1078, which required 20 percent of the State's energy portfolio to be supplied by renewable sources such as solar, wind, hydroelectricity, geothermal, and bioenergy renewable energy by 2017. RPS goals have been accelerated over time to require the State's energy portfolio to be supplied by renewable sources in increasingly higher percentages. Since 2011, the RPS target has required all electricity retailers in the state, including CCAs and investor-owned utilities such as PG&E to procure 33 percent of their energy sales from renewable sources by the end of 2020. SB 350, passed in 2015, directs California utilities to further increase the amount of renewable energy to be delivered to customers to 50 percent by 2050. Collectively, PG&E, SCE, and SDG&E met the 33 percent goal in 2016 and are forecasted to reach 50 percent in 2020 (CPUC 2018c). Additionally, California CCAs submitted 2018 RPS compliance reports which showed that of the 19 CCAs that are currently providing energy load, three (15%) have already procured long term contracts above the 65% requirement, four have procured some long-term contracts but need to procure more to meet the 65% requirement, 11 have procured only short-term contracts, and one has not procured any RPS energy.

control and full authority over charging and discharging the Energy Storage System(s). The Developer could agree to certain exceptions, such as the utility or CCA's right to dispatch the Energy Storage System(s) during a limited number of peak hours each year.

Under a Hybrid PPA, the Developer would sell bundled products from the alternative energy generated from the solar systems integrated with some type of Energy Storage System product. Two main types of Hybrid PPAs could be selected. An as-available, take-or-pay Hybrid PPA typically requires the Energy Storage System(s) are only charged by on-site renewable energy generation. The Energy Storage System(s) would be discharged to moderate renewable intermittent energy flows on the grid. The Developer could sell as available energy bundled with other available products such as capacity attributes or RECs to the utility or CCA and would receive a fixed or escalating price in return. Under this type of Hybrid PPA, the utility or CCA typically has full discretion to charge and discharge the Energy Storage Systems, subject to certain operating parameters. The Energy Storage Systems would be designed to satisfy minimum levels of operating and technical requirements assessed based on the Solar Plus Storage Systems' performance in smoothing out energy flows.

Alternatively, the Developer may elect to execute a Hybrid PPA that sells renewable energy generated by the solar sources to the utility or CCA and allows the utility or CCA to decide when to charge and discharge the Energy Storage Systems and whether to charge the Energy Storage Systems from the on-site renewable energy generation or the grid. This type of hybrid PPA provides a grid service to the utility or CCA and is increasing popular with utilities and CCAs in California.

The compensation structures in Hybrid Renewable PPAs vary but typically the Developer would receive either (i) an energy charge ($/MWh) for energy delivered plus a capacity payment in relation to the Energy Storage Systems ($.KW-month) or (ii) just an energy charge ($/MWh), but with an agreed "adder" per MWh to compensate the Developer for the Energy Storage Systems.

In addition to the on-site and off-site improvements that would be required to accommodate the alternative energy resources, as discussed in Sections 3.1.2 and 3.1.6 above, the Developer would begin working through the California ISO interconnection process to enable power transmission to utilities or CCAs, as applicable. Once such processes are completed, the Developer could enter into a negotiation process with a CCA or other type of utility to execute one or more of the above described front-of-meter agreements.

3.2. Electrical Service Infrastructure for Future Phases

As the Future Phases of the Project are developed, the electrical infrastructure implemented in First Phase will be built upon with the goal of maintaining the Project's goals of reliability, clean power and resiliency. The potential development within the new zoning classification GVD

includes additional PV solar, energy storage and other energy generation technology to support the distribution option selected in the First Phase and Future Phases. Infrastructure systems to be built in the First Phase of the Project will support Future Phases.

4.0 OTHER CONSIDERATIONS

4.1 Direct and Indirect Environmental and Community Benefits

All electrical infrastructure developed at the Project as described herein will enable resilience, reliability and consistent power supply and distribution services for the Project. There are many direct and indirect benefits from solar energy, energy storage and microgrids to the Project, ranging from emergency power services to clean air.

In regard to direct environmental benefits, the proposed electrical infrastructure's distribution Options 2 through 4 offers distinct advantages. Option 1 would respond to California state law and generate approximately 2,775 KW of PV solar energy. Options 2 through 4 would go beyond California state law requirements, being the most environmentally superior options, and result in up to 28 MW of clean PV solar energy generated by the Project's electrical infrastructure.

There are also other indirect benefits that could be more readily monetized by the Project regardless of the chosen distribution option. The National Renewable Energy Laboratory ("NREL"), for instance, examined the value that energy storage has in reducing demand charges which are utility charges that are typically based on the peak amount of energy used in a specified time interval. Demand charges are designed to enable the utility to recover costs associated with having to build distribution capacity that is idle except for during peak demand periods. The end user's demand charge is usually set by a formula that considers, among other things, how that end user's peak demand coincides with the grid's peak demand. An end user whose own peak coincides with grid peak pays a higher demand charge.

Demand charges are not trivial. NREL determined that 25% of commercial customers pay demand charges greater than $0.015/kWh.[30] A microgrid can reduce this cost substantially. The Project can manage coincident peak contribution during peak grid times, such as hot summer afternoons. Likewise, the Project could manage peak load contribution for capacity charges and could even sell power back to the grid during peak load periods. Microgrids have been found to be cost-effective based upon indirect value to the community, providing emergency power and clean energy.

[30] *See* J. McLaren et al, "Identifying Potential Markets for Behind the Meter Battery Energy Storage: A Survey of the U.S. Demand Charges." National Renewable Energy Laboratory (2017) https://www.nrel.gov/docs/fy17osti/68963.pdf See also: E. Wood, "Wondering if Energy Storage Can Reduce Your Demand Charges," Microgrid Knowledge, August 24, 2017, found at: https://microgridknowledge.com/demand- charges-energy-storage/

4.2 Energy Impacts[31]

Analysis of the energy impacts reveals there will be a significant increase in energy use on the Project when compared to usage in the agricultural setting today. All aspects of the Project will be built to meet energy use code requirements and systems will be put in place to minimize wasteful, inefficient and unnecessary use of energy resources within the buildings in accordance with the California building and energy codes.

During the construction of First Phase and Future Phases, electrical energy will be consumed in the course of constructing the facility. Overall demolition and construction activities will be analyzed in a separate report prepared by the Developer. Operations will increase electrical consumption on the Project. The Project will be built in phases and the electricity usage will grow over time and generally in accordance with the Table 6.

5.0 CONCLUSION

As can be seen from the analyses presented in this report, the development of the proposed PV solar based electrical infrastructure options for the Project are all technically feasible, meet the needs of the Project and comply with California state law. Each of the four distribution options described herein would meet the energy demand needs of the Project, and the possibility of developing the distribution options in phases is feasible. With PV solar systems as the primary source of energy generation, nearly all of the electrical energy requirements at the Project will be met in an environmentally sound manner.

We have created a work flow for the Project's electrical infrastructure development, which is included in Exhibit A –Work Flow attached hereto. This Work Flow sets forth in detail the specific tasks related to the Project's electrical infrastructure development, the applicable processes related thereto and estimated timelines for completion of the electrical distribution options analyzed in this report.

[31] http://resources.ca.gov/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf, page 30 accessed 7/8/2019.

- EXHIBIT A -
Work Flow

	ELECTRICAL INFRASTRUCTURE DEVELOPMENT ISSUES	ACTION ITEMS & PROCESSES	ESTIMATED TIMEFRAMES
1	Submit Public Draft of EIR	• Finalize DEIR	TBD
2	Developer must purchase from the current utility provider, PG&E, 18 miles of existing PG&E 12 KV circuit (which needs to be either removed or reused).	• Either through Advice Letter process with PG&E & CPUC or the creation of a Public Utility District & CPUC approval or seeking an exemption. • Further legal due diligence required.	TBD
3	Developer must install 25 miles of new joint trench and underground electrical infrastructure in the Project's proposed subdivisions.	• TBD - Dependent on construction timelines, development agreement and other factors still needed to be worked out. • Further legal due diligence required.	TBD
4	Developer must install 8 miles of overhead cables and poles to connect the proposed subdivisions.	• TBD – Dependent on construction timelines, development agreement and other factors still needed to be worked out. • Further legal due diligence required.	TBD
5	Per California law, for all residential structures, Developer must either install PV solar on the rooftops or provide solar through ground-mounted community solar systems.	• Further financial analysis as to best option for Developer would be beneficial here – eg. Financial modeling for Developer owned and operated community solar projects v. if Developer contracts out supply/servicing of solar projects to a third-party to own & operate the systems should be considered. • Whatever method of ownership is selected, this action item will require certain contracts to be drafted/negotiated with third-parties such as EPC contractors, vendors and end-users. Terms of warranties are important considerations in these types of documents. • A community solar ground mounted project would require additional legal work structure. A 20 year minimum commitment required for dedicated solar from any ground mounted project to each residential structure. • If ground mounted community solar project selected, Developer must submit an application to California Energy Commission ("Commission") for approval to administer a community shared solar electric generation or community shared battery storage system to provide partial or total compliance with the onsite electric generation system and/or battery storage system required by Section 150.1 of Title 24, California Code of Regulations, Part 6. The application must demonstrate to the Commission's satisfaction that each of the requirements for Section 10-115(a)1-	TBD: If ground-mounted community solar method selected as the solar installation choice, then such community solar systems must be installed and ready for inspection no later than the time the residential structures are inspected for compliance by the building department. All documentation for the community solar electric generation system and/or community solar battery storage system that is required to demonstrate compliance for the building must be completed prior to building permit applications.

		6 will be meet and shall include detailed explanation of the actions that will be taken by the applicant to ensure that each requirement is met over the period of time specified Section 10-115(a)4 for each building for which a partial or total offset is used to demonstrate compliance. • Further legal due diligence required.	
6	Per California law, all commercial structures must be build "Solar Ready" or, alternatively, Developer can elect to develop ground-mounted community solar projects to supply the commercial buildings' energy needs.	• See similar comments to Item 7 above. • Additionally, if ground mounted solar plus storage micro-grid are created and owner operated, then the development of solar PPAs for the sale of electricity to end user customers will need to occur. • Further legal due diligence required.	TBD
7	Recommendation that Developer install storage (battery type TBD) at every location where PV solar is installed – eg., regardless of choice to do rooftop solar or community solar.	• Further financial analysis as to best option for Developer would be beneficial here. • Decision partly dependent on which distribution option is chosen below. E.g., an independent microgrid requires some type of battery storage paired with the solar. Even if Option 1 is chose, the majority professional opinion in the industry is that solar system should either be sized for a baseload, e.g., never export to PG&E, or add storage to solar because PG&E retail rates extend the payback of a solar system when selling back to PG&E.	TBD
8	Based review of PG&E's Solar Photovoltaic ("PV) and Renewable Auction Mechanism ("RAM") Program Map, the SPOD, and the Project's tentative map, it appears that the construction plans for the Project contain residential and commercial buildings and other accessory features in areas directly over (to be constructed on top of) existing PG&E easements and poles.	• Further legal due diligence required. • Potential coordination/negotiation with PG&E required to reach agreement on moving or co-using the applicable easements and PG&E property over which construction is desired. If the uses do not qualify for a de minimis use exception of PG&E property, either the Advice Letter process with PG&E & CPUC *or* the creation of a Public Utility District & CPUC approval is required.	TBD
9	**Option 1:** The Project's current utility provider, PG&E, would provide the electrical distribution services (metering, distribution, etc.) to all facilities at the Project. This would require Developer to work with PG&E to request that PG&E, in coordination with Developer, build standard subdivision reconnects to the 11 existing PG&E service points on the Project. These subdivision reconnects would be built across the multiple newly created parcels and "remaining parcels" as shown on the tentative subdivision maps for the Project. All commercial properties would be built "Solar Ready" pursuant to applicable California energy code.	• Further legal due diligence required.	TBD

10	**Option 2:** The Project's current utility provider, PG&E, would provide the electrical distribution services (metering, distribution, etc.) to all residential structures at the Project as in Option 1. However, for the commercial and other accessory features at the Project, PG&E would only provide a single delivery point to the Project at the service entrance designated as "Back of House." From this point, Developer would construct, own and operate new meters and distribution lines to each of the 12 commercial facilities at the Project and to each of the 57 other resort accessory features consisting of water wells, waste water treatment plants, cell towers and IT features. This option would allow for Developer to own and operate "behind the meter" solar plus storage microgrids for all commercial and resort accessory features. Four locations at the Project have been identified as available for ground mounted solar plus storage systems. The independent micro-grids 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 desired per the final Project's design.	• The development of independent behind the meter solar plus storage microgrids for the commercial and other facilities at the Project could be accomplished with the projects owned by Developer and the electricity sold to the lessors of the buildings at the Project through traditional solar Power Purchase Agreements ("PPAs). The development of such PPA documents would be relatively straightforward given the lack of apparent tax equity investor and Developer's position of also owning the land and buildings; however, the transactional documents would still require a certain amount of time to set up from a legal perspective. • Further legal due diligence required.	TBD
11	**Option 3:** This option envisions that Developer would create a "Public Utility District" that would supply power, own all of the electrical infrastructure and provide related services to all of the residential, commercial and accessory buildings and features at the Project. This option includes behind the meter solar for commercial facilities at the central solar locations to enable community solar and community storage to meet the Project's aesthetic goal related to no solar on roofs. Between one to four ground mounted solar plus storage solar systems would be located at the Project, which collectively could generate enough electric supply for the Project's entire energy needs. Similar to Option 2, PG&E would provide a single delivery point to the Project at the service entrance designated as "Back of House" and the "remainder parcels" including roads connecting the commercial properties would be recorded as a single parcel or multiple parcel's with a designated network of easements to accommodate the micro-grid design.	• Finish feasibility study. • Further legal due diligence / analysis required. • Conduct study with legal input to estimate the value of the electric distribution system. • Hold referendum to create District. • Potentially hire third-party to assist with running the day to day operations of the Public Utility District. • Construct, own and operate community solar and storage systems at the Project. • Ongoing operations and maintenance obligations of electrical infrastructure required. • Evaluate financing alternatives for any debt desired/required for the acquisition of District/utility assets. • Exercise rights to acquire PG&E easements and property for District.	TBD: Uncertain and lengthy process.
12	**Option 4:** This option would provide for a hybrid of Options 2 and 3, wherein Developer would create and own solar	• Similar comments to 13 and 14 above	TBD

	plus storage micro-grids that would be constructed for all or certain commercial structures at the Project similar to Option 2. PG&E would service all residential lots at the Project. All commercial facilities served by the privately owned micro-grids would be serviced through traditional solar Power Purchase Agreements ("PPAs") until the formation of the Public Utility District is completed. Under this option, the Project's electrical infrastructure would begin, at least in certain areas of the Project, while the extensive formation processes related to setting up a Public Utility District is accomplished. Option 4 would provide for a phased approach to the development of the Project's distribution infrastructure and include the potential sale of the solar plus storage systems to the Public Utility District at a later date, if desired.		

APPENDIX FIRE

GUENOC VALLEY WILDFIRE PREVENTION PLAN

MAHÁ

GUENOC VALLEY

DRAFT WILDFIRE PREVENTION PLAN

FOR THE FIRST PHASE OF THE
MAHA RESORT AT GUENOC VALLEY

FEBRUARY 5, 2020

ACKNOWLEDGMENTS

The *Maha Guenoc Valley Wildfire Prevention Plan* was created as part of collaborative effort between the County of Lake, representatives from the California Department of Forestry & Fire Protection (CAL FIRE), design and engineering teams, and grazing consultants. The group relied upon local knowledge and trusted resources to identify the key fire risks throughout the site and then develop an innovative and comprehensive wildfire prevention strategy.

TABLE OF CONTENTS

Note: Site plans throughout this document are intended to demonstrate key wildfire prevention concepts. Final site plans are subject to change; please refer to the tentative and final maps for detailed site plan information, including parcel layouts and circulation alignments. In addition, the wildfire prevention commitments for the McCain Canyon entry road option are detailed in the McCain Canyon entry road grading plan.

OVERVIEW

GOALS & INTENT

The Maha Resort at Guenoc Valley is situated in a unique northern California landscape. The site's hills and valleys filled with oak woodlands, grasslands, vineyards, and grazing pastures will create an exceptional visitor and resident experience. Yet, this same setting also presents critical wildfire risks. A development of this size and expense requires a comprehensive approach to protect the environment and buildings from wildfire damage.

The *Maha Guenoc Valley Wildfire Prevention Plan* presents an integrated approach to wildfire management throughout the project site. This plan includes a thorough consideration of the site's wildfire history as well as vegetative, topographic, and climatic wildfire risks. These risk patterns inform a series of essential wildfire prevention strategies for all components of the project. This includes innovative concepts and commitments that will contribute to a wildfire resilient setting. For example, goat, sheep, and cattle will reach many hard-to-access areas of the property to graze dry grasses and reduce understory vegetation, both of which are significant wildfire risk factors. As determined by the Homeowner's Association, the project site will additionally be protected with fire breaks along the roadway network as well as along unprotected areas of the property boundary. In the case of an actual wildfire, the on-site emergency response system will quickly be deployed–which includes everything from high-definition fire detection cameras to an on-site emergency and fire response center.

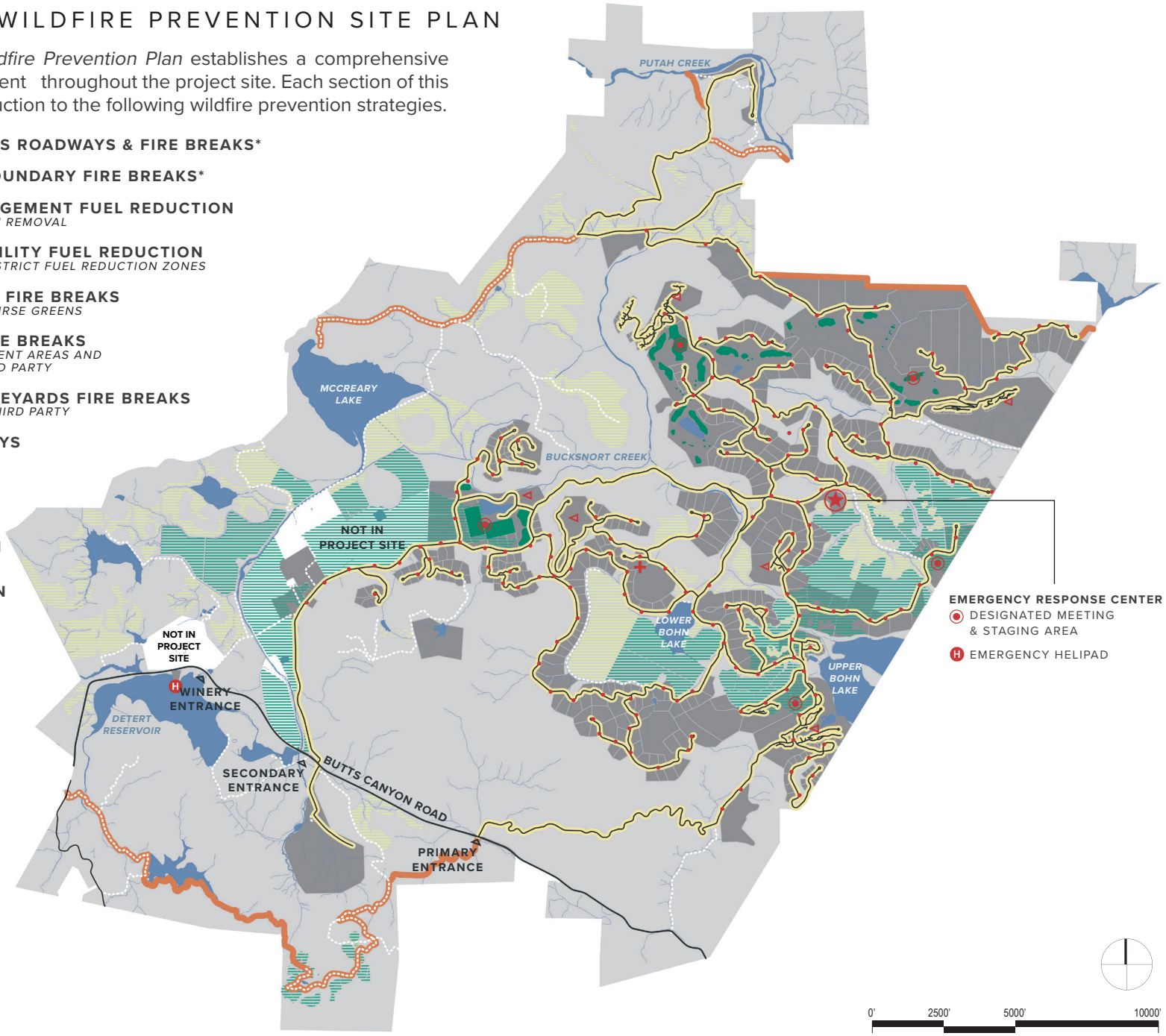
These efforts will be part of an overall commitment to developing long-term wildfire resilience through innovative partnerships, research, and strategies. The resort will follow the guidance and establish collaborations with the County of Lake, the California Department of Forestry & Fire Protection (CAL FIRE) and the local fire department, South Lake County Fire, to continuously improve the wildfire prevention plan. These actions will all contribute to the resort's plege to become a Firewise Community as designated by the National Fire Protection Association (NFPA), which will reinforce the long-term ability to address wildfire risk. With comprehensive and careful planning, Maha Resort at Guenoc Valley will offer an dynamic and effective ability to reduce wildfire risk for all residents, visitors, and workers.

OVERVIEW
COMPREHENSIVE WILDFIRE PREVENTION SITE PLAN

The *Maha Guenoc Valley Wildfire Prevention Plan* establishes a comprehensive approach to wildfire management throughout the project site. Each section of this plan will provide a brief introduction to the following wildfire prevention strategies.

- **PRIMARY TWO-WAY ACCESS ROADWAYS & FIRE BREAKS***
- **VOLUNTARY PROPERTY BOUNDARY FIRE BREAKS***
- **ACTIVE LANDSCAPE MANAGEMENT FUEL REDUCTION**
  GRAZING AND MANUAL VEGETATION REMOVAL
- **RESIDENTIAL/RESORT/FACILITY FUEL REDUCTION**
  STRUCTURE FIRE SPRINKLERS AND STRICT FUEL REDUCTION ZONES
- **IRRIGATED RECREATIONAL FIRE BREAKS**
  EQUESTRIAN FIELDS AND GOLF COURSE GREENS
- **IRRIGATED VINEYARDS FIRE BREAKS**
  CURRENTLY PLANTED IN DEVELOPMENT AREAS AND AREAS LONG-TERM LEASED BY THIRD PARTY
- **POTENTIAL IRRIGATED VINEYARDS FIRE BREAKS**
  IN AREAS LONG-TERM LEASED BY THIRD PARTY
- **EXISTING RANCH ROADWAYS**
  USED FOR ACTIVE FUEL REDUCTION AND EMERGENCY ACCESS
- **EMERGENCY RESPONSE CENTER**
- **EARLY DETECTION SYSTEM**
  HIGH-DEFINITION CAMERA
- **EMERGENCY NOTIFICATION SIREN SYSTEM**
  EXACT LOCATIONS TBD
- **DESIGNATED MEETING & STAGING AREA**
- **HELIPADS**
- **FIRE HYDRANTS**
- **WATER SOURCES**
  RESERVOIRS, LAKES, PONDS, CREEKS & STREAMS

**To be constructed at the discretion of the Homeowner's Association if and when necessary*



OVERVIEW
IMPLEMENTATION & MANAGEMENT

The *Maha Guenoc Valley Wildfire Prevention Plan* will create a comprehensive framework to guide the plan's continuous development, implementation, and management. Beyond meeting code requirements defined by the County of Lake and the State of California, the project team will work closely with the California Department of Forestry & Fire Protection (CAL FIRE) and the local fire department, South Lake County Fire, to continuously identify strategies to improve the wildfire prevention plan.

The plan will be implemented through the resort's Covenants, Conditions, & Restrictions (CC&Rs), development agreement, and Guenoc Vally District (GVD) zoning ordinance documents, which will all be overseen by the County of Lake through the development permitting process. The resort's residential homeowner's association (HOA) will provide ongoing oversight of the plan's management, operations, and enforcement. The ability for this organization to oversee the wildfire plan will be specified within the resort's CC&Rs.

SITE CONTEXT
PROJECT SETTING & HISTORY

The Maha Resort at Guenoc Valley is located approximately 100 miles north of the Bay Area in the agricultural and viticultural region of North–central California. The resort is located in the southeastern corner of the County of Lake, three miles southeast of Middletown and on Napa County's northern border.

Guenoc Valley, a small inland valley, is comprised of varying landscapes and conditions. The valley experiences greater seasonal temperature extremes than neighboring areas, and has a wide range of elevation changes throughout the property. These varying elevations support various vegetation types and uses; a series of vineyards generally cover the lower areas and slopes, while oak woodlands, grasslands, and chaparral covered hillsides offer plenty of opportunities for livestock grazing.

At approximately 16,000 acres, the resort site remains one of the largest privately owned properties in the state of California. The property first came to public attention when a portion of the ranch was owned by the British Actress, Lillie Langtry. Through the years the land has continued to be utilized for outdoor recreational pursuits, vineyards, and agriculture.

PROJECT SITE LOCATION

In resort site is located approximately 100 miles north of the Bay Area on the border of Napa and Lake County with close access to Clearlake and Santa Rosa.

SITE CONTEXT
PROJECT SITE PLAN

This site's inherent agricultural and rural character will continue to be a valuable aspect of the resort experience. The proposed development—which includes boutique hotels, residential estates, recreational amenities, operational facilities, roadways, and trailways—will be carefully integrated into the site. The resort will prioritize protecting and enhancing vineyards, grazing pastures, and undeveloped open areas throughout the development process.

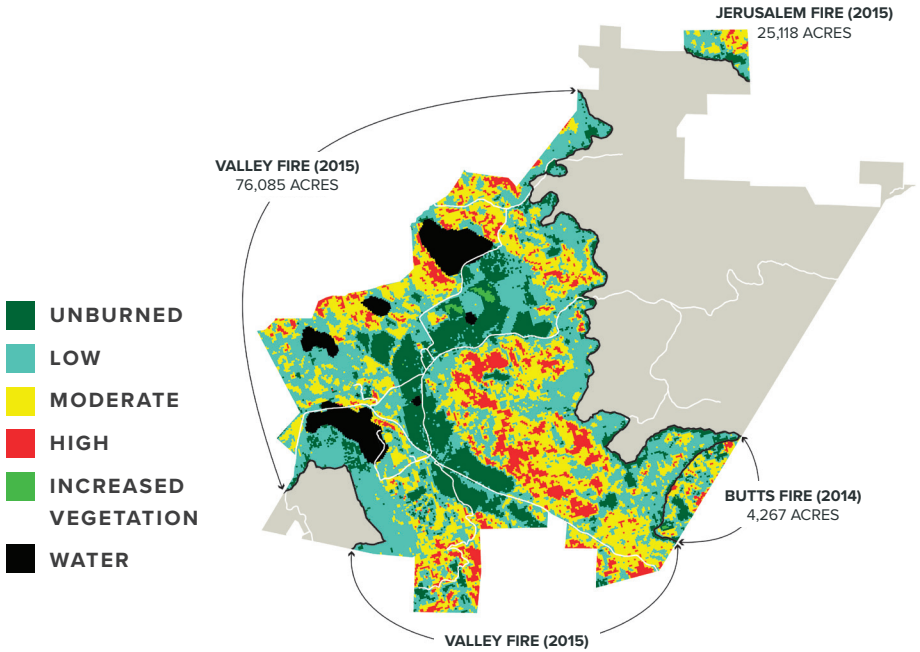
1 ON-SITE WORKFORCE HOUSING
2 AERIAL SITE ACCESS
3 CENTRAL BACK-OF-HOUSE OPERATIONS
4 MAHA FARM
5 EQUESTRIAN CENTER & LODGE
6 BOHN RIDGE RESORT
7 SPA & WELLNESS
8 EMERGENCY RESPONSE CENTER
9 RESORT AT TROUT FLAT
10 GOLF COURSE
11 RED HILL RESORT
12 TENT CAMP AREA

SITE CONTEXT
WILDFIRE HISTORY

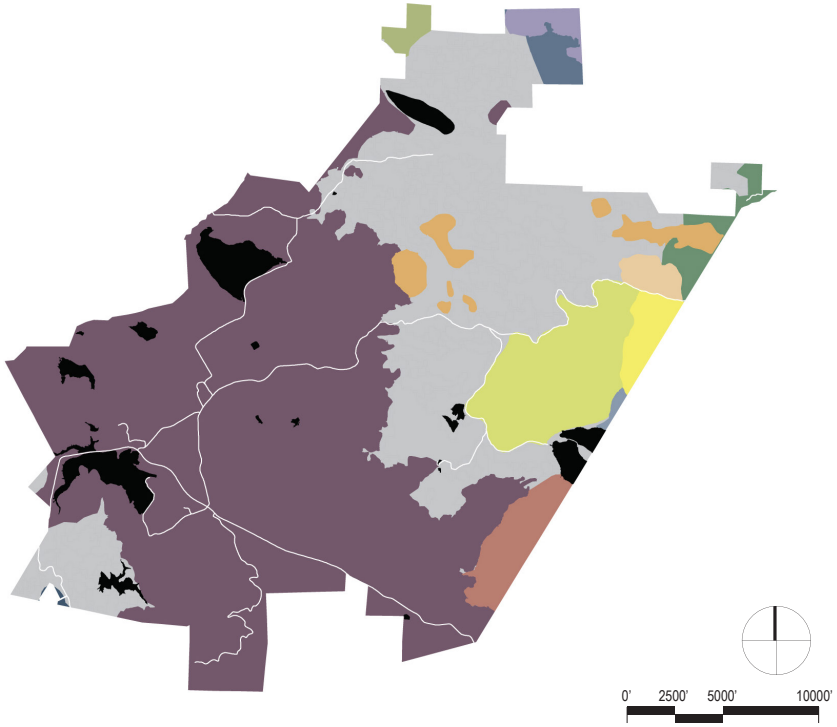
Guenoc Valley is located in a fire prone region of California. Although wildfire is a year-round possibility, risk increases during the late summer into the fall. During this time of the year, hot days with a lack of precipitation dries out vegetation, which increases the risk for wildfire, particularly during windy days. Climate change could further affect these risk factor patterns.

Wildfires have affected the site throughout its history. Since the 1950s, fires of varying size and intensity have burned parts of the project site. A few of the more recent fires, including the Butts Fire in 2014 and the Jerusalem and Valley Fires in 2015, were large-scale fires which spread from off-site and affected large portions of the site as well as nearby properties. In particular, the Valley Fire caused wide-spread damage to the southern portion of the site, particularly along Butts Canyon Road. These affects are still visible and present today.

The scale, severity, and effects of the most recent wildfires are all important considerations in developing a rigorous wildfire prevention strategy.



BURN SEVERITY OF MOST RECENT WILDFIRES
SOURCE: National Burn Severity Mapping Project, National Park Service - U.S. Geologic Survey, 2014 and 2015



SITE WILDFIRE HISTORY SINCE 1950s
SOURCE: California Fire Return Interval Departure (FRID), USDA Forest Service, Pacific Southwest Region, 2012 with 2016 update

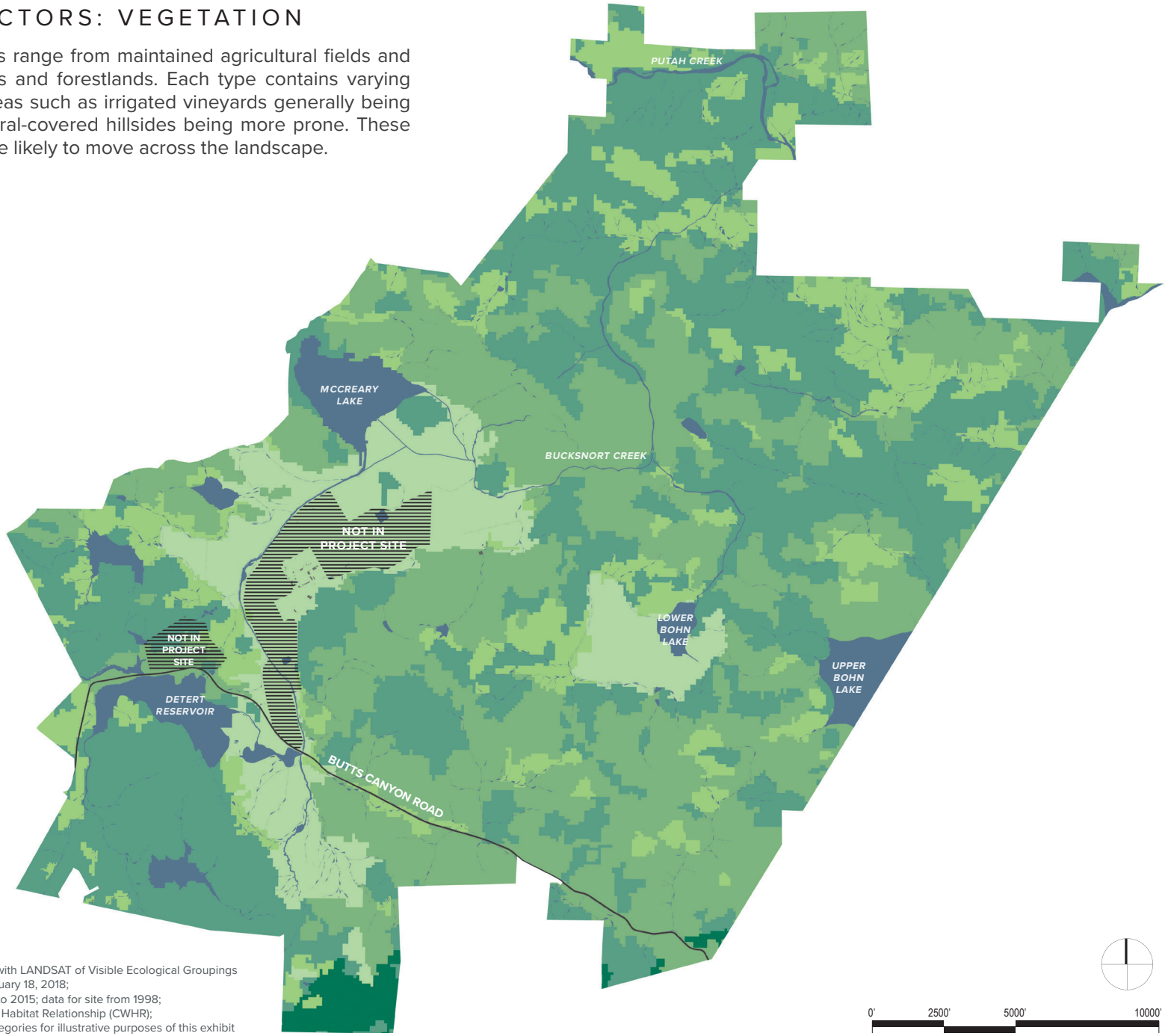
SITE CONTEXT

WILDFIRE RISK FACTORS: VEGETATION

The dominant vegetation types range from maintained agricultural fields and vineyards to dense woodlands and forestlands. Each type contains varying levels of wildfire fuels, with areas such as irrigated vineyards generally being less prone to fires and chaparral-covered hillsides being more prone. These patterns affect how wildfires are likely to move across the landscape.

VEGETATION COVERAGE

- AGRICULTURE
- GRASSLANDS
- CHAPARRAL
- OAK WOODLANDS
- GENERAL FORESTLANDS
- WATER

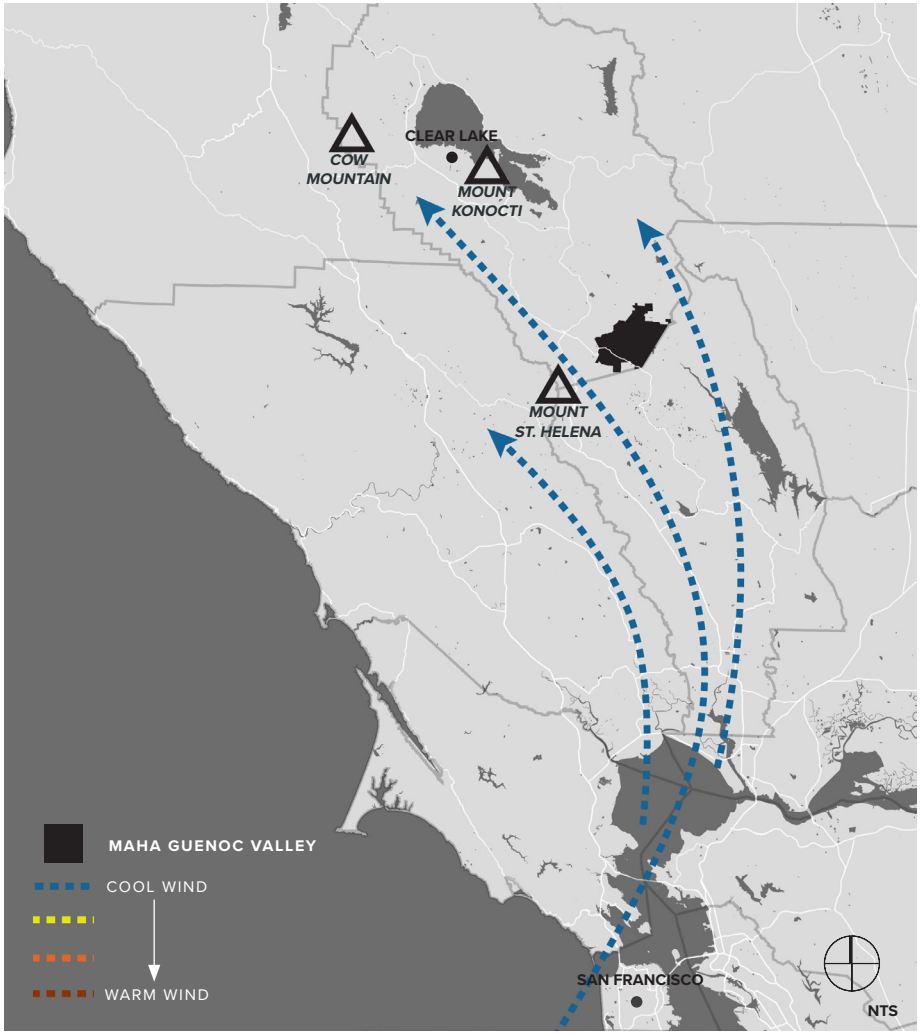


SOURCE:
U.S. Forest Service, Classification and Assessment with LANDSAT of Visible Ecological Groupings (CALVEG), EVeg Mid Region 5 North Coast Mid, January 18, 2018;
data source information ranges from the year 1998 to 2015; data for site from 1998;
data source crosswalked with the California Wildlife Habitat Relationship (CWHR);
CWHR categories simplified to the above seven categories for illustrative purposes of this exhibit

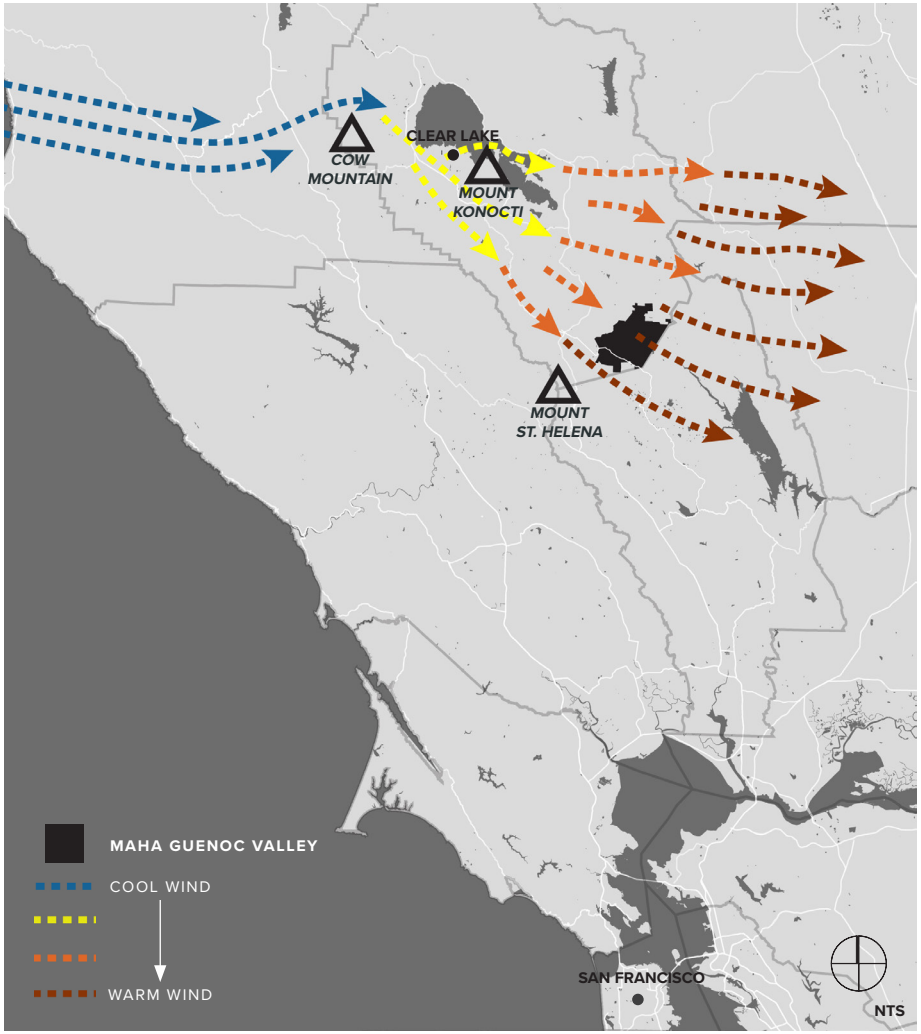
SITE CONTEXT
WILDFIRE RISK FACTORS: REGIONAL WIND PATTERNS

Windy conditions during the fire season increase the likelihood of fires erupting, rapidly escalating, and increasing in intensity and scale. Depending on various climatic conditions, regional wind patterns may vary seasonally and even daily. However, the resort site is primarily affected by two regional wind patterns: the Konocti Winds and Diablo Winds.

The Konocti Winds, as shown below, affect the site with varying morning and afternoon wind patterns. In the morning, wind typically flows northward from the Bay Area. In the afternoon, cool air flows eastward from the coast over Cow Mountain and towards Clear Lake, splits around Mount Konocti, and then increases in speed and temperature as it flows southwards towards Highway 20, Morgan Valley, and Guenoc Valley.



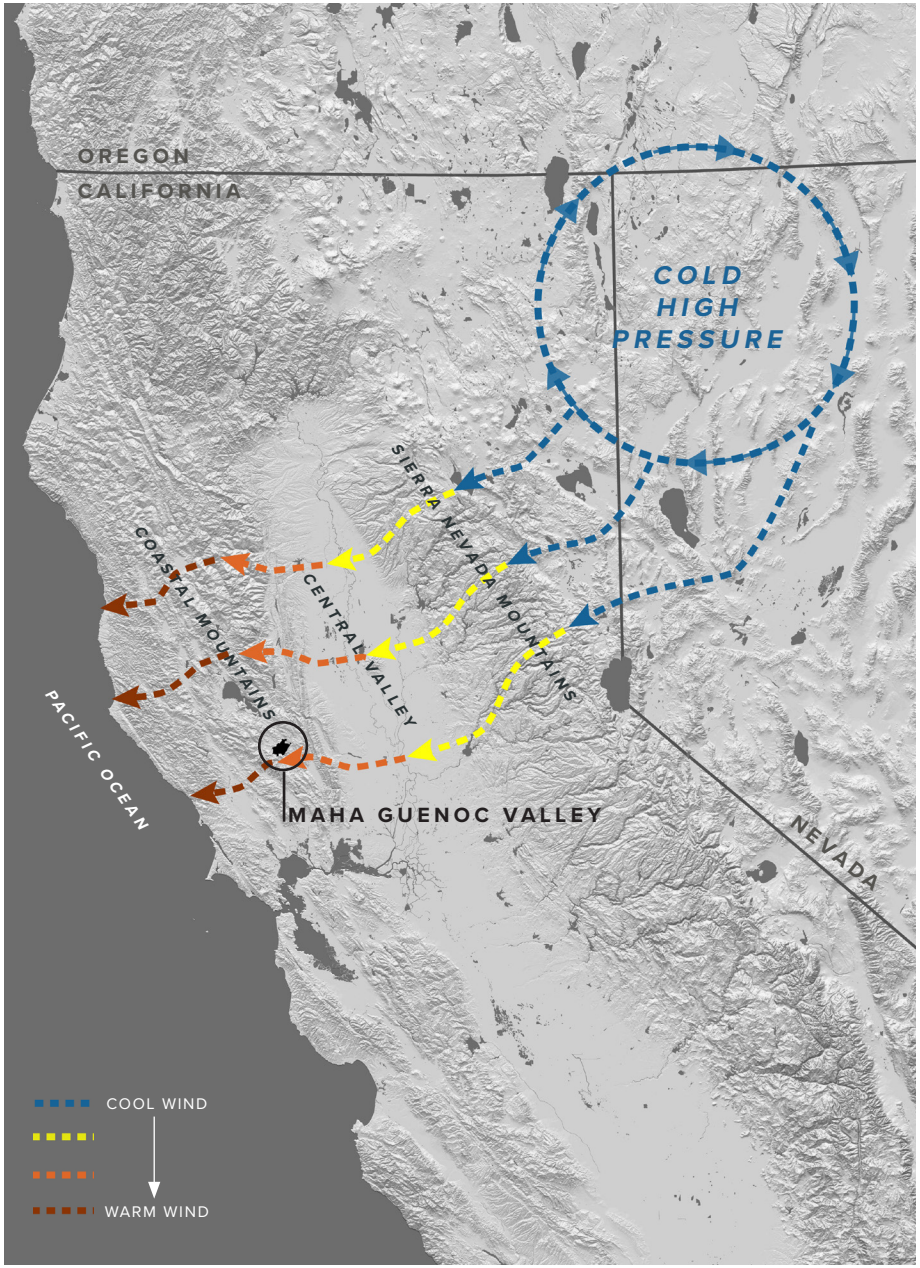
MORNING KONOCTI WIND PATTERNS
SUNRISE – NOON



AFTERNOON KONOCTI WIND PATTERNS
NOON – SUNSET

SOURCE:
South Lake County Fire Protection District and National Weather Service San Francisco Bay Area, 2019

SITE CONTEXT
WILDFIRE RISK FACTORS: REGIONAL WIND PATTERNS



DIABLO WIND PATTERNS

As shown on the right, the resort site is also subject to the Diablo Winds. This wind pattern begins in the Great Basin area of Nevada and Utah. The jet stream pushes cool, high pressure air from the area down to California. Once crossing over and cascading down the Sierra Nevada mountain range, the air increases in temperature and decreases in humidity; the air continues to increase in temperature as it crosses the Central Valley.

Finally, the warm air increases in speed as it pushes between narrow gaps in the Coastal Mountain ranges towards the Pacific Ocean. This pattern primarily affects the region during high fire risk seasons in the fall and winter.

FIRE WEATHER WATHCES & RED FLAG WARNINGS

When certain climate conditions combine, the National Weather Service may issue either a Fire Weather Watch or a Red Flag Warning.

A **Fire Weather Watch** indicates that local conditions resulting in extreme fire could occur in the next 12 - 72 hours. Wildfires are possible, but not imminent or currently occurring.

A **Red Flag Warning**—the highest and most serious type of alert—indicates to residents that local conditions may result in extreme fire behavior within 24 hours. Wilfires are ongoing or may begin shortly.

Various combinations of climate conditions can result in either a watch or warning, including:

- Low relative humidity
- Strong winds
- Dry fuels
- Potential for dry lightening strikes

During both Fire Weather Watches and Red Flag Warnings, residents are urged to practice extreme caution, as major wildfires could be started with a simple spark.

SOURCE:
California Department of Forestry & Fire Protection, “Red Flag Warning & Fire Weather Watches,” 2019
National Oceanic and Atmospheric Administration: National Weather Service, “Understanding Wildfire Warnings, Watches and Behavior,” 2019
San Francisco Chronicle, “Are infamous Diablo winds responsible for recent wildfires?,” 2019

SITE CONTEXT

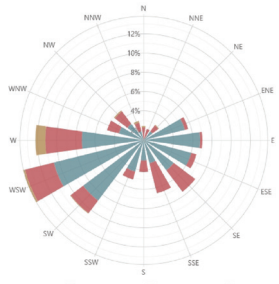
WILDFIRE RISK FACTORS: LOCAL WIND PATTERNS

While affected by the larger Konocti and Diablo wind patterns, the resort site's topography and microclimates also contribute to unique wind conditions. The wind patterns shown in this map are based on three local wind stations and demonstrate a likely wind condition for a typical day during the July through November fire season. Depending on a variety of climatic conditions, local wind patterns could easily change direction and speed and affect the spread of potential wildfires.

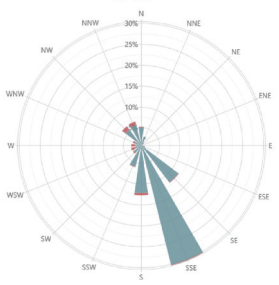
WIND DIRECTION

WIND SPEED

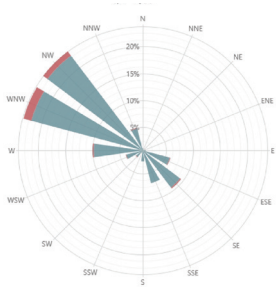
- > 0 to 5 mph
- > 5 to 10 mph
- > 10 to 20 mph
- > 20 to 30 mph
- > 30 mph



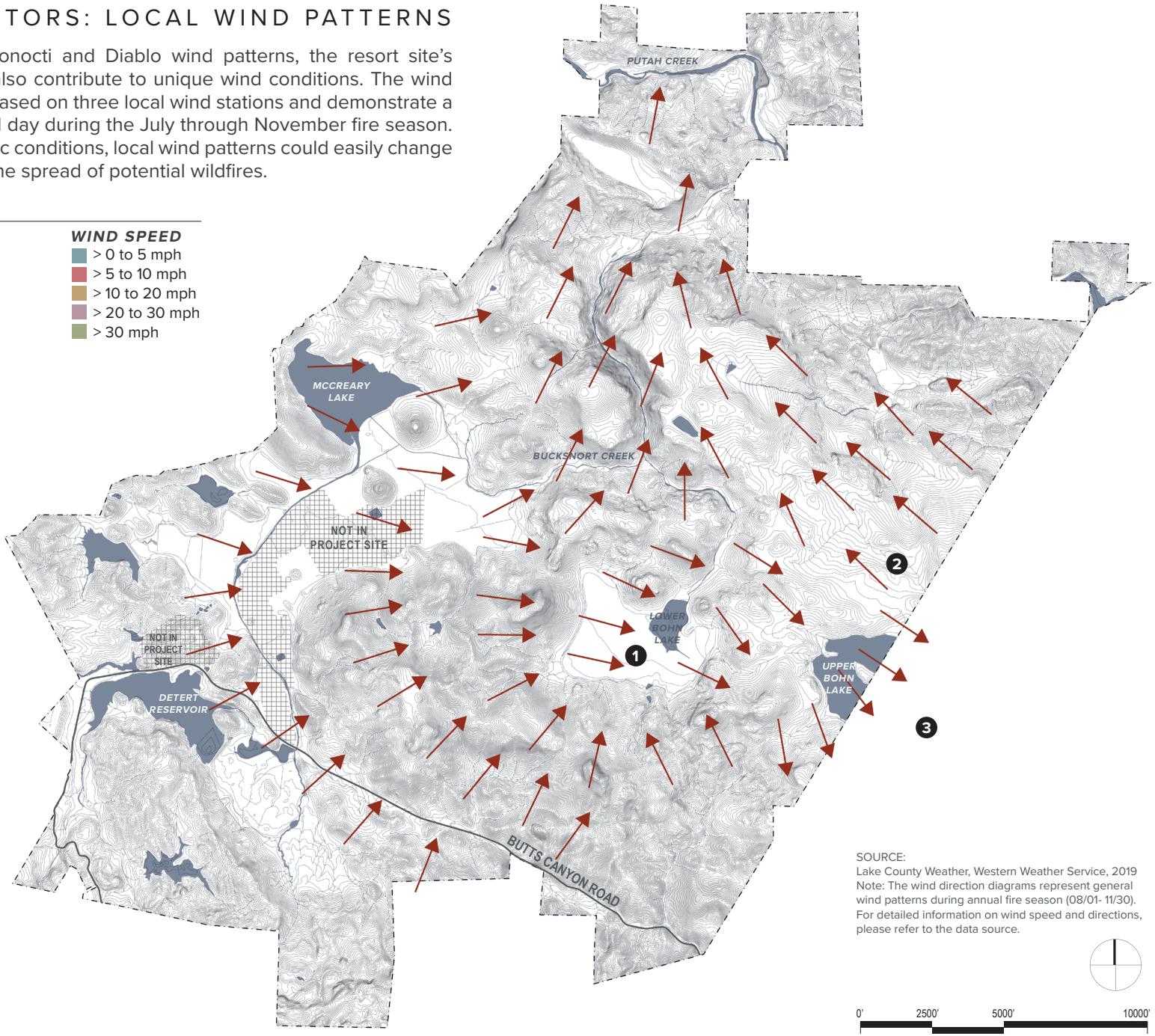
1 LOWER BOHN



2 UPPER BOHN NORTH



3 UPPER BOHN SOUTH



SOURCE:
Lake County Weather, Western Weather Service, 2019
Note: The wind direction diagrams represent general wind patterns during annual fire season (08/01- 11/30). For detailed information on wind speed and directions, please refer to the data source.

0' 2500' 5000' 10000'

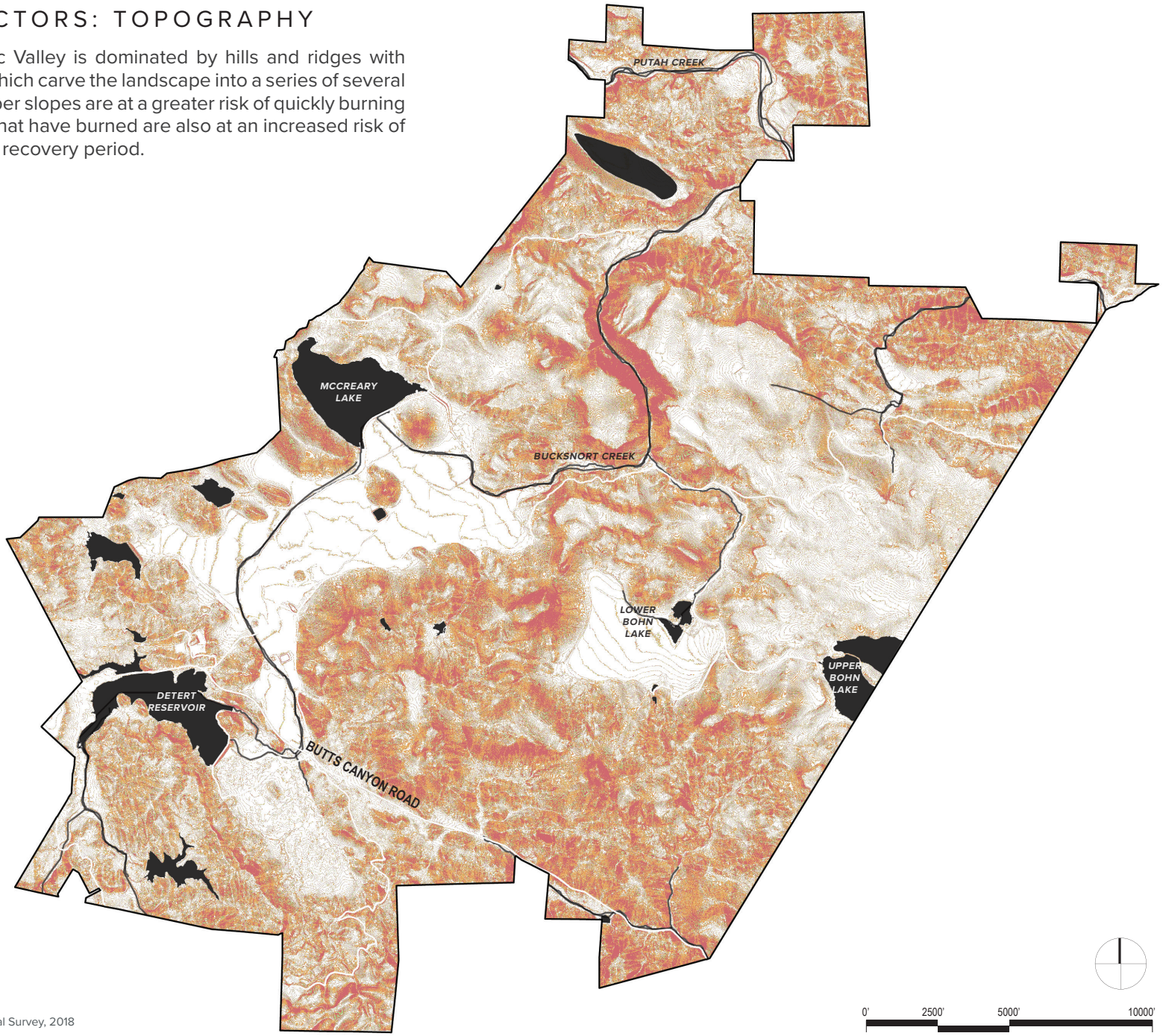
SITE CONTEXT

WILDFIRE RISK FACTORS: TOPOGRAPHY

A significant portion of Guenoc Valley is dominated by hills and ridges with slopes exceeding 30 percent, which carve the landscape into a series of several smaller valleys. Areas with steeper slopes are at a greater risk of quickly burning during a wildfire. Steep slopes that have burned are also at an increased risk of erosion during the post-wildfire recovery period.

SLOPE PERCENTAGE

- 0-5%
- 5-10%
- 10-20%
- 20-30%
- 30-50%
- 50%+



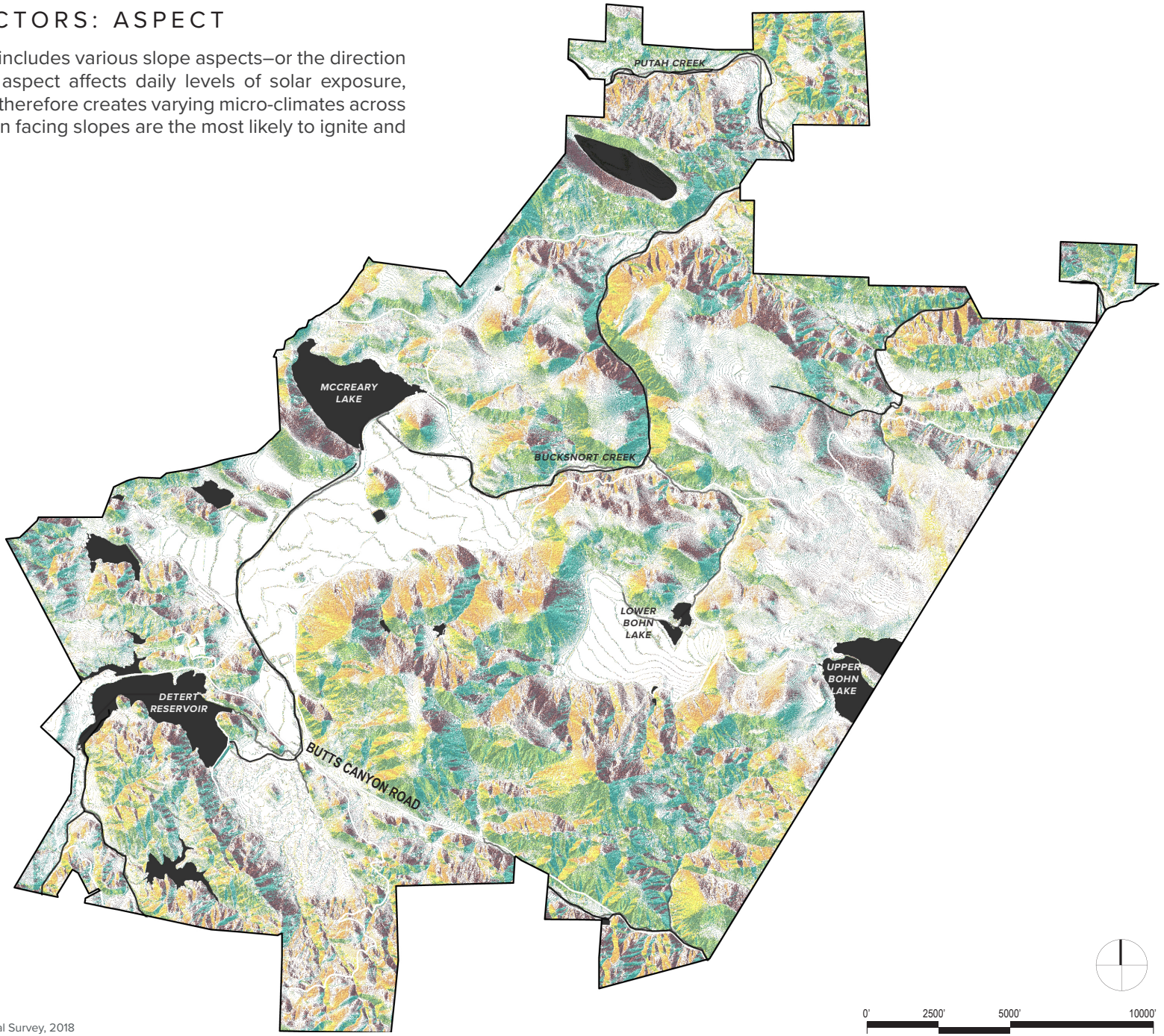
SOURCE:
1 meter Digital Elevation Model (DEM), U.S. Geological Survey, 2018

SITE CONTEXT
WILDFIRE RISK FACTORS: ASPECT

The resort site's diverse terrain includes various slope aspects–or the direction that a slope faces. The slope aspect affects daily levels of solar exposure, humidity, and temperature, and therefore creates varying micro-climates across the site. South and southwestern facing slopes are the most likely to ignite and burn.

ASPECT

- FLAT
- NORTH
- NORTHEAST
- EAST
- SOUTHEAST
- SOUTH
- SOUTHWEST
- WEST
- NORTHWEST



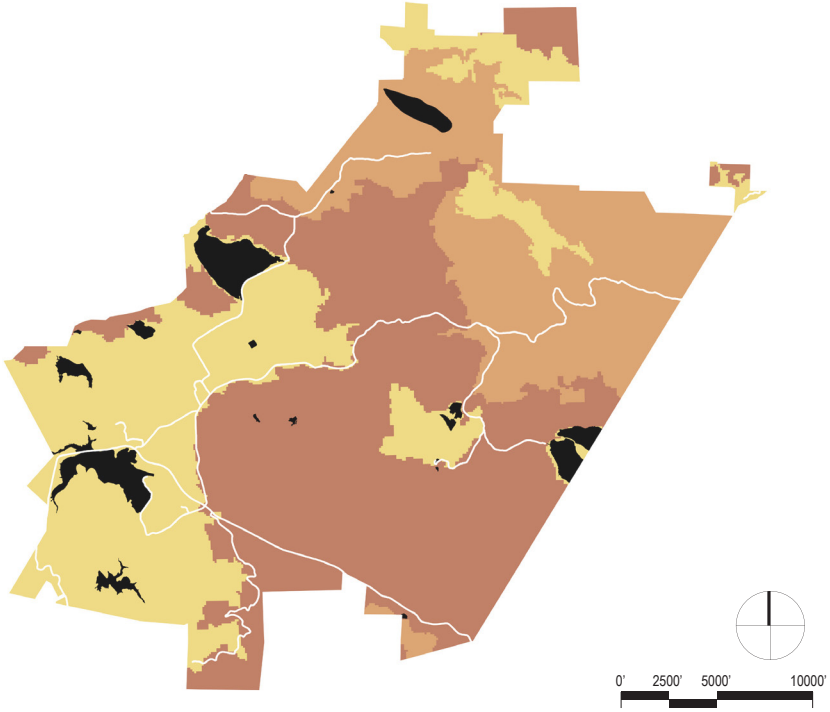
SOURCE:
1 meter Digital Elevation Model (DEM), U.S. Geological Survey, 2018

SITE CONTEXT
WILDFIRE RISK SEVERITY

The specific factors that affect wildfire risk are complicated. A wide range of topographic and landscape conditions create a complex environment to predict and prepare for potential wildfires.

Various risk factors—including those described in the preceding pages—are considered in developing CAL FIRE's Fire Hazard Severity Zones rating system and map. This rating system situates the resort site in a moderate to very high severity zone. The highest risk areas are in the southeast and central parts of the site. These areas have the steepest slopes, are more likely to have a chaparral vegetation coverage, and are exposed to northern-moving winds.

Given the connection between fire risk and slopes, the site's lower risk locations tend to be the flatter valley areas to southwest and northeast. This risk is further reduced where the land is more actively cultivated with vineyards and others farming practices. The areas around the site's many water bodies also generally have a lower risk severity.



FIRE HAZARD SEVERITY ZONES

SOURCE: Lake County Fire Hazard Severity Map, CAL FIRE, 2007

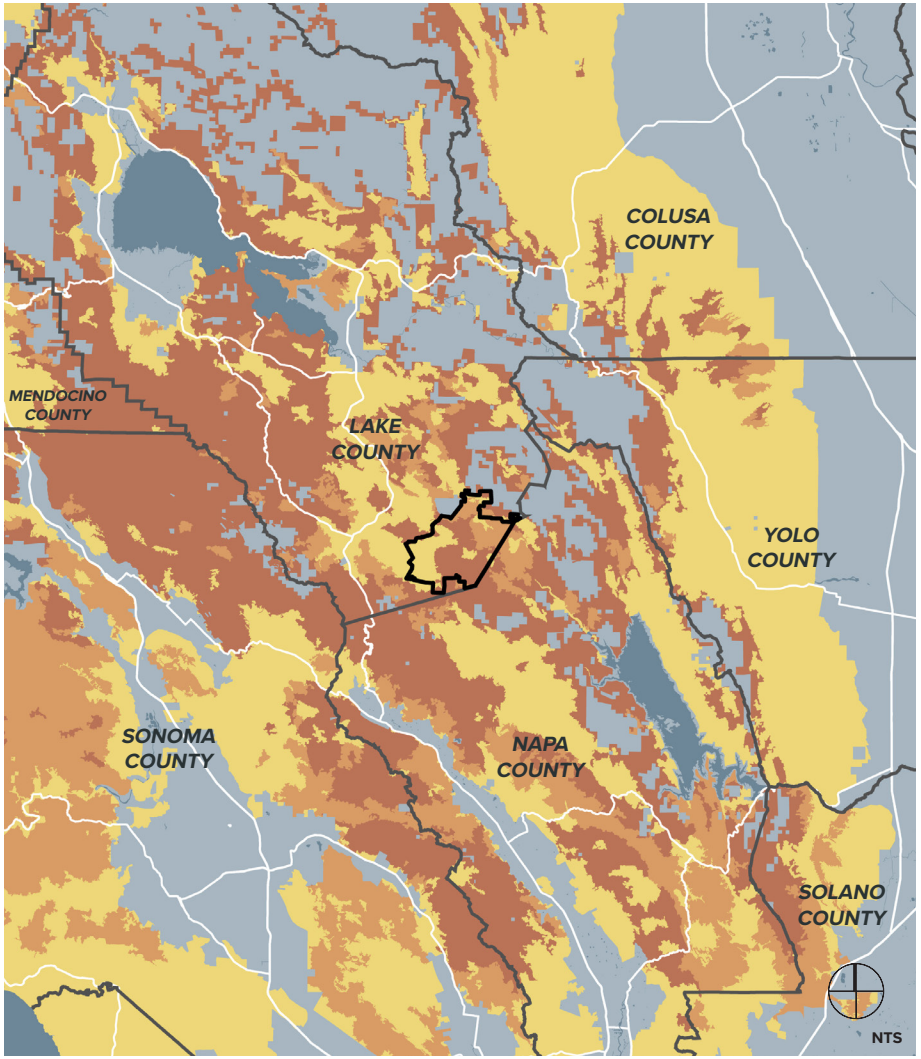
- MODERATE SEVERITY
- HIGH SEVERITY
- VERY HIGH SEVERITY

SITE CONTEXT
WILDFIRE REGIONAL RISK

Cataloging environmental risks is the first step to successfully develop a wildfire prevention plan. However, even with the best research and preparation within the site, fires on neighboring properties can rapidly move across the property boundaries.

While Guenoc Valley's setting is an inherent part of its attraction, the surrounding rural landscapes can also increase the site's wildfire risk. The property is bordered by ranches, pastures, woodlands, and forests with various levels of fire hazard severity. The northern edge of the property is adjacent to the Snow Mountain National Monument, an area of land stretching across approximately 330,000 acres and managed by the Bureau of Land Management (BLM).

The minimally managed landscapes within these neighboring areas tend to have less rigorous wildfire prevention practices, which can result in larger fuel reserves. As detailed in the following pages, additional precautions will be taken along the property boundaries where the risk of fires spreading onto the site is greater.



FIRE HAZARD SEVERITY ZONES

SOURCE: California Fire Hazard Severity Map, CAL FIRE, 2007

- *MAHA GUENOC VALLEY*
- FEDERAL OR LOCAL RESPONSIBILITY AREA
- MODERATE SEVERITY
- HIGH SEVERITY
- VERY HIGH SEVERITY

GENERAL WILDFIRE PREVENTION

GENERAL WILDFIRE PREVENTION STRATEGIES

In order to retain the resort site's inherent rural quality, a low-impact design plan prioritizes limited buildings, roadways, or infrastructure. Undeveloped areas will be managed to reduce wildfire risk through the following strategies:

- **Fire Breaks**
  Fire breaks will be established and maintained along all roadway corridors as well as vulnerable property boundary edges.

- **Active Landscape Management**
  Fields, pastures, woodlands will be actively managed to reduce fire risk. These areas will be continuously grazed with a rotation of cattle, sheep, and goat livestock. In certain locations, dead or fire-prone vegetation may also be manually thinned or removed with machinery and crews.

- **Irrigated Green Belt**
  Vineyards, orchards, gardens, and recreational fields—as well as irrigated residential, resort, and facility landscapes—will all become part of a site-wide irrigated green belt.

FIRE BREAKS

DISRUPT FIRE PATHWAYS

A network of fire breaks will be developed throughout the site, especially along roadways; they will be established and maintained as phases are built.

ACTIVE LANDSCAPE MANAGEMENT

LOP & SCATTER

This involves thinning and removing flammable and dead vegetation through felling and cutting; material is then distributed across the ground.

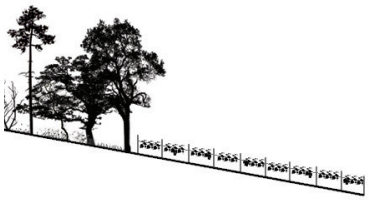
MASTICATE

Flammable and dead vegetation is thinned and removed with chopping, grinding, and mowing; material is then scattered across the ground.

GRAZE WITH LIVESTOCK

Sheep, goat, and cattle livestock will graze understory grasses and vegetation; the livestock will continuously rotate throughout the property.

IRRIGATED GREEN BELT

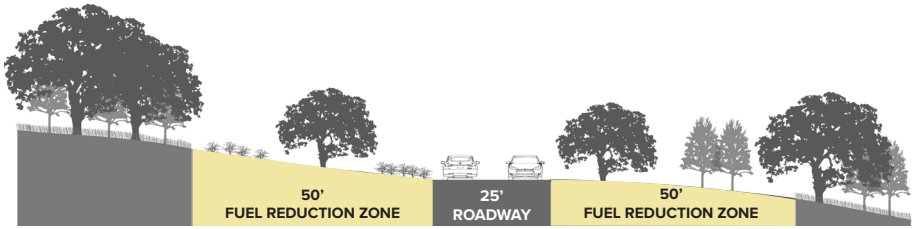


CONNECT IRRIGATED AREAS

Where feasible, contiguous green belts with irrigated farmlands, landscapes, and recreational fields will be developed.

GENERAL WILDFIRE PREVENTION
FIRE BREAK NETWORK

TYPICAL ROADWAY FIRE BREAK

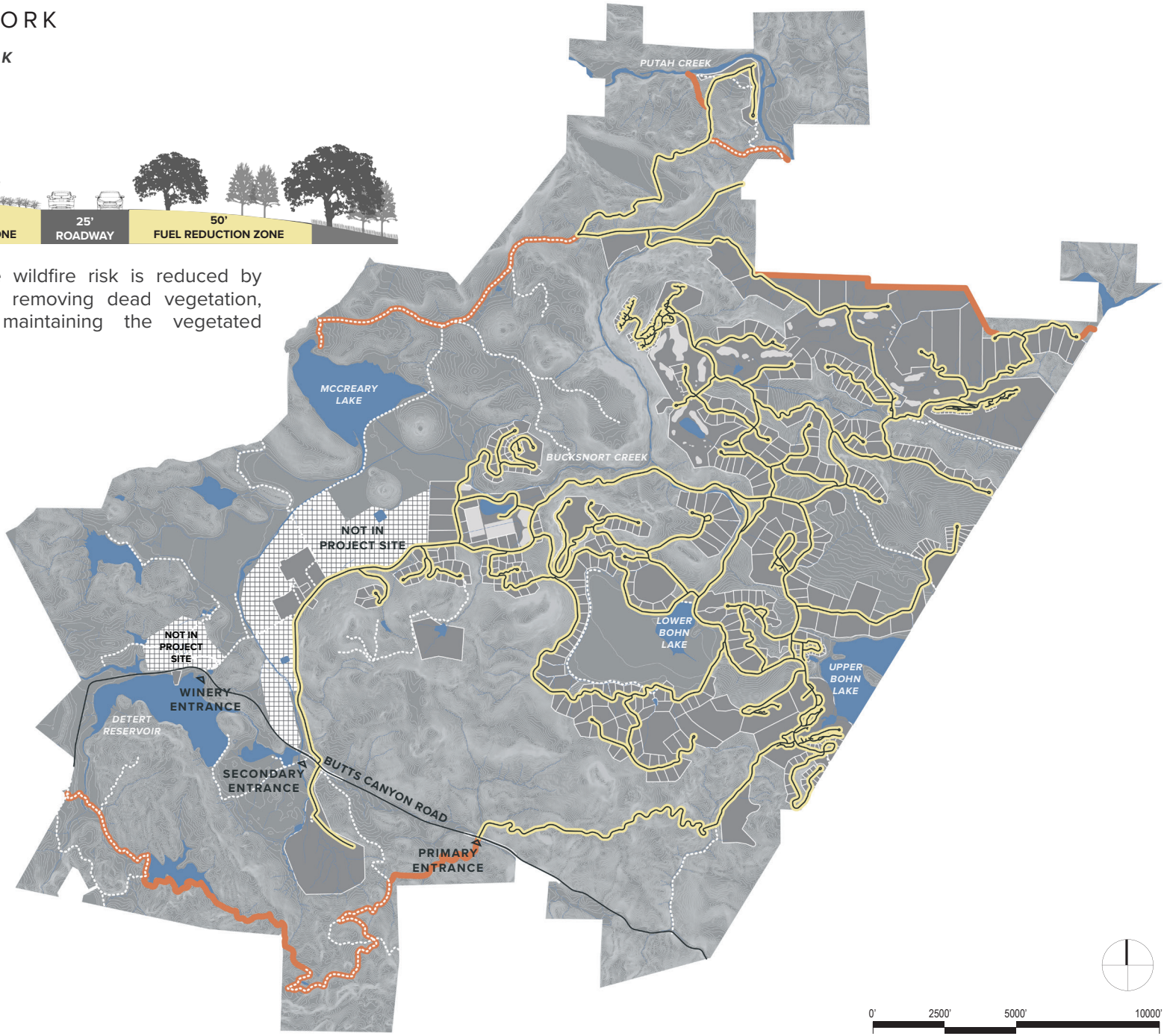


Fire breaks are areas where wildfire risk is reduced by strategies such thinning and removing dead vegetation, separating canopies, and maintaining the vegetated understory through grazing.

All roadways will be bordered on each side by a fuel reduction zone. As an overall defense strategy, 100 foot wide fire breaks could also be established and maintained at select vulnerable areas of the property boundary.

PRIMARY TWO-WAY ACCESS ROUTES & ROADWAY FIRE BREAKS

VOLUNTARY PROPERTY BOUNDARY FIRE BREAKS



GENERAL WILDFIRE PREVENTION
ACTIVE LANDSCAPE FIRE MANAGEMENT

The resort's landscapes will be actively managed to reduce fire risk. This will be achieved through a two-part strategy. First, livestock grazing will be heavily relied upon to reduce fire risk (see next page). Grazing will primarily take place within the site's undeveloped rural landscapes; where feasible and permissible, grazing may also be used to manage landscapes within resort, residential, and facility parcels as well as within vineyards.

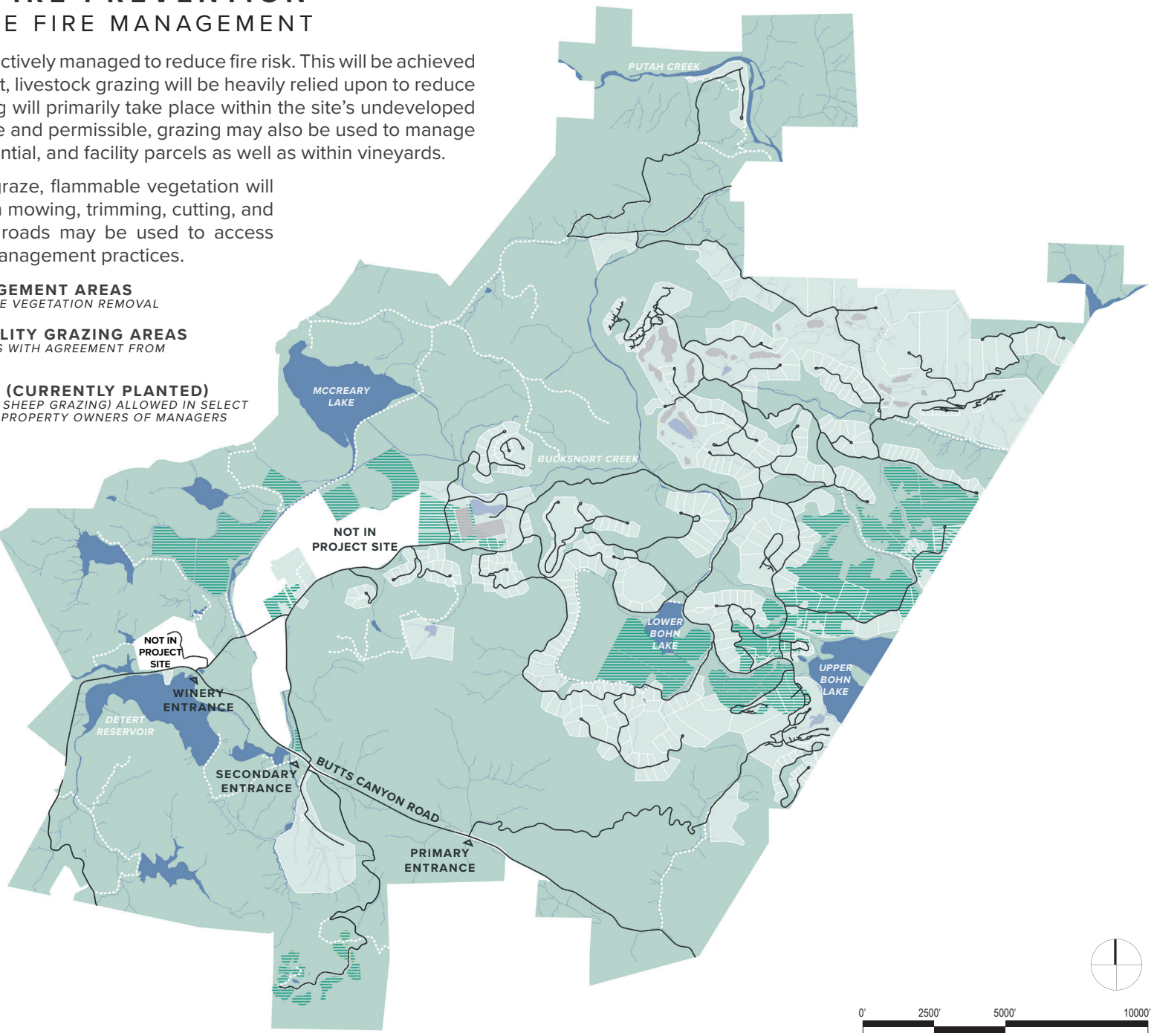
In areas that are infeasible to graze, flammable vegetation will be manually addressed through mowing, trimming, cutting, and brush removal. Existing ranch roads may be used to access more remote areas for active management practices.

ACTIVE LANDSCAPE MANAGEMENT AREAS
CONTINUED GRAZING AND SELECTIVE VEGETATION REMOVAL

RESIDENTIAL/RESORT/FACILITY GRAZING AREAS
GRAZING ALLOWED IN SELECT AREAS WITH AGREEMENT FROM PROPERTY OWNERS OR MANAGERS

VINEYARD GRAZING AREAS (CURRENTLY PLANTED)
MINIMALLY IMPACTFUL GRAZING (I.E. SHEEP GRAZING) ALLOWED IN SELECT VINEYARDS WITH AGREEMENT FROM PROPERTY OWNERS OF MANAGERS

EXISTING RANCH ROADS



GENERAL WILDFIRE PREVENTION
GRAZING PRACTICES

As a key component of the active landscape management plan, goat, sheep, and cattle livestock will continuously rotate throughout the resort site to reduce and remove overgrown and dead vegetation.

As these animals are capable of moving around difficult terrain, allowing them to graze throughout the site will ensure that hard-to-reach areas are regularly maintained. And, as each of these species prefers different types of vegetation, a regular rotation will broaden the types of flammable vegetation that is reduced and removed.

The following matrix provides general standards of site-wide, long-term grazing practices. Although the exact configuration of grazing areas and corridors may shift over time, these general parameters will help to coordinate the placement and movement of herds throughout the site.

Species	**Primary Foraging Behavior**	**Equivalent Animal Unit** *	**Preferred Vegetation**	**Minimum Practical Grazing Area** (Acres) **	**Maximum Practical Grazing Slope** (Percent %) (Wet Ground / Dry Ground)	**Maximum Density** (lbs per acre) (Wet Ground/Dry Ground) ***	**Grazing Season**	**Herd Type**
Goats	Browsing	0.2	Chaparral, Brush, Poison Oak, Weeds	0.15 AC	60% / 80%	15,000 lbs / 60,000 lbs	April - October	Seasonal/ Contracted
Sheep	Grazing	0.2	Oak Woodland/ Grassland, select weeds	0.15 AC	60% / 80%	15,000 lbs / 60,000 lbs	April - June	Seasonal/ Contracted
Cattle	Grazing	1.0	Oak Woodland/ Grassland	0.5 AC	50% / 70%	10,000 lbs / 50,000 lbs	Year Round	Resident

* "Equivalent Animal Units" establishes a consistent unit factor to compare herd sizes; for example, a herd of 10 cows (1.0 AU) is equivalent to a herd of 50 goats (0.2 AU)

** The "Minimum Practical Grazing Area" is significantly dependent on herd size; these minimum practical grazing areas assume that herd sizes will remain equally small in order to accommodate efficient grazing in and around small spaces between buildings and roads.

*** The "Maximum Density" is the maximum collective herd weight supported per graze-able acre

GENERAL WILDFIRE PREVENTION
IRRIGATED GREEN BELT

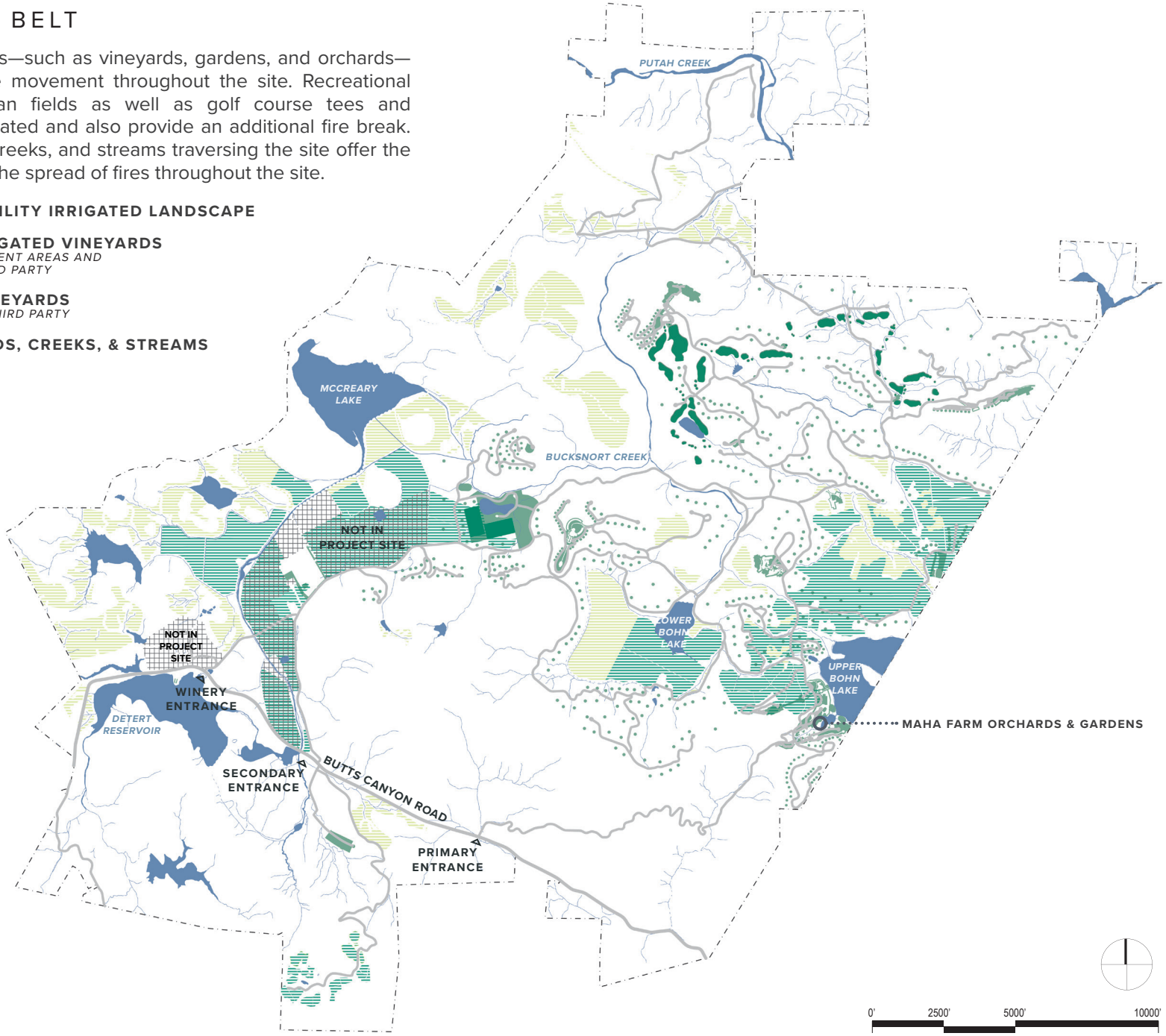
Irrigated agricultural operations—such as vineyards, gardens, and orchards—will interrupt potential wildfire movement throughout the site. Recreational amenities—including equestrian fields as well as golf course tees and fairways—will be regularly irrigated and also provide an additional fire break. The reservoirs, lakes, ponds, creeks, and streams traversing the site offer the additional benefit of reducing the spread of fires throughout the site.

RESIDENTIAL/RESORT/FACILITY IRRIGATED LANDSCAPE

CURRENTLY PLANTED IRRIGATED VINEYARDS
CURRENTLY PLANTED IN DEVELOPMENT AREAS AND AREAS LONG-TERM LEASED BY THIRD PARTY

POTENTIAL IRRIGATED VINEYARDS
IN AREAS LONG-TERM LEASED BY THIRD PARTY

RESERVOIRS, LAKES, PONDS, CREEKS, & STREAMS



CONSTRUCTION WILDFIRE PREVENTION

RESPONSIBILITIES & PROCEDURES

Construction practices will be carefully monitored to ensure that operations which could ignite a wildfire are minimized to the greatest extent possible.

Fire Safety Oversight and Responsibilities

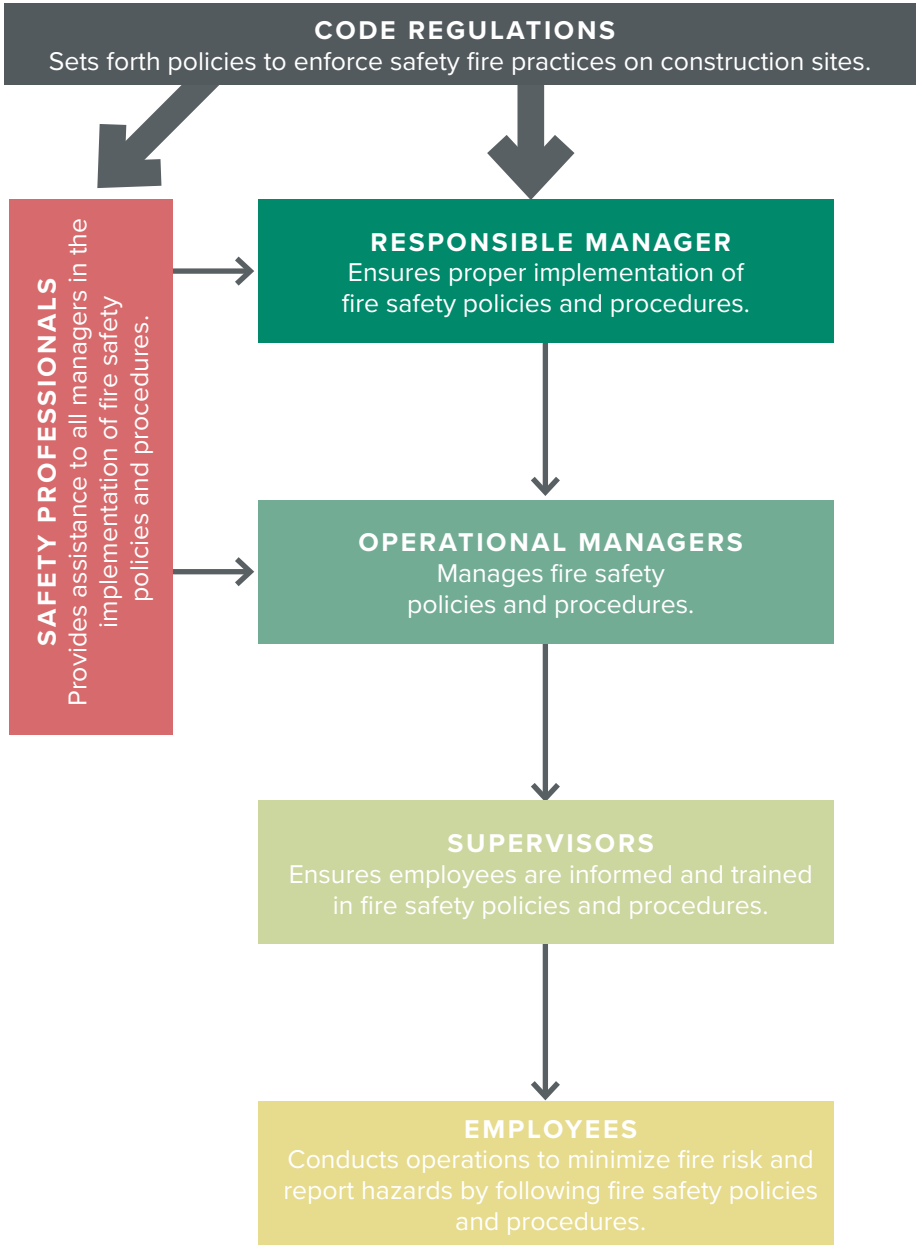
Beyond set code regulations, the project's general contractor has established fire prevention and protection procedures for every level of management and employment (see flowchart). This includes the following:

- Safety Professionals will advise and assist the Responsible and Operational Managers in charge of the project on fire safety;
- Supervisors–as advised by the Safety Professionals–will play a pivtol role in ensuring employees are informed and trained in fire safety. They will often conduct workforce training to educate employees about the fire hazards associated with specific tasks. They will also approve and carefully monitor any hot work or the use of temporary portable heaters. Supervisors will ensure that fire extinguishing equipment is present on all work sites and regularly inspected; and
- All managers and employees will be well-informed on procedures to immediately report fires.

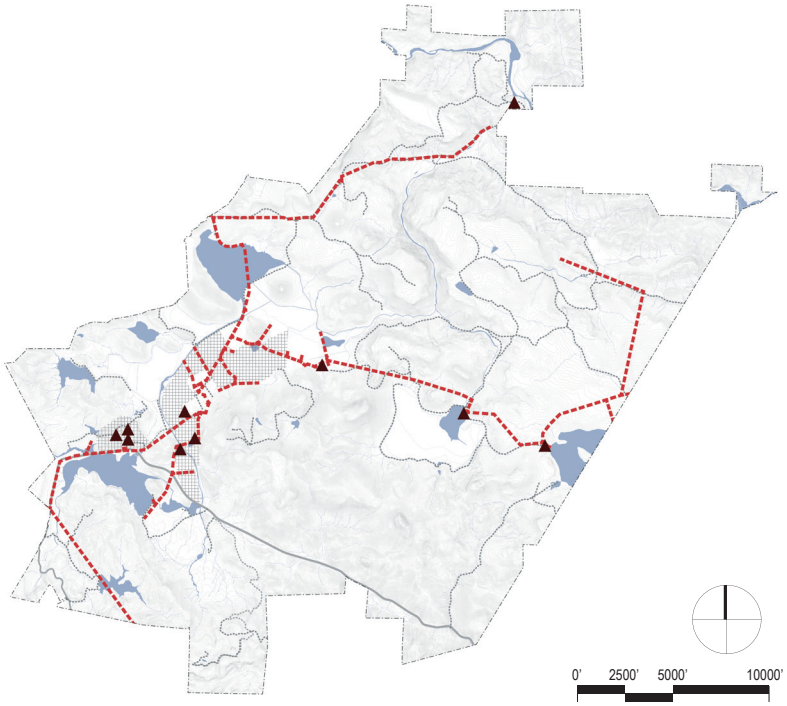
Fire Safety Procedures

During wildfire season, there is a heightened risk of construction-caused fires. In particular, heavy machinery has the potential to ignite fires during site preparation, preliminary grading, and utility line establishment. In order to mitigate fire risk during construction, the local CAL FIRE unit has recommended the following fire safety procedures, among others:

- One round-tip shovel and one water fire extinguisher should be available within 10 feet of all work areas;
- Portable fire extinguishers should be kept in every construction vehicle and piece of equipment;
- Vegetation within the work area should generally be mowed by noon during wildfire season or whenever wildfire conditions are present;
- Hot work should establish a wildfire watch for the duration of work and for 30 minutes after;
- Everyone working on-site should be aware of their location within the project in the event that they must report a fire;
- Everyone working on-site should have access to a cell phone or radio system to report a fire; and
- Everyone working on-site should have access to a pressurized air horn available to alert others in case of an emergency.



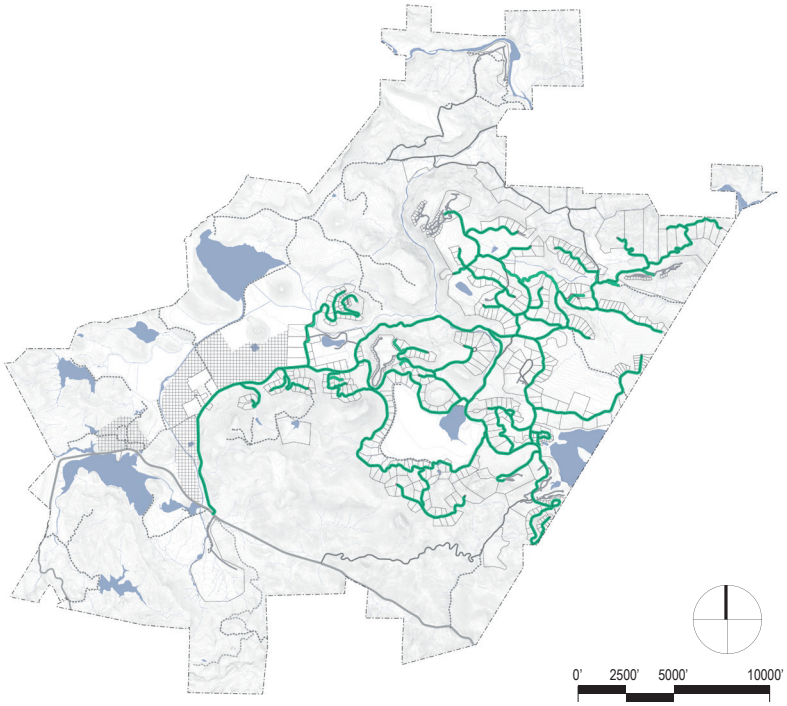
UTILITY WILDFIRE PREVENTION
ELECTRIC NETWORK



EXISTING OVERHEAD NETWORK
The existing power distribution network primarily relies upon overhead electrical lines, which can pose fire risk in the event of downed or sparking lines.

▲ EXISTING SERVICE CONNECTION

EXISTING OVERHEAD SERVICE LINES



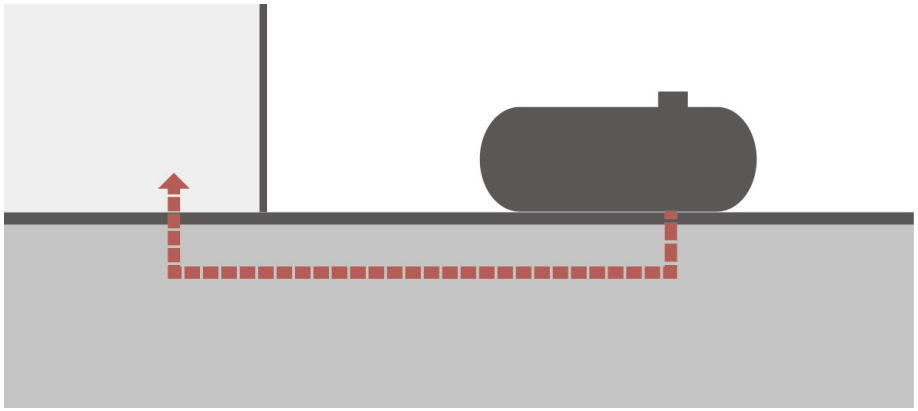
PROPOSED UNDERGROUND NETWORK
To the maximum extent feasible, the proposed electric network will be undergrounded in a joint trench system. This will ensure a safer distribution of power and reduce or eliminate the risk of overhead powerlines causing wildfires during windy conditions.

UNDERGROUND POWER AND DATA LINES

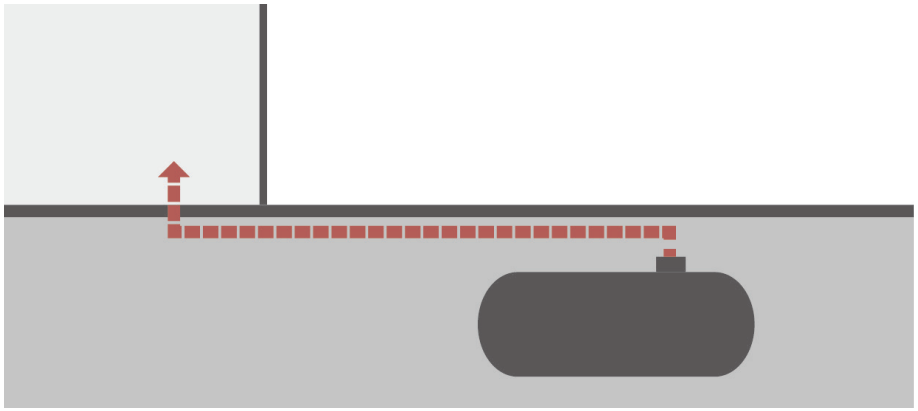
UTILITY WILDFIRE PREVENTION
PROPANE GAS SYSTEM

Similar to the strategy of undergrounding power lines, gas propane tanks will be undergrounded throughout the resort. This approach reduces the risk of gas related wildfires while also controlling for temperature fluctuations.

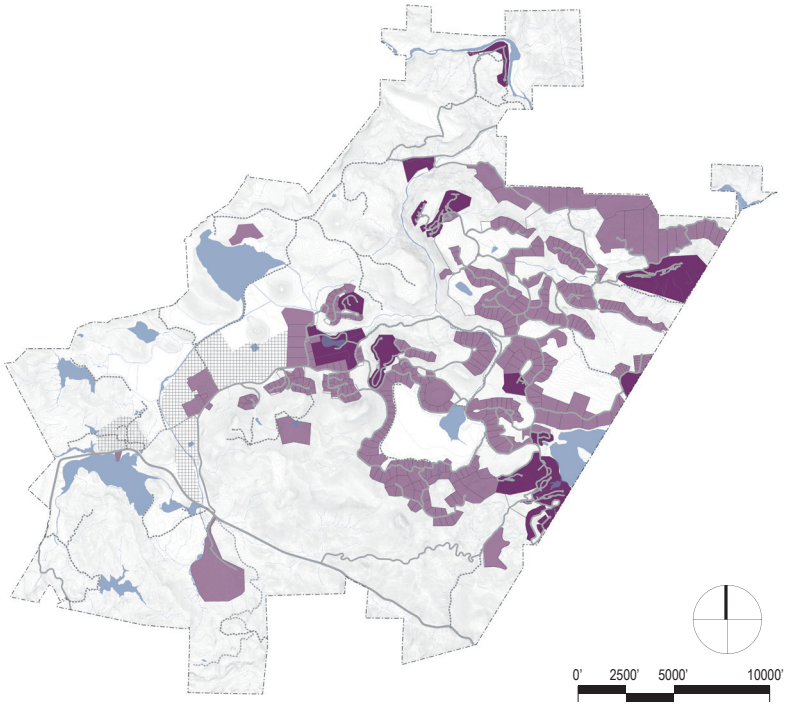
Each residential estate will be serviced by an individual underground gas tanks. Resort communities–which includes both resort and resort residential structures– will utilize a shared propane gas tank system with a localized underground distribution system.



TYPICAL ABOVE GROUND PROPANE TANKS
Above ground tanks are the standard and more affordable option, but present a greater risk of gas leaks and the potential to fuel wildfires.



PROPOSED UNDERGROUND PROPANE TANK
Propane tanks will be undergrounded to improve wildfire safety and benefit from the stabilized temperature control.



PROPOSED PROPANE GAS NETWORK
To the maximum extent feasible, propane gas tanks will be undergrounded throughout the resort, with residential estates serviced by individual tanks and resort communities serviced by shared tanks and distribution systems.

- **RESIDENTIAL ESTATES AND SUPPORTING FACILITIES SERVICED BY INDIVIDUAL UNDERGROUND TANKS**
- **RESORT COMMUNITIES SERVICED BY SHARED UNDERGROUND TANKS**

RESIDENTIAL LANDSCAPE WILDFIRE PREVENTION

SITE BUILDING & DETERMINE TOTAL DEFENSIBLE SPACE

If a wildfire occurs, it poses a considerable risk to residential homes and their occupants. Homeowners will be advised to implement various wildfire prevention strategies.

Site Structures to Reduce Fire Risk

The first step in addressing wildfire risk is to properly site residential structures. While the ideal residential structure location will be based on many factors (including views, accessibility, and privacy), residential property owners will be encouraged to closely consider certain criteria which reduces fire risk.

This includes siting buildings on the most level portion of the property. Wherever possible, residential structures should avoid being placed on mid-slopes, ridge edges, or directly between high points.

Determine Total Defensible Space

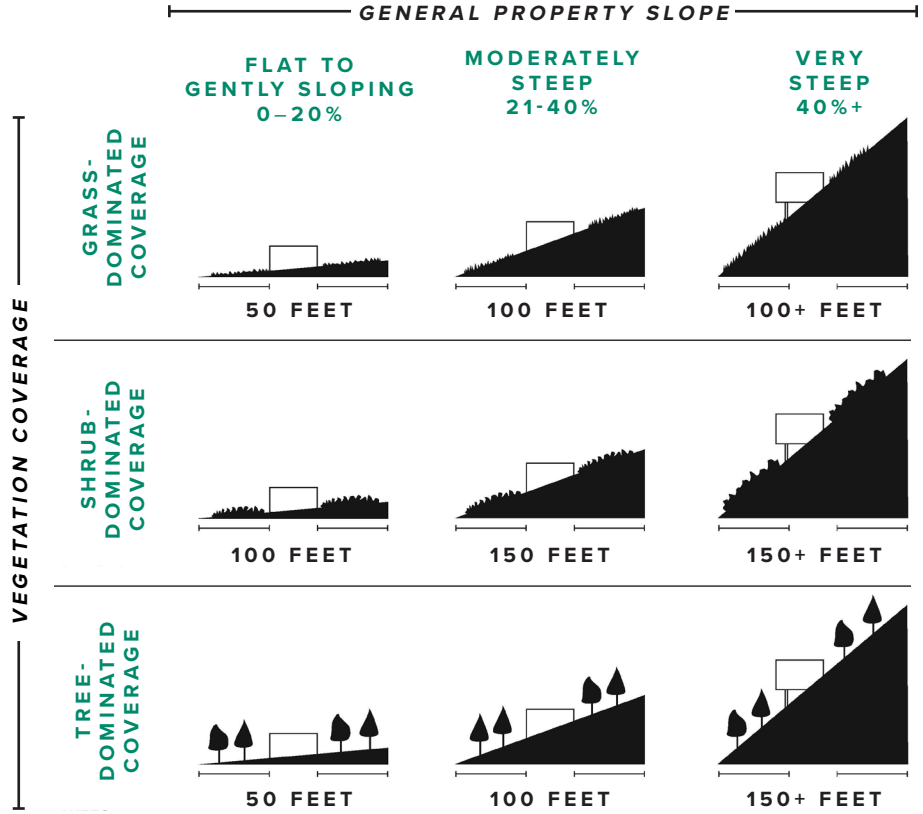
Homeowners will be advised to establish and maintain defensible space for the purposes of reducing fire risk in the immediate vicinity of the residential structure. The total defensible space will depend on the unique vegetated coverage and topographic conditions of each residential property (see right):

- **Grass-Dominated Coverage**
  Depending on slopes, 50 to 100 feet of total defensible space from the building edge in landscapes dominated by grasses, weeds, and widely scattered shrubs

- **Shrub-Dominated Coverage**
  Depending on slopes, 100 to 150+ feet of total defensible space from the building edge in landscapes dominated by shrubs, scrub, or chaparral

- **Tree-Dominated Coverage**
  Depending on slopes, 50 to 150+ feet of total defensible space from the building edge in landscapes dominated by trees; if understory is substantially shrubs, homeowners should follow “shrub-dominated coverage” category

Wherever necessary or possible, adjacent residential property owners and the resort ownership will cooperatively address defensible space concerns which cannot be fully established or maintained within the residential property line.



DETERMINING TOTAL DEFENSIBLE SPACE

The total defensible space will vary based on the unique vegetated coverage and topographic conditions of each property. In the above diagrams, the indicated length relates to the total defensible space measured from the building edge.

RESIDENTIAL LANDSCAPE WILDFIRE PREVENTION

DETERMINE DEFENSIBLE ZONES

Once the building has been sited and the total defensible space has been determined, homeowners will be advised to establish and maintain two zones of defense. These zones and associated fuel reduction strategies will reduce the risk of fire in the immediate vicinity of the residential structure:

- **Zone 1: Remove Flammable Vegetation**

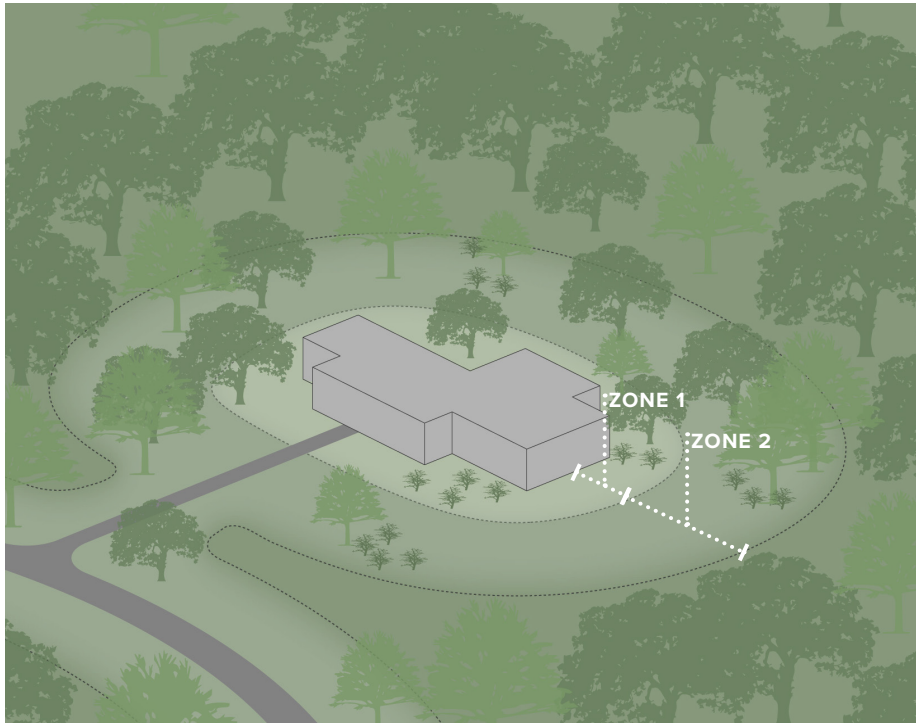
  Regardless of the total defensible space, the first defense zone will be maintained zero to 30 feet from the edge of the residential structure.

  Within this zone, flammable vegetation should be removed. This includes removing all standing dead trees and shrubs. All downed dead trees, tree branches, and shrubs should also be removed if not yet decayed. Trees should generally be pruned up to a height of 10 feet, depending on tree species and understory conditions. Flammable shrub species should be thoroughly pruned.

- **Zone 2: Reduce Flammable Vegetation**

  The second defense zone should be maintained from 30 feet from the building edge to the edge of the total defensible space (e.g. 50 feet, 100 feet, 150 feet–see previous page); this includes a defensible space of zero to 15 feet from the driveway edge.

  Within this zone, flammable vegetation should be reduced. Trees and shrubs should be selectively addressed to reduce flammable vegetation parts, including pruning dead or lower branches. Dead vegetation should also be selectively removed within this wider zone.



STANDARD RESIDENTIAL DEFENSIBLE ZONES
Two defensible zones should be established and maintained within the total defensible space.

ZONE 1 REMOVE FLAMMABLE VEGETATION

ZONE 2 REDUCE FLAMMABLE VEGETATION

RESIDENTIAL LANDSCAPE WILDFIRE PREVENTION

PREPARE THE PROPERTY

After the defensible space and zones have been determined, the residential property should be assessed for key fire risks. Primarily, continuous and dense vegetation creates a condition in which fires can quickly spread. Trees and shrubs should be vertically and horizontally separated in order to reduce “ladder fuel” conditions–or situations in which flames can easily move upwards from the vegetation understory to the canopy.

The following offers general vegetation clearance and spacing recommendations in order prepare the site for residential dwellings. Although these standards should be followed across the entire defensible space, greater adherence to these standards should be followed within Zone 1.

Tree and Shrub Vertical Clearance

In general, the lowest level of the canopy branches should be three times greater than the height of the vegetation understory. This vertical separation relationship can be established through either pruning the vegetation understory or the overhead tree limbs. For example, if a shrub is three feet in height, the lowest level of the directly overhead canopy branches would be trimmed or pruned to a height of 12 feet.

Tree and Shrub Horizontal Spacing

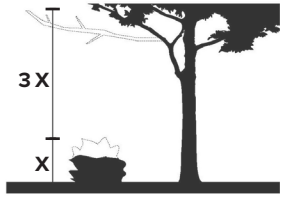
Individual or small clusters of trees and shrubs should generally be separated based on the horizontal spacing standards (see right) in order to reduce potential fire movement. For example, if a residential property is “moderately steep,” shrubs that are three feet in height should be separated by 12 feet. Note that the recommended tree and shrub horizontal separation distances are measured from the canopy edge, not the trunk.

LADDER FUELS

Flames burning at lower levels can ignite taller plants by moving up vegetated “ladder fuels”.

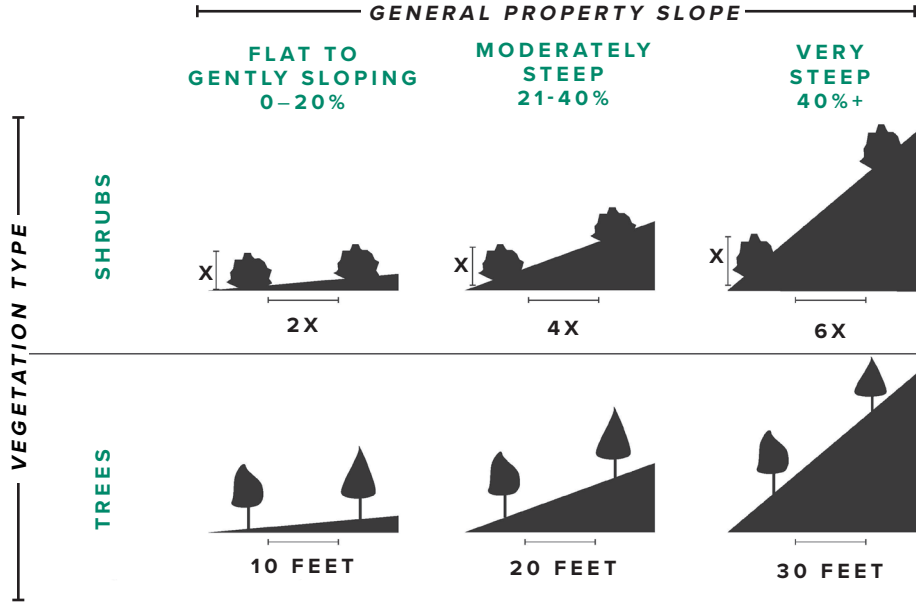
The potential for ladder fuels can be avoided by separating vegetation vertically and horizontally.

VERTICAL CLEARANCE



The lowest level of the canopy branches should be three times greater than the height of the vegetation understory.

HORIZONTAL SPACING



Individual or small clusters of trees and shrubs should be separated in order to reduce potential fire movement

RESIDENTIAL LANDSCAPE FIRE PREVENTION
ESTABLISH NEW LANDSCAPE

After the residential property has been cleared of flammable vegetation and ladder fuels have been addressed, various strategies can reduce wildfire risk where establishing a new landscape design.

Fire-Resistant Planting Design and Selection
New planting design should follow the spacing and clearance strategies delineated above. Planting designs and patterns should anticipate the mature size of new trees and shrubs. Simple, low-volume, and well-separated planting designs will generally achieve these spacing and clearance objectives. All efforts should be made to avoid tree limbs touching the residential structure or powerlines; tree limbs should also not be within 10 feet of the chimney.

Planting selection should avoid fire-prone species and instead prioritize fire-resistant species. In general, fire-resistant species are low-growing with a high moisture content and have stems or leaves that are not resinous, oily, or waxy.

Small-Scale Fire Breaks: Hardscapes and Irrigation
Wherever possible, the landscape design should be configured to create a series of smaller-scale fire breaks in the immediate vicinity of the residential structure.

For example, driveways, walkways, patios, and parking areas could be selectively spread out to impede a potential fire path; non-combustible materials (such as mulch, boulders, and rocks) will additionally reduce fire risk. Pools, water features, ponds, or streams could also be creatively used as small-scale fire breaks. Irrigation systems used to establish or maintain landscapes could also create an irrigated fire break.

Additional Strategies
Additional landscape design strategies should be prioritized to reduce fire risk and improve emergency response. This includes the following:

- Constructing fencing with non-combustible materials, such as stone or metal, rather than wood;
- Enclosing areas below decks to reduce the risk of debris ignition;
- Clearly marking the address number on the house itself and at the driveway entry to aid in identification in the case of a fire emergency; and
- As much as possible, designing driveways and bridges to allow for large-scale emergency vehicle access.

FIRE PRONE PLANTING TO AVOID
Certain plants should be avoided because of their fire prone characteristics, such as resinous, oily, or waxy leaves. This includes trees such as the Eucalyptus.

FIRE RESISTANT PLANTING TO USE
Fire resistant plants should be used as much as possible. This includes plants that are low-growing and have a high moisture content.

RESIDENTIAL LANDSCAPE FIRE PREVENTION

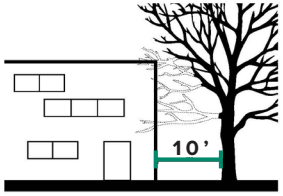
MANAGE LANDSCAPE TO REDUCE RISK

Various landscape management practices can address wildfire hazards within the residential landscape over time.

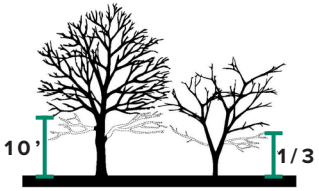
This includes the following recommendations for residential property owners:

- Periodically inspect the residential property to maintain defensible space—which includes ongoing removal and reduction of flammable vegetation and reestablishment of vegetation clearance and spacing standards;
- Prune tree limbs which are within 10 feet of buildings or chimneys or are otherwise encroaching on powerlines;
- Within the defensible space, trim tree limbs below 10 feet in height; for smaller trees, prune the lower 1/3 of the branches;
- Routinely mow grasses and wildflowers within the defensible space to a maximum height of 4 inches, particularly during dry seasons;
- Keep vegetation well-irrigated, particularly within the first defense zone;
- Where feasible, irrigation systems used for plant establishment should be maintained for additional wildfire protection;
- Install fine mesh metal on eaves, roofs, and vents to prevent embers from entering the structure;
- Remove vegetation debris that accumulates on the roof or within the rain gutters;
- Place combustible debris (such as firewood, wood scraps, grass clippings, leaf piles, or garbage cans) and propane tanks outside of the first defense zone; and
- Keep any ignitable outdoor furniture and equipment (i.e. wooden brooms and shovels) 10 feet away from the residential structure.

PRUNE, TRIM, AND MOW



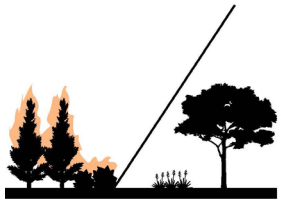
PRUNE: Prune tree limbs which are within 10 feet of building or chimneys or are otherwise encroaching on powerlines.



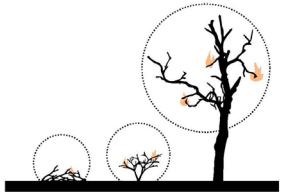
TRIM: Within the defensible space, trim tree limbs below 10 feet in height; for smaller trees, prune the lower 1/3 of the branches

MOW: Mow and grass to a maximum of 4 inches in height.

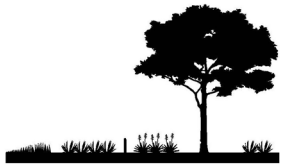
LEAN, CLEAN, AND GREEN



LEAN: Minimize or eliminate the use of flammable vegetation and emphasize the use of low-growing herbaceous (non-woody) plants. Ornamental trees and shrubs should be kept green.



CLEAN: Remove all dead trees and shrubs within the defensible area. Remove all dead leaves, twigs, cones and branches. Reduce thick layers of pine needles to a depth of 2 inches.



GREEN: Keep plants green and healthy by irrigating throughout the fire season.

RESIDENTIAL BUILDING WILDFIRE PREVENTION

EXTERIOR BUILDING STRATEGIES

The fire safety of a building starts with design and material decisions. All residential buildings will abide by relevant California Building Codes “CBC” and Wildland Urban Interface “WUI” standards. The following are a selection of strategies to prevent fires on the building exterior:

1 | Class A rated roof with non-combustible covering
The roof is the most vulnerable part of the home in the event of a wildfire. Class A rated roofs are highly resistant to fire by minimizing the ability of flames to spread.

2 | Fire resistant eaves, overhangs, and soffits
The risk of embers getting caught in the eaves and igniting can be minimized by the eliminating or shortening overhangs, or otherwise constructing eaves, overhangs, and soffits with non-combustible materials.

3 | Building vents precautions
Vents in roofs, soffits, and exterior walls should be made of non-combustible materials with screens to prevent the penetration of embers.

4 | Underground utility connections
Wherever possible, utility connections should be undergrounded, particularly for electrical and fuel-related utilities.

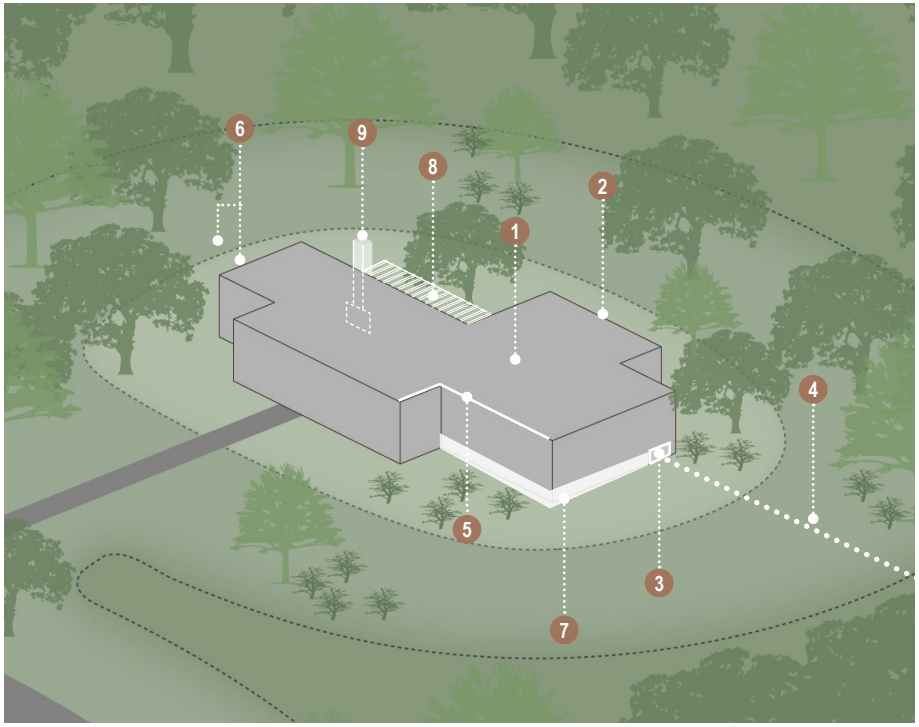
5 | Non-combustible leaf guards over gutters
Leaf guards can reduce the build-up of combustible leaf debris. Guards, gutters, and downspouts should be made of noncombustible material.

6 | Exterior fire suppression systems
Exterior fire suppression systems will be encouraged for all primary residential structures; these systems will be required for primary residential structures on dead-end roads that exceed ¼ mile in length. Fire suppression systems are remote or heat-activated. During a fire, they prevent substantial damage to the primary building as well as nearby outdoor features.

7 | Fire resistant material for exposed foundations
Fire resistant materials should be used for all exposed foundations above grade, including both open and closed foundations.

8 | Fire resistant deck materials
Decks connected to residential structures should be fire resistant, which can be achieved by using fire retardant treated timber, fire resistant plastic, and non-combustible materials for all deck components, including skirting to protect the deck underside.

9 | Exterior fire places and wood stoves
Anything with an exposed flame, such as a outside fireplace or wood stove, should have a screen built into the design to protect against stray embers.



RECOMMENDED EXTERIOR DESIGN STRATEGIES

The highlighted items are a selection of strategies to incorporate into the residential building to address wildfire safety.

1. CLASS A RATED ROOFS WITH NON-COMBUSTIBLE COVERING
2. FIRE RESISTANT EAVES, OVERHANGS, AND SOFFITS
3. BUILDING VENT PRECAUTIONS
4. UNDERGROUND UTILITY CONNECTIONS
5. NON-COMBUSTIBLE LEAF GUARDS OVER GUTTERS
6. EXTERIOR FIRE SUPPRESSION SYSTEMS
7. FIRE RESISTANT MATERIAL FOR EXPOSED FOUNDATIONS
8. FIRE RESISTANT DECK MATERIALS
9. EXTERIOR FIRE PLACES AND WOOD STOVES

SOURCE: FEMA, Home Builder’s Guide to Construction in Wildfire Zones, 2008

RESIDENTIAL BUILDING WILDFIRE PREVENTION
INTERIOR BUILDING STRATEGIES

On the inside of residential structures, certain precautions and practices can further protect the home. The following are a selection of interior building strategies to reduce wildfire risk:

1 | Smoke detectors throughout the home
Smoke detectors should be located throughout the house to cover all livable areas. If placed in hallways between living and sleeping areas, smoke detectors can reach many rooms. In addition, smoke detectors shall be programmed to communicate directly to a fire and security monitoring companies.

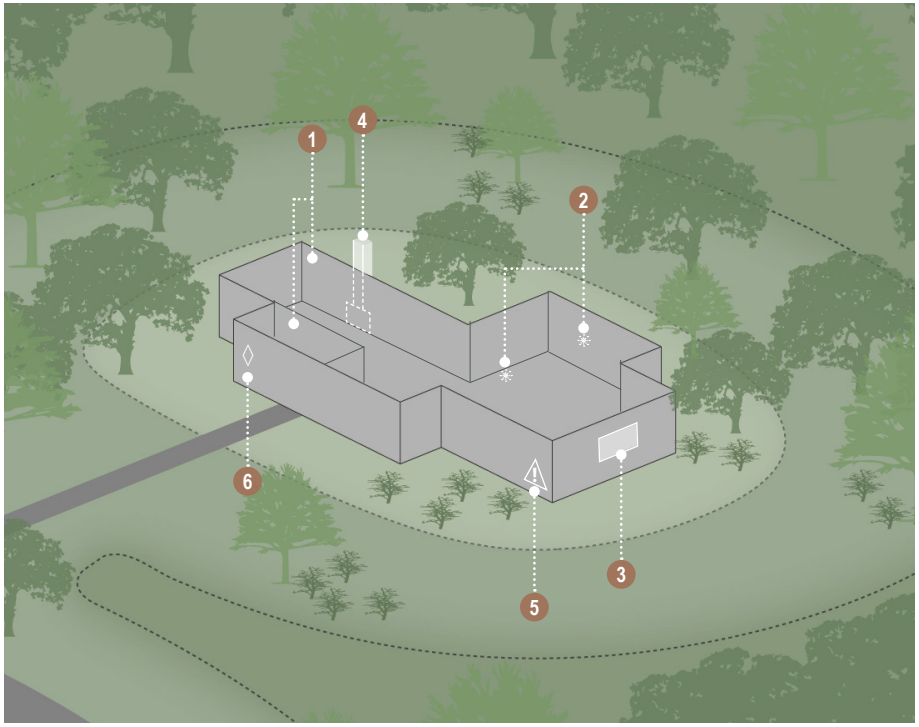
2 | Interior fire sprinklers
Interior fire sprinklers come in a variety of styles in order to blend with the home's aesthetic. They are automatically activated by high heat and can include a warning system.

3 | Window security quick-release
If window security bars or other protection systems are installed, a quick-release system should be included to allow for immediate escape in the case of a wildfire emergency.

4 | Chimney maintenance
Chimneys should be inspected yearly to remove all flammable debris and material.

5 | Combustible hazardous material protection
All combustible materials should be stored in protected safety containers away from appliances with ignition sources, such as stoves and water heaters.

6 | Wildfire fighting tools
Homeowners should have easy access to wildfire emergency tools, such as a shovel, hoe, rake, and bucket.



RECOMMENDED INTERIOR DESIGN ELEMENTS

The fire safety of a structure starts with design decisions. The highlighted items are a selection of some strategies to incorporate into residential architecture.

1. SMOKE DETECTORS THROUGHOUT THE HOUSE
2. INTERIOR FIRE SPRINKLERS
3. WINDOW SECURITY QUICK-RELEASE
4. CHIMNEY MAINTENANCE
5. COMBUSTIBLE MATERIAL PROTECTION
6. WILDFIRE FIGHTING TOOLS

SOURCES: FEMA, Home Builder's Guide to Construction in Wildfire Zones, 2008; CalFire, Homeowners Checklist, 2009

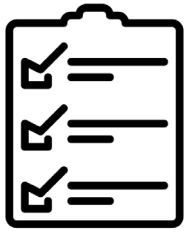
WILDFIRE PREVENTION PREPAREDNESS

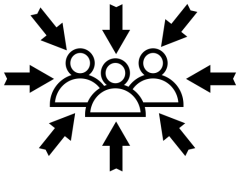
RESIDENT RECOMMENDATIONS

Homeowners will be advised to plan for the event of a wildfire. This will require preparing in advance and developing specific action plans for different scenarios.

Pre-Fire Preparations

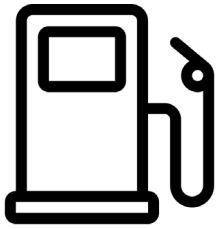
- Develop an emergency plan with your family;
- Place important documents in a fire-proof box close to the exit;
- Practice how to shut off key utilities, including water, gas, and electricity;
- Discuss plans for evacuation, including what to bring and where to go;
- Determine multiple evacuation routes in case one is blocked;
- Develop a communication plan in case your family is separated;
- Select meeting places a safe distance the home; and
- Identify a non-local contact person who knows your emergency plan.





Potential Fire Threat (including Red Flag Warnings)

- Pay attention to local news for updates and evacuation notices;
- Keep flashlights and portable chargers ready in case of power shutoff;
- Ensure that your car has gas, as stations often become crowded;
- Confirm that all garden hoses are attached and accessible;
- Prop a ladder against the house for the potential need for roof access;
- Disable electronic garage openers so this area can be manually opened;
- Prepare and pack essential items to prepare for potential evacuation; and
- Gather pets in kennel of on leashes to keep them close and safe



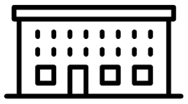
Notice to Evacuate

- Stay together as a household and remember that time is of the essence;
- Dress appropriately with long pants/sleeves, layers, and face protection;
- Shut off the home's gas supply, but leave lights and water on;
- Close all doors and windows but leave exterior doors unlocked;
- Pack water, supplies, and other essentials in the car;
- Ensure all car windows are closed while evacuating;
- Choose evacuation routes selected by emergency personnel; and
- Follow all directions and signage provided by emergency personnel.



Shelter in Place

- Take shelter within a building whenever possible;
- Close all windows and doors, but leave unlocked;
- Remain close to the front door and low to the ground;
- Continue to monitor the fire and stay observant;
- If not at home, proceed to a designated meeting & staging area;
- If unable to reach either home or a designated meeting & stage area, park and take shelter in your car;
- If in the car, stay on paved roads and park away from vegetation; and
- Leave headlights and emergency flashers on while you wait for aid.

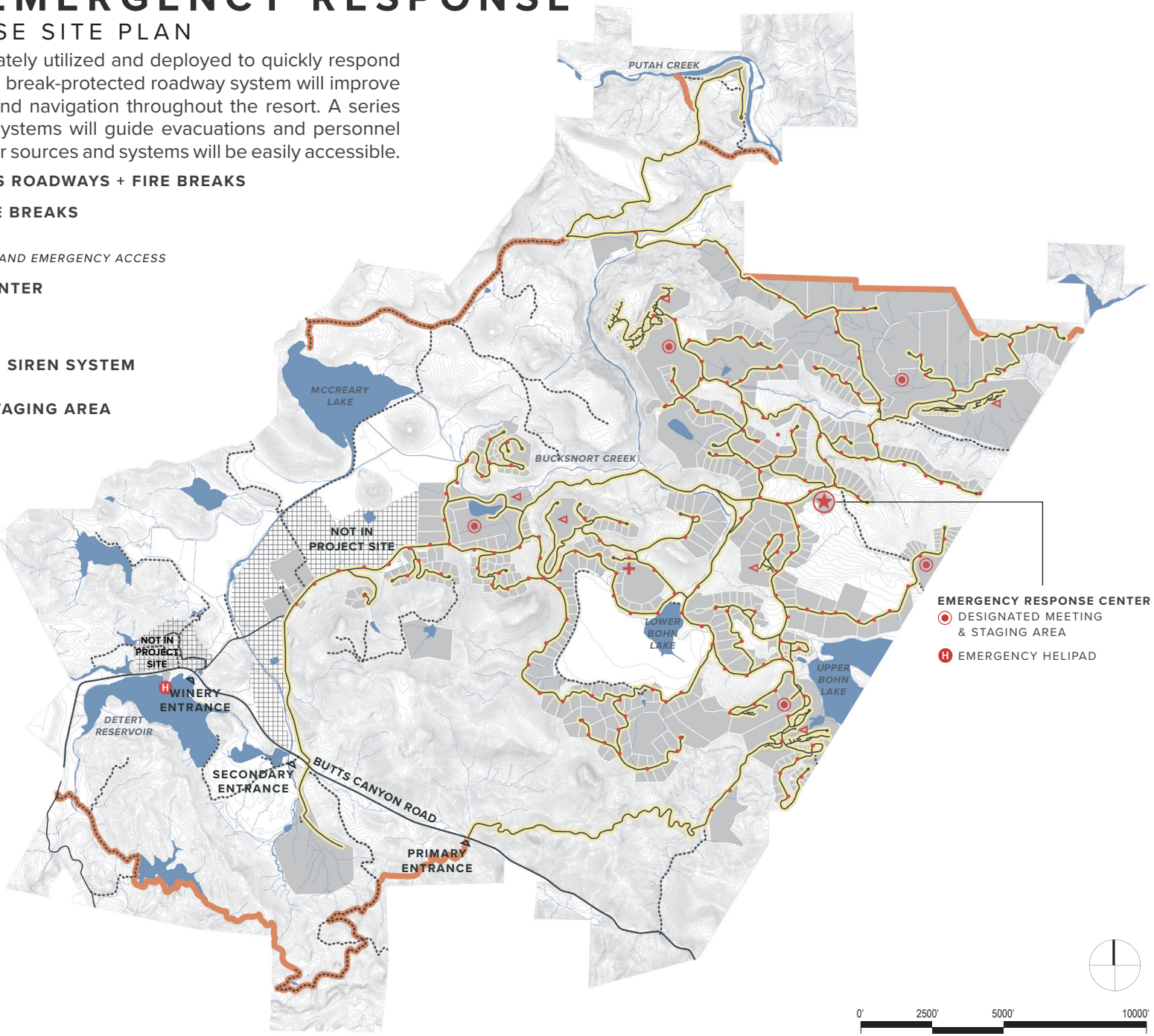


WILDFIRE EMERGENCY RESPONSE

WILDFIRE RESPONSE SITE PLAN

Various systems will be immediately utilized and deployed to quickly respond to a wildfire emergency. The fire break-protected roadway system will improve emergency personnel access and navigation throughout the resort. A series of emergency communication systems will guide evacuations and personnel response. Fire suppression water sources and systems will be easily accessible.

- **PRIMARY TWO-WAY ACCESS ROADWAYS + FIRE BREAKS**
- **PROPERTY BOUNDARY FIRE BREAKS**
- **EXISTING RANCH ROADS**
  USED FOR ACTIVE FUEL REDUCTION AND EMERGENCY ACCESS
- **EMERGENCY RESPONSE CENTER**
- **EARLY DETECTION SYSTEM**
  HIGH-DEFINITION CAMERA
- **EMERGENCY NOTIFICATION SIREN SYSTEM**
  EXACT LOCATIONS TBD
- **DESIGNATED MEETING & STAGING AREA**
- **HELIPAD**
- **FIRE HYDRANTS**
- **WATER SOURCES**
  RESERVOIRS, LAKES, PONDS, CREEKS & STREAMS



WILDFIRE EMERGENCY RESPONSE

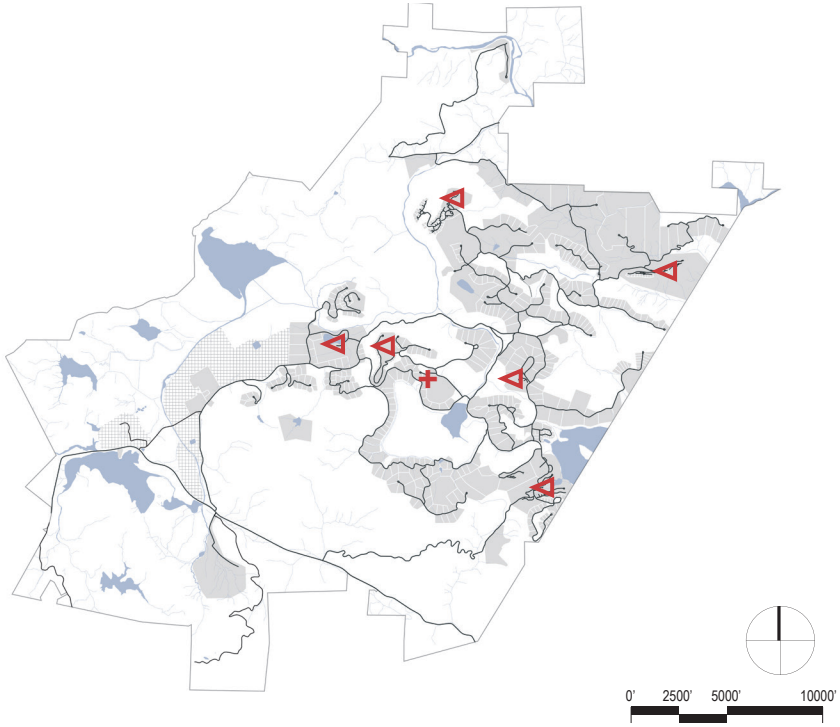
WILDFIRE EMERGENCY DETECTION & COMMUNICATION SYSTEMS

Efficient emergency communication is critical for providing immediate information to residents, visitors, and employees. In the event of a wildfire emergency, the following detection and communication systems will quickly be deployed:

Early Detection System
An early detection system will immediately identify potential fires igniting on site or in the vicinity. This system includes a high-definition camera installed in the center of the resort.

Emergency Notification Siren System
Located throughout the resort, the siren system will alert people to a wildfire emergency and announce updated information and directions.

Opt-out Communication System
All residents, visitors, and employees will be enrolled in an opt-out phone-based communication system, such as Nixle, to receive emergency notifications. This system will supplement the site-wide emergency siren system to ensure that everyone is alerted of important emergency information and updates.



COMMUNICATION RESPONSE SYSTEM

Key communication technologies will aid in detecting and communicating wildfire emergencies.

+ **EARLY DETECTION SYSTEM**
HIGH-DEFINITION CAMERA

◁ **EMERGENCY NOTIFICATION SIREN SYSTEM**
EXACT LOCATIONS TBD

WILDFIRE EMERGENCY RESPONSE

WILDFIRE EMERGENCY RESPONSE CENTER & REFUGE AREAS

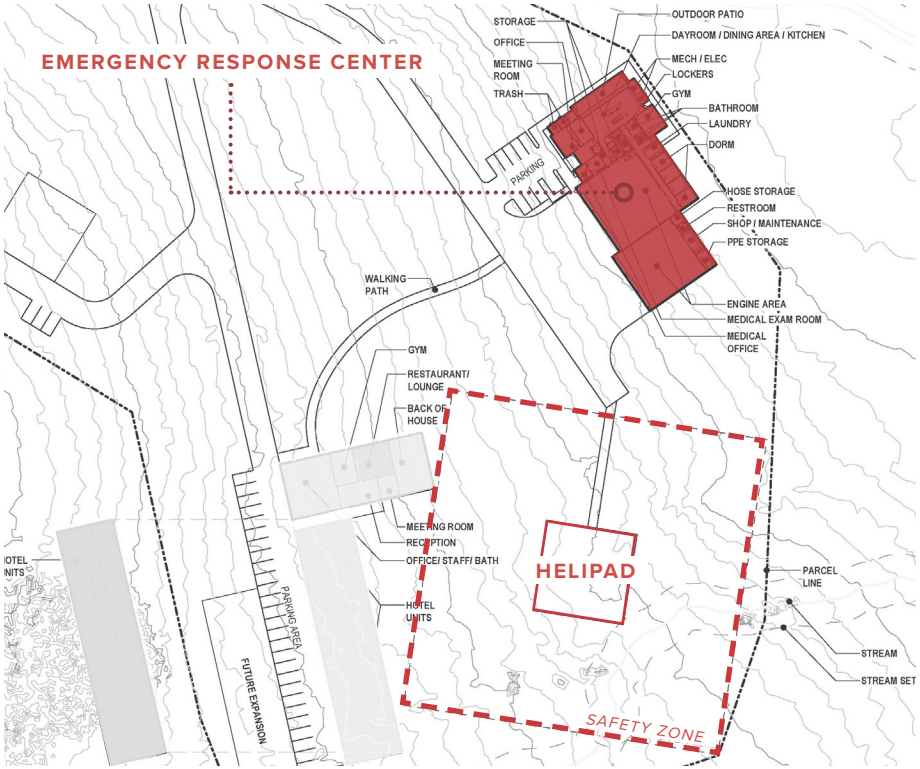
Various areas of the site will play a pivotal role in servicing evacuees and emergency personnel in the case of wildfire emergency.

Emergency Response Center

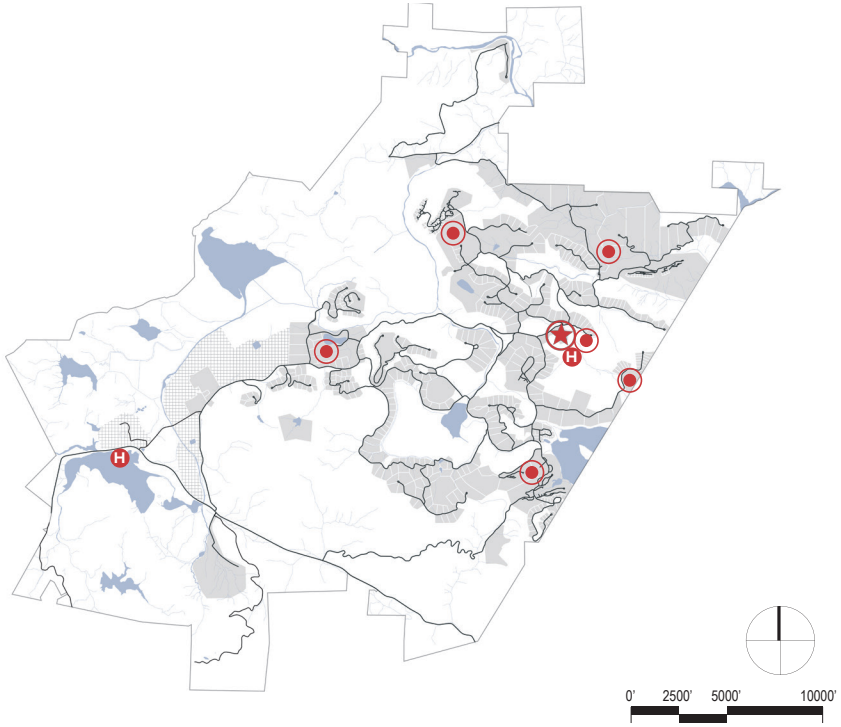
The on-site Emergency Response Center will serve as a primary location for first responders to gather and coordinate efforts. The center will include essential fire-fighting equipment and minor medical supplies. In the case of a major wildfire, the center can act as a headquarters for operations. A helipad will be located on-site for emergency landings and take-offs; and additional helipad at Detert Reservoir can also be used during emergencies

Designated Meeting & Staging Areas

Depending on the circumstances of a wildfire emergency, it may be difficult to evacuate. In this situation, residents, visitors, and employees will be directed to gather at designated meeting & staging areas where they will be provided information and assistance.



EMERGENCY RESPONSE CENTER SITE PLAN



EMERGENCY RESPONSE CENTER & MEETING POINTS

The emergency response center is located in a centralized area to service the entire site; temporary meeting points are dispersed throughout the site in order to provide easily accessible locations for all residents, visitors, and employees.

- **EMERGENCY RESPONSE CENTER**
- **HELIPADS**
- **DESIGNATED MEETING & STAGING AREAS**

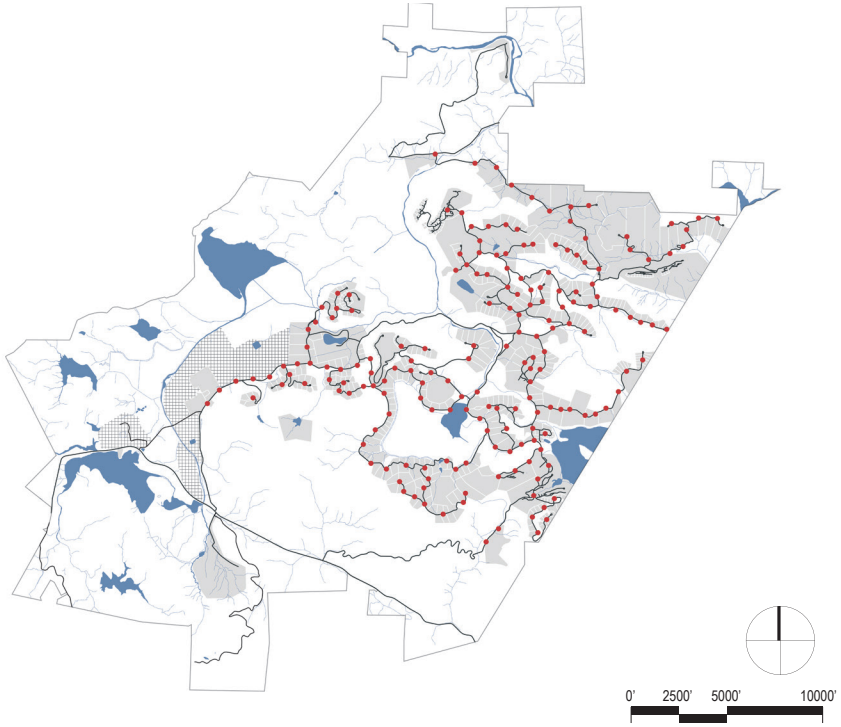
WILDFIRE EMERGENCY RESPONSE
WILDFIRE WATER SUPPLY & SUPPRESSION SYSTEM

If wildfires occur, a comprehensive, on-site water supply and fire suppression system will service firefighting needs.

Fire Suppression Water Sources
Fire suppression systems will be serviced by reclaimed and non-potable water sources, such as recycled wastewater, non-treated groundwater, and surface water reservoirs. Surface water sources—including reservoirs, lakes, ponds, creeks, and streams—can also be drawn upon by fire engines or helicopter buckets in the case of a wildfire emergency.

Fire Suppression Water System
A connected non-potable water distribution system will supply all water to fire hydrants as well as interior and exterior fire suppression systems. Portions of the system will be designed as a loop to maximize flow. Booster pump systems will also maintain water pressure above minimum requirements. Additional water storage may also be established in areas further from water sources for wildfire emergencies.

Fire Hydrants
All hydrants will have the capacity to maintain a minimum of a two-hour flow. Hydrants will be located within close proximity to roadways and spaced to maintain required flow to all parts of the site.



WILDFIRE WATER SUPPLY & SUPPRESSION SYSTEM
A network of fire hydrants and surface water sources will service the entire site.

- **FIRE HYDRANTS**
- **WATER SOURCES**
  RESERVOIRS, LAKES, PONDS, CREEKS & STREAMS

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SOURCES

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Note: The wind direction diagrams represent general wind patterns during annual fire season (08/01- 11/30). For detailed information on wind speed and directions, please refer to the data source.

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Note: Data source information ranges from the year 1998 to 2015; data for site from 1998; data source crosswalked with the California Wildlife Habitat Relationship (CWHR); CWHR categories simplified seven categories for illustrative purposes of the exhibit.

APPENDIX GEOTECH

PRELIMINARY GEOTECHNICAL STUDY REPORT

Experience is the difference

PRELIMINARY
GEOTECHNICAL STUDY REPORT

MAHA RESORT AT GUENOC VALLEY
22000 BUTTS CANYON ROAD
MIDDLETOWN, CALIFORNIA

Project Number:

7192.04.01.3

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May 29, 2019
(Revised December 6, 2019)

TABLE OF CONTENTS

INTRODUCTION

This report presents the results of our preliminary geotechnical study for the proposed Maha Resort at Guenoc Valley to be constructed at 22000 Butts Canyon Road in Middletown, California. The project includes dozens of parcels totaling approximately 16,000 acres. The terrain varies from relatively level valley floor areas to rolling hills and contains several lakes, established vineyards, and vast undeveloped areas. The site location is shown on Plate 1 in Appendix A.

We understand that the planned Maha Resort at Guenoc Valley will be an extensive, multi-phased resort including boutique hotels, residential communities, farmstead, golf course, equestrian facilities, and shops. As outlined in our proposal dated May 24, 2019, our preliminary study was broken into two phases. The purpose of Phase 1 was to evaluate the geologic hazards and pertinent geologic features and characteristics within certain proposed areas of development, and to comment on the geotechnical feasibility of the project. The purpose of Phase 2 was to refine the geologic hazards by collection of samples and testing for naturally-occurring asbestos (NOA) in areas that we identified as potentially containing serpentinite bedrock, landslide areas, and/or areas selected by the project team.

SCOPE

Our scope of work for Phase 1 was limited to a site reconnaissance, a review of selected published geologic data, aerial photographs and LiDAR, and preparation of this report. Our scope of work for Phase 2 included collection of samples and testing for NOA (see Appendix B). Based on the geologic literature review (References, see Appendix C), site reconnaissance, limited subsurface exploration and laboratory testing, we were to develop the following information:

1. A brief description of geologic, surface soil, and seepage/spring or other conditions observed during our reconnaissance;

2. Our opinion of potential cut and fill slope inclinations;

3. Distance to nearby active faults and a discussion of geologic hazards that may affect the proposed project;

4. Our opinions regarding the geotechnical feasibility of the project; and

5. Preliminary conclusions and recommendations concerning site-specific geotechnical services needed for actual development, design and construction of the project.

SERVICES PROVIDED

We reviewed aerial photographs of the site, 2-foot LiDAR contours of the entire property, and other select published geologic information pertinent to the site. A list of the geologic references reviewed is presented at the end of this report. On October 8, 9, 10, and November 12 and 20, 2018, our Engineering Geologist conducted a surficial reconnaissance of the property to observe exposed topographic features, surface soils, rock outcroppings and cut banks. We also excavated test pits on these days for the collection of preliminary geotechnical information and to assess the presence of NOA in areas mapped as serpentine-bearing. The test pit locations are shown on Plates 2 and 4A through 4E. Our Principal Engineering Geologist and Principal Geotechnical Engineer also performed a brief site reconnaissance of selected areas on October 8, 2018. Selected samples were laboratory tested to assess their pertinent engineering characteristics and potential presence and concentration of NOA. In addition to the test pits for our preliminary evaluation of the property, additional test pits were excavated for the Farmstead and access road geotechnical studies that were being performed concurrently. The logs for these test pits are included herein.

SITE CONDITIONS

General

Lake and Napa Counties are located within the California Coast Range geomorphic province. This province is a geologically complex and seismically active region characterized by sub-parallel northwest-trending faults, mountain ranges and valleys. The oldest bedrock units are the Jurassic-Cretaceous Franciscan Complex and Great Valley sequence sediments originally deposited in a marine environment. Subsequently, younger rocks such as the Tertiary-age Sonoma Volcanics group, the Plio-Pleistocene-age Clear Lake Volcanics and sedimentary rocks such as the Guinda, Domengine, Petaluma, Wilson Grove, Cache, Huichica and Glen Ellen formations were deposited throughout the province. Extensive folding and thrust faulting during late Cretaceous through early Tertiary geologic time created complex geologic conditions that underlie the highly varied topography of today. In valleys, the bedrock is covered by thick alluvial soils. The site is located in a northwest-trending, structurally-system of valleys and ridges in southeastern Lake county and northwestern Napa County.

Geology

Published geologic maps (Fox et al., 1973) indicate the property is underlain by igneous, sedimentary, and metamorphic bedrock formations ranging from Jurassic to Quaternary in age. 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. The Great Valley Sequence units shown to be present in the project area include mudstone, siltstone, and sandstone. The mapped Franciscan Assemblage outcrops include metagraywacke, metagreenstone, and metachert,

with discrete masses of serpentinite and silica-carbonate rocks strewn throughout the property. 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. It also blankets a vast, northwest -trending swath north of Upper Bohn Lake and extending to the edge of Bucksnort Creeks valley. It is usually underlain by small bodies of Franciscan silica-carbonates and large masses of Franciscan serpentinite, the other dominant rock type according to the geologic maps. The Tertiary-aged Sonoma Volcanics occurs south of Butts Canyon Road at higher elevations. 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.

Landslides

Published landslide maps (Dwyer, 1976) indicate many isolated areas of large-scale slope instability at the site. Presented on Plate 3 is our interpretation of the locations presented on Dwyer's map. Dwyer's "definite" and "probable" landslides primarily occur within areas mapped by Fox et al. (1973) as Franciscan Assemblage including metagraywacke, metagreenstone, metachert, and bodies of serpentine. We outlined these, as well as other areas with suspicious topographic features we observed using LiDAR, on the LiDAR overlay in Google Earth. Our engineering geologists then excavated test pits in several of the areas where planned roads crossed the mapped landslide areas and other suspicious areas based on our LiDAR review. In some cases, the rubbly surface outcrops and "float" (boulders carried downslope by gravity) prevented excavator access to these areas, such as on the northeastern flank of Goat Mountain. Based on our surface and subsurface observations we revised the landslide mapping. Where these physical areas were observed and revised by RGH, the landslide boundaries are considered approximate. We have not undertaken detailed studies of the individual landslide areas. The scope of this phase of investigation was to confirm or refute the presence of actual landslide debris in certain mapped and conspicuous locations that could directly affect road construction at the site. The revised features are presented on Plates 4A through 4E.

A summary of the subsurface soil, rock, and groundwater conditions found within landslide test pits LSTP-1 through LSTP-25 is presented in the table below. In some cases, our subsurface observations indicate that no landslide was present. Where we interpret the deposits as landslide-derived, our opinion as to the type of landslide, degree of certainty, thickness of deposits, and state of landslide activity is indicated with a 4-digit number in the right-hand column of the table. A key to the numerical landslide identification and nomenclature is given on Plate 5. The soil is described in accordance with the Unified Soil Classification System, outlined on Plate 6. Bedrock is described in accordance with Engineering Geology Rock Terms, shown on Plate 7.

Test Pit #	Depth (ft.)	Description	Landslide Type
LSTP-1	0.0-1.0	DARK BROWN SANDY CLAY WITH GRAVEL (CH) soft, moist (surface soil)	
	1.0-4.75	GRAY GREEN MOTTLED CLAY WITH SAND (CH) soft to medium stiff, moist (Qls)	Possible Landslide

		- possible slide plane -	3312
	4.75-6.5	DARK GRAY GREENSTONE very closely spaced fractures, firm, weak, moderately weathered Seepage at 6 feet	
LSTP-2	0.0-1.25	BROWN SANDY CLAY (CH) soft to medium stiff, moist (surface soil)	
	1.25-5.0	DARK GRAY GREENSTONE closely spaced fractures, firm to moderately hard, weak to moderately strong, slightly weathered	No Landslide
LSTP-3	0.0-1.5	RED-BROWN CLAY WITH SAND (CH) hard, dry to moist, weak and porous to 6 inches, with gravel and cobbles up to 6 inches in diameter, vertical pressure facets (VPF) Qls	
	1.5-3.5	RED-BROWN BRECCIA closely spaced fractures, moderately hard, moderately strong, highly weathered, subangular, poorly sorted clasts from coarse sand to small cobbles, volcanic and ultramafic (healed landslide/Qls)	3323
	3.0-3.5 (locally)	OLIVE GREEN SANDY CLAY (CH) very hard, dry, with gravel Practical refusal at 3½ feet	
LSTP-4	0.0-2.5	RED BROWN SANDY CLAY (CL) very stiff to hard, dry, weak and porous to 6 inches, gravel to 2 inches in diameter, somewhat porous (colluvium)	
	2.5-3.5	RED-BROWN CLAY WITH SAND AND GRAVEL (CH) hard, moist, increased gravels and cobbles, angular, poorly sorted (colluvium)	3323
	3.5-10.0	DARK RED-BROWN BRECCIA no visible fractures, firm, weak, highly weathered, poorly sorted angular to subrounded polished clasts (healed landslide/Qls)	
LSTP-5	0.0-2.0	BROWN TO DARK BROWN CLAY WITH SAND (CL-CH) medium stiff, dry to moist, with coarse sand to gravel, weak and porous to 6 inches, roots to 2 feet (Qls)	
	2.0-5.0	DARK BROWN CLAY WITH SAND AND GRAVEL (CH) hard to very hard, moist, with VPF and shearing from creep, angular gravels to 2 inches in diameter (Qls)	3323
	5.0-9.0	DARK BROWN SANDY CLAY TO CLAYEY SAND (CH) hard/dense, moist, poorly sorted, clay less fat than B unit, coarse sand and small gravels, larger cobbles to 6 inches in diameter starting at 8 feet (Qls)	

	9.0-9.5	GRAY ANDESITE closely spaced fractures, very hard, very strong, slightly weathered, soil infilling Refusal in boulders at 9½ feet	3323
LSTP-6	0.0-2.0	BROWN TO DARK BROWN SANDY CLAY WITH GRAVEL AND COBBLES (CH) soft, dry, weak and porous to 1 foot; hard, moist 1 to 2½, cobbles and clasts to 8 inches in diameter (Qls)	
	2.0-4.5	RED -BROWN BRECCIA no visible fractures, firm, weak, highly weathered, clasts poorly sorted, angular, coarse sand to cobbles 6 inches in diameter (well-indurated/healed Qls)	3213
	4.5-7.0	RED-BROWN SERPENTINIZED GREENSTONE closely spaced fractures, firm, weak, completely to highly weathered	
LSTP-7	0.0-0.5	LIGHT OLIVE-BROWN CLAY (CH) medium stiff, dry, with desiccation cracks, weak and porous	
	0.5-4.0	DARK OLIVE GRAY SILTSTONE/SHALE closely laminated, extremely closely spaced fractures, moderately hard to hard, weak, moderately weathered to brown, dips into hillside; completely weathered to soil-like from ½ to 1 foot	No Landslide
	4.0-5.0	DARK GRAY SANDSTONE massive to thickly bedded, moderately spaced fractures, hard to very hard, strong, slightly weathered, very fine grained	
LSTP-8	0.0-0.5	LIGHT OLIVE-BROWN CLAY (CH) medium stiff, dry, with desiccation cracks, weak and porous	
	0.5-2.0	RED-BROWN CLAY WITH GRAVEL AND COBBLES (CH) very stiff to hard, moist, angular cobbles to 6 inches in diameter, some roots (Qc/residual soil)	Outside of Landslide
	2.0-2.5	DARK GRAY CLAY WITH SAND (CH) very stiff, dry to moist, with shale inclusions (Qls)	3322
	2.5-5.0	DARK OLIVE GRAY SILTSTONE/SHALE closely laminated, extremely closely spaced fractures, moderately hard to hard, weak, moderately weathered to brown, sheared	
LSTP-9	0.0-1.0	LIGHT OLIVE-BROWN CLAY (CH) medium stiff, dry, with desiccation cracks, weak and porous, with angular gravels and cobbles, roots	
	1.0-2.0	DARK GRAY SHALE crushed, sheared, firm, plastic, completely weathered to soil (residual/colluvium/Qc)	Outside of Landslide 3221

	2.0-5.0	DARK OLIVE GRAY SILTSTONE/SHALE closely laminated, extremely closely spaced fractures, sheared, firm, friable, highly weathered to brown, with strong concretions	
LSTP-10	0-1.0	OLIVE BROWN SANDY CLAY (CH) hard, dry, with gravel, with roots (Qls)	
	1.0-5.75	DARK OLIVE BROWN TO DARK OLIVE GREEN CLAY WITH GRAVEL AND COBBLES (CH) very hard, moist, very hard and very strong angular clasts of greenstone from 1 to 8 inches in diameter (Qls)	3122
	5.75-6.5	OLIVE GREEN CLAY WITH SAND (CH) hard, moist, sheared, slicks, healed slide plane	
	6.5-7.5	GREEN SERPENTINE MELANGE sheared, soft to firm, plastic to friable, highly weathered	
LSTP-11	0.0-2.5	RED CLAY WITH SAND (CH) (Qls) soft to hard, weak and porous to ½ foot, dry ½ to 2 feet then moist	
	2.5-3.0	DARK OLIVE-GREEN CLAY (CH) hard, moist, sheared, with slicks, irregular edges, locally pinched out (healed side plane) (Qls)	3312
	3.0-5.0	OLIVE GREEN WITH RED WEATHERING SERPENTINTE MELANGE firm, friable, highly weathered, with hard, strong, greenstone inclusions	
LSTP-12	0.0-1.0	BROWN CLAY (CH) stiff, dry to moist, with angular volcanic cobbles to 6 inches in diameter, weak and porous, with roots (Qc) (Qls)	
	1.0-3.5	RED BROWN CLAY (CH) hard, moist, with coarse sand and volcanic cobbles approximately 6 inches in diameter from 2½ to 3½ feet, with roots at base of layer (Qls)	Question-able 3312
	3.5-5.0	RED-BROWN SANDY CLAY (CL-CH) very hard, dry to moist, with sand to small cobbles and volcanic gravels (completely weathered lithic tuff)	
	5.0-7.0	YELLOW-GREEN LITHIC TUFF closely to very closely spaced fractures, firm, friable, highly weathered	
LSTP-13	0.0-3.0	GRAY BROWN SANDY CLAY WITH GRAVEL AND COBBLES (CH) stiff to very stiff, dry to moist, shrinkage crack ½ inch wide and 12 inches deep	
	3.0-4.0	RED BROWN SANDY CLAY WITH COBBLES (CH) very stiff, moist, with volcanic and greenstone cobbles	3312
	4.0-5.5	GRAY GREEN SERPENTINITE	

		Closely to very closely spaced fractures, firm, weak to friable, moderately weathered	
LSTP-14	0.0-1.5 1.5-2.5 2.5-5.0	RED-BROWN CLAY WITH SAND AND GRAVEL (CL) soft to medium stiff, dry to moist, weak and porous, with angular volcanic cobbles to 1½ feet (Qc) RED-BROWN CLAY (CH) hard, moist (residual soil) SERPENTINIZED GREENSTONE extremely closely spaced fractures, moderately hard, weak, highly weathered	No Landslide
LSTP-15	0.0-4.0 4.0-7.0	RED BROWN SANDY CLAY WITH COBBLES AND BOULDERS (CH) very stiff, moist, porous in upper 1 foot GREEN SERPENTINITE closely spaced fractures, firm, weak, moderately weathered	3212
LSTP-16	0.0-1.0 1.0-3.5 3.5-4.5	BROWN CLAY WITH SAND (CH) soft to medium stiff, dry, with cobbles and small boulders, with boulder float at surface (Qc/Qls) BROWN CLAY WITH SAND AND GRAVEL (CH) hard, moist, with prominent VPF, angular volcanic cobbles (Qls) BROWN CONGLOMERATE no visible fractures, moderately hard, moderately strong, moderately to highly weathered, serpentinite clasts (KJF)	3212
LSTP-17	0.0-1.5 1.5-3.0 3.0-5.0	BROWN SANDY CLAY (CH) soft to medium stiff, dry to moist, with desiccation cracks, with roots, weak and porous to ½ foot, with boulder float at surface (residual soil) GREEN SERPENTINIZED GREENSTONE closely spaced fractures, firm, weak to moderately strong, highly weathered GREEN SERPENTINIZED GREENSTONE closely spaced fractures, moderately hard, weak to moderately strong, moderately weathered	Outside of Landslide
LSTP-18	0.0-1.0 1.0-4.0	BLUE GREEN CLAYEY SAND (SC) medium dense, dry (residual soil) BLUE GREEN SERPENTINITE sheared, very closely spaced fractures, firm to moderately hard, weak, highly to moderately weathered, highly sheared and weathered from 1 to 2 feet	Above Landslide Head Scarp (Outside of Landslide)
LSTP-19	0.0-2.5 2.5-3.0	LIGHT GRAY-BROWN CLAY (CL-CH) hard, dry, weak and porous to 3 feet (Qc) GRAY SILTSTONE	

		extremely closely spaced fractures, moderately hard, weak, highly weathered to brown	No Landslide
	3.0-5.0	GRAY SILTSTONE very closely to closely spaced fractures, moderately hard, moderately strong, moderately weathered	
LSTP-20	0.0-1.5	LIGHT GRAY-BROWN SANDY CLAY (CH) hard, dry, grades to completely weathered siltstone from 1 to 1½ feet, volcanic rubbly float at surface	No Landslide
	1.5-5.0	GRAY-BROWN SHALE closely to very closely spaced fractures, moderately hard, moderately strong, moderately weathered	
LSTP-21	0.0-1.0	VERY LIGHT BROWN SANDY CLAY WITH GRAVEL (CL) medium stiff, dry, with volcanic cobbles and rubbly surface float (Qc)	No Landslide
	1.0-7.0	GRAY SILTSTONE/SHALE extremely closely spaced fractures, moderately hard, moderately strong, moderately weathered	
LSTP-22	0.0-2.0	VERY DARK GRAY BROWN CLAY (CH) hard, dry, with volcanic cobbles and rubbly surface float (Qls)	
	2.0-3.0	VERY DARK GRAY BROWN CLAY WITH COBBLE (CH) medium stiff, dry to moist, with angular gravel and cobbles to 8 inches in diameter, clast-supported (old Qls)	3313
	3.0-4.5	OLIVE BROWN SHALE extremely closely spaced fractures, firm, weak, highly weathered	
LSTP-23	0.0-3.5	LIGHT RED-BROWN SANDY CLAY (CL) medium stiff, dry, with cobbles and boulders, angular gravel, very clayey from 3 to 3½ feet (Qls)	5322
	3.5-4.5	BROWN SANDY CLAYSTONE WITH BOULDERS closely spaced fractures, firm, plastic to friable, highly weathered, with pressure facets	
LSTP-24	0.0-5.0	GRAY BROWN TO DARK GRAY BROWN SANDY CLAY (CH) very stiff to hard, dry to moist, weak and porous to 1½ feet, sparse volcanic gravels (alluvium)	No Landslide
	5.0-6.0	VOLCANIC BOULDERS rubbly flow deposit (Qob – Clearlake Volcanics)	
LSTP-25	0.0-1.0	BROWN SANDY CLAY (CH) medium stiff, dry, with desiccation cracks	No Landslide
	1.0-7.0	DARK GRAY SILTSTONE closely to very closely spaced fractures, firm to moderately hard, weak to moderately strong, moderately weathered	

Faulting

The site is not within a current Alquist-Priolo Earthquake Fault Zone for active faults as defined by California geological Survey (CGS). CGS defines active faults as those exhibiting evidence of surface displacement during Holocene time (last 11,000 years). However, the site is within an area affected by strong seismic activity. Several northwest-trending Earthquake Fault Zones exist in close proximity to, and within several miles of, the site (Bortugno, 1982). The shortest distances from the site to the mapped surface expression of these faults are presented in the table below.

ACTIVE FAULT PROXIMITY		
Fault	**Direction**	**Distance-Miles**
San Andreas	SW	41
Healdsburg-Rodgers Creek	SW	20
Concord-Green Valley	SE	30
Cordelia	SE	30
West Napa	SE	21½
Maacama	SW	16
Konocti	NW	14
Hunting Creek	NE	5¾

Surface

The property extends primarily over relatively level valley floor areas as well as rugged, moderately to steeply sloping terrain. Volcanic-capped peaks are characteristically conical in shape. The vegetation consists of seasonal grasses, chaparral, oak, and other common shrubs of the region. Many acres have been planted in wine grapes.

We understand that several archaeological/cultural historic sites are present on the property. We observed one spring on the southwestern shore of Upper Bohn Lake that reportedly flows all year long (Randy Sternberg, personal communication, 2018).

In general, the ground surface includes both soft, spongy areas, and relatively hard, dry areas. Either condition can generally be associated with weak, porous surface soils. Along existing roads and around existing building areas, some fill soils are present. Undocumented or heterogeneous fill soils, as well as weak, porous surface soils, often have unknown bearing capacity and unpredictable settlement under new loads.

Natural drainage consists of overland flow over the ground surface that concentrates on a natural drainage element such as swales and ravines. Because of the large size of the property, there are several micro-water

sheds that trend toward local low areas, such as Bohn Valley, Bucksnort Creek valley, and the Upper Bohn Lake area.

Subsurface

Our observations of the subsurface materials generally agreed with the published geologic maps with respect to mapped geologic units and bedrock types. The bedrock characteristics vary with the rock type. A summary of the subsurface conditions as observed within our test pits is presented below. Our laboratory testing indicates that two of the five samples of serpentine bedrock tested contained detectable levels of naturally-occurring asbestos mineral fibers (1.58 percent and 2.17 percent; see below and Appendix B for full report).

A composite sample of the near-surface soils from test pits TP-1 through TP-6 exhibits medium plasticity (LL = 48.1; PI = 18.7), very low expansion potential (EI = 8), and moderate to high R-Value (R-Value = 50). A composite sample of the near-surface soils from test pits TP-7 through TP-12 exhibits medium plasticity (LL = 55.8; PI = 28.0), medium expansion potential (EI = 81), and low R-Value (R-Value = 7).

ORIGINAL ENTRY ROAD - TEST PITS TP-1 THROUGH TP-12

Test Pit #	Depth (ft.)	Description	NOA tested/detected
TP-1	0-4	RED-BROWN GRAVEL WITH SILT AND SAND (GP-GM), Loose to medium dense, dry, with roots and rootlets throughout, angular coarse gravel to cobbles (colluvium - Qc)	
	4-5	GREEN SERPENTINITE, crushed, sheared, moderately hard, weak to moderately strong, highly weathered, with hard boulders. No Groundwater encountered	2.17% Chrysotile
TP-2	0-0.5	RED-BROWN CLAYEY SAND (SC), loose, dry, weak and porous, abundant rootlets (surface soil)	
	0.5-1.5	RED-BROWN CLAYEY SAND (SC), with gravel, medium dense, dry to moist, weak and porous, with roots	
	1.5-3	RED-BROWN SILTY GRAVEL WITH SAND (SM), medium dense, moist (Qc)	
	3-4	GRAY SERPENTINIZED GREENSTONE, closely spaced fractures, hard, strong, highly weathered. No Groundwater encountered	
TP-3	0-0.5	RED-BROWN CLAYEY SAND (SC), loose, dry, weak and porous, with gravel, abundant rootlets (Surface soil)	
	0.5-3	GREEN SERPENTINITE, closely to very closely spaced fractures, hard, strong, moderately weathered. No Groundwater encountered	
TP-4	0-0.5	BROWN CLAYEY SAND WITH GRAVEL (SC), loose, moist, weak and porous, with abundant rootlets and organics (surface soil)	

	0.5-2	BLUE-GRAY GREENSTONE, closely spaced fractures, hard, strong, moderately weathered, with serpentinized areas. Very hard digging. No Groundwater encountered	
TP-5	0-0.5	RED-BROWN CLAYEY SAND (SC), loose, dry to moist, weak and porous, with abundant rootlets and organics (surface soil)	
	0.5-1.5	GREEN SERPENTINITE, closely spaced fractures, sheared, moderately hard, weak, highly weathered. No Groundwater encountered	
TP-6	0-2	BROWN CLAYEY SAND WITH GRAVEL (SC), medium dense, dry to moist, with cobbles and boulders, rip rap (fill) Digging refusal in boulders. No Groundwater encountered	
TP-7	0-1.5	RED-BROWN CLAYEY SAND WITH GRAVEL (SC), loose, dry, weak and porous (Qc)	
	1.5-4	ORANGE-BROWN MELANGE, sheared, firm, friable, completely/highly weathered, with hard cobbles of greenstone No Groundwater encountered	ND (non-detect, <0.08%)
TP-8	0-1	RED-BROWN CLAYEY SAND (SC), loose to medium dense, dry, with gravel and cobbles (Qc)	
	1-2	RED CLAY (CH), hard, dry (residual soil)	
	2-6	RED BASALT, closely spaced fractures, firm, weak, highly weathered. No Groundwater encountered	
TP-9	0-0.5	RED CLAY WITH SAND (CL), soft, moist, weak and porous, with abundant rootlets	
	0.5-1	RED CLAY WITH SAND (CL), hard, dry, with gravel (residual soil)	
	1-2.5	RED-BROWN PEBBLY COARSE SANDSTONE, firm, weak, highly weathered No Groundwater encountered	
TP-10	0-2	LIGHT BROWN SILTY-CLAYEY SAND (SC), medium dense, dry to moist, weak and porous	
	2-3	LIGHT BROWN CLAYEY SAND (SC), medium dense to dense, dry to moist, with gravel (residual soil)	
	3-5	ORANGE BROWN GREENSTONE, very to extremely closely spaced fractures, firm, weak, highly weathered No Groundwater encountered	
TP-11	0-1.5	RED-BROWN CLAY WITH SAND (CL), soft to medium stiff, moist, weak and porous, with roots to 2’	
	1.5-3	RED-BROWN SANDY CLAY (CH), hard, dry	

	3-4 4-5	GREEN TO RED-BROWN MELANGE, sheared, firm, weak, highly weathered, with resistant greenstone fragments. DARK GRAY-GREEN GREENSTONE, sheared, moderately hard, moderately strong, moderately weathered to red in color. No Groundwater encountered	
TP-12	0-2 2-5 5-5.5	DARK BROWN SANDY CLAY (CH), hard, dry, weak and porous to 0.5', with roots, GREEN TO BROWN MELANGE, sheared, firm, weak, highly weathered GRAYWACKE SANDSTONE, closely spaced fractures, hard, moderately strong to strong, moderately weathered. No Groundwater encountered	

Our laboratory tests indicate that throughout the Farmstead area, most of the near-surface soils exhibit high plasticity (LL from 60.3 to 91.6; PI from 39.5 to 63.1), and medium to high expansion potential (EI from 88 to 123).

FARMSTEAD/MAHA Farm- TEST PITS TP-13 THROUGH TP-30

Test Pit #	Depth (ft.)	Description	NOA tested/detected
TP-13	0-0.5 0.5-3	BROWN CLAYEY SAND (SC), loose, moist, weak and porous, with gravel and cobbles, with abundant roots, organics YELLOW TO OLIVE GREEN TUFF, firm to moderately hard, weak, highly weathered, hydrothermally altered. No Groundwater encountered	
TP-14	0-1 1-1.5 1.5-2 	RED-BROWN CLAY WITH SAND (CL), soft, moist, weak and porous, with gravel, with roots (surface soil) RED-BROWN CLAY WITH SAND (CH), hard, moist, with cobbles, vertical pressure facets RED-BROWN SILTY GRAVEL WITH SAND (SM), medium dense, moist (Qc) GREEN SERPENTINITE, sheared, moderately hard, moderately strong, highly weathered. No Groundwater encountered	1.58 % Chrysotile
TP-15	0-2 2-2.5 2.5-6	RED-BROWN CLAY WITH SAND AND GRAVEL (CL), medium stiff, dry, with rootlets to 0.5, weak and porous to 1' (surface soil) RED-BROWN CLAYEY GRAVEL (GC), dense, dry to moist, angular volcanic gravels (Qt) RED-BROWN CLAY WITH SAND (CH), hard, dry to moist, vertical pressure facets	

	6-7	RED-ORANGE CLAY WITH SAND (CL), hard, dry, with basalt gravel and cobbles, becomes indurated (MUDSTONE) at 7'. No Groundwater encountered	
TP-16	0-0.75	BROWN SANDY CLAY (CH), medium stiff to very stiff, moist, weak and porous to 0.5', with roots throughout	
	0.75-2	BROWN, GREEN, ORANGE SERPENTINITE, extremely closely spaced fractures, moderately hard, strong, highly weathered; hard digging No Groundwater encountered	ND (<0.08%)
TP-17	0-2	RED-BROWN CLAY WITH SAND AND GRAVEL (CL), medium stiff, dry, with rootlets to 0.5', weak and porous to 1' (Surface soil)	
	2-2.5	RED-BROWN CLAYEY GRAVEL (GC), dense, dry to moist, angular volcanic gravels (terrace deposits - Qt)	
	2.5-5	RED-BROWN CLAY WITH SAND (CH), hard, dry to moist, vertical pressure facets, with sand, with serpentinite and obsidian gravels (Qt and residual soil)	
	5-5.5	GREEN AND BLACK SERPENTINITE, sheared, firm, weak, highly weathered No Groundwater encountered	ND (<0.08%)
TP-18	0-1.5	LIGHT BROWN CLAYEY SAND (SC), medium dense, dry to moist, weak and porous throughout, with gravel, with large roots to 3', increased gravels at base of layer	
	1.5-3	RED TO OLIVE BROWN CLAY (CH), hard to very hard, moist, vertical pressure facets	
	3-4	LIGHT BROWN SANDSTONE, closely to very closely spaced fractures, moderately hard, weak to moderately strong, moderately to highly weathered. No Groundwater encountered	
TP-19	0-1.5	RED-BROWN CLAY WITH SAND (CH), medium stiff, dry to moist, weak and porous, with abundant roots, with volcanic gravels	
	1.5-3.5	RED-BROWN CLAY (CH), hard to very hard, moist, with some gravels	
	3.5-5.5	VOLCANIC BRECCIA, closely spaced fractures, firm, friable, highly weathered No Groundwater encountered	
TP-20	0-2	RED-BROWN CLAY WITH SAND (CL), medium stiff to very stiff, moist, weak and porous, abundant roots and rootlets	
	2-4	RED-BROWN CLAY (CH), hard to very hard, moist, with large gravels/small cobbles of basalt-andesite	

	4-4.5	ORANGE-BROWN SANDY VOLCANIC AGGLOMERATE, closely spaced fractures, firm, weak, highly weathered. No Groundwater encountered	
TP-21	0-1.5 1.5-3	RED-BROWN CLAY WITH SAND (CL), soft to medium stiff, dry, weak and porous, with abundant roots, with weathered silicic gravels LIGHT YELLOW TO RED VOLCANIC AGGLOMERATE, closely spaced fractures, firm to moderately hard, weak, highly weathered, with spheroidally weathered dacite cobbles in a red clay matrix. No Groundwater encountered	
TP-22	0-1.5 1.5-2 2-3 3-3.5	RED-BROWN SANDY CLAY WITH GRAVEL (CL), medium stiff, dry, weak and porous RED-BROWN CLAY WITH SAND (CH), hard, dry, with light gray silicic volcanic gravels RED-BROWN CLAY (CH), hard to very hard, moist ORANGE SANDY LITHIC TUFF, partly welded, closely spaced fractures, firm to moderately hard, weak, highly weathered No Groundwater encountered	
TP-23	0-2 2-5.5	RED CLAYEY SAND (SC), dense, moist, weak and porous to 1', with roots to 2', with abundant small gravels (residual soil) RED AGGLOMERATE, firm, weak, highly weathered No Groundwater encountered	
TP-24	0-2 2-3 3-4	RED-BROWN SANDY CLAY (CL), medium stiff, moist, with abundant volcanic gravel, with abundant roots to 2.5', weak and porous to 0.5' MOTTLED RED-BROWN AND GRAY CLAY (CH), hard to very hard, moist, vertical pressure facets (residual soil) RED TO LIGHT GRAY TUFF AND TUFF AGGLOMERATE, closely spaced fractures, firm, weak, highly weathered No Groundwater encountered	
TP-25	0-2.5 2.5-3 3-3.5	BROWN SANDY CLAY (CL), soft to medium stiff, moist, weak and porous, with abundant roots and volcanic cobbles. GRAY-OLIVE BROWN CLAY WITH SAND (CH), hard, moist RED WELDED TUFF, closely spaced fractures, moderately hard, moderately strong, highly weathered. No Groundwater encountered	
TP-26	0-2 2-3.5	RED-BROWN SANDY CLAY (CL), soft to medium stiff, moist, with abundant dacite cobbles and boulders GRAY AND RED DACITE AGGLOMERATE, spheroidally weathered clasts in a weathered RED CLAY (CH) matrix, clasts are very hard, very strong; clast-supported	

		No Groundwater encountered	
TP-27	0-0.5 0.5-2	RED-BROWN SANDY CLAY (CL), soft, moist, weak and porous, with abundant rootlets and volcanic cobbles DARK GRAY BASALT AGGLOMERATE, moderately to widely spaced fractures, very hard, very strong, moderately weathered to red on fracture surfaces, clast-supported, boulders in a soft, dry clay matrix, very hard digging No Groundwater encountered	
TP-28	0-0.5 0.5-2	RED-BROWN SANDY CLAY (CL), soft, moist, weak and porous, with abundant rootlets and volcanic cobbles DARK GRAY BASALT AGGLOMERATE, moderately to widely spaced fractures, very hard, very strong, moderately weathered to red on fracture surfaces, clast-supported, boulders in a soft, dry clay matrix, very hard digging No Groundwater encountered	
TP-29	0-1 1-1.5 1.5-2.5 2.5-3	RED SANDY CLAY (CL), soft to medium stiff, dry to moist, with gravel RED SILTY GRAVEL (GM), dense, moist, with sand, spheroidally weathered dacite cobbles in a soil matrix RED-BROWN CLAY (CH), hard, moist, with gravel, vertical pressure facets ORANGE-BROWN VOLCANIC AGGLOMERATE, very hard, moderately strong, moderately weathered. No Groundwater encountered	
TP-30	0-3	RED-BROWN SANDY CLAY (CL), soft, weak and porous to 2', hard, clast-supported 2' to 3', dry to moist, with cobbles and boulders of very hard, very strong basalt; digging refusal in boulders at 3' No Groundwater encountered	

OTHER AREAS - TEST PITS TP-31 THROUGH TP-45

Test Pit #	Depth (ft.)	Description	NOA tested/detected
TP-31	0 – 3 3 - 5	BROWN SILTY SAND (SM), loose to medium dense, dry to moist, with cobbles to boulders of serpentinized greenstone, weak & porous to 1.5', roots to 3' Green serpentinite, extremely closely spaced fractures, moderately hard, moderately strong to strong, moderately to highly weathered. No Groundwater encountered	
TP-32	0 - 1	REDDISH BROWN SANDY CLAY (CL), soft to medium stiff, dry, with cobbles. – Hang-dug pit, no excavator access. Float on surface of gray basalt, closely spaced fractures, hard to very hard, very strong, highly to moderately weathered.	

		No Groundwater encountered	
TP-33	0 – 2	LIGHT BROWN CLAY (CL), soft to medium stiff, dry, with cobbles of very light gray dacite; weak and porous to 1’	
	2 – 3.5	LIGHT GRAY & RED AGGLOMERATE. Light gray DACITE cobbles in a very stiff to hard, red CLAY (CH) matrix. Matrix-supported and highly weathered 1 to 2’; clast-supported below 2’; closely spaced fractures. No Groundwater encountered	
TP-34	0 – 1	BROWN SANDY CLAY (CH), very stiff to hard, dry, with gravel (volcanic, angular clasts); weak and porous; desiccation cracks at surface extend 1.5’ below surface.	
	1 – 3	BLACK CLAY (CH), hard, dry to moist, with black and green greenstone fragments; with vertical pressure facets	
	3 – 5.5	BLACK TO GREEN SERPENTINITE & SERPENTINIZED GREENSTONE, extremely closely spaced fracatures, hard to very hard, strong to very strong, moderate weathering. No Groundwater encountered	
TP-35	0 – 5.5	RED-BROWN SANDY CLAY (CL-CH), stiff, dry, weak to 1’, somewhat porous to 2’, roots to 3’, with coarse sand and gravel. Becomes, hard, less porous at 2’, with increased dacite gravel and cobbles.	
	5.5 - 7	LIGHT GRAY & RED AGGLOMERATE. Light gray DACITE cobbles in a very stiff to hard, red CLAY (CH) matrix. Clast-supported; closely spaced fractures. No Groundwater encountered	
TP-36	0 – 1	BROWN CLAY (CH), very stiff, dry, with sand and gravel, weak and porous to 0.5’, sparse roots	
	1 - 5	BLACK AND GREEN SERPENTINIZED GREENSTONE, extremely closely spaced fractures, sheared texture, friable to moderately hard, moderately strong, highly weathered; completely weathered with soil matrix from 1 to 1.5’. No Groundwater encountered	
TP-37	0 – 1.5	BROWN CLAY (CL), very stiff, dry, weak to 0.5’	
	1.5 – 4.5	VERY DARK BROWN SANDY CLAY (CH), hard, moist, with red volcanic cobbles, with serpentinite gravels, some roots to 3.5’.	
	4.5 – 7	RED-BROWN SANDY CLAY (CH), hard, dry to moist, with serpentinite gravels	
	7	RED-BROWN GREENSTONE/BASALT, closely spaced fractures, hard, moderately strong, highly weathered. No Groundwater encountered	ND (< 0.08%)
TP-38	0 – 1	LIGHT BROWN CLAY (CL), medium stiff, dry, with cobbles, weak and porous, with roots	

	1 – 1.5 1.5 - 4	RED CLAY (CH), hard, moist, with sand and gravel RED VOLCANIC AGGLOMERATE – subangular gravel- to cobble-sized andesite-dacite clasts in a hard, red SANDY CLAY (CH) matrix, matrix-supported; massive, no visible fracturing, moderately hard, moderately strong, moderate weathering, hard digging. No Groundwater encountered	ND (< 0.08%)
TP-39	0 – 1.5 1.5 - 4	DARK BROWN SANDY CLAY (CH), medium stiff to hard, dry to moist, weak and porous to 0.5', with abundant roots throughout, with serpentinite clasts/weathered bedrock surface 1-1.5'. DARK GRAY GREEN SERPENTINIZED GREENSTONE & SERPENTININTE, sheared, closely to extremely closely spaced fractures, moderately hard, weak to moderately strong, highly weathered. No Groundwater encountered	Chrysotile (< 0.08%)
TP-40	0 – 1.5 1.5 - 3	RED-BROWN CLAY (CH), medium stiff to very stiff, moist, with gravels and cobbles of serpentinite GREEN SERPENTINITE, sheared, extremely closely spaced fractures, moderately hard, weak to moderately strong, highly weathered from 1.5' to 2.5', moderately weathered 2.5' to 3', hard digging. No Groundwater encountered	3.92% Chrysotile
TP-41	0 – 1 (locally) 0 – 1.5	RED-BROWN SANDY CLAY (CL), soft, dry, weak and porous, with roots GREEN SERPENTINITE, sheared, closely-spaced fractures, moderately hard, moderately strong, highly weathered 0 to 1', moderately to slightly weathered 1 to 1.5;, digging refusal at 1.5'.	1% Chrysotile
TP-42	0 – 2 2 – 3.5	LIGHT REDDISH-BROWN CLAY WITH SAND (CL), medium stiff, dry, with roots, weak and porous; increased large gravels and small cobbles 1' to 2'. VOLCANIC AGGLOMERATE, closely to very closely spaced fractures, hard to very hard, strong to very strong, large cobble-sized clasts of subangular, spheroidally-weathered basalt; clast-supported. Digging refusal at 3'. No Groundwater encountered	
TP-43	0 – 1.5 1.5 - 2	RED-BROWN SILT (ML), medium stiff, dry, weak and porous throughout GRAY TO PINK TUFF AGGLOMERATE, closely spaced fractures, hard, strong, moderate weathering. No Groundwater encountered	ND (< 0.08%)
TP-44	0 – 1 (locally) 0 – 1.5	LIGHT RED-BROWN SILT (ML), medium stiff, dry, weak and porous GRAY ANDESITE, closely spaced fractures, hard, strong, slightly to	ND (< 0.08%)

		moderately weathered to red-brown on fractures. Digging refusal at 1.5'. No Groundwater encountered	
TP-45	0 – 1 1 - 2	LIGHT RED-BROWN SILT (ML), medium stiff, dry, weak and porous GRAY ANDESITE, closely spaced fractures, hard, strong, highly weathered from 1 to 1.5', slightly to moderately weathered to red-brown on fractures below 1.5'. Digging refusal at 2'. No Groundwater encountered	ND (< 0.08%)

DISCUSSION AND CONCLUSIONS

Geologic Hazards

Serpentinite Bedrock and NOA

The site has areas mapped as having ultramafic bedrock units. Some ultramafic bedrock types contain naturally occurring asbestos. Test pits TP-1, -2, -3, -4, -5, -14, -16, -17, -31, -34, -36, -40, and -41 encountered serpentinite and/or serpentinized greenstone bedrock at depths of 0 to 5 feet. This bedrock could be exposed during grading and can contain naturally occurring asbestos fibers. There are State enforced regulations giving specific measures that must be used during grading to mitigate hazards associated with airborne asbestos particles. If these materials are exposed during grading, we will notify the client and the general contractor of the potential hazard. We recommend you retain certified asbestos personnel to develop a work plan to address airborne asbestos during grading.

Landslides

As discussed previously, landslide/debris/earth flow features have been mapped by others (Dwyer, 1976) at the project site and primarily occur with Franciscan Complex bedrock. Development including roadway and utilities should avoid these areas unless remedial work is performed to stabilize the slopes. Remedial work could include removing the landslide debris and constructing a buttress. In addition, debris/earth flow features can have adverse impact on improvements constructed downslope if the feature were to reactivate. The design level geotechnical studies at each structure location should address these issues in detail.

In general, most of the deposits we interpret to have been emplaced through landslide processes are less than 5 feet thick and consist of angular cobbles within a sandy clay matrix. Often, an old clay slide plane and/or layer of larger cobbles or boulders was observed along the base of the deposit. All of the landslides we observed in test pits are at least dormant, with some being ancient and well-indurated or "healed". The oldest of the landslides exhibits a high degree of cementation and induration, being described as hardpan soil or breccia. In test pits LSTP-3 and LSTP-4, we encountered digging refusal within the well-indurated, ancient landslide deposits. In some areas, the material described as landslide debris may be more colluvial in nature (colluvium is unconsolidated soil and rock material that moves downslope primarily due to gravity rather than saturation, material characteristics, or inherent planes of weakness). However, due to the unconsolidated and geologically young nature of these deposits, loose colluvium may pose similar risks to construction as landslide debris, when disturbed.

The most notable areas in which we anticipate the presence of landslide deposits will be a prominent geotechnical consideration during construction are the landslides mapped at LSTP-15 and -16, -11, -13, -6, and along the main entry road. Separate reports addressing the main entry road, other roads, and the Polo Lodge, respectively, will address these landslides on a case by case basis.

Fault Rupture

We did not observe landforms within the area that would indicate the presence of active faults and the site is not within a current Alquist-Priolo Earthquake Fault Zone. Therefore, we believe the risk of fault rupture at the site is low.

Strong Ground Shaking

Data presented by the Working Group on California Earthquake Probabilities (2002) estimates the chance of one or more large earthquakes (Magnitude 6.7 or greater) in the San Francisco Bay region within the next 30 years to be approximately 62 percent. Therefore, future seismic shaking should be anticipated at the site. It will be necessary to design and construct the proposed structures in strict adherence with current standards for earthquake-resistant construction.

Liquefaction

Liquefaction is a rapid loss of shear strength experienced in saturated, predominantly granular soils below the groundwater level during strong earthquake ground shaking due to an increase in pore water pressure. The occurrence of this phenomenon is dependent on many complex factors including the intensity and duration of ground shaking, particle size distribution and density of the soil. The site contains several isolated areas delineated by Slosson and Associates (1976) as liquefaction study zones, including Bohn Valley, the flat, low-lying area south of McCreary Lake, the small basin surrounding Wildcat Lake, and the low-lying areas surrounding Ink Ranch in the far northeastern corner of the property. Therefore, we judge that there is a moderate potential for liquefaction at the site within these areas. The final geotechnical study should address liquefaction in detail, especially if development is planned in these areas.

Densification

Densification is the settlement of loose, granular soils above the groundwater level due to earthquake shaking. Densification typically occurs in old fills and in soils that if saturated would be susceptible to liquefaction. The final geotechnical study should address densification in detail, especially in areas of planned development.

Lurching

Seismic slope failure or lurching is a phenomenon that occurs during earthquakes when slopes or man-made embankments yield and displace in the unsupported direction. Provided the improvements are located outside areas of identified slope instability and the foundations are installed as recommended herein, and the proposed fills are adequately keyed into underlying bedrock material, as subsequently discussed, we judge the potential for impact to the proposed fills from the occurrence of these phenomena

at the site is low. However, some of these secondary earthquake effects are unpredictable as to location and extent, as evidenced by the 1989 Loma Prieta Earthquake.

Volcanism

The Clear Lake volcanic field has experienced a complex and cyclic eruptive history. The youngest eruptive sequence is dated at 10,000 years old (Miller, 1989; Sims and Rymer, 1975), and fumaroles (gas vents) are active throughout the Clear Lake Basin. These conditions suggest that the Clear Lake Volcanic System is not extinct and future eruptions could occur. Volcanic hazards that may be pertinent to the site area include phreatic and tephra eruptions and surges (Miller, 1989). Volcanic impact could range from inundation by several inches of ash to major ash flow eruptions. Due to the complex nature of the past episodic volcanic activity, no prediction regarding the extent or time of future volcanic activity is available. The risk of impact from volcanism at the site can be further influenced by wind and other climatologic conditions, is consistent with that of other properties in the Clear Lake area, and is not considered to be sufficiently defined to preclude site development.

Flooding and Seiche

Our review of the Federal Emergency Management Agency (FEMA) Flood Zone Maps for Lake County, California, Unincorporated Areas (No. 06033C1000D dated September 26, 2008 and 06033C0900D dated September 30, 2005), indicate that the entire property lies within Zone D, defined as an area of undetermined flood hazards. Evaluation of flooding potential is typically the responsibility of the project civil engineer.

The site includes several lakes ranging greatly in size, and as previously discussed, is susceptible to impact from seismic shaking. Strong, sudden earthquake waves can produce surges in bodies of water (seiches) that can cause damage and flooding similar to the effect of tsunami along the coastline. Site-specific evaluation of seiche impact to the project is beyond the scope of this study.

Expansive Soil

We encountered expansive soils in some of our test pits. Expansive soil is considered a geologic hazard because of the costly damage it causes to structures when its effects are not considered during construction. Expansive surface soils shrink and swell as they lose and gain moisture throughout the yearly weather cycle. Near the surface, the resulting movements can heave and crack lightly loaded shallow foundations, slabs and pavements. The zone of significant moisture variation (active layer) is dependent on the expansion potential of the soil and the extent of the dry season. In the Lake and Napa County area, the active layer is generally considered to range in thickness from about 2 to 3 feet. The detrimental effects of the above-described movements can be reduced by treating or capping the expansive soils during grading, and/or by utilizing foundation systems that either gain support below the active layer, or are designed to move with the soils and bridge the heave effects.

Conclusions and Recommendations

Based upon the results of our geologic data review and reconnaissance, we judge that it is geotechnically feasible to construct the resort. The primary geotechnical considerations and potential mitigating measures recommended for parcel creation, building site development and roadway construction are discussed in the

following sections of the report. These conclusions are preliminary and will need to be verified or modified during final design following detailed site-specific subsurface exploration, laboratory testing and geotechnical engineering evaluations, as recommended herein.

Permanent Cut and Fill Slopes

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. 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.

Landslide Areas

In general, weak landslide/colluvium deposits on the order of 5 to 10 feet thick can be removed during grading and replaced as drained, buttressed fills. Support for new fills or retaining walls can be found below relatively shallow unconsolidated deposits. Cuts within surficial landslide deposits or loose colluvium can be retained, laid back, and/or the unconsolidated deposits removed on slopes steeper than about 5:1, to prevent reactivation of movement. Denuded slopes should be planted with fast-growing plants to stabilize the bare soils. In the ancient landslide explored with test pits LSTP-3, -4, and -5, the landslide debris is so ancient and consolidated that it constitutes supporting material. In this area, and on stable slopes in general, the younger, weak surface soil and colluvium will still need to be reworked if it is to be used for support.

Residence Locations

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 should finalize recommended structural setbacks.

Supplemental Services

We should perform detailed, site-specific geotechnical studies prior to the construction of the different phases of the resort, including access roads, the farmstead, hotels, spa, equestrian center, shops, residences, and other planned features. The studies should include test borings or backhoe pits, laboratory testing and engineering analyses. The geotechnical study should address specific design and locating aspects of each planned structure location and the access road, and the data generated should be incorporated into project plans. The plans should then be reviewed by the geotechnical engineer and /or engineering geologist prior to receiving bids for planned work.

LIMITATIONS

This report has been prepared by RGH for the exclusive use of Lotusland Investment Holdings, Inc. and their consultants to evaluate the geotechnical feasibility of the proposed resort.

Our services consist of professional opinions and conclusions developed in accordance with generally accepted geotechnical engineering principles and practices. We provide no warranty, either expressed or implied. Our conclusions and recommendations are based on the information provided to us regarding the project, the results of our field reconnaissance, data review, and professional judgment. As such, our conclusions and recommendations should be considered preliminary and for feasibility and planning purposes only. Additional subsurface study, such as recommended herein, may reveal conditions different from those inferred by surface observation and data review only. Such subsurface study may warrant a revision to our preliminary conclusions.

Site conditions and cultural features described in the text of this report are those existing at the time of our field exploration in 2018 and 2019, and may not necessarily be the same or comparable at other times.

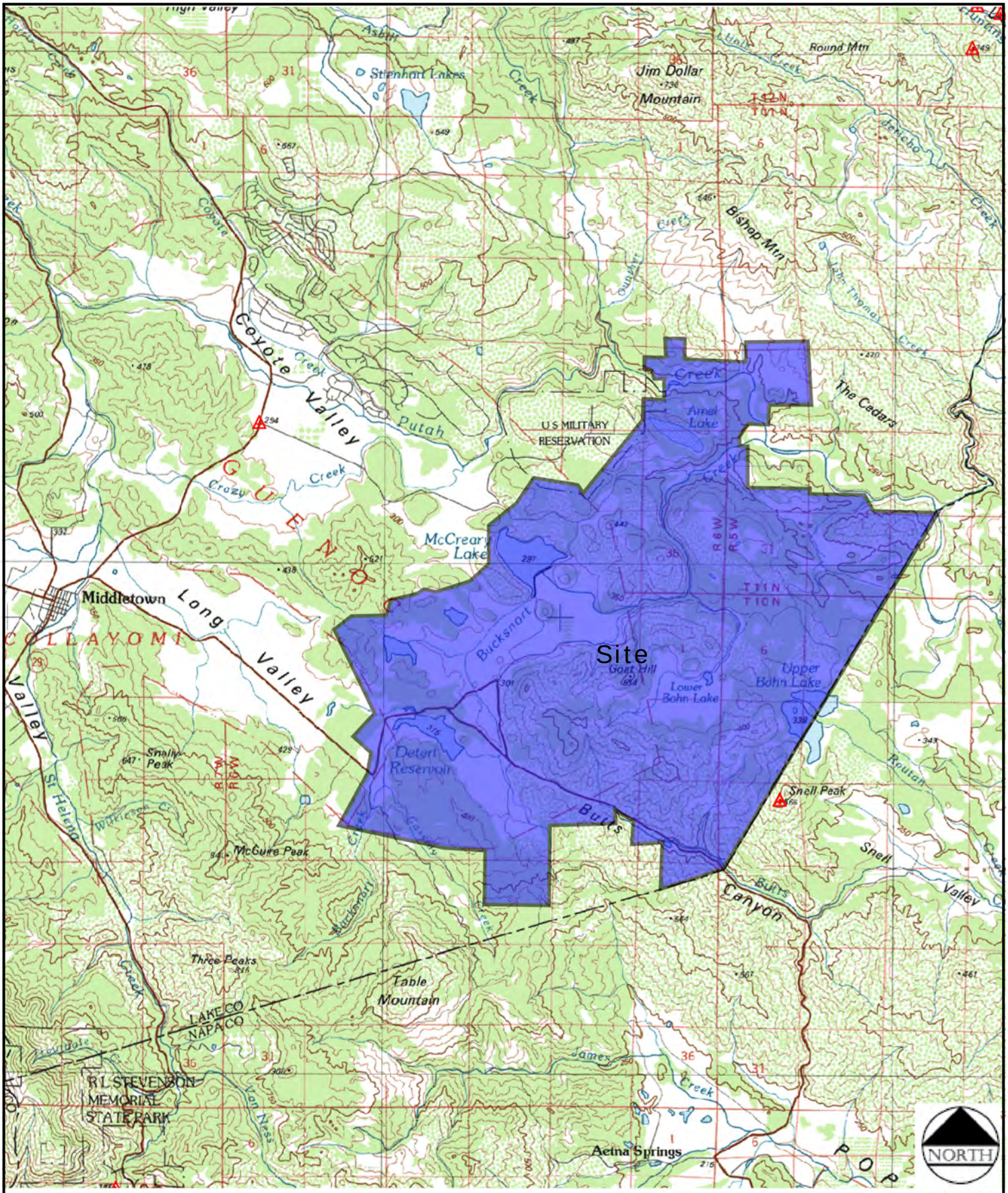
It should be understood that slope failures including landslides, debris flows and erosion are on-going natural processes which gradually wear away the landscape. Residual soils and weathered bedrock can be susceptible to downslope movement, even on apparently stable sites. Such inherent hillside and slope risks are generally more prevalent during periods of intense and prolonged rainfall, which occasionally occur in northern California and/or during earthquakes. Therefore, it must be accepted that occasional slope failure and erosion and deposition of the residual soils and weathered bedrock materials are irreducible risks and hazards of building upon or near the base of any hillside or steep slope throughout northern California. By accepting this report, the client and other recipients acknowledge their understanding and acceptance of these risks and hazards.

Except for the testing for the presence of NOA as discussed herein, the scope of our services did not include an environmental assessment or a study of the presence (or absence) of hazardous, toxic or corrosive materials in the soil, surface water, groundwater or air on, below, or around this site, nor did it include an evaluation or study for the presence (or absence) of wetlands.

APPENDIX A – PLATES

LIST OF PLATES

Plate 1	Site Location Map
Plate 2	Exploration Plan and Mapped Landslide
Plate 3	Map of Published Landslides
Plates 4a through 4e	Aerial Images with Landslide Areas
Plate 5	Landslide Identification Chart
Plate 6	Soil Classification smf Kry To Test Data
Plate 7	Engineering Geology Rock Terms



Reference: Maptech Topoquad

Scale: 1:100,000

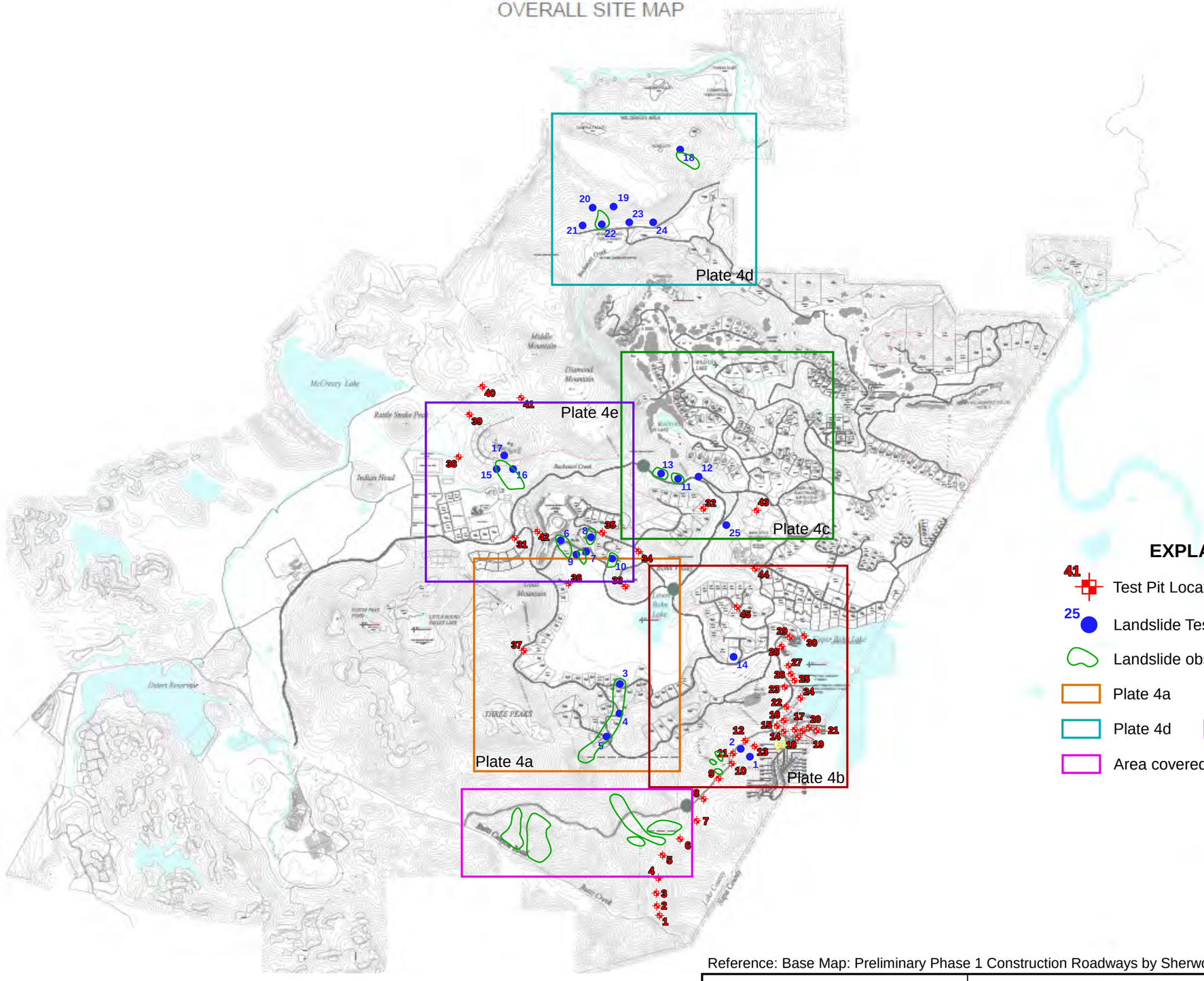
RGH
CONSULTANTS

Job No: 7192.04.01.3 | Date: DEC 2019

SITE LOCATION MAP
MAHA Resort at Guenoc Valley
22000 Butts Canyon Road
Middletown, California

PLATE
1

OVERALL SITE MAP



EXPLANATION

- 41 — Test Pit Location and Number
- 25 — Landslide Test Pit Location and Number (LSTP)
- Landslide observed/mapped by RGH
- Plate 4a
- Plate 4b
- Plate 4c
- Plate 4d
- Plate 4e
- Area covered in detail in Main Entry Road Report

Reference: Base Map: Preliminary Phase 1 Construction Roadways by Sherwood Design Engineers Not To Scale

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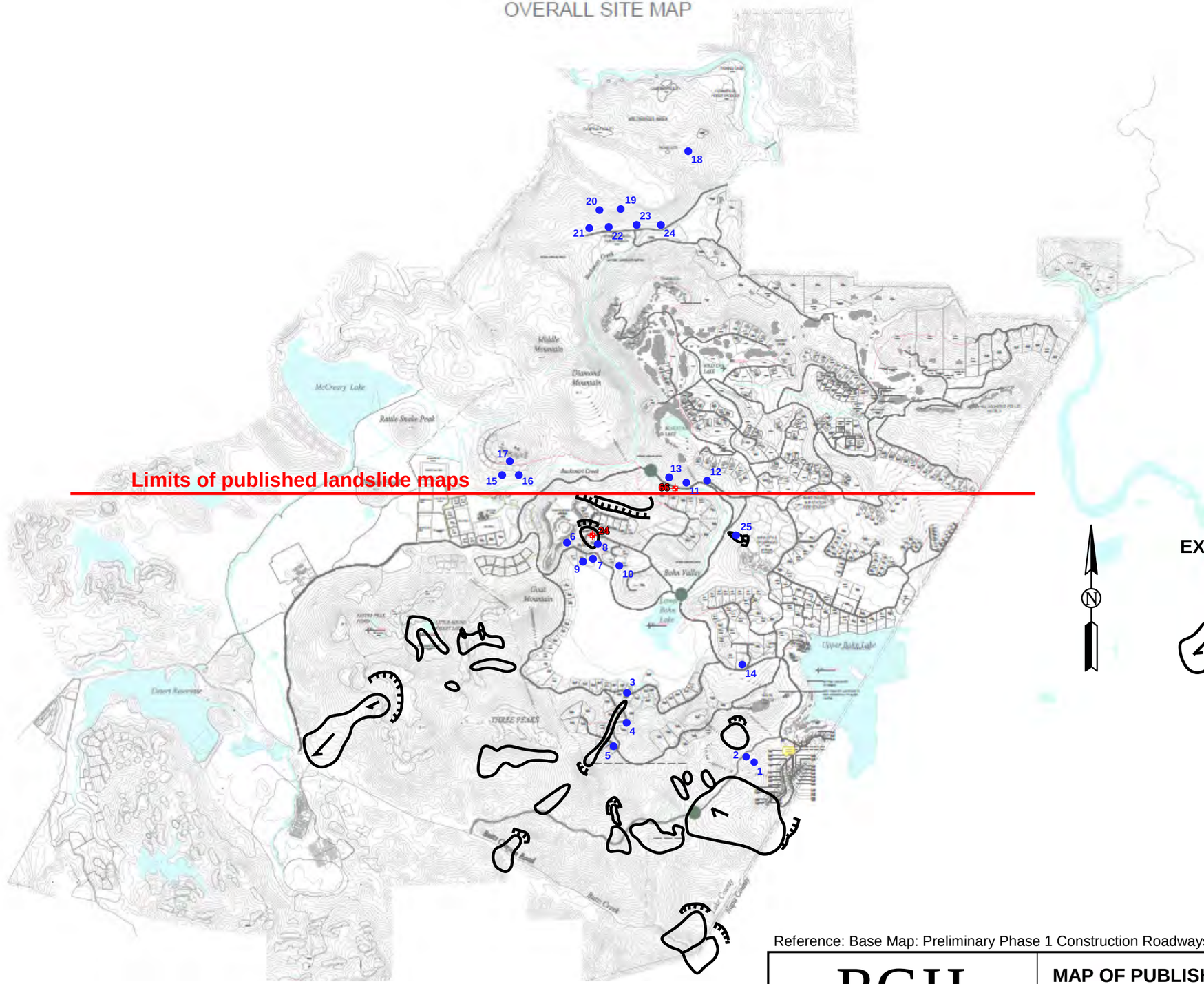
Job No: 7192.04.01.3 Date: DEC 2019

EXPLORATION PLAN WITH LANDSLIDE MAPPING
MAHA Resort at Guenoc Valley
22000 Butts Canyon Road
Middletown, California

PLATE 2

OVERALL SITE MAP



N

EXPLANATION

Approximate location of published landslide and direction of movement (Dwyer, 1976)

66 Road Test Pit Location and Number (TPR)

25 Landslide Test Pit Location and Number (LSTP)

Reference: Base Map: Preliminary Phase 1 Construction Roadways by Sherwood Design Engineers Not To Scale

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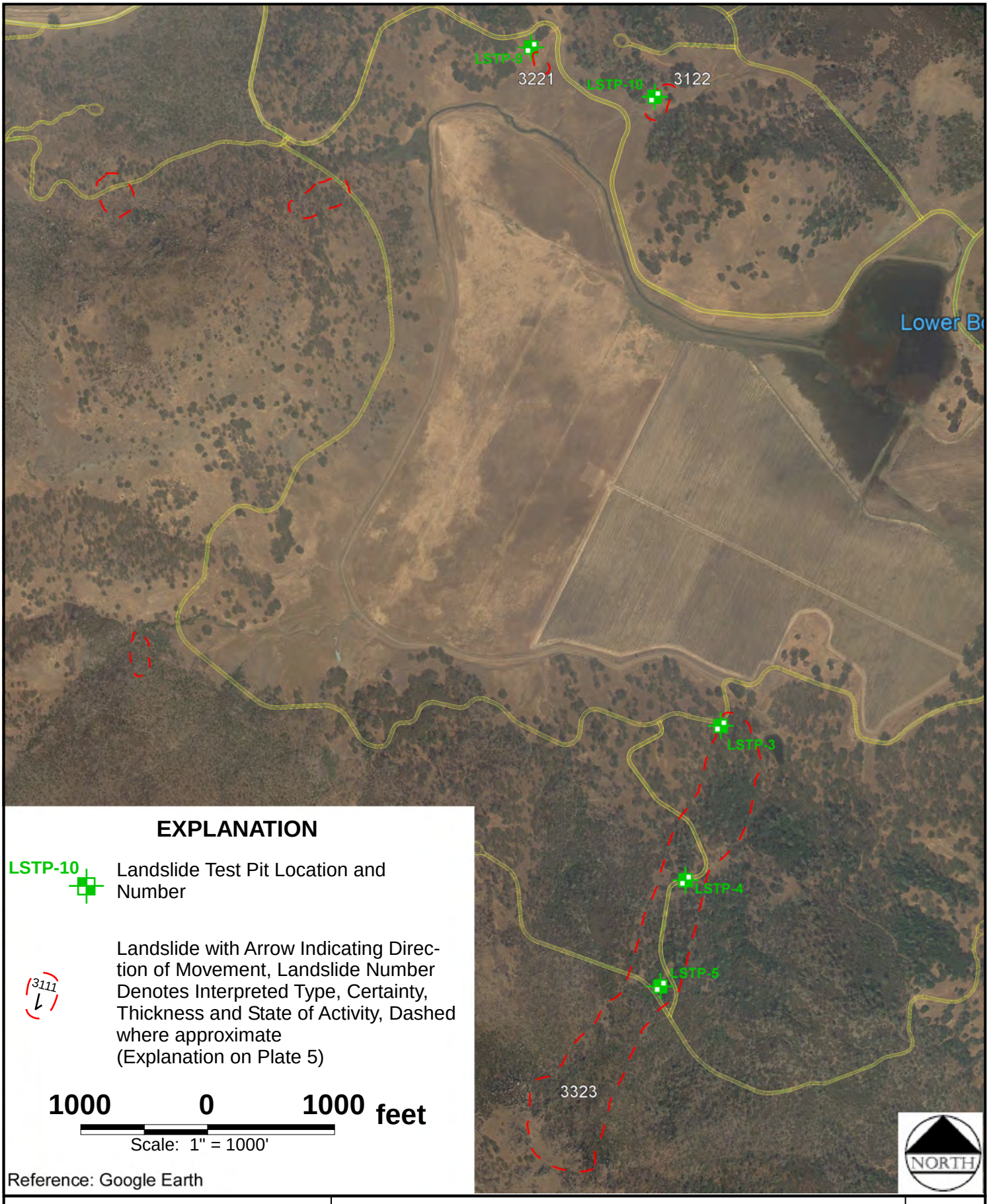
Job No: 7192.04.01.3 Date: DEC 2019

MAP OF PUBLISHED LANDSLIDES
MAHA Resort at Guenoc Valley
22000 Butts Canyon Road
Middletown, California

PLATE
3



EXPLANATION

LSTP-10 — Landslide Test Pit Location and Number

3111 — Landslide with Arrow Indicating Direction of Movement, Landslide Number Denotes Interpreted Type, Certainty, Thickness and State of Activity, Dashed where approximate (Explanation on Plate 5)

1000 0 1000 feet

Scale: 1" = 1000'

Reference: Google Earth

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Job No: 7192.04.01.3 | Date: DEC 2019

AERIEAL IMAGES OF LANDSLIDE AREAS

MAHA Resort at Guenoc Valley
2200 Butts Canyon Road
Middletown, California

PLATE 4a

EXPLANATION

LSTP-14 Landslide Test Pit Location and Number

3111 Landslide with Arrow Indicating Direction of Movement, Landslide Number Denotes Interpreted Type, Certainty, Thickness and State of Activity, Dashed where approximate (Explanation on Plate 5)

1000 0 1000 feet

Scale: 1" = 1000'

NORTH

Reference: Google Earth

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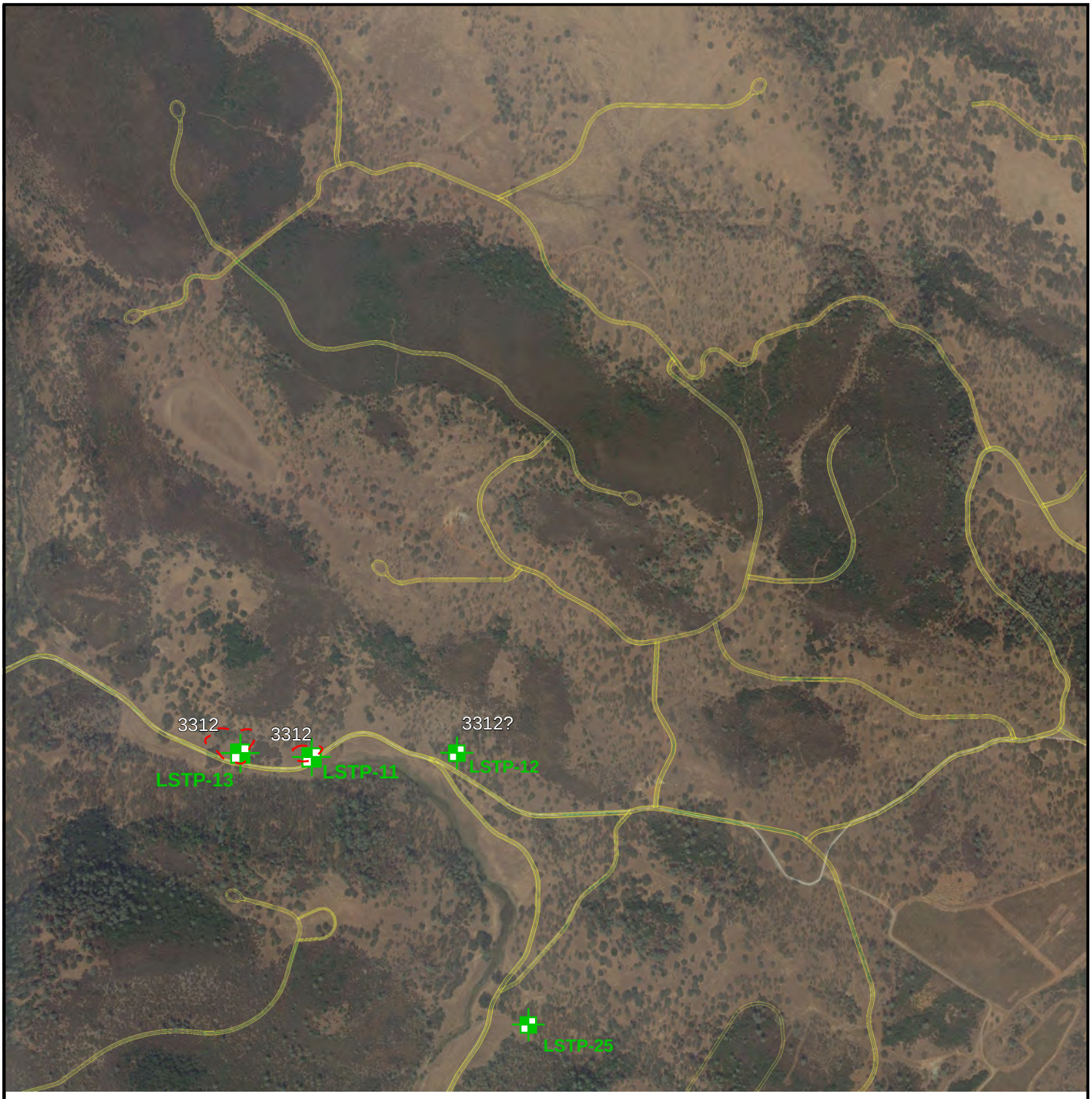
Job No: 7192.04.01.03 | Date: DEC 2019

AERIAL IMAGES OF LANDSLIDE AREAS
MAHA Resort at Guenoc Valley
22000 Butts Canyon Road
Middletown, California

PLATE
4b



EXPLANATION

LSTP-25 Landslide Test Pit Location and Number

3111 Landslide with Arrow Indicating Direction of Movement, Landslide Number Denotes Interpreted Type, Certainty, Thickness and State of Activity, Dashed where approximate (Explanation on Plate 5)

1000 0 1000 feet

Scale: 1" = 1000'

NORTH

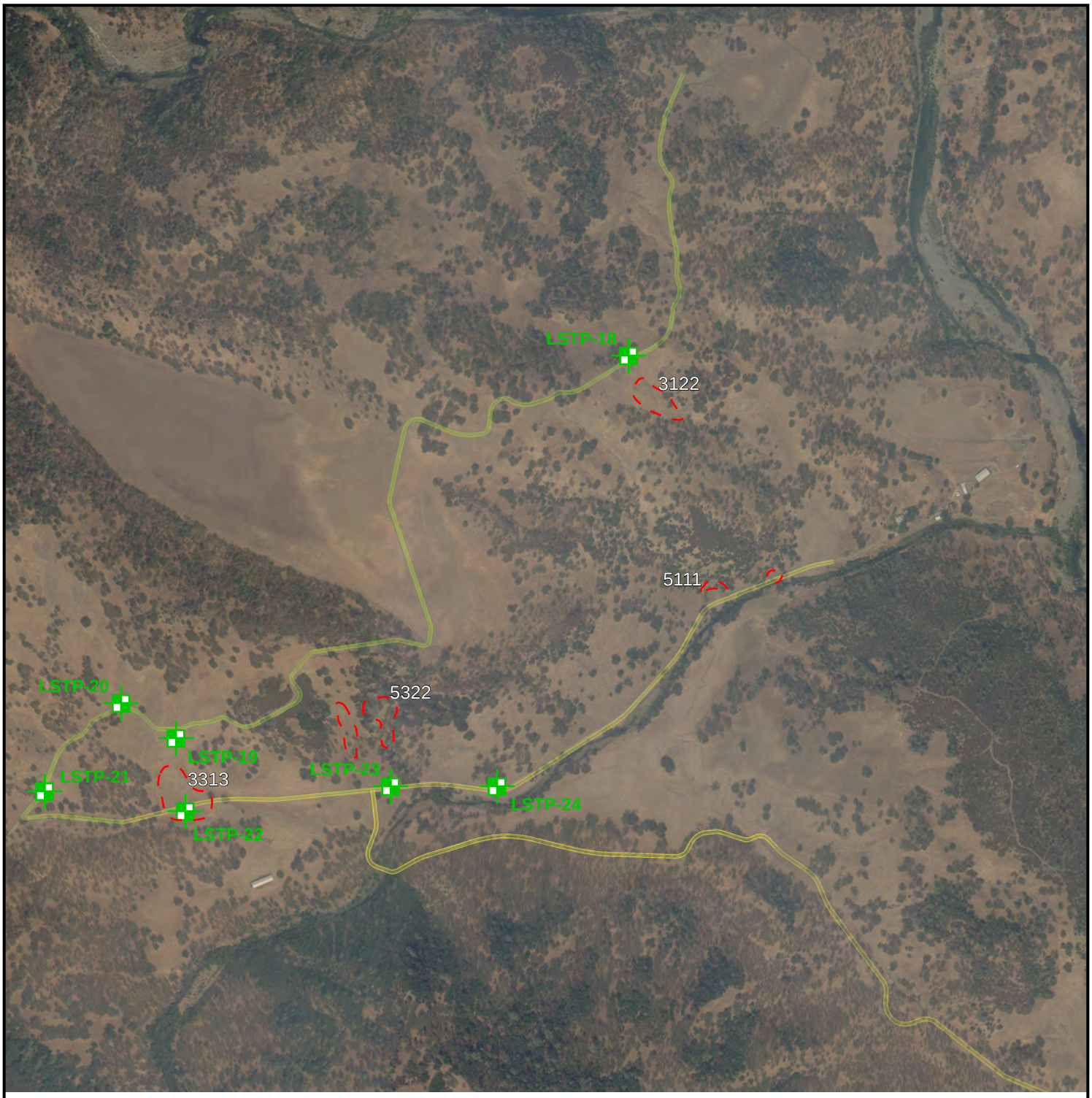
Reference: Google Earth

RGH CONSULTANTS

Job No: 7192.04.01.03 | Date: DEC 2019

AERIAL IMAGES OF LANDSLIDE AREAS
MAHA Resort at Guenoc Valley
22000 Butts Canyon Road
Middletown, California

PLATE
4c



EXPLANATION

LSTP-24 Landslide Test Pit Location and Number

3111 Landslide with Arrow Indicating Direction of Movement, Landslide Number Denotes Interpreted Type, Certainty, Thickness and State of Activity, Dashed where approximate (Explanation on Plate 5)

1000 0 1000 feet

Scale: 1" = 1000'

NORTH

Reference: Google Earth

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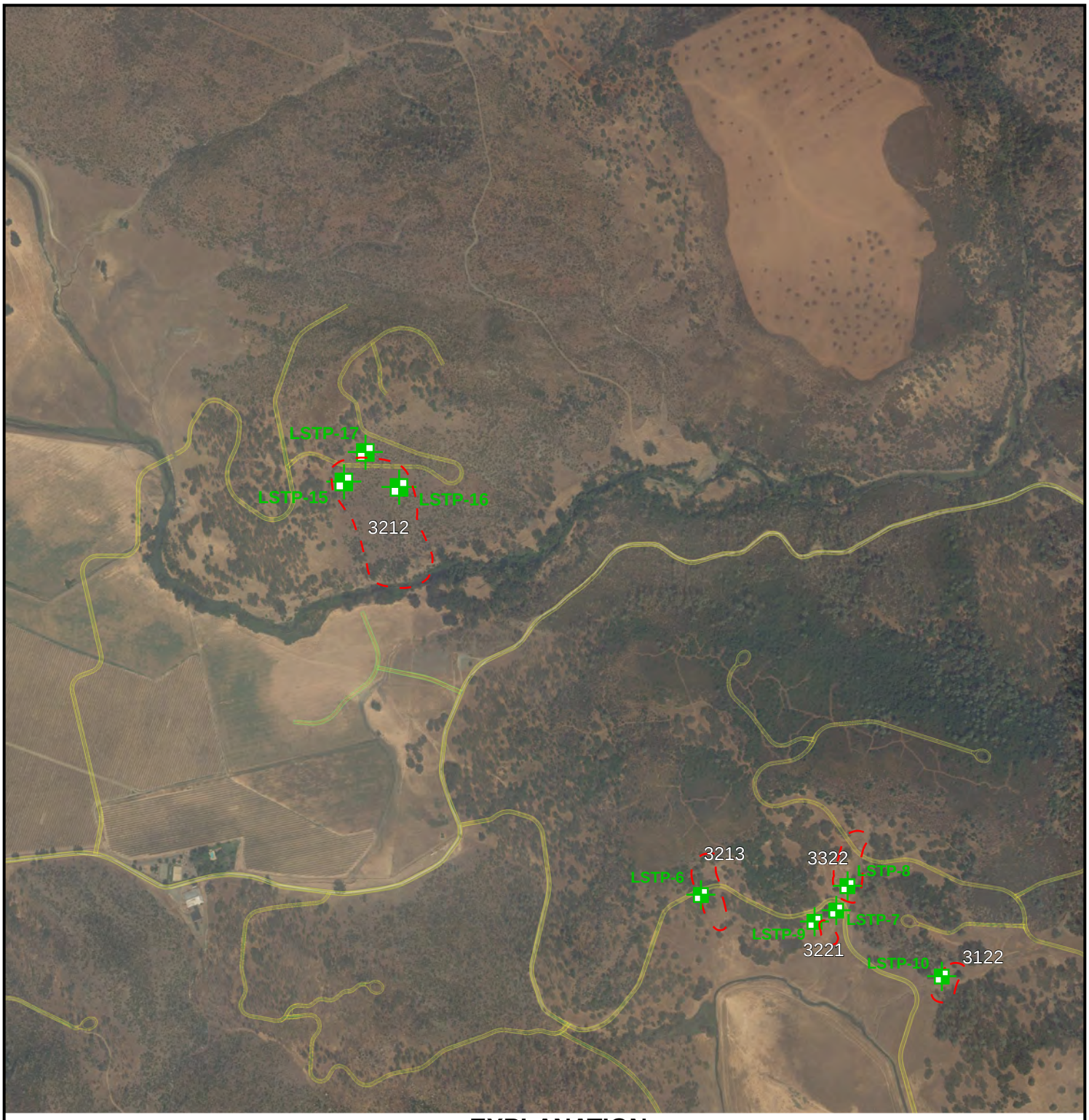
Job No: 7192.04.01.03 | Date: DEC 2019

AERIAL IMAGES OF LANDSLIDE AREAS
MAHA Resort at Guenoc Valley
22000 Butts Canyon Road
Middletown, California

PLATE
4d



EXPLANATION

LSTP-17 Landslide Test Pit Location and Number

3111 Landslide with Arrow Indicating Direction of Movement, Landslide Number Denotes Interpreted Type, Certainty, Thickness and State of Activity, Dashed where approximate (Explanation on Plate 5)

1000 0 1000 feet

Scale: 1" = 1000'

NORTH

Reference: Google Earth

RGH CONSULTANTS

Job No: 7192.04.01.3 | Date: DEC 2019

AERIAL IMAGES OF LANDSLIDE AREAS
MAHA Resort at Guenoc Valley
22000 Butts Canyon Road
Middletown, California

PLATE
4e

Landslide Identification Nomenclature *

Type of Landslide Movement

1	Rotational (Earth Slump)	Movement due to forces that cause a turning moment about a point above the center of gravity of the unit.
2	Translational	Movement predominantly along more or less planar or gently undulatory surfaces.
3	Debris Flow	Rapid movement (50 to 80 kph) within displaced mass such that the form taken by moving material or the apparent distribution of velocities and displacements resemble those of viscous fluids.
4	Earth Flow	Downslope viscous flow of fine grained materials that have been saturated and moves under the pull of gravity. Typically slow moving (a few meters per day or less).
5	Debris Slide	Unconsolidated rock and soil moved downslope along a relatively shallow failure plane
6	Rock Fall	Fragments of rock detached by toppling or falling that falls along a vertical or sub-vertical cliff.
C	Many landslides consist of one or more type of movement. The listed type of movement is modified with a "C" to indicate a Complex of landslides.	

Certainty of Landslide Identification

1	Definite
2	Probable
3	Questionable

Estimated Thickness of Landslide Deposits

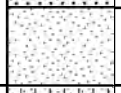
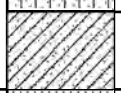
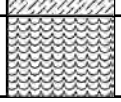
1	Less than 5 feet
2	5 to 20 feet
3	20 to 50 feet
4	Greater than 50 feet

State of Landslide Activity

1	Recently Active	Currently moving or estimated movement within recent years.
2	Dormant	Marginally stable with mature and subdued expression of the landslide. Mostly re-vegetated.
3	Ancient	Most landslide features are eroded. Heavily vegetated.

* The landslide identification mapping is designed for planning purposes only and should not be used in lieu of a detailed site specific investigation. Our mapping should be considered preliminary and for feasibility and planning purposes only. A subsurface study may reveal conditions different from those inferred by surface observations and data review only. Such subsurface study may warrant a revision to our preliminary mapping.

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVEL (LITTLE OR FINES)		GW	WELL-GRADED GRAVEL, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVEL, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVEL WITH FINES (OVER 12% OF FINES)		GM	WELL-GRADED GRAVEL, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GC	CLAYEY GRAVEL, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SAND, GRAVELLY SAND, LITTLE OR NO FINES
				SP	POORLY-GRADED SAND, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (OVER 12% OF FINES)		SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
				SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS — LIQUID LIMIT LESS THAN 50			ML	INORGANICS SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS — LIQUID LIMIT GREATER THAN 50			MH	ORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS AND OTHER SOILS WITH HIGH ORGANIC-CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

KEY TO TEST DATA

Consol - Consolidation
Gs - Specific Gravity
SA - Sieve Analysis
■ - "Undisturbed" Sample
⊠ - Bulk or Disturbed Sample
◥ - Standard Penetration Test
⦸ - Sample Attempt With No Recovery
◧ - Sample Recovered But Not Retained

Shear Strength, psf		Confining Pressure, psf	
Tx	320	(2600)	- Unconsolidated Undrained Traixial
TxCU	320	(2600)	- Consolidated Undrained Triaxial
DS	2750	(2600)	- Consolidated Drained Direct Shear
UC	2000		- Unconfined Compression
FVS	470		- Field Vane Shear
LVS	700		- Laboratory Vane Shear
SS			- Shrink Swell
EXP			- Expansion
P			- Permeability

Note: All strength tests on 2.8-in. or 2.4-in. diameter sample, unless otherwise indicated.

RGH CONSULTANTS

Job No: 7192.04.01.3 | Date: DEC 2019

SOIL CLASSIFICATION AND KEY TO TEST DATA
MAHA Resort at Guenoc Valley
22000 Butts Canyon Road
Middletown, California

PLATE **6**

LAYERING

MASSIVE	Greater than 6 feet
THICKLY BEDDED	2 to 6 feet
MEDIUM BEDDED	8 to 24 inches
THINLY BEDDED	2½ to 8 inches
VERY THINLY BEDDED	¾ to 2½ inches
CLOSELY LAMINATED	¼ to ¾ inches
VERY CLOSELY LAMINATED	Less than ¼ inch

JOINT, FRACTURE, OR SHEAR SPACING

VERY WIDELY SPACED	Greater than 6 feet
WIDELY SPACED	2 to 6 feet
MODERATELY SPACED	8 to 24 inches
CLOSELY SPACED	2½ to 8 inches
VERY CLOSELY SPACED	¾ to 2½ inches
EXTREMELY CLOSELY SPACED	Less than ¼ inch

HARDNESS

Soft - pliable; can be dug by hand

Firm - can be gouged deeply or carved with a pocket knife

Moderately Hard - can be readily scratched by a knife blade; scratch leaves heavy trace of dust and is readily visible after the powder has been blown away

Hard - can be scratched with difficulty; scratch produces little powder and is often faintly visible

Very Hard - cannot be scratched with pocket knife, leaves a metallic streak

STRENGTH

Plastic - capable of being molded by hand

Friable - crumbles by rubbing with fingers

Weak - an unfractured specimen of such material will crumble under light hammer blows

Moderately Strong - specimen will withstand a few heavy hammer blows before breaking

Strong - specimen will withstand a few heavy ringing hammer blows and usually yields large fragments

Very Strong - rock will resist heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments

DEGREE OF WEATHERING

Highly Weathered - abundant fractures coated with oxides, carbonates, sulphates, mud, etc., thorough discoloration, rock disintegration, mineral decomposition

Moderately Weathered - some fracture coating, moderate or localized discoloration, little to no effect on cementation, slight mineral decomposition

Slightly Weathered - a few stained fractures, slight discoloration, little or no effect on cementation, no mineral composition

Fresh - unaffected by weathering agents; no appreciable change with depth

APPENDIX B - ASBESTOS REPORT

ASBESTOS TEM LABORATORIES, INC.

CARB Method 435
Polarized Light Microscopy
Analytical Report

Laboratory Job # 1392-00005

630 Bancroft Way
Berkeley, CA 94710
(510) 704-8930
FAX (510) 704-8429

ASBESTOS TEM LABORATORIES, INC

CA DPH ELAP
Lab No. 1866

NVLAP®
NVLAP Lab Code: 101891-0
Berkeley, CA

Nov/13/2018

Travis Whitted
RGH Consultants
1305 North Dutton Avenue
Santa Rosa, CA 95401

RE: LABORATORY JOB #'s: 1392-00005
Polarized light microscopy analytical results for 5 bulk sample(s).
Job Site: 7192.04.01.3
Job No.: Maha Resort Middletown

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with a modified California Air Resources Board (ARB) Method 435 for the determination of asbestos in serpentine aggregate samples.

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Sample preparation follows a standard CARB 435 prep method. The entire sample is dried at 135-150 C and then crushed to ~3/8" gravel size using a Bico Chipmunk crusher. The sample is then pulverized in a Bico Braun disc pulverizer calibrated to produce a nominal 200 mesh final product. Small aliquots are collected from throughout the pulverized material to create three separate microsope slide mounts containing the appropriate refractive index oil. The prepared slides are placed under a polarizing light microscope where standard mineralogical techniques are used to analyze the various materials present, including asbestos. If asbestos is identified and of less than 10% concentration by visual area estimate then an additional five sample mounts are prepared. Quantification of asbestos concentration is obtained using the modified CAL ARB Method 435 point count protocol. For samples observed to contain visible asbestos of less than 10% concentration, a point counting techinique was performed on multiple sample mounts for a total of 800 or 1200 particle points (a variation from the 400 points called for by the standard CARB 435 method) which is detailed on the test report. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

While the CARB 435 method has much to commend it, there are a number of situations where it fails to provide sufficient accuracy to make a definitive determination of the presence/absence of asbestos and/or an accurate count of the asbestos concentration present in a given sample. These problems include, but are not limited to, 1) statistical uncertainty with samples containing <1% asbestos when too few particles are counted, 2) definitive identification and discrimination between various fibrous amphibole minerals such as tremolite/actnolite/ hornblende and the "Libby amphiboles" such as tremolite/winchite/richterite/arfvedsonite, and C) small asbestiform fibers which are near or below the resolution limit of the PLM microscope such as those found in various California coast range serpentine bodies. In these cases, further analysis by transmission electron microscopy (TEM) is recommended to obtain a more accurate result.

Sincerely Yours,

ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
CARB 435 ANALYTICAL REPORT

Contact: Travis Whitted

Address: RGH Consultants
1305 North Dutton Avenue
Santa Rosa, CA

Samples Submitted: 5

Samples Analyzed: 5

Job Site / No. Maha Resort Middletown
7192.04.01.3

Report No. 361417

Date Submitted: Nov-08-18

Date Reported: Nov-13-18

SAMPLE ID	ASBESTOS POINTS COUNTED	ASBESTOS %	ASBESTOS TYPE	LOCATION / DESCRIPTION
TP-1-TP-6	26	2.17%	Chrysotile	Chrysotile and Antigorite fibers observed
Lab ID # 1392-00005-001	1200 - Total Points			
TP-7-TP-12		<0.08%	None Detected	No Asbestos Detected
Lab ID # 1392-00005-002	1200 - Total Points			
TP-14@15	19	1.58%	Chrysotile	Chrysotile and Antigorite fibers observed
Lab ID # 1392-00005-003	1200 - Total Points			
TP-16@1'-2'		<0.08%	None Detected	No Asbestos Detected
Lab ID # 1392-00005-004	1200 - Total Points			
TP-17@5'		<0.08%	None Detected	No Asbestos Detected
Lab ID # 1392-00005-005	1200 - Total Points			
Lab ID #	- Total Points			
Lab ID #	- Total Points			
Lab ID #	- Total Points			
Lab ID #	- Total Points			
Lab ID #	- Total Points			

QC Reviewer R. McBride

Analys Jo Ann Hurtado

ASBESTOS TEM LABORATORIES, INC.

CARB Method 435
Polarized Light Microscopy
Analytical Report

Laboratory Job # 1392-00006

630 Bancroft Way
Berkeley, CA 94710
(510) 704-8930
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ASBESTOS TEM LABORATORIES, INC

CA DPH ELAP
Lab No. 1866

NVLAP®
NVLAP Lab Code: 101891-0
Berkeley, CA

Dec/07/2018

Travis Whitted
RGH Consultants
1305 North Dutton Avenue
Santa Rosa, CA 95401

RE: LABORATORY JOB #'s: 1392-00006
Polarized light microscopy analytical results for 9 bulk sample(s).
Job Site: 7192.04.01.3
Job No.: MAHA Resort Middletown

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with a modified California Air Resources Board (ARB) Method 435 for the determination of asbestos in serpentine aggregate samples.

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Sample preparation follows a standard CARB 435 prep method. The entire sample is dried at 135-150 C and then crushed to ~3/8" gravel size using a Bico Chipmunk crusher. The sample is then pulverized in a Bico Braun disc pulverizer calibrated to produce a nominal 200 mesh final product. Small aliquots are collected from throughout the pulverized material to create three separate microsope slide mounts containing the appropriate refractive index oil. The prepared slides are placed under a polarizing light microscope where standard mineralogical techniques are used to analyze the various materials present, including asbestos. If asbestos is identified and of less than 10% concentration by visual area estimate then an additional five sample mounts are prepared. Quantification of asbestos concentration is obtained using the modified CAL ARB Method 435 point count protocol. For samples observed to contain visible asbestos of less than 10% concentration, a point counting techinique was performed on multiple sample mounts for a total of 800 or 1200 particle points (a variation from the 400 points called for by the standard CARB 435 method) which is detailed on the test report. The data is then compiled into standard report format and subjected to a thorough quality assurance check before the information is released to the client.

While the CARB 435 method has much to commend it, there are a number of situations where it fails to provide sufficient accuracy to make a definitive determination of the presence/absence of asbestos and/or an accurate count of the asbestos concentration present in a given sample. These problems include, but are not limited to, 1) statistical uncertainty with samples containing <1% asbestos when too few particles are counted, 2) definitive identification and discrimination between various fibrous amphibole minerals such as tremolite/actnolite/ hornblende and the "Libby amphiboles" such as tremolite/winchite/richterite/arfvedsonite, and C) small asbestiform fibers which are near or below the resolution limit of the PLM microscope such as those found in various California coast range serpentine bodies. In these cases, further analysis by transmission electron microscopy (TEM) is recommended to obtain a more accurate result.

Sincerely Yours,

ASBESTOS TEM LABORATORIES, INC.

POLARIZED LIGHT MICROSCOPY
CARB 435 ANALYTICAL REPORT

Contact: Travis Whitted

Address: RGH Consultants
1305 North Dutton Avenue
Santa Rosa, CA

Samples Submitted: 9

Samples Analyzed: 9

Job Site / No. MAHA Resort Middletown
7192.04.01.3

Report No. 361758
Date Submitted: Dec-03-18
Date Reported: Dec-07-18

SAMPLE ID	ASBESTOS POINTS COUNTED	ASBESTOS %	ASBESTOS TYPE	LOCATION / DESCRIPTION
TP-37@7'		<0.08%	None Detected	No Asbestos Detected
Lab ID # 1392-00006-001	1200 - Total Points			
TP-38@4'		<0.08%	None Detected	No Asbestos Detected
Lab ID # 1392-00006-002	1200 - Total Points			
TP-39@1S-4'		<0.08%	Chrysotile	Trace Chrysotile fibers detected.
Lab ID # 1392-00006-003	1200 - Total Points			
TP-40@1S-3'	47	3.92%	Chrysotile	Chrysotile fibers detected.
Lab ID # 1392-00006-004	1200 - Total Points			
TP-41@0-1S	12	1 %	Chrysotile	Chrysotile fibers detected.
Lab ID # 1392-00006-005	1200 - Total Points			
112018A@surface		<0.08%	Chrysotile	Trace Chrysotile fibers detected.
Lab ID # 1392-00006-006	1200 - Total Points			
TP-43@1S		<0.08%	None Detected	No Asbestos Detected
Lab ID # 1392-00006-007	1200 - Total Points			
TP-44@1'		<0.08%	None Detected	No Asbestos Detected
Lab ID # 1392-00006-008	1200 - Total Points			
TP-45@1'-2'		<0.08%	None Detected	No Asbestos Detected
Lab ID # 1392-00006-009	1200 - Total Points			
Lab ID #	- Total Points			

QC Reviewer R. McBride

Analys Jo Ann Hunter

APPENDIX C - REFERENCES

Bortugno, E.J., 1982, Map Showing Recency of Faulting, Santa Rosa Quadrangle in Wagner and Bortugno, Geologic Map of the Santa Rosa Quadrangle: California Division of Mines and Geology, Regional Geologic Map Series, Map No. 2A, Santa Rosa Quadrangle, Scale 1:250,000.

Bryant, W.A., and Hart, E.W., Interim Revision 2007, Fault-Rupture Zones in California; California Geological Survey, Special Publication 42, p. 21 with Appendices A through F.

Dwyer, M.J., Noguchi, N., and O'Rourke, J., 1976, Reconnaissance Photo-Interpretation Map of Landslides in 24 Selected 7.5-Minute Quadrangles in Lake, Napa, Solano, and Sonoma Counties, California: U.S. Geological Survey OFR 76-74, 25 Plates, Scale 1:24,000.

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Miller, D.C., 1989, Potential Hazards from Future Volcanic Eruption in California, United States Geologic Survey Bulletin 1847, p. 17.

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.

U.S. Department of Housing and Urban Development, Federal Insurance Administration, 1980, Flood Insurance Rate Map, Sonoma County, California, Community Panel Number No. 06033C1000D dated September 26, 2008 and 06033C0900D dated September 30, 2005.

APPENDIX D - DISTRIBUTION

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s:\project files\7001-7250\7192\7192.04.01.2 maha resort preliminary gs\7192 prelim gs 1.doc

APPENDIX GPCT

GENERAL PLAN CONSISTENCY TABLE

Appendix GPCT

Policy Analyses

Guenoc Valley Mixed Use Planned Development Project
Consistency with Lake County
General Plan Policies

An EIR must discuss "any inconsistencies between the proposed project and the applicable general plans." CEQA Guidelines,§15125(d). For the Proposed Project, the applicable plan is the Lake County General Plan. The focus of this appendix is the identification of policies in the General Plan that apply to the proposed land uses of this particular project. This appendix does not discuss policies that apply to the County itself or policies that apply only to some other type of land use not included in the proposed project. Policies that are not applicable to the proposed project for either reason have not been included in the following discussion.

While this EIR analyzes the Proposed Project's consistency with applicable policies, it is the County Board of Supervisors who will make the ultimate determination in regard to the Proposed Project's consistency with the General Plan.

TABLE 1
LCGP CONSISTENCY ANALYSIS – LAND USE AND AGRICULTURE

General Plan Policy	Consistency Determination	Analysis
Land Use (LU) Element		
Growth and Development		
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.	Consistent	The Proposed Project is designed with low impact development and smart growth policies. The resort features clustered development, preservation of agricultural and cultural heritage, landscape preservation, diversification of the Lake County housing stock, and conservation of open space. The resort itself would be bikeable, feature active and passive use trails, and create a community center open to the public.
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.	Consistent	The Proposed Project is a planned mixed-use resort development that satisfies the County's desire to support innovative ideas and land use techniques.
Policy LU-1.3: The County shall prevent intrusion of new compatible land uses into existing community areas.	Consistent	The Proposed Project would not be introducing new compatible land uses into an existing community setting because the off-site workforce housing would be residential and therefore match the current land use in Middletown. The Guenoc Valley Site is not within an existing community area.
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.	Consistent	The Proposed Project would offer mixed-use development including retail, residential, and agricultural.
Urban/Rural Boundary		
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.	Consistent	The Proposed Project would be entirely self-sufficient and would therefore provide adequate infrastructure for its capacity requirements.
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.	Consistent	The proposed residential communities would be developed in clusters and preserve approximately 2,765 acres of designated open space.

General Plan Policy	Consistency Determination	Analysis
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 (e.g. topography). Buffers shall be provided by the new proposed development.	Consistent	The Proposed Project utilizes native landscape plantings as buffers, stormwater mitigation, and fire preparedness. Natural buffers would be implemented between agricultural and non-agricultural uses.
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). These Community Growth Boundaries are located in the following communities: Clearlake Oaks, Clearlake Riviera, Coyote Valley, Kelseyville, Lower Lake, Lucerne, Middletown, Nice, North Lakeport, Soda Bay, South Lakeport, and Upper Lake.	Consistent	The Middletown Housing Site is within the Community Growth Boundary. Although the Guenoc Valley Site is not within a Community Growth Boundary, the development on this site would be Resort Commercial with low housing density.
Residential Development		
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.	Consistent	See **Policy LU-2.1** for infrastructure. The Proposed Project would be located in close proximity to existing recreational opportunities and services in addition to creating its own. The Proposed Project would create job opportunities for Lake County.
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.	Consistent	This EIR includes an analysis of the suitability of the development areas, including water/waste, accessibility, biological resources, and 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.	Consistent	The circulation and fire management plan (**FIG 2-10**) shows clustered development with accessible roads and trails.
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.	Consistent	The Proposed Project's Agricultural Preserve Combining District would not include residential use exceeding single-family residences, as described in **Appendix GVD**. Furthermore, agricultural areas would only be utilized for agricultural related purposes in addition to agricultural tourism and 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.	Consistent	The Proposed Project's residential areas will be surrounded in open-space and have access to on-site boutique shops, restaurants, a market, entertainment areas, and recreational opportunities, such as hiking, boating, and horseback riding.
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:	Consistent	The Proposed Project includes an amendment of the Guenoc Valley Site land use designation to Resort Commercial. New road improvements include entrances on Butts Canyon Road consistent with county standards.

General Plan Policy	Consistency Determination	Analysis
• average slopes must be below 30 percent 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.	Consistent	The Proposed Project does not include lands designated Resource Conservation in forestry production areas.
Commercial Development		
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	Consistent	The Proposed Project commercial developments would include centrally located market area featuring local produce, restaurants, winery, entertainment areas, and more. These businesses and areas would be available to the public, which would be accessible through Butts Canyon Road and ample parking would be provided for visitors.

General Plan Policy	Consistency Determination	Analysis
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.	Consistent	The Proposed Project would be accessed through a major collector road, Butts Canyon Road, and Butts Canyon Road connects to the SR-29 and SR-175 in less than 5 miles to the east of the Guenoc Valley Site.
Economic Development		
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.	Consistent	The Proposed Project will contribute to the diversification of the County's economic base through the development of a luxury agro-tourism resort that will include amenities such as vacation rentals, the Farmstead community center that will feature an amphitheater, farmers markets, and retail space.
Policy LU-6.4: The County shall encourage high quality development projects that will entice visitors, businesses, and permanent residents to the area.	Consistent	The Proposed Project intends to serve guests from all over the world by creating a luxury agro-tourism resort
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.	Consistent	The Proposed Project would attract high income multi-day and long-term visitors through fractioned ownership options, boutique hotel options, and upscale resort amenities including spas, recreational uses, and a winery.
Policy LU-6.7: The County shall encourage community and regional events and recreational activities to bolster community pride and identification	Consistent	The Farmstead community center provides event space for outdoor concerts in the amphitheater, farmers markets, and retail spaces. The Resort also prioritizes outdoor recreational trails and activities creating community pride and expanding existing community outdoor-use space.
Policy LU-6.8: The County shall promote agro-tourism, eco-tourism, and outdoor recreation in Lake County to outside markets	Consistent	The Proposed Project promotes agro-tourism and outdoor recreation to Lake County and 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	Consistent	The Proposed Project would include Resort Commercial development compatible with surrounding land uses. The residential development supports the agro-tourism facilities.

General Plan Policy	Consistency Determination	Analysis
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 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	Consistent	The Proposed Project includes primary and secondary recreational trails for pedestrian access throughout the Guenoc Valley Site (**Figure 2-9**)
Design		
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.	Consistent	The Proposed Project includes low impact development with low densities. The GVD zoning district would restrict heights to 40 feet (**Appendix GVD**). Additionally, the Proposed Project includes design features with high-end farm architecture to emanate the community's character.
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.	Consistent	The Proposed Project includes distinct clusters of development that are designed in response to the existing natural landscape.
Policy LU-7.9: The County shall emphasize each community's natural features as the visual framework for new development and redevelopment	Consistent	The Proposed Project includes designated open space and landscaping zones to highlight the existing natural features.
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.	Consistent	The Proposed Project would restrict building heights and include clustered development (see **Appendix DG**). Reservoirs on the Guenoc Valley Site would be visual features of proposed development.
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.	Consistent	The GVD Zoning Ordinance Design Guidelines (**Appendix DG**) includes shielding and fencing of utility facilities and structures from the public viewshed.
Policy LU-7.17: The County shall provide code enforcement that protects the cultural and historic value of existing places and	Consistent	The Proposed Project includes efforts to protect culturally important resources.

General Plan Policy	Consistency Determination	Analysis
buildings. This should include demolition by neglect, lack of maintenance, overgrown landscaping, and inappropriate storage of items that may create a public safety or hazard issue.		
Housing Element (HE)		
New Construction		
Policy HE-1.9: The County shall place a priority on the development of new rental housing.	Consistent	On and off-site workforce housing would be leased to employees and local residents and would therefore increase the amount of new rental housing in the County.
Policy HE-1.14: The County shall promote infill development on appropriate sites in existing neighborhoods and reuse underutilized parcels throughout the county.	Consistent	This policy is not applicable to the Guenoc Valley Site because it is not located within an existing neighborhood. However, the Middletown Housing Area Site is located within an existing neighborhood and would constitute infill development.
Policy HE-1.15: Consistency with Surrounding Neighborhoods The County shall ensure that infill development maintains or enhances the positive qualities of the surrounding neighborhoods.	Consistent	This policy is not applicable to the Guenoc Valley Site because it does not constitute as infill development. However, the Middletown Housing Area site is located within an existing neighborhood and would constitute infill development. The Middletown Housing Area site would be generally consistent with the surrounding neighborhoods.
Energy Conservation and Production		
Policy HE-6.1: 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.	Consistent	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: 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.	Consistent	The Proposed Project would comply with all Title 24 energy efficiency standards and all electricity would be provided from on-site solar arrays.
Jobs / Housing Balance		
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.	Consistent	The Proposed Project would develop workforce housing, and increase the supply and diversity of housing stock options within Lake County that match the job income and affordability levels.
Public Facilities and Services (PFS) Element		
General		
Policy PFS-1.3: The County shall ensure that proposed developments do not create significant adverse impacts on existing natural or manmade 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.	Consistent	The Proposed Project would fund any necessary infrastructure improvements through mitigation measures in the EIR or through the Development Agreement.
Water Supply		

General Plan Policy	Consistency Determination	Analysis
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.	Consistent	The Proposed Project includes mitigation for safe yield groundwater well monitoring to ensure less-than-significant effects to groundwater supplies.
Policy PSF-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	Consistent	As analyzed in Section 3.14 Utilities, with construction of the Proposed Project, there would be adequate water and wastewater treatment capacity
Policy PFS-2.7: The County shall give priority to water conservation measures over development of additional water sources where mutually exclusive.	Consistent	The Proposed Project will include water efficient appliances
Policy PFS-2.8: Proposed new development exceeding twenty (20) dwelling units using surface water or ten (10) dwelling units using groundwater (or residential equivalent dwelling units) shall be required to prepare a water supply adequacy study that identifies where the source water is to come from as well as to the sustainability of the source water. The study shall be required prior to considering the application complete for processing in order to be considered during the CEQA review process.	Consistent	**Appendix WSA** is a water supply analysis for the Proposed Project.
Wastewater		
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.	Consistent	Clustered residential and commercial development on the Guenoc Valley Site would include package water reclamation plants, sized to accommodate the proposed development. The Applicant would coordinate with the County to ensure septic tanks are compliant with the County's standards.
Policy PFS-3.2: The County should promote and support programs to educate homeowners on the care and maintenance of septic systems.	Consistent	Under the Proposed Project, remote residential properties may have septic systems. Homeowners would be educated about these systems.
Policy PFS-3.3: The 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.	Consistent	The Proposed Project includes package water reclamation plants for clustered development areas. More remote residential parcels will have individual systems to avoid excessive costs associated with the extension of sewer.

General Plan Policy	Consistency Determination	Analysis
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.	Consistent	The Applicant will coordinate with the County to ensure consistency with wastewater requirements
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.	Consistent	The Proposed Project includes recycled water usage 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, leachfield, 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).	Consistent	The Proposed Project includes sewer systems for clustered development
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.	Consistent	All the proposed residential and commercial wastewater facilities are in areas that are remote for adjoining parcels and as planned will not have any potential impacts to the adjoining properties. The design and locations of these facilities will not result in any potential noise or odor nuisance conditions to adjoining property (**Appendix WATER**).
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	Consistent	The Proposed Project would utilize the Eastlake Sanitary Landfill, which has adequate capacity.
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 was	Consistent	During construction, undiscovered geothermal wells will be reported to the Department of Conversation and the County. Furthermore, all hazardous materials will be disposed of according to applicable federal, state, and local laws.
Public Utilities		
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.	Consistent	The Proposed Project includes underground utility lines where feasible
Fire Protection and Law Enforcement		
Policy PFS-8.1: The County shall promote expansion of fire protection service to continue to meet County needs	Consistent	The Proposed Project includes an emergency and fire response center
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.	Consistent	The Proposed Project includes road that are wide enough for emergency access vehicles and emergency 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-	Consistent	As per the Wildfire Prevention Plan (Appendix FIRE), addresses would be marked on the houses and driveways

General Plan Policy	Consistency Determination	Analysis
combustible and are clearly visible from main roadways.		
Policy PFS-8.5: The County shall continue to support the fire mitigation fee ordinance.	Consistent	Pursuant to Chapter 27 of the Lake County Code of Ordinances, prior to the issuance of any building permit or development permit, the Applicant will pay a fire mitigation fee proportionate to the square footage of development accounted for in the permit.
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.	Consistent	The Proposed Project includes the Wildfire Prevention Plan, which identifies wildfire prevention and response strategies for the Proposed Project. The Proposed Project does not specifically propose any further public safety programs; however, the Applicant would comply with any County initiatives regarding the development of public safety programs at the Guenoc Valley Site and the Middletown Housing Site.
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.	Consistent	The Proposed Project involves the development of an onsite emergency response facility, which will enable faster response times than currently existing. No existing fire or police stations will be expanded.
Community Facilities		
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.	Consistent	Development impact fees from the Proposed Project would fund schools to provide adequate infrastructure improvements and resources (including desks, teachers, etc.) to support the addition of the students generated by the project.
Transportation and Circulation (T) Element		
Roads and Highways		
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 California Department of Transportation (Caltrans) and County standards.	Consistent	All proposed roadway improvements would be consistent with applicable standards
Policy T-1.5: 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	Consistent	All proposed roadway improvements would be consistent with applicable standards

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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: Facilities constructed or utilized for new development shall comply with County standards in order to minimize initial and subsequent maintenance costs.	Consistent	The Proposed Project includes mitigation to pay a fair-share for traffic improvements
Policy T-1.8: 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.	Consistent with mitigation	The Proposed Project includes mitigation for intersections below LOS C
Policy T-1.11: Develop and maintain roads and highways in a manner that protects natural and scenic resources.	Consistent with mitigation	With mitigation, impacts to natural resources from roadways would be less than significant. The design guidelines for the GVD (**Appendix DG**) include
Public Transport		
Policy T-2.4: 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.	Consistent	The Proposed Project includes an employee shuttle.
Aviation		
Policy T-3.2 The County shall promote compatible land use planning in areas surrounding airports. Land uses involving the concentration of	Consistent	None of the development proposed for the sites or off-site infrastructure improvement areas are within 2 miles of an airport. However, all onsite aviation activities will comply with

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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.		applicable federal and state regulations governing operations, including for hazardous materials.
Health and Safety (HS) Element		
General		
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.	Consistent	Some of the development have existing hazards, such as naturally occurring asbestos, but these can be mitigated to acceptable levels.
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).	Consistent	All developments will be developed according to the Uniform Building Code
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.	Consistent with mitigation	During grading and other dust inducing activities, the development will adhere to the County's comprehensive order in order to mitigate dust. Furthermore, special mitigation will be developed for the areas with serpentine soils and therefore NOA.
Geologic and Seismic Hazards		
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	Consistent	The Proposed Project would obtain a grading permit from the County prior to any earthwork and comply with the County's building permit process
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.	Consistent	No residential, commercial, recreational, or industrial structures would be built on or adjacent to known active or potentially active fault zones as a result of the Proposed Project.
Policy HS-2.3: The County shall not allow development on existing unconsolidated landslide debris.	Consistent	A geotechnical investigation will be conducted prior to construction which would also recommend that buildings be located outside unstable areas and steep slopes with a setback of approximately 50-feet.
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.	Consistent	NOA shall be avoided if deemed feasible during construction. If not feasible, then during the construction and operation of the developments, if needed, mitigation measures shall be developed for NOA dust.

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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.	Consistent	There would be no construction of critical transportation structures across the trace of a known active or potentially active fault as a result of the Proposed Project, as no known active or potentially active fault zones exist in or adjacent to areas of construction.
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.	Consistent	A geotechnical investigation will be conducted prior to construction plan development to ensure critical facilities are resistant to collapse.
Air Quality		
Policy HS-3.2: The County shall require the use of the best available air pollution control technologies to maintain healthful air quality and high visibility standards, along with continuing compliance with State and Federal Ambient Air Quality Standards.	Consistent	The Proposed Project includes air quality mitigation
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.	Consistent	The Proposed Project is designed with low impact development and smart growth policies which features clustered development, resulting in fewer vehicle trips and miles traveled.
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.	Consistent	Under the Proposed Project, newly paved and improved roadways would be constructed throughout the Project Site (refer to **Figure 2-11**). Additionally, during construction and grading, roads would be routinely watered to prevent dust density and minimize particulate emissions.
Policy HS-3.8: The County shall require consideration of alternatives or amendments that reduce emissions of air pollutants when reviewing project applications.	Consistent	As part of this Draft EIR, several alternative projects are considered and analyzed, where emissions of air pollutants are discussed (refer to **Section 5.0**). Additionally, the Proposed Project includes mitigation for emissions of air pollutants, such as a dust control plan. A full list of mitigation measures for air pollutants is located in **Section 3.**3.
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.	Consistent	**Section 3.3 Air Qualtiy** includes an analysis of potential air quality impacts of the Proposed 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.	Consistent with mitigation	During grading and other dust inducing activities, mitigation measures for dust suppression and specialized mitigation measures for NOA will be implemented.

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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	Consistent	Construction of the development areas shall require both grading and building permits. Therefore, adherence to the LCAQMD, CARB and the Lake County Community Development Department in terms of developing mitigation measures for NOA will be done.
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 also include typical mitigation measures and legal requirements.	Consistent	Mitigation requires an Asbestos Dust Mitigation Plan and that disturbed surfaces containing naturally occurring asbestos be stabilized with vegetative cover, 3 inches of non-asbestos containing material, or paving.
Airport Hazards		
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).	Consistent	None of the development proposed for the sites or off-site infrastructure improvement areas are within airport approach and departure zones. However, the developments will be compliant with Part 77 of the Federal Aviation Administration Regulations due to the onsite floating plane dock.
Hazardous Materials		
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	Consistent	The construction and operation of the development areas shall adhere to all applicable local, state, and federal safety standards. If any violations are found regarding hazardous materials, the Applicant shall comply fully to remedy these violations.
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.	Consistent	Transportation of the hazardous materials will be necessary as part of the development areas construction and operation. During transportation, all applicable local, state and federal regulation regarding transportation of hazardous materials will be follow in addition to County road restrictions for hazardous materials.
Policy HS-5.5: The County shall prevent incompatible land uses within close proximity to hazardous waste properties.	Consistent	There are no active hazardous wastes sites in close proximity to the development areas, and therefore there will be no inconsistency with land use.
Policy HS-5.6: The County shall review new development proposals to ensure that soils, surface water and groundwater are protected from contamination.	Consistent	The Applicant will submit a proposal to the county for review and comply with their findings concerning soils, surface water and groundwater.
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	Consistent	The Applicant shall conduct a Phase I or Phase II should it be deemed necessary. However, no active hazardous material sites are within the development areas.
Flood Hazards		

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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.	Consistent with mitigation	The Proposed Project includes mitigation to ensure development within floodplains conforms to regulations.
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.	Consistent with mitigation	The Proposed Project does not propose any critical facilities, residential structures or septic systems within a 100-year flood zone.
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.	Consistent with mitigation	The Proposed Project includes mitigation to ensure development within floodplains conforms to regulations and does not contribute to flood hazards.
Urban and Wildland Fire Hazards		
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 (refer to Figure 7 - 3).	Consistent	The Proposed Project would actively work with CAL FIRE and local fire protection districts to establish and maintain programs for annual vegetation clearing and fuel breaks, as well provide consultation in regards to fire related regulations and design requirements.
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, fire fighting equipment access, and water service provision.	Consistent	With the implementation of the Wildfire Prevention Plan, wildfire risks within the Project Site would be greatly reduced, as a result of adding an additional fire response center, year round grazing and vegetation removal, fire breaks along main roadways, and incorporating fire resistant landscaping. In addition, fire safe building, which would include thoughtful materials and design, would be implemented to reduce wildfire risk. As a result of the Proposed Project, development would be clustered where appropriate to take advantage of fuel breaks to reduce fire danger.

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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.	Consistent	The Proposed Project would actively work with CAL FIRE and local fire protection districts to establish and maintain programs for annual vegetation clearing and fuel breaks which would not impact air quality.
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.	Consistent	A Wildland Fire Management Plan would be imposed under the Proposed Project, which would include the implementation of fire-resistant landscaping, defensible space, and fire safe building, including projects adjoining significant areas of open space. In addition, an evacuation route map would also be provided.
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, discing, 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.	Consistent	As a result of the implementation of the Wildfire Prevention Plan, techniques such as fire or fuel breaks, active landscape management, and irrigated green belts would be enforced. Typical fire breaks along roads would include 50 feet of fuel reduction zone on each side of the 25 foot primary roads. There would also be 100-foot fire breaks along particularly vulnerable areas along the Guenoc Valley Site boundary.
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.	Consistent	Although the development would not be rural residential, the Proposed Project is designed as cluster developments which would help to reduce fire risk. Additionally, in collaboration with the County, Cal Fire, design and engineering teams, and grazing consultants, the Proposed Project would be able to maintain an aggressive fire prevention program and would support and assist in the implementation of adopted emergency preparedness plans and regulations (Appendix FIRE). Furthermore, there would be adequate water supply on-site which would include fire hydrants which are designed to maintain a minimum of a two-hour flow, as well as surface water sources that can be drawn upon in the case of a wildfire emergency.
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.	Consistent	All buildings would comply with the California Fire Code and CBC, including the use of fire resistant building materials, such as solid wood doors, and non-combustible metal and tempered glass doors and windows. In addition, all residential structures would include fire suppression systems.
Noise (N) Element		

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Noise		
Policy N-1.1: The County shall consider the compatibility of proposed land uses, utilizing the standards in Table 8 - 1, with the noise environment when preparing or revising community area 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.	Consistent	Land uses are compatible with surrounding areas
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 CNEL is expected to exceed 55 dBA during daytime (7Am to 10PM) or 45 dBA during nighttime (10PM to 7AM), measured at the property line of the noise sensitive land use, unless effective mitigation measures are incorporated into the project design.	Consistent	The Proposed Project does not propose new commercial, industrial, or other noise generating land uses directly adjacent to existing residential uses or other sensitive noise receptors.
Policy N-1.3: Indoor noise levels for residential uses shall not exceed 45 dBA CNEL.	Consistent	With standard building practices, the Proposed Project does not propose land uses that would increase indoor noise levels for residential uses above 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	Consistent	The Proposed Project will adhere to all County standards for noise reduction.

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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.	Consistent	The Proposed Project does not propose any land uses near highways or major roads.
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.	Consistent	The Proposed Project is not within the vicinity of an airport land use 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.	Consistent	During construction of the Phase 1, sensitive receptors shall be within 500 feet of construction in certain areas. Therefore, **MM 3.10-1** will be implemented in addition to other County requirements in order to mitigate the noise impact that would ensue.
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.	Consistent	All construction performed as part of the Phase 1 and Future Phases shall comply with State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code as required.
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.	Consistent	The Proposed Project includes periodic outdoor entertainment as an activity at the amphitheater, equestrian center and other areas. All of these activities shall adhere to the current local noise standards during the development of these facilities.
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.	Consistent	The Proposed Project includes boating as a possible recreational activity on Upper Bohn Lake. While this activity is not anticipated to be a substantial source of noise, all boating activities will adhere to any applicable local regulations noise regarding boating activities.
Open Space, Conservation and Recreation (OSC) Element		
Biological Resources		
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.	Consistent with Mitigation	A full analysis of habitats and species occurred for the Proposed Project. Through implementation of mitigation, the Proposed Project would not result in take of rare, threatened, and/or endangered wildlife. Additionally, rare, threatened, and/or endangered plant species have been identified for the Proposed Project, and any impacts would be offset through translocation or compensatory planting of rare, threatened, and/or endangered plants. These activities would be performed and monitored by a qualified biologist that would ensure minimum success criteria are met.
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	Consistent	The Proposed Project clusters development and provides for significant open space. Significant riparian corridors are included within dedicated open space, and impacts to oaks have been minimized through extensive avoidance measures. Additional

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habitat areas.		sensitive habits were identified and avoided as possible in project design. Mitigation has been included to offset unavoidable impacts.
Policy OSC-1.3: When reviewing development proposals, the County should encourage cluster development in areas with moderate to high potential for sensitive habitat.	Consistent	All resort communities utilize cluster development in order to minimize the total impact footprint. Non-dedicated open space is still maximized within the development areas.
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.	Consistent	The majority of the project design has clustered development away from setbacks for riparian corridors. Additionally, significant riparian corridors and setbacks have been included within dedicated open space preservation.
Policy OSC-1.6: The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats.	Consistent	Aquatic resources on the Guenoc Valley Site would result in a variety of uses from adjacent development for recreational purposes to complete preservation within dedicated open space. The dedicated open space is intentionally contiguous to promote landscape preservation features such as groundwater recharge. The overall design would allow access to certain aquatic habitat, including manmade reservoirs, while preserving significant habitat and allowing for passive enjoyment of sensitive areas.
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.	Consistent	Planting associated with mitigation will occur exclusively with plants native to the Guenoc Valley Site. Operation of the Proposed Project would similarly maximize use of native plant species to increase the visual aesthetic, maintain the natural landscape, and utilize those species that would require minimal maintenance.
Policy OSC-1.9: The County shall require buffer areas between development projects and significant watercourses, riparian vegetation, and wetlands.	Consistent	Avoidance of watercourses, riparian vegetation, and wetlands occurred during the design phase. Construction and development buffers have been included for avoided features. Mitigation and permitting terms have been included to offset impacts in cases where encroachment into riparian and wetland areas occurs.
Policy OSC-1.13: The County shall support the conservation and management of oak woodland communities and their habitats.	Consistent	The Proposed Project maximizes avoidance of oaks through intentional design, incorporation into landscape, development restrictions, and cluster of development. An Oak Mitigation Plan (**Appendix OAK**) consistent with **Policy OSC-1.13** has been prepared for the Proposed Project subject to Lake County approval.
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, DFG, and NMFS; (3) inventory special-status species listed in the CNDDB; and (4) conduct field surveys of the project site by a qualified biologist.	Consistent	A full analysis of biological resources on the Guenoc Valley Site and Middletown Housing Site was completed and is included as **Appendix BRA-Middletown**. Information from CNPS, USFWS, CDFW, NMFS and CNDDB were reviewed and incorporated into the analysis presented within the Environmental Impact Report. This was done consistent with **Policy OSC.-1.14**.

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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.	Consistent	The Proposed Project would not result in the release or propagation of invasive species. Mitigation includes habitat restoration and removal of invasive species already present.
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.	Consistent	The Guenoc Valley Site's roadways will be designed in a way to prevent lighting from reflecting into Project Site's designated Open Space.
Policy OSC-1.19: The County should incorporate the protection of sensitive habitat as nature areas where recreational facilities are proposed in these habitats.	Consistent	A significant portion of sensitive habitat is retained within designated open space. In areas where sensitive habitat occurs alongside natural recreational opportunities, such as the reservoirs, public signage will be posted to inform guests of the sensitive nature and importance of the habitat. Signage would additionally include measures to prevent degradation of habitat and restrictions on those activities allowable within and near sensitive habitat.
Scenic Resources		
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.	Consistent	The Guenoc Valley Site would be designed to be hidden from major roadways with the structures situated back from the roadways and in a way to not obstruct views of significant natural features.
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.	Consistent	Roadway improvements for the Guenoc Valley Site would be done in a manner that minimizes roadway width and retains the natural aesthetic by limiting vegetation removal and follow natural contours of the land.
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.	Consistent	On-street parking would be minimized to the fullest extent possible and. Additionally, areas of parking shall be screened from view whenever possible, hidden behind trees and vertical screens, including trellises and canopies.

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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.	Consistent	Due to the entire Guenoc Valley Site not being visible by scenic roadways, parking areas would be hidden from scenic roadways.
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.	Consistent	The electrical infrastructure at the Guenoc Valley Site will change from all overhead distribution service to a mix of overhead and primarily underground service, however infrastructure will largely be installed underground in the subdivisions and resort properties. Although the Proposed Project will include the installation of approximately 8 miles of overhead cables and poles to connect the development areas, they will be installed in locations that will avoid interfering with scenic views to the greatest extent possible.
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.	Consistent	Both the Guenoc valley site and the Middletown Housing Site would comply with the Lake County Grading Ordinance and include revegetation if necessary.
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.	Consistent	The Proposed Project would incorporate lighting that is directed downward and use low energy lighting. Street lighting would be limited to areas where needed for safety.
Policy OSC-2.14: Street lighting should only be utilized where needed to protect public safety.	Consistent	The Proposed Project would incorporate lighting that is directed downward and use low energy lighting. Street lighting would be limited to areas where needed for safety.
Policy OSC-2.16: The County shall require the use of low glare building materials for new buildings constructed within the county.	Consistent	The Off-Site Workforce housing and the Guenoc Valley Site developments would utilize low glare building materials.
Energy Resources		
Policy OSC-5.1: 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.	Consistent	Energy use, including all future construction and renovation projects, shall be in accordance with state law, by requiring clean alternative energy use to the greatest extent possible. This would include the development of solar energy to meet the demand of all residential uses within the Guenoc Valley Site, as well as requiring the use of energy efficient lighting and appliances. Additionally, Mitigation Measure 3.1-7 would require commitment to solar energy to meet the demand of all commercial facilities.

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Policy OSC-5.2: 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.	Consistent	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.
Parks and Recreation		
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.	Consistent	The Proposed Project includes the development of resort amenities including but not limited to an outdoor entertainment area, spa and wellness amenities, sports fields, equestrian areas, a new golf course, camping area and commercial and retail facilities.
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.	Consistent	Because the Proposed Project does not include the development of park areas, the parkland dedication shortfall is proposed to be made up 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. 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.
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.	Consistent	The Proposed Project incorporates low-impact development techniques and clustered communities. The density of the Proposed Project is low
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.	Consistent	Under the Proposed Project, recreation features, such as trails, docks, beaches, vista points, picnic areas, swimming, boating, and fishing opportunities, would be provided at Upper Bohn Lake. Additionally, a non-vehicular circulation system would be developed to connect all development areas of the project site and natural destinations. Off-road trails traversing more rugged terrain would be developed for use with hiking, horseback, and mountain bike riding.
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.	Consistent	A non-vehicular circulation system would be developed throughout the Guenoc Valley Site. These trails would extend through the open space areas within the site to connect many of the resort planning areas and natural destinations, and will provide recreational walking, running, hiking, biking, and horseback riding opportunities.
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.	Consistent	A non-vehicular circulation system would be developed to connect all development areas of the project site and natural destinations. Off-road trails traversing more rugged terrain would be developed for use with hiking, horseback, and mountain bike riding.
Policy OSC-6.20: Provide lighting, Rest Areas, and Signage to maintain safe trails. Determine the safest areas for trail locations.	Consistent	Under the Proposed Project, off-road trails traversing more rugged terrain would be developed for use with hiking, horseback, and

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Encourage local law enforcement agencies to use the trail system as part of their physical training.		mountain bike riding. The onsite emergency response team would be encouraged to utilize the trail system as part of their physical training regime.
Cultural Resources		
Policy OSC-8.3: 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.	Consistent	Investigations have been completed for Phase I development areas and mitigation measures have been developed to both protect known resources and ensure that future phase development areas are investigated in a similar fashion. Mitigation measures include development of an Unanticipated Discoveries Plan which would guide identification of extent and value of resources.
Policy OSC-8.7: 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.	Consistent	The NAHC has been contacted on three separate occasions, two for the Guenoc Valley Site and once for off-site improvements. The County has initiated SB 18 and AB 52 consultation with multiple Native American tribes and is in active consultation with Middletown Rancheria.
Policy OSC-8.8: 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.	Consistent	Cultural resources reports and resource location information have been generally discussed in the EIR, but no record search results, site record forms, or cultural resources maps have been included in publicly accessible documents.
Policy OSC-8.11: The County shall develop standards for monitoring of mitigation measures established for the protection of historical resources prior to development.	Consistent	The EIR includes provisions for construction monitoring in order to protect historical resources.
Policy OSC-8.13: 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.	Consistent	Mitigation Measure 3.5-2 requires procedures for the discovery of cultural resources consistent with this County policy.
Policy OSC-8.14: 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	Consistent	Mitigation Measure 3.5-4 details the procedure to be followed if Native American burials are uncovered.

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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; and 1. If the coroner determines that the remains are of Native American origin, a. The coroner shall contact the Native American Heritage Commission within 24 hours b. 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. c. 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, or 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 descendents 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.		

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Water Resources (WR) Element		
Groundwater Protection		
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.	Consistent	The Proposed Project is designed with low impact development and smart growth policies. The resort features low density clustered development which would preserve open space, allowing for groundwater recharge through the percolation of rainwater. Under the Proposed Project, impervious surfaces will be limited to the greatest extent possible.
Water Quality		
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.	Consistent	Under the CWA, the Proposed Project would implement a NPDES permit which would require continual monitoring and enforcing of provisions to control non-point and point source water pollution from surface water and groundwater supplies.
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.	Consistent	Under the CWA, the Proposed Project would implement a NPDES permit which would require continual monitoring and enforcing of provisions to control non-point source water pollution.
Policy WR-2.3: The County shall continue to enforce provisions to control erosion and sediment from construction sites.	Consistent	As a result of implementing a SWPPP and an Aggregate/Concrete Monitoring and Reporting Control Program, issues related to erosion and sediment at construction sites would be less than significant.
Policy WR-2.4: The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect surface water and groundwater from the adverse effects of construction activities and urban runoff.	Consistent	Under the Proposed Project, the implementation of a SWPPP, an Aggregate/Concrete Monitoring and Reporting Control Program, and associated BMPs would be required, resulting in a less than significant effect on surface water and groundwater as a result of construction activities and urban runoff.
Policy WR-2.5: The County shall ensure the design of facilities and management of storm water 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.	Consistent	Under the Proposed Project, a Stormwater Design Report has been prepared to minimize impacts related to stormwater runoff as a result of development, including roadways, residential areas, and commercial areas. Methods include but are not limited to the use of vegetated swales, sediment forebays, bio-retention areas, and self-treating areas.

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Water Resource Sustainability		
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	Consistent	Under the Proposed Project, off-site groundwater well hydraulic analysis and monitoring as well as a Water Supply Assessment would be required before and during all phases of construction in order to monitor current and future water availability (refer to **Appendix WSA**).
Conservation and Reuse		
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.	Consistent	As part of a project wide measure, new development would be designed to conserve water through the use of drought resistant vegetation and low flow appliances and fixtures. Also state-of-the-art irrigation systems that reduce water consumption including graywater systems and rainwater catchment would be implemented.
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 (California Health and Safety Code, Section 17921.3; Title 20, California Code of Regulations, Section 1601(b); and other applicable sections of Title 24 of the California Code of regulations).	Consistent	As part of a project wide measure, new development would be designed to conserve water low flow appliances and fixtures, including low flow plumbing features.
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.	Consistent	The Proposed Project incorporates wastewater reclamation for landscape irrigation and other outdoor uses.
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.	Consistent	Under the Proposed Project, small biological package style treatment systems would be installed 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, which would treat and recycle wastewater for future use.
Agricultural Resources (AR) Element		
Agricultural Protection		
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	Consistent	The Proposed Project includes parcel boundaries within Primary Agricultural Areas. The smallest of these parcels is 3.2 acres, which is large enough to sustain agricultural use. Additionally, Mitigation Measure 3.2-2 includes acre-for-acre permanent conservation for development upon Important Farmlands (Prime and Unique Farmlands).

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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).	Consistent	The Guenoc Valley Site will be resort development and the Middletown Housing Site is within a Community Growth Boundary.
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.	Consistent	All residents within 1,000 feet of agricultural land would sign the Right to Farm form prior to obtaining the property deed.
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	Consistent with mitigation	The majority of the Primary Agricultural Areas would be within the proposed Agricultural Preserve Combining District, which restricts residential development to one single-family dwelling (**Appendix GVD**). A small portion of Unique Farmland would occur within the Maha Farm residential estate parcels, however, there would be acre-for-acre conservation easements under Mitigation Measure 3.2-2, and the easements would have a 100 foot buffer between residential and agricultural uses.

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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 can not 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.	Consistent	Where feasible, sewer and water lines would be constructed along roadways. Agricultural Preserve Combining District areas would only allow one single-family dwelling.
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.	Consistent	. The Proposed Project includes parcel boundaries within Primary Agricultural Areas, however the smallest of these parcels is 3.2 acres, which is large enough to sustain agricultural use. Additionally, under **Mitigation Measure 3.2-2**, the Proposed Project would require acre for acre permanent conservation, which would require that every acre of Prime Farmland or 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.
Policy AR-1.12: The County shall encourage the use of agricultural and conservation easements to preserve agricultural land.	Consistent	As a result of the implementation of **Mitigation Measure 3.2-2**, the Proposed Project would require acre for acre permanent conservation, which would require that every acre of Prime Farmland or 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.
Agricultural Enhancement		
Policy AR-2.1: The County should continue to support programs of	Consistent	The Proposed Project encourages the economic development of

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agricultural technical assistance and should cooperate with public and private groups to promote the economic development of agricultural areas.		agricultural areas by incorporating market gardens, and local businesses in the Maha Farm area
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.	Consistent	The Proposed Project includes agro-tourism features such as farm-to-table restaurants and wineries. The Maha Farm area would feature a market for local agricultural products.
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.	Consistent	The Proposed Project includes resort development that is not able to occur in urban areas and would support agricultural operations
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)	Consistent	The Proposed Project shall feature local agricultural products in the Maha Farms area and will be compatible with surrounding vineyard developments

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• No facilities supporting or offering off-road vehicles.		
Agricultural Tourism		
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. **1.** Small-Scale Facilities. Facilities may be permissible if they meet the following conditions (in addition to a standard site suitability assessment as part of a normal minor use permit): **a.** The facility is approved subject to maintaining an agriculturally oriented theme **b.** The use is compatible with existing agricultural uses in the area and does not adversely impact neighboring agricultural operations **c.** The use does not require the extension of urban services (sewer and/or water service) **d.** No motorized off-road vehicles for recreational purposes (no use restrictions when used to support agricultural operations) **2.** Large-Scale Facilities. Facilities may be permissible if they meet the following conditions (in addition to a standard site suitability assessment as part of a normal major use permit): **a.** The facility is approved subject to maintaining an agriculturally oriented theme **b.** The use is compatible with existing agricultural uses in the area and does not adversely impact neighboring agricultural operations **c.** The site is accessible from a County or State maintained roadway or highway **d.** No motorized off-road vehicles for recreational purposes (no use restrictions when used to support agricultural operations)	Consistent	The GVD zoning district allows for the development of agricultural tourism facilities consistent with surrounding land uses. Facilities would maintain an agricultural theme, would be accessible by Butts Canyon Road (a state maintained roadway) and would not allow motorized off-road vehicles for recreational purposes.
Source: Lake County, 2008		