

APPENDIX OAK

OAK MITIGATION PLAN



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GUENOC VALLEY SITE

FEBRUARY 2020

PREPARED BY:

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1.0 INTRODUCTION

The Guenoc Valley District (GVD) is a proposed rezoning and planned development project located in southern Lake County within an approximately 16,000-acre boundary (Guenoc Valley Site), (**Figure 1** and **Figure 2**). The first phase of planned development includes luxury resorts and a master-planned residential community to be sited in clusters (Phase 1). The GVD incorporates low impact designs that prioritize large residential parcels with low density and clustered development, preserving surrounding open space and agricultural cultivation. The plan to develop a portion of the GVD will be accompanied by this Oak Mitigation Plan.

This Oak Mitigation Plan (Plan) addresses development for both Phase 1, which is under project-level environmental review, as well development of future phases, which are under programmatic-level review in the same EIR (Proposed Project). This Plan addresses the impacts to oaks resulting from the Proposed Project as analyzed in the EIR, defines specific impacts in the Phase One development, and outlines a system of impact identification and mitigation that can be applied consistently to all phases of development. Therefore, mitigation measures applied in Phase One as they relate to oaks will also apply to future phases.

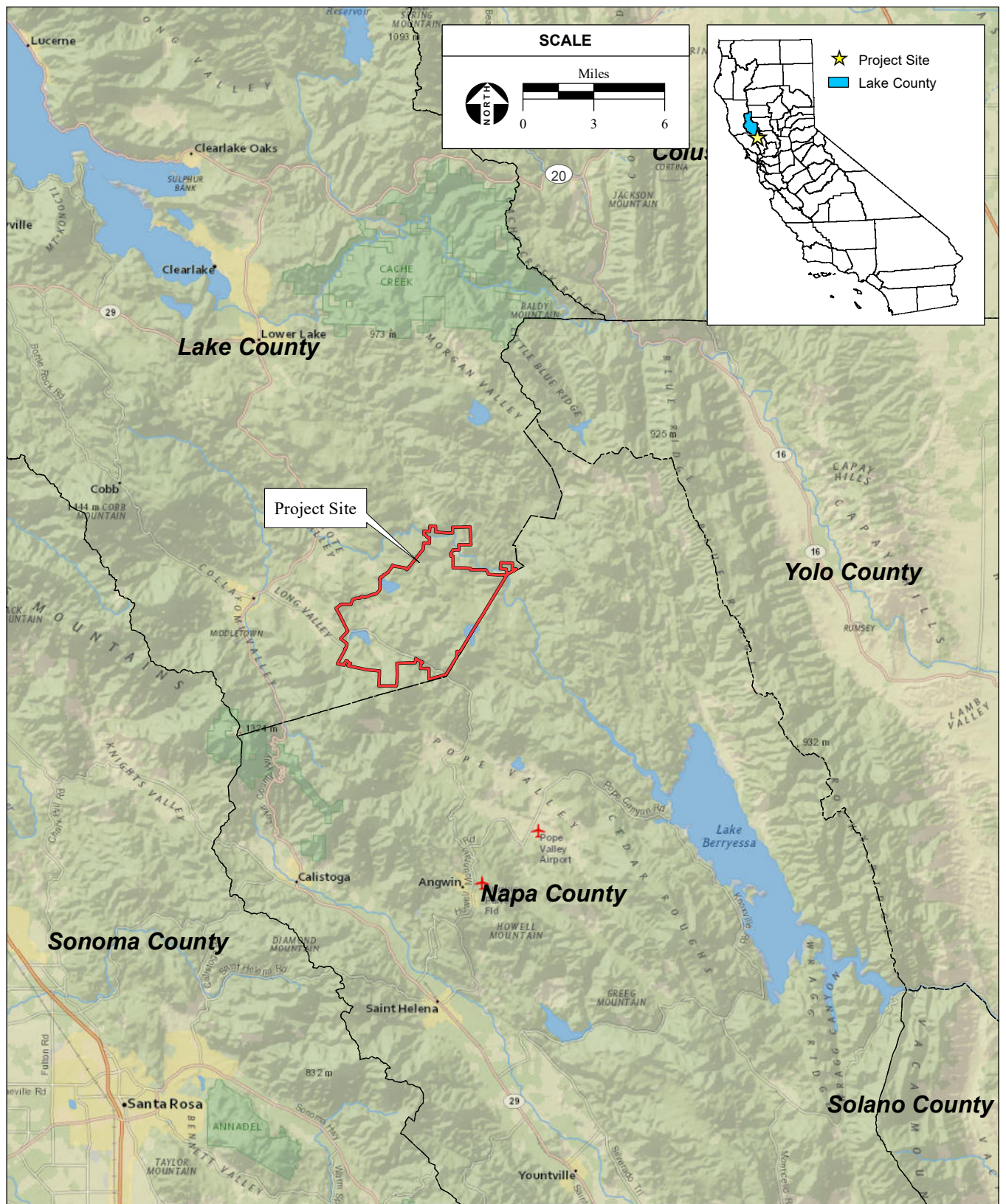
A portion of the Guenoc Valley Ranch was evaluated for environmental impacts related to planned water diversion and use of surface water for land conversion to vineyard. The appropriation and use of water and conversion of land to vineyard was approved by the State Water Board based on an EIR completed in March of 2009 (AES, 2009; FEIR). Development of these approved acreages is still in progress. An Oak Tree Replacement Plan was completed in September of 2008 to mitigate for impacts to oaks within the Places of Use (POUs), where surface water was approved for use, identified in the 2009 FEIR (AES, 2008). The previous Oak Mitigation Plan continues to apply to the development of vineyards and use of water approved under the 2009 EIR.

1.1 PROJECT LOCATION

The Guenoc Valley Site is located approximately three miles east of the town of Middletown and is accessible via Butts Canyon Road (**Figure 1** and **Figure 2**). Long Valley and Coyote Valley occur to the west of the Ranch, and the Cedars Mountains occur to the north. Terrain varies from areas of level valley to areas of steep, rocky terrain. Several vegetative communities exist within the Ranch including; agriculture, annual grassland, oak woodland, pine-oak woodland, cypress forest, mixed conifer forest, and chaparral. Aquatic habitats include ephemeral drainages, perennial streams, seasonal wetlands, groundwater seeps, freshwater marsh, and manmade ponds and reservoirs. Climate of the area consists of hot dry summers and cool, moist winters. Annual precipitation averages approximately 44.1 inches, with zero to insignificant snowfall (WRCC, 2016).

1.2 EXISTING USES

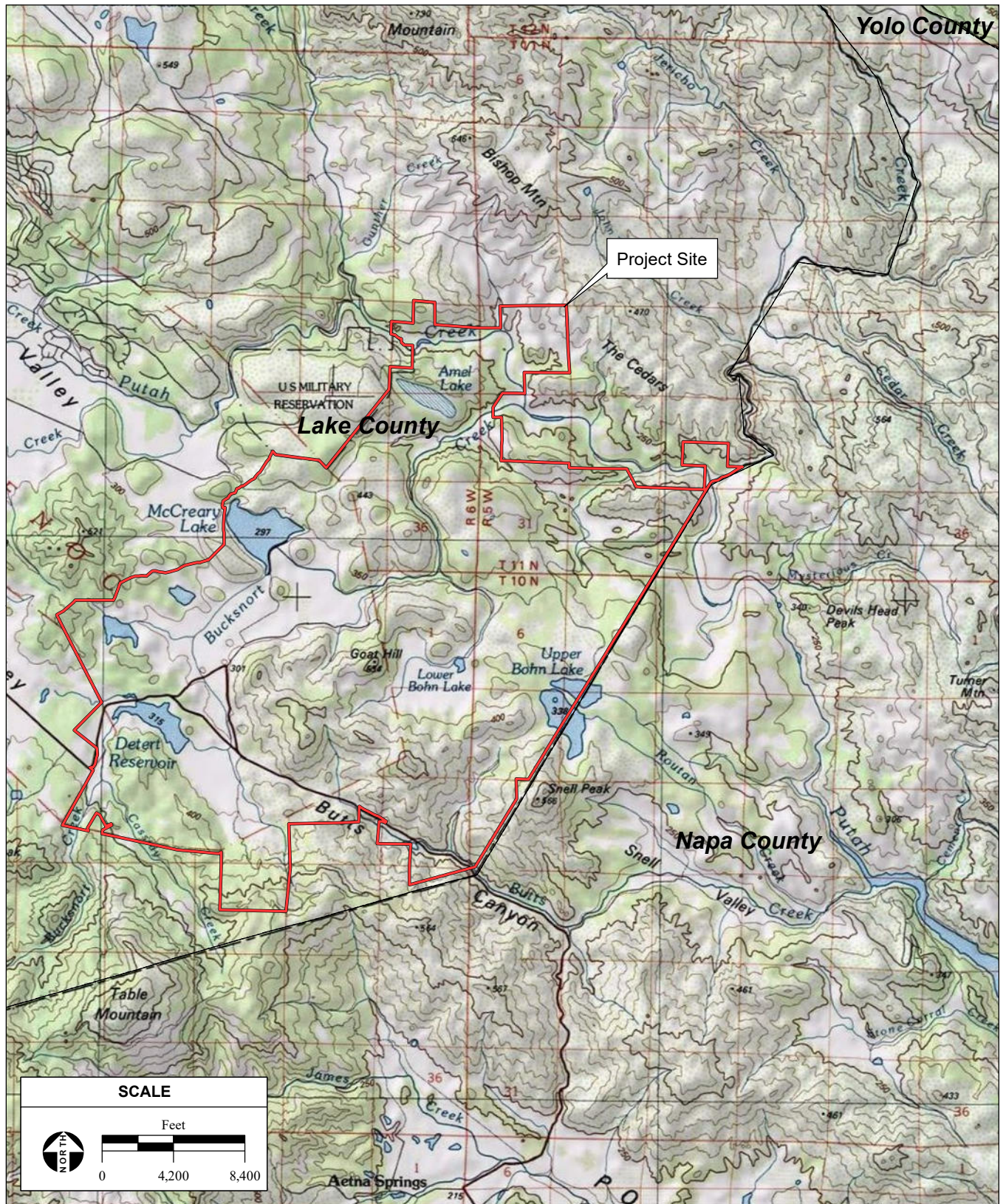
The current land uses within the Guenoc Valley Site are a mixture of agriculture, recreation, and open space. These land uses utilize existing water rights, which allow for irrigated pastures, dry land grazing and open space, vineyards, golf courses, and water bodies (reservoirs). The main reservoirs on the Guenoc Valley Site and connected reservoirs provide approximately 10,390 acre feet of water storage. The agricultural activities include cattle and sheep grazing and vineyards.



SOURCE: NatGeo 2017; AES, 2/18/2020

- Guenoc Ranch Oak Mitigation Plan / 217520 ■

Figure 1
Regional Location



SOURCE: "Middletown, CA" & "Jericho Valley, CA" & "Knoxville, CA" & "Detert Reservoir, CA" & "Aetna Springs, CA" & "Walter Springs, CA" USGS 7.5 Minute Topographic Quadrangles; T10N R5W & T10N R6W & T11N R5W & T11N R6W; Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18, 19, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, and Unsectioned Areas of Middletown, Jericho Valley, Detert Reservoir, and Aetna Springs, Mt. Diablo Baseline & Meridian; ESRI 2019; AES, 2/18/2020

Guenoc Ranch Oak Mitigation Plan / 217520 ■

Figure 2
Site and Vicinity

The Guenoc Valley Site is currently farmed with 990 acres of vineyards, and an additional 970 acres of vineyard is anticipated and allowed pursuant to previous entitlements. The entitlement for water appropriation for use in vineyard irrigation, and the cultivation of land to vineyard was authorized by the Division of Water Rights following the Guenoc Ranch Water Rights Final EIR (AES, 2009). No additional vineyard area is proposed with the GVD or Phase 1, and approximately 1,700 acres of previously-approved vineyard will be placed under an Agricultural Preserve Combining Zoning district. Impacts to oaks resulting from the planting of the existing and expanded vineyards were mitigated for through provisions in the 2009 Water Rights FEIR (AES, 2009).

1.3 PROJECT DESCRIPTION

Development plans for Phase 1 are comprised of multiple resort communities including residential parcels, boutique hotels, an equestrian center, golf course, and other recreational attractions and associated roadways and supporting facilities. The Phase 1 would result in the development of the following six resort communities described in the Specific Plan of Development (SPOD; MAHA, 2019):

1. Equestrian Center Community - This community includes a clubhouse, stables, paddocks, manmade lake, and several riding arenas and polo fields. Residential parcels will also be located within this community.
2. Maha Farm Community - This community is designed around the existing agricultural history of the Ranch by establishing residential parcels with potential for vineyard or other agricultural development. Maha Farms also includes sales centers, a hotel, wineries, barns, and other supporting infrastructure.
3. Red Hills Estates Community - This community includes the Red Hill hotel, residential parcels, and an 18-hole golf course with clubhouse.
4. Bohn Ridge Resort Community - This community consists of the Bohn Ridge hotel and surrounding residential parcels.
5. Spa Community - This community consists of a few residential parcels, a walking path, and the main spa building.
6. Resort at Trout Flat Community - This community includes residential parcels, resort cottages, and a hotel.
7. Camping Area: This area includes semi-permanent tent structures to provide short-term guests with high-end “glamping” recreational opportunities that are set back from the larger resort communities.

These communities plus supporting infrastructure and workforce housing are included within the Proposed Project. Phase 1 of the Proposed Project will result in multiple hotels, resort residential units near hotels, residential estate villa units, short term staff hotel rooms, campsites, and workforce housing units (i.e. bedrooms). Future phases and the approval of the GVD anticipates up additional hotel units, resort residential units, residential estate units, and additional supporting workforce housing units/bedrooms. A map outlining the different resort communities shown with identified oak habitat impacts is presented in **Attachment A**. Future phases of development are anticipated to include additional hotel units, resort residential units, residential estate units, and supporting workforce housing units. All phases and all aspects of development will occur entirely within Lake County.

2.0 IMPACTS TO OAKS

Oak woodland habitat is a unique component of California's natural heritage. Oak trees serve several important ecological functions including temperature moderation, reduction of soil erosion, facilitation of nutrient cycling, and maintenance of water quality. Oak woodlands also have inherent aesthetic value, are a characteristic feature of the state, and have cultural significance to Native Americans. In addition, oak woodlands provide essential habitat and/or food for many wildlife species including insects, invertebrates, amphibians, reptiles, birds, and mammals.

2.1 IMPACT MINIMIZATION MEASURES

Minimization measures are included as part of the project design where possible in order to minimize oak impacts. Minimization measures include maximum avoidance of oak woodland and individual oaks, maximum avoidance of sensitive habitat that supports oaks and oak dispersal, and incorporation of oaks into landscape design.

Following the sale of a residential lot, a development plan for that lot will follow the general outline described below:

- Residential lots larger than two acres that are entirely within oak woodland habitat will be restricted to a one-acre maximum buildable area. This buildable area is designed to provide footprint size and location guidance to avoid impacts to oaks within residential lots.
- For residential lots in which a significant impact to canopy cover is unavoidable, the impact will be analyzed for the grading, driveways, and building areas, not to exceed 1.5 acres. Mitigation for this type of impact will occur through recordation of same-species oak woodland in long term preservation prior to the issuance of building or grading permits.
- For impacts in which cover is sparse, or significant woodland impacts can be avoided, an exact tree removal and size inventory will be required prior to a building or grading permit. The mitigation will include transplanting, compensatory planting, and/or enhancement as described below.
- These methods will be applied to residential lots developed as a result of either Phase 1 or future phases of development.

In addition to the general impact minimization measures, development of commercial lots has followed the general outline below:

- The footprint of development was reduced to only that area required for the function and design of a commercial lot.
- Placement of structures maximized avoidance oak woodlands.
- Individual oaks will be preserved or transplanted through intentional landscaping or design.
- For commercial lots in which a significant impact to canopy cover is anticipated, the impact will be analyzed for as the greatest maximum potential impact and mitigated through oak woodland preservation prior to impacts.
- For impacts in which cover is sparse, or significant woodland impacts can be avoided, an exact tree count and size inventory will be required followed by mitigation through transplanting, compensatory planting, and/or enhancement as described below.

2.2 OAK IMPACTS BY HABITAT TYPES

Approximately 4,278.2 acres of the Guenoc Valley Site has been identified as oak woodland, with an additional 1,238.7 acres of oak savannah, and 174.9 acres of mixed-oak woodland. **Table 1** provides a summary breakdown of oak habitats impacted by Phase 1.

Infrastructure impacts were calculated based on linear impact features such as roadways along with a thirty-foot grading buffer on each side. Acreages were calculated for illustrative purposes to show the scale of potential impacts. Because of the ability to design around specific oak trees, roadway impacts will be addressed on a tree-by-tree basis. Maximum potential impacts for residential lots are based on the 1.5-acre allowable development area set by the GVD for a given parcel and a 1.0-acre lot development restriction on a parcel that lies entirely within oak woodland habitat, which will be recorded with the parcel's final map. Maximum potential impacts for commercial lots are based on the maximum development footprint as proposed in the Specific Plan of Development (SPOD) for the intended use of the lot positioned to minimize potential impacts to oaks and includes the building footprint as well as the grading extent area.

Vegetative cover in oak savanna habitat is typically dominated by non-native annual grasses with interspersed individual oaks. An Oak savanna is approximately 60% or less total canopy cover and with less than 2/3 of the canopies touching (WRA, 2020a; WRA 2020b). Oak savanna impacts described in **Table 1** are based on the total acreage of oak savanna rather than representative acreage based on percent cover of oaks. Similar to roadway impacts, because of the low density of trees and the ability to avoid them, oak savanna impacts will be measured on a tree-by-tree basis for the purpose of mitigation.

TABLE 1
OAK HABITAT TYPES AND POTENTIAL PHASE 1 IMPACTS BY ACREAGE

Habitat Type	Acres on Guenoc Valley Site	Maximum Roadway Impacts	Maximum Residential Impacts	Maximum Commercial Impacts	Maximum Potential Impacts
Interior Live Oak Woodland	756.5	19.0	31.0	22.0	72.0
Valley Oak Woodland	49.3	1.0	0.0	1.0	2.0
Blue Oak Woodland	3,472.4	91.0	97.0	69.0	257.0
Mixed Oak Woodland	174.9	0.0	0.0	0.0	0.0
Total Oak Woodland	4,453.1	111.0	128.0	92.0	331.0
Blue Oak Savanna	1,238.7	50.0	52.0	44.0	146.0
Total	5,691.8	161.0	180.0	136.0	477.0

Source: WRA, 2020a; WRA 2020b; **Attachment A**

Oak Woodland

The project site contains interior live oak woodland, valley oak woodland, blue oak woodland, and mixed oak woodland. This habitat type was identified in a Biological Resource Analysis performed by WRA Inc. (BRA; WRA, 2019). Oak habitat identified was overlaid on a georeferenced map of the Phase One development in order to determine potential impacts. Identification of oak woodland impacts from future development phases will be performed in a similar fashion. A maximum of approximately 220 acres (**Table 1**) of oak woodland habitat has the potential to be impacted by residential and commercial development. Potential impacts from future development will be assessed in a similar fashion. Roadway impacts of approximately 111 acres of oak woodland along 7.5 miles of roadway will be

defined through tree counts as specified in detail in **Section 3.0** as impacts to individual oaks may be avoided.

Blue Oak Savanna

The project site includes 1,215 acres of blue oak savannah where oak trees occur, but in lower density than in oak woodlands. This habitat type was identified by areas of low-density oak presence interspersed within a grasslands-type setting that was verified through aerial imagery, biological surveys, and GIS mapping overlaid with the development footprint. Specifically, an oak savanna is identified as 60% or less total canopy cover and with less than 2/3 of the canopies touching (WRA, 2020a; WRA, 2020b). Identification of oak savannah impacts from future development phases will be performed in a similar fashion. The Proposed Project has the potential to impact up to 96 acres of oak savanna within commercial and residential development as well as approximately 50 acres of oak savanna along 4.5 miles of roadway. However, the majority of this habitat type is dominated by herbaceous cover and the impacts to individual oaks may be avoided. Therefore, impacts to oak savanna will be defined through tree counts as specified in **Section 3.0**.

Mixed Oak Woodland

The project site includes 175 acres of mixed oak woodland. Mixed oak woodland is comprised of multiple co-dominate oak species and, in some cases, non-oak species. This habitat type was identified by areas with mixed oak species interspersed within a larger canopy co-dominated by other tree species. Mixed oak habitat mapping was verified through aerial imagery, biological surveys, and GIS mapping overlaid with the development footprint. There are no anticipated impacts to mixed oak woodland during Phase 1 of construction. Potential impacts from future development will be assessed in a similar fashion. Depending on the canopy cover of sensitive oaks within mixed oak woodlands, potential impacts may be measured based on acreage or on a tree-by-tree basis.

Oaks Occurring Outside of Mapped Oak Habitat

Because of the continuous nature of habitat types on the Ranch, it is likely that the Proposed Project will result in impacts to individual oak trees present within habitat types for which they are not a dominant species. Individual oaks, specifically blue oaks, have occasionally been observed on the project site within other habitat types such as foothill pine woodland. While an acreage cannot be assigned to oaks potentially occurring throughout the project site, these impacts are to be mitigated for on a tree-by-tree basis as defined in **Section 3.0**.

3.0 PROPOSED OAK MITIGATION PLAN

3.1 MITIGATION GOALS AND OBJECTIVES

Oak habitat on site will be avoided to the maximum extent possible to preserve the aesthetic, ecological, and cultural benefits provided by oaks. Acreages calculated in **Table 1** are based on the reduced impacts as a result of avoidance measures outlined in **Section 2.1**.

The goal of this Plan is to replace the function and value of impacted oak habitat as a result of the Proposed Project. The impacts from the Proposed Project will be fully mitigated in compliance with the 2009 Water Rights EIR, 2008 Oak Tree Replacement Plan, and Lake County General Plan. Success metrics will be utilized to meet mitigation criteria and ensure long-term success of the oak mitigation. Proposed mitigation is comprised of protecting existing oak woodlands as possible and creating or enhancing habitat in suitable locations. These mitigation methods are described in detail below.

3.2 OAK MITIGATION RECOMMENDATIONS BY IMPACT TYPE

As described in **Section 2.1**, the Proposed Project has the potential to impact oak woodland, oak savanna, and individual oak trees. Impacts to these habitat types can be further described by the level of impact. Therefore, mitigation is best determined through an analysis of the habitat types and the level of impact. **Table 2** provides a mitigation matrix summary following the methods described below.

Impacts to Oak Woodland with Significant Loss of Canopy Cover

While impact minimization measures have been incorporated as part of the Proposed Project (**Section 2.1**), the Proposed Project has the potential to impact oak woodland such that a significant loss of canopy cover may occur. In this circumstance, suitable mitigation will occur through preservation of in-kind habitat at a ratio of 1.5 acres preserved to 1 acre of impacts. These methods apply to residential and commercial lot development for which a qualified biologist has determined that a significant loss of cover has occurred. This method of mitigation is suitable for Phase One and future phases of development.

Impacts to Oak Woodland without Significant Loss of Canopy Cover

Due to impact minimization measures presented in **Section 2.1**, the Proposed Project will likely have impacts on individual oak trees within oak woodland habitat such that the overall character and quality of the habitat is not significantly impacted. Consistent with the Biological Resources Assessment of the Guenoc Valley Site, impacts that result in a reduction in woodland canopy cover to 60 percent or less and less than 2/3 of the canopies touching would be considered conversion of habitat from oak woodland to oak savanna. In circumstances where removal of trees does not convert oak woodland to oak savanna, the following mitigation is recommended:

- For oaks removed with a diameter at breast height (dbh) between 3 inches and 15 inches, full transplant or replanting at a 2:1 ratio as detailed in **Section 4.0**.
- For oaks removed with a diameter at breast height of 15 inches or greater, transplantation or replanting at a 5:1 ratio as detailed in **Section 4.0**.
- For oaks that are transplanted, they will be monitored for the success of transplanting as described under **Section 5.0** and replaced via replanting ratios described above should the transplanting fail.
- Locations of removed oaks will be documented such that oaks removed within a POU will result in compensatory plantings within POU consistent with the 2009 Water Rights EIR. The Phase I of the GVD proposes approximately 32 acres of potential impact to oaks within the POU, which will be mitigated in accordance with the 2009 Water Rights EIR requirement for like compensation within POU. In addition to this existing requirement, the 32 acres will also comply with this 2020 GVD Oak Mitigation plan as described in the below table with a preservation of similar oak woodland at a ratio of preservation of 1.5 acres to 1.0 acres of impact, which may occur outside of the previously defined POU, but within the Guenoc Valley Site.

These methods apply to oaks impacted by infrastructure and fire-protection vegetation management. These methods also apply to residential and commercial lot development for which a qualified biologist has determined that a significant loss of cover has not occurred. This method of mitigation is suitable for Phase 1 and future phases of development.

TABLE 2
SUMMARY MATRIX OF RECOMMENDED OAK MITIGATION

Habitat Type	Habitat Impact Type	Mitigation Recommended
Interior Live Oak Woodland	Significant loss of oak canopy cover	Preservation of interior live oak woodland at a 1.5:1 ratio
	No significant loss of canopy cover	Exact tree count followed by replanting interior live oak at the following ratios: <ul style="list-style-type: none"> 2:1 for dbh 3"-15" 5:1 for dbh < 15" Transplanted trees that fail are subject to these replanting ratios.
Valley Oak Woodland	Significant loss of oak canopy cover	Preservation of valley oak woodland at a 1.5:1 ratio
	No significant loss of canopy cover	Exact tree count followed by replanting of valley oak at the following ratios: <ul style="list-style-type: none"> 2:1 for dbh 3"-15" 5:1 for dbh < 15" Transplanted trees that fail are subject to these replanting ratios.
Blue Oak Woodland	Significant loss of oak canopy cover	Preservation of blue oak woodland at a 1.5:1 ratio
	No significant loss of canopy cover	Exact tree count followed by replanting of blue oak at the following ratios: <ul style="list-style-type: none"> 2:1 for dbh 3"-15" 5:1 for dbh < 15" Transplanted trees that fail are subject to these replanting ratios.
Mixed Oak Woodland	Significant loss of oak canopy cover	Preservation of mixed oak woodland at a 1.5:1 ratio
	No significant loss of canopy cover	Exact tree count followed by replanting mixed oak at the following ratios: <ul style="list-style-type: none"> 2:1 for dbh 3"-15" 5:1 for dbh < 15" Transplanted trees that fail are subject to these replanting ratios.
Blue Oak Savanna	Any impact	Exact tree count followed by replanting blue oak at the following ratios: <ul style="list-style-type: none"> 2:1 for dbh 3"-15" 5:1 for dbh < 15" Transplanted trees that fail are subject to these replanting ratios.
Individual Oak	Any impact	Exact tree count followed by replanting in-kind oak at the following ratios: <ul style="list-style-type: none"> 2:1 for dbh 3"-15" 5:1 for dbh < 15" Transplanted trees that fail are subject to these replanting ratios.

Impacts to Oak Savanna

Impacts to oak savanna will be handled in the same manner as impacts to oak woodland without significant loss of canopy cover. This method of mitigation is suitable for Phase One and future phases of development.

Impacts to Individual Oaks

Impacts to oaks that occur outside of habitat mapped as oak woodland or oak savanna will be handled in the same manner as impacts to oak woodland without significant loss of canopy cover. This method of mitigation is suitable for Phase One and future phases of development.

4.0 OAK MITIGATION

Detailed tree counts will be maintained as necessary in order to ensure full mitigation within the appropriate area of the Guenoc Valley Site.

4.1 OAK WOODLAND PRESERVATION

A significant portion of oak woodland within the development area is avoided through residential development restriction or project design. The area of potential oak woodland preservation was identified based on the type and quality of habitat impacted by the Proposed Project. **Attachment A** shows potential oak impacts resulting from Phase 1 and illustrates the existing and proposed preservation areas under Phase 1. Of the oak preservation presented in **Attachment A**, a total of 464 acres are preserved within Lake County and located within the POU pursuant to the 2009 Guenoc Valley Water Rights FEIR (AES, 2009). In addition to the 464 acres of oak woodlands required to be preserved within Lake County and located within the POU, 853 acres of oak woodlands are in long term preservation within the Preserved Open Space Area, which will be in long-term management, for a total of 1,317 acres of existing preserved oak woodlands. Additionally, based on a preservation ratio of 1.5 acres to 1 acre impacted, additional acres of oak woodland would be preserved through restrictions on residential lot development and avoidance of woodland within commercial lots. The total area of existing and proposed oak preservation within the Guenoc Valley Site following Phase 1 development would be 1,633 acres. **Table 3** shows a summary of proposed oak preservation areas related to Phase 1 impacts.

TABLE 3
PHASE 1 MAXIMUM OAK WOODLAND PRESERVATION REQUIREMENTS FOLLOWING IMPACT MINIMIZATION

Habitat Type	Maximum Acres of Significant Cover Loss	Maximum Acres Required for 1.5:1 Preservation
Interior Live Oak	53	80
Valley Oak	1	1.5
Blue Oak	166	249
Mixed Oak	0	0
Total	220	331

Acres of oak woodland preservation will be protected prior to the issuance of a building or grading permit of a commercial property or the recordation of the final map prior to the sale of a residential parcel. This Oak Mitigation Plan will serve as an agreement between the property-holder of the Guenoc Valley Site and Lake County, restricting future development on the identified oak woodland preservation areas. Any future modification of such preservation areas would require additional identification of oak preservation such that acreage of preserved oak woodland by species is not lost. Since these

conservation areas will be filed as a deed restriction and recorded as a development restriction on the title, a formal conservation easement filed with Lake County is not necessary.

4.2 OAK TREE PLANTING

Because exact tree counts are dependent upon final development plans, this section serves to outline a method for determining suitable oak planting locations. Suitable oak habitat replacement or preservation should be of similar quality to support successful oak establishment.

Additionally, locations for mitigation plantings should consider practicality of planting and maintenance based on the location. Oaks may be planted in suitable habitat where oaks do not substantially occur, or where cover is low. These locations also considered surrounding land use and targeted those areas most likely to be preserved throughout all phases of development. Potential locations were selected for plantings based on suitable supporting habitat, continuity of the landscape, and other metrics that would increase the success and functionality of mitigation plantings. Selection also considered the accessibility of the location for the purpose of planting, maintenance, and monitoring. Habitat of similar quality and practicality for mitigation plantings may be utilized.

A qualified biologist will confirm the tree removal count and the required number of compensatory plantings for a development area. Tree counts and planting locations will be carefully documented in order to ensure compliance with this Plan. Oak plantings will be initiated no later than the suitable planting season following oak removal for which a parcel or area of development has been impacted. Oak seedlings will be planted with the intent of replacing not only the trees themselves, but restoring the functionality of the habitat impacted by the Proposed Project.

Source and Size of Mitigation Plantings

Oak planting required for mitigation may be obtained from a variety of sources. An on-site nursery currently produces seedlings from acorns collected on site and could be used to provide for a portion of plantings. Direct plantings of acorns and seedlings collected on site may also occur. Each individual oak planting, whether it be sourced from the nursery or planted directly, will count as one individual for the sake of tree replacement mitigation ratios, and subject to the monitoring requirements outlined in **Section 5.0**. Should needs exceed the on-site production of acorns and seedlings, locally sourced nurseries within 200 miles of the project site may be used to provide seedlings.

Transplanting of Oak Trees

When possible, transplanting of trees removed during development will also be used in oak woodland creation areas. Due to the value of mature trees, preferential selection for transplanting should be given to those trees with a dbh equal to or greater than 15" when possible. If the tree planned to be removed is successfully transplanted, then there is no additional required mitigation. Transplanted trees will be monitored as outlined in **Section 5.0**. Should a transplanted tree fail, replanting as outlined in **Section 2.2** will occur. The following outlines the methods used for transplanting of oaks previously performed on the Guenoc Valley Site to be used for oaks transplanted through construction of the Proposed Project:

- Select tree to be salvaged / transplanted;
- Evaluated current health of selected tree taking into consideration age, vigor, presence of sickness, fungus, pest/disease;

- Evaluate the type and conditions of the soil where the tree is growing (sandy, rocky, clay, etc.). Root pruning and transplant methods will vary based on these conditions;
- Evaluate labor and machinery available to transplant. Size of root ball, root-pruning methodology and system of containerization will vary based on these variables;
- Determine root ball dimensions based on size of tree, conditions of soil, and target final weight of root ball/tree;
- Initiate exploratory digging around root ball perimeter. This exploratory dig will reveal extent of lateral root system and soil profile;
- Once root ball perimeter is determined and marked, initial digging is initiated around all or a portion of the root ball;
- Depending on the species and its root system, often main lateral roots are left intact to a) minimize shock to the tree and b) to maintain tree stability, so it does not fall down;
- Ideally perform initial root ball digging during the dormant season;
- Once the first stage of root ball digging is complete, the ball is wrapped tightly in heavy duty black plastic, or a layer of burlap followed by then black plastic. The purpose of this is to retain humidity within the root ball while reducing direct sunlight on the exposed roots;
- Depending on the tree species, the tree will often be left for a matter of months or even up to a year following the initial root prune. The purpose of this is to allow the tree to recover from the shock of root pruning prior to cutting main lateral roots and lifting the tree;
- During this rest period the tree is regularly monitored for overall health and to ensure adequate moisture, etc.;
- The following stage involves gradual cutting of lateral roots, finalized shaping of the root ball and in many cases, construction of a box or container around the root ball. Very heavy trees will often be lifted from this box;
- Once the tree is containerized, the tree is ready to be lifted. Ideally this will occur during or just prior to a dormant season (typically fall or winter), although this is not always possible;
- Lifting / transplant methods vary from species to species and are also dependent on soil type, proximity of tree to final planting location, and the type of machinery being used to transplant. In the case of blue oaks, a large articulating forklift is used to lift the tree from the bottom of the box. The tree is then transported by the articulating forklift to its designated staging area or final planting location., and
- Following tree extraction and relocation, the tree hole is backfilled, and erosion control measures are implemented.

Planting Specifications

There are several methods to increase the success of direct acorn plantings. The following specifications are to be followed for the collection and direct plantings of acorns:

- Collection of acorns for planting should occur within the same year that tree planting would occur. Acorns are ready to pick from trees when the acorn cap can be easily separated from the acorn without tearing the seed coat.
- If unable to plant acorns immediately, acorn caps should be removed, and acorns will be stored under cool moist conditions until ready to be planted.
- Three to four acorns will be planted two to four inches deep on their side approximately three inches apart in order to maximize the germination success of at least one seedling.
- Organic mulch may be applied after planting, extending to a three to four-foot radius, and to a height of two to three inches over the top of the soil. Water following the planting.

The following planting specifications will be followed to increase the success rate for seedlings and transplanted trees:

- Should needs exceed the production capabilities of the on-site nursery, seedlings are to be sourced from a nursery that is growing trees from locally sourced acorns.
- Organic mulch will be applied after planting, extending to a three to four-foot radius and to a height of two to three inches over the top of the soil. Water following planting.
- Seedlings planted from starter pots are to be planted in holes dug slightly deeper than pot height and twice the width. Holes should be dug by hand when possible with smooth edges loosened to promote root growth.
- Any trees that are staked should be done so such that the straps are loose enough to allow for natural bending and movement of the tree while being tight enough to protect the tree from structurally damaging movements such as high-wind storms. Stakes should be removed following successful establishment.

Oak woodland planting areas should be planted with irregular spacing and clumps of trees to reflect the natural and aesthetic qualities of the existing oak woodlands.

Methods of Irrigation

Irrigation methods will vary based on the locations of the planting sites within the mitigation areas. Some planting sites may not need supplemental irrigation if there is a sufficient source of groundwater. If tree planting takes place during the rainy season, supplemental irrigation is not anticipated to be necessary during the first year. Irrigation methods for mitigation areas planted in the dry season will likely include the installation of temporary drip irrigation systems. Tree plantings will be irrigated in the absence of enough groundwater during the dry season in their first two years of growth in order to promote seedling survival. The plantings should not need to be irrigated during the wet season.

Planting Schedule

Acorn and seedling planting will be conducted between the months November and December, pending availability of seedlings or acorns. Planting during the fall will facilitate establishment of the planted acorns and seedlings during the rainy season. Plantings should begin no later than the first suitable planting season following oak tree removal for the Proposed Project.

Seedling Protection

In areas that have issues with herbivory, seedlings or acorn planting sites will be provided with adequate protection from damage to increase survival rates. These protections usually consist of tree shelters, or small wire mesh cages covering the seedling to reduce the likelihood that deer or other herbivores will consume the young trees. Mesh should be of an appropriate size to prevent entrapment of songbirds.

4.3 OAK HABITAT ENHANCEMENT

These areas may be used for tree-by-tree mitigation or restoration activities and will follow the specific planting instructions above. Oak habitat enhancement may occur in areas of oak savannah and pine-oak woodland but may include the enhancement of other mixed-oak habitat.

4.4 MITIGATION AREA MAINTENANCE

Maintenance of the mitigation areas will consist of weed removal, removal of trash and litter, inspection of tree shelters and wire mesh, fencing (as needed), irrigation systems, tree stakes, and inspection for evidence of vandalism or other uses conflicting with the goals of this Plan.

Weed Control

Three primary techniques are available for weed control maintenance activities in the oak planting areas: mowing, hand weeding, and herbicide application. Mowing and/or hand weeding are the preferred methods of weed control. If herbicides are used, they will be applied only by licensed personnel in strict accordance with the manufacturer's regulations. No herbicide should contact the leaves or stems of the oak trees. Herbicide use will be as restricted as possible; spot applications are preferred, and extreme care should be taken when applying herbicides in the vicinity of open water, wetlands, existing native vegetation, and revegetation plantings. No weed control is necessary in the oak preservation areas.

Removal of Trash and Litter

Trash and litter, which may blow into the mitigation areas, will be removed periodically. Any trash observed within the mitigation areas during the monitoring visits will be reported and/or removed.

Other Inspections

Planting equipment such as tree shelters, wire mesh, fencing, irrigation systems, or tree stakes if used, will be inspected during quarterly monitoring visits by a qualified biologist described in **Section 5.0** below. Instructions to correct any defects will be included in the biological monitoring reports. Evidence of any uses conflicting with the goals of this tree mitigation plan will be included in the monitoring reports.

Maintenance Schedule

The oak planting mitigation sites will be visited by the Ranch staff at least twice monthly during the first six months to assess the effectiveness of the irrigation system (if applicable) and to inspect any tree shelters, wire mesh, fencing, or tree stakes used. Quarterly visits, as described in **Section 4.3**, will also ensure that plantings and irrigation are functioning as designed. These quarterly visits will be performed by a qualified biologist throughout the remainder of the three-year monitoring period, described further in **Section 5.0** below.

5.0 MONITORING PLAN

5.1 DATA COLLECTION

Mitigation sites will be inspected by a qualified biologist or certified arborist for three years after planting. Monitoring site visits will involve assessing the status of the replacement plantings, determining the need for irrigation, identifying weeds for removal, and assessing the overall integrity and success of the mitigation sites.

Monitoring reports will, at a minimum, include the following metrics of successful oak establishment: survival rates, overall health, dbh of mitigation plantings, and the status of competing woody vegetation. Criteria described below will apply to both Phase 1 and future phases of development.

5.2 SUCCESS CRITERIA

Oak Preservation Areas

The oak preservation areas do not have success criteria. Because the oak preservation areas are ecologically functional oak woodlands, these areas need only to be protected from future development in order to offset the impacts to oak woodlands elsewhere on the property.

Oak Habitat Planting Areas

The oak replanting mitigation will be considered successful when, after three years, the tree plantings have achieved an 80 percent success rate. If additional plantings are necessary to increase the total plantings to meet the 80 percent survival rate, these seedlings will be monitored for a full 3 years to ensure success of those additional plantings. A high level of replanting success is anticipated with the use of protective measures, along with placement of the plantings in appropriate habitat.

Oak Habitat Enhancement Areas

Oak woodland enhancement areas are deemed successful when, after three years, the tree plantings have achieved an 80 percent success rate. If additional plantings are necessary to increase the total plantings to meet the 80 percent survival rate, these seedlings will be monitored for a full 3 years to ensure success of those additional plantings. A high level of replanting success is anticipated with the use of protective measures, along with placement of the plantings in appropriate habitat.

5.3 REPORTING

A qualified biologist or certified arborist will inspect the site during planting to ensure that it is completed in compliance with this plan and to create a baseline of the locations for future inspections. Due to the size of the property, the projected development timeline, and the associated mitigation plan, restoration areas may be broken into Mitigation Units. Each Mitigation Unit will be mapped with an approximate tree count and submitted to Lake County immediately following mitigation plantings. A total of three annual reports will be completed for each Mitigation Unit, with additional reports as necessary until all success criteria are met. Annual reports will include the quarterly report along with an analysis on the projected success of mitigation and any adaptive management recommendations.

The first annual inspection will occur approximately one year after installation and will include a report documenting the results of the monitoring efforts. Annual reports will be submitted to the Lake County within six months of the monitoring event for a total of three years, starting the year following the initial planting. This reporting scheme will be followed such that all mitigation plantings on the Ranch associated with Phase 1 and future phases of development receive a full three years of mitigation monitoring in order to reach success criteria, with additional mitigation and monitoring as needed to meet success criteria. Should adaptive management recommendations and supplemental plantings occur, the annual report will include the notice of new plantings needed to replace failed trees, along with documentation (summary data and photos) to illustrate the condition and location of plantings. The report should include the success of natural revegetation, establishment, survival, and height of replacement tree plantings, and the status of the oak improvement area's competing woody vegetation.

5.4 SCHEDULE

Oak plantings may occur during the appropriate planting season prior to the development of the Proposed Project and must be initiated no more than one planting season following tree removal. The

first annual monitoring of the mitigation sites will be conducted the year following the initial planting, with a total of three yearly monitoring reports.

5.5 ADAPTIVE MANAGEMENT

If trees planted in the mitigation areas are deemed to be performing poorly, a contingency plan may be submitted to Lake County requesting modifications to this Plan. Modifications may only be requested related to the location and management of mitigation plantings and will not result in the reduction of plantings or success criteria described herein.

6.0 COMPLETION OF MITIGATION

Once the minimum three-year monitoring period is completed and success criteria met for all mitigations, Lake County will be informed that the mitigation requirements have been completed. A qualified biologist will prepare the Notice of Completion of mitigation activities and will include the final annual report for each mitigation unit detailing the achievement of success criteria. Therefore, completion of mitigation activities will include the following reports and documentation:

- Mapping submitted to and approved by Lake County detailing all oak woodland preservation locations;
- Mapping submitted to and approved by Lake County detailing potential oak planting locations;
- Maps submitted to Lake County detailing Mitigation Units as they are designated;
- A minimum total of three annual reports for each Mitigation Unit submitted to Lake County;
 - The first annual report will document the specific planting details such as location of plantings, species, number of trees, and other important tracking information.
 - Additional annual reports may be necessary if additional supplemental plantings occur.
 - A request may be sent to Lake County to amend mitigation planting location(s) and monitoring activities based on tree performance and subject to County approval.
- A Notice of Completion of mitigation activities submitted to Lake County; and
- A final site visit with the County, if requested by the County.

Lake County may require a site visit to confirm that the success criteria have been met and that the required mitigation has been completed. The landowner will retain the oak mitigation areas and will not use them in a way that significantly degrades the ecological value of the mitigation area without notice to and approval by the County. With prior notification, the property may be periodically inspected by the County to ensure compliance with this Plan.

6.1 ASSURANCE OF MITIGATION PERMANENCE

This document will serve as an assurance that the mitigation measures will be performed as described. Any future development of this property within Lake County will be bound to this agreement. Future development on the Ranch in Lake County occupied by oak trees, specifically the areas of oak replanting and oak woodland preservation covered in this document, will require consent from Lake County. The landowner agrees to the mitigation and reporting requirements described in **Sections 3.0, 4.0, and 5.0**, and acknowledges that the completion of the mitigation described in **Section 6.0** does not permit the cutting or development of the oak mitigation areas.

Further development or cutting of oaks on this property beyond the Phase 1 and future phases of development plans outlined here would require consent from Lake County and consistency with this

Oak Mitigation Plan. Future development plans would be contingent on the continued protection and upkeep of the oak preservation and oak replanting areas. The applicant consents to not implement any activity on the property that may result in an impact to oak woodland habitat or is inconsistent with this Plan without first consulting with the County. Therefore, modification of development plans not specifically authorized by this Plan will occur only with the understanding and required approvals by Lake County.

7.0 REFERENCES

Analytical Environmental Services (AES). 2008. *Langtry Farms Water Rights Modification Project Oak Tree Replacement Plan*.

Analytical Environmental Services (AES). 2009. *Guenoc Water Rights Modification Project Final Environmental Impact Report*.

Lake County. 2008. *Lake County General Plan*. Available online at:
<http://www.co.lake.ca.us/Page3939.aspx>. Accessed June 2019.

MAHA Developments. 2019. Specific Plan of Development for the MAHA resort at Guenoc Valley.

Western Regional Climate Center (WRCC). 2016. Middletown, CA: Period of Record Monthly Climate Summary. Available online at: <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5598>. Accessed June 2019.

WRA, Inc. (WRA), 2020a. Biological Resources Assessment for MAHA Resort and Guenoc Valley Development, Phase 1 Lake County, California.

WRA, Inc. (WRA), 2020b. Biological Resources Assessment for MAHA Resort and Guenoc Valley Development, Phase 2 and Open Space Lake County, California.

ATTACHMENT A

MAHA GUENOC VALLEY OAK PRESERVATION PLAN

MAHA GUENOC VALLEY

OAK PRESERVATION PLAN

FEBRUARY 18, 2020

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OVERALL ESTIMATES

EXISTING OAK WOODLAND COVERAGE

COMMUNITIES	BLUE OAK WOODLAND	BLUE OAK SAVANNA	INTERIOR LIVE OAK	VALLEY OAK WOODLAND	MIXED OAK WOODLAND	TOTAL
EXISTING OAK WOODLAND COVERAGE (PG 2)	3,452 AC	1,215 AC	753 AC	50 AC	175 AC	5,645 AC

TOTAL PROJECT SITE AREA: 16,000 AC

OAK WOODLANDS IMPACT AND PRESERVATION

	OAK WOODLANDS GREATEST POTENTIAL IMPACT*	OAK WOODLANDS AREA RATIO PRESERVATION
PROPOSED ROADWAY DEVELOPMENT (PG 3)		
ROADWAYS	12 MI	—
	12 MI	
PROPOSED PROJECT (PG 3 & 4)		
VILLA & RESORT RESIDENTIAL PARCELS	128 AC	489 AC
COMMERCIAL & FACILITY PARCELS	92 AC	118 AC
RURAL LANDSCAPES	0 AC	188 AC
DESIGNATED OPEN SPACE	0 AC	868 AC
TOTAL	220 AC	1,663 AC**

*Oak woodlands impacted by roadway development and Blue Oak Savanna impacted within parcels will be mitigated with tree-by-tree replacement ratios as described in the Oak Mitigation Plan. Tree-by-tree replacement areas will be identified on an ongoing and as-needed basis and are not reflected in the "Project Area Ratio Preservation of Oak Woodlands" plan on page 4.

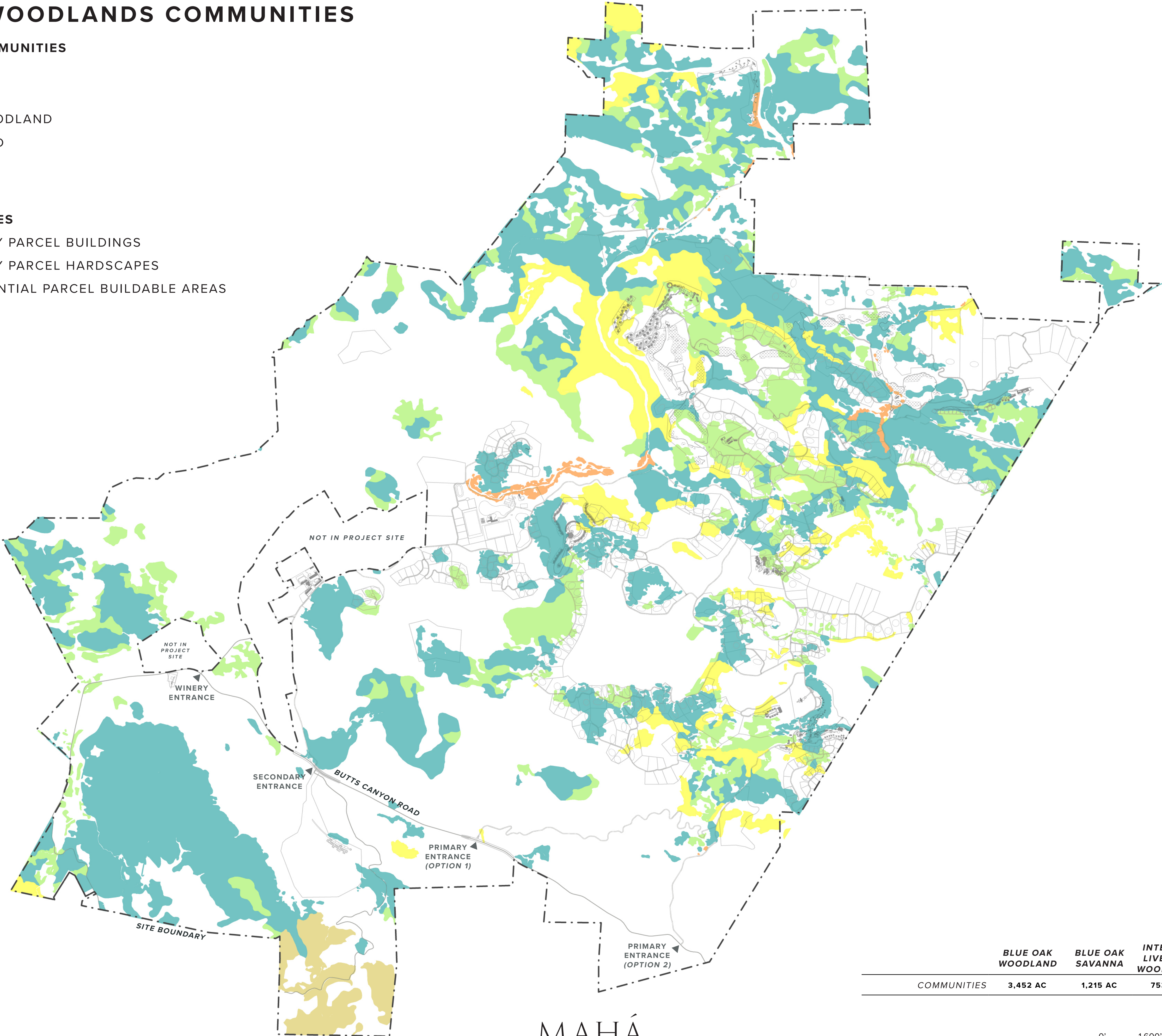
**Please note this figure is higher than the 1,633 overall oak preservation figure as reported in the Oak Mitigation Plan, as it includes the combination of preservation to both Blue Oak Savanna and Oak Woodland communities.

EXISTING OAK WOODLANDS COMMUNITIES

- OAK WOODLANDS COMMUNITIES**

 - BLUE OAK WOODLAND
 - BLUE OAK SAVANNA
 - INTERIOR LIVE OAK WOODLAND
 - VALLEY OAK WOODLAND
 - MIXED OAK WOODLAND
- DEVELOPMENT FEATURES**

 - COMMERCIAL & FACILITY PARCEL BUILDINGS
 - COMMERCIAL & FACILITY PARCEL HARDSCAPES
 - VILLA & RESORT RESIDENTIAL PARCEL BUILDABLE AREAS
 - GOLF COURSE
 - ROADWAYS
 - PARCELS
 - PROPERTY BOUNDARY



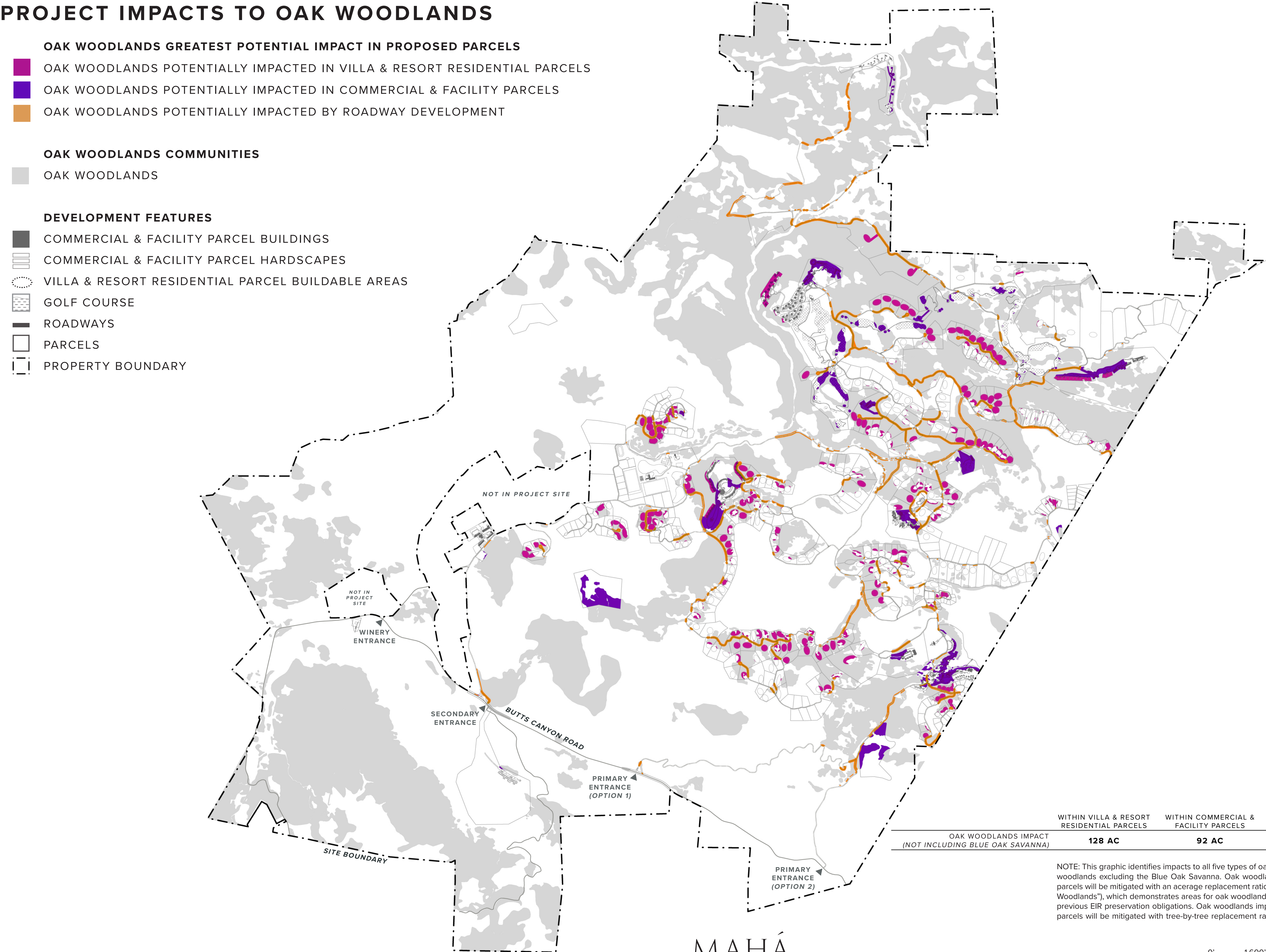
	BLUE OAK WOODLAND	BLUE OAK SAVANNA	INTERIOR LIVE OAK WOODLAND	VALLEY OAK WOODLAND	MIXED OAK WOODLAND	TOTAL
COMMUNITIES	3,452 AC	1,215 AC	753 AC	50 AC	175 AC	5,645 AC

PROJECT IMPACTS TO OAK WOODLANDS

- OAK WOODLANDS GREATEST POTENTIAL IMPACT IN PROPOSED PARCELS
- OAK WOODLANDS POTENTIALLY IMPACTED IN VILLA & RESORT RESIDENTIAL PARCELS
- OAK WOODLANDS POTENTIALLY IMPACTED IN COMMERCIAL & FACILITY PARCELS
- OAK WOODLANDS POTENTIALLY IMPACTED BY ROADWAY DEVELOPMENT

- OAK WOODLANDS COMMUNITIES
- OAK WOODLANDS

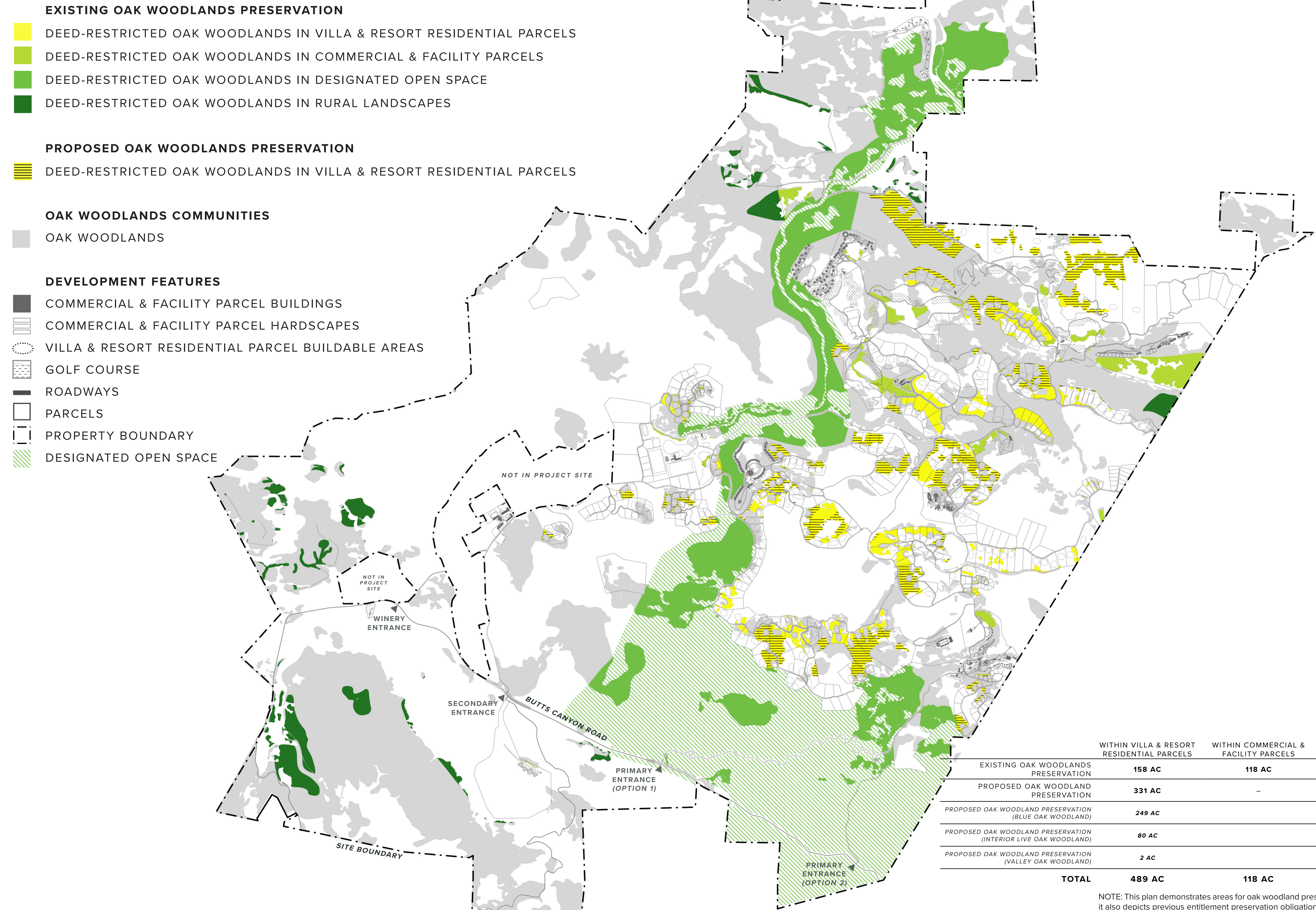
- DEVELOPMENT FEATURES
- COMMERCIAL & FACILITY PARCEL BUILDINGS
- COMMERCIAL & FACILITY PARCEL HARDSCAPES
- VILLA & RESORT RESIDENTIAL PARCEL BUILDABLE AREAS
- GOLF COURSE
- ROADWAYS
- PARCELS
- PROPERTY BOUNDARY



	WITHIN VILLA & RESORT RESIDENTIAL PARCELS	WITHIN COMMERCIAL & FACILITY PARCELS	PARCEL IMPACT TOTAL	BY ROADWAY DEVELOPMENT
OAK WOODLANDS IMPACT (NOT INCLUDING BLUE OAK SAVANNA)	128 AC	92 AC	220 AC	12 MI

NOTE: This graphic identifies impacts to all five types of oak woodlands, while the table summarizes impacts to the oak woodlands excluding the Blue Oak Savanna. Oak woodlands (not including the Blue Oak Savanna) impacted within parcels will be mitigated with an acreage replacement ratio; please see page 4 ("Project Area Preservation Ratio of Oak Woodlands"), which demonstrates areas for oak woodlands preservation to mitigate for these impacts and to also fulfill previous EIR preservation obligations. Oak woodlands impacted by roadways and Blue Oak Savanna impacted within parcels will be mitigated with tree-by-tree replacement ratios; tree-by-tree replacement areas will be identified on an

PROJECT AREA RATIO PRESERVATION OF OAK WOODLANDS



	WITHIN VILLA & RESORT RESIDENTIAL PARCELS	WITHIN COMMERCIAL & FACILITY PARCELS	WITHIN DESIGNATED OPEN SPACE	WITHIN RURAL LANDSCAPE	TOTAL
EXISTING OAK WOODLANDS PRESERVATION	158 AC	118 AC	868 AC	188 AC	1,332 AC
PROPOSED OAK WOODLAND PRESERVATION	331 AC	-	-	-	331 AC
PROPOSED OAK WOODLAND PRESERVATION (BLUE OAK WOODLAND)	249 AC				249 AC
PROPOSED OAK WOODLAND PRESERVATION (INTERIOR LIVE OAK WOODLAND)	80 AC				80 AC
PROPOSED OAK WOODLAND PRESERVATION (VALLEY OAK WOODLAND)	2 AC				2 AC
TOTAL	489 AC	118 AC	868 AC	188 AC	1,663 AC

NOTE: This plan demonstrates areas for oak woodland preservation to mitigate for impacts to oak woodlands, in addition it also depicts previous entitlement preservation obligations. Please see the Oak Mitigation Plan for further information.