Sutter County
Initial Study

1. Project title: Project #U23-0023 (Raub)

2. Lead agency name and address: Sutter County Development Services Department
Planning Division
1130 Civic Center Boulevard, Suite A
Yuba City, CA 95993

3. Contact person and phone number: Casey Murray, Senior Planner
530-822-7400 ext. 245

4. Project sponsor's name and address:

Applicant:
Gordon A. Raub 03 Trust
2400 Irwin Avenue
Sutter, CA 95982

Owner:
Paula E. Raub, Trustee of the Gordon A. Raub Trust and Paula E. Raub Trust
2400 Irwin Avenue
Sutter, CA 95982

Engineer/Surveyor:
MHM, Inc.
Sean Minard
1204 E Street
Marysville, CA 95901

5. Project Location & APN: 2354 Perry Avenue, Sutter, CA 95982; on the east side of Irwin Avenue, on the west side of Perry Avenue, on the north side of South Butte Road, within the unincorporated area of Sutter County; APN: 13-222-008, 13-222-009, 13-231-006, 13-231-007, 13-231-008, 13-231-009

6. General Plan Designation: ER (Estate Residential)

7. Zoning Classification: ER (Estate Residential) District

8. Description of project: The proposed project is a Tentative Subdivision Map to divide six existing 10-acre parcels into 17 estate residential lots and one remainder parcel (See attachments 1 and 2). The lot sizes will range from 2.95 net acres to 3.00 net acres with a total net acreage of 55.52. The project consists of 60.0 gross acres. The lots have a proposed density of 0.34 dwelling units per acre. The road right-of-way to be dedicated to the County along Irwin Avenue, Perry Avenue, and South Butte Road totals 3.33 acres and ditch right-of-way is 1.15 acres reducing the project to 55.52 net acres. There are also two detention pond parcels consisting of 1.12 net acres (Lot A) and 1.08 net acres (Lot B) included in the 55.52 net acres. The tentative map shows net and gross acres for each proposed lot. The project proposes to subdivide the project site and construct the required subdivision improvements including roadway, drainage, and utilities, and does not propose construction of any dwellings.

The existing use of the property is an almond orchard. A single-family residence and accessory structures are located at the northeast corner of the site and are proposed to remain in place on the proposed remainder parcel. The owner does reserve the right to demolish the residence and construct a new residence in the future. The existing residence is served by an individual on-site well and septic system and

is accessed by an existing driveway off of Perry Avenue.

The proposed lots have frontage on Perry Avenue, South Butte Road, and Irwin Avenue, which are all County maintained roads. Lots 1 – 8 will be accessed from Perry Avenue and Lots 9-17 will be accessed by Irwin Avenue. The subdivider reserves the right to phase development and file multiple final maps pursuant to Section 66456.1 (A) of the subdivision map act. A four (4) phase project is proposed and shown on the tentative map. All infrastructure needed for each phase will be completed so that each phase will function as a standalone subdivision without completion of the entire project.

Each lot is proposed to be served by an individual on-site well and septic system designed and installed under permit by the County Development Services Environmental Health Division in compliance with State law and local ordinance. A total of 40 mantles were performed with at least two on each future lot. These mantles where used to establish the location of the minimum usable sewage disposal area (MUSDA) and size in accordance with the Sutter County Code of Ordinances 700-130. The MUSDA sizes are shown on the proposed tentative map based on 5-bedroom homes. If less bedrooms are considered the size of the MUSDA can be reduced to the County minimum.

Dry utilities (AT&T, Comcast, PG&E) will be brought into the development to serve residents utilizing existing and proposed easements.

Drainage will be mitigated onsite such that the peak runoff from the property shall be the same as pre-development conditions or less. The property drains in a southern direction towards the roadside ditch on South Butte Road. The historic drainage pattern will be maintained with each lot draining towards a ditch located in the middle of the project. The ditch will drain into a detention pond. The drainage facilities will be dedicated to the County of Sutter. The detention pond will also be used for water quality. The detention pond and ditch shall be located more than 50 feet from the MUSDA and over 100 feet from water wells.

The MUSDA, drainage ditch, and detention pond for all of the lots were placed based on having individual water wells on each property. The subdivider reserves the right to consider annexation into Sutter Community Services District (CSD) for domestic water to serve just the Perry Avenue lots or all the lots. The project site is currently located outside the Sutter CSD boundary but is located within its sphere of influence (SOI) or future growth area for the CSD. If the project is approved and annexation is desired, a separate application/public hearing process will occur with the Sutter Local Agency Formation Commission (LAFCO) to annex the property into the Sutter CSD.

9. Surrounding land uses and setting: The project site consists of six existing 10± acre legal parcels totaling 60± acres. Each existing parcel is a square with dimensions of 660 feet by 660 feet. Three parcels have frontage on Irwin Avenue, two parcels have frontage on South Butte Road, and three parcels have frontage on Perry Avenue (See attachments 1-7).

This project is located within the Rural Planned Community of Sutter, which is an unincorporated community. The 2015 General Plan, adopted on November 25, 1996, designated the subject property as Estate Residential (ER) with an underlying Urban Reserve (UR) designation. The current 2030 General Plan was adopted on March 29, 2011. During preparation of the 2030 General Plan, the community of Sutter was designated as a Rural Planned Community and determined to be one of the Growth Areas in the County. The General Plan defines Growth Areas as areas where new growth and development should be directed within the County (Page 3-2; Figure 3-1). The underlying Urban Reserve designation was removed from the subject property and it remained designated Estate Residential. On February 21, 2012, the subject property was rezoned from AG (Agriculture) to ER (Estate Residential) through the County's consistency rezoning process (Project #11-026).

The subject property, together with the rural community of Sutter, is located southeast of the Sutter Buttes. The project area includes a mix of residential and agricultural uses. Surrounding uses consist of rural residential uses to the north, single-family residential uses to the south, rural residential and single-family residential uses to the east, and rural residential uses, a winery, and almond orchards to the west. The density proposed is less than the existing developed community of Sutter that borders this site to the east.

North: rural residential; South: South Butte Road, single-family residential; East: Perry Avenue, rural residential, single-family residential; West: Irwin Avenue, rural residential, winery, almond orchard.

10. Other public agencies whose approval is required: The applicant may propose to have potable water provided by a connection to the Sutter CSD public water system. This will require annexation of this property to the Sutter CSD under a separate application process with Sutter LAFCO.

Other permits and approvals required are listed below. It should be noted that this list is not exhaustive and additional permits and approvals may also be required.

- *County of Sutter Tentative Subdivision Map, Final Map(s)*
- *County of Sutter Building, Well and Septic, Grading and Encroachment Permits*
- *Feather River Air Quality Management District (FRAQMD). The proposed project is within the jurisdiction of the FRAQMD and will be required to comply with FRAQMD rules and regulations, including but not limited to Rule 3.0, 3.15, 3.16, 3.17, 3.23, and 7.10.*
- *Central Valley Regional Water Quality Control Board, SWPPP*. The proposed project site is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB will require a Storm Water Pollution Prevention Plan (SWPPP) to prevent impacts related to stormwater as a result of project construction

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.? The County initiated Assembly Bill 52 (AB 52) consultation through distribution of letters to the Native American tribes provided by the Native American Heritage Commission (NAHC). No request for consultation were received from Native American tribes during the review period.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology and Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☐ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ **I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.**

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Applicant Mitigation Agreement:

CEQA allows a project proponent to make revisions to a project, and/or to agree and comply with, mitigation measures that reduce the project impacts such that the project will not have a significant effect on the environment. CEQA Guidelines Section 15064.

As the applicant/representative for this proposed project, I hereby agree to implement the proposed mitigation measures and mitigation monitoring program identified within this document.

DocuSigned by:
Paula Raub
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Signature of Applicant/Representative — Date: 11/22/2024

Casey Murray, Senior Planner — Date: 11-22-2024

Neal Hay

Neal Hay, Director of Development Services
Environmental Control Officer — Date: 11-26-2024

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Responses:

a) **Less than significant impact.** This project will not have a substantial adverse effect on a scenic vista. The General Plan Technical Background Report identifies geographic features such as the Sutter Buttes, Feather River, Sacramento River, Bear River, and the valley's orchards as scenic resources within the County, which contribute to the County's character. Additionally, the Land Use Element of the General Plan contains specific goals and policies directed at preservation of scenic resources and enhancing design of new development. This project is not located in the immediate vicinity of the Bear River, Feather River, or Sacramento River. This property, together with the rural community of Sutter, is located adjacent to but not within the Sutter Buttes. This project is located approximately 2,590 feet southeast from the Sutter Buttes and Overlay Zone, which identifies the area defined by the County as the beginning of the Sutter Buttes. One residence exists at the project site and a residence could be built on each of the five other existing lots today. This project will result in a potential net increase of 12 residential units on large lots. The construction of these residential units will slightly obscure various public viewpoints of the Sutter Buttes along County roads. It should be noted that views of the Sutter Buttes from County roads are currently partially obstructed by the existing orchard trees.

The project will result in a single-family residential subdivision consisting of grading and installation of roadway, utility, and drainage infrastructure. The area is not strictly dominated by orchards and includes a mix of residential and agricultural uses; therefore, the project will not significantly impact a vista of unobstructed orchards or agricultural land as a result of the proposed subdivision of land. This property is designated Estate Residential (ER) and zoned Estate Residential (ER) District and the proposed density is consistent with the General Plan's density for ER development which is consistent with the vision for this property in the 2030 General Plan. The density proposed is less than the existing developed community of Sutter

that borders this site to the east. Therefore, this project will not substantially alter any scenic vista and a less than significant impact is anticipated.

b) **No impact.** This project will not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway because there are no state scenic highway designations in Sutter County. As there are no scenic highways located in Sutter County, no impact is anticipated.

c) **Less than significant impact.** The proposed project is located in a nonurbanized area and will not substantially degrade the existing visual character or quality of public views of the site and its surroundings because future residences will be developed consistent with all applicable County standards. This project is located within the Rural Planned Community of Sutter and has existing Estate Residential zoning and General Plan designation in-place. This project is consistent with the General Plan, Estate Residential zoning, and existing residences in the area. This project site has been zoned and designated for residential uses and residential development is an existing permitted use although historically agriculture as an interim use has remained.

The 2015 General Plan, adopted on November 25, 1996, designated the subject property as Estate Residential (ER) with an underlying Urban Reserve (UR) designation. The current 2030 General Plan was adopted on March 29, 2011. During preparation of the 2030 General Plan, the community of Sutter was designated as a Rural Planned Community and determined to be one of the Growth Areas in the County. The General Plan defines Growth Areas as areas where new growth and development should be directed within the County (Page 3-2; Figure 3-1). The underlying Urban Reserve designation was removed from the subject property and it remained designated Estate Residential. For the last 28 years, this site has been committed to ER development.

The proposed density is consistent with the General Plan's density for ER development which is consistent with the vision for this property in the 2030 General Plan. The density proposed is less than the existing developed community of Sutter that borders this site to the east. The minimum lot size for ER zoned property is 0.5 acres and the maximum lot size is three acres. The proposed lots range from 2.95 acres to 3.00 acres; therefore, they are being divided to nearly the lowest density allowed. One residence exists at the project site and a residence could be built on each of the five other existing estate residential lots today. This project will result in a potential net increase of 12 residential units on large estate residential lots. Development associated with this project site was previously considered by the General Plan EIR. This project will allow for an extension of residential uses that currently exist to the north, east, and south of the subject property and will avoid conflicts with the existing visual character of the surrounding community. Future improvements of the site will likely result in the construction of single-family residential homes and accessory structures consistent with existing residential subdivisions in the surrounding area. This project will not substantially degrade the existing visual character or quality of public views of the site and its surroundings and a less than significant impact is anticipated.

d) **Less than significant impact.** This project will not create a new source of substantial light or glare which will adversely affect day or nighttime views in the area. The area of the project has moderate to low levels of ambient lighting predominately from residential and agricultural uses, streetlights on Perry Avenue, and vehicle headlights on County roads. New sources of light and glare will potentially be generated from private lighting affixed to future homes or project entry improvements and streetlights on Perry Avenue; however, these improvements are minor in

nature, are typical of residences in the area, and are not considered significant sources of light or glare. This type of lighting is anticipated for this type of development on property that is already zoned Estate Residential and designated Estate Residential by the General Plan. Anticipated changes to existing levels of exterior lighting that will result from the construction of the project will be minimal. As a result, it is not anticipated that this project will create a new source of substantial light or glare in this area. A less than significant impact is anticipated.

(County of Sutter, General Plan Technical Background Report. 2008)
(County of Sutter, Zoning Code. 2024)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

Responses:

a) **Less than significant impact**. This project will not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, to a non-agricultural use. As shown on the 2020 Sutter County Important Farmland map, the residential developed areas immediately south and east of the project site are designated as "Urban and Built-Up Land." Approximately 1.3 acres of the project site are also designated as "Urban and Built-Up Land." This area at the northeast corner of the project site is the developed area, which consists of a residence and accessory structures. The remaining 58.7± acres of the project site are designated as "Prime Farmland." This 58.7± acres of the site have historically consisted of an almond orchard; however, recently 20± acres of older almond trees along the northern end of the project site were cut down.

Although the site includes "Prime Farmland," the site has been designated by the General Plan for Estate Residential development; therefore, the General Plan EIR analysis has previously contemplated the conversion of the land from agricultural use to residential development. The County General Plan designates the site as ER (Estate Residential) which is intended to allow the development of large lot residential uses with a corresponding ER (Estate Residential) zone district designation. The impacts associated with the type of proposed development were analyzed in the General Plan EIR. This project site has been zoned and designated for residential uses and residential development is an existing permitted use although historically agriculture as an interim use has remained. For the last 28 years, this site has been committed to ER development. The State does not consider existing zoning when they establish their farmland mapping. This application proposes to subdivide this property consistent with existing County policies and density standards. This project will not convert farmland to a non-agricultural use that wasn't previously planned for by the General Plan. This project site is located within the Rural Planned Community of Sutter and development associated with this project site was previously considered by the General Plan EIR. As a result, a less than significant impact is anticipated.

b) **Less than significant impact**. This project will not conflict with existing zoning for agricultural uses or a Williamson Act contract. The project site and all adjacent properties are not encumbered by a Williamson Act contract. Adjacent parcels surrounding the project are zoned ER, R-1 (Single-Family Residential), RAN (Ranchette), and AG (Agriculture). The project site is zoned for large lot residential development. No additional residential development beyond what is currently allowed and was analyzed in the 2030 General Plan EIR will result from this project.

Article 19 of the Zoning Code contains agricultural buffering standards, which are applicable for new or expanded non-agricultural use or development such as the subdivision of Estate Residential properties or other residential subdivisions that require discretionary approval, are located outside established City sphere of influence boundaries or rural community boundaries, are located on land that is not zoned AG, and is adjacent to agriculturally zoned property with existing agricultural uses. The purpose of agricultural buffers is to provide for the long-term viability of agricultural operations and to minimize potential conflicts between adjacent agricultural and new, non-agricultural development and uses. Agricultural buffers are required to be located on the non-agricultural property. Almonds are grown on agriculturally zoned property located west of proposed lots 15, 16 and 17; however, the project site and all surrounding property is located within the Rural Planned Community of Sutter so the provisions of Article 19 of the Zoning Code do not apply. The subdivision is separated from the orchard by Irwin Avenue

and its 50-foot-wide right-of-way. All new homes adjacent to Irwin Avenue will be required to be setback a minimum of 30 feet from the edge of the right-of-way per zoning requirements. Therefore, new homes on proposed lots 15, 16, and 17 will be setback from the adjacent orchards by at least 80 feet. Conflicts between the proposed project and adjacent agricultural land is not anticipated. The adjacent agricultural land is also owned by the project applicant. Additionally, new home buyers will be required to sign a Right to Farm disclosure informing them they may be subjected to impacts related to productive nearby farming activities. A less than significant impact is anticipated.

c) **No impact.** This project does not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)), because the project site and surrounding area does not contain forest land. The project site is not zoned for forest land or timberland nor is it adjacent to land that is zoned for forest land or timberland. This project is located in the Sacramento Valley, a non-forested region. No impact is anticipated.

d) **No Impact.** This project will not result in the loss of forest land or conversion of forest land to a non-forest use because of its location within Sutter County. Sutter County is located on the valley floor of California's Central Valley, and, as such, does not contain forest land. No impact is anticipated.

e) **Less than significant impact.** This project will not involve other changes to the existing environment which could result in the conversion of farmland to a non-agricultural use or conversion of forest land to a non-forest use. This project does not include land being converted from farmland to a non-agricultural use or forest land to non-forest use. The project site is designated Estate Residential by the General Plan and the proposed residential use is consistent with the ER designation and ER zone district. Agricultural uses in the vicinity will continue as they historically have. Staff does not anticipate that this project will result in the conversion of other agricultural lands to non-agricultural use. Therefore, a less than significant impact is anticipated.

(California Dept. of Conservation, Farmland Mapping and Monitoring Program. 2020)
(County of Sutter, Zoning Code. 2024)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Responses:

a) **Less than significant with mitigation incorporated.** This project will not conflict with or obstruct implementation of an applicable air quality plan. Both the federal and State governments have established ambient air quality standards, based on their respective Clean Air Acts, for various air pollutants identified as "criteria" air pollutants. The federal Clean Air Act identifies six criteria pollutants: reactive organic gases (ROG), nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO_2), lead, and particulate matter less than 10 micrometers in diameter (PM10), a subset of which is particulate matter less than 2.5 micrometers in diameter (PM2.5). The California Clean Air Act identifies these six federal criteria pollutants, along with four others.

Under both Clean Air Acts, air basins are classified as being in "attainment" or "nonattainment" of these ambient air quality standards, or they are "unclassified". Any air district that has been designated as a nonattainment area relative to federal and/or State ambient air quality standards for ozone, CO, sulfur dioxide, or nitrogen dioxide is required to prepare and submit a plan for attaining and maintaining the standards for which it is in nonattainment.

The proposed project is located within the Northern Sacramento Valley Air Basin (NSVAB) and the jurisdiction of the Feather River Air Quality Management District (FRAQMD), which covers both Sutter and Yuba Counties. Air quality standards are set at both the federal and state levels. FRAQMD is responsible for the planning and maintenance/attainment of these standards at the local level. FRAQMD sets operational rules and limitations for businesses that emit significant amounts of criteria pollutants. The FRAQMD is either in attainment of or unclassified for all federal and State ambient air quality except for federal standards for ozone and PM10. Portions of Sutter County are also in nonattainment of State standards for ozone. The FRAQMD, in cooperation with other air districts in the northern Sacramento Valley, has prepared the Northern Sacramento Valley Planning Area Air Quality Attainment Plan for the attainment of State ozone standards. Plans have also been prepared for the attainment of federal ozone and PM10 standards.

According to the FRAQMD 2010 Indirect Source Review Guidelines, Significant Impact Thresholds are triggered by the construction of projects larger than 130 new single-family residences, 225,000 square feet of new light industrial space, 350,000 square feet of new warehouse space, or 130,000 gross square feet of new office space. Since this project does not propose construction and is a subdivision of land to create 17 residential lots, it will not trigger this threshold of significance.

Short-Term Construction Impacts

Construction activity will be phased and will temporarily increase emissions in the project vicinity during the construction period. Construction activities, including site clearing, excavation, grading, and paving, would be considered an intermittent air quality impact throughout the construction period of the project. Emission levels would fluctuate depending upon construction activity, equipment type, and duration of use. All equipment must comply with California emissions standards.

Construction activities for the proposed project will emit criteria air pollutants from a variety of activities, including operation of heavy equipment and use of worker vehicles, vendor trucks, and hauling trucks. Emissions of ozone precursors (ROG and NOx) are primarily generated by mobile sources and largely vary as a function of vehicle trips per day and the type, quantity, intensity, and frequency of heavy-duty, off-road equipment used. Typically, a large portion of construction-related ROG emissions results from the application of asphalt on to parking areas, and the application of architectural coatings. Construction-related fugitive dust emissions of PM10 would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather.

Based on the minor nature of the scope of the project consisting of the creation of 17 estate residential lots along with drainage and road improvements, estimated construction emissions of NOx, ROG, and PM10 generated during construction of the subdivision is not expected to exceed FRAQMD thresholds of significance. Therefore, project construction activities will not interfere with the implementation of air quality attainment plans for ozone or PM10. Project construction impacts on air quality will be less than significant.

The FRAQMD considers a project with no operational phase a Type-2 project. A Type-2 project is considered less than significant if the averaged project life emissions do not exceed 25 lbs./day of NOx or ROG, and the daily emissions of PM_{10} does not exceed 80 lbs./day. Projects that qualify as a Type-2 project should implement the Standard Mitigation Measures. This project was circulated to FRAQMD for review and they have required the applicant to complete and submit a Fugitive Dust Control Plan and stated this project is subject to FRAQMD rules and regulations for new development. To ensure these requirements are met, the following mitigation measure is proposed:

> **Mitigation Measure No. 1 (Air Quality):** Prior to any on-site grading, paving, or construction activities, the applicant shall submit a fugitive dust control plan to the Feather River Air Quality Management District (FRAQMD) for review and approval. The applicant shall comply with all FRAQMD standards and construction phase measures. A copy of the approved plan shall be submitted to the Development Services Department.

The approved Fugitive Dust Control Plan serves as an acknowledgement by the project proponent of their duty to address state and local laws governing fugitive dust emissions and the potential for first offense issuance of a Notice of Violation by FRAQMD where violations are substantiated by district staff. The approved Fugitive Dust Control Plan along with the standard construction phase measures are required to be made available to the contractors and construction superintendent on the project site. The approved Fugitive Dust Control Plan requires the project proponent to acknowledge that they have read the FRAQMD Rules and Regulations Statement for new development, which includes state and local fugitive dust emission laws. It further requires the project proponent to acknowledge that it is their responsibility to ensure that appropriate materials and instructions are available to site

employees to implement fugitive dust mitigation measures appropriate for each development phase of this project in order to ensure compliance. It further requires the project proponent to acknowledge that it is their responsibility to ensure that site employees are made formally aware of fugitive dust control laws, requirements, and available mitigation techniques, and that appropriate measures are to be implemented at the site as necessary to prevent fugitive dust violations.

As required by the Fugitive Dust Control Plan, the developer or contractor is required to control dust emissions from earth moving activities, storage, and any other construction activity to prevent airborne dust from leaving the project site. Required measures to control dust emissions include, but are not limited to, suspending all grading operations on a project when winds exceed 20 miles per hour or when winds carry dust beyond the property line, utilizing a water truck to water all work areas as needed, and covering all on-site dirt piles or other stockpiled material.

All projects are subject to FRAQMD rules in effect at the time of construction. All new residential, commercial, and industrial land uses in Yuba and Sutter counties are subject to the Indirect Source Fee collected by FRAQMD. These fees are collected by FRAQMD to offset FRAQMD's costs reviewing projects under CEQA and to mitigate air quality impacts of new development. Projects are subject to the Indirect Source Fee at the time of building permit issuance. FRAQMD has stated that future residential units will be subject to the Indirect Source Fee at the residential rate of $15.00 per unit.

Overall, because this project will not generate emissions above FRAQMD's thresholds of significance for construction and operational activities and will implement the relevant mitigation listed above, a less than significant impact is anticipated.

b) **Less than significant impact.** Neither construction nor operation of the proposed project will generate emissions that will exceed the FRAQMD thresholds of significance, and the project will implement the FRAQMD recommended Standard Mitigation Measures. Therefore, the project will not result in a significant net increase of criteria air pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. A less than significant impact is anticipated.

c) **Less than significant impact.** This project will not expose sensitive receptors to substantial pollutant concentrations. The nearest potential sensitive receptors include residences on all sides of the project site. As discussed in a) above, project construction and operational emissions will not exceed FRAQMD significance thresholds. As such, the nearby sensitive receptors will not be exposed to substantial amounts of pollutant emissions, especially when Mitigation Measure No. 1 is implemented.

The project will generate short-term phased construction emissions of diesel particulate matter (DPM), which is considered a toxic air contaminant that could lead to increased cancer risk with prolonged exposure. DPM emissions will be generated by the operation of off-road construction equipment (e.g., excavators, loaders, cranes, graders) and on-road diesel heavy-duty vehicles.

Toxic air contaminant emissions are considered significant if the emissions lead to a cancer risk of 10 cancers per million people and the Non-Cancer Hazard Index is 1.0. The project construction and operational emissions will be well below the significance thresholds for cancer risk.

This project does not include any project components identified by the California Air Resources Board that could potentially impact any sensitive receptors. These include heavily traveled roads, distribution centers, fueling stations, and drycleaning operations. In summary, construction and operational emissions from the proposed project will not generate substantial criteria pollutant emissions, nor will it generate DPM emissions that will pose a substantial health risk to nearby residences (sensitive receptors). Therefore, the project will not expose sensitive receptors to substantial pollutant concentrations, and the impact is considered less than significant.

d) **Less than significant impact.** This project will not result in other emissions, such as those leading to odors, adversely affecting a substantial number of people. FRAQMD has identified various types of facilities that are known sources of odors, including wastewater treatment plants, sanitary landfills, painting/coating operations, food processing facilities, and green waste and recycling operations. The proposed project will not include operation of any of these types of odor-generating facilities. This project will not introduce a conflicting land use (surrounding land includes residential neighborhoods) to the area and will not have any component that will typically emit odors. Therefore, the project will not be anticipated to generate odors that will affect a substantial number of people and the impact will be less than significant.

(Feather River Air Quality Management District, Indirect Source Review Guidelines. 2010)
(County of Sutter, General Plan 2030. 2011)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
protecting biological resources, such as a tree preservation policy or ordinance?				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Responses:

a), d) **Less than significant with mitigation incorporated.** This project will not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS). This project will also not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of a native wildlife nursery site. The California Natural Diversity Database (CNDDB) is a positive-sighting database managed by CDFW. According to the CNDDB, there are no candidate, sensitive, or special status species identified as potentially occurring on-site or in the immediate area. This project was circulated to CDFW for review, and they did not provide any comments.

During September 19 to 28, 2023, Marcus H. Bole & Associates conducted a CEQA-level Biological Resources Evaluation and Wetland Determination on the subject property (see attachment 8). The methodology of the assessment and the project's setting is included in the report. Due to the long history of agricultural use (orchards) of the property, and the lack of any natural habitat on or near the site, it was concluded that there is limited potential for any of the protected species identified by the USFWS or California Department of Fish & Wildlife to nest or forage on the site.

It was determined that although orchards are not normally considered suitable nesting habitat due to the high level of disturbance during maintenance and harvest phases of operation, there are larger suitable nest trees adjacent to the rural residence within the northern portion of the subject property. These trees were thoroughly examined during onsite surveys and no nests were observed. Surveys were conducted during the latter part of the normal nesting season when nesting activity would have been evident. The biological assessment included the following mitigation measure to ensure that no avian species are impacted.

> **Mitigation Measure No. 2 (Biological Resources):** The following are avoidance and minimization measures for California avian species of special concern and species protected under the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (CFWC). Any suitable nest tree removal and/or ground disturbance activities should begin during the avian non-breeding (September 1 –February 28) season so as to avoid and minimize impacts to avian species. If construction is to begin within the avian breeding season (March 1 – August 31) then a migratory bird and raptor survey shall be conducted within the Subject Property by a qualified biologist. A qualified biologist shall: Conduct a survey for all birds protected by the MBTA and CFWC no later than fifteen (15) days prior to construction activities; map all nests located within 250 feet

of construction areas; develop buffer zones around active nests as recommended by a qualified biologist. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored at least twice (2) per week and a report submitted to the Sutter County Planning Division monthly. If construction activities stop for more than ten (10) days then another migratory bird and raptor survey shall be conducted no later than fifteen (15) days prior to the continuation of construction activities.

Based on the findings of the biological assessment and with the above mitigation measure required, it can be concluded that impacts will be less than significant.

b) **No impact.** This project will not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. There are no streams or rivers in the immediate vicinity. No riparian habitat or other sensitive natural community is known to exist on-site or near the property. No riparian habitats were found on or near the subject property as stated in the biological assessment prepared by Marcus H. Bole & Associates. No impact is anticipated.

c) **No impact.** This project will not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means because there are no known wetlands located within the project site or vicinity. No wetlands are located at the project site according to the National Wetlands Inventory of the U.S. Fish and Wildlife Service. Using the methodologies described in the *1987 Wetland Delineation Manual*, Marcus H. Bole & Associates found no federal jurisdictional wetland habitats within the boundaries of the subject property. No impact is anticipated.

e) **No impact.** This project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Sutter County has not adopted a tree preservation ordinance; however, General Plan Policy ER 3.7 is in place to preserve native oak trees when possible, through the review of discretionary development projects and activities. Policy ER 3.7 also requires a reduction in the loss of oak trees through consideration of tree mitigation and replanting programs. The biological assessment prepared by Marcus H. Bole & Associates states that Valley oaks, walnuts, willows, and pine trees have been planted and maintained as landscape features around the existing house and outbuildings. Marcus H. Bole stated that the Valley oaks were identified in the area northwest of the residence and none were within the area of Perry Street where they could be impacted by road improvements. At the time of their evaluation, they were informed that the oak trees were not planned for removal. Therefore, the Valley oak trees are proposed to be protected in place on the proposed remainder parcel. No impact is anticipated.

f) **No impact.** The proposed project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan because a plan has not been adopted that affects this project site. As a result, not impacts are anticipated.

(County of Sutter, General Plan Technical Background Report. 2008)
(California Department of Fish and Wildlife, California Natural Diversity Database)
(U.S. Fish and Wildlife Service, National Wetlands Inventory, 2024)
(Marcus H. Bole & Associates, Biological Resources Evaluation and Wetland Determination, 2023)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Responses:

a-c) **Less than significant with mitigation incorporated.** The proposed project will not cause a substantial adverse change in the significance of a historical resource or archaeological resource pursuant to §15064.5. This project is not expected to disturb any human remains, including those interred outside of dedicated cemeteries. In Section 4.6 of the General Plan Technical Background Report, Figure 4.6-1 does not list the property as being a historic site. There are no unique features or historical resources located on the project site and the property is not located near a cemetery. The project site is not located within the vicinity of the Bear River, Sacramento River, or Feather River. There is no evidence on the project site indicating that historical or archaeological resources exist. Furthermore, the property has been extensively disturbed to varying depths due to agricultural operations, current activities, and existing development. Therefore, no significant impacts to historical or archaeological resources are anticipated with this project.

Genesis Society conducted a Cultural Resources Inventory Survey for the proposed project (see attachment 9). The report details the results of the survey. Existing records at the Northeast Information Center (NEIC) document that none of the present Area of Potential Effect (APE) had been subjected to previous archaeological investigation, and that no cultural resources had been documented within the APE. As well, the survey included an intensive-level pedestrian survey. No cultural resources were identified within the present APE.

Based on the absence of significant historical resources/unique archaeological resources/historic properties within the APE, Genesis Society recommended archaeological clearance for the project and provided the following as general mitigation measures in the event of inadvertent discovery of cultural resources.

> **Mitigation Measure No. 3 (Cultural Resources):** Consultation in the event of inadvertent discovery of cultural material: The present evaluation and recommendations are based on the findings of an inventory-level surface survey only. There is always the possibility that important unidentified cultural materials could be encountered on or below the surface during the course of future development activities. This possibility is particularly relevant considering the constraints generally to archaeological field survey, and particularly where past ground disturbance activities (e.g., flooding,

residential/agricultural development) have obscured historic ground surface visibility, as in the present case. In the event of an inadvertent discovery of previously unidentified cultural material, archaeological consultation should be sought immediately.

Mitigation Measure No. 4 (Cultural Resources): Consultation in the event of inadvertent discovery of human remains: In the event that human remains are inadvertently encountered during trenching, grading, or other ground-disturbing activity or at any time subsequently, State law shall be followed, which includes, but is not limited to, immediately contacting the County Coroner's office upon any discovery of human remains.

(County of Sutter, General Plan Technical Background Report. 2008)
(Genesis Society, Cultural Resources Inventory Survey, 2024)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Responses:

a-b) **Less than significant impact.** The proposed project will not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This project proposes to subdivide the site into 17 estate residential lots and will require the construction and installation of supporting utility and drainage infrastructure to serve the subdivision.

Overall, this project will not require the creation of a new substantial source of energy generation. Construction of the utilities and drainage infrastructure will require the consumption of diesel and gasoline to power construction equipment and delivery trucks. The size of the project is minor in nature, consisting of 17 residential lots. Construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency, combined with state regulations limiting engine idling times, will further reduce transportation fuel demand during project construction. There are no unusual construction processes that will be more energy-intensive than are used for comparable activities, and no equipment will be used that will not conform to current emissions standards and related fuel efficiencies. For these reasons, it is expected that fuel consumption associated with project construction will not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature within Sutter County.

Future home construction is required to comply with the energy requirements of the State Building Codes, including California's energy code, Title 24, and will not result in a wasteful, inefficient, or unnecessary consumption of energy resources because the energy efficiency standards of the State of California are some of the most stringent codes in the nation. A less than significant impact is anticipated.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☒	☐
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Responses:

a) **Less than significant impact.** This project will not directly or indirectly cause potential substantial adverse effects from rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides because the subject property is not located in an Alquist-Priolo Earthquake Fault Zone and will not exacerbate

existing seismic hazards in the region. Figure 5.1-1 in the General Plan Technical Background Report does not identify any active earthquake faults in Sutter County as defined by the California Mining and Geology Board. The faults identified in Sutter County include the Quaternary Faults, located in the northern section of the County within the Sutter Buttes, and the Pre-Quaternary Fault, located in the southeastern corner of the County, just east of where Highway 70 enters the County (Figure 5.1-1 of the General Plan Technical Background Report). Both faults are listed as non-active faults but have the potential for seismic activity. The project site is relatively level with no significant slope and is not in an area where any documented faults exist. The project will involve minor grading activities that will not exacerbate existing seismic hazards in the region and is unlikely to be affected by earthquakes, liquefaction, or landslides in the region. As a result, a less than significant impact is anticipated.

b) **Less than significant with mitigation incorporated.** This project will not result in substantial soil erosion or the loss of topsoil. According to the USDA Soil Conservation Service Soil Survey of the County, on-site soils consist of Olashes sandy loam, 0 to 2 percent slopes. These soils are unlikely to cause erosion because runoff is very slow with only a slight hazard of water erosion. The General Plan Technical Background Report indicates that soils with a 0 to 9 percent slope have slight erodibility. The project site is relatively level and has been graded in the past to accommodate the existing structures and agricultural use. Severe erosion typically occurs on moderate slopes of sand and steep slopes of clay subjected to concentrated water runoff. These conditions do not exist at the site.

Minor grading work will be required to construct the proposed subdivision and has the potential to result in soil erosion. If the project size is more than one acre, the applicant is required to prepare a Storm Water Pollution Prevention Plan (SWPPP) and obtain a National Pollution Discharge Elimination System (NPDES) General Construction Permit through the Regional Water Quality Control Board (RWQCB) to ensure that soil is not released in storm water from the project site. This will include Best Management Practices designed to prevent sediment and other pollutants from contacting stormwater moving off-site into receiving waters during the construction process. To ensure that a less than significant impact occurs, the following mitigation measure is included.

> **Mitigation Measure No. 5 (Geology and Soils):** STORM WATER QUALITY PROTECTION – DURING CONSTRUCTION.
>
> SWPPP – Prior to construction the applicant shall prepare and submit a Storm Water Pollution and Prevention Plan (SWPPP) if the project's cumulative disturbed area is one acre or more, to be executed through all phases of grading and project construction. The SWPPP shall incorporate Best Management Practices (BMPs) to ensure that potential water quality impacts during construction phases are minimized. These measures shall be consistent with the County's Improvement Standards and Land Grading and Erosion Control Ordinance and the requirements of the National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities. The SWPPP shall be submitted to the County for review and to the Central Valley Regional Water Quality Control Board (CVRWQCB) as required by the NPDES General Permit in effect during construction. During construction, the applicant shall implement actions and procedures established to reduce the pollutant loadings in storm drain systems. The project applicant shall implement BMPs in accordance with the SWPPP and the County's Improvement Standards. The project applicant(s) shall submit a state storm water permit Waste Discharger Identification (WDID) number for each construction project.

If the Project cumulative disturbed area is less than one acre the applicant's engineer shall submit an engineer stamped letter along with a calculation certifying the cumulative disturbed area is less than one acre.

NPDES GENERAL CONSTRUCTION PERMIT - If the project size is one acre or more, the applicant shall file a Notice of Intent (NOI) with the Central Valley Regional Water Quality Control Board (CVRWQCB), prior to construction, to obtain coverage under the California State Water Resources - General Construction Activity Storm Water Permit. Permits are issued by the State Water Resources Control Board, which can provide all information necessary to complete and file the necessary documents. Applicant shall comply with the terms of the General Construction Permit, the County's ordinances, and the NPDES Waste Discharge Requirements for the Sutter County Phase II NPDES Permit.

c) **Less than significant impact.** This project is not located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. As stated above in b), soils at the site have a 0 to 2 percent slope with only a slight hazard of water erosion. The General Plan Technical Background Report indicates that soils with a 0 to 9 percent slope have slight erodibility. In addition, the project is not located in the Sutter Buttes, the only area identified by the General Plan Technical Background Report as having landslide potential. A less than significant impact is anticipated.

d) **Less than significant impact.** This project is not located on expansive soil creating substantial direct or indirect risks to life or property. The soil types on the project site, as stated above in b), have a low to moderate shrink-swell potential. All future construction is required to comply with the current adopted California Building Code, specifically Chapter 18 for soils conditions and foundation systems, to address potential expansive soils that may require special foundation design, a geotechnical survey, and engineering for foundation design. The Sutter County Building Division will implement these standards as part of the permitting process for each home to be established and a less than significant impact is anticipated.

e) **Less than significant impact.** This project does not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. Properties in the area of the project rely on the use of on-site septic tanks and leach field systems for the disposal of wastewater, as there is no sewer system available in the area. The property has an existing septic system/leach field that serves the existing residence.

The Development Services Environmental Health Division reviewed this project and stated that soil testing was conducted April 12th and April 19th, 2023, on each proposed lot to designate the Minimum Usable Sewage Disposal Area (MUSDA), for placement of the initial septic system and reserve area for future septic system replacement and is in accordance with Sutter County On-Site Sewage Treatment and Disposal Ordinance Section 700-130.

As a condition of approval, each phase of the recorded final map shall have a statement that the Minimum Usable Sewage Disposal Area (MUSDA) layout for each parcel is on file at Sutter County Environmental Health office. The MUSDA shall remain unimproved and reserved exclusively for on-site wastewater and any modification to the MUSDA must to be approved by Sutter County.

Any new or expanded septic systems will require evaluation and approval by the Environmental Health Division to ensure compliance with wastewater standards. With compliance with all Environmental Health Division regulations, a less than significant impact is anticipated.

f) **Less than significant impact.** The proposed project will not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. There are no known unique paleontological resources or unique geologic features located in the vicinity of the project. Implementation Program ER 8-D for policy ER 8.2 in the County General Plan requires that when paleontological resources are encountered, all work within 100 feet of the discovery shall be stopped and the area protected from further disturbance until the discovery is evaluated. The appropriate County personnel shall be notified immediately. The resource shall be examined by qualified personnel in accordance with the Society of Vertebrate Paleontology (SVP) guidelines to determine their significance and to develop appropriate protection and preservation measures. A less than significant impact is anticipated.

(County of Sutter, General Plan Technical Background Report. 2008)
(USDA Soil Conservation Service, Sutter County Soil Survey. 1988)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Responses:

a) **Less than significant impact.** This project will not generate additional greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Sutter County is required to reduce greenhouse gas emissions to 1990 levels by the year 2020 consistent with State reduction goals in Assembly Bill (AB) 32. The Climate Action Plan (CAP) was prepared and adopted as part of the General Plan to ensure compliance with AB 32. Sutter County's CAP includes a greenhouse gas (GHG) inventory, an emission reduction target, and reduction measures to reach the target. The CAP also includes screening tables used to assign points for GHG mitigation measures. Projects that achieve 100 points or more do not need to quantify GHG emissions and are assumed to have a less than significant impact.

Sutter County's screening tables apply to all project sizes. Small projects with little or no proposed development and minor levels of GHG emissions typically cannot achieve the 100-point threshold and therefore must quantify GHG emission impacts using other methods, an approach that consumes time and resources with no substantive contribution to achieving the CAP reduction target.

Since the adoption of the CAP, further analysis to determine if a project can be too small to provide the level of GHG emissions reductions expected from the screening tables or alternative emissions analysis methods has been performed. In that study, emissions were estimated for each project within the Governor's Office of Planning and Research (OPR) database. The analysis found that 90 percent of carbon dioxide equivalent (CO_2e) emissions are from CEQA projects that exceed 3,000 metric tons CO_2e per year. Both cumulatively and individually, projects that generate less than 3,000 metric tons CO_2e per year have a negligible contribution to overall emissions.

Sutter County has concluded that projects generating less than 3,000 metric tons of CO_2e per year are not required to be evaluated using Sutter County's screening tables. Such projects require no further GHG emissions analysis and are assumed to have a less than significant impact.

The proposed project will not result in the construction of any additional residences beyond what is already allowed by existing General Plan density standards and no other building construction is proposed by this project. Based on the GHG Pre-Screening Measures, construction of up to 132 single family dwelling units are "pre-screened out", which means it falls below the 3,000 metric tons threshold. As the proposed project will subdivide the project site into 17 residential lots for future residential development, the project falls well below the threshold. Therefore, no further GHG emissions analysis is necessary and a less than significant impact is anticipated.

b) **Less than significant impact**. This project will not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The project is within the boundaries of the Feather River Air Quality Management District (FRAQMD), which has not individually adopted any plans or regulations for reducing greenhouse gas emissions. However, FRAQMD adopted a document on August 7, 2015, through the Northern Sacramento Valley Planning Area and in collaboration with Butte County AQMD, Colusa County Air Pollution Control District (APCD), Glenn County APCD, Shasta County AQMD, and Tehama County APCD, titled the 2015 Triennial Air Quality Attainment Plan. This document provides thresholds given by some of the AQMDs and APCDs, and the thresholds given by FRAQMD from 2010, which are described and analyzed in the Air Quality impact section, still apply to Sutter County. In addition, the County has adopted a Climate Action Plan (CAP) that details methods to reduce greenhouse gas emissions. As noted in a) above, this project will be consistent with the County CAP so a less than significant impact is anticipated.

(County of Sutter, General Plan Technical Background Report. 2008)
(County of Sutter, General Plan 2030 Climate Action Plan. 2011)
(County of Sutter, Greenhouse Gas Pre-Screening Measures for Sutter County. June 28, 2016.)
(Sacramento Valley Air Quality Engineering and Enforcement Professionals (SVAQEEP), Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan. 2015)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Responses:

a-b) **Less than significant with mitigation incorporated.** This project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or the creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The project consists of a subdivision of land to create 17 estate residential lots. The Development Services Environmental Health Division is the Certified Unified Program Agency (CUPA) for Sutter County with responsibility for the administration of the "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program). All uses involving the storage and handling of hazardous materials are monitored by CUPA. CUPA has reviewed this project and stated that they had no comments. This project does involve the routine transport, use, or disposal of hazardous materials.

The project site is currently used as an orchard. As such, it is considered likely that agricultural chemicals, including pesticides and herbicides, have been used. These chemicals may have accumulated in concentrations that could affect the health of construction workers on the project

site. Mitigation described below will ensure that workers will not be exposed to potentially hazardous concentrations of residual agricultural chemicals on project site soils.

> **Mitigation Measure No. 6 (Hazards and Hazardous Materials):** Prior to the start of project construction, the developer shall conduct a limited sampling of the surface soil of the project site to determine the presence of residual pesticides, including but not limited to organochlorines. The samples shall be analyzed using California Department of Toxic Substances Control (DTSC) screening levels established for residential projects in Human Health Risk Assessment Note Number 3: DTSC-Modified Screening Levels, June 2020, or by U.S. Environmental Protection Agency Regional Screening Levels if screening levels are not established in HHRA Note Number 3. If no pesticide contamination is found or does not exceed applicable screening levels, then no further action need be taken. If pesticide contamination is identified and found to exceed the applicable screening level, then a Phase II Environmental Site Assessment shall be conducted for the property/properties on which this contamination was identified. The Phase II Environmental Site Assessment shall identify the extent of the contamination and shall recommend measures to remediate soil contamination to below applicable screening levels. The developer shall implement these actions prior to the start of construction.

c) **No impact.** This project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. The only school that is located within one-quarter mile of the project site boundary is Sutter Union High School. The project site is approximately 0.13 miles southwest from the boundary of the school property and approximately 0.23 miles southwest from the closest school building. There are no proposed schools within the vicinity of the project site. The proposed project will not result in any hazard through the transport, use, or disposal of hazardous waste. Due to the nature of this project, no impacts are anticipated.

d) **No impact.** This project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5. As a result, the project will not create a hazard to the public or the environment; therefore, no impact is anticipated.

e) **No impact**. This project is not located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport; therefore, this project will not result in a safety hazard or excessive noise for people residing or working in the project area. The nearest public airport is the Sutter County Airport, which is located approximately 8.5 miles southeast of the project site. Due to the project's distance from these facilities, no impact is anticipated.

f) **Less than significant impact.** This project will not impact the implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan because the project site has adequate frontage on Irwin Avenue, South Butte Road, and Perry Avenue, which are of sufficient size to not impede necessary emergency responses. This project does not pose a unique or unusual use or activity that will impair the effective and efficient implementation of an adopted emergency response or evacuation plan. A less than significant impact is anticipated.

g) **Less than significant impact.** This project will not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. The General Plan indicates the Sutter Buttes and the "river bottoms," or those areas along the

Sacramento, Feather, and Bear Rivers within the levee system, are susceptible to wildfires since much of the areas inside the levees are left in a natural state, thereby allowing combustible fuels to accumulate over long periods of time. The area has existing fire protection services. Since this property is not located in the Sutter Buttes or “river bottom” areas, a significant risk of loss, injury, or death associated with wildland fires as a result of the proposed project is not anticipated and is considered less than significant.

(County of Sutter, General Plan Technical Background Report. 2008)
(California Department of Toxic Substances Control, Hazardous Waste and Substances Site List - Site Cleanup (Cortese List). 2024)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☒	☐	☐
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐
iv) Impede or redirect flood flows?	☐	☒	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Responses:

a) **Less than significant impact.** This project will not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. The property has an existing septic system/leach field that serves the existing residence. Future homes or other uses generating wastewater will require disposal provided by onsite septic systems that will be designed by an authorized professional and installed under permit from the Development Services Environmental Health Division. Future development that generates wastewater is required to meet local and State requirements for wastewater disposal in effect at the time of development. The applicant has designated adequate area required for the Minimum Usable Sewage Disposal Area (MUSDA) for each lot as part of the tentative map. Additionally, the location of proposed wells has also been identified to ensure that required setbacks from surrounding septic systems is maintained.

The applicant is required to obtain coverage under the State Construction General Permit, under the National Pollutant Discharge Elimination System (NPDES) program (Mitigation Measure 5). This program requires implementation of erosion control measures designed to avoid significant erosion. The NPDES construction permit requires implementation of a Storm Water Pollution Prevention Program (SWPPP) that includes storm water best management practices to control runoff, erosion, and sedimentation from the site.

This project is not expected to violate water quality standards or waste discharge requirements. Compliance with applicable requirements and water quality standards will minimize the project's impact to water quality. No aspect of the proposed project involving water quality or discharge standards will be allowed to operate until they have complied with all state and local standards. No additional mitigation is necessary, and a less than significant impact is anticipated.

b) **Less than significant impact.** This project will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. The General Plan Technical Background Report indicates the property is provided with groundwater by the Sutter Subbasin. Water levels in the Sutter Subbasin have remained approximately 10 feet below ground surface and California's Groundwater Bulletin 118 prepared by the California Department of Water Resources indicates municipal and irrigation wells withdraw groundwater at a rate of 500-2000 gallons per minute.

The project site has historically been used for agricultural purposes and was served by on-site water supplies. Water demand from the proposed project is not anticipated to be higher over the historic use of the property. No additional residential development beyond what is currently allowed and was analyzed in the 2030 General Plan EIR will result from this project. Water is proposed to be supplied by private wells for each parcel. Each future well will be required to obtain permits from the Environmental Health Division. As proposed, the subdivider may consider annexation into Sutter CSD for domestic water to serve just the Perry Avenue lots or all the lots. The Sutter CSD has reviewed this project and stated that they have sufficient surface treated water capacity and supply to serve the proposed project. The Sutter CSD is willing to provide domestic water services provided the applicant completes certain requirements and the property is annexed into the Sutter CSD. This project is not anticipated to substantially increase the amount of water used onsite beyond what has been historically used.

Future residences at the site must comply with standard green building and energy efficiency standards consistent with the California Building Code and Title 24 Energy Code standards. The

incorporation of green building measures, as applicable to a residence, will reduce energy and water consumption. Additionally, front yard landscaping exceeding 500 square feet in area is required to comply with the current Model Water Efficient Landscaping Ordinance prepared by the California Department of Water Resources. A less than significant impact is anticipated.

c) **Less than significant with mitigation incorporated.** This project will not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on or off site or substantially increase the rate or amount of surface runoff in a manner resulting in flooding on or off-site. This project will also not contribute runoff water which will exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff or impede or redirect flood flows.

There are no streams or rivers on or in the immediate vicinity of the project site that could be altered by this project. A preliminary storm drainage analysis was submitted by the applicant (Attachment 10), which has been reviewed by the Development Services Engineering Division. Drainage will be mitigated onsite such that the peak runoff from the property shall be the same as pre-development conditions or less. The property drains in a southern direction towards the roadside ditch on South Butte Road. The historic drainage pattern will be maintained with each lot draining towards a ditch located in the middle of the project. The ditch will drain into a detention pond. The drainage facilities will be dedicated to the County of Sutter. The detention pond will also be used for water quality. The detention pond and ditch shall be located more than 50 feet from the MUSDA and over 100 feet from water wells.

The Development Services Engineering Division has reviewed this proposed project and has provided comments regarding the drainage of this project. Based on these comments, the following mitigation measures are recommended.

> **Mitigation Measure No. 7 (Hydrology and Water Quality):** DRAINAGE STUDY, GRADING, AND CONSTRUCTION. Prior to recordation of a map, issuance of a building, grading or encroachment permit, the applicant shall obtain approval from the Director of a drainage study that reflects final design conditions for the proposed project per County Standards. The Drainage Study shall be completed and stamped by a Professional Engineer and determined by the County to be comprehensive, accurate, and adequate. (SCIS Section 9)
>
> All impacts to the site must be mitigated in the project area or lands acquired for mitigation by the project. Any Grading or Site Improvements shall be done per an approved plan and in accordance with Sutter County Development Standards. Plans shall be reviewed and approved for construction by the Director of Development Services prior to the start of construction.
>
> **Mitigation Measure No. 8 (Hydrology and Water Quality):** DRAINAGE IMPROVEMENTS. The applicant shall construct onsite drainage ditches/basins that provide storm water detention per a County Approved Drainage Study for this Project.
>
> a) The drainage basin shall be metered into the roadside swales based on a County approved drainage study.
> b) The proposed collection ditch at the back of each lot must be constructed of concrete and placed in a drainage easement dedicated to the Sutter County Water Agency.

c) A secondary access to the collection ditch shall be provided at the North end of the project and an easement granted to Sutter County for maintenance access.
d) All lots will need to be graded so that the entire drainage runoff from the lot is directed to the drainage collection ditch at the back of each lot.
e) All slopes on drainage ditches and basins shall be 3:1 maximum.
f) Provide for a 10-foot-wide access road alongside at least one side of the drainage collection ditch at the back of the lots.
g) Provide a pipe inlet to the detention basin from the drainage collection ditch to allow full uninterrupted access for maintenance around the detention pond.
h) Provide a 10-foot-wide access ramp into the detention basin from South Butte Road.
i) Provide a 12-foot-wide improved surface maintenance road with 2-foot gravel shoulders on each side for a total of 16-foot of maintenance access on all sides around the detention basin.
j) All drainage facilities (ditches and basins) shall have a 6-foot-high chain link fence around their perimeter.
k) Provide a 16-foot total width double access gate at the entrance from South Butte Road.
l) Provide a 12-foot-wide single access gate at the north access point.
m) The applicant must obtain a grading permit from the County prior to any grading for storm water retention basins or collection ditches.
n) The applicant shall provide an as-built drawing of the drainage improvements, that is stamped and signed by a licensed Engineer verifying that what was constructed complies with the approved plan for the site.

Mitigation Measure No. 9 (Hydrology and Water Quality): DRAINAGE / WATER ZONE OF BENEFIT. The developer is required to place each lot in a water zone of benefit district, committing the property owners and all successors in interest to pay their fair share for the maintenance, replacement, and operations costs of the drainage facilities that are part of this project. The developer shall initiate and complete the formation of a water zone of benefit district (assessment). The applicant shall pay all County fees for formation of water zone of benefit district. (Contact Development Services Planning and Engineering Departments.) In assessment districts, the cost of neighborhood drainage maintenance, repair, replacement, and administration of the zone is equitably spread on the basis of special benefit.

If the project's cumulative disturbed area is one acre or more, the applicant will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) as a component of the General Construction Permit for storm water discharges (Mitigation Measure 5). This plan will be implemented during the construction phase of the project and will reduce erosion and stormwater pollution.

The project site is located within Flood Zone "X" (Unshaded) according to Flood Insurance Rate Map (FIRM) No. 0603940080B, dated April 5, 1988, issued by the Federal Emergency Management Agency (FEMA). Flood Zone "X" (Unshaded) depicts areas of minimal flood hazard. A less than significant impact is anticipated with the proposed mitigation measures incorporated into the project.

d) **No impact.** This project will not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. The project is not located within a FEMA designated flood hazard zone or Local Flood Hazard Area. There is no anticipated impact to this project site

resulting from tsunamis and seiches because the land is not located adjacent to or near any water bodies of sufficient size to create such situations. No impact is anticipated.

e) **No Impact.** This project will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The County, along with other agencies, has prepared the Sutter Subbasin Groundwater Sustainability Plan that covers most of Sutter County, including the project site. The public comment period on the plan ended in April 2022. The project is not expected to interfere with implementation of the Groundwater Sustainability Plan, particularly since the project would not generate significant water demand. No impact is anticipated.

(California Department of Water Resources (DWR), California's Groundwater – Bulletin 118 (Update 2003). 2003)
(County of Sutter, General Plan Technical Background Report. 2008)
(Federal Emergency Management Agency, Flood Insurance Rate Map. 1988)
(Sutter Subbasin Groundwater Management Coordination Committee, Sutter Subbasin Groundwater Sustainability Plan. 2022)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Responses:

a) **No impact.** This project will not physically divide an established community because the site is located within the existing Rural Planned Community of Sutter, as identified by the General Plan where this type of development is planned for in this location. The proposed residential density was analyzed in the 2030 General Plan EIR. Higher density residential development exists south and east of the project site. This project will not modify any existing roadways that will result in a barrier to other surrounding parcels as a result of the project. This project will not result in a physical barrier that will divide a community so no impact is anticipated.

b) **Less than significant impact.** This project will not conflict with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The proposed subdivision will create 17 estate residential lots intended for future residential development. The proposed density of the subdivision is consistent with the Estate Residential designation of the site and the ER zone district. The County has not adopted any land use plan, policy, or regulation for the purpose of avoiding or mitigating a specific environmental effect that affects this project. The proposed project is consistent with the goals and policies of the General Plan and County Code and will not conflict with any adopted plan affecting the site. Where necessary, mitigation has been incorporated into the project and no additional mitigation measures are necessary. A less than significant impact is anticipated.

(County of Sutter, General Plan 2030. 2011)
(County of Sutter, General Plan Technical Background Report. 2008)
(County of Sutter, Zoning Code. 2024)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Responses:

a-b) **No impact.** This project will not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. The General Plan and State of California Division of Mines and Geology Special Publication 132 do not list the site as having any substantial mineral deposits of a significant or substantial nature, nor is the site located in the vicinity of any existing surface mines. No impact is anticipated.

(California Department of Conservation, Division of Mines and Geology, Special Report 132: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Yuba City-Marysville Production-Consumption Region. 1988)
(County of Sutter, General Plan Technical Background Report. 2008)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) For a project located within the vicinity of a private	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				

Responses:

a-b) **Less than significant impact with mitigation incorporated.** This project will not result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinances, or applicable standards of other agencies or result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels. The Sutter County General Plan Noise Element provides a basis for local policies to control and abate environmental noise and to protect the citizens of Sutter County from excessive noise exposure. The Sutter County Noise Ordinance (Article 21.5 of the Zoning Code) establishes standards and procedures to protect the health and safety of County residents from the harmful effects of exposure to excessive, unnecessary, or offensive noise.

Future construction of residences and accessory structures on the proposed lots will result in temporary phased increases in ambient noise levels or vibrations; however, once construction is complete, ambient noise levels and vibration should return to a level that will not exceed any standards. This project will result in the creation of 17 estate residential lots that will accommodate future residential dwellings that will not be a significant source of noise. Potential noise impacts associated with designating this property Estate Residential were previously analyzed in the 2030 General Plan EIR and subdividing the property as proposed implements the General Plan as envisioned.

Sutter County does not establish quantitative noise limits for construction activities occurring in the County. During project construction, exterior noise levels could affect the nearby existing sensitive receptors in the vicinity. Per Policy N 1.6 of the County's General Plan, all project-related noise-generating construction activities within 1,000 feet of noise-sensitive uses (i.e., residential uses, daycares, schools, convalescent homes, and medical care facilities) are limited to daytime hours between 7:00 a.m. and 6:00 p.m. on weekdays, 8:00 a.m. and 5:00 p.m. on Saturdays, and prohibited on Sundays and holidays unless permission for the latter has been applied for and granted by the County. To ensure compliance with General Plan Policy N 1.6, the following mitigation measure is proposed. Compliance with this mitigation measure would make construction noise impacts less than significant.

> **Mitigation Measure No. 10 (Noise):** During construction, the applicant shall ensure that all project related noise-generating construction activities are limited to daytime hours between 7:00 a.m. and 6:00 p.m. on weekdays, 8:00 a.m. and 5:00 p.m. on Saturdays, and are prohibited on Sundays and holidays unless permission for the latter has been applied for and granted by the County.

c) **Less than significant impact.** This project is not located within the vicinity of a private airstrip, public airport, or public use airport; therefore, it will not result in excessive noise levels for people residing or working in the project area. The nearest public airport is the Sutter County Airport, which is located approximately 8.5 miles southeast of the project site. The closest

private airstrip is located approximately 1.5 miles southeast of the project site. Due to the project's distance from these facilities, a less than significant impact is anticipated.

(County of Sutter, General Plan 2030. 2011)
(County of Sutter, General Plan Technical Background Report. 2008)
(County of Sutter, Zoning Code. 2024)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Responses:

a) **Less than significant impact.** This project will not induce substantial unplanned population growth in an area, directly or indirectly. The project site consists of six existing 10-acre parcels. One residence exists on one parcel and one residence could be built on each of the five undeveloped parcels today. Therefore, this project is anticipated to result in a net increase of 12 residential units. According to the U.S. Census Bureau, American Community Survey 2018-2022, 5-year estimates, the average household size in Sutter County is 2.97 persons per household. Using this estimate, this project could result in a net increase of 36 additional persons to the Rural Planned Community of Sutter. Using the 2020 Census estimate for the population of Sutter (2,789 persons), this project could result in a 1.2 percent net increase in the community's population once the project is built-out. In 2010, the population estimate was 2,904. Therefore, there has been a slight population decrease since 2010.

The proposed density of 0.34 dwellings per acre is low density and is consistent with the General Plan's density for ER development which is consistent with the vision for this property in the 2030 General Plan. The density proposed is less than the existing developed community of Sutter that borders this site to the east. The minimum lot size for ER zoned property is 0.5 acres and the maximum lot size is three acres. The proposed lots range from 2.95 acres to 3.00 acres; therefore, they are being divided to nearly the lowest density allowed. Development associated with this project site was previously considered by the General Plan EIR. The additional lots will not generate the demand for unplanned growth such as new commercial or other types of residential development. The proposed lots will have frontage on existing County roads. As a result, the amount of population growth in the area will be negligible and a less than significant impact is anticipated.

b) **No impact.** This project will not displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere. The proposed project will not

expand beyond the property boundaries and will not displace any housing or people. A single residence resides on the project site, which is proposed to remain. No replacement housing will be required as part of this subdivision project. No impact is anticipated.

(County of Sutter, General Plan Technical Background Report. 2008)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☒	☐
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☒	☐

Responses:

i) **Less than significant impact.** This project location is provided fire protection by Sutter County and is located in County Service Area (CSA) F. The nearest fire station is Sutter (Station 6), located at 2340 California Street in Sutter, approximately 0.5 miles east of the project site. Referral of this project was sent to the Sutter County Fire Department and the Fire Department stated no comment with regard to this project. This project is not anticipated to affect response time for fire protection services. Existing County roads will provide adequate transportation routes to reach the project site in the event of a fire. Potential impacts to fire services will be mitigated through the collection of the County's current development impact fee for "Fire Protection" per dwelling unit. The County will collect impact fees for fire protection prior to issuance of building permits for any future residential dwellings at the site. The proposed remainder parcel is already developed with a residence so impact fees will be collected for each new residence on the 17 proposed lots. Using the County's currently adopted impact fee for fire protection of $1,259.69 per dwelling unit, this project will result in the collection of $21,414.73 in fire impact fees at build-out. A less than significant impact to fire services is anticipated.

ii) **Less than significant impact.** This project will not have a significant impact on police protection. Law enforcement for unincorporated portions of Sutter County is provided by the Sutter County Sheriff's Department and traffic investigation services by the California Highway Patrol. The Sheriff's Department has reviewed this project and had no comments or concerns.

This project is not anticipated to affect response time for law enforcement services. Existing State Highways or County roads will provide adequate transportation routes to reach the project site in the event of an emergency. The demand for services resulting from the creation of 17 estate residential lots is anticipated to be minimal. Potential impacts to the Sheriff's Department will be mitigated through the collection of the County's current development impact fee in the "Sheriff" and "Criminal Justice" impact fee categories per dwelling unit. The County will collect impact fees for Sheriff and criminal justice prior to issuance of building permits for any future residential dwellings at the site. The proposed remainder parcel is already developed with a residence so impact fees will be collected for each new residence on the 17 proposed lots. Using the County's currently adopted impact fee for Sheriff and criminal justice of $2,108.41 per dwelling unit, this project will result in the collection of $35,842.97 in law enforcement impact fees at build-out. As a result, a less than significant impact is anticipated.

iii) **Less than significant impact.** This project will create new estate residential lots that will potentially generate a demand for school services; however, this demand will not be significant. The proposed density is consistent with the Estate Residential land use designation permitted by the 2030 General Plan. This project is located within the Brittan Elementary School District and Sutter Union High School District. The County will collect school impact fees prior to issuance of building permits for any future residential dwellings at the site to offset potential impacts. Sutter Union High School District stated that their school has sufficient capacity for any students generated from this project. Brittan Elementary School District did not have any comments. A less than significant impact is anticipated.

iv) **Less than significant impact.** This project will not have a significant impact upon parks. This project is not anticipated to impact park services because there are no parks located in the project's vicinity and the proposed project will generate a minimal increase in demand for additional park land and create limited additional impacts upon existing parks in the region. While the proposed project will create 17 new estate residential lots that will support additional residents in the area that will potentially utilize park facilities, the increase in demand will be less than significant. Impacts to existing parks will be minor and will not necessitate the construction of new park facilities that will create an environmental impact. Pursuant to Subdivision Ordinance Section 1400-731, the County will collect the adopted "Park Acquisition" fee based on the number of bedrooms per each future dwelling unit to offset the potential demand from the proposed subdivision. This project will not have a significant impact on parks countywide. A less than significant impact is anticipated.

v) **Less than significant impact.** The proposed project is not anticipated to have a significant impact on other public facilities. There are a limited number of other public facilities in the area that may be impacted by this project; however, potential impacts to general government, animal control, library, and health and social services will be mitigated through the collection of the County's current adopted development impact fees for each category listed. The County will collect impact fees prior to issuance of building permits for any future residential dwellings at the site. The proposed remainder parcel is already developed with a residence so impact fees will be collected for each new residence on the 17 proposed lots. Using the County's currently adopted impact fees for the general government, animal control, library, and health and social services categories, this project will result in the collection of $66,573.02 in impact fees at build-out. A less than significant impact is anticipated.

(County of Sutter, Zoning Code. 2024)
(County of Sutter, General Plan Technical Background Report. 2008)
(County of Sutter, Subdivision Ordinance. 2021)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Responses:

a-b) **Less than significant impact.** This project will not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility will occur or be accelerated nor will the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. The proposed project consists of a subdivision to create 17 estate residential lots for the purposes of residential development. There are no existing neighborhood or regional parks in the project vicinity and this project does not propose recreational facilities or require the expansion of existing recreational facilities. Future residential development as a result of this project is not anticipated to have a significant impact on parks countywide due to the minor additional number of residential units that will result from construction of the subdivision and any future dwellings constructed on the project site. As part of issuing a building permit for any future dwelling, the County will collect the adopted “Park Acquisition” fee that can be used for recreation facilities in the future. As a result, a less than significant impact is anticipated.

(County of Sutter, General Plan Technical Background Report. 2008)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION. Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

Responses:

a) **Less than significant impact.** This project will not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. This property is located within the Rural Planned Community of Sutter, approximately 3.7 miles west of the Yuba City incorporated limits. Given its location, personal vehicles will be the most likely form of transportation. There is no fixed route or dial-a-ride transit service to Sutter.

The proposed lots have frontage on Perry Avenue, South Butte Road, and Irwin Avenue, which are all County maintained roads. Lots 1 – 8 will be accessed from Perry Avenue and Lots 9-17 will be accessed by Irwin Avenue.

The applicant was required to submit a traffic study to analyze the project's potential traffic impacts to specific area roads and intersections identified by the Engineering Division of the Development Services Department. The traffic study was completed by Flecker Associates and is included as Attachment 11 to this initial study. The following three intersections were addressed in the traffic analysis: Acacia Avenue/Griffith Lane, Acacia Avenue/South Butte Road, and State Highway 20 (Colusa Highway)/Acacia Avenue.

Level of service (LOS) analysis was used to provide a basis for describing existing traffic conditions and for evaluating the significance of project traffic impacts. LOS measures the *quality* of traffic flow and is represented by letter designations from 'A' to 'F', with a grade of 'A' referring to the best conditions, and 'F' representing the worst conditions. Based on methodologies accepted under adopted guidelines, the intersections studied currently operate at a LOS C or better which is within the County's minimum LOS D peak hour threshold. Current peak hour traffic volumes were compared to traffic signal warrants to determine whether traffic signals may already be justified. The study concluded that current traffic volumes do not reach the level that warrant signalization. Under existing plus project conditions, all study intersections will continue to operate acceptably. Neither of the two unsignalized intersections will meet the peak hour signal warrant. Under cumulative conditions all intersections will operate at LOS C or better. Neither the Acacia Avenue / Griffith Lane nor the Acacia Avenue / S. Butte Road intersection will meet the peak hour warrant. Under cumulative plus project conditions all intersections will continue to operate at LOS C or better. The General Plan has a policy (Policy M 2.5) to maintain roads at an LOS D or better during peak hour, and LOS C or better at all other times; therefore, this project is consistent with this policy.

The number of vehicle trips that are expected to be generated by the project was estimated using data from Land Use Code 210 in ITE *Trip Generation, 11th Edition*. The project consists of six existing parcels which will be split into 17 new single-family lots and one remainder parcel which has an existing residential unit. The project is expected to generate 170 daily trips with 13 a.m. peak hour trips and 17 p.m. peak hour trips. The existing six parcels, all zoned Estate Residential (ER) could construct six houses. Under existing and proposed ER zoning, the site could generate 57 daily trips with 4 a.m. and 6 p.m. peak hour trips. The net new trips generated with this project is 113 daily trips, 11 a.m. and 14 p.m. peak hour trips. The anticipated demand is consistent with the residential density permitted by the ER designation and will not generate traffic beyond what was analyzed in the 2030 General Plan EIR.

In the area of the proposed project, new development is constructed with frontage improvements including curb, gutter and sidewalk. The east side of Perry Street opposite the project is one such example. This project also proposes these improvements on the west side of

Perry Street. As the Sutter area is historically rural, older neighborhoods and the outlying areas surrounding the project reflect the rural nature with properties abutting unpaved shoulders. Where pedestrian facilities are not present pedestrians must walk along the paved shoulders on major roads and on unimproved shoulders on local streets.

The Development Services Engineering Division reviewed this project, including the traffic study, and has determined the applicant is required to dedicate sufficient rights of way and/or public service easements as necessary to Sutter County. This requirement will be implemented through a project condition.

The Engineering Division has determined, pursuant to Sutter County Improvement Standards Section 2-2, complete plans and specifications for all proposed streets, bikeways, grading, drainage facilities, sewerage, street lighting, water distribution systems, industrial developments, commercial developments, and subdivisions, including any necessary dedications, easements, and rights of entry, shall be submitted to the Development Services Department for approval. The approval shall be substantiated by the signature of the Director prior to the beginning of construction of any such improvements. The Director will order any Contractor to cease work on any project if said Contractor does not have properly approved plans in his possession. This requirement will be implemented as a project condition.

The Engineering Division has required the developer to provide the design and construct all roadway improvements for Irwin Avenue, South Butte Road, and Perry Avenue when the phase that the parcels front is constructed, consistent with what is shown on the Tentative Subdivision Map. Improvements are to be constructed for the half-street adjacent to the parcel and must meet current County Development Standards for the road classification. The applicant must obtain an Encroachment Permit from the County prior to any work in the County Right of Way and must pay their fair share of Sutter County traffic impact fees. This requirement will be included as a proposed project condition.

Based on the conclusions of the traffic study, a less than significant impact will result from the proposed project.

b) **Less than significant impact.** This project will not conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b). This section of CEQA states that vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts. VMT refers to the amount and distance of automobile travel attributable to a project. VMT generally represents the number of vehicle trips generated by a project multiplied by the average trip length for those trips. OPR's Technical Advisory further clarifies that “the term ‘automobile’ refers to on-road passenger vehicles, specifically cars and light trucks.” This section also states VMT exceeding an applicable threshold of significance may indicate a significant impact.

The County has not adopted a threshold of significance for VMT. The traffic study prepared by Flecker Associates (Attachment 11) includes a VMT impact assessment and uses the guidance in the Governor's Office of Planning and Research's (OPR's) Technical Advisory for the assessment.

Senate Bill (SB) 743 governs the application of new CEQA guidelines for addressing transportation impacts based on VMT. Because Sutter County has not yet adopted guidelines or policies for dealing with VMT, guidance from OPR's Technical Advisory was employed to evaluate VMT impacts. Screening criteria can be used to quickly identify whether sufficient evidence exists to presume a project will have a less than significant VMT impact without

conducting a detailed study. Projects meeting at least one of the screening criteria can be presumed to have a less than significant VMT impact, absent substantial evidence that the project will lead to a significant impact.

Small projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less than significant transportation impact. As stated in the traffic study, the proposed project is estimated to generate 113 new net daily trips; these are the additional trips that are generated beyond which the site can construct per the existing zoning. This value exceeds the 110 daily threshold by three trips. The difference of three trips in 24 hours is unobservable and would fall within the range of normal day-to-day variation. The OPR Technical Advisory also notes that CEQA provides a categorical exemption for existing facilities up to 10,000 square feet. The Advisory estimates that an existing facility up to 10,000 square feet can generate or attract 110-124 daily trips. It then notes that "absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact". OPR does not identify why 110 daily trips is reasonable; the additional three trips fall in the lower portion of the range cited by OPR. Based on the analysis included in the traffic study, the project's VMT impacts can be presumed to be less than significant.

c-d) **Less than significant impact.** This project will not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) nor will it result in inadequate emergency access. The project site has adequate frontage on Irwin Avenue, South Butte Road, and Perry Avenue, which are County maintained roads. All roads run in a straight direction along the frontage of the project site. Lots 1 – 8 will be accessed from Perry Avenue and Lots 9-17 will be accessed by Irwin Avenue. County roads will provide adequate emergency service access for each proposed lot. The traffic study (Attachment 11) prepared for the project reviewed potential sight distance issues and did not identify any impacts. Construction, fencing, and landscaping at all roads and intersections for the subdivision will be required to comply with the County's adopted improvement standards.

No impacts have been identified by the Development Services Engineering Division or Fire Services indicating an increased hazard will result. This project will be required to comply with all County roadway safety, emergency access, and design standards, and any associated General Plan policies.

Public road improvements are required for Irwin Avenue, South Butte Road, and Perry Avenue, which will be included as a project condition. As part of this condition, adequate sight distance is to be provided at each project access intersection and any entry features and landscaping is to be no higher than 2.5 feet and no less than 10 feet from the ground.

Streetlights are required along Perry Avenue per residential spacing requirements, which will be included as a project condition. Streetlights are required at all intersections and at other locations essential for safety, including but not limited to all intersections with South Butte Road per Sutter County Improvement Standards 4-35 and 4-36. A less than significant impact is anticipated.

(County of Sutter, General Plan Technical Background Report. 2008)
(County of Sutter, General Plan 2030. 2011)
(Flecker Associates, Transportation Impact Analysis. 2024)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES.				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Responses:

i-ii) **Less than significant impact.** In September of 2014, the California Legislature passed Assembly Bill (AB) 52, which added provisions to the Public Resources Code regarding the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American tribes. The County initiated AB 52 consultation through distribution of letters to the seven (7) Native American tribes provided by the Native American Heritage Commission (NAHC), which include the Mechoopda Indian Tribe of Chico, Mooretown Rancheria of Maidu Indians, United Auburn Indian Community of the Auburn Rancheria, Strawberry Valley Rancheria, Enterprise Rancheria of Maidu Indians, Ione Band of Miwok Indians, and Wilton Rancheria. The Mooretown Rancheria responded and stated that they are not aware of any known cultural resources at this site. No requests for consultation were received from Native American tribes during the review period. The property has been extensively disturbed to varying depths due to previous historical agricultural use and operations on the site. A less than significant impact to tribal cultural resources as a result of the project is anticipated.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Responses:

a) **Less than significant impact.** This project will not require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Each lot is proposed to be served by an individual septic system designed and installed under permit by the County Development Services Environmental Health Division in compliance with State law and local ordinance. A total of 40 mantles were performed with at least two on each future lot. These mantles where used to establish the location of the minimum usable sewage disposal area (MUSDA) and size in accordance with the Sutter County Code of Ordinances 700-130.

Water is proposed to be supplied by private wells for each parcel. Each future well will be required to obtain permits from the Environmental Health Division. As proposed, the subdivider may consider annexation into Sutter CSD for domestic water to serve just the Perry Avenue lots or all the lots. The Sutter CSD has reviewed this project and stated that they have sufficient surface treated water capacity and supply to serve the proposed project.

The Sutter CSD is willing to provide domestic water services of up to 1 ½" meters to the lots which front Perry Avenue, under their normal service agreements and fee schedules, provided the lands are annexed into the Sutter CSD. The developer will be required to pay all costs of annexation. In addition, the Sutter CSD will need to approve plans and specifications for interconnections, obtain necessary rights of way, and dedications of facilities to be owned, operated, or maintained by the Sutter CSD in accordance with Sutter CSD policies and procedures. Any private well services for properties not served by or annexed into the Sutter

CSD will need to be completely sealed and segregated from the Sutter CSD's distribution system.

The Sutter CSD has capacity in its trunk system and adequate water supply to serve the lots located on Irwin Avenue, but currently has no infrastructure in the vicinity to interconnect those properties. In order to reach the lots on Irwin Avenue, the developer will need to install infrastructure to interconnect to the Sutter CSD's service on South Butte Road and install a service line on Irwin Avenue. The Sutter CSD also recommends installation of an additional fire hydrant on Irwin Avenue. All of the service infrastructure will need to be consistent with Sutter CSD approved plans and specifications, inspected by the Sutter CSD, then dedicated to the Sutter CSD, and made subject to necessary reservations of right for access. These requirements will be included as a project condition.

The proposed project will require the relocation and extension of existing utility services into the project area. This is not anticipated to cause a significant environmental effect because extension/relocation will occur within the right-of-way prior to road improvements to minimize environmental impacts. The project will also relocate existing utilities along Perry Avenue to underground behind the proposed sidewalk along the subdivision frontage.

This project was reviewed by the Pacific Gas and Electric Company (PG&E) and they stated that no impacts will result from this project. They have stated that the installation of new gas and electric facilities and/or relocation of existing PG&E facilities will be performed in accordance with common law or Rules and Tariffs as authorized by the California Public Utilities Commission. PG&E has provided language to be expressly stated for the offer to dedicate Public Utility Easements (PUE), which is included as a project condition. A uniform 10-foot-wide public service easement is required to be dedicated to the County along each road frontage.

Drainage will be mitigated onsite such that the peak runoff from the property shall be the same as pre-development conditions or less. The property drains in a southern direction towards the roadside ditch on South Butte Road. The historic drainage pattern will be maintained with each lot draining towards a ditch located in the middle of the project. The ditch will drain into a detention pond. The drainage facilities will be dedicated to the County of Sutter. The detention pond will also be used for water quality. The new stormwater basin is not anticipated to cause a significant environmental impact beyond those analyzed in this initial study because the basin is located within the proposed development area.

Any additional utility needs would tie into existing utilities being provided to the area. This area that is proposed to be subdivided and improved has been previously disturbed and historically used for agriculture and has no significant environmentally sensitive characteristics present such as wetlands, special status species, cultural resources, or other potentially significant issues that will result in a significant environmental impact. A less than significant impact is anticipated.

b) **Less than significant impact.** This project will have sufficient water supplies available to serve the project and reasonably foreseeable future development. The project site has historically been used for agricultural purposes and was served by on-site water supplies. Water demand from the proposed project is not anticipated to be higher over the historic use of the property. No additional residential development beyond what is currently allowed and was analyzed in the 2030 General Plan EIR will result from this project. Water is proposed to be supplied by private wells for each parcel. Each future well will be required to obtain permits from the Environmental Health Division. As proposed, the subdivider may consider annexation into

Sutter CSD for domestic water to serve just the Perry Avenue lots or all the lots. The Sutter CSD has reviewed this project and stated that they have sufficient surface treated water capacity and supply to serve the proposed project. The Sutter CSD is willing to provide domestic water services provided the applicant completes certain requirements and the property is annexed into the Sutter CSD. This project is not anticipated to substantially increase the amount of water used onsite beyond what has been historically used. As a result, a less than significant impact is anticipated.

c) **No impact.** This project will not result in a determination by a wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. This project is not located in an area that is served by a wastewater treatment provider. Individual on-site sewage disposal systems are currently the only method of providing sewage disposal for the project area. Therefore, a demand will not be placed on a local sanitary sewer system and no impact is anticipated.

d-e) **Less than significant impact.** This project will have a less than significant impact on solid waste. Solid waste is anticipated as a result of project implementation; however, this project does not include any components that will generate excessive waste. Solid waste from this project will be disposed of through the local waste disposal company in a sanitary landfill in Yuba County which has sufficient capacity to serve this project. Project disposal of solid waste into that facility will comply with all federal, state, and local statutes and regulations related to solid waste, including recycling. As a result, a less than significant impact is anticipated.

(County of Sutter, General Plan Technical Background Report. 2008)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Responses:

a-d) **No impact.** The subject property is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones; therefore, no impacts are anticipated with respect to wildfire hazard.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Responses:

a) **Less than significant impact.** No environmental effects were identified in the initial study which indicate this project will have the ability to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. A mitigation measure is proposed in the biological resources section to mitigate impacts on biological resources. Mitigation measures are proposed in the cultural resources section to protect possible disturbance of human remains should they be encountered.

b) **Less than significant impact.** No environmental effects were identified in the initial study which indicates the project would have impacts that are individually limited, but cumulatively considerable. This project will generate temporary emissions associated with construction of the proposed improvements of the subdivision such as grading, roadway improvements, drainage, and utilities. Standard mitigation measures for project construction emissions have been incorporated to minimize construction related emissions; however, the project is not anticipated to contribute to cumulative significant impacts with regard to air quality. In rural areas, noise

impacts generally are localized in character and typically do not have cumulative effects. A mitigation measure is proposed in the noise section to reduce noise impacts.

c) **Less than significant impact**. No environmental effects which will cause substantial adverse effects on human beings either directly or indirectly were identified in the initial study. Mitigation measures have been incorporated in the project design to reduce potentially significant impacts to less than significant.

MITIGATION MONITORING PROGRAM – Project #U23-0023 (Raub)

Mitigation Measure	Timing	Monitoring Agency
Mitigation Measure No. 1 (Air Quality): Prior to any on-site grading, paving, or construction activities, the applicant shall submit a fugitive dust control plan to the Feather River Air Quality Management District (FRAQMD) for review and approval. The applicant shall comply with all FRAQMD standards and construction phase measures. A copy of the approved plan shall be submitted to the Development Services Department.	Prior to any on-site grading, paving, or construction activities/ Ongoing	FRAQMD / Development Services
Mitigation Measure No. 2 (Biological Resources): The following are avoidance and minimization measures for California avian species of special concern and species protected under the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (CFWC). Any suitable nest tree removal and/or ground disturbance activities should begin during the avian non-breeding (September 1 –February 28) season so as to avoid and minimize impacts to avian species. If construction is to begin within the avian breeding season (March 1 – August 31) then a migratory bird and raptor survey shall be conducted within the Subject Property by a qualified biologist. A qualified biologist shall: Conduct a survey for all birds protected by the MBTA and CFWC no later than fifteen (15) days prior to construction activities; map all nests located within 250 feet of construction areas; develop buffer zones around active nests as recommended by a qualified biologist. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored at least twice (2) per week and a report submitted to the Sutter County Planning Division monthly. If construction activities stop for more than ten (10) days then another migratory bird and raptor survey shall be conducted no later than fifteen (15) days prior to the continuation of construction activities.	Prior to any construction activities including tree removal and/or ground disturbance activities if activities will begin between March 1 and August 31	Development Services
Mitigation Measure No. 3 (Cultural Resources): Consultation in the event of inadvertent discovery of cultural material: The present evaluation and recommendations are based on the findings of an inventory-level surface survey only. There is always the possibility that important unidentified cultural materials could be encountered on or below the surface during the course of future development activities. This possibility is particularly relevant considering the constraints generally to	During construction activities	Development Services

Mitigation Measure	Timing	Monitoring Agency
archaeological field survey, and particularly where past ground disturbance activities (e.g., flooding, residential/agricultural development) have obscured historic ground surface visibility, as in the present case. In the event of an inadvertent discovery of previously unidentified cultural material, archaeological consultation should be sought immediately.		
Mitigation Measure No. 4 (Cultural Resources): Consultation in the event of inadvertent discovery of human remains: In the event that human remains are inadvertently encountered during trenching, grading, or other ground-disturbing activity or at any time subsequently, State law shall be followed, which includes, but is not limited to, immediately contacting the County Coroner's office upon any discovery of human remains.	During construction activities	Development Services
Mitigation Measure No. 5 (Geology and Soils): STORM WATER QUALITY PROTECTION – DURING CONSTRUCTION. SWPPP – Prior to construction the applicant shall prepare and submit a Storm Water Pollution and Prevention Plan (SWPPP) if the project's cumulative disturbed area is one acre or more, to be executed through all phases of grading and project construction. The SWPPP shall incorporate Best Management Practices (BMPs) to ensure that potential water quality impacts during construction phases are minimized. These measures shall be consistent with the County's Improvement Standards and Land Grading and Erosion Control Ordinance and the requirements of the National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities. The SWPPP shall be submitted to the County for review and to the Central Valley Regional Water Quality Control Board (CVRWQCB) as required by the NPDES General Permit in effect during construction. During construction, the applicant shall implement actions and procedures established to reduce the pollutant loadings in storm drain systems. The project applicant shall implement BMPs in accordance with the SWPPP and the County's Improvement Standards. The project applicant(s) shall submit a state storm water permit Waste Discharger Identification (WDID) number for each construction project. If the Project cumulative disturbed area is less than one acre the applicant's engineer shall submit an engineer stamped letter along with a calculation certifying the cumulative disturbed area is less than one acre. NPDES GENERAL CONSTRUCTION PERMIT - If the project size is one acre or more, the applicant shall file a Notice of Intent (NOI) with the Central Valley Regional Water Quality Control Board (CVRWQCB), prior to construction, to obtain coverage under the California State Water Resources - General	Before site improvements begin and/or issuance of a grading permit. Maintain SWPPP and BMP's from start to finish of the project.	Development Services Engineering Division/ RWQCB

Mitigation Measure	Timing	Monitoring Agency
Construction Activity Storm Water Permit. Permits are issued by the State Water Resources Control Board, which can provide all information necessary to complete and file the necessary documents. Applicant shall comply with the terms of the General Construction Permit, the County's ordinances, and the NPDES Waste Discharge Requirements for the Sutter County Phase II NPDES Permit.		
Mitigation Measure No. 6 (Hazards and Hazardous Materials): Prior to the start of project construction, the developer shall conduct a limited sampling of the surface soil of the project site to determine the presence of residual pesticides, including but not limited to organochlorines. The samples shall be analyzed using California Department of Toxic Substances Control (DTSC) screening levels established for residential projects in Human Health Risk Assessment Note Number 3: DTSC-Modified Screening Levels, June 2020, or by U.S. Environmental Protection Agency Regional Screening Levels if screening levels are not established in HHRA Note Number 3. If no pesticide contamination is found or does not exceed applicable screening levels, then no further action need be taken. If pesticide contamination is identified and found to exceed the applicable screening level, then a Phase II Environmental Site Assessment shall be conducted for the property/properties on which this contamination was identified. The Phase II Environmental Site Assessment shall identify the extent of the contamination and shall recommend measures to remediate soil contamination to below applicable screening levels. The developer shall implement these actions prior to the start of construction.	Prior to the start of project construction	Development Services
Mitigation Measure No. 7 (Hydrology and Water Quality): DRAINAGE STUDY, GRADING, AND CONSTRUCTION. Prior to recordation of a map, issuance of a building, grading or encroachment permit, the applicant shall obtain approval from the Director of a drainage study that reflects final design conditions for the proposed project per County Standards. The Drainage Study shall be completed and stamped by a Professional Engineer and determined by the County to be comprehensive, accurate, and adequate. (SCIS Section 9) All impacts to the site must be mitigated in the project area or lands acquired for mitigation by the project. Any Grading or Site Improvements shall be done per an approved plan and in accordance with Sutter County Development Standards. Plans shall be reviewed and approved for construction by the Director of Development Services prior to the start of construction.	Before site improvements begin and/or issuance of a grading permit	Development Services Engineering Division
Mitigation Measure No. 8 (Hydrology and Water Quality): DRAINAGE IMPROVEMENTS. The applicant shall construct onsite drainage ditches/basins that provide storm water detention	Prior to recordation of the first final	Development Services Engineering

Mitigation Measure	Timing	Monitoring Agency
per a County Approved Drainage Study for this Project. a) The drainage basin shall be metered into the roadside swales based on a County approved drainage study. b) The proposed collection ditch at the back of each lot must be constructed of concrete and placed in a drainage easement dedicated to the Sutter County Water Agency. c) A secondary access to the collection ditch shall be provided at the North end of the project and an easement granted to Sutter County for maintenance access. d) All lots will need to be graded so that the entire drainage runoff from the lot is directed to the drainage collection ditch at the back of each lot. e) All slopes on drainage ditches and basins shall be 3:1 maximum. f) Provide for a 10-foot-wide access road alongside at least one side of the drainage collection ditch at the back of the lots. g) Provide a pipe inlet to the detention basin from the drainage collection ditch to allow full uninterrupted access for maintenance around the detention pond. h) Provide a 10-foot-wide access ramp into the detention basin from South Butte Road. i) Provide a 12-foot-wide improved surface maintenance road with 2-foot gravel shoulders on each side for a total of 16-foot of maintenance access on all sides around the detention basin. j) All drainage facilities (ditches and basins) shall have a 6-foot-high chain link fence around their perimeter. k) Provide a 16-foot total width double access gate at the entrance from South Butte Road. l) Provide a 12-foot-wide single access gate at the north access point. m) The applicant must obtain a grading permit from the County prior to any grading for storm water retention basins or collection ditches. n) The applicant shall provide an as-built drawing of the drainage improvements, that is stamped and signed by a licensed Engineer verifying that what was constructed complies with the approved plan for the site.	map	Division
Mitigation Measure No. 9 (Hydrology and Water Quality): DRAINAGE / WATER ZONE OF BENEFIT. The developer is required to place each lot in a water zone of benefit district, committing the property owners and all successors in interest to pay their fair share for the maintenance, replacement, and operations costs of the drainage facilities that are part of this project. The developer shall initiate and complete the formation of a water zone of benefit district (assessment). The applicant shall pay all County fees for formation of water zone of benefit	Prior to recordation of the first final map	Development Services Engineering Division

Mitigation Measure	Timing	Monitoring Agency
district. (Contact Development Services Planning and Engineering Departments.) In assessment districts, the cost of neighborhood drainage maintenance, repair, replacement, and administration of the zone is equitably spread on the basis of special benefit.		
Mitigation Measure No. 10 (Noise): During construction, the applicant shall ensure that all project related noise-generating construction activities are limited to daytime hours between 7:00 a.m. and 6:00 p.m. on weekdays, 8:00 a.m. and 5:00 p.m. on Saturdays, and are prohibited on Sundays and holidays unless permission for the latter has been applied for and granted by the County.	During construction activities	Development Services

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Attachments:

1. Tentative Subdivision Map – no aerial
2. Tentative Subdivision Map – with aerial
3. Aerial Photo Exhibit
4. General Plan Exhibit
5. Zoning Exhibit
6. Assessor's Maps
7. Map Showing Project Site within Rural Planned Community of Sutter
8. Biological Resources Evaluation and Wetland Determination prepared by Marcus H. Bole & Associates, September 29, 2023
9. Cultural Resources Inventory Survey prepared by Genesis Society, August 7, 2024
10. Storm Drainage Analysis prepared by MHM, Inc., June 17, 2024
11. Transportation Impact Analysis prepared by Flecker Associates, October 3, 2024

TENTATIVE SUBDIVISION MAP
SOUTH BUTTE ESTATE (#U23-0023)

SUTTER COUNTY, CALIFORNIA
AUGUST 24, 2023 REVISED AUGUST 6, 2024

PROJECT NOTES

OWNER
GORDON A. RAUB 03 TRUST
2400 IRWIN AVENUE
SUTTER, CA 95982
CONTACT: PAULA RAUB
PHONE: (530) 755-1468

APPLICANT
GORDON A. RAUB 03 TRUST
2400 IRWIN AVENUE
SUTTER, CA 95982
CONTACT: PAULA RAUB
PHONE: (530) 755-1468

ENGINEER/SURVEYOR
MHM INCORPORATED
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
CONTACT: SEAN MINARD, P.E., P.L.S.
PHONE: (530) 742-6485

ASSESSOR'S PARCEL NO.
APN 013-222-008 (10.0 AC)
APN 013-222-009 (10.0 AC)
APN 013-231-006 (10.0 AC)
APN 013-231-007 (10.0 AC)
APN 013-231-008 (10.0 AC)
APN 013-231-009 (10.0 AC)

AREA OF TENTATIVE MAP
60.0 GROSS ACRE

EXISTING USE
ORCHARD AND SINGLE FAMILY HOUSE

EXISTING GENERAL PLAN DESIGNATION
ESTATE RESIDENTIAL

PROPOSED GENERAL PLAN DESIGNATION
ESTATE RESIDENTIAL

EXISTING ZONING
ER

PROPOSED ZONING
ER

LEVEE PROTECTION
STATE OF CALIFORNIA

ELEMENTARY SCHOOL DISTRICT
BRITTAN ELEMENTARY SCHOOL DISTRICT

HIGH SCHOOL DISTRICT
SUTTER UNION HIGH SCHOOL DISTRICT

IRRIGATION DISTRICT
NONE - INDIVIDUAL WATER WELLS

FIRE PROTECTION
COUNTY OF SUTTER

LAW ENFORCEMENT
COUNTY OF SUTTER

SANITARY SEWER
INDIVIDUAL SEPTIC AND LEACH FIELD

DOMESTIC WATER
INDIVIDUAL WATER WELLS OR SUTTER COMMUNITY SERVICE DISTRICT

STORM DRAINAGE
COUNTY OF SUTTER

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ELECTRICITY
PACIFIC GAS AND ELECTRIC

NATURAL GAS (OPTIONAL)
PACIFIC GAS AND ELECTRIC

COMMUNICATION
AT&T AND COMCAST

CABLE (OPTIONAL)
COMCAST

GENERAL NOTES:

1. SUBDIVIDER RESERVES THE RIGHT TO PHASE DEVELOPMENT AND FILE MULTIPLE FINAL MAPS PURSUANT TO SECTION 66456.1 (A) OF THE SUBDIVISION MAP ACT.
2. A 10.0' PUBLIC UTILITY EASEMENT SHALL BE LOCATED ADJACENT PROPERTY LINE ON ALL PUBLIC RIGHT OF WAYS.
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4. VILLAGE NUMBERING IS FOR IDENTIFICATION PURPOSES ONLY AND DOES NOT INDICATE PHASING ORDER OF DEVELOPMENT. ULTIMATE DEVELOPMENT PHASING WILL BE ORDERLY AND WILL BE DETERMINED AT FINAL MAP AND/OR IMPROVEMENT PLAN STAGE. THE REMAINDER PARCEL WILL BE CREATED AS PART OF THE FINAL MAP ADJACENT TO THE PARCEL.
5. ALL EXISTING STRUCTURES AND WELLS TO BE REMOVED PRIOR TO CONSTRUCTION EXCEPT AS SHOWN ON THE TENTATIVE MAP. THE OWNER RESERVES THE RIGHT TO REMOVE EXISTING HOME AND ACCESSORY BUILDINGS AS PART OF PROJECT.
6. ALL SEPTIC TANKS SHALL BE REMOVED PRIOR TO OR AS PART OF CONSTRUCTION EXCEPT EXISTING HOME IN REMAINDER.
7. FRONT YARD HOUSE SETBACKS SHALL BE 30 FEET FROM ROADWAY RIGHT-OF-WAY IN ACCORDANCE WITH ESTATE RESIDENTIAL ZONING.
8. OWNERS, APPLICANT, OWNERS REPRESENTATIVE, ENGINEER, AND SURVEYOR SHALL RECEIVE ANY COMMUNICATIONS AND/OR NOTICES RELATED TO THIS PROJECT.
9. DEPTH TO GROUNDWATER BASED ON SURROUNDING WATER WELL REPORTS IS BETWEEN 28 FEET AND 40 FEET THROUGH THE AREA. NO GROUND WATER WAS ENCOUNTERED ON OVER 40 MANTLES PERFORMED.

LOCATION MAP

LAND USE SUMMARY

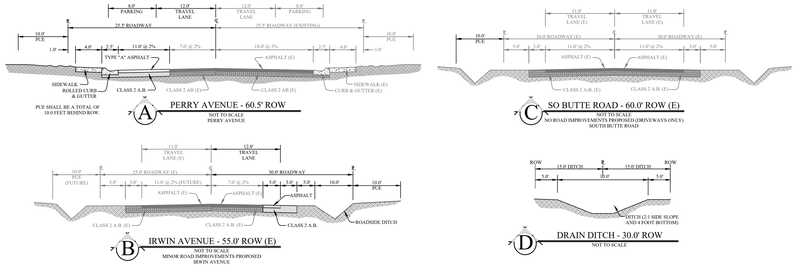
LOT SUMMARY*

VILLAGE NO. 1 =	05 LOTS	14.82 NET AC	0.34 DU/AC
VILLAGE NO. 2 =	03 LOTS	08.88 NET AC	0.34 DU/AC
VILLAGE NO. 3 =	05 LOTS	14.80 NET AC	0.34 DU/AC
VILLAGE NO. 4 =	04 LOTS	11.86 NET AC	0.34 DU/AC
LOT A (POND) =		01.12 NET AC	
LOT B (POND) =		01.08 NET AC	
REMAINDER =	01 LOT	02.96 NET AC	
TOTAL =	18 LOTS	55.52 NET AC	0.32 DU/AC

* SOUTH BUTTE RD, PERRY ST, IRWIN RD, AND DITCH ROW ARE NOT INCLUDED AND WILL BE DEDICATED TO COUNTY IN FEE TITLE OR EASEMENT OR HAVE BEEN PREVIOUSLY DEDICATED TO COUNTY. THE TOTAL ACREAGE OF ROAD ROW IS 3.33 AC AND DITCH ROW IS 1.15 AC.

SURVEYORS STATEMENT:
I HEREBY STATE THAT ALL EASEMENTS OF RECORD ARE SHOWN AND LABELED PER PRELIMINARY TITLE REPORT BY PLACER TITLE COMPANY ORDER NUMBER P-573029 DATED AUGUST 23, 2023.

SEAN MINARD, P.E. 52593, P.L.S. 8397



LEGAL DESCRIPTION (EXISTING PARCELS):

THE LAND DESCRIBED HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF SUTTER, UNINCORPORATED AREA, DESCRIBED AS FOLLOWS:

PARCEL ONE (APN: 013-231-006): BEING A PORTION OF LOTS 9 AND 10 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF LOT 12 OF SAID "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS; THENCE WESTERLY, ALONG THE NORTHERLY BOUNDARY OF LOTS 12 AND 11 A DISTANCE OF 660.0 FEET TO THE NORTHEAST CORNER OF SAID LOT 10, SAID CORNER BEING THE TRUE POINT OF BEGINNING; THENCE FROM SAID TRUE POINT OF BEGINNING SOUTHERLY ALONG THE EASTERLY BOUNDARY OF SAID LOT 10 A DISTANCE OF 648.0 FEET; THENCE WESTERLY AND PARALLEL TO THE NORTHERLY BOUNDARY OF SAID LOTS 9 AND 10 A DISTANCE OF 660.0 FEET TO THE WESTERLY BOUNDARY OF SAID LOT 9; THENCE NORTHERLY ALONG THE WESTERLY BOUNDARY OF SAID LOT 9 A DISTANCE OF 648.0 FEET TO THE NORTHWEST CORNER OF SAID LOT 9; THENCE EASTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOTS 9 AND 10 A DISTANCE OF 660.0 FEET MORE OR LESS TO THE TRUE POINT OF BEGINNING. SAID LAND BEING A S APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO 99-26 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19122 OFFICIAL RECORDS.

PARCEL TWO (APN: 013-231-007): BEING A PORTION OF LOTS 9 AND 10 OF THE ROTHROCK SUBDIVISION FILED IN BOOK 2 OF SURVEYS PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

LOTS 9 AND 10 OF THE ROTHROCK SUBDIVISION FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA.

EXCEPTING THEREFROM, THE FOLLOWING DESCRIBED PARCEL:

COMMENCING AT THE NORTHEAST CORNER OF LOT 12 OF SAID "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS; THENCE WESTERLY, ALONG THE NORTHERLY BOUNDARY OF LOTS 12 AND 11 A DISTANCE OF 660.0 FEET TO THE NORTHEAST CORNER OF SAID LOT 10, SAID CORNER BEING THE TRUE POINT OF BEGINNING; THENCE FROM SAID TRUE POINT OF BEGINNING SOUTHERLY ALONG THE EASTERLY BOUNDARY OF SAID LOT 10 A DISTANCE OF 648.0 FEET; THENCE WESTERLY AND PARALLEL TO THE NORTHERLY BOUNDARY OF SAID LOTS 9 AND 10 A DISTANCE OF 660.0 FEET TO THE WESTERLY BOUNDARY OF SAID LOT 9; THENCE NORTHERLY ALONG THE WESTERLY BOUNDARY OF SAID LOT 9 A DISTANCE OF 648.0 FEET TO THE NORTHWEST CORNER OF SAID LOT 9; THENCE EASTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOTS 9 AND 10 A DISTANCE OF 660.0 FEET MORE OR LESS TO THE TRUE POINT OF BEGINNING. SAID LAND BEING A S APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO 99-26 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19122 OFFICIAL RECORDS.

PARCEL THREE (APN: 013-231-008): BEING A PORTION OF LOTS 11 AND 12 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 12 ; THENCE WESTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOTS 12 AND 11 A DISTANCE OF 660.0 FEET TO THE NORTHWEST CORNER OF SAID LOT 11; THENCE SOUTHERLY ALONG THE WESTERLY BOUNDARY OF SAID LOT 11, A DISTANCE OF 648.0 FEET; THENCE EASTERLY AND PARALLEL TO THE NORTHERLY BOUNDARY OF SAID LOTS 11 AND 12 A DISTANCE OF 660.0 FEET TO THE EASTERLY BOUNDARY OF LOT 12; THENCE NORTHERLY ALONG THE EASTERLY BOUNDARY OF LOT 12, A DISTANCE OF 648.0 FEET MORE OR LESS TO THE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO. 99-24 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123, OFFICIAL RECORDS.

EXCEPTING THEREFROM, AS TO LOT 12 , A LIFE ESTATE IN AND TO ALL OIL, GAS AND OTHER HYDROCARBONS AND MINERALS INCLUDING THE RIGHT OF ENTRY AND OF OCCUPANCY TO EXPLORE SAID PROPERTY FOR SAID SUBSTANCES OR ANY THEREOF AND TO DEVELOP THE PRODUCTION THEREOF AND TO RECOVER THE SAME, AS RESERVED IN THE DEED FROM PETER JOHN DEREE, A SINGLE MAN TO GERALD F. RAUB AND WIFE, DATED JANUARY 23, 1961, AND RECORDED JANUARY 30, 1961, IN BOOK 550 OF OFFICIAL RECORDS, PAGE 158.

PARCEL FOUR (APN 013-231-009): BEING A PORTION OF LOTS 11 AND 12 OF THE ROTHROCK SUBDIVISION FILED IN BOOK 2 OF SURVEYS PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

LOTS 11 AND 12 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA.

EXCEPTING THEREFROM THE FOLLOWING DESCRIBED PARCEL:

BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 12; THENCE WESTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOTS 12 AND 11 A DISTANCE OF 660.0 FEET TO THE NORTHEAST CORNER OF SAID LOT 11; THENCE SOUTHERLY ALONG THE WESTERLY BOUNDARY OF SAID LOT 11, A DISTANCE OF 648.0 FEET; THENCE EASTERLY AND PARALLEL TO THE NORTHERLY BOUNDARY OF SAID LOTS 11 AND 12 A DISTANCE OF 660.0 FEET TO THE EASTERLY BOUNDARY OF LOT 12; THENCE NORTHERLY ALONG THE EASTERLY BOUNDARY OF LOT 12 A DISTANCE OF 648.0 FEET MORE OR LESS, TO THE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO 99-24, FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123 OFFICIAL RECORDS.

EXCEPTING THEREFROM, AS TO LOT 12 , A LIFE ESTATE IN AND TO ALL OIL, GAS AND OTHER HYDROCARBONS AND MINERALS, INCLUDING THE RIGHT OF ENTRY AND OF OCCUPANCY TO EXPLORE SAID PROPERTY FOR SAID SUBSTANCES OR ANY THEREOF AND TO DEVELOP THE PRODUCTION THEREOF AND TO RECOVER THE SAME, AS RESERVED IN THE DEED FROM PETER JOHN DEREE, A SINGLE MAN TO GERALD F. RAUB AND WIFE, DATED JANUARY 23, 1961, AND RECORDED JANUARY 30, 1961, IN BOOK 550 OF OFFICIAL RECORDS, PAGE 158.

PARCEL 5 (APN 013-222-008): BEING A PORTION OF LOTS 13 AND 14 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 13; THENCE WESTERLY ALONG THE SOUTHERLY BOUNDARY OF SAID LOT 13 A DISTANCE OF 660.0 FEET TO A POINT DIVIDING THE SOUTHERLY BOUNDARY OF SAID LOT 13 INTO EQUAL HALVES, SAID POINT BEING THE TRUE POINT OF BEGINNING; THENCE FROM SAID POINT OF BEGINNING, WESTERLY ALONG THE SOUTHERLY BOUNDARY OF SAID LOT 13 A DISTANCE OF 660.0 FEET TO THE SOUTHWEST CORNER OF SAID LOT 13; THENCE NORTHERLY ALONG THE WESTERLY BOUNDARY OF LOTS 13 AND 14 A DISTANCE OF 660.0 FEET TO THE NORTHWEST CORNER OF SAID LOT 14; THENCE EASTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOT 14 A DISTANCE OF 660.0 FEET TO A POINT DIVIDING THE NORTHERLY BOUNDARY OF SAID LOT 14 INTO EQUAL HALVES; THENCE SOUTHERLY A DISTANCE OF 660.0 FEET MORE OR LESS TO THE TRUE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO. 99-25 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123 OFFICIAL RECORDS.

PARCEL SIX (APN 013-222-009): BEING A PORTION OF LOTS 13 AND 14 OF THE "ROTHROCK SUBDIVISION" IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

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2 INDICATES PROPOSED PHASE

M·H·M
ENGINEERS & SURVEYORS SINCE 1892
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
TEL: 530.742.6485
FAX: 530.742.5639

TENTATIVE SUBDIVISION MAP
SOUTH BUTTE ESTATE (#U23-0023)

SUTTER COUNTY, CALIFORNIA

AUGUST 24, 2023 REVISED AUGUST 6, 2024

PROJECT NOTES

OWNER
GORDON A. RAUB 03 TRUST
2400 IRWIN AVENUE
SUTTER, CA 95982
CONTACT: PAULA RAUB
PHONE: (530) 755-1468

APPLICANT
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ENGINEER/SURVEYOR
MHM INCORPORATED
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
CONTACT: SEAN MINARD, P.E., P.L.S.
PHONE: (530) 742-6485

ASSESSOR'S PARCEL NO.
APN 013-222-008 (10.0 AC)
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APN 013-231-006 (10.0 AC)
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APN 013-231-008 (10.0 AC)
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AREA OF TENTATIVE MAP
60.0 GROSS ACRE

EXISTING USE
ORCHARD AND SINGLE FAMILY HOUSE

EXISTING GENERAL PLAN DESIGNATION
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NATURAL GAS (OPTIONAL)
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COMCAST

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LOT SUMMARY*

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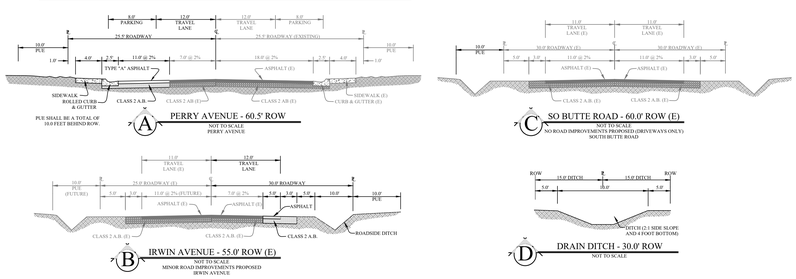
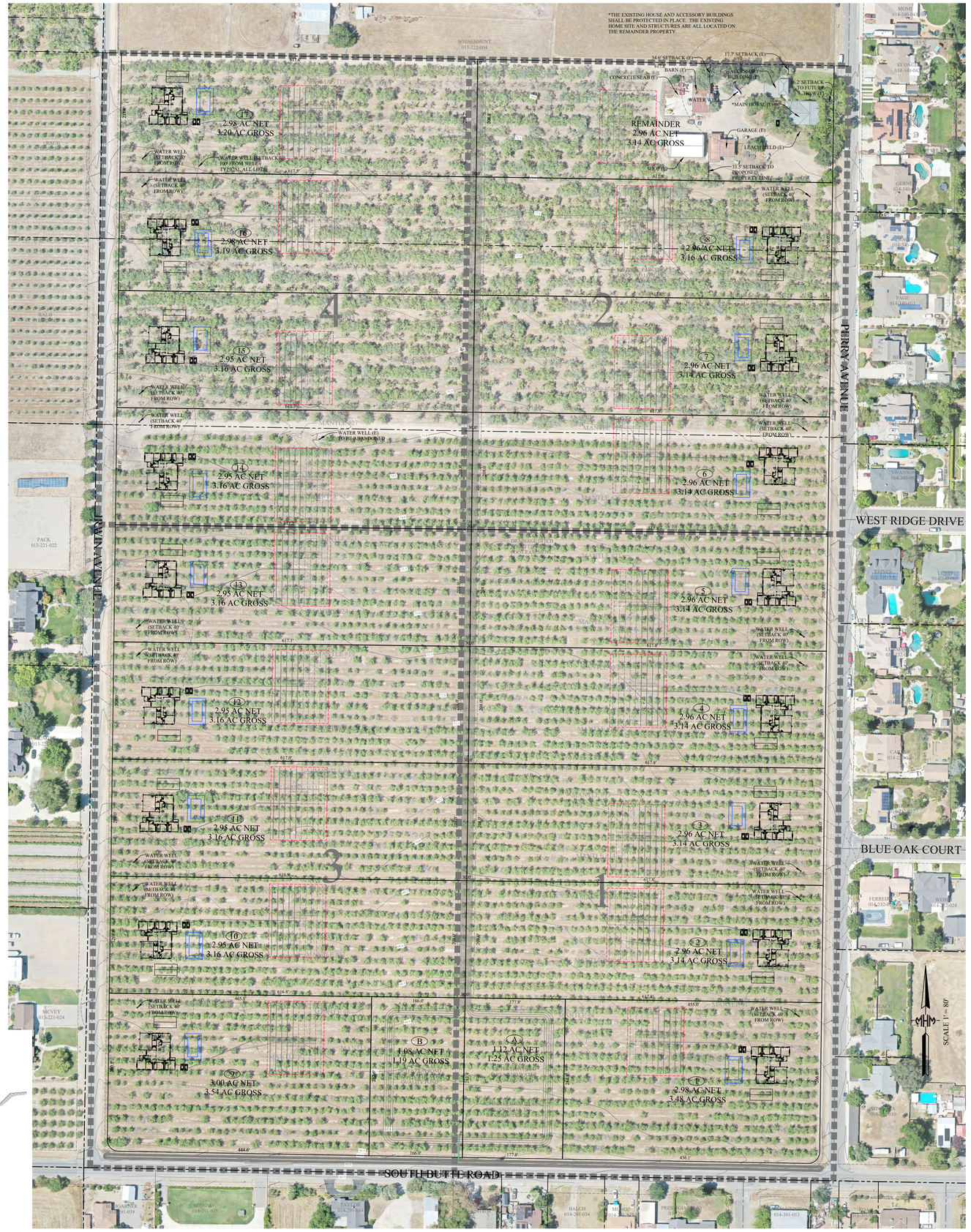
SEAN MINARD, P.E. 52593, P.L.S. 8397





LEGAL DESCRIPTION (EXISTING PARCELS):

THE LAND DESCRIBED HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF SUTTER, UNINCORPORATED AREA, DESCRIBED AS FOLLOWS:

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PARCEL THREE (APN: 013-231-008): BEING A PORTION OF LOTS 11 AND 12 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 12 ; THENCE WESTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOTS 12 AND 11 A DISTANCE OF 660.0 FEET TO THE NORTHWEST CORNER OF SAID LOT 11; THENCE SOUTHERLY ALONG THE WESTERLY BOUNDARY OF SAID LOT 11, A DISTANCE OF 648.0 FEET; THENCE EASTERLY AND PARALLEL TO THE NORTHERLY BOUNDARY OF SAID LOTS 11 AND 12 A DISTANCE OF 660.0 FEET TO THE EASTERLY BOUNDARY OF LOT 12; THENCE NORTHERLY ALONG THE EASTERLY BOUNDARY OF LOT 12, A DISTANCE OF 648.0 FEET MORE OR LESS TO THE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO. 99-24 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123, OFFICIAL RECORDS.

EXCEPTING THEREFROM, AS TO LOT 12 , A LIFE ESTATE IN AND TO ALL OIL, GAS AND OTHER HYDROCARBONS AND MINERALS INCLUDING THE RIGHT OF ENTRY AND OF OCCUPANCY TO EXPLORE SAID PROPERTY FOR SAID SUBSTANCES OR ANY THEREOF AND TO DEVELOP THE PRODUCTION THEREOF AND TO RECOVER THE SAME, AS RESERVED IN THE DEED FROM PETER JOHN DEREE, A SINGLE MAN TO GERALD F. RAUB AND WIFE, DATED JANUARY 23, 1961, AND RECORDED JANUARY 30, 1961, IN BOOK 550 OF OFFICIAL RECORDS, PAGE 158.

PARCEL FOUR (APN 013-231-009): BEING A PORTION OF LOTS 11 AND 12 OF THE ROTHROCK SUBDIVISION FILED IN BOOK 2 OF SURVEYS PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

LOTS 11 AND 12 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA.

EXCEPTING THEREFROM THE FOLLOWING DESCRIBED PARCEL:

BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 12; THENCE WESTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOTS 12 AND 11 A DISTANCE OF 660.0 FEET TO THE NORTHEAST CORNER OF SAID LOT 11; THENCE SOUTHERLY ALONG THE WESTERLY BOUNDARY OF SAID LOT 11, A DISTANCE OF 648.0 FEET; THENCE EASTERLY AND PARALLEL TO THE NORTHERLY BOUNDARY OF SAID LOTS 11 AND 12 A DISTANCE OF 660.0 FEET TO THE EASTERLY BOUNDARY OF LOT 12; THENCE NORTHERLY ALONG THE EASTERLY BOUNDARY OF LOT 12 A DISTANCE OF 648.0 FEET MORE OR LESS, TO THE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO 99-24, FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123 OFFICIAL RECORDS.

EXCEPTING THEREFROM, AS TO LOT 12 , A LIFE ESTATE IN AND TO ALL OIL, GAS AND OTHER HYDROCARBONS AND MINERALS, INCLUDING THE RIGHT OF ENTRY AND OF OCCUPANCY TO EXPLORE SAID PROPERTY FOR SAID SUBSTANCES OR ANY THEREOF AND TO DEVELOP THE PRODUCTION THEREOF AND TO RECOVER THE SAME, AS RESERVED IN THE DEED FROM PETER JOHN DERRE, A SINGLE MAN TO GERALD F. RAUB AND WIFE, DATED JANUARY 23, 1961, AND RECORDED JANUARY 30, 1961, IN BOOK 550 OF OFFICIAL RECORDS, PAGE 158.

PARCEL 5 (APN 013-222-008): BEING A PORTION OF LOTS 13 AND 14 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 13; THENCE WESTERLY ALONG THE SOUTHERLY BOUNDARY OF SAID LOT 13 A DISTANCE OF 660.0 FEET TO A POINT DIVIDING THE SOUTHERLY BOUNDARY OF SAID LOT 13 INTO EQUAL HALVES, SAID POINT BEING THE TRUE POINT OF BEGINNING; THENCE FROM SAID POINT OF BEGINNING, WESTERLY ALONG THE SOUTHERLY BOUNDARY OF SAID LOT 13 A DISTANCE OF 660.0 FEET TO THE SOUTHWEST CORNER OF SAID LOT 13; THENCE NORTHERLY ALONG THE WESTERLY BOUNDARY OF LOTS 13 AND 14 A DISTANCE OF 660.0 FEET TO THE NORTHWEST CORNER OF SAID LOT 14; THENCE EASTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOT 14 A DISTANCE OF 660.0 FEET TO A POINT DIVIDING THE NORTHERLY BOUNDARY OF SAID LOT 14 INTO EQUAL HALVES; THENCE SOUTHERLY A DISTANCE OF 660.0 FEET MORE OR LESS TO THE TRUE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO. 99-25 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123 OFFICIAL RECORDS.

PARCEL SIX (APN 013-222-009): BEING A PORTION OF LOTS 13 AND 14 OF THE "ROTHROCK SUBDIVISION" IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

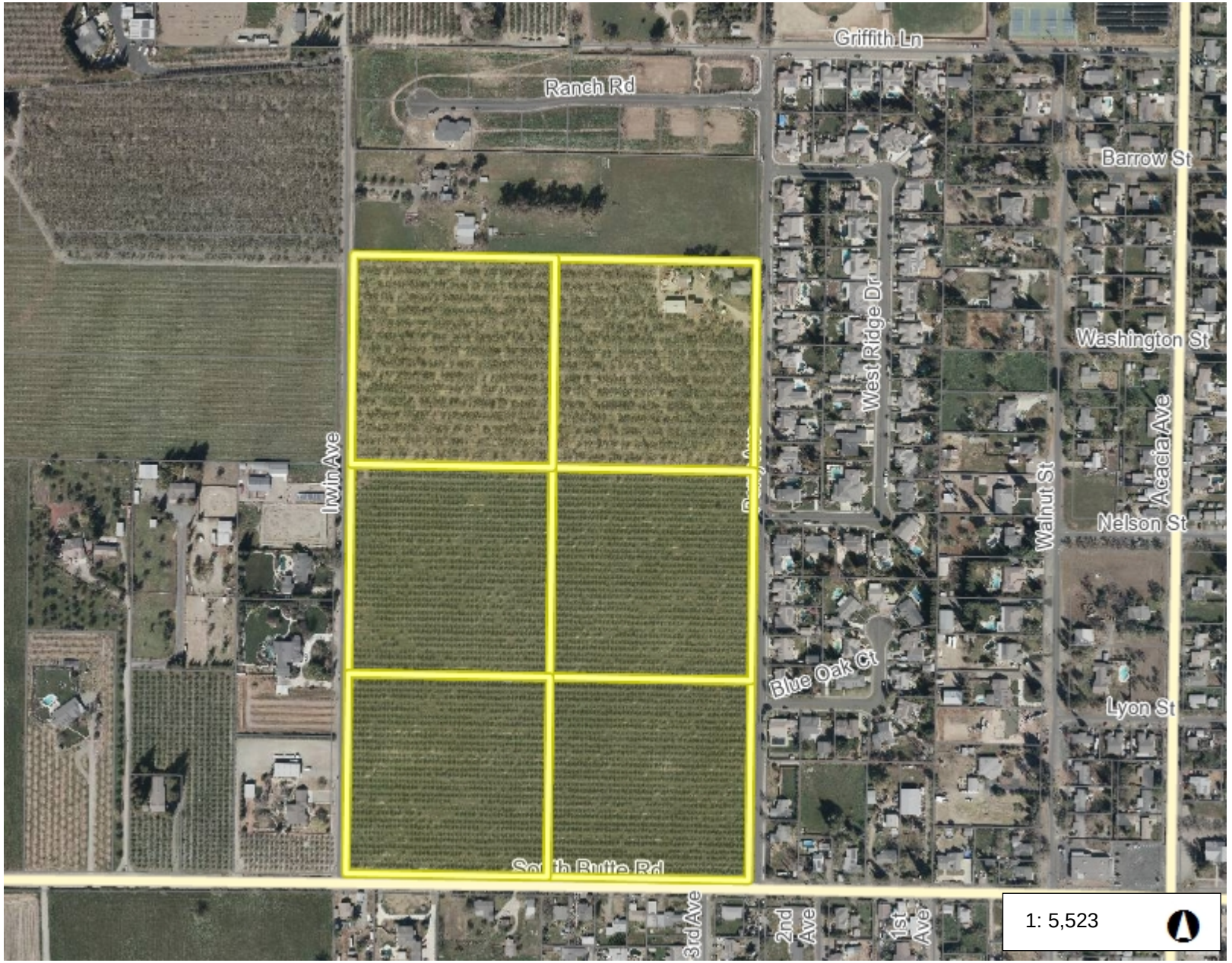
BEGINNING AT THE SOUTHEAST CORNER OF SAID LOT 13; THENCE WESTERLY ALONG THE SOUTHERLY BOUNDARY OF SAID LOT 13 A DISTANCE OF 660.0 FEET TO A POINT DIVIDING THE SOUTHERLY BOUNDARY OF SAID LOT 13 INTO EQUAL HALVES; THENCE NORTHERLY A DISTANCE OF 660.0 FEET TO A POINT DIVIDING THE NORTHERLY BOUNDARY OF SAID LOT 14 INTO EQUAL HALVES; THENCE EASTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOT 14 A DISTANCE OF 660.0 FEET TO THE NORTHEAST CORNER OF SAID LOT 14; THENCE SOUTHERLY ALONG THE EASTERLY BOUNDARY OF SAID LOT 14 AND 13 A DISTANCE OF 660.0 FEET MORE OR LESS TO THE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO. 99-25 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123, OFFICIAL RECORDS.

2 INDICATES PROPOSED PHASE

M·H·M
ENGINEERS & SURVEYORS SINCE 1892
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
TEL.: 530.742.6485
FAX: 530.742.5639

Geocortex® Essentials for ArcGIS Server

Sutter County Web Mapping - Aerial



Legend

- Addresses
- Building Footprints
- Railroads
- Levees
- Open Waterways
  - Irrigation Canal
  - Creek
  - Drainage Ditch
  - River
  - State Drain
  - Ditch (reclass)
  - Natural Waterway (reclass)
  - <all other values>
- Tax Parcels
- Incorporated Cities
- Road Centerlines
  - 1
  - 3
  - 4
  - 5
  - <all other values>
- County Boundary
- 2022 (.25')
  - Red: Band_1
  - Green: Band_2
  - Blue: Band_3

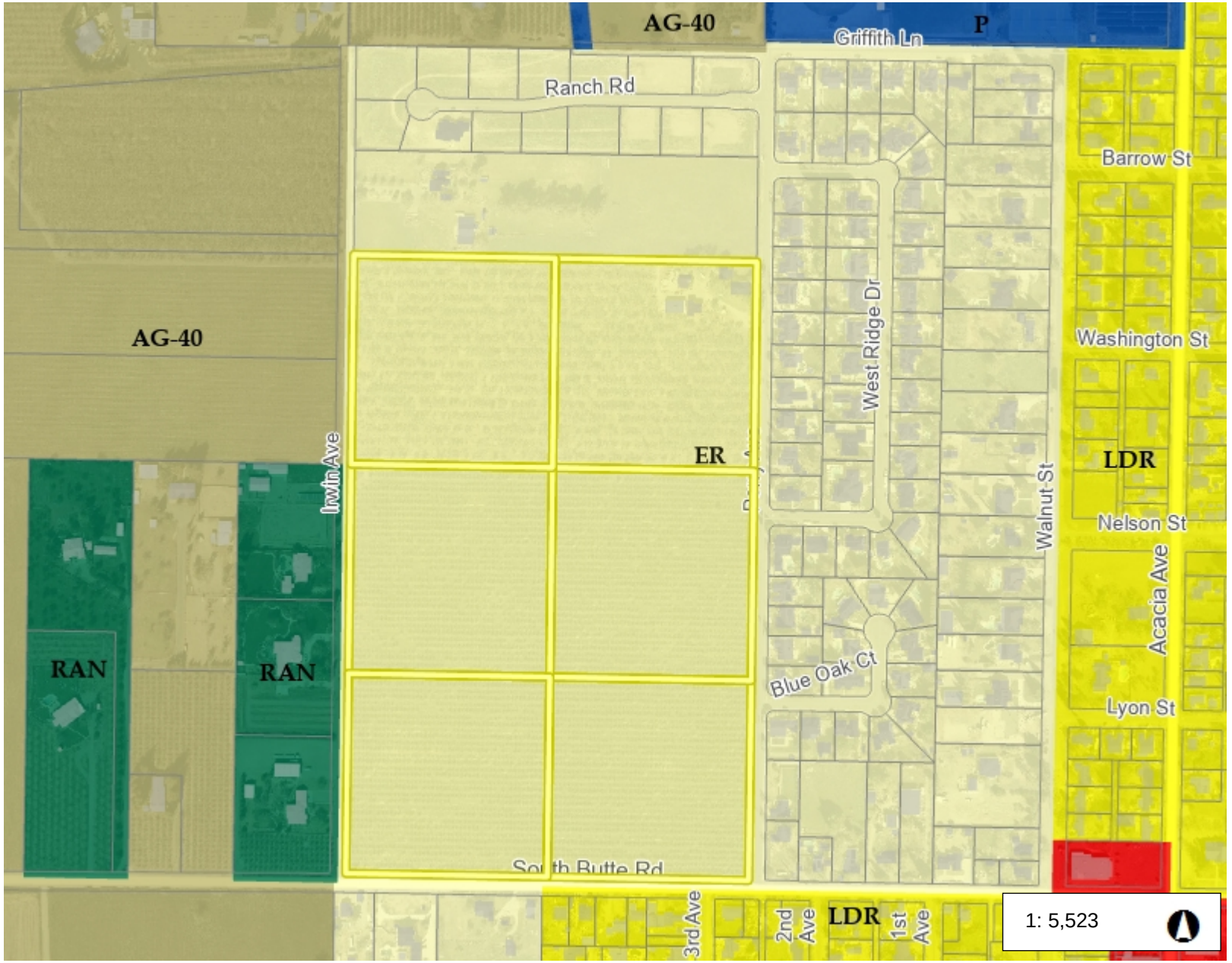
920.6 0 460.28 920.6 Feet

NAD_1983_StatePlane_California_II_FIPS_0402_Feet

SUTTER COUNTY · CALIFORNIA ·

Geocortex® Essentials for ArcGIS Server

Sutter County Web Mapping - General Plan



Legend

- Addresses
- Building Footprints
- Railroads
- Levees
- Open Waterways
  - Irrigation Canal
  - Creek
  - Drainage Ditch
  - River
  - State Drain
  - Ditch (reclass)
  - Natural Waterway (reclass)
  - <all other values>
- Tax Parcels
- General Plan
  - AG-20
  - AG-40
  - AG-80
  - AG-RC
  - AIRPORT
  - COM
  - COM/UR
  - EC
  - ER
  - ER/UR
  - FPARC
  - HDR
  - I/C
  - IND
  - L.O.C.
  - LDR
  - LDR/UR
  - MDR

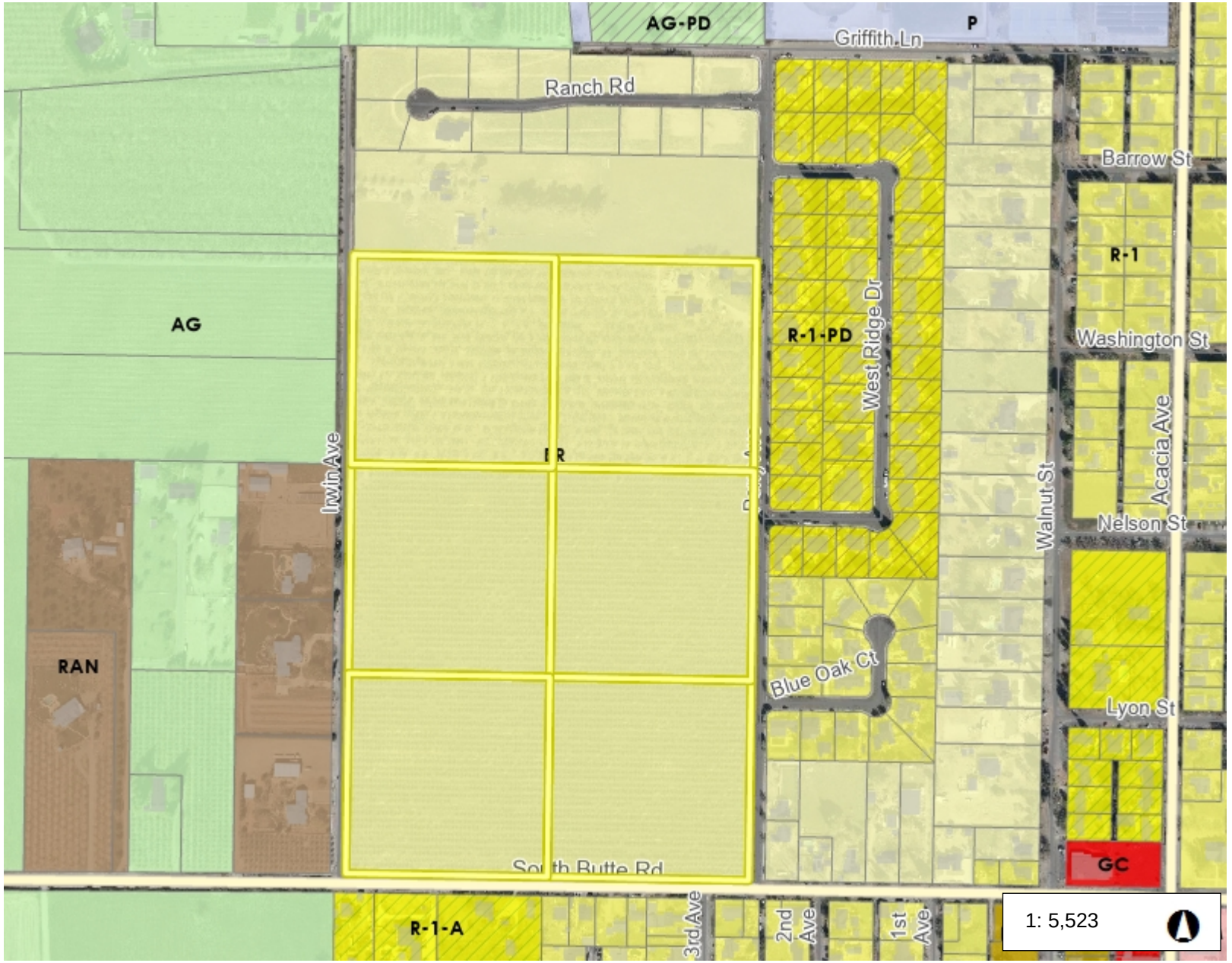
920.6 0 460.28 920.6 Feet

NAD_1983_StatePlane_California_II_FIPS_0402_Feet

SUTTER COUNTY · CALIFORNIA ·

Geocortex® Essentials for ArcGIS Server

Sutter County Web Mapping - Zoning



Legend

- Addresses
- Building Footprints
- Railroads
- Levees
- Open Waterways
  - Irrigation Canal
  - Creek
  - Drainage Ditch
  - River
  - State Drain
  - Ditch (reclass)
  - Natural Waterway (reclass)
  - <all other values>
- Tax Parcels
- Zoning
  - AG
  - AG-PD
  - AG-SB
  - C-M
  - C-M-PD
  - CC
  - CM-PD
  - E1
  - E1-FP
  - E2
  - EC
  - ER
  - ER-PD
  - FPARC
  - GC
  - GC-PD
  - HDR
  - IDB

920.6 0 460.28 920.6 Feet

NAD_1983_StatePlane_California_II_FIPS_0402_Feet

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

SUTTER COUNTY · CALIFORNIA ·

ROTHROCK SUBD.

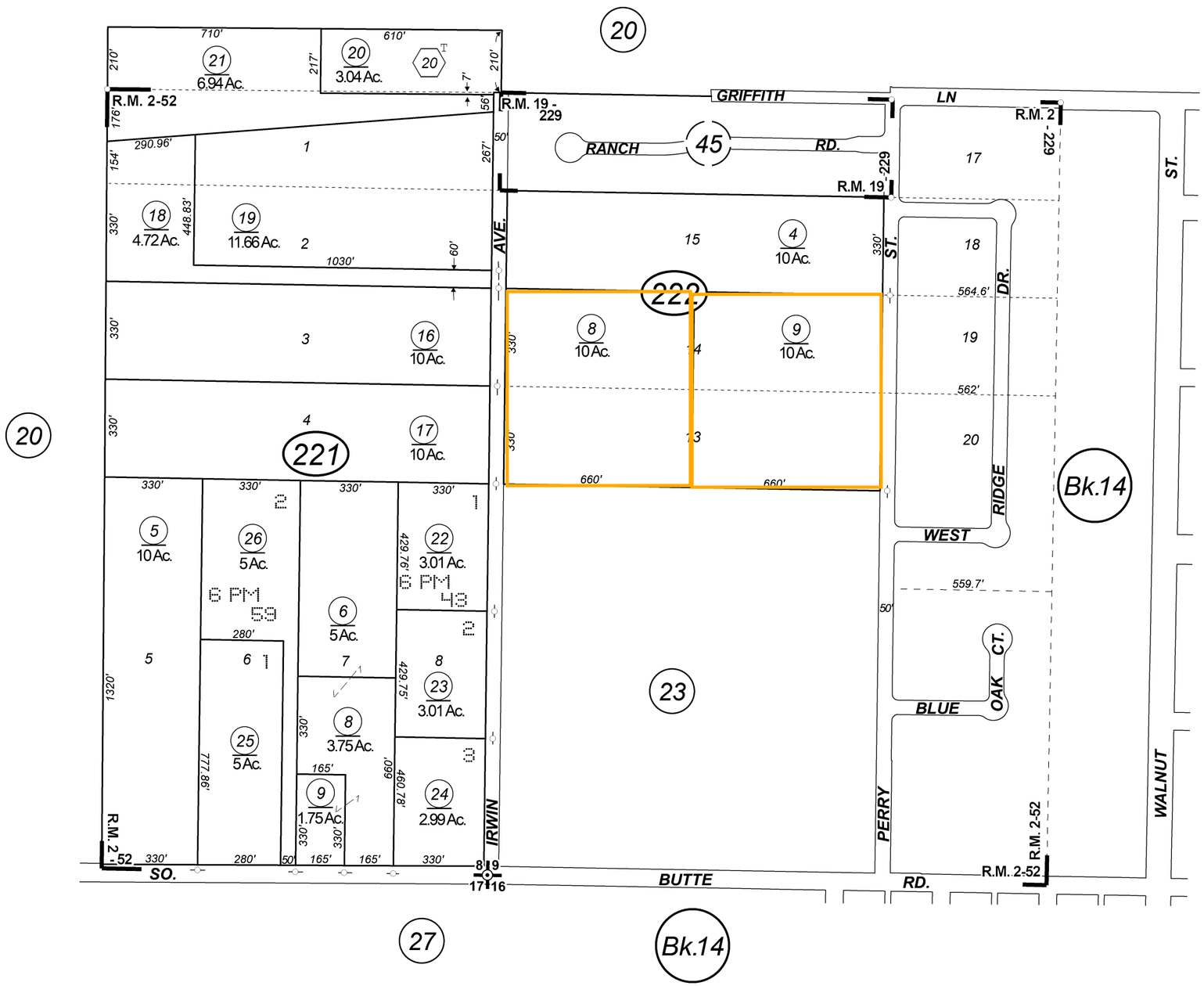
R.M. Bk. 2, Pg. 52

POR. SEC'S. 8 & 9, T.15 N., R.2 E., M.D.B.&M

13-22

N

1" = 400'



ASSESSOR PARCELS SHOWN ON THIS PAGE
DO NOT NECESSARILY CONSTITUTE LEGAL LOTS.
CHECK WITH THE COUNTY SURVEYOR OR
PLANNING DIVISION TO VERIFY.

Note - Assessor's Block Numbers & Lot Numbers Shown in Circles

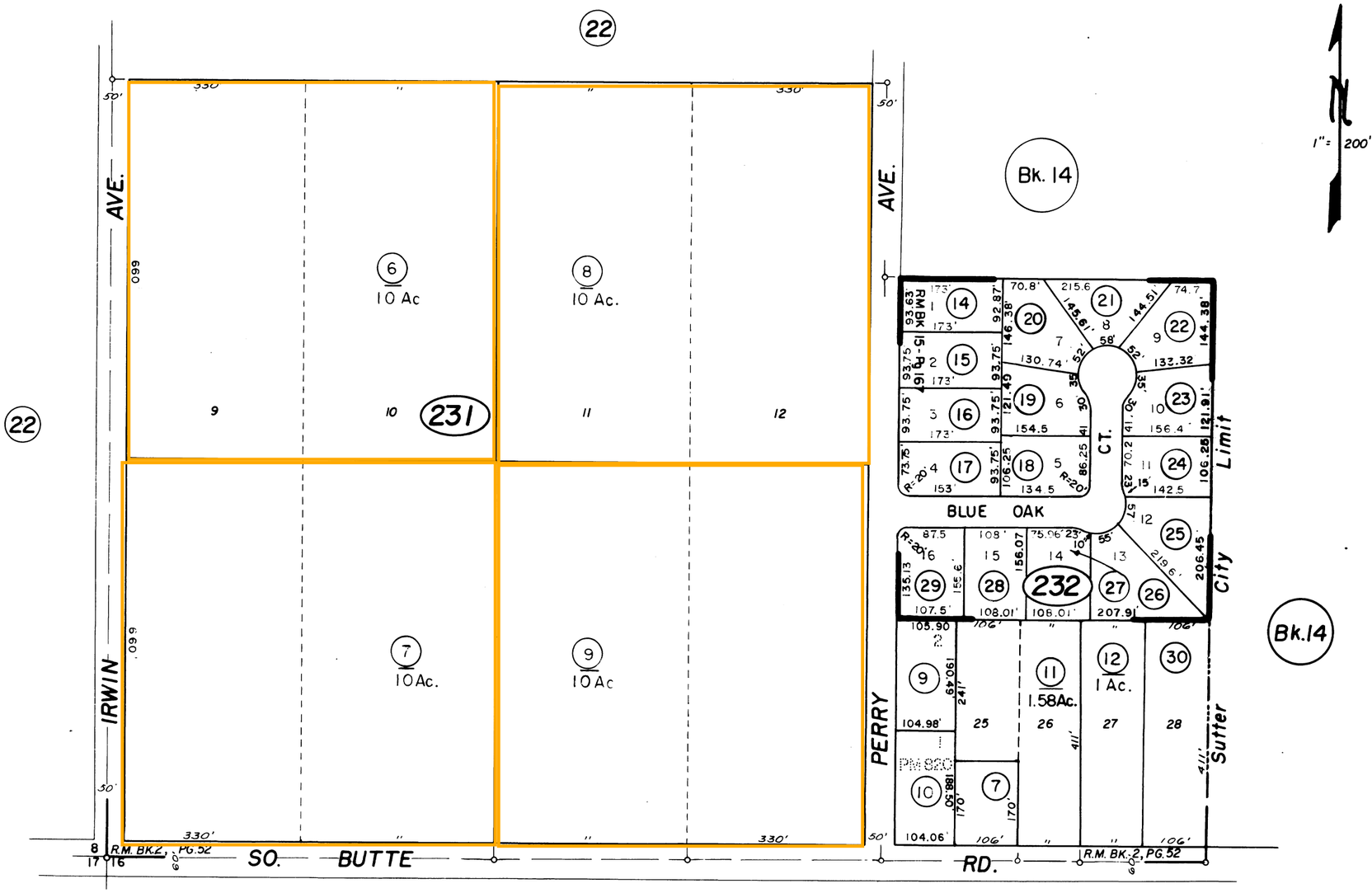
Assessor's Map Bk. 13 - Pg. 22
County of Sutter, Calif.
2018

ROTHROCK SUBD.

R.M. Bk.2, Pg.52

POR. SEC. 9, T.15N., R.2E., M.D.B. & M.

Tax Area Code 52-003 13-23



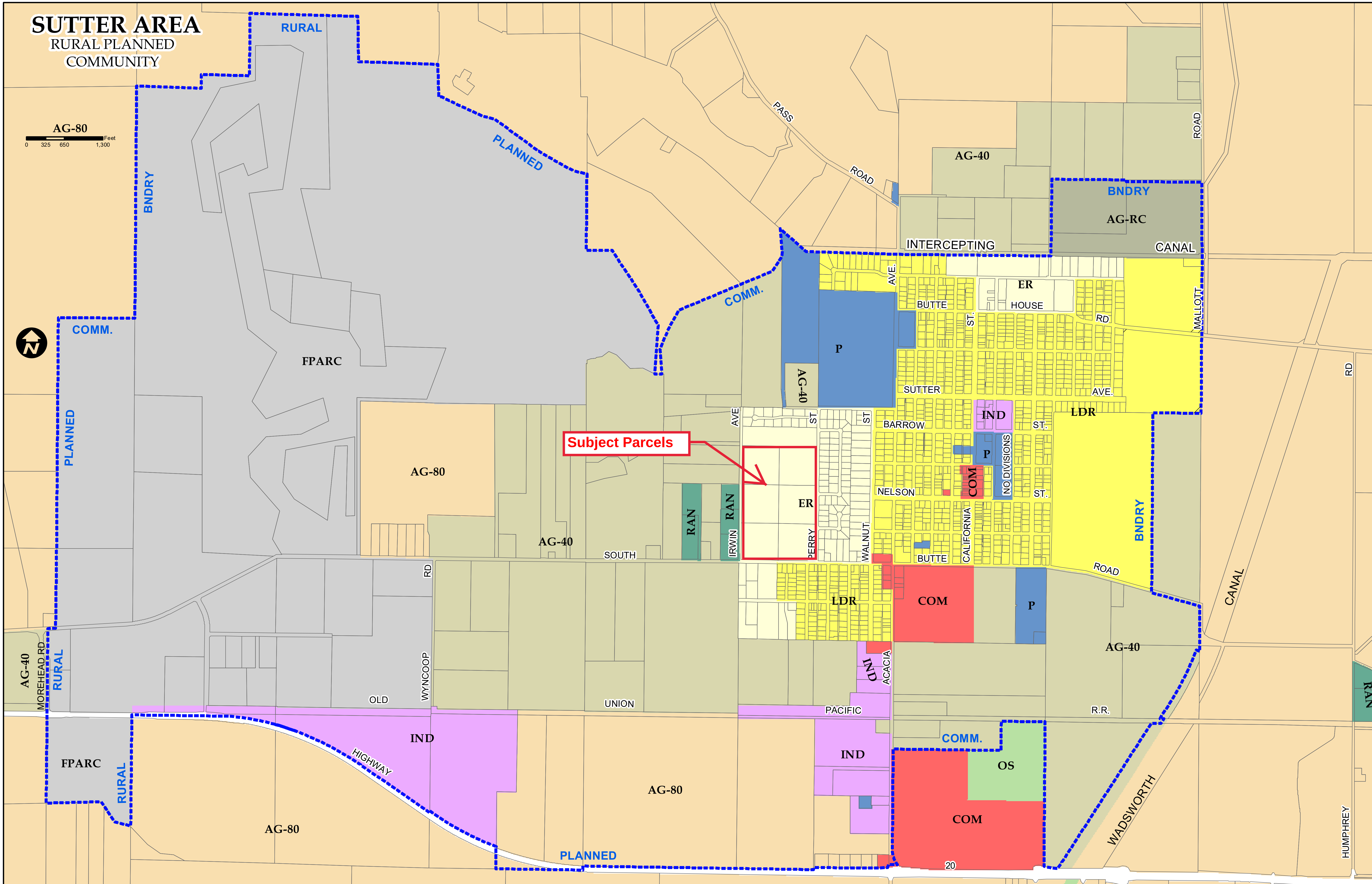
South Butte Estate RM Bk. 15 - Pg. 167

NOTE - ASSESSOR'S BLOCK & LOT NUMBERS SHOWN IN CIRCLES

Assessor's Map Bk. 13 -Pg. 23
County of Sutter, Calif.

1999 - 1

ASSESSOR PARCELS SHOWN ON THIS PAGE DO NOT NECESSARILY CONSTITUTE LEGAL LOTS. CHECK WITH THE COUNTY SURVEYOR OR PLANNING DIVISION TO VERIFY.


SUTTER AREA
RURAL PLANNED
COMMUNITY
AG-80
0 325 650 1,300
Feet
RURAL
PLANNED
COMM.
BNDRY
FPARC
AG-80
AG-40
AG-RC
INTERCEPTING
CANAL
ER
LDR
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IND
COM
RAN
OS
Subject Parcels
PASS
ROAD
BUTTE
HOUSE
RD
SUTTER
AVE.
BARROW
ST.
NELSON
NO DIVISIONS
CALIFORNIA
WALNUT
PERRY
IRWIN
SOUTH
ACACIA
PACIFIC
R.R.
UNION
OLD
WYNCOOP
MOREHEAD RD
HIGHWAY
20
WADSWORTH
HUMPHREY
MALLOTT

Marcus H. Bole & Associates
An Environmental Consulting Firm

September 29, 2023

Gordon A. Raub 03 Trust
C/O MHM Engineering
1204 E Street
Marysville, CA 95901

BIOLOGICAL RESOURCES EVALUATION AND WETLAND DETERMINATION FOR THE PROPOSED SOUTH BUTTE ESTATE TENTATIVE MAP, SUTTER COUNTY APNS 13-222-008 (10.0 AC), 13-222-009 (10.0 AC), 13-231-006 (10.0 AC), 13-231-007 (10.0 AC), 13-231-008 (10.0 AC) and 13-231-009 (10.0 AC), MHBA File 0824-2023-3881.

1.0 INTRODUCTION

During the time period September 19 to 28, 2023, a CEQA-level Biological Resources Evaluation and Wetland Determination was conducted on a 60-acre project site consisting of six parcels located north of South Butte Road, west of Perry Street and east of Irwin Avenue, Sutter, Sutter County, California (Subject Property). The Subject Property is located on the U.S. Geological survey (USGS) South Buttes 7.5-minute topographic quadrangle, Section 9, Township 15 North, Range 2 East, located within the unincorporated rural community of Sutter. (Appendix A, Figure 1). The Subject Property is within Sutter County Assessor parcel numbers (APNs) 13-222-008 (10.0 AC), 13-222-009 (10.0 AC), 13-231-006 (10.0 AC), 13-231-007 (10.0 AC), 13-231-008 (10.0 AC) and 13-231-009 (10.0 AC). Elevation of the property is 70 feet in relatively flat terrain. The Subject Property is bounded on the east, west and south by residences and agricultural lands to the north.

A records search was completed of the United States Fish & Wildlife Service's *Federal Endangered and Threatened Species List* (IPaC Resource List, 09/19/2023) and the *California Natural Diversity Database* (September 2023) for the Sutter Buttes 7 ½ minute quadrangle and eight surrounding quadrangles. These documents list plants and wildlife that have Federal, State and California Native Plant Society (CNPS) special status. The records revealed several plant and wildlife species with a potential to occur onsite. Due to the long history of agricultural use (orchards) of the property, and the lack of any natural habitat on or near the site, there is limited potential for any of the protected species identified by the USFWS or California Department of Fish & Wildlife to nest or forage on the site.

Using the methodologies described in the *1987 Wetland Delineation Manual*, Marcus H. Bole & Associates found no federal jurisdictional wetland habitats within the boundaries of the subject property. Site soils were identified as Olashes sandy loam, 0 to 2 percent slopes. Soil pits were dug in representative areas of the site. All soils were identified as upland soils (Chroma of 10YR 6/3 and 10YR 3/3) with no hydric soil indicators. Plant species were identified as ruderal upland grasses and forbs.

2.0 SETTING

The Sutter area has a Mediterranean climate characterized by hot, dry summers and mild, rainy winters. Annual precipitation generally ranges from 9 to 52 inches. Average annual precipitation is 28 inches. Annual precipitation occurs almost exclusively as rainfall, and mostly from October through May. Mean monthly minimum air temperatures are typically in the high 30s and low 40s F during November through March; while mean maximum air temperatures are around 90º F during July and August. Recorded extremes are 14º F and 109º F, respectively.

3.0 METHODOLOGY

Biological and botanical surveys were conducted based on the California Department of Fish and Wildlife's (CDFW) Natural Diversity Database (CNDDB, September 2023), the United States Fish & Wildlife Service's (USFWS) IPaC Resource List, and the California Native Plant Society's (CNPS) list of rare and endangered plants. All species lists were derived from the United States Geological Survey (USGS) "Sutter Buttes, Sutter, Gridley, Meridian, Grimes, Sanborn Slough, Pennington, Tisdale Weir and Gilsizer Slough" 7.5 minute quadrangles. Based on the results of the species lists, appropriate biological and botanical surveys were conducted. Species habitat surveys were conducted during September 2023, by Marcus H. Bole & Associates (MHBA) senior wildlife biologist Marcus H. Bole. The species habitat surveys were conducted by walking all areas of the property (and surrounding 500 foot buffer) and evaluating potential habitat for special-status species based on vegetation composition and structure, surrounding area, presence of predatory species, microclimate and available resources (e.g. prey items, nesting burrows). A general botanical survey and habitat evaluation for rare plant botanical species was conducted during September 2023 by MHBA's senior botanist Charlene J. Bole. The general botanical survey and habitat evaluation for rare plant botanical species was conducted by walking all areas of the property while taking inventory of general botanical species and searching for special-status plant species and their habitats. A delineation of Waters of the U.S. was also conducted during September 2023 by Marcus H. Bole and was conducted under the guidelines of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008).

3.1 Regulatory Requirements

The following describes federal, state, and local environmental laws and policies that are relevant to the California Environmental Quality Act (CEQA) review process.

Federal

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (ESA) in 1973 to protect species that are endangered or threatened with extinction. The ESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend. The ESA makes it unlawful to "take" a listed animal without a permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound,

kill, trap, capture, or collect or attempt to engage in any such conduct". Through regulations, the term "harm" is defined as "an act which actually kills or injures wildlife". Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e. exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.

Waters of the United States, Clean Water Act, Section 404

The US Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into jurisdictional waters of the United States, under the Clean Water Act (§404). The term "waters of the United States" is an encompassing term that includes "wetlands" and "other waters". Wetlands have been defined for regulatory purposes as follows: "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3). Wetlands generally include swamps, marshes, bogs, and similar areas." Other waters of the United States (OWUS) are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (i.e., hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4). The USACE may issue either individual permits on a case-by-case basis or general permits on a program level. General permits are pre-authorized and are issued to cover similar activities that are expected to cause only minimal adverse environmental effects. Nationwide permits are general permits issued to cover particular fill activities. All nationwide permits have general conditions that must be met for permits issued for a particular project, as well as specific regional conditions that apply to each nationwide permit.

Clean Water Act, Section 401

The Clean Water Act (§401) requires water quality certification and authorization for placement of dredged or fill material in wetlands and OWUS. In accordance with the Clean Water Act (§401), criteria for allowable discharges into surface waters have been developed by the State Water Resources Control Board, Division of Water Quality. The resulting requirements are used as criteria in granting National Pollutant Discharge Elimination System (NPDES) permits or waivers, which are obtained through the Regional Water Quality Control Board (RWQCB) per the Clean Water Act (§402). Any activity or facility that will discharge waste (such as soils from

construction) into surface waters, or from which waste may be discharged, must obtain an NPDES permit or waiver from the RWQCB. The RWQCB evaluates an NPDES permit application to determine whether the proposed discharge is consistent with the adopted water quality objectives of the basin plan.

State of California

California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the ESA, but pertains to state-listed endangered and threatened species. The CESA requires state agencies to consult with the CDFW when preparing documents to comply with the CEQA. The purpose is to ensure that the actions of the lead agency do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species. In addition to formal listing under the federal and state endangered species acts, "species of special concern" receive consideration by CDFW. Species of special concern are those whose numbers, reproductive success, or habitat may be threatened.

California Fish and Wildlife Code

The California Fish and Game Code (CFWC) (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (all owls except barn owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFWC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto".

Rare and Endangered Plants

The CNPS maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The CNPS California Rare Plant Rank (CRPR) categorizes plants as the following:

Rank 1A: Plants presumed extinct in California;
Rank 1B: Plants rare, threatened, or endangered in California or elsewhere;
Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
Rank 3: Plants about which we need more information; and
Rank 4: Plants of limited distribution.

The California Native Plant Protection Act (CFGC §1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered as defined by CDFW. An exception to this prohibition allows landowners, under specific

circumstances, to take listed plant species, provided that the owners first notify CDFW and give the agency at least 10 days to retrieve (and presumably replant) the plants before they are destroyed. Fish and Wildlife Code §1913 exempts from the 'take' prohibition 'the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way".

California Environmental Quality Act Guidelines §15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines §15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled based on the definition in the ESA and the section of the CFGC dealing with rare, threatened, and endangered plants and animals. The CEQA Guidelines (§15380) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (e.g. candidate species, species of concern) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

4.0 RESULTS

4.1 Description of the Existing Biological and Physical Conditions

The Subject Property is located within the unincorporated rural community of Sutter, Sutter County, California. The following describes the biological and physical conditions within the property and within the surrounding area.

4.1.1 Subject property

The Subject Property includes multiple APNs totaling 60-acres. Ground-level and tree surveys were conducted throughout the entire 60-acres. Surveys for nesting avian species were also conducted within 500-feet of the 60-acres (north, east, south and west). These surveys were conducted from public accessible areas only (public roadways) using high-powered Zeiss binoculars and spotting scopes[1]. The Subject Property is an almond orchard with a rural residence and agricultural outbuildings; surrounding properties are residences to the east, west and south and agricultural land to the north.

4.1.2 Physical Conditions

The Subject Property consists of almond trees with ruderal non-native grasses between the rows of almond trees. During onsite surveys on September 19, 2023 approximately 20 acres of older almond trees (APNs 013-222-009 and 013-222-008) had been cut down and piled awaiting permission to burn. The non-native grasses consisted predominately of wild oats, bromegrass,

[1] The California Department of Fish & Wildlife requires construction set-backs from active avian nests. Set-backs vary in distance; however, generally are determined to be 500-feet. Nesting avian survey protocols include areas within 500-feet of the proposed developments.

thistles and non-native forbs. The developed portion of APN 013-222-009 consists of an older residence, warehouses, barns and landscaped areas (cultivars and lawns).

4.1.3 Biological Conditions

Vegetation within the Subject Property consists of almond trees with non-native annual grasses and forbs growing between the trees. Structure and composition of these habitats follow closely those described by the California Department of Fish and Wildlife in the *California Wildlife Habitat Relationship System* as Deciduous Orchards - Almonds, Non-Native Annual Grasslands and Urban – Rural Residential. There are no seasonal or perennial wetlands or riparian habitats on or near the Subject Property.

Deciduous Orchards – Almonds

Orchards are composed of single species (almonds) planted in rows. Between rows of almond trees, grasses and other herbaceous plants may be planted or allowed to grow as a cover crop to control erosion. The understory in orchards usually consists of bare soil or a cover crop of herbaceous plants. Literature is generally lacking on wildlife associated these habitats except as it relates to pests and pest control. Some species of birds and mammals have adapted to the orchard habitats. Many have become "agricultural pests" which has resulted in intensive efforts to reduce crop losses through fencing, sound guns, or other management techniques. Wildlife observed within the onsite almond orchard include the California ground squirrel and Western fence lizard *(Sceloporus occ*identalis).

Non-Native Annual Grasslands

Ruderal non-native grasses and forbs habitats and species composition depend largely on annual precipitation, fire regimes and past agricultural practices (Mayer and Laudenslayer 1998). Common non-native annual grasses and forbs growing between the rows of almond trees include wild oat (*Avena sp*.), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), field bindweed (*Convolvulus arvensis*), flax-leaved horseweed (*Erigeron bonariensis*), puncture vine (*Tribulus terrestris*), tumbleweed amaranth (*Amaranthus albus*), European heliotrope (*Heliotropium europaeum*) and turkey mullein (*Croton setiger*). Wildlife species use non-native grassland habitats for foraging but require some other habitat characteristic such as trees, rocky out crops, cliffs, caves or ponds in order to find shelter and cover for escapement. Wildlife species observed within the Subject Property's non-native annual grasslands included the California ground squirrel, American crow (*Corvus brachyrhynchos*), western scrub jay (*Aphelocoma californica*), house finch (*Carpodacus mexicanus*) and house sparrow (*Passer domesticus*).

Urban- Rural Residential

The structure of urban-rural residential vegetation varies; however, the majority of onsite trees are landscaped cultivars such as sycamore (*Platarnus occidentalis*), mock orange (*Philadelphus coronarius*) and Russian olive (*Elaeagnus angustifolia*). Valley oaks, walnuts, willows and pine trees have been planted and maintained as landscape features around the house and outbuildings.

4.2 Regional Species and Habitats of Concern

The following table is a list of species that have the potential to occur within the Subject Property and is composed of special-status species within the Sutter Buttes, Sutter, Gridley, Meridian, Grimes, Sanborn Slough, Pennington, Tisdale Weir and Gilsizer Slough 7.5 minute quadrangles. Species lists reviewed, and which are incorporated in the following table, include the USFWS species list for the Sutter County area. Species that have the potential to occur within the Subject Property are based on an evaluation of suitable habitat to support these species, CNDDB occurrences within a five mile radius of the Subject Property and observations made during biological surveys. Not all species listed within the following table have the potential to occur within the Subject Property based on unsuitable habitat and/or lack of recorded observations within a five mile radius of the Subject Property.

Table 1. Listed and Proposed Species potentially occurring on or near the South Butte Estates Subject Property

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS/CNDDB	**General Habitat Description**	**Species Presence/ Habitat Presence**	**Rationale**
INVERTEBRATES & INSECTS				
Crotch bumble bee *(Bombus crotchii)*	Candidate Endangered_/G2S3/	Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum*. General vicinity of Wilkins Slough Substation, east of Arbuckle.	A/HA	There is no suitable habitat or plant foods within the Subject Property. **No effect.**
Monarch Butterfly *(Danaus plexippus***)**	Federal Candidate	Roosts located in wind-protected tree groves with nectar and water sources nearby.	A/HA	There is no suitable habitat onsite. None observed on or near the Subject Property. **No effect.**
Valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*	FT/_/_	Blue elderberry shrubs usually associated with riparian areas.	A/HA	There are no elderberry shrubs within or near the Subject Property. **No effect.**
Vernal pool fairy shrimp *(Branchinecta lynchi)*	FT/_/_	Moderately turbid, deep, cool-water vernal pool.	A/HA	There are no vernal pools within the Subject Property. **No effect.**

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS/CNDDB	**General Habitat Description**	**Species Presence/ Habitat Presence**	**Rationale**
Vernal pool tadpole shrimp *(Lepidurus packardi)*	FE/_/_	Vernal pools, swales, and ephemeral freshwater habitat.	A/HA	There are no vernal pools within the Subject Property. **No effect.**
REPTILES AND AMPHIBIANS				
California Tiger Salamander (Ambystoma californiense)	FT/ST/_	Cismontane woodland, meadow & seep, riparian woodland, valley and foothill grassland, vernal pool; need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	A/HA	There is no suitable habitat to support the California Tiger Salamander within the Subject Property. None were observed during the habitat survey. **No effect.**
Giant garter snake *(Thamnophis gigas)*	FT/ST/_	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes ponds, sloughs, small lakes, and there associated uplands. (sea level - 400 ft elevation)	A/HA	No wetland areas were identified within the Subject Property. None were observed during the habitat survey. **No effect.**
BIRDS				
Least Bell's vireo *(Vireo bellii)*	FE/SE/_	Low riparian in vicinity of water or in dry river bottoms. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, and mesquite	A/HA	There is no suitable habitat to support this species within the Subject Property. None were observed during the habitat survey. **No effect.**
Western yellow-billed cuckoo *(Coccyzus americanus occidentalis)*	FT/SE/_	Open woodlands, riparian areas, orchards and moist, overgrown thickets	A/HA	There are no extensive parcels of riparian habitat within or near

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS/CNDDB	General Habitat Description	Species Presence/ Habitat Presence	Rationale
				the Subject Property. None were observed during the habitat survey. **No effect.**
PLANTS				
Hartweg's Golden Sunburst *(Pseudobahia bahiifolia)*	FE/SE/1B.1_	Valley and foothill grassland, cismontane woodland. Clay soils, often acidic. Predominantly on the northern Slopes of knolls, but also along Shady creeks or near vernal pools.	A/HA	There is no suitable habitat within or near the Subject Property. None were observed during the habitat survey. **No effect.**

CODE DESIGNATIONS	
FE = Federally-listed Endangered	**A** = Species Absent
FT = Federally-listed Threatened	**P** = Species Present
FC = Federal Candidate Species	
BCC = Federal Bird of Conservation Concern	**HA** = Habitat Absent
MBTA = Protected by the federal Migratory Bird Treaty Act	**HP** = Habitat Present
SE = State-listed Endangered	**CH** = Critical Habitat
ST = State-listed Threatened	**MH** = Marginal Habitat
SR = State-listed Rare	**CNPS 1B** = Rare or Endangered in California or elsewhere
SSC = State Species of Special Concern	
S1 = State Critically Imperiled	**CNPS 2** = Rare or Endangered in California, more common elsewhere
S2 = State Imperiled	
S3 = State Vulnerable	**CNPS 3** = More information is needed
S4 = State Apparently Secure	**CNPS 4** = Plants with limited distribution
SSC = CDFW Species of Special Concern	**0.1** =Seriously Threatened
FP =CDFW Fully Protected Species	**0.2** = Fairly Threatened
SNC = CDFW Sensitive Natural Community	**0.3** = Not very Threatened

4.2.1 Migratory Birds

Nesting birds are protected under the MBTA (16 USC 703) and the CFWC (3503). The MBTA (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e. exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has

the potential to affect bird species protected by the MBTA. The CFWC (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (all owls except barn owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFWC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto".

Survey Results

Avian species that have a potential to nest within or near the Subject Property are the American crow (*Corvus brachyrhynchos*), western scrub jay (*Aphelocoma californica*), house finch (*Carpodacus mexicanus*), Northern mockingbird (*Mimus polyglottos*), lesser goldfinch (*Spinus psaltria*), turkey vulture (*Cathartes aura*) and house sparrow (*Passer domesticus*). During the migratory bird and raptor survey conducted during September 2023, there were no observed nests within the Subject Property

<u>Recommended Avoidance and Minimization Measure.</u>

Although orchards are not normally considered suitable nesting habitat due to the high level of disturbance during maintenance and harvest phases of operation, there are larger suitable nest trees adjacent to the rural residence within the northern portion of the Subject Property. These trees were thoroughly examined during onsite surveys and no nests were observed. Surveys were conducted during the latter part of the normal nesting season when nesting activity would have been evident. Due to the presence of these larger trees (Valley oaks), it is recommended that a nest survey be conducted prior to removal to ensure that no avian species are impacted.

The following are avoidance and minimization measures for California avian species of special concern and species protected under the MBTA and the CFWC. Any suitable nest tree removal and/or ground disturbance activities should begin during the avian non-breeding (September 1 – February 28) season so as to avoid and minimize impacts to avian species. If construction is to begin within the avian breeding season (March 1 – August 31) then a migratory bird and raptor survey shall be conducted within the Subject Property by a qualified biologist. A qualified biologist shall: Conduct a survey for all birds protected by the MBTA and CFWC no later than fifteen (15) days prior to construction activities; map all nests located within 250 feet of construction areas; develop buffer zones around active nests as recommended by a qualified biologist. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored at least twice (2) per week and a report submitted to the Sutter County Planning monthly. If construction activities stop for more than ten (10) days then another migratory bird and raptor survey shall be conducted no later than fifteen (15) days prior to the continuation of construction activities.

4.2.2 Rare Plants

MHBA's biologist/botanist Charlene J. Bole, M.S., conducted special-status plant surveys during the normal blooming cycles for all plants of concern. These surveys were conducted in accordance with guidelines promulgated by USFWS (USFWS 2000), CDFW (CDFW 2018), and CNPS (CNPS 2001). Ms. Bole walked meandering transects throughout the Subject Property, including all suitable habitats for target species, and identified all plant species to the lowest possible taxonomic level required to assess rarity.

Survey Results

No special special-status plant species or their specific micro-habitats were observed during the survey.

5.0 RESULTS: PERMITS AND TECHNICAL STUDIES FOR SPECIAL LAWS OR CONDITIONS

5.1 Federal Endangered Species Act Consultation Summary

The USFWS was contacted during September 2023, for a list of endangered, threatened, sensitive and rare species, and their habitats within the Subject Property. The list was derived from special-status species that occur or have the potential to occur within the USGS Sutter Buttes 7.5" Quadrangle and eight surrounding quadrangles. The list was referenced to determine appropriate biological and botanical surveys and potential species occurrence within the Subject Property.

5.2 Federal Fisheries and Essential Fish Habitat Consultation Summary

Essential fish habitat (EFH) means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (Magnuson-Stevens Fishery Conservation and Management Act (MSA) §3). There is no habitat within the Subject Property that provides "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," or special-status fish species managed under a fishery council (i.e. chinook and coho). Therefore there is no EFH or the need for federal fisheries consultation.

5.3 California Endangered Species Act Consultation Summary

The CDFW was consulted during September 2023, for a list of endangered, threatened, sensitive and rare species, and their habitats within the Subject Property. The list was derived from special-status species that occur or have the potential to occur within the USGS Sutter Buttes 7.5" Quadrangle and eight adjacent quadrangles. The list was referenced to determine appropriate biological and botanical surveys and potential species occurrence within the Subject Property.

5.4 Wetlands and Others Water Coordination Summary

MHBA conducted a determination of Waters of the U.S. within the Subject Property. Surveys were conducted during September 2023 by MHBA's Marcus H. Bole. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the *United States Army Corps of Engineers Wetlands Delineation Manual (1987); the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008); the U.S. *Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (2007); the *U.S. Army Corps of Engineers Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region* (2011); and the *U.S. Army Corps of Engineers Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (2008).

5.5 Determination of Waters of the United States and Waters of the State

The intent of this determination is to identify wetlands and "other Waters of the United States" that are present within the Study Area that could fall under the regulatory jurisdiction of the U. S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act. The *1987 Corps of Engineers Wetlands Delineation Manual* identifies several methodologies and combinations of methodologies that can be utilized in making jurisdictional determinations. Marcus H. Bole & Associates has employed the Routine On-Site Determination methodology for this study (as supplemented by the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region,* dated December 2006). The Routine On-Site Determination method uses a three-parameter approach (vegetation, soils and hydrology) to identify and delineate the boundaries of jurisdictional wetlands. To be considered a wetland, all three positive wetland parameters must be present. These parameters include (1) a dominance of wetland vegetation, (2) a presence of hydric soils, and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. Further description of these parameters is provided below:

1) Vegetation. Wetland vegetation includes those plants that possess physiological traits that allow them to grow and persist in soils subject to inundation and anaerobic soil conditions. Plant species are classified according to their probability of being associated with wetlands. Obligate (OBL) wetland plant species almost always occur in wetlands (more than 99 percent of the time), facultative wetland (FACW) plant species occur in wetlands most of the time (67 to 99 percent), and facultative (FAC) plant species have about an equal chance (33 to 66 percent) of occurring in wetlands as in uplands. For this study, vegetation was considered to meet the vegetation criteria if more than 50% of the vegetative cover was FAC or wetter. No wetland plant species were observed within the Subject Property during our onsite evaluations. There was no sign of vernal pools or vernal swales on the property.

2) Hydric Soils. Hydric soils are saturated, flooded, or ponded in the upper stratum long enough during the growing season to develop anaerobic conditions and favor the growth of wetland plants. Hydric soils include gleyed soils (soils with gray colors), or usually display indicators such as low chroma values, redoximorphic features, iron, or manganese concretions, or a

combination of these indicators. Low chroma values are generally defined as having a value of 2 or less using the Munsell Soil Notations (Munsell, 1994). For this study a soil was considered to meet the hydric soil criteria for color if it had a chroma value of one or a chroma of two with redoximorphic features, or if the soil exhibited iron or manganese concretions. Redoximorphic features (commonly referred to as mottles) are areas in the soils that have brighter (higher chroma) or grayer (lower chroma) colors than the soil matrix. Redoximorphic features are the result of the oxidation and reduction process that occurs under anaerobic conditions. Iron and manganese concretions form during the oxidation-reduction process, when iron and manganese in suspension are sometimes segregated as oxides into concretions or soft masses. These accumulations are usually black or dark brown. Concretions 2 mm in diameter occurring within 7.5 cm of the surface are evidence that the soil is saturated for long periods near the surface**.** Onsite soils as identified by the Natural Resources Conservation Service (NRCS) are Olashes sandy loam, 0 to 2 percent slopes. These soils do not support ponding or pooling and are not classified as a "hydric" soil of Sutter County.

3) Hydrology. Wetlands by definition are seasonally inundated or saturated at or near the surface. In order for an area to have wetland hydrology, it has to be inundated or saturated for 5% of the growing season (approximately 12 days) (USDA, 1967). Indicators include visual soil saturation, flooding, watermarks, drainage patterns, encrusted sediment and plant deposits, cryptogrammic lichens, and algal mats. Due to past property use as an almond orchard the natural hydrology has been altered through drainage and flood protection.

Wetland Determination Results

Using the methodologies described in the *1987 Wetland Delineation Manual*, Marcus H. Bole & Associates found no state or federal jurisdictional wetland habitats within the boundaries of the Subject Property.

6.0 CONCLUSIONS AND RECOMMENDATIONS

With the implementation of avoidance and minimization measures (See Section 4.2.1) there will be no direct or indirect impacts to avian species of special concern protected under the MBTA and CFWC. Direct impacts to avian species of special concern and species protected under the MBTA and CFWC will be further avoided and/or minimized by beginning construction or tree removal prior to the avian breeding season (March 1 – August 31) or conducting a pre-construction survey prior to the start of construction or tree removal activities if these activities will begin during the avian breeding season. By beginning construction prior to the avian breeding season there will be no active nests within the Subject Property and direct impacts to avian species will not occur. Furthermore, beginning construction prior to the avian breeding season will also deter avian species from nesting within or within close proximity of construction activities. If construction activities are to take place during the avian breeding season then a pre-construction survey will be conducted to determine the locations of active avian nests within and/or near proximity to the Subject Property (i.e 500 feet). If active avian nests are found then construction buffers, as determined by a qualified biologist, will be established and no construction will occur within the buffer until the biologist has determined that the young have fledged. Establishing no-construction buffers around active nests will minimize direct impacts.

Cumulative Effects

There are no foreseeable new actions that have potential to threaten protected avian species within the Subject Property or contribute to cumulative effects of migratory bird species. There will be no cumulative impacts to special status plant species.

This concludes our biological and wetland evaluation of a 60-acre project site consisting of six ten-acre parcels located north of South Butte Road within the unincorporated rural community of Sutter, Sutter County, California (Subject Property). The Subject Property is located on the U.S. Geological survey (USGS) Sutter Buttes 7.5-minute topographic quadrangle, Section 19, Township 15 North, Range 2 East. If you have any questions concerning our findings please feel free to contact me directly at: Marcus H. Bole & Associates, Attn: Marcus Bole, 104 Brock Drive, Wheatland, CA 95692, phone 530-633-0117, fax 530-633-0119, email: mbole@aol.com. For a complete copy of the Statement of Qualifications of the staff members conducting this evaluation please visit our website at: mhbole.com.

Respectfully Submitted:

Charlene J. Bole, M.S, Botanist
Senior Wetland Scientist
Marcus H. Bole & Associates

Marcus H. Bole, M. S, Wildlife Biologist
Senior Wetland Scientist
Marcus H. Bole & Associates

LIST OF ATTACHMENTS:

APPENDIX A: MAPS AND PHOTO PLATES

APPENDIX B: NATURAL DIVERSITY DATA BASE & FEDERAL LIST

APPENDIX C: SOILS

7.0 REFERENCES

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APPENDIX A: MAPS AND SITE PHOTOS

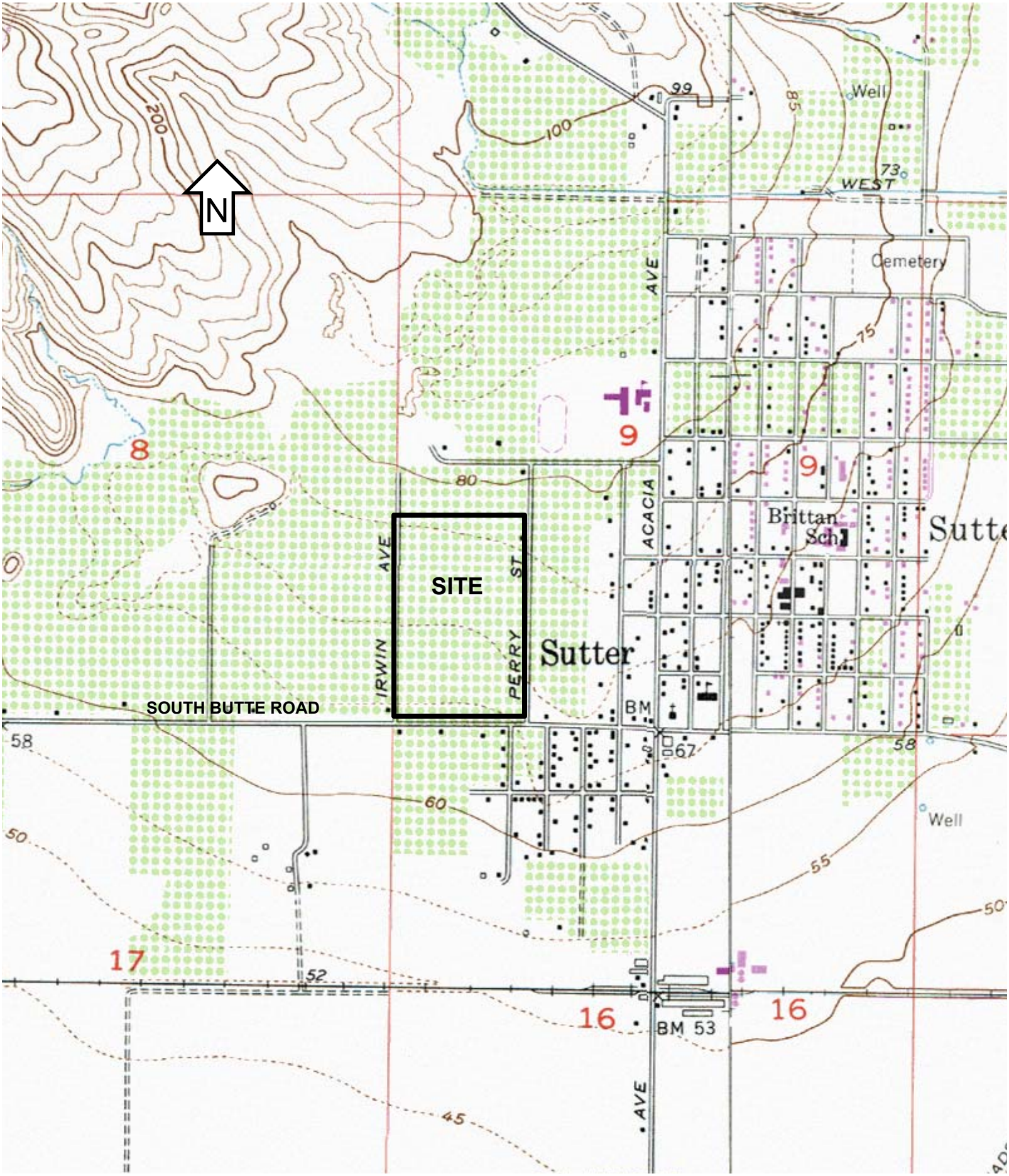


Figure 1: Vicinity Map. South Butte Estate Subdivision, Sutter County APNs 13-231-006, 007, 008, 009, and 13-222-008, 009, a 60-acre project site located within Section 19 Township 15N, Range 2 E, Sutter Buttes, 7.5' USGS Quadrangle. Approximately 39.159977N, -121.760558W.

PROJECT NOTES

OWNER
GORDON A. RAUB 03 TRUST
2400 IRWIN AVENUE
SUTTER, CA 95982
CONTACT: PAULA RAUB
PHONE: (530) 755-1468

APPLICANT
GORDON A. RAUB 03 TRUST
2400 IRWIN AVENUE
SUTTER, CA 95982
CONTACT: PAULA RAUB
PHONE: (530) 755-1468

ENGINEER/SURVEYOR
MHM INCORPORATED
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
CONTACT: SEAN MINARD, P.E., P.L.S.
PHONE: (530) 742-6485

ASSESSOR'S PARCEL NO.
APN 013-220-008 (10.0 AC)
APN 013-220-009 (10.0 AC)
APN 013-231-006 (10.0 AC)
APN 013-231-007 (10.0 AC)
APN 013-231-008 (10.0 AC)
APN 013-231-009 (10.0 AC)

AREA OF TENTATIVE MAP
60.0 GROSS ACRE

EXISTING USE
ORCHARD AND SINGLE FAMILY HOUSE

EXISTING GENERAL PLAN DESIGNATION
ESTATE RESIDENTIAL

PROPOSED GENERAL PLAN DESIGNATION
ESTATE RESIDENTIAL

EXISTING ZONING
ER

PROPOSED ZONING
ER

LEVEE PROTECTION
STATE OF CALIFORNIA

ELEMENTARY SCHOOL DISTRICT
BRITTAN ELEMENTARY SCHOOL DISTRICT

HIGH SCHOOL DISTRICT
SUTTER UNION HIGH SCHOOL DISTRICT

IRRIGATION DISTRICT
NONE - INDIVIDUAL WATER WELLS

FIRE PROTECTION
COUNTY OF SUTTER

LAW ENFORCEMENT
COUNTY OF SUTTER

SANITARY SEWER
INDIVIDUAL SEPTIC AND LEACH FIELD

DOMESTIC WATER
INDIVIDUAL WATER WELLS OR SUTTER COMMUNITY SERVICE DISTRICT

STORM DRAINAGE
COUNTY OF SUTTER

IRRIGATION DISTRICT
SUTTER EXTENSION WD

ELECTRICITY
PACIFIC GAS AND ELECTRIC

NATURAL GAS (OPTIONAL)
PACIFIC GAS AND ELECTRIC

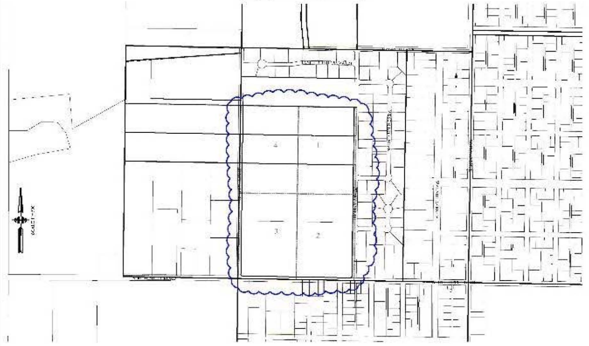
COMMUNICATION
AT&T AND COMCAST

CABLE (OPTIONAL)
COMCAST

GENERAL NOTES:

1. SUBDIVIDER RESERVES THE RIGHT TO PHASE DEVELOPMENT AND FILE MULTIPLE FINAL MAPS PURSUANT TO SECTION 66456.1 (A) OF THE SUBDIVISION MAP ACT.
2. A 10.0' PUBLIC UTILITY EASEMENT SHALL BE LOCATED ADJACENT PROPERTY LINE ON ALL PUBLIC RIGHT OF WAYS.
3. THIS EXHIBIT IS FOR TENTATIVE MAP PURPOSES ONLY. ACTUAL DIMENSIONS, ROAD ALIGNMENTS, ACREAGE, AND YIELDS ARE TO BE VERIFIED PRIOR TO FINAL MAP. THIS IS AN APPLICATION FOR A TENTATIVE SUBDIVISION MAP
4. VILLAGE NUMBERING IS FOR IDENTIFICATION PURPOSES ONLY AND DOES NOT INDICATE PHASING ORDER OF DEVELOPMENT. ULTIMATE DEVELOPMENT PHASING WILL BE ORDERLY AND WILL BE DETERMINED AT FINAL MAP AND/OR IMPROVEMENT PLAN STAGE.
5. ALL EXISTING STRUCTURES AND WELLS TO BE REMOVED PRIOR TO CONSTRUCTION
6. ALL SEPTIC TANKS SHALL BE REMOVED PRIOR TO OR AS PART OF CONSTRUCTION.
7. FRONT YARD HOUSE SETBACKS SHALL BE 30 FEET FROM ROADWAY RIGHT-OF-WAY IN ACCORDANCE WITH ESTATE RESIDENTIAL ZONING.
8. OWNERS, APPLICANT, ENGINEER, AND SURVEYOR SHALL RECEIVE ANY COMMUNICATIONS AND/OR NOTICES RELATED TO THIS PROJECT.
9. DEPTH TO GROUNDWATER BASED ON SURROUNDING WATER WELL REPORTS IS BETWEEN 28 FEET AND 40 FEET THROUGH THE AREA. NO GROUND WATER WAS ENCOUNTERED ON OVER 160 MANTLES PERFORMED.

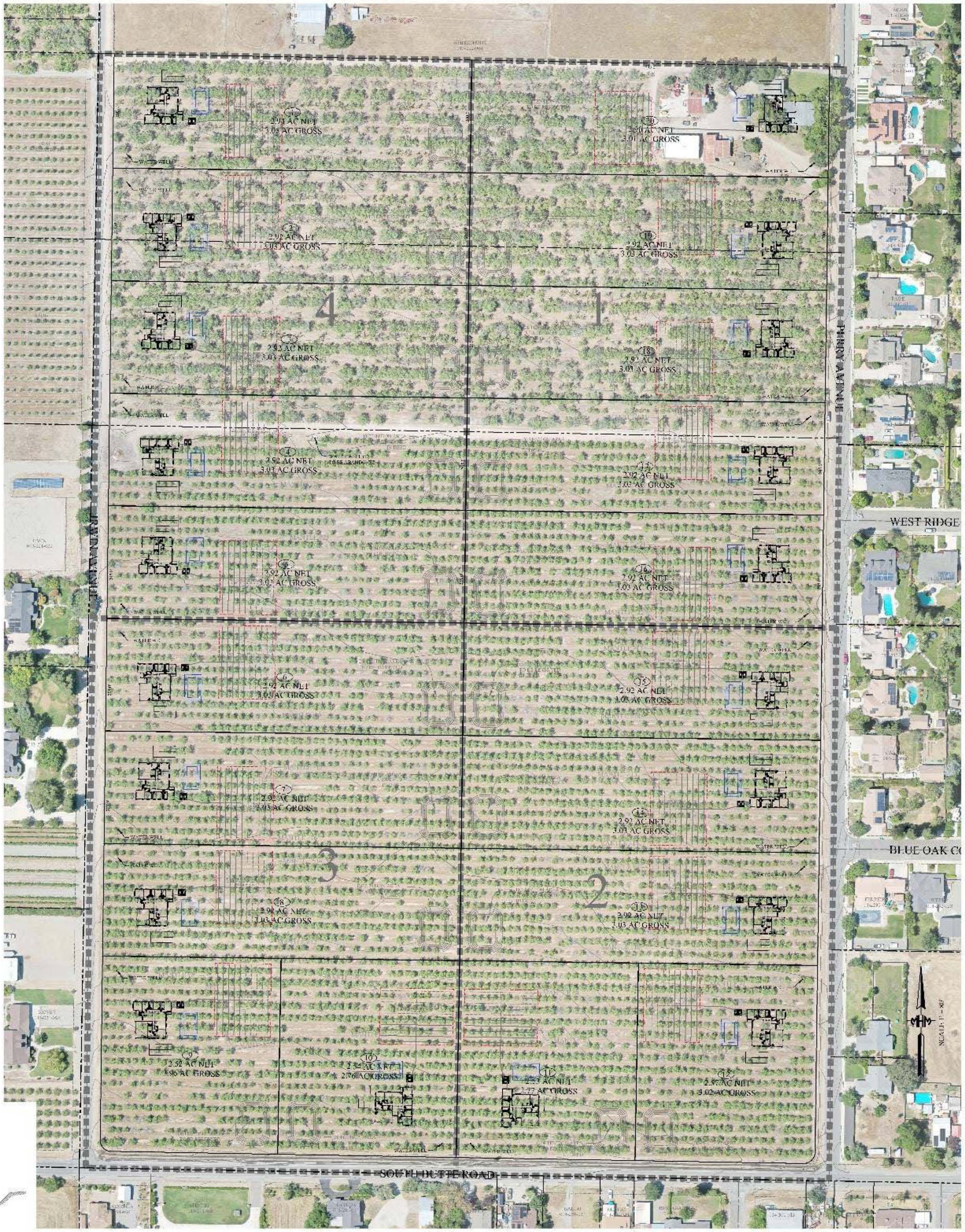
LOCATION MAP



TENTATIVE SUBDIVISION MAP

SOUTH BUTTE ESTATE (#U-23-0XX)

SUTTER COUNTY, CALIFORNIA
AUGUST 21, 2023



LAND USE SUMMARY

LOT SUMMARY*

VILLAGE NO. 1 =	05 LOTS	14.58 AC	2.92 DU/AC
VILLAGE NO. 2 =	05 LOTS	13.86 AC	2.77 DU/AC
VILLAGE NO. 3 =	05 LOTS	13.82 AC	2.76 DU/AC
VILLAGE NO. 4 =	05 LOTS	14.62 AC	2.92 DU/AC
TOTAL – (RESIDENTIAL)	20 LOTS	56.88 AC	2.84 DU/AC

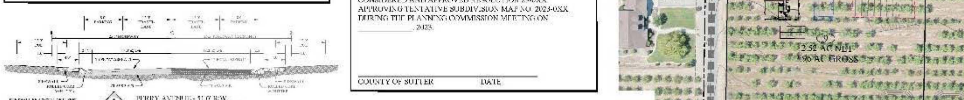
* SOUTH BUTTE ROAD, PERRY STREET, AND IRWIN ROAD ROW ARE NOT INCLUDED SINCE WILL BE DEDICATED IN FEE TITLE AND EASEMENT HAVE BEEN PREVIOUSLY DEDICATED TO COUNTY. THE TOTAL ACREAGE OF ROADWAYS IS 3.14 ACRES.

SURVEYORS STATEMENT:
I HEREBY STATE THAT ALL EASEMENTS OF RECORD ARE SHOWN AND LABELED PER PRELIMINARY TITLE REPORT BY OLD REPUBLIC TITLE COMPANY ORDER NUMBER 4211019682-JS DATED JUNE 24, 2022.

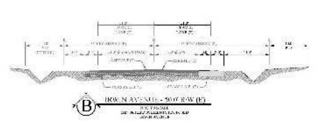
SEAN MINARD, P.E. 52591, P.L.S. 8307

COUTY OF SUTTER APPROVAL:
THE COUNTY OF SUTTER PLANNING COMMISSION HAS CONSIDERED AND APPROVED RESOLUTION 23-0XX APPROVING TENTATIVE SUBDIVISION MAP NO. 2023-0XX DURING THE PLANNING COMMISSION MEETING ON ____________, 2023.

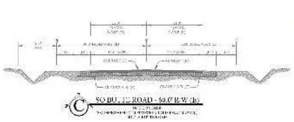
COUNTY OF SUTTER ____ DATE



(A) PERRY AVENUE - 51.0' R/W



(B) IRWIN AVENUE



(C) SOUTH BUTTE ROAD

LEGAL DESCRIPTION (EXISTING PARCELS):

THE LAND DESCRIBED HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF SUTTER, UNINCORPORATED AREA, DESCRIBED AS FOLLOWS:

PARCEL ONE (APN: 013-231-006): BEING A PORTION OF LOTS 9 AND 10 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF LOT 12 OF SAID "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS; THENCE WESTERLY ALONG THE NORTHERLY BOUNDARY OF LOTS 12 AND 11 A DISTANCE OF 660.0 FEET TO THE NORTHEAST CORNER OF SAID LOT 10, SAID CORNER BEING THE TRUE POINT OF BEGINNING; THENCE FROM SAID TRUE POINT OF BEGINNING SOUTHERLY ALONG THE EASTERLY BOUNDARY OF SAID LOT 10 A DISTANCE OF 648.0 FEET; THENCE EASTERLY AND PARALLEL TO THE NORTHERLY BOUNDARY OF SAID LOTS 9 AND 10 A DISTANCE OF 660.0 FEET TO THE WESTERLY BOUNDARY OF SAID LOT 9; THENCE NORTHERLY ALONG THE WESTERLY BOUNDARY OF SAID LOT 9 A DISTANCE OF 648.0 FEET TO THE NORTHWEST CORNER OF SAID LOT 9; THENCE EASTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOTS 9 AND 10 A DISTANCE OF 660.0 FEET MORE OR LESS TO THE TRUE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO 99-56 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19122 OFFICIAL RECORDS.

PARCEL TWO (APN: 013-231-007): BEING A PORTION OF LOTS 9 AND 10 OF THE ROTHROCK SUBDIVISION FILED IN BOOK 2 OF SURVEYS PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

LOTS 9 AND 10 OF THE ROTHROCK SUBDIVISION FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA.

EXCEPTING THEREFROM, THE FOLLOWING DESCRIBED PARCEL:

COMMENCING AT THE NORTHEAST CORNER OF LOT 12 OF SAID "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS; THENCE WESTERLY ALONG THE NORTHERLY BOUNDARY OF LOTS 12 AND 11, A DISTANCE OF 660.0 FEET TO THE NORTHEAST CORNER OF SAID LOT 10, SAID CORNER BEING THE TRUE POINT OF BEGINNING; THENCE FROM SAID TRUE POINT OF BEGINNING, SOUTHERLY ALONG THE EASTERLY BOUNDARY OF SAID LOT 10 A DISTANCE OF 648.09 FEET TO THE WESTERLY BOUNDARY OF SAID LOT 9; THENCE NORTHERLY ALONG THE WESTERLY BOUNDARY OF SAID LOT 9 A DISTANCE OF 648.0 FEET TO THE NORTHWEST CORNER OF SAID LOT 9; THENCE EASTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOTS 9 AND 10 A DISTANCE OF 660.0 FEET MORE OR LESS TO THE TRUE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO. 99-56 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19122 OFFICIAL RECORDS.

PARCEL THREE (APN: 013-231-008): BEING A PORTION OF LOTS 11 AND 12 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 12; THENCE WESTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOTS 12 AND 11 A DISTANCE OF 660.0 FEET TO THE NORTHWEST CORNER OF SAID LOT 11; THENCE SOUTHERLY ALONG THE WESTERLY BOUNDARY OF SAID LOT 11, A DISTANCE OF 648.0 FEET; THENCE EASTERLY AND PARALLEL TO THE NORTHERLY BOUNDARY OF SAID LOTS 11 AND 12 A DISTANCE OF 660.0 FEET TO THE EASTERLY BOUNDARY OF LOT 12; THENCE NORTHERLY ALONG THE EASTERLY BOUNDARY OF LOT 12, A DISTANCE OF 648.0 FEET MORE OR LESS TO THE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO. 99-24 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123, OFFICIAL RECORDS.

EXCEPTING THEREFROM, AS TO LOT 12, A LIFE ESTATE IN AND TO ALL OIL, GAS AND OTHER HYDROCARBONS AND MINERALS INCLUDING THE RIGHT OF ENTRY AND OF OCCUPANCY TO EXPLORE SAID PROPERTY FOR SAID SUBSTANCES OR ANY THEREOF AND TO DEVELOP THE PRODUCTION THEREOF AND TO RECOVER THE SAME, AS RESERVED IN THE DEED FROM PETER JOHN DERFF, A SINGLE MAN TO GERALD E. RAUB AND WIFE, DATED JANUARY 23, 1961, AND RECORDED JANUARY 30, 1961, IN BOOK 550 OF OFFICIAL RECORDS, PAGE 158.

PARCEL FOUR (APN 013-231-009): BEING A PORTION OF LOTS 11 AND 12 OF THE ROTHROCK SUBDIVISION FILED IN BOOK 2 OF SURVEYS PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

LOTS 11 AND 12 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA.
EXCEPTING THEREFROM THE FOLLOWING DESCRIBED PARCEL:
BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 12; THENCE WESTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOTS 12 AND 11 A DISTANCE OF 660.0 FEET TO THE NORTHEAST CORNER OF SAID LOT 11; THENCE SOUTHERLY ALONG THE WESTERLY BOUNDARY OF SAID LOT 11, A DISTANCE OF 648.0 FEET; THENCE EASTERLY AND PARALLEL TO THE NORTHERLY BOUNDARY OF SAID LOTS 11 AND 12 A DISTANCE OF 660.0 FEET TO THE EASTERLY BOUNDARY OF LOT 12; THENCE NORTHERLY ALONG THE EASTERLY BOUNDARY OF LOT 12 A DISTANCE OF 648.0 FEET MORE OR LESS, TO THE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO 99-24, FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123 OFFICIAL RECORDS.

EXCEPTING THEREFROM, AS TO LOT 12, A LIFE ESTATE IN AND TO ALL OIL, GAS AND OTHER HYDROCARBONS AND MINERALS, INCLUDING THE RIGHT OF ENTRY AND OF OCCUPANCY TO EXPLORE SAID PROPERTY FOR SAID SUBSTANCES OR ANY THEREOF AND TO DEVELOP THE PRODUCTION THEREOF AND TO RECOVER THE SAME, AS RESERVED IN THE DEED FROM PETER JOHN DERFF, A SINGLE MAN TO GERALD E. RAUB AND WIFE, DATED JANUARY 23, 1961, AND RECORDED JANUARY 30, 1961, IN BOOK 550 OF OFFICIAL RECORDS, PAGE 158.

PARCEL 5 (APN 013-222-008): BEING A PORTION OF LOTS 13 AND 14 OF THE "ROTHROCK SUBDIVISION" FILED IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 13; THENCE WESTERLY ALONG THE SOUTHERLY BOUNDARY OF SAID LOT 13 A DISTANCE OF 660.0 FEET TO A POINT DIVIDING THE SOUTHERLY BOUNDARY OF SAID LOT 13 INTO EQUAL HALVES, SAID POINT BEING THE TRUE POINT OF BEGINNING; THENCE FROM SAID POINT OF BEGINNING, WESTERLY ALONG THE SOUTHERLY BOUNDARY OF SAID LOT 13 A DISTANCE OF 660.0 FEET TO THE SOUTHWEST CORNER OF SAID LOT 13; THENCE NORTHERLY ALONG THE WESTERLY BOUNDARY OF LOTS 13 AND 14 A DISTANCE OF 660.0 FEET TO THE NORTHWEST CORNER OF SAID LOT 14; THENCE EASTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOT 14 A DISTANCE OF 660.0 FEET TO A POINT DIVIDING THE NORTHERLY BOUNDARY OF SAID LOT 14 INTO EQUAL HALVES; THENCE SOUTHERLY A DISTANCE OF 660.0 FEET MORE OR LESS TO THE TRUE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO. 99-25 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123 OFFICIAL RECORDS.

PARCEL SIX (APN 013-220-009): BEING A PORTION OF LOTS 13 AND 14 OF THE "ROTHROCK SUBDIVISION" IN BOOK 2 OF SURVEYS, PAGE 52, SUTTER COUNTY RECORDS, SUTTER COUNTY, CALIFORNIA, MORE PARTICULARLY DESCRIBED BELOW AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID LOT 13; THENCE WESTERLY ALONG THE SOUTHERLY BOUNDARY OF SAID LOT 13 A DISTANCE OF 660.0 FEET TO A POINT DIVIDING THE SOUTHERLY BOUNDARY OF SAID LOT 13 INTO EQUAL HALVES; THENCE NORTHERLY A DISTANCE OF 660.0 FEET TO A POINT DIVIDING THE NORTHERLY BOUNDARY OF SAID LOT 14 INTO EQUAL HALVES; THENCE EASTERLY ALONG THE NORTHERLY BOUNDARY OF SAID LOT 14 A DISTANCE OF 660.0 FEET TO THE NORTHEAST CORNER OF SAID LOT 14; THENCE SOUTHERLY ALONG THE EASTERLY BOUNDARY OF SAID LOT 14 AND 13 A DISTANCE OF 660.0 FEET MORE OR LESS TO THE POINT OF BEGINNING. SAID LAND BEING AS APPROVED AS PART OF SUTTER COUNTY LOT LINE ADJUSTMENT NO. 99-25 FIRST SHOWN IN DEED RECORDED DECEMBER 13, 1999, AS INSTRUMENT NO. 1999-19123, OFFICIAL RECORDS.

2 INDICATES PROPOSED PHASE

M·H·M
ENGINEERS & SURVEYORS SINCE 1892
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
TEL: 530.742.6485
FAX: 530.742.5639

MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: South Butte Estate
ITEM: Active Orchard and removed trees
DATE: 9/19/2023 PLATE: 1

MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: South Butte Estate
ITEM: AG Pump and Residence
DATE: 9/19/2023 PLATE: 2

APPENDIX B: CALIFORNIA NATURAL DIVERSITY DATABASE - WIDE REPORT & FEDERAL SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Project Code: 2023-0130287
Project Name: South Butte Estate

September 19, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2023-0130287
Project Name: South Butte Estate
Project Type: Commercial Development
Project Description: 60-acre project area located in Sutter County, California
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.16127095,-121.76153131223188,14z

Counties: Sutter County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

REPTILES

NAME	STATUS
Giant Garter Snake *Thamnophis gigas*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/4482

AMPHIBIANS

NAME	STATUS
California Tiger Salamander *Ambystoma californiense*	Threatened

Population: U.S.A. (Central CA DPS)
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2076

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/7850

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi*	Threatened
There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	
Vernal Pool Tadpole Shrimp *Lepidurus packardi*	Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Bole & Associates
Name: Marcus Bole
Address: 104 Brock Drive
City: Wheatland
State: CA
Zip: 95692
Email mbole@aol.com
Phone: 5306330117

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

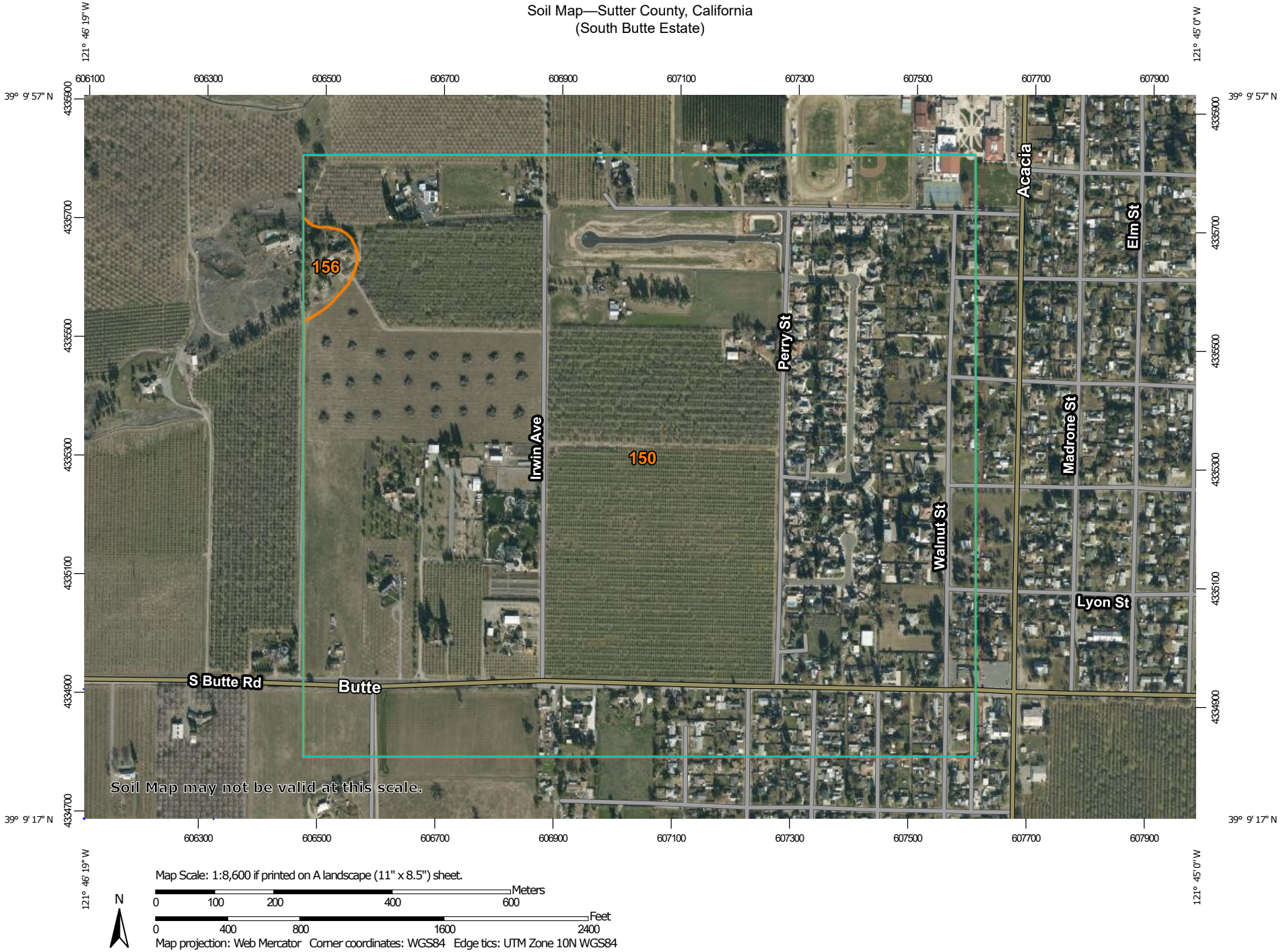
Query Criteria: Quad IS (Sutter (3912126) OR Sutter Causeway (3812186) OR Sutter Buttes (3912127) OR Gilsizer Slough (3912116) OR Yuba City (3912125) OR Olivehurst (3912115) OR Nicolaus (3812185) OR Kirkville (3812187) OR Tisdale Weir (3912117))
 AND (Federal Listing Status IS (Endangered OR Threatened OR Proposed Endangered OR Proposed Threatened OR Candidate) OR State Listing Status IS (Endangered OR Rare OR Candidate Endangered OR Candidate Threatened))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
chinook salmon - Central Valley spring-run ESU *Oncorhynchus tshawytscha pop. 11*	AFCHA0205L	Threatened	Threatened	G5T2Q	S2	
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
giant gartersnake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2	S2	
green sturgeon - southern DPS *Acipenser medirostris pop. 1*	AFCAA01031	Threatened	None	G2T1	S1	
Hartweg's golden sunburst *Pseudobahia bahiifolia*	PDAST7P010	Endangered	Endangered	G1	S1	1B.1
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S3	
steelhead - Central Valley DPS *Oncorhynchus mykiss irideus pop. 11*	AFCHA0209K	Threatened	None	G5T2Q	S2	
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T3	S3	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G3	S3	
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	

Record Count: 11

SOIL DATA

Soil Map—Sutter County, California
(South Butte Estate)



Map Scale: 1:8,600 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sutter County, California
Survey Area Data: Version 20, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 6, 2018—Dec 12, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
150	Olashes sandy loam, 0 to 2 percent slopes	283.4	99.1%
156	Palls-Stohlman stony sandy loams, 9 to 30 percent slopes	2.7	0.9%
Totals for Area of Interest		**286.1**	**100.0%**

CULTURAL RESOURCES INVENTORY SURVEY

South Butte Estates Subdivision Project
circa 57-acres
Sutter County, California.

Prepared for

MHM, Inc.
1204 E Street
Marysville, CA 95901

Author

Sean Michael Jensen, M. A.

Keywords *for Information Center Use:*
Cultural Resources Inventory Survey, circa 57-acres, Sutter County, CEQA, USGS Sutter, Ca. 7.5' Quadrangle, No Significant Historical Resources, No Unique Archaeological Resources

August 7, 2024

GENESIS SOCIETY

ARCHAEOLOGICAL - HISTORICAL - CULTURAL RESOURCE MANAGEMENT SERVICES

ABSTRACT

This report details the results of a cultural resources inventory survey of approximately 57-acres of land adjacent to the north side of South Butte Road, the east side of Irwin Avenue, and the west side of Perry Avenue, within the community of Sutter, in Sutter County, California.

The proposed project will involve subdivision of approximately 60-acres into 17 residential lots and one remainder parcel, followed by land clearing, placement of buried utilities, and excavation of a storm water detention basin. All existing structures are proposed to remain in place on the remainder parcel. The owner reserves the right to demolish the residence and construct a new residence in the future.

Existing records at the Northeast Information Center (NEIC) document that none of the present area of potential effects (APE) had been subjected to previous archaeological investigation, and that no cultural resources had been documented within the APE. As well, the present effort included an intensive-level pedestrian survey. No cultural resources were identified within the present APE.

Consultation was undertaken with the Native American Heritage Commission (NAHC) re. sacred land listings for the property. An information request letter was delivered to the NAHC on July 3, 2024. The NAHC responded on July 16, 2024, indicating that a search of their files resulted in a positive finding. It is important to note that the NAHC searches are not parcel specific, but rather reflect resources reported within a Section. An examination of the USGS quadrangle shows the southeasternmost extension of the Sutter Buttes into the extreme northeastern corner of Section 9, the most likely location for prehistoric cultural resources within the Section. The present APE is approximately 0.5-miles south of this geographical feature. Nevertheless, the NAHC documentation will be provided to the lead agency which will complete Native American consultation tasks per California law.

Based on the absence of significant historical resources/unique archaeological resources/historic properties within the APE, archaeological clearance is recommended for the project/undertaking as presently proposed.

CONTENTS

1. INTRODUCTION

Project Background

This report details the results of a cultural resources inventory survey of approximately 57-acres of land adjacent to the north side of South Butte Road, the east side of Irwin Avenue, and the west side of Perry Avenue, within the community of Sutter, in Sutter County, California.

The proposed project will involve subdivision of approximately 60-acres into 17 residential lots and one remainder parcel, followed by land clearing, placement of buried utilities, and excavation of a storm water detention basin. All existing structures are proposed to remain in place on the remainder parcel. The owner reserves the right to demolish the residence and construct a new residence in the future.

Since the project will involve physical disturbance to ground surface and sub-surface components in conjunction with demolition and residential development, it has the potential to impact cultural resources that may be located within the area of potential effects (APE). In this case, the APE consists of the circa 57-acre property, which excludes the circa 3.14-acre remainder. Evaluation of the project's potential to impact cultural resources must be undertaken in conformity with Sutter County rules and regulations, and in compliance with requirements of the California Environmental Quality Act of 1970, Public Resources Code, Section 21000, et seq. (CEQA), and The California CEQA Environmental Quality Act Guidelines, California Administrative Code, Section 15000 et seq. (Guidelines as amended).

Regulatory Context

The following section provides a summary of the applicable regulations, policies and guidelines relating to the proper management of cultural resources.

The California Register of Historical Resources

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (Public Resources Code (PRC) Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR were developed to be in accordance with previously established criteria developed for listing in the NRHP. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
(2) Is associated with the lives of persons important in our past
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
(4) Has yielded, or may be likely to yield, information important in prehistory or history

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852(d)(2)). The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) define "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource." It also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County Coroner has examined the remains (Section 7050.5b). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the County Coroner determines or has reason to believe the remains are those of a Native

American, the coroner must contact the California NAHC within 24 hours (Section 7050.5c). The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

PRC Sections 21083.2(b)–(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource, even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following:

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA [CEQA Guidelines Section 15064.5(b)(2)].

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2(a), (b), and (c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type
(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC 21074(c); 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described in the following text, these procedures are detailed in PRC Section 5097.98.

Native American Historic Cultural Sites

State law (PRC Section 5097 et seq.) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and established the Native American Heritage Commission (NAHC).

In the event that Native American human remains or related cultural material are encountered, Section 15064.5(e) of the CEQA Guidelines (as incorporated from PRC Section 5097.98) and California Health and Safety Code Section 7050.5 define the subsequent protocol. In the event of the accidental discovery or recognition of any human remains, excavation or other disturbances shall be suspended of the site or any nearby area reasonably suspected to overlie adjacent human remains or related material. Protocol requires that a county-approved coroner be contacted in order to determine if the remains are of Native American origin. Should the coroner determine the remains to be Native American, the coroner must contact the NAHC within 24 hours. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98 (14 CCR 15064.5(e)).

Scope of Work

Compliance with CEQA (and County rules and regulations) requires completion of projects in conformity with the amended (October 1998) Guidelines, including in particular Section 15064.5. Based on these rules, regulations and Guidelines, the following specific tasks were considered an adequate and appropriate Scope of Work for the present archaeological survey:

- Conduct a records search at the Northeast Information Center of the California Historical Resources Information System and consult with the Native American Heritage Commission. The goals of the records search and consultation are to determine (a) the extent and distribution of previous archaeological surveys, (b) the locations of known archaeological sites and any previously recorded archaeological districts, and (c) the relationships between known sites and environmental variables. This step is designed to ensure that, during subsequent field survey work, all significant/eligible cultural resources are discovered, correctly identified, fully documented, and properly interpreted.

- Conduct a pedestrian survey of the APE in order to record and evaluate any previously unidentified cultural resources. Based on map review, a complete coverage, intensive survey was considered appropriate, given the presence of moderate to high archaeological sensitivity within the property. The purpose of the pedestrian survey is to ensure that any previously identified sites are re-located and evaluated in relation to the present project/undertaking. For any previously undocumented sites discovered, the field survey would include formally recording these resources on State of California DPR-523 Forms.

- Upon completion of the records search and pedestrian survey, prepare a Final Report that identifies project effects and recommends appropriate mitigation measures for sites that might be affected by the undertaking and that are considered significant or potentially significant per CEQA, and/or eligible or potentially eligible for inclusion on the California Register of Historical Resources.

The remainder of the present document constitutes the Final Report for this project, detailing the results of the records search, consultation and pedestrian survey and providing recommendations for treatment of significant/eligible archaeological and historic sites. All

field survey work followed guidelines provided by the State Office of Historic Preservation (Sacramento) and conforms to accepted professional standards.

2. Location, Environmental and Cultural Context

Location

The present APE incorporates approximately 57-acres of land adjacent to the north side of South Butte Road, the east side of Irwin Avenue, and the west side of Perry Avenue, within the community of Sutter, in Sutter County, California. Lands affected are located within a portion of Section 9 of Township 15 North, Range 2 East, as shown on the USGS Sutter, California, 7.5' Series Quadrangle (see attached ***Area of Potential Effects and Cultural Resources Survey Area Map***).

Environment

The project area consists of northern Sacramento Valley lands located approximately 8 miles west of the Feather River, and approximately 8 miles east of the Sacramento River, within a basin that receives winter storm runoff from a significant watershed. The basin is formed in deep sediments of the Sacramento Valley, which in turn has been uplifted along its eastern margin where it interfaces with the lower foothills of the Sierra Nevada, and along its western margin where it interfaces with the Coast Range.

Topography within the APE is nearly flat with an elevation of approximately 65-75-feet above sea level. The region is characterized by a Mediterranean climate, with cool, rainy winters and hot, dry summers. The average annual temperature for the project area ranges from 51-75ºF, with the hottest temperatures occurring in July, reaching on average a maximum of 94ºF. The average yearly rainfall totals for the area are approximately 19.37 inches, with the maximum annual precipitation occurring in January.

The region once supported a variety of flora and fauna taxa which have been subsequently replaced with domesticated plants and a slimmer variety of animals, including marsh birds, ducks, geese, raptors, reptiles, amphibians and small mammals.

In view of the substantial surface water sources throughout this area, prehistoric use and occupation was generally intensive, but the population was not randomly distributed. Clearly, the most intensively occupied land areas were at elevated locations along the river systems and along the Valley/Foothill interface, especially along the margins of the Sutter Buttes to the north.

Prehistory

The earliest residents in the Great Central Valley are represented by the Fluted Point and Western Pluvial Lakes Traditions, which date from about 11,500 to 7,500 years ago (Moratto 2004). Within portions of the Central Valley of California, fluted projectile points have been

found at Tracy Lake (Heizer 1938) and around the margins of Buena Vista Lake in Kern County. Similar materials have been found to the north, at Samwel Cave near Shasta Lake and near McCloud and Big Springs in Siskiyou County. These early peoples are thought to have subsisted using a combination of generalized hunting and lacustrine exploitation (Moratto 2004).

These early cultural assemblages were followed by an increase in Native population density after about 7,500 years ago. One of the most securely dated of these assemblages in north-central California is from the Squaw Creek Site located north of Redding. Here, a charcoal-based C-14 date suggests extensive Native American presence around 6,500 years ago, or 4,500 B.C. Most of the artifactual material dating to this time period has counterparts further south, around Borax (Clear) Lake to the west, and the Farmington Area in a Valley setting east of Stockton. Important artifact types from this time period include large wide-stemmed projectile points and manos and metates.

In the Northern Sacramento Valley in the general vicinity of the project area, aboriginal populations continued to expand between 6,500 and 4,500 years ago. Early Penutian-speaking arrivals in this area may be represented by the archaeological complex known in the literature as the "Windmiller" or "Early Horizon." These sites date to about 4,000-5,000 years ago, with the connection to Penutian-speaking peoples suggested on the basis of extended burials, large leaf-shaped and stemmed projectile points similar to points of the Stemmed Point Tradition in the Plateau and portions of the Great Basin, large villages established along major waterways, and elaborate material culture with a wide range of ornamental and other non-utilitarian artifact types being present (Ragir 1972). The continuation of this pattern through the "Middle Horizon", or from about 1,000 B.C. to A.D. 300, has also been documented at riverine sites within the Sacramento Valley, including several sites along the Feather River and Sacramento River, within the general project vicinity.

Sometime around AD 200-300, the Valley may have experienced another wave of Penutian immigration. Arriving ultimately from southern Oregon and the Columbia and Modoc Plateau region and proceeding down the major drainage systems (including the Feather, Yuba and American Rivers and of course the Sacramento River), these Penutian-speaking arrivals may have displaced the earlier populations, including remnant Hokan-speaking peoples still resident within the Valley. Presumably introduced by these last Penutian-speaking peoples to arrive were more extensive use of bulbs and other plant foods, animal and fishing products more intensively processed with mortars and pestles, and perhaps the bow and arrow and associated small stemmed- and corner-notched projectile points.

While very little archaeological research has been conducted within the Sutter Buttes, Jensen (1970) conducted research and limited excavation on 24 sites in 1968-1969. Given the paucity of information concerning specific prehistoric sequences within the Sutter Buttes, Jensen's findings are useful in developing an understanding of land use and subsistence activities within the project area. After considering local land use and subsistence opportunities, Jensen described six site types present within the Sutter Buttes:

- Occupation Sites: Equated with "village" or "habitation" sites and refers to any locale utilized over sufficient time or intensively enough to produce associated midden soils. Mound-like deposition and soil blackening or discoloration is present. Evidence of surface structures may or may not be present.

- Temporary Camp Sites: Open sites with no associated midden. Flaked stone and associated bedrock mortars are commonly present. These sites are essentially task specific with no long-term occupation or intensive use presumed based upon lack of midden soils.

- Quarry Workshop Sites: Occur within close proximity of preferred tool stone outcrops. This site type primarily contains debris associated with tool stone exploitation and may be associated with a lithic reduction workshop.

- Rock Shelter and Cave Sites: All previously observed rock shelters and caves in the Sutter Buttes are formed from overhanging andesite boulders. No completely dry caves or shelters have been recorded; however, one exogene cave recorded at CA-SUT-44 occurs at the border of the central igneous core and the uplifted sedimentary mass that once formed a portion of the valley floor.

- Bedrock Mortar Sites: The most prolific site type in the Buttes is identified by the presence of one or more bedrock mortar holes not associated with a midden deposit. All previously recorded bedrock mortar sites in the Sutter Buttes are associated with oaks, which appears to indicate specific adaptation to acorns.

- Petroglyph Sites: One site of this type, CA-SUT-5, has been identified in the Sutter Buttes. This site contains a pitted boulder whose overall style appears to be distributed throughout Northern California. These pitted boulders may represent a ceremonial association with rain or fertility, but most interpretations of the utility of these pitted boulders remain speculative.

Jensen's 1969 excavation of a rock shelter site (CA-SUT-34) resulted in the recovery of artifacts which suggested that the site was used primarily for winter occupation. Jensen posited that occupants may have arrived via a stream adjacent to the site. The upper deposits excavated at CA-SUT-34 are diagnostic of a Late Period occupation and appears to be associated with other Late Period occupations of ethnographically recorded Maidu villages between Butte Creek and the Feather River. This area was subject to winter flooding that occasionally drove populations from the area. As waters rose, inhabitants would retreat to the higher ground of the Sutter Buttes. Jensen's research led him to conclude that only temporary camps, rather than permanent occupation sites, existed within the Sutter Buttes, a hypothesis supported by the limited classes of tool types found in this area and the lack of evidence of burials within the Sutter Buttes (Jensen 1970).

Ethnography

The project area is located within territory claimed by both the Nisenan (Wilson and Towne 1978) and the Patwin (Johnson 1978) at the time of initial contact with European/American culture (circa AD 1850), but close to the border shared with the Konkow to the north (Riddell 1978; Dixon 1905). The Nisenan were also referred to as Southern Maidu (Kroeber 1925).

The Nisenan, Patwin and Konkow were Penutian speakers (Shipley 1978), for whom the basic social unit was the family, although the village may also have functioned as a social, political and economic unit. Villages were usually located near water sources, with major villages inhabited mainly in the winter as it was necessary to relocate into the hills and higher elevation zones to establish temporary camps during food gathering seasons (i.e., spring, summer and fall). Villages typically consisted of a scattering of bark houses, numbering from four or five to several dozen in larger villages, each house containing a single family of from three to seven people.

As with all northern California Indian groups, economic life for these Penutian-speaking groups revolved around hunting, fishing and the collecting of plant foods. Deer were an important meat source and were hunted by individuals by stalking or snaring, or by groups in community drives. Salmon runs, and other food resources available along the Feather and Yuba Rivers, also contributed significantly to local economies. While much of the fish protein was consumed immediately, a significant percentage, particularly during the fall salmon run, was prepared for storage and consumed during winter months (Broughton 1988). Acorns represented one of the most important vegetal foods and were particularly abundant within the Valley Oak Woodlands, which dominated lands located along the margins of the major rivers, including the Sacramento River, the Feather River, the Yuba River and the Bear River, all located within the general project vicinity.

Relations between Euro-Americans and Native Americans in the northern Sacramento Valley followed the course of interaction documented in most other parts of North America, but with particularly devastating consequences for the Sacramento Valley Indians. John Work's fur trapping expedition through the region in 1832-33 resulted in the introduction of several communicable diseases, the results of which were devastating to Native culture and society (Maloney 1945; Cook 1955, 1976).

Historic Context

Recorded history in the project area begins with the attempts of Spanish colonists to explore parts of California beyond the coastal zone. The earliest non-Native American to view the Sutter Buttes was Gabriel Moraga, who, in 1808, made exploration forays into the region (Hendrix 1980:33). Later, Spanish Lieutenant Arguello led an 1817 expedition from San Francisco into northern California. Arguello is credited with naming both the Feather River (El Rio de las Plumas) and the Sutter Buttes (los Picachos-the peaks) (Hendrix 1980:34).

John Work's fur trapping expedition through central California in 1832-33, the best documented of the initial forays into the Valley. Work's expedition introduced several

communicable diseases to the Native inhabitants that turned out to be devastating to Nisenan culture and society (Work 1945; Cook 1976). Work's party utilized the Sutter Buttes as a "dry land" base for his group of some 163 individuals, making observations of the abundant flora and fauna in his journal: "There was excellent feeding for the horses and abundance of animals for the people to subsist on – 395 elk, 148 deer, 17 bears and 8 antelopes have been killed in a month, which is certainly a great many more than was required" (quoted in Dillon 1975:190).

Additional major incursion by European American populations followed John Sutter's establishment of New Helvetia. Born in Baden, Germany in 1803, John Augustus Sutter left behind a wife and five children in 1834 to settle in America. Over the next five years, Sutter traveled throughout the western states, even spending time in the Kingdom of Hawaii and what would become Sitka, Alaska, before arriving in Alta California in 1839 (Hurtado 2006).

Sutter envisioned a vast agrarian utopia for California's central valley, but in order to see his plans through, he first had to receive permission from then Mexican Governor, Juan Bautista Alvarado. In August 1839, Sutter began construction of his fortified settlement known as New Helvetia (New Switzerland), and one year later became a Mexican citizen. The following year, Governor Alvarado granted Sutter the 48,849-acre Rancho New Helvetia land grant. The grant extended from present-day Marysville in the north, southward along the Feather River, to the confluence of the Sacramento River and American River, in present-day Sacramento. Coincident with the land grant, Sutter brokered a deal with the Russian-American Company for the purchase of Fort Ross in exchange for $30,000. Sutter dismantled many of the structures, transporting the materials and livestock to the Central Valley.

Within the grant, Sutter produced various agricultural commodities including vast fields of wheat, approximately 13,000 head of cattle, and fruit orchards. By 1844, Sutter's son John Sutter, Jr. had moved to New Helvetia, with the remainder of the family following shortly thereafter.

United States military exploration of the region occurred during the 1840's, when a detachment of the Wilkes expedition identified the Sutter Buttes from Work's earlier descriptions. Later, John C. Fremont's second mapping exploration of northern California, in 1846, transformed into efforts supporting the U.S. war effort against Mexico. It was while camping at the Sutter Buttes, that Fremont planned the initial strategies that would assist the "Bear Flag Revolt," and establish American dominance over California (Hendrix 1980:35).

Between 1846 and 1848, the United States federal government-initiated hostilities with Mexico, ultimately resulting in nearly 30,000 lives lost. The ultimate result of the Mexican-American War, which lasted from 1846 to 1848, was the surrender of California under the Treaty of Guadalupe Hidalgo. The following year witnessed the Gold Rush into northern California, and the state, as a whole, underwent substantial demographic changes.

In 1848, Sutter directed John Marshall to establish a lumber mill at Coloma, in the Sierra Nevada foothills along the American River. On January 24, 1848, Marshall discovered gold

at the site. Less than two weeks later, on February 2, 1848, the Treaty of Guadalupe Hidalgo was signed. These convergent events resulted in the influx of thousands of fortune seekers into California and the Sacramento area, ultimately destroying Sutter's hopes for a northern agrarian empire. The embarcadero became a trading center instead, with supplies from San Francisco sold to miners departing for the foothills east of Sacramento and elsewhere in the Sierra Nevada.

By 1849, Sutter's son had assumed title to New Helvetia, and began a systematic survey of the extensive land grant, resulting eventually in a network of straight 80-foot wide streets and 20-foot wide alleys within Sacramento. Proximity to the American and Sacramento Rivers prompted levee construction as early as 1850.

Similar to the rest of Sutter County, the land that makes up Yuba City was part of the original Mexican land grant acquired by John Sutter. By 1840, Sutter established his Hock Farm immediately west of the Feather River, and south of present-day Yuba City, which was one of California's first large scale agricultural ventures. The establishment of this farm set a precedent for farming in Yuba City and Sutter County.

The organization of Yuba City began on July 27, 1849, when John Sutter deeded approximately four-square miles of land west of the Feather River to Henry Cheever, Sam Brannon, and Pierson B. Redding. The men hired Joseph S. Ruth to survey the terrain and lay out the city. In early September, property lots within the Yuba City limits were for sale and Redding was given the task of advertising and selling them. By 1852, Yuba City had one hotel, a small grocery store, two saloons, one blacksmith, one justice of the peace, a post office, and a population of roughly 150 people. Although Yuba City grew slowly during the 1850s and 1860s, in 1856 it became the county seat for Sutter County. Prior to Yuba City, the county seat was held by Oro, Nicolaus, and Vernon.

As elsewhere in California, many of the Valley communities were purposefully created and funded by the railroads, with one of the objectives being to provide necessary services for the system itself (water, fuel), and another being to benefit from housing construction spurred by the extension of the railroad. Several towns both north and south of Yuba City represent such communities whose early growth was directly related to the railroad and to the benefits to local agriculture and ranching (both sheep and cattle) which accompanied expansion of the market created by the extension of long-haul freight into the Valley.

As Yuba City continued to grow into the 20th century, the city developed further west away from the Feather River. This can be seen with the growing number of canning and packing industries that developed in order to support Sutter County's growing agricultural industry. These began near the Northern California Railroad lines (Southern Pacific Railroad by 1899).

In addition to the availability of freight service, the Northern Electric Railroad provided passenger service across the Feather River. In 1909, the Northern Electric Railroad had constructed a steel truss bridge alongside a covered wagon bridge connecting Marysville and Yuba City. The construction of a passenger and railroad link between the Cities of Marysville and Yuba City was crucial to the overall growth and development of both cities.

Closer to the present project APE, the first permanent settlement in the area was initiated by Edwin Thurman who built a cabin at the intersection of Pass Road and West Butte Road in 1851. Thurman's land was purchased in 1853 by George Brittan. Over the next seven years, Brittan quarried stones out of the Sutter Buttes, and constructed his two-story Pass Road home. Additional settlement of the area along South Butte Pass occurred over the following decades, and in 1871, the first post office was established at South Butte.

In 1887, private land lots were being advertised for sale along the Sutter Buttes, and the San Francisco-based company, Sutter County Land and Improvement Company advanced colonization of the region. The town of Sutter City was then surveyed and subdivided, with lots listed for sale, and officially named on November 25, 1887. Over the next few years, several ventures were planned and developed in the town, including the establishment of neighborhoods, College Park (which was to be the site of a future college), a courthouse, bank, a school, a hotel, churches and windmills. By 1890, the community's population had reached 800, and in 1895, the town's name was officially changed to Sutter.

The subject property is owned by the Raub family, and within the proposed 3.14-acre remainder, immediately adjacent to the northeast side of the APE, stands the Raub family home. Built circa 1915, the residence is surrounded by ancillary buildings (garage, shop, barn, etc.), and anchored the family farming activities. The APE, as well as the surrounding land area, has been subjected to agricultural development throughout the first half of the 20th century, ultimately giving way to greater residential and commercial development, first following the end of World War II, and more intensively into the 21st century.

3. RECORDS SEARCH and SOURCES CONSULTED

Several types of information were considered relevant to evaluating the types of archaeological sites and site distribution that might be encountered within the project area. The information evaluated prior to conducting the pedestrian survey includes data maintained by the Northeast Information Center, and available published and unpublished documents relevant to regional prehistory, ethnography, and early historic developments.

Northeast Information Center Records

The official Sutter County archaeological records were examined on July 10, 2024 (I.C. File # NE24-355). This search documented the following existing conditions for the 60-acre APE, and for a 0.25-mile radius surrounding the APE.

- According to the Information Center, none of the present APE has been subjected to previous cultural resources survey, and no investigations have been documented within the 0.25-mile search radius.

- According to the Information Center's records, no resources have been documented within the APE, nor within the 0.25-mile search radius.

Other Sources Consulted

In addition to examining the archaeological site and survey records of Sutter County maintained at the Northeast Information Center, the following sources were also included in the search conducted at the Information Center, or were evaluated separately:

- The National Register of Historic Places (1986, Supplements).
- The California Register of Historical Resources.
- The California Inventory of Historic Resources (State of California 1976).
- The California Historical Landmarks (State of California 1996).
- The California Points of Historical Interest (May 1992 and updates).
- The Historic Property Data File (OHP 2012).
- 1867 GLO Plat, T15N, R2E.
- Marysville, CA USGS quadrangle, 1:125,000 (1888).
- Sutter, CA USGS quadrangle (1911).
- NETR Topographic Maps (1912, 1943, 1955, 1959, 1966, 1967, 1974, 1981, 2012, 2015, 2018, 2021).
- NETR Aerial Photographs (1958, 1973, 1984, 1998, 2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020).
- Sutter County Museum.
  Examination of the Sutter County Museum records confirmed that 2354 Perry Street (Raub Family Home) has been recorded within the "remainder" portion of the project property.
- Existing published and unpublished documents relevant to prehistory, ethnography, and early historic developments in the vicinity. These sources, reviewed below, provided a general environmental and cultural context by means of which to assess likely site types and distribution patterns for the project area.

4. CULTURAL RESOURCES SURVEY and CULTURAL INVENTORY

Survey Strategy and Field Work

All of the APE was subjected to intensive pedestrian survey by means of walking systematic transects spaced at 30-meter intervals.

In searching for cultural resources, the surveyor considered the results of background research and was alert for any unusual contours, soil changes, distinctive vegetation patterns, exotic materials, artifacts, feature or feature remnants and other possible markers of cultural sites.

Fieldwork was undertaken on July 20, 2024, by Principal Investigator, Sean Michael Jensen, M.A. Mr. Jensen is a professional archaeologist, historian and architectural historian, with 38 years of experience in archaeology, architectural history and history, who meets the

professional requirements of the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (Federal Register, Vol. 48, No. 190), as demonstrated in his listing on the California Historical Resources Information System list of qualified archaeologists, architectural historians and historians. No special problems were encountered and all survey objectives were satisfactorily achieved.

General Field Observations

Fieldwork identified the following general conditions within the project area. Disturbance to the ground surface within the APE ranges from moderate to substantial. The entire property exhibits evidence of past agricultural modification, with the adjacent remainder parcel having undergone residential and agricultural building construction, demolition, grading and land re-contouring, and placement of both buried and overhead utilities.

Examination of the USGS topographic maps (1912, 1943, 1955, 1959, 1966, 1967, 1974, 1981, 2012, 2015, 2018, 2021), and aerial photographs (1958, 1973, 1984, 1998, 2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020) of the property provided a limited, temporal context for these various disturbance activities.

As previously noted, the Raub Family Home is a recorded resource located outside of, and immediately adjacent to, the present APE. Records indicate that this resource was constructed circa 1915 and supported the surrounding orchard development activities (see photos, below).

View southerly

View easterly

No buildings or structures are depicted within the APE on any of the topographic maps or aerial images, and orchards appear to predate these maps and images.

South Butte Road appears on all of the topos and aerials, while Irwin Avenue and Perry Avenue first appear on the 1955 topos and all of the aerials (1958+), indicating that these latter two roads were constructed after 1943 and by 1955.

Prehistoric Resources

No evidence of prehistoric activity or occupation was observed during the present pedestrian survey. The absence of such resources may best be explained by more suitable habitation locales situated closer to the Feather River, to the east, the Sacramento River, to the west, and to the Sutter Buttes to the north, and to the level of disturbance to which all of the property has been subjected.

Historic Resources

No historic-era resources were identified within the APE during the pedestrian survey.

5. ELIGIBILITY RECOMMENDATIONS

Sites identified within the project area were to be evaluated for significance in relation to CEQA significance criteria. Historical resources per CEQA are defined as buildings, sites, structures, objects, or districts, each of which may have historical, architectural, archaeological, cultural, or scientific significance. CEQA requires that, if a project results in an effect that may cause a substantial adverse change in the significance of a historical resource, alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed. Therefore, before developing mitigation measures, the significance of cultural resources must be determined in relation to criteria presented in PRC 15064.5, which defines a historically significant resource (one eligible for listing in the California Register of Historical Resources, per PRC SS5024.1) as an archaeological site which possess one or more of the following attributes or qualities:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
2. Is associated with the lives of persons important in our past
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
4. Has yielded, or may be likely to yield, information important in prehistory or history

In addition, CEQA further distinguishes between archaeological sites that meet the definition of a significant historical resource as described above (for the purpose of determining effects), and "unique archaeological resources." An archaeological resource is considered

"unique" (Section 21083.2(g)) when the resource not merely adds to the current body of knowledge, but when there is a high probability that the resource also:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In the present case, no cultural resources were identified within the APE.

6. PROJECT EFFECTS

A project may have a significant impact or adverse effect on cultural resources/historic properties if the project will or could result in the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance or values of the historic resource would be materially impaired. Actions that would materially impair a cultural resource are actions that would alter or diminish those attributes of a site that qualify the site for inclusion in the California Register of Historical Resources.

Based on the specific findings detailed above under ***Cultural Resources Survey and Cultural Inventory***, no significant historical resources, or unique archaeological resources are located within the APE.

7. NATIVE AMERICAN CONSULTATION

Consultation was undertaken with the Native American Heritage Commission (NAHC) re. sacred land listings for the property. An information request letter was delivered to the NAHC on July 3, 2024. The NAHC responded on July 16, 2024, indicating that a search of their files resulted in a positive finding. It is important to note that the NAHC searches are not parcel specific, but rather reflect resources reported within a Section. An examination of the USGS quadrangle shows the southeasternmost extension of the Sutter Buttes into the extreme northeastern corner of Section 9, the most likely location for prehistoric cultural resources within the Section. The present APE is approximately 0.5-miles south of this geographical feature.

Nevertheless, the NAHC documentation will be provided to the lead agency which will complete Native American consultation tasks per California law.

8. PROJECT SUMMARY

This report details the results of a cultural resources inventory survey of approximately 57-acres of land adjacent to the north side of South Butte Road, the east side of Irwin Avenue, and the west side of Perry Avenue, within the community of Sutter, in Sutter County, California.

The proposed project will involve subdivision of approximately 60-acres into 17 residential lots and one remainder parcel, followed by land clearing, placement of buried utilities, and excavation of a storm water detention basin. All existing structures are proposed to remain in place on the remainder parcel. The owner reserves the right to demolish the residence and construct a new residence in the future.

Existing records at the NEIC document that none of the present APE had been subjected to previous archaeological investigation, and that no cultural resources had been documented within the APE. As well, the present effort included an intensive-level pedestrian survey. No cultural resources were identified within the present APE.

Consultation was undertaken with the Native American Heritage Commission (NAHC) re. sacred land listings for the property. An information request letter was delivered to the NAHC on July 3, 2024. The NAHC responded on July 16, 2024, indicating that a search of their files resulted in a positive finding. It is important to note that the NAHC searches are not parcel specific, but rather reflect resources reported within a Section. An examination of the USGS quadrangle shows the southeasternmost extension of the Sutter Buttes into the extreme northeastern corner of Section 9, the most likely location for prehistoric cultural resources within the Section. The present APE is approximately 0.5-miles south of this geographical feature. Nevertheless, the NAHC documentation will be provided to the lead agency which will complete Native American consultation tasks per California law.

Based on the absence of significant historical resources/unique archaeological resources/historic properties within the APE, archaeological clearance is recommended for the project/undertaking as presently proposed, although the following general provisions are considered appropriate:

1. ***Consultation in the event of inadvertent discovery of cultural material***: The present evaluation and recommendations are based on the findings of an inventory-level surface survey only. There is always the possibility that important unidentified cultural materials could be encountered on or below the surface during the course of future development activities. This possibility is particularly relevant considering the constraints generally to archaeological field survey, and particularly where past ground disturbance activities (e.g., flooding, residential/agricultural development) have obscured historic ground surface visibility, as in the present case. In the event of an inadvertent discovery of previously unidentified cultural material, archaeological consultation should be sought immediately.

2. ***Consultation in the event of inadvertent discovery of human remains***: In the event that human remains are inadvertently encountered during trenching, grading or other ground-disturbing activity or at any time subsequently, State law shall be followed, which includes, but is not limited to, immediately contacting the County Coroner's office upon any discovery of human remains.

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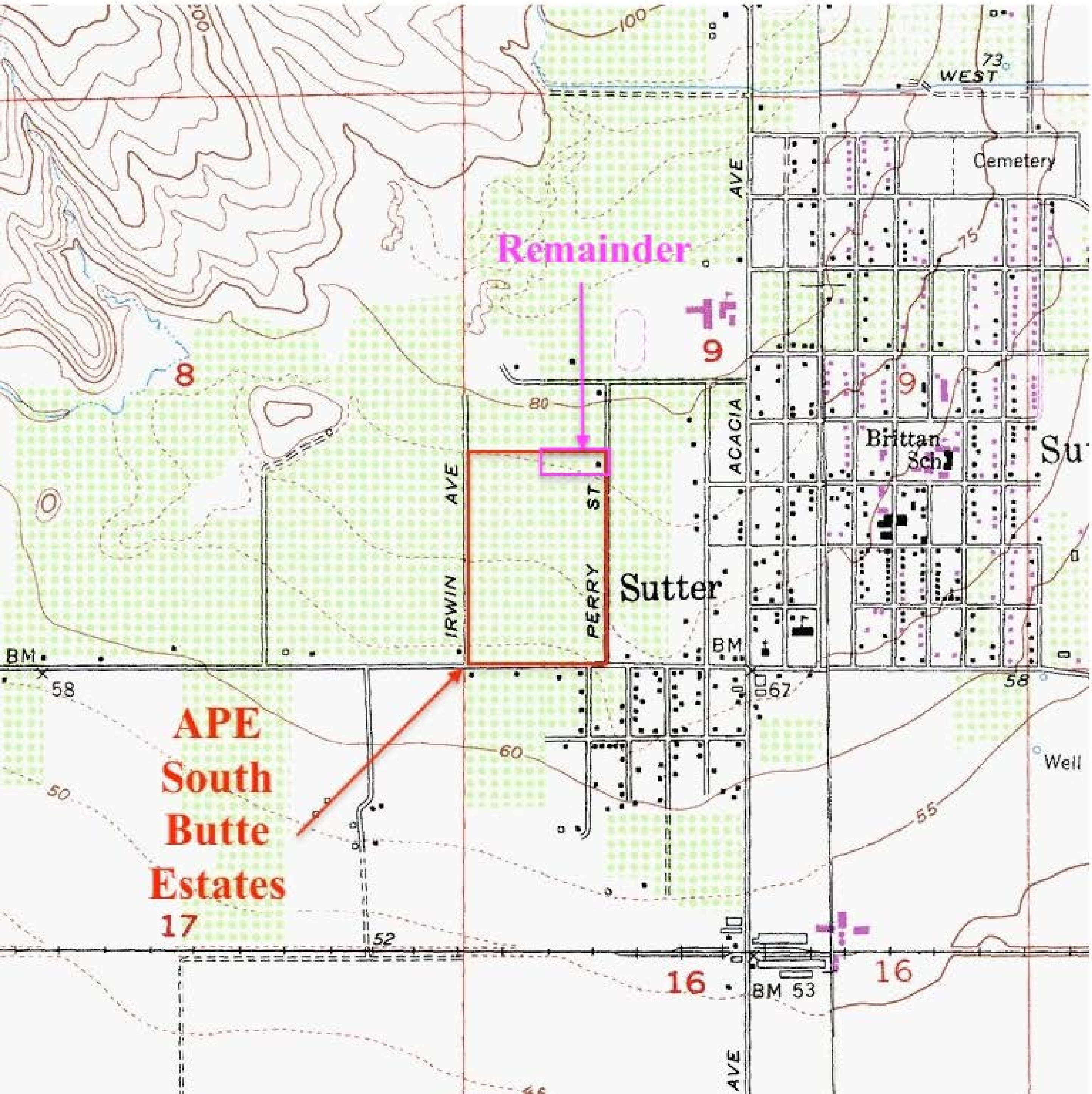
CULTURAL RESOUCES INVENTORY SURVEY

South Butte Estates Subdivision Project
circa 57-acres
Sutter County, California.

ATTACHMENTS

- Area of Potential Effects and Cultural Resources Survey Area Map
- Records Search from Northeast Information Center
- Consultation letter to the Native American Heritage Commission (NAHC)
- Response from the NAHC


Remainder
APE
South
Butte
Estates
Sutter
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PERRY ST
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California Historical Resources Information System

BUTTE
GLENN
LASSEN
MODOC
PLUMAS
SHASTA
SIERRA
SISKIYOU
SUTTER
TEHAMA
TRINITY

Northeast Information Center
1074 East Avenue, Suite F
Chico, California 95926
Phone (530) 898-6256
neinfocntr@csuchico.edu

July 10, 2024

Sean Jensen
Genesis Society
123 East Swift Creek Way
Kalispell, MT 59901

IC File # NE24-355
Data Request – Priority

RE: South Butte Estates Residential Development Project
T15N, R2E, Section 9 MDBM
USGS Sutter Buttes 7.5' (1973) & Sutter Buttes 15' (1966) quadrangle maps
59 acres (Sutter County)

Sean Jensen:

In response to your request, a records search for the project cited above was conducted by examining the official maps and records for cultural resources and reports in Sutter County. Please note, the search includes the requested 0.25-mile radius surrounding the project area.

RESULTS:

Resources within project area:	No resources were located in the project area
Resources within 0.25-mile radius:	No resources were located in the project vicinity
Reports within project area:	No reports were located in the project area
Reports within 0.25-mile radius:	No reports were located in the project vicinity

As indicated on your data request form, the locations of resources and reports are provided in the following format: ☒ Custom Maps ☐ GIS Data ☐ N/A

Resource Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Other Reports: *	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☐ enclosed	☐ not requested	☒ nothing listed
Report Copies:	☐ enclosed	☐ not requested	☒ nothing listed
Built Environment Resources Directory:	☐ enclosed	☐ not requested	☒ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☐ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Maps:	☒ enclosed	☐ not requested	☐ nothing listed
Local Inventories:	☐ enclosed	☐ not requested	☒ nothing listed
GLO and/or Rancho Plat Maps:	☒ enclosed	☐ not requested	☐ nothing listed
Shipwreck Inventory:	☐ enclosed	☒ not requested	☐ nothing listed

Notes: *These are classified as studies that are missing maps or do not have a field work component. Please refer to the NRCS Soil Survey website for current soil survey information: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if it is for public distribution.

The provision of California Historical Resources Information System (CHRIS) Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archaeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation (OHP), or the State Historical Resources Commission.

Not all known cultural resources have been recorded and submitted to the OHP, so this record search should not be considered an exhaustive list of all cultural resources present in your project area. DPR forms and reports that are used for recording and evaluating sites and individual resources are submitted to the Northeast Information Center by private and public agencies. Please note that the Northeast Information Center is not responsible for misinformation of coordinates

presented on the submitted DPR forms. If a discrepancy is found, please contact the lead agency for more information.

Due to processing delays and other factors, it is possible that not all reports and resource records that have been submitted to the OHP are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for cultural resource management work in the search area. Additionally, Native American tribes have cultural resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

An invoice will follow from Chico State Enterprises for billing purposes. Thank you for your concern in preserving California's cultural heritage, and please feel free to contact us if you have any questions or need any further information.

Sincerely,

Ashlyn Weaver

Ashlyn Weaver, M.A.
Coordinator & GIS Specialist
Northeast Information Center
(530) 898-6256

GENESIS SOCIETY

a Corporation Sole

Historic Preservation Services

July 3, 2024

Native American Heritage Commission
1550 Harbor Boulevard,
West Sacramento, California 95691

Subject: ***South Butte Estates Residential Development Project, circa 60-acres, Sutter County, California.***

Dear Commission:

We have been requested to conduct the archaeological survey, for the above-cited project, and are requesting any information you may have concerning archaeological sites or traditional use areas for this area. Any information you might supply will be used to supplement the archaeological and historical study being prepared for this project.

Project Name:	South Butte Estates Residential Development Project
County:	Sutter
Map:	USGS Sutter, CA 7.5'
Location:	Portion of Section 9 of T15N, R2E

Thanks in advance for your assistance.

Regards,

Sean Michael Jensen

Sean Michael Jensen, Administrator

(530) 680-6170

Montana Office
123 E Swift Creek Way
Kalispell, MT 59901

California Office
2398 Azalea Street
Kingsburg, CA 93631

seanjensen@comcast.net

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,

July 16, 2024

Sean Jensen
Genesis Society

Via Email to: seanjensen@comcast.net

Re: South Butte Estates Residential Development Project, Sutter County

Dear Mr. Jensenl:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the tribes on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Pricilla.Torres-Fuentes@nahc.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

Attachment

M·H·M
ENGINEERS & SURVEYORS SINCE 1892

Technical Memorandum

To: **Scott Riddle, PE**
David Tomm, PE

From: Sean Minard, PE, PLS
Stephen Mallen, PE

Date: June 17, 2024

Subject: South Butte Estates
Storm Drainage Analysis

The technical memorandum was prepared to address the drainage improvements for the South Butte Estates Subdivision Project. The purpose is to verify the sizing of the storm drainage system on the project. The goal of the drainage improvement will be to meet Sutter County Design Standards, "All drainage must enter and leave the project site at its existing line and grade, unless otherwise approved by the Director. No net increase of peak flow is allowed. No net adverse impact for volume, quality or duration is allowed. No additional runoff may be directed towards County facilities or adjacent parcels. All impacts must be mitigated in the project site or lands acquired for mitigation by the project. Impacts must be evaluated using the 2-year, 10-year, and 100-year storms."

The 55.52-acre site consists of eighteen (18) lots ranging in size from 3.14 acre to 3.54 gross acres. The project site is relatively flat and has historically been an orchard. Historically the smaller storm events absorbed into the soil and larger events flowed south to the existing roadside ditch along South Butte Road. The proposed design shall consist of constructing a drainage ditch system along the back of the proposed lot that will flow to a proposed detention basin with a metered outlet. Both the drainage ditch and the detention basin will act as a conveyance system and also storm water storage. The outlet will be a twenty-four (24) inch connection into the existing roadside ditch. The system will not only mitigate the pre to post peak flow but also the pre to post storage.

Attached are the calculations for runoff volumes on the site. Pre- and post-development volumes for 2-year, 10-year, and 100-year storm events were calculated using NOAA Atlas 14 rainfall data from a spot approximately at the center of the site.

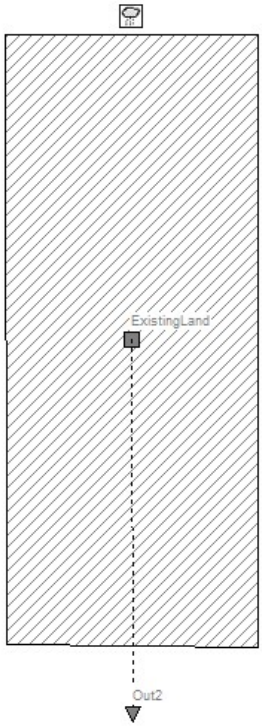
Based upon our calculations, it is estimated that the proposed drainage system has a storage capacity of 236,400 cubic feet. For the 24-hour, 2-year storm event, this capacity exceeds the amount of storage required. This will allow the entire storm to be held onsite with no release. For the 24-hour, 10- year storm event, the theoretical volume exceeds the storage capacity resulting in the need for runoff. Routing the event through the proposed system, results in a theoretical outflow through a proposed eight (8) inch orifice of 4.58 cubic feet per second. For the 24- hour, 100-year storm event, the theoretical volume exceeds the storage capacity resulting in the need for runoff. Routing the event through the proposed system, results in a theoretical outflow of 4.58 cubic feet per second, which is less than the maximum allowed outflow for the 55.52-acre site when multiplied by the allowed release rate 0.123 cfs/acre.

Our recommendation is to construct the system as stated which will act as a conveyance system and storage. The twenty-four (24) inch culvert outlet for the system will have a storm drain inlet prior which will work as a metering device to detain water throughout the system to mitigate pre and post project peak flows. This will be achieved via an eight (8) inch orifice in the side of the drain inlet box to meter smaller storm events and utilize the systems entire capacity. The size of the facility also mitigates the volumes between pre and post runoff events.

Attached are the parameters and results from the EPA's Storm Water Management Model (SWMM) software, which was used to prepare this technical memorandum.

Sincerely,

Sean Minard

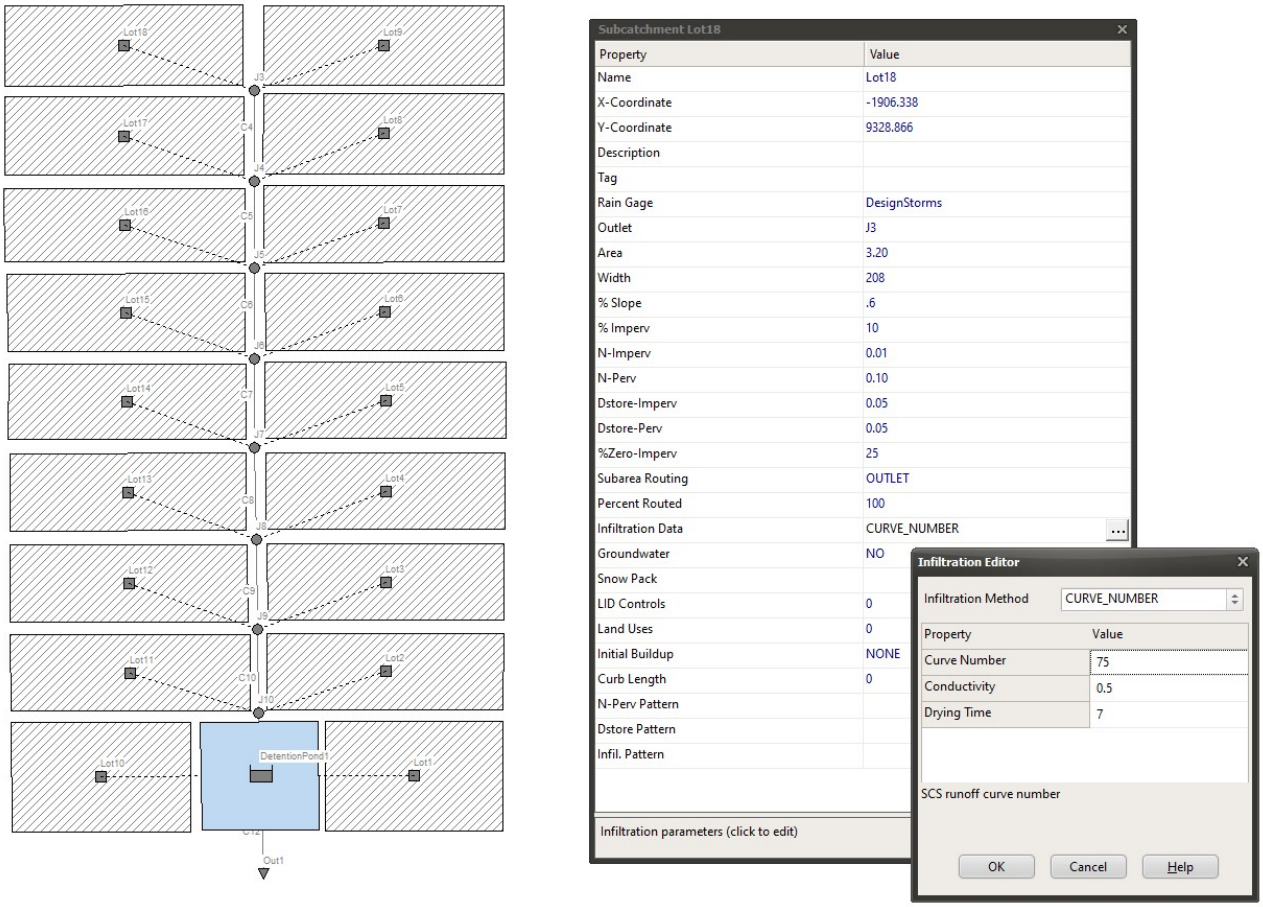


Subcatchment ExistingLand

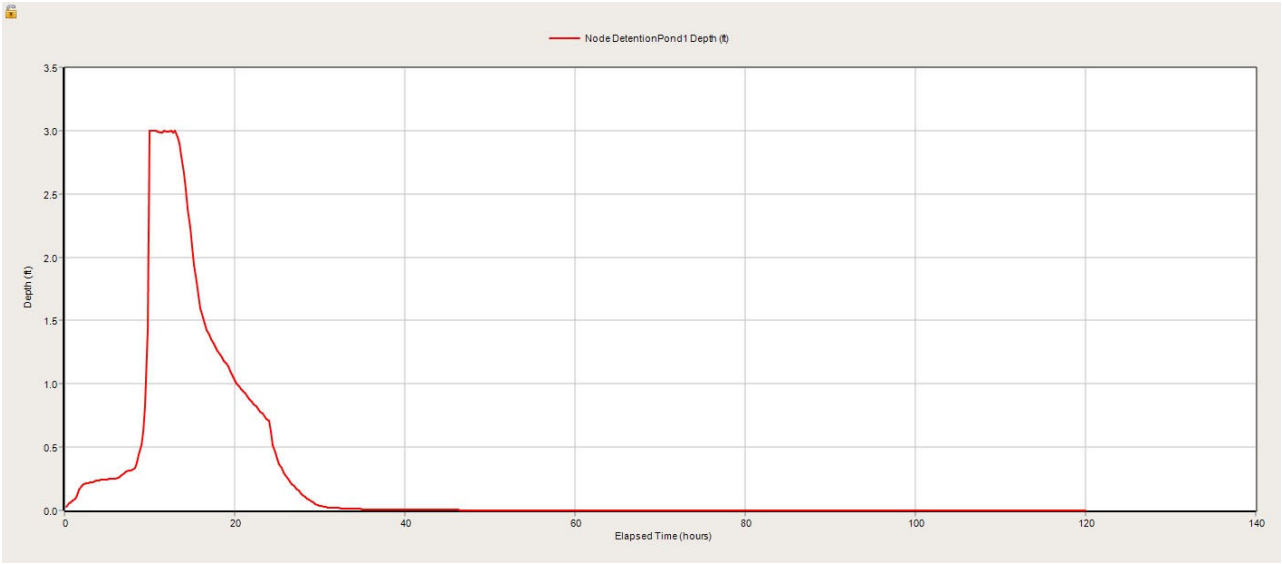
Property	Value
Name	ExistingLand
X-Coordinate	-132.508
Y-Coordinate	8397.229
Description	Existing Property with Orchard
Tag	Orchard
Rain Gage	DesignStorms
Outlet	Out2
Area	55.52
Width	1250
% Slope	.6
% Imperv	0
N-Imperv	0.01
N-Perv	0.15
Dstore-Imperv	0.05
Dstore-Perv	0.05
%Zero-Imperv	25
Subarea Routing	OUTLET
Percent Routed	100
Infiltration Data	CURVE_NUMBER ...
Groundwater	NO
Snow Pack	
LID Controls	0
Land Uses	0
Initial Buildup	NONE
Curb Length	0
N-Perv Pattern	
Dstore Pattern	
Infil. Pattern	

Infiltration parameters (click to edit)

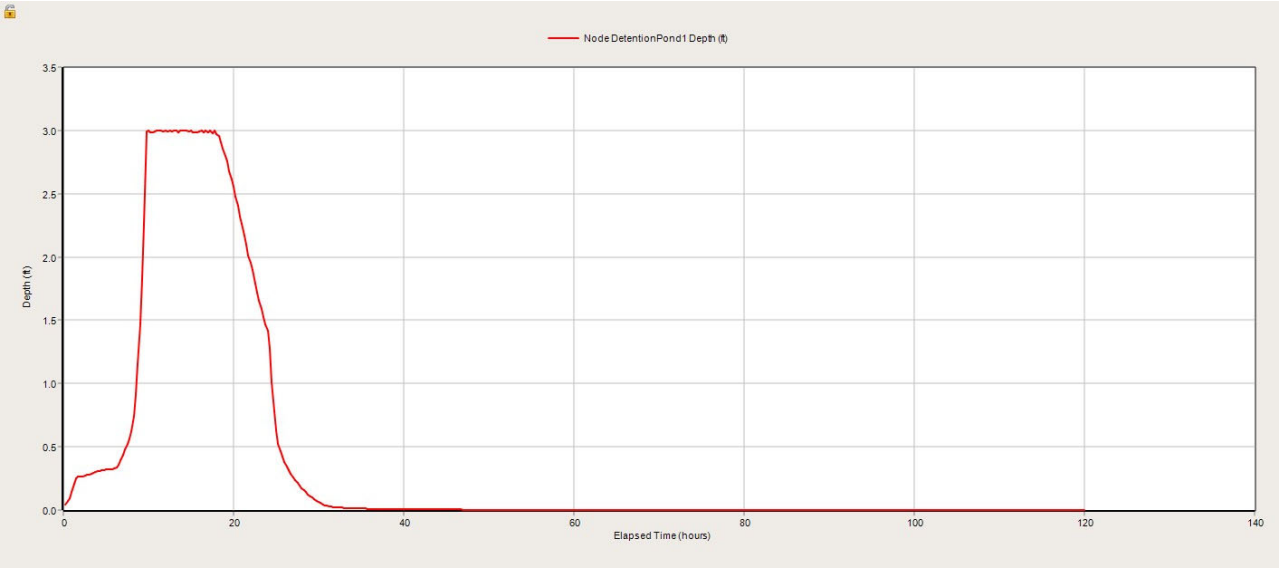
Existing Conditions SWMM Model



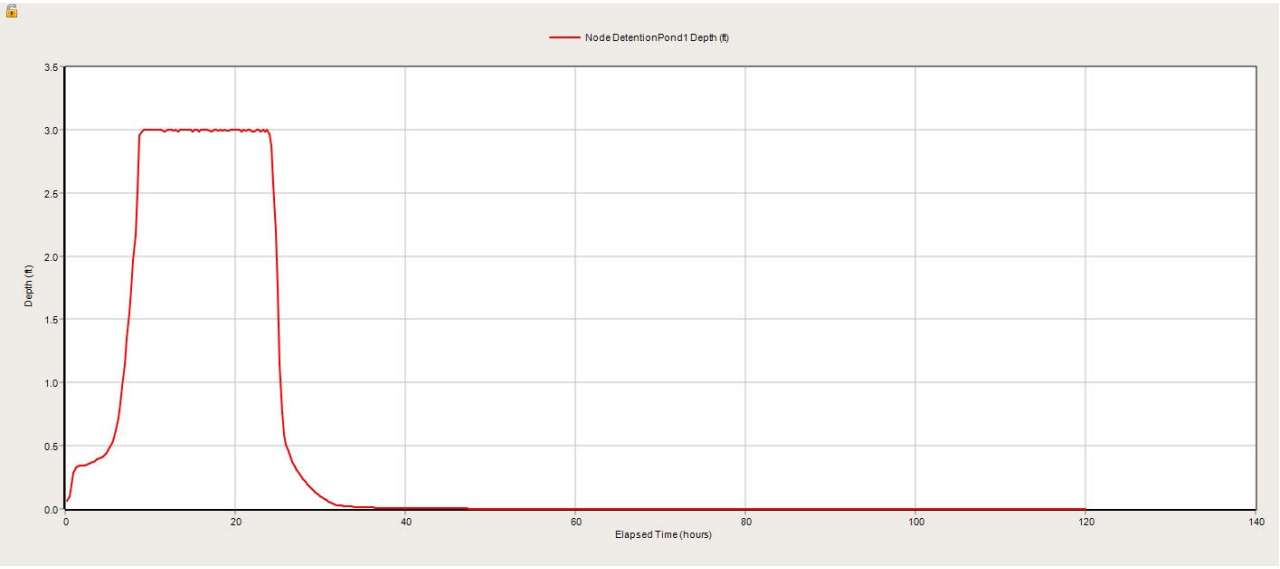
Post Development SWMM Model with Typical Parameters



Detention Basin Depth – 2 Year, 24 Hour Rain Event



Detention Basin Depth – 10 Year, 24 Hour Rain Event



Detention Basin Depth – 100 Year, 24 Hour Rain Event

Existing Conditions

Rain Event	Total Precip (in)	Total Runon (in)	Total Evap (in)	Total Infil (in)	Imperv Runoff (in)	Perv Runoff (in)	Total Runoff (in)	Total Runoff (ft^3)	Peak Runoff (CFS)
2yr24hr	2.23	0	0	1.62	0	0.56	0.56	112,292	2.14
5yr24hr	2.95	0	0	1.93	0	0.97	0.97	196,511	4.17
10yr24hr	3.53	0	0	2.13	0	1.35	1.35	272,709	6.28
25yr24hr	4.3	0	0	2.35	0	1.9	1.9	382,328	9.82
50yr24hr	4.87	0	0	2.49	0	2.33	2.33	470,557	13.08
100yr24hr	5.45	0	0	2.61	0	2.78	2.78	561,460	16.8

Proposed Conditions

Rain Event	Total Precip (in)	Total Runon (in)	Total Evap (in)	Total Infil (in)	Imperv Runoff (in)	Perv Runoff (in)	Total Runoff (in)	Total Runoff (ft^3)	Peak Runoff (CFS)
2yr24hr	2.23	0	0	1.25	0.22	0.71	0.93	180,603	4.58
5yr24hr	2.95	0	0	1.47	0.29	1.15	1.44	230,600	4.58
10yr24hr	3.53	0	0	1.6	0.35	1.53	1.88	262,817	4.58
25yr24hr	4.3	0	0	1.75	0.43	2.07	2.5	292,494	4.58
50yr24hr	4.87	0	0	1.84	0.48	2.5	2.98	308,001	4.58
100yr24hr	5.45	0	0	1.93	0.54	2.93	3.48	319,899	4.58

TRANSPORTATION IMPACT ANALYSIS

FOR

SOUTH BUTTE ESTATES
Sutter County, CA

Prepared For:

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October 3, 2024

6200-01

0 South Butte Estates

TRANSPORTATION IMPACT ANALYSIS FOR
SOUTH BUTTE ESTATES
Sutter County, CA

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FA

TRANSPORTATION IMPACT ANALYSIS FOR
SOUTH BUTTE ESTATES
Sutter County, CA

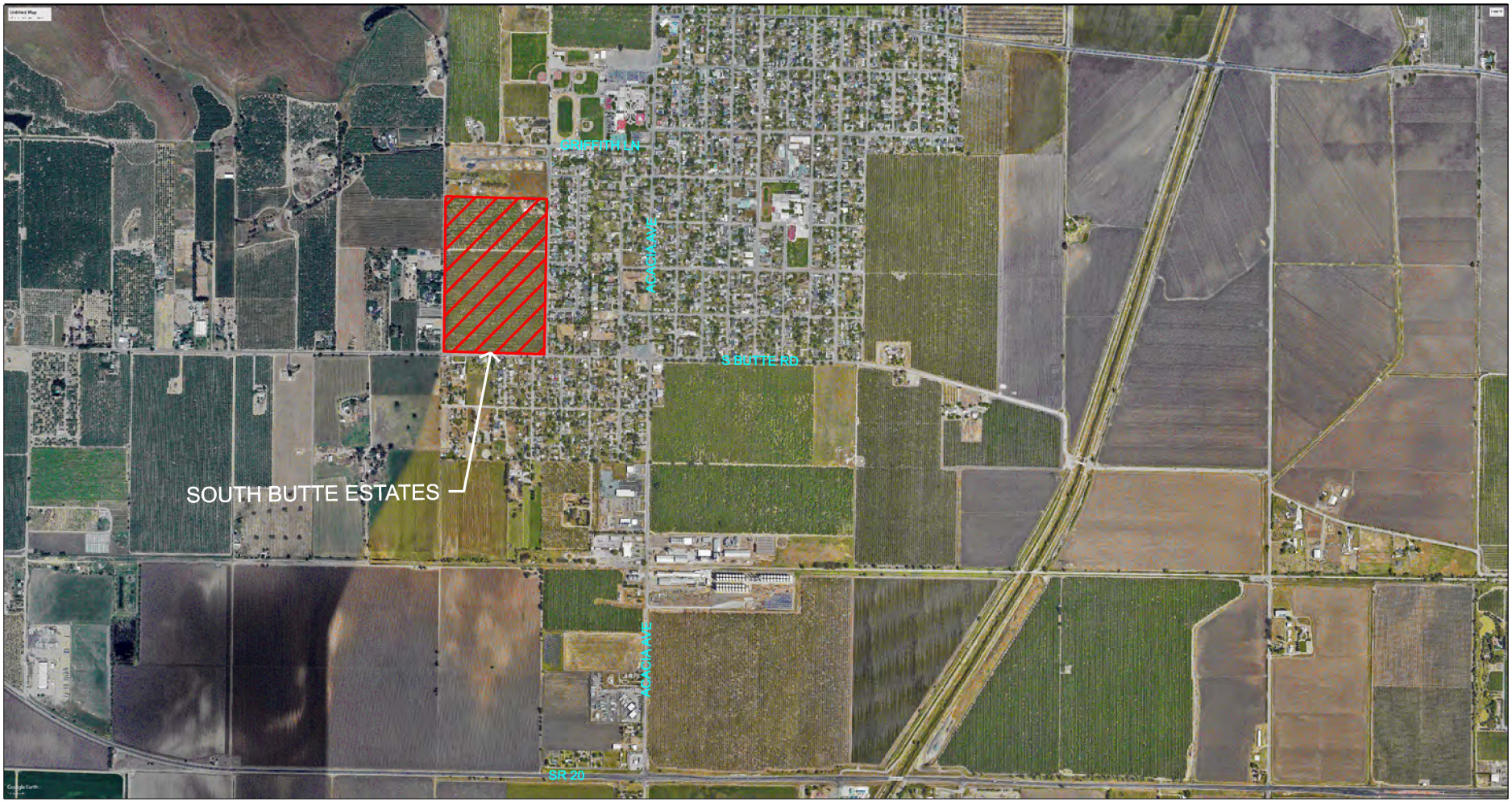
INTRODUCTION

This report summarizes Flecker Associates (FA) analysis of the potential transportation impacts and traffic operational effects associated with the proposed South Butte Estates subdivision in Sutter County, California. The South Butte Estates site is bounded by Irwin Avenue to the west, S. Butte Road to the south, Perry Street to the east and a 10-acre parcel located between the proposed project and the existing subdivision at Ranch Road to the north. The site is shown regionally in Figure 1. The proposed tentative map is shown in Figure 2.

Project Description. The South Butte Estates project is located on six parcels zoned Estate Residential. The project intends to subdivide the six parcels into 17 new single family lots with one remainder parcel where a residence currently exists. A net increase of 12 residential units will occur over the entire site. Access to the units will be directly onto Irwin Avenue and Perry Street.

Analysis Approach. The purpose of this analysis is to identify the potential impacts of the project under the California Environmental Quality Act and to evaluate the project's effects on local traffic operations within the requirements of Sutter County General Plan standards and policies. The analysis includes identification / evaluation of existing traffic circulation conditions in the area based on current a.m. and p.m. peak hour traffic volumes.

The extent to which improvements are currently needed were determined based on a level of service analysis of three study intersections. The general characteristics of the proposed project were determined based on probable peak hour trip generation, regional trip distribution and local trip assignment. The impact of the project on regional Vehicle Miles Traveled (VMT), alternative transportation modes and safety at Caltrans facilities was also assessed. Local traffic operational analyses were conducted to determine intersection Levels of Service and queuing at the study intersections under Existing plus Project conditions and long-term cumulative conditions. As Sutter County does not maintain a travel demand model (TDM), the SACOG TDM was used to project future traffic volumes.



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VICINTY MAP

FIGURE 1

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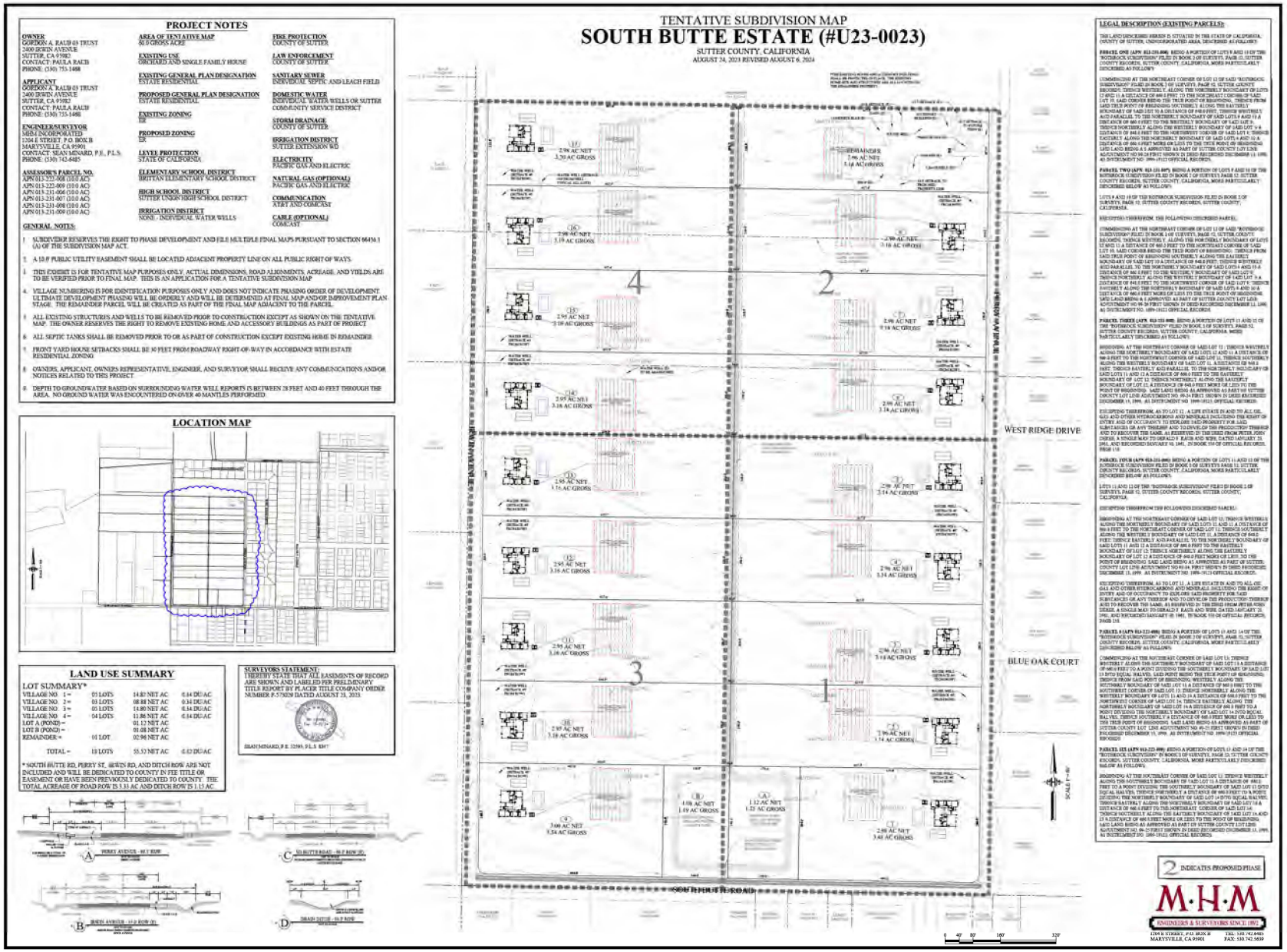

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SUTTER BUTTE ESTATES SITE PLAN

FIGURE 2

EXISTING SETTING

Existing Street System

Intersections. The operational analysis considers these three intersections.

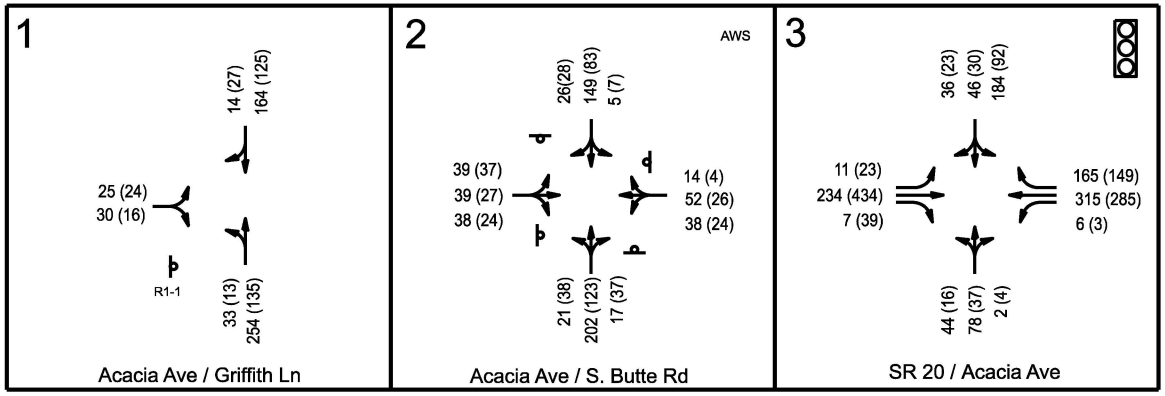
The **Acacia Avenue / Griffith Lane** intersection is a tee intersection with stop control along the eastbound Griffith Lane approach. Each approach has a single travel lane, and there are no marked crosswalks. Griffith Lane is the southerly limits of Sutter High School with sports facilities and a solar farm along Griffith Lane. Acacia Avenue is the main north-south roadway between SR 20 and Sutter. In the area of this intersection Acacia Avenue consists of single lanes in each direction, double yellow centerline striping and bike lanes. The posted speed is 35 miles per hour (mph) with a posted reduction to 25 mph when children are present. In the vicinity of the intersection Griffith Lane is about a 26-foot wide unstriped roadway without curb and gutter. There are no sidewalks along either street in this area.

The **Acacia Avenue / S. Butte Road** intersection is a four-way intersection with all-way stop control. Each approach has a single travel lane, and there are no marked crosswalks. Acacia Avenue is the main north-south roadway between SR 20 and Sutter. The roadway is two lanes with double yellow centerline striping and bike lanes. The posted speed is 35 mph north of S. Butte Road and 45 mph south of S. Butte Road. S. Butte Road extends generally east-west from SR 20 just west of Yuba City to W. Butte Road about 5 miles west of Sutter. The posted speed along S. Butte Road in the intersection vicinity is 35 mph. Bike lanes are present along Acacia Avenue and sidewalks are not present in the vicinity.

The **SR 20 (Colusa Highway) / Acacia Avenue** intersection is controlled by a traffic signal that operates with protected left turn phasing along SR 20 and split phasing along Acacia Avenue. The SR 20 approaches include single through lanes with left and right turn lanes. Acacia Avenue includes a single lane approach in each direction. Marked crosswalks are not present within the intersection. Pedestrian signals are present for pedestrian accessibility; however, there are not sidewalks. Bike lanes are not present along any approaches.

Existing Traffic Volumes

Traffic Counts. Traffic counts were conducted in mid-March 2024 while school was in session. Figure 3 presents the existing a.m. and p.m. peak hour volumes at the study locations.



LEGEND

XX - AM PEAK HOUR

(XX) - PM PEAK HOUR

SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

EXISTING VOLUMES
AM / PM PEAK HOURS

FIGURE 3

FLECKER ASSOCIATES

6200-01

Level of Service / 95th Percentile Queue Calculation

Level of Service. To quantitatively evaluate traffic conditions and to provide a basis for comparison of operating conditions with and without project generated traffic, Levels of Service were determined at study area intersections.

"Level of Service" (LOS) is a quantitative measure of traffic operating conditions whereby a letter grade "A" through "F" is assigned to an intersection. LOS "A" through "F" represents progressively worsening traffic conditions. The characteristics associated with the various LOS for intersections are presented in Table 1. The Sutter County General Plan has established LOS "D" measured over the peak hour as the minimum standard for County roadway segments and intersections.

Levels of Service were calculated for this study using the methodology contained in the *Highway Capacity Manual, 7th Edition (HCM)*. The overall Level of Service for intersections was determined based on the average length of delays for all motorists at signalized intersections. At unsignalized intersections the Level of Service was based on the length of the average delay experienced by motorists who must yield the right of way before turning or continuing through an intersection. Level of Service was calculated using *Synchro* Version 12 software.

Peak Period Queues. Queues created during peak periods at signalized intersections were identified based on the *Synchro* results. The 95th percentile queue is the metric used in developing turn lane lengths. The 95th percentile queues is not necessarily the longest queue occurring during the peak period but represent queues with lengths that are exceeded only 5% of the time. It is commonly accepted that the queue's length that extends beyond the limits of available turn lane storage could interfere with through traffic, and this represents a potential safety conflict.

Existing Peak Hour Traffic Conditions

Current a.m. and p.m. peak hour Levels of Service were calculated at three existing intersections, Acacia Avenue at Griffith Lane, Acacia Avenue at S. Butte Road and Acacia Avenue at SR 20. Results are presented in Table 2 for the midweek a.m. and p.m. peak hours.

Level of Service. Peak hour operating conditions show that all intersections currently operate at LOS C or better in both peak hours. A peak hour traffic signal warrant was conducted for the two unsignalized intersections. Neither the Acacia Avenue / Griffith Lane nor the Acacia Avenue / S. Butte Road intersection meets the peak hour warrant.

TABLE 1
LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long-standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Sources: Highway Capacity Manual, 7th Edition.

TABLE 2
EXISTING AM / PM PEAK HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Control	Min LOS[1]	AM Peak Hour		PM Peak Hour		Meets Peak Hour Warrant
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	
1. Acacia Ave / Griffith Ln	EB Stop	D	18.3	C	10.3	B	No
2. Acacia Ave / S. Butte Rd	AWS	D	13.9	B	8.7	A	No
3. SR 20 / Acacia Ave	Signal	D	23.0	C	18.2	B	N/A

[1] minimum LOS established by Sutter County
N/A – not applicable

Peak Hour 95th Percentile Queues. Table 3 presents current peak hour 95th percentile at each of the intersections. At the Acacia Avenue / S. Butte Road intersection the longest queues occur during the a.m. peak hour. Along the northbound approach a 98-foot queue is present while the southbound approach has a 58-foot queue. During the p.m. peak hour queues are generally 25 feet or less.

At the SR 20 / Acacia Avenue intersection the southbound approach has a 173-foot queue in the a.m. peak hour while the northbound approach has a 90-foot queue. In the p.m. peak hour the southbound approach has a queue of 68 feet while the westbound right turn lane has a queue of 50 feet. All other queues are less than 50 feet.

TABLE 3
EXISTING PEAK HOUR INTERSECTION 95th PERCENTILE QUEUE LENGTHS

Intersection	Lane	Storage (feet)	AM Peak Hr 95th % Queue (feet)	PM Peak Hr 95th % Queue (feet)
1. Acacia Ave / Griffith Ln	EB	--	30	<25
2. Acacia Ave / S. Butte Rd	NB	--	98	28
	SB	--	58	<25
	EB	--	33	<25
	WB	--	30	<25
3. SR 20 / Acacia Ave	NB	--	90	25
	SB	260	173	68
	EB Left	305	<25	<25
	EB Right	305	<25	<25
	WB Left	250	<25	<25
	WB Right	500	88	50

Collision History. Recent collision history for the SR 20 / Acacia Avenue intersection was obtained from the California Highway Patrol (CHP) SWITRS database while the Average Annual Daily Traffic (AADT) for the SR 20 / Acacia Avenue intersection was obtained from the Caltrans Traffic Census Program database. Table 4 summarizes the crash history over the last 5 years (2018 to 2022). Crashes that occurred within 100 feet of the intersection were assumed to be part of the intersection. The latest Caltrans crash data publication is the *2021 Crash Data on California State Highways*. The equivalent annual collision frequency rate for the SR 20 / Acacia Avenue intersection was calculated with the result compared to statewide averages for similar facilities (i.e., 0.74 acc/mve). The recent overall collision frequency, 0.51 is lower than the statewide average.

TABLE 4 YEAR 2018 - 2022 COLLISION HISTORY												
	2018		2019		2020		2021		2022		Total	
Location	total	inj	total	inj	total	inj	total	inj	total	inj	total	inj
SR 20 / Acacia Ave[1]	2	1	1	0	2	1	3	0	3	0	11	2
MVE – million vehicles entering; ev – entering vehicles; acc/MVE – accidents per million vehicles entering crash rate = [(No of crashes in 'n' years) x (1,000,000)] / [(total entering vehicles) x (365) x ('n' years)] [1]Statewide average is 0.74 for total collisions at rural signalized four-way intersections (Group 4) [2] daily volume averaged from 2021 Caltrans Traffic Census Program collision frequency = [11 x 1,000,000] / [8,050 ev[2] x 365 x 5] = 0.74 acc/MVE												

Alternative Transportation Modes

The text which follows outlines facilities for pedestrians, bicyclists and transit riders in the area of the project.

Pedestrians. In the area of the proposed project, new development is constructed with frontage improvements including curb, gutter and sidewalk. The east side of Perry Street opposite the project is one such example. However, as the Sutter area is historically rural, older neighborhoods and the outlying areas surrounding the project reflect the rural nature with properties abutting unpaved shoulders. Where pedestrian facilities are not present pedestrians must walk along the paved shoulders on major roads and on unimproved shoulders on local streets. Table 5 summarizes available pedestrian facilities in the surrounding area.

TABLE 5 STUDY AREA PEDESTRIAN FACILITIES			
Street	**Location**	**Side**	**Description**
Irwin Ave	S Butte Rd to north end of roadway	east	none
		west	none
Perry St	S Butte Rd to Ridge Dr	east	sidewalk present
		west	none
	Ridge Dr to Griffith Ln	east	sidewalk present
		west	sidewalk present
S Butte Rd	Irwin Ave to Acacia Ave	north	none
		south	none
Griffith Ln	Perry St to Acacia Ave	north	none
	Perry St to 550' east	south	sidewalk present
	550' east of Perry St to Acacia Ave	south	none
Acacia Ave	SR 20 to Pass Rd	east	none
		west	none

Bicycles. The most recent bikeway master plan for Sutter County was prepared in 2012 (*County of Sutter Pedestrian & Bicycle Master Plan*). This document identified existing and planned facilities for this transportation mode under these classifications:

- Class I Bicycle Path – a facility separated from other vehicular traffic
- Class II Bicycle Lanes – a paved lane along a street striped for the exclusive use of bicycles
- Class III Bicycle Route – a shared facility designated for bicycle use
- Class IV Bikeway (NEW) – this type of facility was approved for use by Caltrans in 2018 (DIB 89-01). It provides exclusive use of bicycle traffic with physical separation provided from motor vehicle traffic.

The primary facilities in the Sutter area are identified in Table 6. Proposed facilities are also identified. There are two primary north-south Class II facilities, along Acacia Avenue and California Street while a single east-west Class II facility exists along Sutter Avenue. In addition, a 5 mile bike path exists along the former Sacramento Northern Railroad right-of-way between Acacia Avenue and Hooper Road in Yuba City.

TABLE 6
STUDY AREA BICYCLE FACILITIES

Street	Location	Side	Description
Existing			
Acacia Ave	Sutter Commuter Bikeway to Pass Rd	Both	Class II Lanes
California St	Butte House Rd to Washington St	Both	Class II Lanes
Sutter Ave	Acacia Ave to Oak St	Both	Class II Lanes
Sutter Commuter Bikeway	Acacia Ave to Hooper Rd (Yuba City)	--	Bike Path
Planned			
Pass Rd	Acacia Ave to Mawson Rd	Both	Class III Lanes
S. Butte Rd	Acacia Ave to W. Butte Rd	Both	Class II and III Lanes
Source: County of Sutter Pedestrian and Bicycle Master Plan, 2012			

Transit Services. Based on Yuba Sutter Transit route information there is no fixed route or dial-a-ride service to Sutter.

PROJECT CHARACTERISTICS

Project Descriptions

Trip Generation. The text that follows describes the characteristics of the project in terms of automobile trip generation and distribution. The number of vehicle trips that are expected to be generated by the project was estimated using data from Land Use Code 210 in ITE *Trip Generation, 11th Edition*. The project consists of six existing parcels which will be split into 17 new single family lots and one remainder parcel which has an existing residential unit. The project is expected to generate 170 daily trips with 13 a.m. peak hour trips and 17 p.m. peak hour trips. This is illustrated in Table 7. The existing six parcels, all zoned Estate Residential (ER) could construct six houses. Under existing and proposed ER zoning, the site could generate 57 daily trips with 4 a.m. and 6 p.m. peak hour trips. The net new trips generated with this project is 113 daily trips, 11 a.m. and 14 p.m. peak hour trips.

TABLE 7
AM / PM PEAK HOUR TRIP GENERATION RATES

Land Use	Quantity / Unit	Trip Per Unit						
		Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Proposed Total Residential Units								
Single Family Residential (LU 210)	17	9.43	0.70	25%	75%	0.94	63%	37%
Remainder Parcel (LU 210)	1	9.43	0.70	25%	75%	0.94	63%	37%
Single Family Residential (LU 210)		160	12	3	9	16	10	6
Remainder Parcel (LU 210)		9	1	0	1	1	1	0
Sub-Total		**170**	**13**	3	9	**17**	11	6
Existing Residential Parcels								
Single Family Residential (LU 210) - Developed	1	9.43	0.70	25%	75%	0.94	63%	37%
Single Family Residential (LU 210) - Undeveloped	5	9.43	0.70	25%	75%	0.94	63%	37%
Single Family Residential (LU 210) - Developed		9	1	0	1	1	1	0
Single Family Residential (LU 210) - Undeveloped		47	3	1	3	5	3	2
Sub-Total		**57**	**4**	1	3	**6**	4	2
Net New Trips								
Net New Trips		**113**	**11**	**3**	**8**	**14**	**9**	**5**

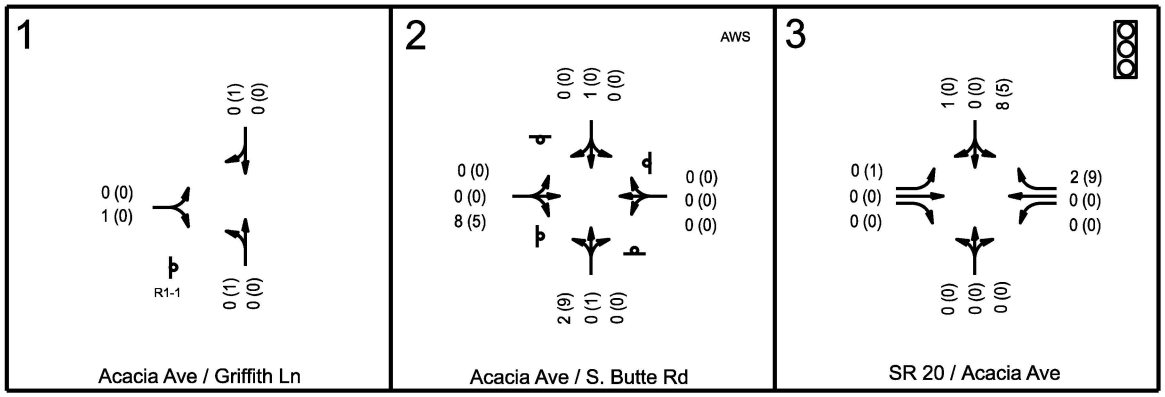
numbers may not equal due to rounding
[1]*ITE Trip Generation*, 11th Edition

Trip Distribution. The regional distribution of project trips was developed based on existing travel patterns, the SACOG regional travel demand forecasting model for future conditions, current and future roadway network and the demographics of the project. The projected trip distribution is shown in Table 8.

TABLE 8
PROJECT TRIP DISTRIBUTION ASSUMPTIONS

Direction	Route	Percentages	
		A.M.	P.M.
North	Via Acacia Ave	5%	7%
East	Via S. Butte Rd	5%	5%
	Via SR 20	80%	80%
South	Via Acacia Ave	0%	0%
West	Via SR 20	10%	8%
Total		**100%**	**100%**

Trip Assignment. Project traffic was assigned to the study area circulation system based on the proposed residential units relative to access to Acacia Avenue, the primary north-south roadway for Sutter. Project Only traffic under this scenario is presented in Figure 4.



N

LEGEND

XX - AM PEAK HOUR
(XX) - PM PEAK HOUR

SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

PROJECT VOLUMES
AM / PM PEAK HOURS

FIGURE 4

FLECKER ASSOCIATES
6200-01

CEQA TRANSPORTATION IMPACTS

This report section identifies transportation impact under current CEQA requirements and Caltrans transportation analysis guidelines.

Vehicle Miles Traveled Analysis

Vehicle Miles Traveled (VMT) refers to the amount and distance of vehicle travel attributable to a project. VMT generally represents the number of vehicle trips generated by a project multiplied by the average trip length for those trips. For CEQA transportation impact assessment, VMT shall be calculated using the origin-destination VMT method, which accounts for the full distance of vehicle trips with one end from the project.

Process. Sutter County has not yet adopted guidelines for addressing VMT impacts for land development projects in compliance with CEQA Guidelines Section 15064.3. Therefore, guidance provided in the Governor's Office of Planning and Research (OPR) technical directive on CEQA was used. The directive addresses several aspects of VMT impact analysis, and is organized as follows:

- ***Screening Criteria***: Screening criteria are intended to quickly identify when a project should be expected to cause a less-than-significant VMT impact without conducting a detailed study.

- ***Significance Thresholds***: Significance thresholds define what constitutes an acceptable level of VMT and what is considered a significant level of VMT requiring mitigation.

- ***Analysis Methodology***: These are the procedures and tools for producing VMT forecasts to use in the VMT impact assessment.

- ***Mitigation***: Projects that are found to have a significant VMT impact based on the County's significance thresholds are required to implement mitigation measures to reduce impacts to a less than significant level (or to the extent feasible).

Screening Criteria. Screening criteria can be used to quickly identify whether sufficient evidence exists to presume a project will have a less than significant VMT impact without conducting a detailed study. However, each project should be evaluated against the evidence supporting that screening criteria to determine if it applies. Projects meeting at least one of the criteria below can be presumed to have a less than significant VMT impact, absent substantial evidence that the project will lead to a significant impact.

The following screening criteria have been reviewed. The extent to which the proposed project qualifies under each criterion is also noted.

- Small Projects – The proposed project is estimated to generate 113 new net daily trips; these are the additional trips that are generated beyond which the site can construct per the existing zoning. This value exceeds the 110 daily threshold by three trips. The difference of three trips in 24 hours is unobservable and would fall within the range of normal day-to-day variation. The OPR Technical Advisory also notes that CEQA provides a categorical exemption for existing facilities up to 10,000 square feet. The Advisory estimates that an existing facility up to 10,000 square feet can generate or attract 110-124 daily trips. It then notes that that "absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact". OPR does not identify why 110 daily trips is reasonable; the additional three trips fall in the lower portion of the range cited by OPR. **Based on this information this is not considered significant.**

- Affordable Housing – The proposed project does not include affordable housing, and this screening criterion does not apply.

- Locations Served by High Quality Transit – The proposed project is not served by transit. Therefore, this screening criterion does not apply.

- Local Serving Retail – The proposed project is not a retail project. Therefore, this screening criterion does not apply.

- Map Based Screening for Residential and Office Projects – The Sacramento Area Council of Governments (SACOG) has developed a Map Based Screening for projects within their jurisdiction.

  The South Butte Estates location within the SACOG region was determined, and the residential VMT per capita characteristics of this area of Sutter were identified and are shown in Table 9. The Sutter County jurisdiction average is 25.90 VMT. The location containing the site has a rate of 28.32 (Hex BZ-64). The OPR recommended goal would be a 15% reduction from the jurisdiction average, or 22.0. The site has a 9.3% increase reduction compared to the jurisdictional average. This is a result of Sutter being located in a rural area within the SACOG region.

TABLE 9 VMT ANALYSIS RESULTS				
VMT per Job			South Butte Estates Increase / (Reduction) from Average (4)	Goal Met?
Sutter County Jurisdiction Average (1)	15% Reduction Goal (2)	South Butte Estates (3)		
25.90	22.0	28.32	9.3%	No
(2) - 85% of (1) (4) – (3) / (1)				

Standards of Significance / Level of Service Thresholds

The significance of the proposed project's impact on traffic operating conditions is based on a determination of whether project generated traffic results in roadway or intersection operating conditions below acceptable standards as defined by the governing agency. A project's impact on traffic conditions is considered significant if implementation of the project would result in LOS changing from levels considered acceptable to levels considered unacceptable, or if the project would significantly worsen an already unacceptable LOS without the project. Relevant policies for the study area consist of the following.

SB 743

SB 743 required that as of July 1, 2020 evaluation of transportation impacts under CEQA may no longer be based on consideration of Level of Service and moved to evaluation based on Vehicle Miles Traveled (VMT). Methods for estimating project VMT and for evaluating VMT impacts are outlined in Office of Planning & Research (OPR) directives and are implemented by individual jurisdictions.

Sutter County General Plan (Adopted March, 2011)

Policy M2.5 *(Level of Service on County Roads)* of the General Plan's Mobility section states the following: Develop and manage the County roadway segments and intersections to maintain LOS D or better during peak hour, and LOS C or better at all other times. Adjust for seasonality. These standards shall apply to all County roadway segments and intersections, unless otherwise addressed in an adopted specific plan or community plan. *(M 2-C/M 2-D)*

Based upon the above, the following standards and LOS criteria have been used for this analysis to identify a facility requiring improvements.

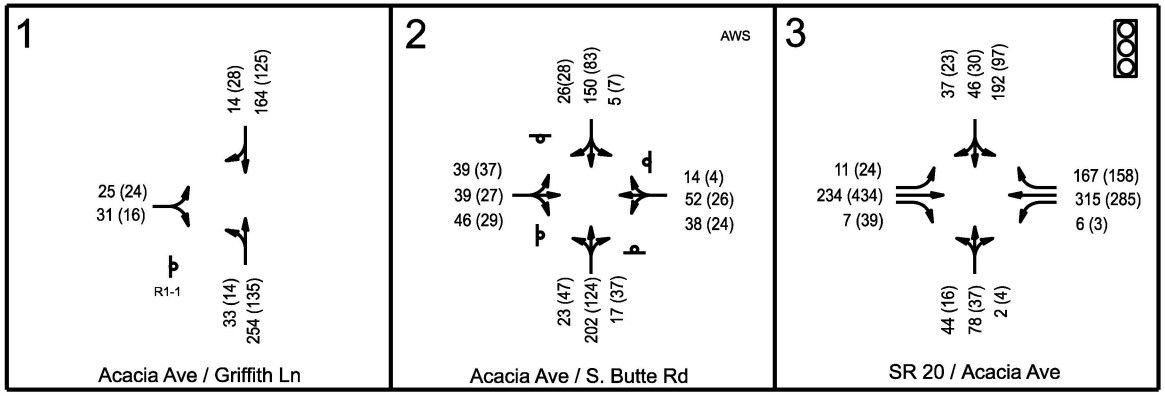
- Cause level of service at a study intersection to degrade from an acceptable LOS D or better to LOS E or F.

- Exacerbate the no project level of service at a study intersection operating at an unacceptable LOS. It is assumed that if an intersection operates at an unacceptable LOS, improvements would be required if the proposed project causes an increase in the average vehicle delay of 5 seconds within the overall intersection for signalized and all-way stop controlled locations or 5 seconds at the worst approach at side street stop controlled intersections.

EXISTING PLUS PROJECT CONDITIONS

Intersection Levels of Service. Figure 5 presents the sum of existing traffic and project trips for the South Butte Estates. Table 10 compares existing Levels of Service at study intersections to "Existing Plus Project" conditions during the midweek a.m. and p.m. peak hours. With the project added to existing traffic the study intersections will continue to operate acceptably. Neither of the two unsignalized intersections will meet the peak hour signal warrant.

95th Percentile Queues. Table 11 presents the projected queues under Existing plus Project conditions for both peak periods. Queues at each intersection will lengthen incrementally with the longest queue increasing by 7 feet, to 180 feet in the a.m. peak hour, along the southbound approach at the SR 20 / Acacia Avenue intersection.



LEGEND

XX - AM PEAK HOUR

(XX) - PM PEAK HOUR

SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

EXISTING PLUS PROJECT VOLUMES
AM / PM PEAK HOURS

FIGURE 5

TABLE 10
EXISTING PLUS PROJECT
PEAK HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Control	Min LOS[1]	AM Peak Hour				PM Peak Hour				Meets Peak Hour Warrant
			Exist		Exist Plus South Butte Estates		Exist		Exist Plus South Butte Estates		
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	
1. Acacia Ave / Griffith Ln	EB Stop	D	18.3	C	18.3	C	10.3	B	10.3	B	No
2. Acacia Ave / S. Butte Rd	AWS	D	13.9	B	14.2	B	8.7	A	8.8	A	No
3. SR 20 / Acacia Ave	Signal	D	23.0	C	23.3	C	18.2	B	18.0	B	N/S

[1] Minimum LOS established by Sutter County
N/S – not studied

TABLE 11 EXISTING PLUS PROJECT PEAK HOUR INTERSECTION 95th PERCENTILE QUEUE LENGTHS						
			AM Peak Hr		PM Peak Hr	
			Exist	Exist Plus Project	Exist	Exist Plus Project
Intersection	Lane	Storage (feet)	95th % Queue (feet)	95th % Queue (feet)	95th % Queue (feet)	95th % Queue (feet)
1. Acacia Ave / Griffith Ln	EB left	--	30	30	<25	<25
2. Acacia Ave / S. Butte Rd	NB	--	98	100	28	30
	SB	--	58	60	<25	<25
	EB	--	33	38	<25	<25
	WB	--	30	30	<25	<25
3. SR 20 / Acacia Ave	NB	--	90	93	25	25
	SB	260	173	180	68	65
	EB Left	305	<25	<25	<25	<25
	EB Right	305	<25	<25	<25	<25
	WB Left	250	<25	<25	<25	<25
	WB Right	500	88	93	50	53

CUMULATIVE CONDITIONS

Long Term Cumulative Conditions

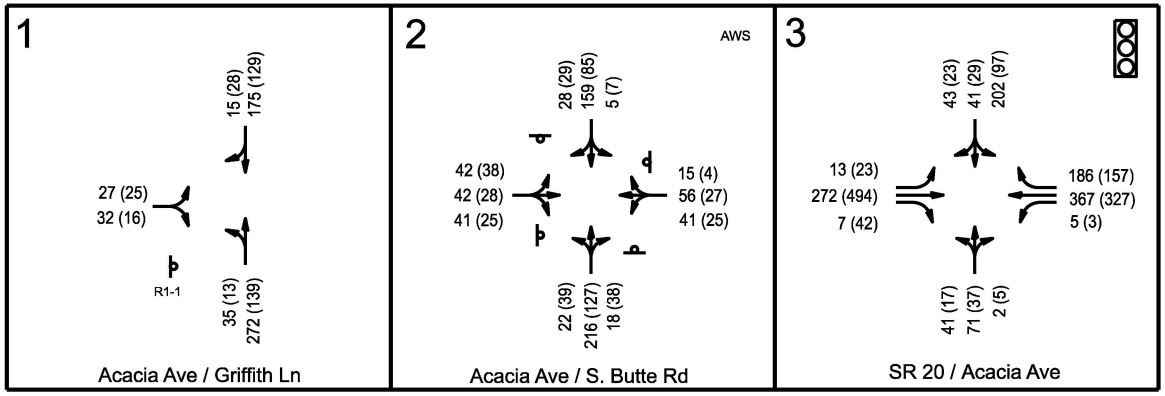
Basis for Long Term Projections. The SACOG Travel Demand Model was the source of long-term traffic volumes for this analysis. Year 2040 traffic forecasts were based on the most recent SACOG model. Peak hour traffic volumes from the travel model were used to generate growth factors. These growth factors were applied to existing peak hour intersection turning movement traffic volumes. The development of future year intersection turning movement traffic volumes requires that the turning movements at each intersection "balance". To achieve the balance, inbound traffic volumes must equal the outbound traffic volumes, and the volumes must be distributed among the various left-turn, through, and right-turn movements at each intersection. The "balancing" of future year intersection turning movement traffic volumes was conducted using methods described in the Transportation Research Board's (TRB's) National Cooperative Highway Research Program (NCHRP) Report 765, *Analytical Travel Forecasting Approaches for Project-Level Planning and Design*. The NCHRP 765 method applies the desired peak hour directional volumes to the intersection turning movement volumes, using an iterative process to balance and adjust the resulting forecasts to match the desired peak hour directional volumes.

Circulation System Assumptions. The traffic volume forecasts made for this analysis include those county-wide circulation system improvements incorporated into the County's General Plan. All roadways are projected to remain in their current configurations.

Cumulative No Project Conditions

Levels of Service. Peak hour intersection turning movements were developed for the No Project conditions and are shown in Figure 6 for each of the study intersections. Table 12 identifies peak hour LOS under future conditions. All intersections are projected to continue to operate at LOS C or better in the future. Neither the Acacia Avenue / Griffith Lane nor the Acacia Avenue / S. Butte Road intersection will meet the peak hour warrant.

95th Percentile Queues. Table 13 describes the projected queues under Cumulative traffic conditions. The longest queues will occur along the southbound approach of the SR 20 / Acacia Avenue intersection with a queue of 158 feet in the a.m. peak hour and 78 feet in the p.m. peak hour; no queues will exceed the turn lanes at the intersection. At the Acacia Avenue / S. Butte Road intersection the longest queue, 83 feet, will occur in the a.m. peak hour.



LEGEND

XX - AM PEAK HOUR
(XX) - PM PEAK HOUR

SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

2040 VOLUMES
AM / PM PEAK HOURS

FLECKER ASSOCIATES
6200-01

FIGURE 6

TABLE 12
CUMULATIVE PEAK HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Control	Min LOS[1]	AM Peak Hour				PM Peak Hour				Meets Peak Hour Warrant
			Cumulative		Cumulative Plus South Butte Estates		Cumulative		Cumulative Plus South Butte Estates		
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	
1. Acacia Ave / Griffith Ln	EB Stop	D	15.5	C	15.4	C	10.3	B	10.3	B	No
2. Acacia Ave / S. Butte Rd	AWS	D	12.9	B	13.1	B	8.7	A	8.8	A	No
3. SR 20 / Acacia Ave	Signal	D	22.0	C	22.2	C	18.8	B	18.9	B	N/A

[1] Minimum LOS established by Sutter County

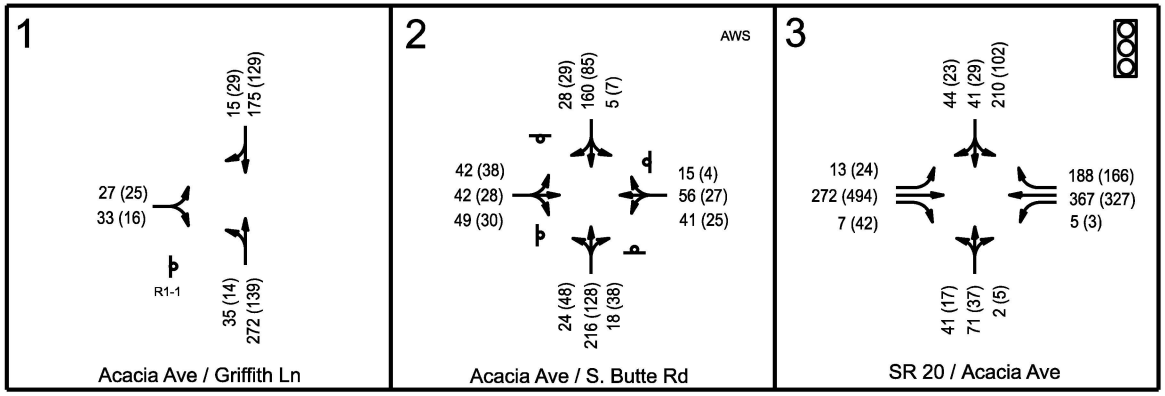
TABLE 13
CUMULATIVE PEAK HOUR INTERSECTION 95th PERCENTILE QUEUE LENGTHS

Intersection	Lane	Storage (feet)	Cumulative AM	Cumulative + Project AM	Cumulative PM	Cumulative + Project PM
			95th % Queue (feet)	95th % Queue (feet)	95th % Queue (feet)	95th % Queue (feet)
1. Acacia Ave / Griffith Ln	EB left	--	<25	<25	<25	<25
2. Acacia Ave / S. Butte Rd	NB	--	83	85	28	30
	SB	--	50	53	<25	<25
	EB	--	30	33	<25	<25
	WB	--	28	28	<25	<25
3. SR 20 / Acacia Ave	NB	--	**65**	**65**	30	30
	SB	260	158	165	78	80
	EB Left	305	<25	<25	<25	<25
	EB Right	305	<25	<25	<25	<25
	WB Left	250	<25	<25	<25	<25
	WB Right	500	83	85	58	60

Cumulative Plus Project Conditions

Levels of Service. The South Butte Estates traffic was added to the Cumulative Base peak hour volumes and are shown in Figure 7 at each of the study intersections. Table 12 identifies peak hour LOS under future conditions. With the project added to future traffic the study intersections will continue to operate acceptably. Neither of the two unsignalized intersections will meet the peak hour signal warrant.

95th Percentile Queues. Table 13 describes the projected queues under Cumulative plus Project traffic conditions. Queues at each intersection will lengthen incrementally with the longest queue increasing by 7 feet, to 165 feet in the a.m. peak hour, along the southbound approach at the SR 20 / Acacia Avenue intersection.



LEGEND

XX - AM PEAK HOUR
(XX) - PM PEAK HOUR

SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

2040 PLUS PROJECT VOLUMES
AM / PM PEAK HOURS

FIGURE 7

FLECKER ASSOCIATES
6200-01

FINDINGS / RECOMMENDATIONS/ IMPROVEMENTS

The preceding analysis has identified project impacts that may occur without identifying any recommendations or improvements. The text that follows identifies a strategy for recommendations to the 'No Project' conditions or improvements to the 'Plus Project' conditions.

Existing Conditions

Recommendations. All intersections currently operate at LOS C or better. At the SR 20 / Acacia Avenue intersection the southbound approach has a 173-foot queue in the a.m. peak hour while the northbound approach has a 90-foot queue. In the p.m. peak hour the southbound approach has a queue of 68 feet while the westbound right turn lane has a queue of 50 feet. All other queues are less than 50 feet.

Transportation Effects for Existing plus Project

Improvements. Under Existing plus Project conditions all study intersections will continue to operate acceptably. Neither of the two unsignalized intersections will meet the peak hour signal warrant. Queues at each intersection will lengthen incrementally with the longest queue increasing by 7 feet, to 180 feet in the a.m. peak hour, along the southbound approach at the SR 20 / Acacia Avenue intersection.

The following improvements are recommended:

- The project shall pay their fair share Sutter County traffic impact fees.

- The project shall complete ½ street widening along each of the project frontages, along Perry Street, Irwin Avenue and S. Butte Road per County policies.

- Adequate sight distance shall be provided at each project access intersection. Any entry features and landscaping shall be no higher than 2½ feet and no less than 10 feet from the ground.

Cumulative Conditions

Recommendations. Under Cumulative conditions all intersections will operate at LOS C or better. Neither the Acacia Avenue / Griffith Lane nor the Acacia Avenue / S. Butte Road intersection will meet the peak hour warrant.

The longest queues will occur along the southbound approach of the SR 20 / Acacia Avenue intersection with a queue of 158 feet in the a.m. peak hour and 78 feet in the p.m. peak hour; no queues will exceed the turn lanes at the intersection. At the Acacia Avenue / S. Butte Road intersection the longest queue, 83 feet, will occur in the a.m. peak hour.

Transportation Effects for Cumulative Plus Project Conditions

Improvements. Under Cumulative plus Project conditions all intersections will continue to operate at LOS C or better. Queues at each intersection will lengthen incrementally with the longest queue increasing by 7 feet, to 165 feet in the a.m. peak hour, along the southbound approach at the SR 20 / Acacia Avenue intersection.

REFERENCES

1. Sutter County. *Sutter County 2030 General Plan.* March, 2011.
2. Sutter County, *County of Sutter Pedestrian and Bicycle Master Plan*, 2012
3. California Department of Transportation. *California Manual on Uniform Traffic Control Devices for Streets and Highways* – 2014 Edition, 2021 Addendum. Sacramento, CA
4. Caltrans *Highway Design Manual*, 2023
5. California Highway Patrol, *Statewide Integrated Traffic Records System (SWITRS)*. https://iswitrs.chp.ca.gov/reports/jsp/index.jsp
6. California Department of Transportation. Traffic Census Program, http://dot.ca.gov/programs/traffic-operations/census
7. Transportation Research Board. *Highway Capacity Manual 7th Edition*. Washington, D.C.
8. Transportation Research Board. 2014. National Cooperative Highway Research Program (NCHRP) Report 765, *Analytical Travel Forecasting Approaches for Project-Level Planning and Design.* Washington, D.C.
9. California Department of Transportation. *Transportation Concept Report State Route 20*, District 3 March 2013

APPENDIX

Prepared by National Data & Surveying Services

Acacia Ave & Griffith Ln

Peak Hour Turning Movement Count

ID: 24-070055-003
City: Sutter

Day: Tuesday
Date: 3/19/2024

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

CONTROL: 1-Way Stop(EB)

	AM	NOON	PM
TEV	521	0	342
PHF	0.49		0.88

SOUTHBOUND (Acacia Ave)

	Left	Thru	Right	U-Turn	
AM	14	164	0	0	280 AM
NOON	0	0	0	0	0 NOON
PM	27	125	0	0	159 PM

EASTBOUND (Griffith Ln)

	AM	NOON	PM
Left	0	0	0
Thru	25	0	24
Right	0	0	0
U-Turn	30	0	16
Entering	47	0	40

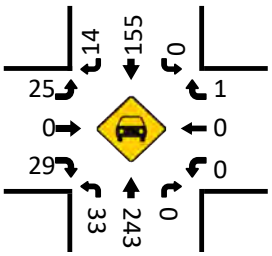
WESTBOUND (Griffith Ln)

	PM	NOON	AM
Left	0	0	1
Thru	0	0	0
Right	0	0	0
U-Turn	0	0	0
Entering	2	0	0

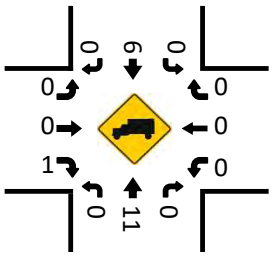
NORTHBOUND (Acacia Ave)

	Left	Thru	Right	U-Turn	
PM	141	0	13	135	2 PM
NOON	0	0	0	0	0 NOON
AM	194	0	33	254	0 AM

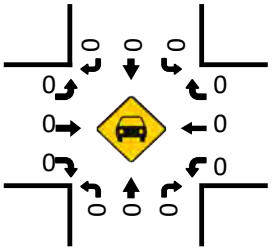
Cars (AM)



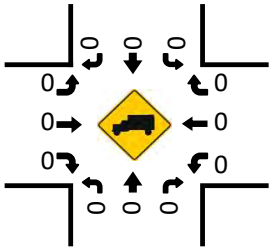
HT (AM)



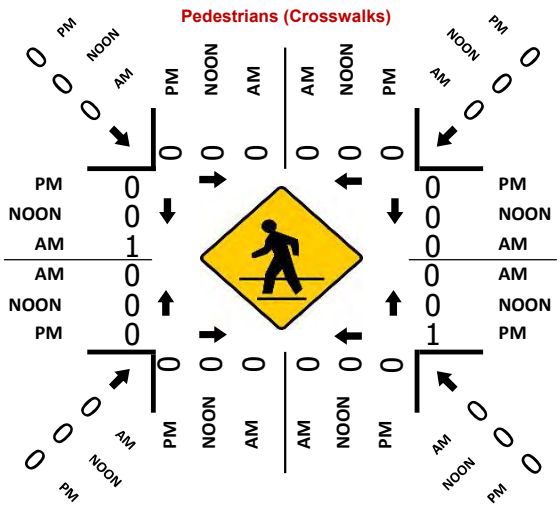
Cars (NOON)



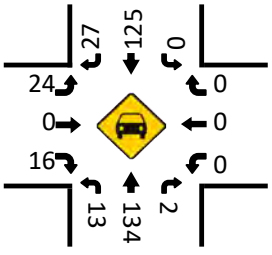
HT (NOON)



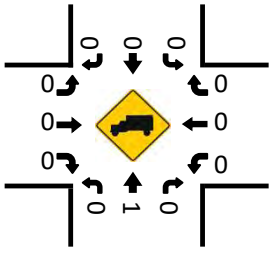
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Acacia Ave & Griffith Ln
City: Sutter
Control: 1-Way Stop(EB)

Project ID: 24-070055-003
Date: 3/19/2024

Data - Total

NS/EW Streets:	Acacia Ave				Acacia Ave				Griffith Ln				Griffith Ln				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	15	0	0	0	15	1	0	3	0	2	0	0	0	0	0	36
7:15 AM	3	20	0	0	0	18	1	0	6	0	1	0	0	0	0	0	49
7:30 AM	6	84	0	0	0	37	2	0	11	0	10	0	0	0	0	0	150
7:45 AM	21	133	0	0	0	83	7	0	6	0	16	0	0	0	0	0	266
8:00 AM	3	17	0	0	0	26	4	0	2	0	3	0	0	0	1	0	56
8:15 AM	3	19	0	0	0	12	1	0	4	0	0	0	0	0	0	0	39
8:30 AM	1	10	0	0	0	13	4	0	7	0	5	0	0	0	0	0	40
8:45 AM	1	18	0	0	0	12	6	0	2	0	1	0	0	0	0	0	40
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	38	316	0	0	0	216	26	0	41	0	38	0	0	0	1	0	676
APPROACH %'s :	10.73%	89.27%	0.00%	0.00%	0.00%	89.26%	10.74%	0.00%	51.90%	0.00%	48.10%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	33	254	0	0	0	164	14	0	25	0	30	0	0	0	1	0	521
PEAK HR FACTOR :	0.393	0.477	0.000	0.000	0.000	0.494	0.500	0.000	0.568	0.000	0.469	0.000	0.000	0.000	0.250	0.000	0.490
	0.466				0.494				0.625				0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	44	0	0	0	17	7	0	8	0	11	0	0	0	0	0	92
4:15 PM	8	27	0	0	0	24	7	0	8	0	6	0	1	0	0	0	81
4:30 PM	2	23	0	0	0	21	5	0	2	0	6	0	0	0	0	0	59
4:45 PM	4	44	0	0	1	31	8	0	5	0	2	0	0	0	0	0	95
5:00 PM	1	35	0	0	0	27	7	0	8	0	5	0	0	0	0	0	83
5:15 PM	3	38	1	0	0	33	6	0	2	0	2	0	0	0	0	0	85
5:30 PM	5	27	1	0	0	31	9	0	4	0	0	0	0	0	0	0	77
5:45 PM	4	35	0	0	0	34	5	0	10	0	9	0	0	0	0	0	97
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	32	273	2	0	1	218	54	0	47	0	41	0	1	0	0	0	669
APPROACH %'s :	10.42%	88.93%	0.65%	0.00%	0.37%	79.85%	19.78%	0.00%	53.41%	0.00%	46.59%	0.00%	100.00%	0.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	13	135	2	0	0	125	27	0	24	0	16	0	0	0	0	0	342
PEAK HR FACTOR :	0.650	0.888	0.500	0.000	0.000	0.919	0.750	0.000	0.600	0.000	0.444	0.000	0.000	0.000	0.000	0.000	0.881
	0.893				0.950				0.526								

Prepared by National Data & Surveying Services

Acacia Ave & S Butte Rd

Peak Hour Turning Movement Count

ID: 24-070055-002
City: Sutter

Day: Tuesday
Date: 3/19/2024

PEAK HOURS		COUNT PERIODS
AM	07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	4:00 PM - 06:00 PM

Acacia Ave – SOUTHBOUND

	Right	Through	Left	U-Turn	Departing (NB)
AM	26	149	5	0	255
NOON	0	0	0	0	0
PM	28	83	7	0	164
	0	2	0	0	

S Butte Rd – EASTBOUND

	AM	NOON	PM	
Departing (WB)	99	0	92	
U-Turn	0	0	0	0
Left	39	0	37	0
Through	39	0	27	1
Right	38	0	24	0

S Butte Rd – WESTBOUND

		PM	NOON	AM
Right	0	4	0	14
Through	1	26	0	52
Left	0	24	0	38
U-Turn	0	0	0	0
Departing (EB)		71	0	61

Acacia Ave – NORTHBOUND

	Departing (SB)	U-Turn	Left	Through	Right
		0	0	1	0
PM	131	0	38	123	37
NOON	0	0	0	0	0
AM	225	0	21	202	17

CONTROL

4-Way Stop

	AM	NOON	PM
TEV	640	0	458
PHF	0.62		0.89

Cars / HT

	SB Right	SB Thru	SB Left	WB Right	WB Thru	WB Left	NB Left	NB Thru	NB Right	EB Left	EB Thru	EB Right
Cars (AM)	24	142	5	13	50	37	19	192	16	38	38	36
Cars (NOON)	0	0	0	0	0	0	0	0	0	0	0	0
Cars (PM)	25	83	7	4	26	23	37	123	36	37	27	24
HT (AM)	2	7	0	1	2	1	2	10	1	1	1	2
HT (NOON)	0	0	0	0	0	0	0	0	0	0	0	0
HT (PM)	3	0	0	0	0	1	1	0	1	0	0	0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	→	0	0	0
North	←	0	0	0
West	↓	1	0	0
West	↑	1	0	0
East	↓	0	0	0
East	↑	0	0	0
South	→	0	0	0
South	←	1	0	0
NW diagonal	↘	0	0	0
NE diagonal	↙	0	0	0
SW diagonal	↗	0	0	0
SE diagonal	↖	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Acacia Ave & S Butte Rd
City: Sutter
Control: 4-Way Stop

Project ID: 24-070055-002
Date: 3/19/2024

Data - Total

NS/EW Streets:	Acacia Ave				Acacia Ave				S Butte Rd				S Butte Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	13	1	0	0	19	3	0	4	3	7	0	7	6	0	0	66
7:15 AM	4	17	2	0	0	20	6	0	4	2	3	0	8	4	2	0	72
7:30 AM	3	77	6	0	1	40	7	0	16	7	8	0	12	8	1	0	186
7:45 AM	2	103	4	0	2	68	6	0	14	11	11	0	12	16	9	0	258
8:00 AM	4	13	3	0	2	30	8	0	3	15	9	0	4	15	0	0	106
8:15 AM	12	9	4	0	0	11	5	0	6	6	10	0	10	13	4	0	90
8:30 AM	2	11	1	0	0	10	5	0	4	4	10	0	4	3	0	0	54
8:45 AM	7	12	4	0	1	17	3	0	5	3	7	0	3	5	0	0	67
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	37	255	25	0	6	215	43	0	56	51	65	0	60	70	16	0	899
APPROACH %'s :	11.67%	80.44%	7.89%	0.00%	2.27%	81.44%	16.29%	0.00%	32.56%	29.65%	37.79%	0.00%	41.10%	47.95%	10.96%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	21	202	17	0	5	149	26	0	39	39	38	0	38	52	14	0	640
PEAK HR FACTOR :	0.438	0.490	0.708	0.000	0.625	0.548	0.813	0.000	0.609	0.650	0.864	0.000	0.792	0.813	0.389	0.000	0.620
	0.550				0.592				0.806				0.703				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	11	43	14	0	2	14	4	0	10	7	9	0	7	6	1	0	128
4:15 PM	10	23	7	0	2	30	4	0	10	7	3	0	7	4	1	0	108
4:30 PM	11	29	10	0	1	23	9	0	7	5	5	0	5	9	1	0	115
4:45 PM	6	28	6	0	2	16	11	0	10	8	7	0	5	7	1	0	107
5:00 PM	7	24	8	0	0	20	8	0	10	7	10	0	9	2	1	0	106
5:15 PM	4	29	4	0	0	13	13	0	7	7	6	0	1	7	1	0	92
5:30 PM	5	28	6	0	3	19	7	0	7	8	4	0	5	7	6	0	105
5:45 PM	8	36	5	0	1	37	8	0	5	5	4	0	5	4	2	0	120
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	62	240	60	0	11	172	64	0	66	54	48	0	44	46	14	0	881
APPROACH %'s :	17.13%	66.30%	16.57%	0.00%	4.45%	69.64%	25.91%	0.00%	39.29%	32.14%	28.57%	0.00%	42.31%	44.23%	13.46%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	38	123	37	0	7	83	28	0	37	27	24	0	24	26	4	0	458
PEAK HR FACTOR :	0.864	0.715	0.661	0.000	0.875	0.692	0.636	0.000	0.925	0.844	0.667	0.000	0.857	0.722	1.000	0.000	0.895
	0.728				0.819				0.846				0.900				

Prepared by National Data & Surveying Services

Acacia Ave & SR 20

Peak Hour Turning Movement Count

ID: 24-070055-001
City: Sutter

Day: Tuesday
Date: 3/19/2024

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	4:00 PM - 06:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	1128	0	1135
PHF	0.82		0.96

SOUTHBOUND (Acacia Ave)

	AM	NOON	PM
Left	36	0	23
Through	46	0	30
Right	184	0	92
U-turn	0	0	0
Total	254	0	209

NORTHBOUND (Acacia Ave)

	AM	NOON	PM
Left	59	0	72
Through	0	0	0
Right	44	0	16
U-turn	78	0	37
Left-turn	2	0	4
Total	0	0	1

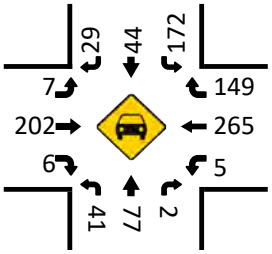
EASTBOUND (SR 20)

	AM	NOON	PM
Left	0	0	0
Through	11	0	23
Right	234	0	434
U-turn	7	0	39
Total	395	0	324

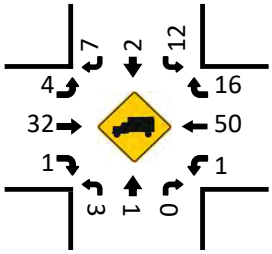
WESTBOUND (SR 20)

	AM	NOON	PM
Left	149	0	165
Through	285	0	315
Right	3	0	6
U-turn	0	0	0
Total	530	0	420

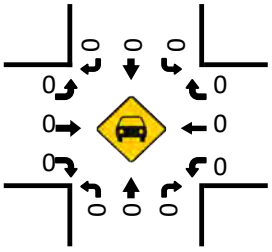
Cars (AM)



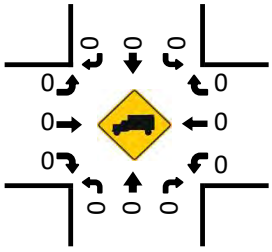
HT (AM)



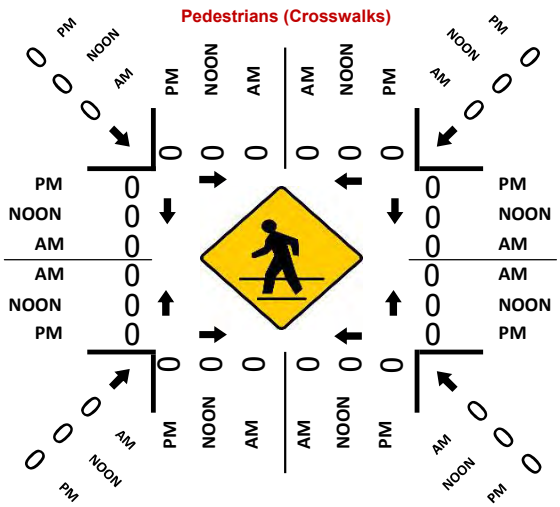
Cars (NOON)



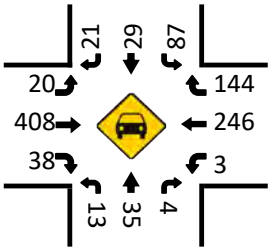
HT (NOON)



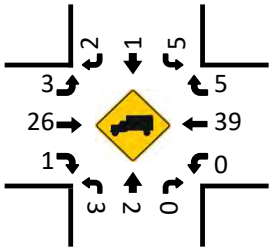
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Acacia Ave & SR 20
City: Sutter
Control: Signalized

Project ID: 24-070055-001
Date: 3/19/2024

Data - Total

NS/EW Streets:	Acacia Ave				Acacia Ave				SR 20				SR 20				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	1	1	1	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	6	0	0	23	7	14	0	1	38	0	0	1	66	20	0	180
7:15 AM	10	15	0	0	31	7	10	0	4	39	0	0	1	73	31	0	221
7:30 AM	9	35	1	0	35	10	9	0	4	86	4	0	3	93	54	0	343
7:45 AM	15	23	0	0	81	15	9	0	3	50	1	0	2	72	63	0	334
8:00 AM	10	5	1	0	37	14	8	0	0	59	2	0	0	77	17	0	230
8:15 AM	6	5	1	0	23	6	8	0	2	37	0	0	0	56	18	0	162
8:30 AM	4	1	0	0	13	9	7	0	4	46	3	0	1	69	20	0	177
8:45 AM	4	5	1	0	29	1	3	0	2	53	6	0	0	53	17	0	174
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	62	95	4	0	272	69	68	0	20	408	16	0	8	559	240	0	1821
APPROACH %'s :	38.51%	59.01%	2.48%	0.00%	66.50%	16.87%	16.63%	0.00%	4.50%	91.89%	3.60%	0.00%	0.99%	69.27%	29.74%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	44	78	2	0	184	46	36	0	11	234	7	0	6	315	165	0	1128
PEAK HR FACTOR :	0.733	0.557	0.500	0.000	0.568	0.767	0.900	0.000	0.688	0.680	0.438	0.000	0.500	0.847	0.655	0.000	0.822
	0.689				0.633				0.670				0.810				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	1	1	1	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	10	2	0	19	9	2	0	6	105	10	0	0	75	45	0	286
4:15 PM	8	11	0	0	25	8	7	0	4	112	12	0	1	80	29	0	297
4:30 PM	1	10	2	0	19	7	9	0	6	88	6	0	2	71	36	0	257
4:45 PM	4	6	0	0	29	6	5	0	7	129	11	0	0	59	39	0	295
5:00 PM	3	8	2	0	32	7	7	0	7	77	5	0	0	67	22	0	237
5:15 PM	2	4	1	0	19	4	6	0	9	98	16	0	1	70	38	0	268
5:30 PM	3	6	0	0	20	7	6	0	7	106	11	0	0	63	31	0	260
5:45 PM	0	2	0	0	32	5	4	0	6	69	4	0	0	64	37	0	223
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	24	57	7	0	195	53	46	0	52	784	75	0	4	549	277	0	2123
APPROACH %'s :	27.27%	64.77%	7.95%	0.00%	66.33%	18.03%	15.65%	0.00%	5.71%	86.06%	8.23%	0.00%	0.48%	66.14%	33.37%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	16	37	4	0	92	30	23	0	23	434	39	0	3	285	149	0	1135
PEAK HR FACTOR :	0.500	0.841	0.500	0.000	0.793	0.833	0.639	0.000	0.821	0.841	0.813	0.000	0.375	0.891	0.828	0.000	0.955
	0.750				0.906				0.844				0.910				

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	30	33	254	164	14
Future Vol, veh/h	25	30	33	254	164	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	49	49	49	49	49	49
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	61	67	518	335	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1002	349	363	0	-	0
Stage 1	349	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	269	694	1195	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	247	694	1195	-	-	-
Mov Cap-2 Maneuver	247	-	-	-	-	-
Stage 1	658	-	-	-	-	-
Stage 2	518	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	18.33	0.94	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	207	-	381	-	-
HCM Lane V/C Ratio	0.056	-	0.294	-	-
HCM Control Delay (s/veh)	8.2	0	18.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.2	-	-

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	39	38	38	52	14	21	202	17	5	149	26
Future Vol, veh/h	39	39	38	38	52	14	21	202	17	5	149	26
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	63	61	61	84	23	34	326	27	8	240	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.9	11.8	16.2	13.2
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	34%	37%	3%
Vol Thru, %	84%	34%	50%	83%
Vol Right, %	7%	33%	13%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	240	116	104	180
LT Vol	21	39	38	5
Through Vol	202	39	52	149
RT Vol	17	38	14	26
Lane Flow Rate	387	187	168	290
Geometry Grp	1	1	1	1
Degree of Util (X)	0.59	0.313	0.288	0.45
Departure Headway (Hd)	5.486	6.014	6.174	5.586
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	654	593	577	639
Service Time	3.556	4.102	4.264	3.665
HCM Lane V/C Ratio	0.592	0.315	0.291	0.454
HCM Control Delay, s/veh	16.2	11.9	11.8	13.2
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	3.9	1.3	1.2	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	234	7	6	315	165	44	78	2	184	46	36
Future Volume (veh/h)	11	234	7	6	315	165	44	78	2	184	46	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	285	9	7	384	201	54	95	2	224	56	44
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	464	393	26	443	375	72	126	3	265	66	52
Arrive On Green	0.03	0.25	0.25	0.01	0.24	0.24	0.11	0.11	0.11	0.22	0.22	0.22
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	656	1153	24	1221	305	240
Grp Volume(v), veh/h	13	285	9	7	384	201	151	0	0	324	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1833	0	0	1766	0	0
Q Serve(g_s), s	0.4	7.9	0.3	0.2	11.5	6.5	4.7	0.0	0.0	10.3	0.0	0.0
Cycle Q Clear(g_c), s	0.4	7.9	0.3	0.2	11.5	6.5	4.7	0.0	0.0	10.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.36		0.01	0.69		0.14
Lane Grp Cap(c), veh/h	46	464	393	26	443	375	201	0	0	383	0	0
V/C Ratio(X)	0.28	0.61	0.02	0.27	0.87	0.54	0.75	0.00	0.00	0.85	0.00	0.00
Avail Cap(c_a), veh/h	305	1216	1031	305	1216	1031	282	0	0	725	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.9	19.5	16.6	28.5	21.4	19.5	25.2	0.0	0.0	21.9	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.5	0.0	2.0	2.1	0.4	3.8	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	5.1	0.1	0.2	7.7	3.5	3.6	0.0	0.0	6.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.1	20.0	16.6	30.5	23.5	19.9	29.0	0.0	0.0	23.9	0.0	0.0
LnGrp LOS	C	B	B	C	C	B	C			C		
Approach Vol, veh/h		307			592			151			324	
Approach Delay, s/veh		20.3			22.4			29.0			23.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	21.5		18.7	6.5	20.8		12.4
Change Period (Y+Rc), s	5.0	7.0		6.0	5.0	7.0		6.0
Max Green Setting (Gmax), s	10.0	38.0		24.0	10.0	38.0		9.0
Max Q Clear Time (g_c+I1), s	2.4	9.9		12.3	2.4	13.5		6.7
Green Ext Time (p_c), s	0.0	0.2		0.5	0.0	0.3		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	23.0
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	16	13	135	125	27
Future Vol, veh/h	24	16	13	135	125	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	18	15	153	142	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	340	157	173	0	-	0
Stage 1	157	-	-	-	-	-
Stage 2	183	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	656	888	1404	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	648	888	1404	-	-	-
Mov Cap-2 Maneuver	648	-	-	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	848	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.28	0.67	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	158	-	727	-	-
HCM Lane V/C Ratio	0.011	-	0.063	-	-
HCM Control Delay (s/veh)	7.6	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	27	24	24	26	4	38	123	37	7	83	28
Future Vol, veh/h	37	27	24	24	26	4	38	123	37	7	83	28
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	30	27	27	29	4	43	138	42	8	93	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	8.4	9.1	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	42%	44%	6%
Vol Thru, %	62%	31%	48%	70%
Vol Right, %	19%	27%	7%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	198	88	54	118
LT Vol	38	37	24	7
Through Vol	123	27	26	83
RT Vol	37	24	4	28
Lane Flow Rate	222	99	61	133
Geometry Grp	1	1	1	1
Degree of Util (X)	0.272	0.13	0.083	0.163
Departure Headway (Hd)	4.397	4.73	4.903	4.438
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	816	757	730	807
Service Time	2.423	2.764	2.94	2.467
HCM Lane V/C Ratio	0.272	0.131	0.084	0.165
HCM Control Delay, s/veh	9.1	8.5	8.4	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.4	0.3	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	434	39	3	285	149	16	37	4	92	30	23
Future Volume (veh/h)	23	434	39	3	285	149	16	37	4	92	30	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	452	41	3	297	155	17	39	4	96	31	24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	521	441	12	448	379	41	95	10	160	52	40
Arrive On Green	0.05	0.28	0.28	0.01	0.24	0.24	0.08	0.08	0.08	0.14	0.14	0.14
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	516	1185	122	1121	362	280
Grp Volume(v), veh/h	24	452	41	3	297	155	60	0	0	151	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1823	0	0	1764	0	0
Q Serve(g_s), s	0.6	11.2	0.9	0.1	7.0	4.0	1.5	0.0	0.0	3.9	0.0	0.0
Cycle Q Clear(g_c), s	0.6	11.2	0.9	0.1	7.0	4.0	1.5	0.0	0.0	3.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.28		0.07	0.64		0.16
Lane Grp Cap(c), veh/h	81	521	441	12	448	379	146	0	0	252	0	0
V/C Ratio(X)	0.30	0.87	0.09	0.26	0.66	0.41	0.41	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	365	1458	1236	365	1458	1236	336	0	0	868	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.5	16.7	13.0	24.1	16.8	15.6	21.3	0.0	0.0	19.6	0.0	0.0
Incr Delay (d2), s/veh	0.7	1.8	0.0	4.2	0.6	0.3	0.7	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	6.6	0.4	0.1	4.1	2.0	1.0	0.0	0.0	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.3	18.5	13.1	28.3	17.4	15.9	22.0	0.0	0.0	20.4	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	C			C		
Approach Vol, veh/h		517			455			60			151	
Approach Delay, s/veh		18.3			17.0			22.0			20.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	20.6		13.0	7.2	18.7		9.9				
Change Period (Y+Rc), s	5.0	7.0		6.0	5.0	7.0		6.0				
Max Green Setting (Gmax), s	10.0	38.0		24.0	10.0	38.0		9.0				
Max Q Clear Time (g_c+I1), s	2.1	13.2		5.9	2.6	9.0		3.5				
Green Ext Time (p_c), s	0.0	0.4		0.2	0.0	0.2		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	18.2
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	31	33	254	164	14
Future Vol, veh/h	25	31	33	254	164	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	49	49	49	49	49	49
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	63	67	518	335	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1002	349	363	0	-	0
Stage 1	349	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	269	694	1195	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	247	694	1195	-	-	-
Mov Cap-2 Maneuver	247	-	-	-	-	-
Stage 1	658	-	-	-	-	-
Stage 2	518	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	18.28	0.94	0
HCM LOS	C		

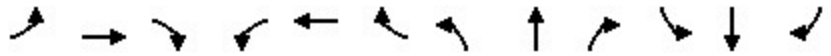
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	207	-	384	-	-
HCM Lane V/C Ratio	0.056	-	0.297	-	-
HCM Control Delay (s/veh)	8.2	0	18.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.2	-	-

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	39	46	38	52	14	23	202	17	5	150	26
Future Vol, veh/h	39	39	46	38	52	14	23	202	17	5	150	26
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	63	74	61	84	23	37	326	27	8	242	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12.1	11.9	16.7	13.5
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	31%	37%	3%
Vol Thru, %	83%	31%	50%	83%
Vol Right, %	7%	37%	13%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	242	124	104	181
LT Vol	23	39	38	5
Through Vol	202	39	52	150
RT Vol	17	46	14	26
Lane Flow Rate	390	200	168	292
Geometry Grp	1	1	1	1
Degree of Util (X)	0.601	0.334	0.291	0.458
Departure Headway (Hd)	5.54	6.016	6.235	5.646
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	648	592	570	633
Service Time	3.618	4.111	4.333	3.731
HCM Lane V/C Ratio	0.602	0.338	0.295	0.461
HCM Control Delay, s/veh	16.7	12.1	11.9	13.5
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	4	1.5	1.2	2.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	234	7	6	315	167	44	78	2	192	46	37
Future Volume (veh/h)	11	234	7	6	315	167	44	78	2	192	46	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	285	9	7	384	204	54	95	2	234	56	45
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	463	393	26	442	375	71	125	3	275	66	53
Arrive On Green	0.03	0.25	0.25	0.01	0.24	0.24	0.11	0.11	0.11	0.22	0.22	0.22
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	656	1153	24	1234	295	237
Grp Volume(v), veh/h	13	285	9	7	384	204	151	0	0	335	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1833	0	0	1766	0	0
Q Serve(g_s), s	0.4	8.0	0.3	0.2	11.7	6.7	4.7	0.0	0.0	10.7	0.0	0.0
Cycle Q Clear(g_c), s	0.4	8.0	0.3	0.2	11.7	6.7	4.7	0.0	0.0	10.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.36		0.01	0.70		0.13
Lane Grp Cap(c), veh/h	46	463	393	26	442	375	199	0	0	394	0	0
V/C Ratio(X)	0.28	0.62	0.02	0.27	0.87	0.54	0.76	0.00	0.00	0.85	0.00	0.00
Avail Cap(c_a), veh/h	301	1203	1019	301	1203	1019	279	0	0	717	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	28.2	19.7	16.8	28.8	21.7	19.8	25.6	0.0	0.0	22.0	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.5	0.0	2.0	2.1	0.5	4.3	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	5.2	0.1	0.2	7.8	3.7	3.7	0.0	0.0	7.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.4	20.2	16.8	30.8	23.8	20.2	29.8	0.0	0.0	24.0	0.0	0.0
LnGrp LOS	C	C	B	C	C	C	C			C		
Approach Vol, veh/h		307			595			151			335	
Approach Delay, s/veh		20.5			22.6			29.8			24.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	21.6		19.2	6.5	21.0		12.4
Change Period (Y+Rc), s	5.0	7.0		6.0	5.0	7.0		6.0
Max Green Setting (Gmax), s	10.0	38.0		24.0	10.0	38.0		9.0
Max Q Clear Time (g_c+I1), s	2.2	10.0		12.7	2.4	13.7		6.7
Green Ext Time (p_c), s	0.0	0.2		0.5	0.0	0.3		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	23.3
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	16	14	135	125	28
Future Vol, veh/h	24	16	14	135	125	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	18	16	153	142	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	343	158	174	0	-	0
Stage 1	158	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	653	887	1403	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	645	887	1403	-	-	-
Mov Cap-2 Maneuver	645	-	-	-	-	-
Stage 1	860	-	-	-	-	-
Stage 2	846	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.3	0.71	0
HCM LOS	B		

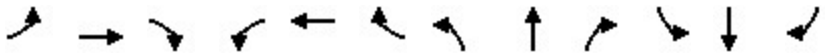
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	169	-	724	-	-
HCM Lane V/C Ratio	0.011	-	0.063	-	-
HCM Control Delay (s/veh)	7.6	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	27	29	24	26	4	47	124	37	7	83	28
Future Vol, veh/h	37	27	29	24	26	4	47	124	37	7	83	28
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	30	33	27	29	4	53	139	42	8	93	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	8.4	9.2	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	40%	44%	6%
Vol Thru, %	60%	29%	48%	70%
Vol Right, %	18%	31%	7%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	208	93	54	118
LT Vol	47	37	24	7
Through Vol	124	27	26	83
RT Vol	37	29	4	28
Lane Flow Rate	234	104	61	133
Geometry Grp	1	1	1	1
Degree of Util (X)	0.287	0.137	0.083	0.164
Departure Headway (Hd)	4.423	4.73	4.939	4.466
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	813	757	724	802
Service Time	2.45	2.766	2.978	2.496
HCM Lane V/C Ratio	0.288	0.137	0.084	0.166
HCM Control Delay, s/veh	9.2	8.5	8.4	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	0.5	0.3	0.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	434	39	3	285	158	16	37	4	97	30	23
Future Volume (veh/h)	24	434	39	3	285	158	16	37	4	97	30	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	452	41	3	297	165	17	39	4	101	31	24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	522	443	12	446	378	42	95	10	147	45	35
Arrive On Green	0.05	0.28	0.28	0.01	0.24	0.24	0.08	0.08	0.08	0.13	0.13	0.13
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	516	1185	122	1142	351	271
Grp Volume(v), veh/h	25	452	41	3	297	165	60	0	0	156	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1823	0	0	1764	0	0
Q Serve(g_s), s	0.6	10.9	0.9	0.1	6.8	4.2	1.5	0.0	0.0	4.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	10.9	0.9	0.1	6.8	4.2	1.5	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.28		0.07	0.65		0.15
Lane Grp Cap(c), veh/h	84	522	443	12	446	378	147	0	0	227	0	0
V/C Ratio(X)	0.30	0.87	0.09	0.26	0.67	0.44	0.41	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	375	1496	1267	375	1496	1267	345	0	0	891	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.9	16.3	12.7	23.5	16.4	15.4	20.8	0.0	0.0	19.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	1.7	0.0	4.2	0.6	0.3	0.7	0.0	0.0	1.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	6.3	0.4	0.1	4.0	2.1	1.0	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.6	18.0	12.7	27.7	17.0	15.7	21.4	0.0	0.0	21.2	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	C			C		
Approach Vol, veh/h		518			465			60			156	
Approach Delay, s/veh		17.8			16.6			21.4			21.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	20.3		12.1	7.2	18.3		9.8				
Change Period (Y+Rc), s	5.0	7.0		6.0	5.0	7.0		6.0				
Max Green Setting (Gmax), s	10.3	38.0		24.0	10.0	38.0		9.0				
Max Q Clear Time (g_c+I1), s	2.1	12.9		6.0	2.6	8.8		3.5				
Green Ext Time (p_c), s	0.0	0.4		0.2	0.0	0.2		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	18.0
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	32	35	272	175	15
Future Vol, veh/h	27	32	35	272	175	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	53	58	453	292	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	874	304	317	0	-	0
Stage 1	304	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	320	736	1243	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	300	736	1243	-	-	-
Mov Cap-2 Maneuver	300	-	-	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.46	0.92	0
HCM LOS	C		

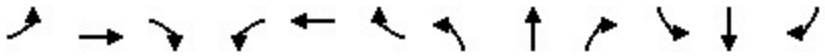
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	205	-	442	-	-
HCM Lane V/C Ratio	0.047	-	0.222	-	-
HCM Control Delay (s/veh)	8	0	15.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	42	41	41	56	15	22	216	18	5	159	28
Future Vol, veh/h	42	42	41	41	56	15	22	216	18	5	159	28
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	60	59	59	80	21	31	309	26	7	227	40
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.3	11.3	14.8	12.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	34%	37%	3%
Vol Thru, %	84%	34%	50%	83%
Vol Right, %	7%	33%	13%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	125	112	192
LT Vol	22	42	41	5
Through Vol	216	42	56	159
RT Vol	18	41	15	28
Lane Flow Rate	366	179	160	274
Geometry Grp	1	1	1	1
Degree of Util (X)	0.546	0.29	0.267	0.416
Departure Headway (Hd)	5.371	5.853	6.009	5.457
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	669	611	594	656
Service Time	3.426	3.924	4.082	3.517
HCM Lane V/C Ratio	0.547	0.293	0.269	0.418
HCM Control Delay, s/veh	14.8	11.3	11.3	12.4
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	3.3	1.2	1.1	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	272	7	5	367	186	41	71	2	202	41	43
Future Volume (veh/h)	13	272	7	5	367	186	41	71	2	202	41	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	289	7	5	389	197	44	75	2	214	44	46
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	481	408	19	449	381	70	119	3	256	53	55
Arrive On Green	0.03	0.26	0.26	0.01	0.24	0.24	0.10	0.10	0.10	0.21	0.21	0.21
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	666	1135	30	1239	255	266
Grp Volume(v), veh/h	14	289	7	5	389	197	121	0	0	304	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1832	0	0	1760	0	0
Q Serve(g_s), s	0.4	7.7	0.2	0.2	11.4	6.2	3.6	0.0	0.0	9.4	0.0	0.0
Cycle Q Clear(g_c), s	0.4	7.7	0.2	0.2	11.4	6.2	3.6	0.0	0.0	9.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.36		0.02	0.70		0.15
Lane Grp Cap(c), veh/h	50	481	408	19	449	381	192	0	0	364	0	0
V/C Ratio(X)	0.28	0.60	0.02	0.26	0.87	0.52	0.63	0.00	0.00	0.84	0.00	0.00
Avail Cap(c_a), veh/h	312	1246	1056	312	1246	1056	289	0	0	741	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.2	18.6	15.8	28.0	20.8	18.8	24.5	0.0	0.0	21.7	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.4	0.0	2.7	2.0	0.4	1.3	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	4.9	0.1	0.1	7.6	3.3	2.6	0.0	0.0	6.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.3	19.1	15.8	30.7	22.8	19.2	25.8	0.0	0.0	23.7	0.0	0.0
LnGrp LOS	C	B	B	C	C	B	C			C		
Approach Vol, veh/h		310			591			121			304	
Approach Delay, s/veh		19.4			21.7			25.8			23.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	21.7		17.8	6.6	20.7		12.0				
Change Period (Y+Rc), s	5.0	7.0		6.0	5.0	7.0		6.0				
Max Green Setting (Gmax), s	10.6	38.0		24.0	10.0	38.0		9.0				
Max Q Clear Time (g_c+I1), s	2.2	9.7		11.4	2.4	13.4		5.6				
Green Ext Time (p_c), s	0.0	0.2		0.4	0.0	0.3		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	22.0
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	16	13	139	129	28
Future Vol, veh/h	25	16	13	139	129	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	18	14	154	143	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	342	159	174	0	-	0
Stage 1	159	-	-	-	-	-
Stage 2	183	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	654	886	1402	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	647	886	1402	-	-	-
Mov Cap-2 Maneuver	647	-	-	-	-	-
Stage 1	860	-	-	-	-	-
Stage 2	848	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.31	0.65	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	154	-	723	-	-
HCM Lane V/C Ratio	0.01	-	0.063	-	-
HCM Control Delay (s/veh)	7.6	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	28	25	25	27	4	39	127	38	7	85	29
Future Vol, veh/h	38	28	25	25	27	4	39	127	38	7	85	29
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	31	28	28	30	4	43	141	42	8	94	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	8.4	9.1	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	42%	45%	6%
Vol Thru, %	62%	31%	48%	70%
Vol Right, %	19%	27%	7%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	204	91	56	121
LT Vol	39	38	25	7
Through Vol	127	28	27	85
RT Vol	38	25	4	29
Lane Flow Rate	227	101	62	134
Geometry Grp	1	1	1	1
Degree of Util (X)	0.278	0.133	0.085	0.166
Departure Headway (Hd)	4.409	4.746	4.923	4.452
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	816	754	727	805
Service Time	2.436	2.782	2.962	2.481
HCM Lane V/C Ratio	0.278	0.134	0.085	0.166
HCM Control Delay, s/veh	9.1	8.5	8.4	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.5	0.3	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	494	42	3	327	157	17	37	5	97	29	23
Future Volume (veh/h)	23	494	42	3	327	157	17	37	5	97	29	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	537	46	3	355	171	18	40	5	105	32	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	599	507	12	524	444	42	92	12	157	48	37
Arrive On Green	0.05	0.32	0.32	0.01	0.28	0.28	0.08	0.08	0.08	0.14	0.14	0.14
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	520	1155	144	1143	348	272
Grp Volume(v), veh/h	25	537	46	3	355	171	63	0	0	162	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1818	0	0	1764	0	0
Q Serve(g_s), s	0.7	14.4	1.1	0.1	8.9	4.6	1.7	0.0	0.0	4.6	0.0	0.0
Cycle Q Clear(g_c), s	0.7	14.4	1.1	0.1	8.9	4.6	1.7	0.0	0.0	4.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.29		0.08	0.65		0.15
Lane Grp Cap(c), veh/h	83	599	507	12	524	444	146	0	0	243	0	0
V/C Ratio(X)	0.30	0.90	0.09	0.26	0.68	0.39	0.43	0.00	0.00	0.67	0.00	0.00
Avail Cap(c_a), veh/h	338	1349	1143	338	1349	1143	311	0	0	804	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.3	17.1	12.5	26.0	16.8	15.3	23.1	0.0	0.0	21.6	0.0	0.0
Incr Delay (d2), s/veh	0.7	2.0	0.0	4.3	0.6	0.2	0.8	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	8.4	0.5	0.1	5.3	2.3	1.2	0.0	0.0	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.0	19.1	12.6	30.3	17.4	15.5	23.8	0.0	0.0	22.7	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	C			C		
Approach Vol, veh/h		608			529			63			162	
Approach Delay, s/veh		18.8			16.9			23.8			22.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	23.9		13.3	7.5	21.8		10.2				
Change Period (Y+Rc), s	5.0	7.0		6.0	5.0	7.0		6.0				
Max Green Setting (Gmax), s	10.0	38.0		24.0	10.0	38.0		9.0				
Max Q Clear Time (g_c+I1), s	2.1	16.4		6.6	2.7	10.9		3.7				
Green Ext Time (p_c), s	0.0	0.4		0.2	0.0	0.3		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	18.8
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	33	35	272	175	15
Future Vol, veh/h	27	33	35	272	175	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	55	58	453	292	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	874	304	317	0	-	0
Stage 1	304	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	320	736	1243	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	300	736	1243	-	-	-
Mov Cap-2 Maneuver	300	-	-	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.42	0.92	0
HCM LOS	C		

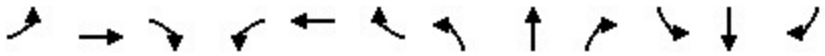
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	205	-	445	-	-
HCM Lane V/C Ratio	0.047	-	0.225	-	-
HCM Control Delay (s/veh)	8	0	15.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.9	-	-

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	42	49	41	56	15	24	216	18	5	160	28
Future Vol, veh/h	42	42	49	41	56	15	24	216	18	5	160	28
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	60	70	59	80	21	34	309	26	7	229	40
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.6	11.4	15.1	12.6
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	32%	37%	3%
Vol Thru, %	84%	32%	50%	83%
Vol Right, %	7%	37%	13%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	258	133	112	193
LT Vol	24	42	41	5
Through Vol	216	42	56	160
RT Vol	18	49	15	28
Lane Flow Rate	369	190	160	276
Geometry Grp	1	1	1	1
Degree of Util (X)	0.555	0.309	0.269	0.422
Departure Headway (Hd)	5.417	5.85	6.06	5.507
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	663	610	589	651
Service Time	3.478	3.926	4.139	3.573
HCM Lane V/C Ratio	0.557	0.311	0.272	0.424
HCM Control Delay, s/veh	15.1	11.6	11.4	12.6
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	3.4	1.3	1.1	2.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	272	7	5	367	188	41	71	2	210	41	44
Future Volume (veh/h)	13	272	7	5	367	188	41	71	2	210	41	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	289	7	5	389	199	44	75	2	223	44	47
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	481	407	19	448	380	69	118	3	265	52	56
Arrive On Green	0.03	0.26	0.26	0.01	0.24	0.24	0.10	0.10	0.10	0.21	0.21	0.21
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	666	1135	30	1250	247	264
Grp Volume(v), veh/h	14	289	7	5	389	199	121	0	0	314	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1832	0	0	1760	0	0
Q Serve(g_s), s	0.4	7.8	0.2	0.2	11.5	6.3	3.7	0.0	0.0	9.9	0.0	0.0
Cycle Q Clear(g_c), s	0.4	7.8	0.2	0.2	11.5	6.3	3.7	0.0	0.0	9.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.36		0.02	0.71		0.15
Lane Grp Cap(c), veh/h	50	481	407	19	448	380	190	0	0	374	0	0
V/C Ratio(X)	0.28	0.60	0.02	0.26	0.87	0.52	0.64	0.00	0.00	0.84	0.00	0.00
Avail Cap(c_a), veh/h	309	1233	1045	309	1233	1045	286	0	0	733	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.5	18.8	16.0	28.3	21.0	19.1	24.8	0.0	0.0	21.8	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.5	0.0	2.7	2.0	0.4	1.3	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	5.0	0.1	0.1	7.6	3.4	2.6	0.0	0.0	6.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.6	19.3	16.0	31.0	23.1	19.5	26.1	0.0	0.0	23.8	0.0	0.0
LnGrp LOS	C	B	B	C	C	B	C			C		
Approach Vol, veh/h		310			593			121			314	
Approach Delay, s/veh		19.6			21.9			26.1			23.8	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	21.8		18.2	6.6	20.8		12.0				
Change Period (Y+Rc), s	5.0	7.0		6.0	5.0	7.0		6.0				
Max Green Setting (Gmax), s	10.6	38.0		24.0	10.0	38.0		9.0				
Max Q Clear Time (g_c+I1), s	2.2	9.8		11.9	2.4	13.5		5.7				
Green Ext Time (p_c), s	0.0	0.2		0.5	0.0	0.3		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	22.2
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	16	14	139	129	29
Future Vol, veh/h	25	16	14	139	129	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	18	16	154	143	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	345	159	176	0	-	0
Stage 1	159	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	652	886	1401	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	644	886	1401	-	-	-
Mov Cap-2 Maneuver	644	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	846	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.33	0.7	0
HCM LOS	B		

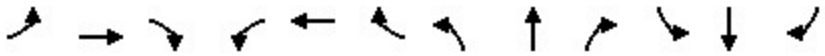
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	165	-	721	-	-
HCM Lane V/C Ratio	0.011	-	0.063	-	-
HCM Control Delay (s/veh)	7.6	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	28	30	25	27	4	48	128	38	7	85	29
Future Vol, veh/h	38	28	30	25	27	4	48	128	38	7	85	29
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	31	33	28	30	4	53	142	42	8	94	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.6	8.5	9.3	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	40%	45%	6%
Vol Thru, %	60%	29%	48%	70%
Vol Right, %	18%	31%	7%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	214	96	56	121
LT Vol	48	38	25	7
Through Vol	128	28	27	85
RT Vol	38	30	4	29
Lane Flow Rate	238	107	62	134
Geometry Grp	1	1	1	1
Degree of Util (X)	0.293	0.141	0.086	0.167
Departure Headway (Hd)	4.436	4.747	4.96	4.479
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	811	754	721	800
Service Time	2.466	2.786	3.001	2.514
HCM Lane V/C Ratio	0.293	0.142	0.086	0.168
HCM Control Delay, s/veh	9.3	8.6	8.5	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	0.5	0.3	0.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	494	42	3	327	166	17	37	5	102	29	23
Future Volume (veh/h)	24	494	42	3	327	166	17	37	5	102	29	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	537	46	3	355	180	18	40	5	111	32	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	599	507	12	521	442	42	92	12	162	47	36
Arrive On Green	0.05	0.32	0.32	0.01	0.28	0.28	0.08	0.08	0.08	0.14	0.14	0.14
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	520	1155	144	1166	336	263
Grp Volume(v), veh/h	26	537	46	3	355	180	63	0	0	168	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1818	0	0	1765	0	0
Q Serve(g_s), s	0.7	14.5	1.1	0.1	8.9	4.9	1.7	0.0	0.0	4.8	0.0	0.0
Cycle Q Clear(g_c), s	0.7	14.5	1.1	0.1	8.9	4.9	1.7	0.0	0.0	4.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.29		0.08	0.66		0.15
Lane Grp Cap(c), veh/h	86	599	507	12	521	442	145	0	0	245	0	0
V/C Ratio(X)	0.30	0.90	0.09	0.26	0.68	0.41	0.43	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	338	1347	1141	338	1347	1141	310	0	0	803	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.3	17.1	12.6	26.1	17.0	15.5	23.1	0.0	0.0	21.6	0.0	0.0
Incr Delay (d2), s/veh	0.7	2.0	0.0	4.3	0.6	0.2	0.8	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	8.4	0.5	0.1	5.3	2.4	1.2	0.0	0.0	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.0	19.1	12.6	30.3	17.5	15.7	23.9	0.0	0.0	22.9	0.0	0.0
LnGrp LOS	C	B	B	C	B	B	C			C		
Approach Vol, veh/h		609			538			63			168	
Approach Delay, s/veh		18.9			17.0			23.9			22.9	
Approach LOS		B			B			C			C	

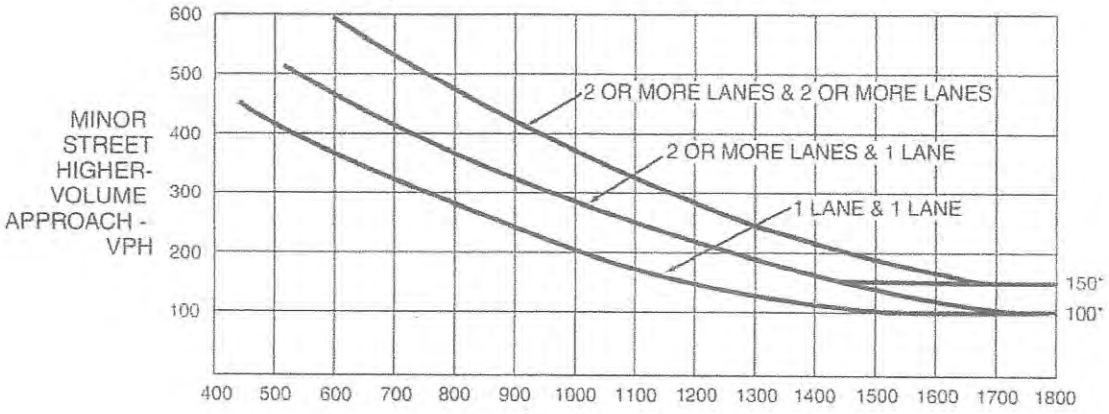
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	23.9		13.3	7.5	21.7		10.2				
Change Period (Y+Rc), s	5.0	7.0		6.0	5.0	7.0		6.0				
Max Green Setting (Gmax), s	10.0	38.0		24.0	10.0	38.0		9.0				
Max Q Clear Time (g_c+I1), s	2.1	16.5		6.8	2.7	10.9		3.7				
Green Ext Time (p_c), s	0.0	0.4		0.2	0.0	0.3		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	18.9
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

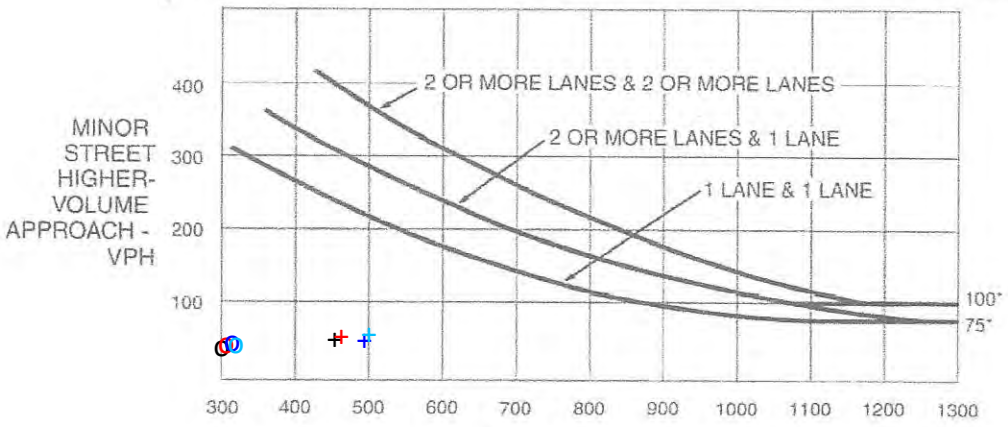
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



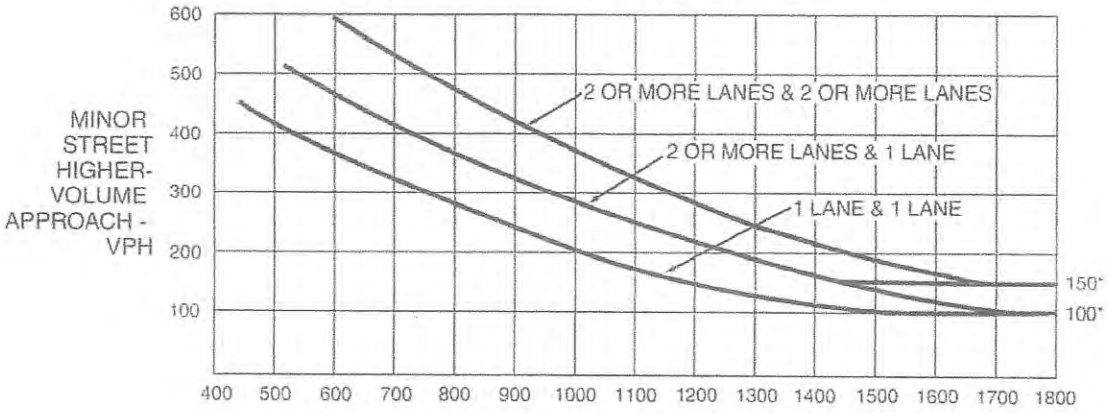
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

+ Exist AM
o Exist PM
+ Ex + Proj AM
o Ex + Proj PM

+ Cum AM
o Cum PM
+ Cum + Proj AM
o Cum + Proj PM

ACACIA AVE / GRIFFITH LN

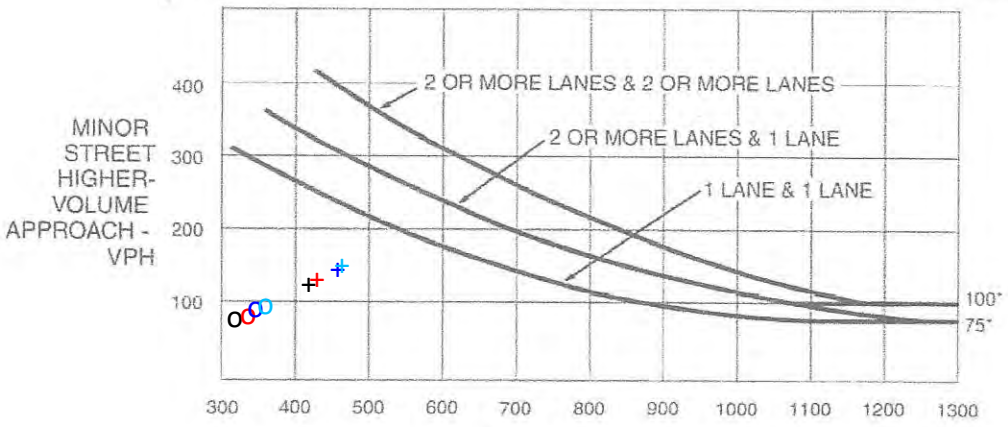
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

+ Exist AM

o Exist PM

+ Ex + Proj AM

o Ex + Proj PM

+ Cum AM

o Cum PM

+ Cum + Proj AM

o Cum + Proj PM

ACACIA AVE / S. BUTTE RD