Tuolumne County
Community Resource Agency

Oxbow Investments Project

Initial Study/Mitigated Negative Declaration

June 2019

RANEY PLANNING & MANAGEMENT, INC. 20 years
1501 Sports Drive, Suite A, • Sacramento • CA • 95834
Office 916.372.6100 • Fax 916.419.610

TABLE OF CONTENTS

APPENDICES:

INITIAL STUDY

June 2019

A. BACKGROUND

1. Project Title: Oxbow Investments Project

2. Lead Agency Name and Address: Tuolumne County
Community Resources Agency
48 Yaney Avenue
Sonora, CA 95370

3. Contact Person and Phone Number: Quincy Yaley, AICP
Community Resource Agency Assistant Director
(209) 533-5633

4. Project Location: 14690 Tuolumne Road
Sonora, CA 95383
APN 061-150-25

5. Project Sponsor's Name and Address:
Oxbow Investments, LLC
23311 Oxbow Lane North
Sonora, CA 95370

6. Existing General Plan Designation: Light Industrial (LI)

7. Existing Zoning Designation: Residential Estate, one acre minimum (RE-1)
Residential Estate, five acre minimum (RE-5)

8. Required Approvals from Other Public Agencies: None

9. Surrounding Land Uses and Setting:

The project site consists of approximately 5.0 acres located north of Tuolumne Road and northeast of the intersection of Tuolumne Road and Wards Ferry Road in the County of Tuolumne, California. The site is identified by Assessor's Parcel Number (APN) 061-150-25. The project site is currently developed a barn and associated outbuildings. Curtis Creek borders the project site to the north, beyond which exists commercial/industrial land uses and open space. Tuolumne Road is located along the western border of the project site and the Tuolumne County Fire Department is located southeast of the site.

Commercial development exists to the east of the site and agricultural land exists south of the project site across Tuolumne Road.

10. Project Description Summary:

The Oxbow Investments Project would include a General Plan Amendment, Rezone, Planned Unit Development, and a Vesting Tentative Subdivision Map to allow the construction of 29 detached, manufactured patio homes, with lots ranging in size from 3,107 square feet (sf) to 6,164 sf.

11. Status of Native American Consultation Pursuant to Public Resources Code Section 21080.3.1:
Tuolumne County initiated consultation under AB 52 pursuant to Public Resources Code Section 21080.3.1 with the Chicken Ranch Rancheria of Me-Wuk Indians. The tribe responded that further consultation on this project was not required.

B. SOURCES

All of the technical reports and modeling results used for the project analysis are available upon request at the County of Tuolumne Community Resources Agency, located on the 3rd and 4th floors of the A.N. Francisco Building at 48 Yaney Avenue in Sonora, California. Office hours are Monday through Friday, 8:00 AM to 4:00 PM. The following documents are referenced information sources used for the purposes of this Initial Study:

1. California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.
2. California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.
3. California Department of Conservation. *Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones.* Available at: https://www.conservation.ca.gov/cgs/Pages/Earthquakes/affected.aspx. Accessed April 1, 2019.
4. California Department of Conservation. *Farmland Mapping and Monitoring Program*. Available at: http://www.conservation.ca.gov/dlrp/fmmp. Accessed March 2019.
5. California Department of Conservation. *DOC Maps*. Available at https://maps.conservation.ca.gov/#dataviewer. Accessed January 2019.
6. California Department of Forestry and Fire Protection. *Tuolumne County Fire Hazard Severity Zones in SRA.* November 7, 2007.
7. California Department of Forestry and Fire Protection. *Tuolumne County Very High Fire Hazard Severity Zones in LRA*. September 2, 2008.
8. California Department of Transportation. *California Scenic Highway Mapping System*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed March 2019.
9. California Department of Toxic Substances Control. *EnviroStor*. Available at: https://www.envirostor.dtsc.ca.gov/public/. Accessed April 2, 2019.

10. Central California Information Center. *File No. 9317/O.* April 27, 2015.
11. County of Tuolumne. *Emergency Operations Plan for Tuolumne County*. June 2012.
12. County of Tuolumne. *Tuolumne County General Plan Update and EIR.* January 2019.
13. Federal Emergency Management Agency. *Flood Insurance Rate Map 06109C0854C*. Effective April 16, 2009.
14. Moore Biological Consultants. *Baseline Biological Resources Assessment: 6+/- Acre Curtis Creek Site, Tuolumne County, California.* December 29, 2017.
15. Peak & Associates, Inc. *Cultural Resource Assessment for the Krag Brotby Property, Tuolumne, California.* August, 2015.
16. U.S. Department of Agriculture, Natural Resources Conservation Service. *Web Soil Survey*. Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed March 2019.
17. Unites States Geological Survey. *Mineral Resources Online Spatial Data.* Available at http://mrdata.usgs.gov/mineral-resources/mrds-us.html. Accessed March 2019.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

✖ **Aesthetics**	☐ **Agriculture and Forest 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**

D. DETERMINATION

On the basis of this initial study:

☐ 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 applicant. 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" 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 pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Quincy Yaley
Signature

May 28, 2019
Date

Quincy Yaley
Printed Name

Tuolumne County
For

E. BACKGROUND AND INTRODUCTION

This Initial Study identifies and analyzes the potential environmental impacts of the Oxbow Investments Project (proposed project). The information and analysis presented in this document is organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines. Where the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures are prescribed.

The mitigation measures prescribed for environmental effects described in this Initial Study/Mitigated Negative Declaration (IS/MND) would be implemented in conjunction with the project, as required by CEQA. The mitigation measures would be incorporated into the project through project conditions of approval. The County would adopt findings and a Mitigation Monitoring/Reporting Program for the project in conjunction with approval of the project.

F. PROJECT DESCRIPTION

The following provides a description of the project site's current location and setting, as well as the proposed project components and the discretionary actions required for the project.

Project Location and Setting

The project site consists of approximately 5.0 acres located north of Tuolumne Road and northeast of the intersection of Tuolumne Road and Wards Ferry Road within unincorporated Tuolumne County, California (APN 61-150-25) (see Figure 1 and Figure 2). The site is designated LI per the County's General Plan and is zoned RE-1 and RE-5. The project site is predominantly undeveloped with the exception of an existing barn and several outbuildings. A large, open field of annual grassland in the eastern portion of the site was previously used as a vineyard until 2012 when the vines were removed. Oak woodlands interspersed with areas of annual grassland cover the majority of the western portion of the site. The site has been disturbed through past farming and agriculture, development of the site with the existing structures, and construction and maintenance of farm roads and fences.

Tuolumne Road borders the project site to the west and south. Existing land uses surrounding the project site include a CalFire Station and commercial/industrial development to the north, the Tuolumne County Ambulance Station and Emergency Operations Center to the southeast, and commercial/industrial development to the east.

Project Components

The proposed project would include the subdivision of the 5.0-acre site into 29 residential lots ranging in size from 3,107 sf to 6,164 sf to allow for the construction of 29 detached, manufactured patio homes. Additional site improvements associated with the proposed project would include internal vehicle circulation, stormwater management, and landscaping. Figure 3 and Figure 4 below illustrate the proposed project site plan and vesting tentative subdivision map for the proposed project.

Figure 1
Regional Project Location

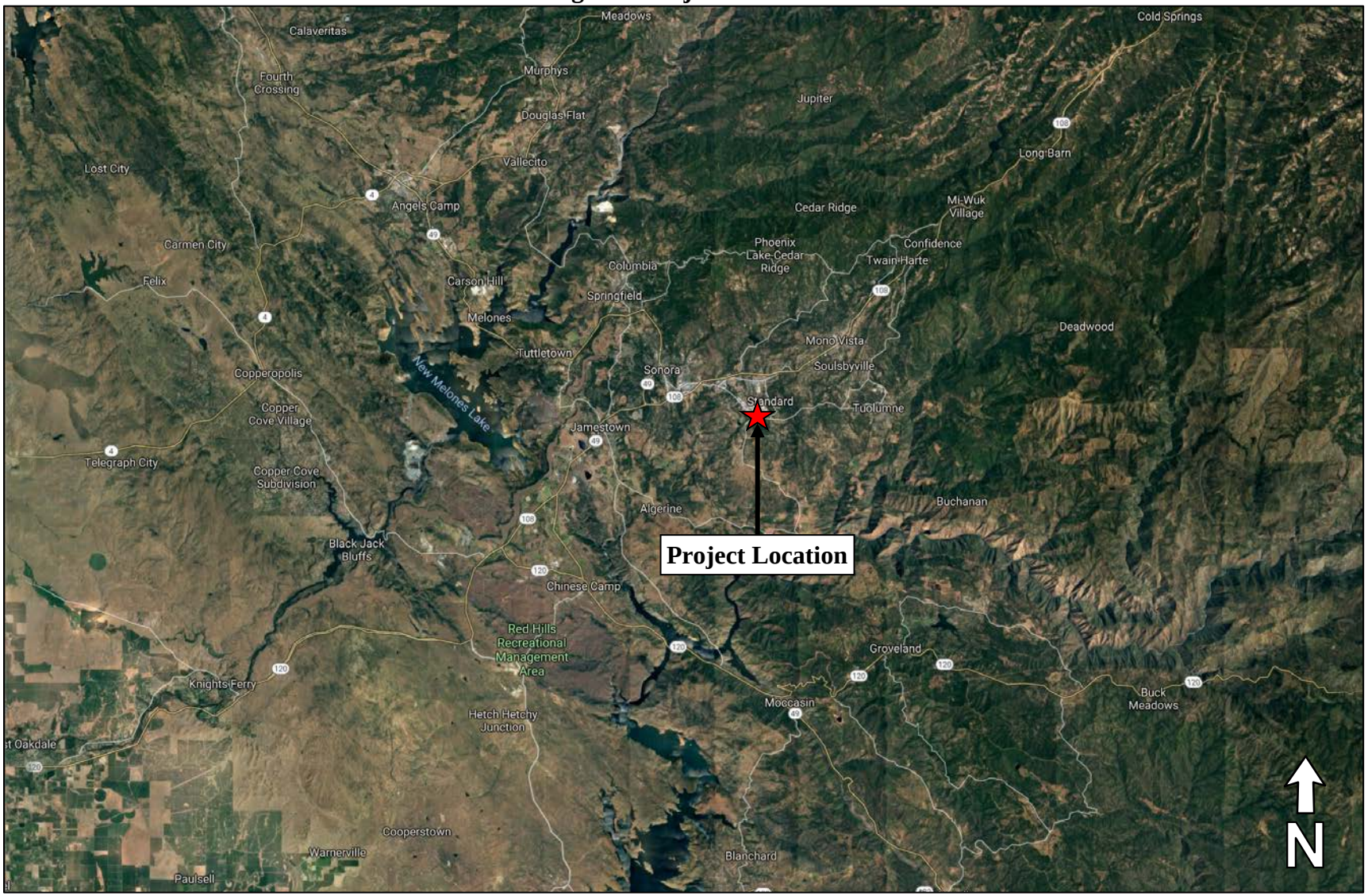


Figure 2
Project Site Boundaries

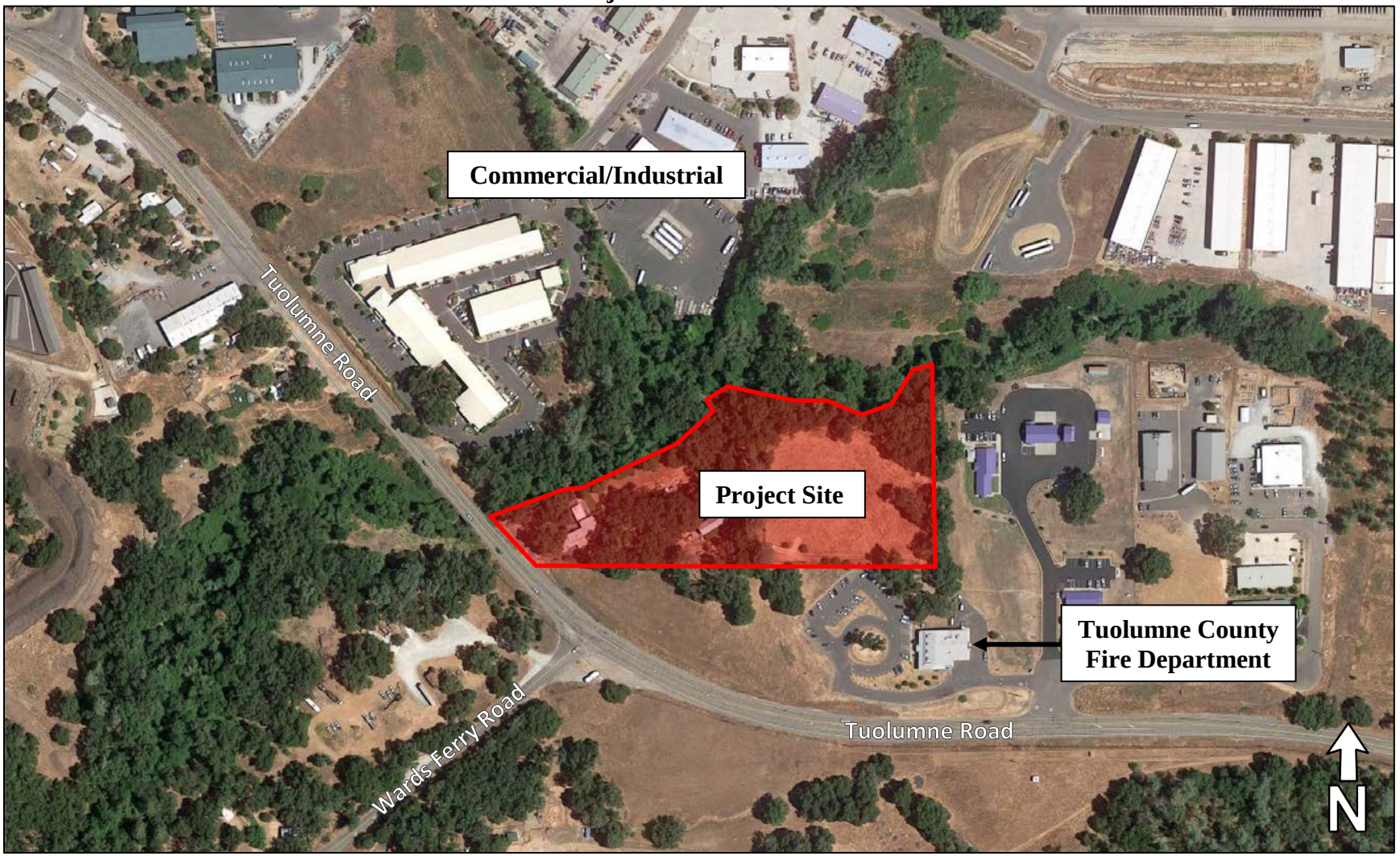
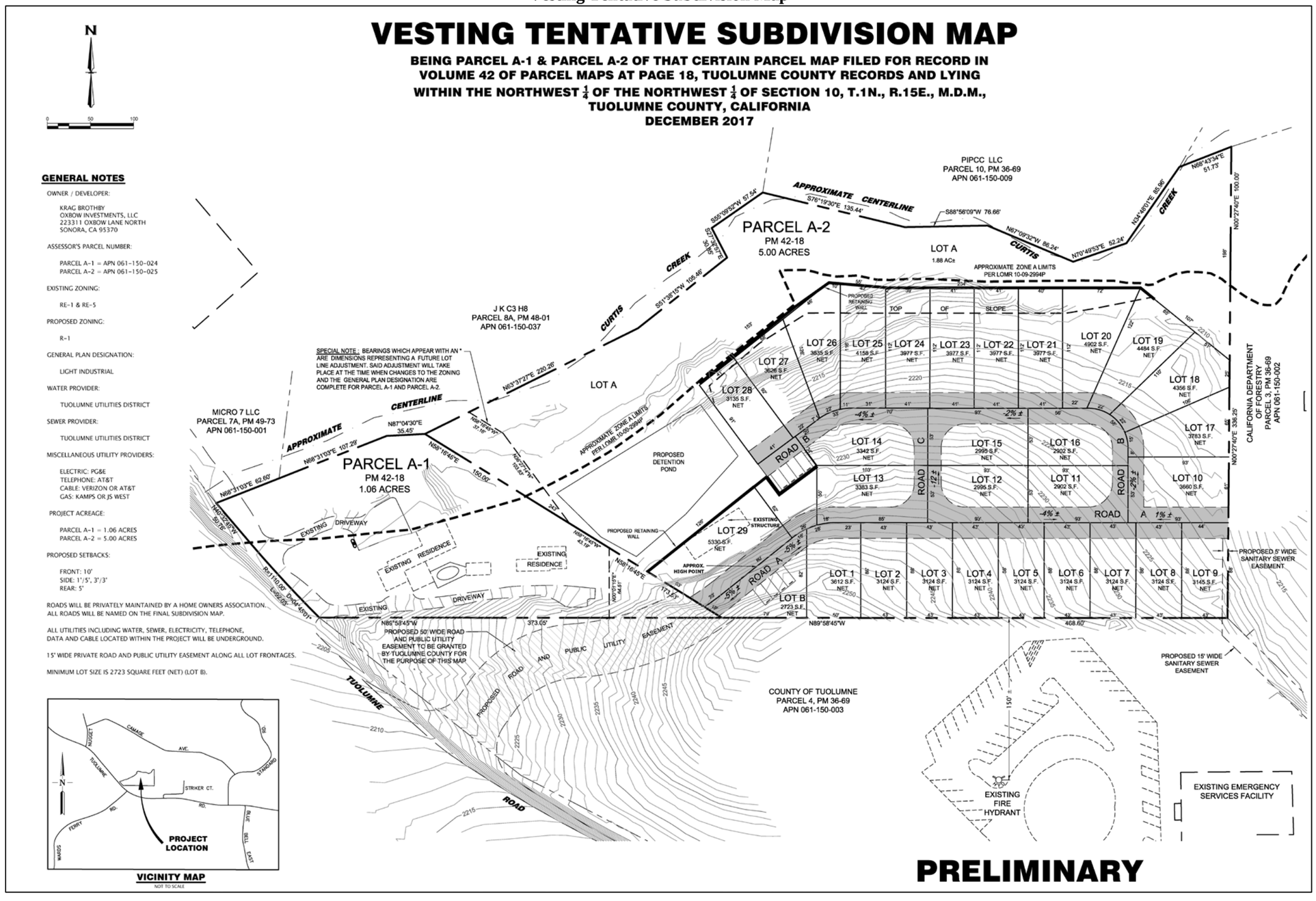


Figure 3
Proposed Site Plan

Figure 4
Vesting Tentative Subdivision Map



The proposed project would require County approval for the following entitlements:

- General Plan Amendment GPA17-009 to amend the General Plan land use designation from LI to Low Density Residential (LDR); and
- Zone Change RZ17-010 to rezone the 5.0-acre project site from RE-1 and RE-5 to R-1:PD (Single Family Residential:Planned Unit Development) under Title 17 of the Tuolumne County Ordinance Code;
- Planned Unit Development (PUD) PUD17-001 to allow the following:
    - Reduction in the minimum lot size to not less than 3,100 sf, and minimum width at front setback of no less than 30 feet;
    - Reduction in the minimum building setbacks from 15 to 10 feet at the front and rear property lines and reduction from a six- to zero-foot setback for side property lines, reduced from six feet, while maintaining 10 feet between structures;
    - Reduction in the number and location of public utility easements required per parcel due to the reduced setbacks; and
- Vesting Tentative Subdivision Map T17-057 to divide the 5.0-acre parcel into 29 lots.

The project components, including the requested approvals, are discussed in detail below.

General Plan Amendment

The current General Plan land use designation for the project site is Light Industrial (LI), which provides for industrial land uses with an emphasis on manufacturing, processing, assembly, storage, distribution, and research and design activities. Under the LI designation, one dwelling unit per parcel is permitted. The proposed project would require approval of a General Plan Amendment in order to change the site's current land use designation from LI to Low Density Residential (LDR). The LDR designation allows for a maximum of six dwelling units per acre, which would be consistent with the proposed project density.

Rezone

The current zoning for the project site parcel is Residential Estate, one acre minimum (RE-1) and Residential Estate, five-acre minimum (RE-5). The purpose of the RE-1 zoning is intended to provide for a suburban-style family living on a variety of parcel sizes and allows a maximum residential building density of six dwelling units per acre. The RE-5 designation is intended for areas where public services are limited and allows a maximum residential density of one dwelling unit per five acres.

The proposed project would include subdivision of the 5.0-acre project site to allow for the construction of 29 single-family residences. The 5.8 dwelling units per acre densities associated with the proposed project would not be permitted under the site's current zoning. Thus, a rezone to Single Family Residential: Planned Unit Development (R-1:PD) would be required in order to allow for implementation of the proposed project.

Planned Unit Development

The site is currently zoned RE-1 and RE-5 and would be rezoned to R1:PD. The purpose of the Planned Unit Development (PD) district is to achieve flexibility, to provide a more desirable living environment than would be possible through the strict application of ordinance requirements, encourage a more creative, efficient, and desirable approach in development and use of land, and to encourage conservation of the County's rural landscapes, oak woodlands, and the natural environment. As part of the PUD, the applicant is proposing to modify the following development standards:

- Reduction in the minimum lot size to not less than 3,100 sf, and minimum width at front setback of no less than 30 feet;
- Reduction in the minimum building setbacks from 15 to 10 feet at the front and rear property lines and a six- to zero-foot setback for side property lines, reduced from six feet (10 feet between structures will be maintained); and
- Reduction in the number and location of public utility easements required per parcel due to the reduced setback.

The PD designation, as requested, would enable the proposed project to more efficiently utilize the project site in order to address County needs for a variety housing opportunities.

Site Access and Circulation

The proposed project would include construction of Road A, a new private right-of-way (ROW) that would be constructed to connect with Tuolumne Road to the west and provide primary access for the project site (see Figure 5). The applicants have purchased the required area from Tuolumne County to obtain access to the site, and a Lot Line Adjustment is being executed to ensure the project site has direct access to Tuolumne Road (see Figure 6). Road B and Road C would be constructed to create internal vehicle circulation for the site.

Utilities

Water supply and sewer utilities for the proposed development would be provided by the Tuolumne Utilities District (TUD) through connections to an existing water main, located south of the site within the Tuolumne Road ROW, and sewer line, located southeast of the project site within the Striker Court ROW (see Figure 7). Implementation of the proposed project would include connection to the existing utility infrastructure within the Tuolumne Road and Striker Court ROWs that would extend to each of the proposed lots.

Stormwater generated by the proposed impervious surfaces within the project site would be directed to the proposed detention pond located north of the proposed emergency access road. The project would include a community-style propane system, in which one or two main tanks would be used to provide gas to the individual proposed units.

Figure 5
Roadway Sections

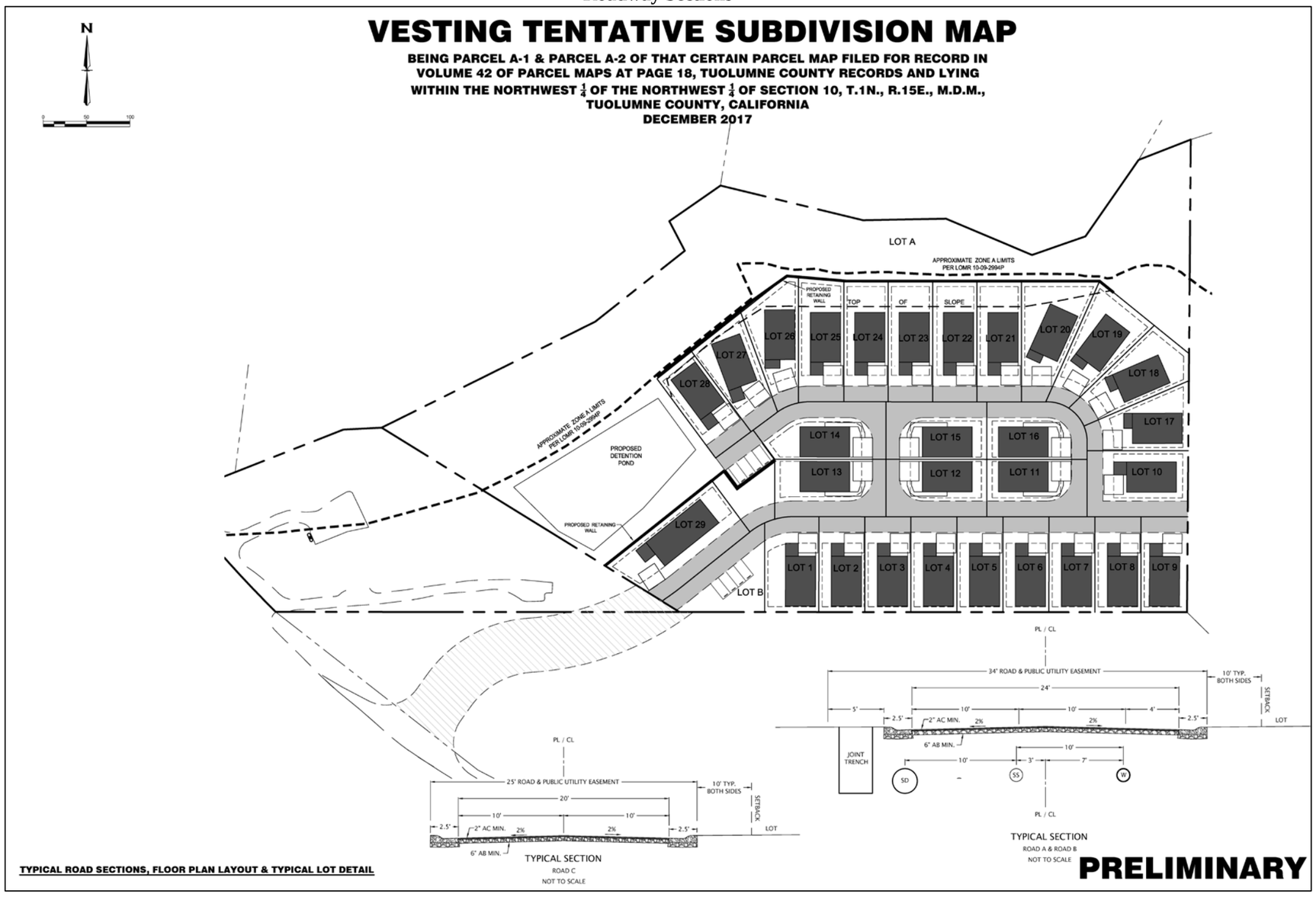


Figure 6
Access Property Purchased from County

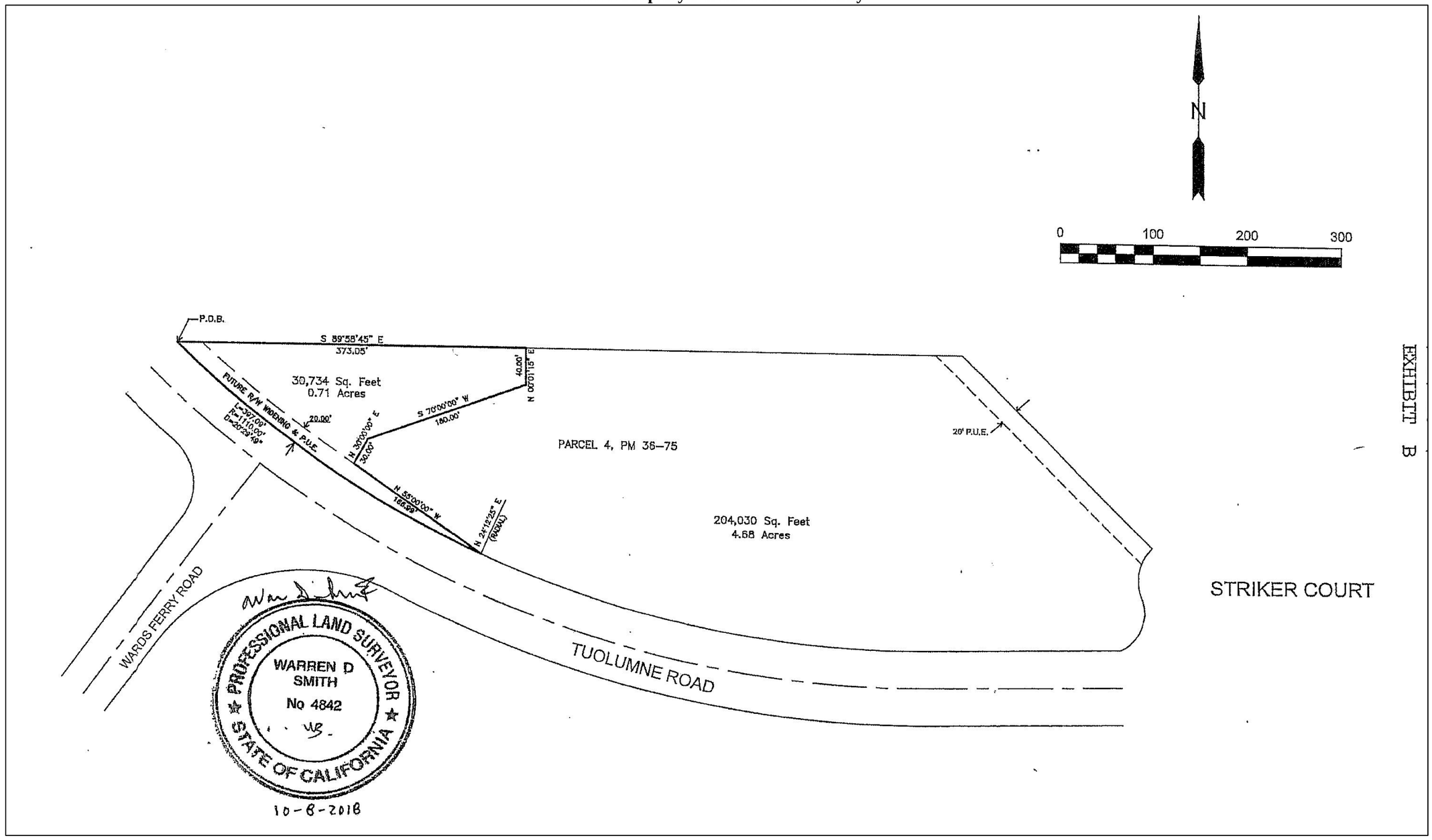
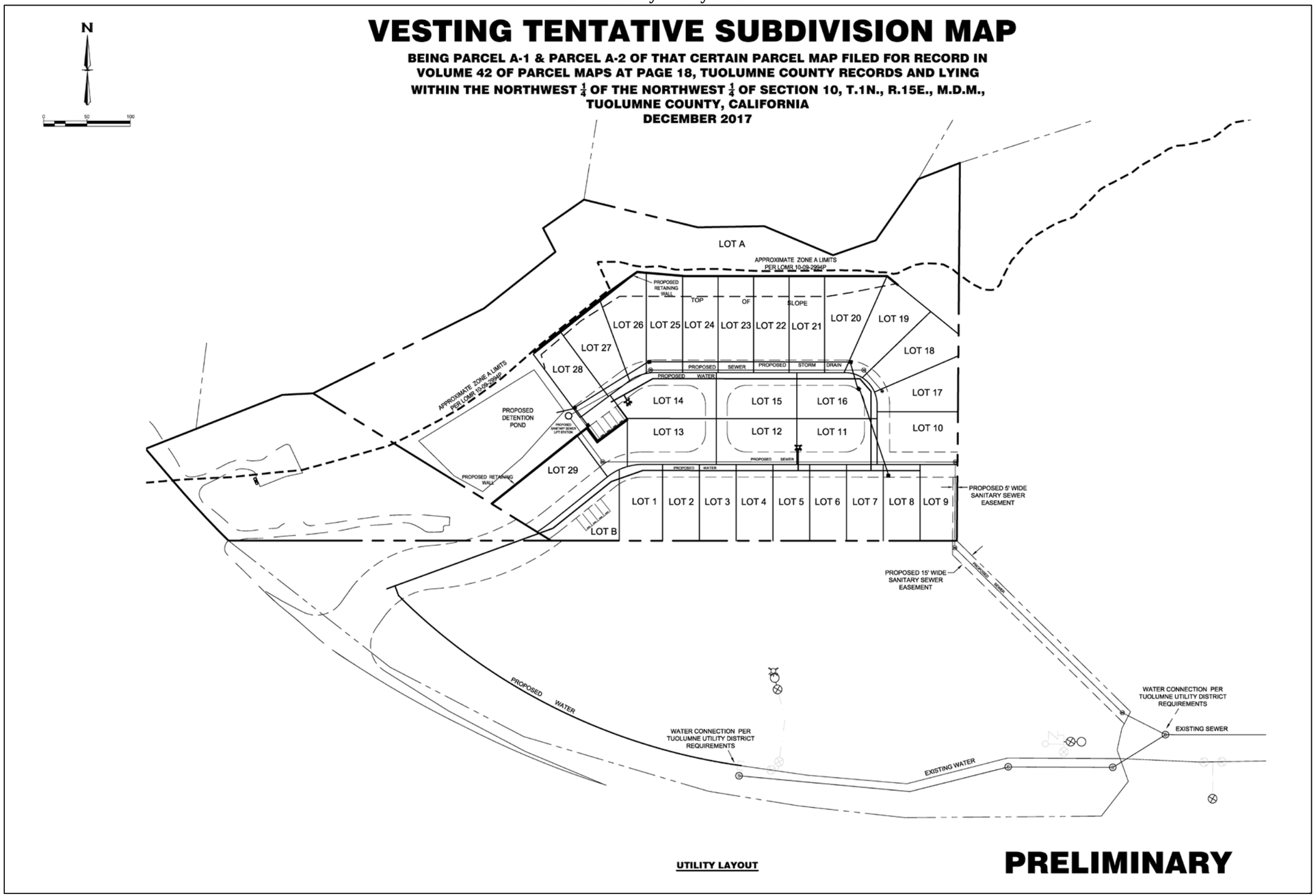


Figure 7
Preliminary Utility Plan



G. ENVIRONMENTAL CHECKLIST

The following Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from 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?	☐	✖	☐	☐

Discussion

a,b. The 5.0-acre project site is located in the County of Tuolumne, California within Township 1 North, Range 10 East of the USGS 7.5-Minute Standard topographic quadrangle. The project site is bounded by Tuolumne Road to the west, Curtis Creek to the north, existing commercial and industrial development to the east, and the Tuolumne County Fire Department to the south. As shown in Figure 8, the project site is predominantly vacant and rural, with ruderal grasses and oak woodlands throughout. Two single-family residences and a barn with associated outbuildings currently exist on the western portion of the project site. Implementation of the proposed project would include the demolition of the barn building in order to accommodate lot #29 on the Vesting Tentative Map. The two existing single-family residences would remain undisturbed.

Scenic vistas are generally considered to be areas where the public can experience unique or high-quality views. Typical examples of scenic vistas include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other area designated for the express purpose of viewing and sightseeing. In general, a project would result in an impact to a scenic vista if development of the project would substantially change or remove a scenic vista. Three officially designated vista points exist within the County and are located on State Route (SR) 120 at miles 19 and 21, which overlook Don Pedro Lake, and mile 44, which overlooks a canyon containing the South Fork of the Tuolumne River. The project site is not located within the vicinity of the officially designated scenic vistas.

Figure 8
Project Site Photos




According to the California Scenic Highway Mapping System, the project site is not located within the vicinity of an officially designated State Scenic Highway.[1] SR 108, located approximately 2.4-miles northwest of the site is an Eligible State Scenic Highway, but has not been officially designated. Because the project site is not visible from SR 108, the proposed project would not have the potential to alter the scenic nature of SR 108. In addition, locally designated scenic routes are not within the vicinity of the project site.[2]

Based on the above, development of the proposed residential subdivision would not have a substantial adverse effect on a scenic vista and would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. Therefore, a ***less-than-significant*** impact would occur.

c. The project site is located within a relatively urbanized area of Tuolumne County, with existing commercial and industrial developments to the north, west, and south. The project site is visible from the public ROW along Tuolumne Road and Striker Court. The proposed project would result in the development of the eastern portions of the project site that have previously been used for agricultural use and are currently covered with ruderal grassland. Following implementation of the proposed project, the project site would undergo a visual change from that of ruderal grassland with limited residential development, to a 29-lot single-family residential subdivision.

The General Plan EIR analyzed build out of the project site with light industrial uses and, thus, potential impacts to views of the project site resulting from development of the project site have been previously analyzed for light industrial uses. The use of the site for a residential subdivision would result in a similar area of disturbance as was previously analyzed in the General Plan EIR and the scale of development that would occur with implementation of the proposed project would be similar to or less than what would occur under the existing General Plan land use designation for the site. As such, while the proposed project would result in a change of the visual character of the site, the proposed project would not substantially degrade the existing visual character or quality of public views of the site and a ***less-than-significant*** impact would occur.

d. Due to the largely undeveloped nature of the project site, the only existing sources of light and glare would be the two existing residences located in the western portion of the site. Development of the project site with the proposed residential subdivision and internal roadways would involve potential sources of light and glare associated with interior light spilling through windows, exterior lighting on the proposed ROWs, and light reflected off windows.

The project site was previously anticipated for light industrial development which would result in levels of light and glare in excess of what currently exists for the project site. Implementation of the proposed residential uses would result in similar levels of light and glare as would be anticipated to occur for a light industrial type development. As such,

[1] California Department of Transportation. *California Scenic Highway Mapping System.* Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed March 2019.

[2] Tuolumne County. *Tuolumne County General Plan Update Draft EIR.* [pg. 4.1-3]. December 2015.

the proposed project would not result in more light and glare than was anticipated for the site in the General Plan EIR; furthermore, the light and glare created by future residential development would be consistent with the levels of light and glare currently emitted in the surrounding developed environment. However, future residential development at the project site would incrementally increase light and glare due to vehicles traveling to and from the development and lighted buildings. Therefore, the approval of the proposed project would result in a ***potentially significant*** impact with respect to creating a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Implementation of Mitigation Measure I-1 would reduce the potential impact to a *less-than-significant* level.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

I-1 *Prior to issuance of a building permit, and subject to the review and approval of the Planning Division of the Tuolumne County Community Resources Agency, construction plans shall show that all exterior lighting of roads, driveways and the exterior of structures shall be designed (aimed down and towards the site) to provide adequate illumination without a glaring effect. Exterior lighting shall have the International Dark Sky fixture seal of approval. Fixtures shall have bulbs that are fully recessed and shielded and shall not emit light above the horizontal plane of the shielding.*

II. AGRICULTURE AND FOREST RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	☐	✖

Discussion

a,e. The project site is predominantly vacant with the exception of the existing barn structure and residences located in the western portion. Although the project site has been historically used as a vineyard, the site has not recently been used for agricultural production and is not zoned or designated in the General Plan for agricultural uses. In addition, according to the State of California Department of Conservation Farmland Mapping and Monitoring Program, the project site does not contain lands designated as important farmland such as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.[3] Given that the project site does not contain lands designated as important farmland, development of the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, or otherwise result in the loss of Farmland to non-agricultural use. Therefore, ***no impact*** would occur.

b. The site is currently designated LI per the County's General Plan and zoned RE-1 and RE-5. Thus, the County anticipated development of the site with industrial uses. The site is not under a current Williamson Act contract and is not zoned for agricultural uses. Therefore, buildout of the project would not conflict with existing zoning for agricultural use or a Williamson Act contact, and ***no impact*** would occur.

[3] State of California Department of Conservation. *Farmland Mapping and Monitoring Program*. Available at: http://www.conservation.ca.gov/dlrp/fmmp. Accessed March, 2019.

c,d. The project area is not considered forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), and is not zoned Timberland Production (as defined by Government Code section 51104[g]). Therefore, the proposed project would have ***no impact*** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	✖	☐
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?	☐	☐	✖	☐

a. The Environmental Protection Agency (EPA) has determined that Tuolumne County has attained the 1997 federal eight-hour ozone standard of 0.08 parts per million (ppm) by July 2011. However, the County's official status remains nonattainment until the State of California submits, and the EPA approves, a redesignation request, maintenance plan and supporting documentation, which may not occur because the 1997 Standard was superseded in 2013. The EPA designated Tuolumne County as "attainment" for the more stringent 2008 eight-hour ozone standard of 0.075 ppm. The County would need to complete a maintenance plan in order to finalize this designation. Regarding State ozone standards, Tuolumne County is still classified as "nonattainment" for the eight-hour ozone standard of 0.07 ppm and the one-hour ozone standard of 0.09 ppm. The non-attainment status of Tuolumne County regarding these standards is overwhelming due to the transport of ozone precursors from the Central Valley, rather than emissions generated in Tuolumne County.

Tuolumne County is designated as a non-attainment area for the state ozone standard and a clean air plan that addresses efforts to reduce ozone precursors within the County does not currently exist. However, the General Plan contains an Air Quality Element which sets forth the following Policies and Implementation Measures designed to address the potential air quality impacts of development projects in the County:

- **Policy 15.A.1:** Accurately determine and fairly mitigate the local and regional air quality impacts of land development projects proposed in the county.
- ***Implementation Measure 15.A.a:*** Coordinate and cooperate with other local, regional and State agencies to develop a consistent and effective approach to air quality planning and management.
- ***Implementation Measure 15.A.b:*** Require an air quality impact evaluation for development projects, as necessary, pursuant to the requirements of the Tuolumne County Air Pollution Control District. The air quality impact evaluation shall be the responsibility of the developer or proponent and prepared by a qualified consultant at their expense.

- ***Implementation Measure 15.A.c:*** Require project applicants to identify alternatives or amendments for proposed projects that would reduce emissions of air pollutants, if air pollutant emissions exceed applicable air quality standards. Require all air quality mitigation to be real, feasible, cost effective, and enforceable.

Based on the above discussion, although Tuolumne County does not have a current air quality plan, the proposed project would be subject to compliance with General Plan Policies and Implementation Measures designed to address the potential air quality impacts of developments project. Furthermore, as discussed under questions b and c below, the proposed project would not result in significant emissions of pollutants. Therefore, the proposed project would have a ***less-than-significant*** impact related to conflicting or obstructing the implementation of an applicable air quality plan.

b. The Tuolumne County Air Pollution District (TCAPD) is the regional air quality authority for the project area and has established thresholds of significance for assessing potential air quality impacts related to development projects. According to the TCAPD, a project would result in a significant environmental impact to air quality if emissions related to implementation of the project were to exceed the following thresholds of significance:

- 100 tons per year (tons/yr) or 1,000 pounds per day (lbs/day) of reactive organic gases (ROG);
- 100 tons/yr or 1,000 lbs/day of oxides of nitrogen (NOx);
- 100 tons tons/yr or 1,000 lbs/day of particulate matter (PM_{10}); or
- 100 tons/yr or 1,000 lbs/day of carbon monoxide (CO).

The proposed project's construction and operational emissions were quantified using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 – a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including construction data, trip generation rates, vehicle mix, trip length, average speed, compliance with the California Building Standards Code (CBSC), etc. Where project-specific information is available, such information should be applied in the model. For the proposed project, default trip generation rates and construction schedules for a 29-unit single-family residential development were used to provide a conservative analysis of construction emissions. Development of the project site with the proposed modular homes would likely result in fewer construction emissions than what has been modeled based on the reduced amount of on-site construction activity associated with modular homes. The emissions intensity factor for electricity consumed at the project site was updated to reflect PG&E's progress towards achieving the State's Renewable Portfolio Standards (RPS). Table 1 below shows the project's maximum estimated construction and operational emissions as modeled.

Table 1
Maximum Project Emissions

Pollutant	Construction		Operational	
	lbs/day	Tons/yr	lbs/day	Tons/yr
ROG	8.75	0.85	47.03	2.28
NO_x	42.57	2.79	4.49	0.63
PM_{10}	20.41	0.24	9.44	0.60
CO	22.94	2.38	69.23	4.45

Source: CalEEMod. April 2019 (see Appendix A)

As shown in Table 1 above, the proposed project would result in construction and operational emissions of criteria air pollutants significantly below the 100 tons/yr and/or 1,000 lbs/day, which are the applicable TCAPCD thresholds of significance for all pollutants. In addition, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the County is nonattainment under an applicable federal or state ambient air quality standard. Therefore, a ***less-than-significant*** impact would result.

c. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Sensitive receptors are typically defined as facilities where sensitive receptor population groups (i.e., children, the elderly, the acutely ill, and the chronically ill) are likely to be located. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest existing sensitive receptors would be the two existing on-site single-family residences located in the western portion of the project site.

The major pollutant of concern for the proposed project would be toxic air contaminant (TAC) emissions. TAC emissions typically result from emissions from vehicles, both construction and operational trips.

The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk.

The proposed single-family development would not involve any land uses or operations that would be considered major sources of TACs, including DPM. As such, the project would not generate any substantial pollutant concentrations during operations. However, short-term, construction-related activities could result in the generation of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. Construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the proposed project. Health risks are typically associated with exposure to high concentrations of TACs over extended periods of time (e.g., 30 years or greater), whereas the construction period associated with the proposed project would likely be limited to one year or less. Furthermore, the proposed project includes placement of pre-fabricated homes on the project site. Because the homes would be pre-fabricated, construction of the proposed project would likely involve fewer pieces of heavy machinery than would be anticipated for a typical development. The relatively short construction period and use of prefabricated structures would ensure that nearby residents would not be exposed to excess pollutant concentrations. Consequently, the proposed project would result in a ***less-than-significant*** impact related to the exposure of sensitive receptors to substantial pollutant concentrations.

d. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative analysis to determine the presence of a significant odor impact is difficult. Typical odor-generating land uses include, but are not limited to, wastewater treatment plants, landfills, and composting facilities. The proposed project would not introduce any such land uses and is not located in the vicinity of any such existing or planned land uses. Consequently, potential odor impacts would be ***less than significant.***

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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, and regulations or by the California Department of Fish and Wildlife or US 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 resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	✖	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	✖	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	✖

Discussion

a. The following discussion is based primarily on a Biological Assessment prepared for the proposed project by Moore Biological Consultants (see Appendix B).[4] As part of the Biological Assessment, Moore Biological Consultants conducted a search of published records of special-status plant and wildlife species for the Standard and Columbia SE topographic quadrangles, using the California Natural Diversity Data Base (CNDDB). The intent of the database review was to identify documented occurrences of special-status species in the vicinity of the project area, to determine their locations relative to the project site, and for use in the field assessment of habitats suitable for special-status species within the site. In addition, on February 20, 2017 and May 5, 2017, Moore Biological Consultants conducted field surveys of the site that consisted of pedestrian surveys noting land uses, vegetation type, plant and wildlife species, and the presence or

[4] Moore Biological Consultants. *Baseline Biological Resources Assessment: 6+/- Acre Curtis Creek Site, Tuolumne County, California.* December 29, 2017.

absence of jurisdictional wetland features. The results of the records search and field surveys are discussed below.

Under CEQA, special-status species include those species meeting the following criteria:

- Plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal and State Endangered Species Acts. Both acts afford protection to listed species;
- California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue;
- U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern;
- Sensitive species included in USFWS Recovery Plans; and
- CDFW special-status invertebrates.

Although CDFW Species of Special Concern generally do not have special legal status, they are given special consideration under CEQA. In addition to regulations for special-status species, most birds in the U.S., including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under the MBTA, destroying active nests, eggs, and young is illegal. In addition, plant species on the California Native Plant Society (CNPS) Lists 1 and 2 are considered special-status plant species and are protected under CEQA.

Currently, the site is predominantly vacant and undeveloped with the exception of an existing barn and outbuildings to be demolished, as well as two existing residences and associated access roads located in the western portion of the site. Per the Biological Assessment, the natural habitat of the project site, and in the vicinity of the site, has been substantially modified by past agricultural uses, previous grading of the site associated with construction of the on-site residences and barn, and urban development of the surrounding area. As a result of past site disturbance, the project site is dominated by ruderal grasslands and oak woodlands.

Special-Status Plants

Special-status plants generally occur in relatively undisturbed areas within vegetation communities such as vernal pools, marshes and swamps, chenopod scrub, seasonal wetlands, riparian scrub, and areas with unusual soil characteristics. The grassland and oak woodland habitats within the project site have been disturbed by past agricultural uses, development of areas adjacent to the project site, and grading of areas of the project site. Due to the history of intensive disturbance of the site and the adjacent area, Moore Biological concluded that, although seven special-status plant species occur or have been recorded within the project region, the project site does not provide suitable habitat for any special-status plant species. In addition, special-status plants were not identified during field observations of the project site conducted by Moore Biological. Therefore, due to the disturbed nature of the site and because special-status plants do not currently occur on the project site, and are not anticipated to be present on the site upon

commencement of construction, construction activities associated with the proposed project would not result in adverse effects to special-status plant species.

Special-Status Wildlife

Based on the results of the CNDDB search, a total of 12 special-status wildlife species have been recorded within the project region. Moore Biological determined that only three of the 12 species identified in the CNDDB search have the potential to occur in the site on more than an occasional or transitory basis. For example, special-status birds may fly over the site; however, none would be expected to nest in the area due to a lack of preferred nesting habitat. Curtis Creek provides potentially suitable habitat for the foothill yellow-legged frog; however, the presence of bullfrogs reduces the suitability for the foothill yellow-legged frog to occur on-site. Curtis Creek also provides potentially suitable habitat for western pond turtle; however, the western pond turtle requires sunny waterways for basking, and such features do not exist within the portions of Curtis Creek on the project site. Consequently, although 12 special-status wildlife species were identified for the project region, only the San Joaquin roach has the potential to be occur within the Curtis Creek riparian corridor portion of the site. In addition, some special-status bat species may use the oak woodland within the site for roosting. All other identified special-status species would not be expected to occur on the site.

Because the proposed project would result in tree removal to allow for the construction of single-family residences, the potential exists for impacts to special status bat species to occur. In addition, while the on-site trees, blackberry brambles, and grasslands are unlikely to support habitat for raptors and other migratory birds, the potential exists for site-clearing activities occurring during the breeding season to impact raptors or migratory birds. Therefore, a ***potentially significant*** impact would result. Implementation of Mitigation Measures IV-1 and IV-2 would reduce the potential impact to a *less-than-significant* level.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

Special-Status Bat Species

IV-1 *Prior to site-clearing activities, to prevent impacts to special status bats that may roost in the site during the maternity season (mid-March through early-November), tree removal shall occur when daytime temperatures are 50 degrees Fahrenheit or higher to ensure bats are active and can abandon any potential roosts. If site clearing activities occur outside of the maternity season for special-status bats (i.e. if site clearing occurs December through February), mitigation is not required. Compliance with the above measure shall be noted on improvement plans and completed to the satisfaction of the Tuolumne County Community Resources Agency.*

Nesting Raptors and Migratory Birds

IV-2 *A pre-construction survey for nesting birds shall be conducted by a qualified biologist within on-site ground-nesting habitat and a 500-foot buffer around the project site boundaries, if feasible, not more than 14 days prior to site disturbance during the breeding season (February 1st to September 15th). If site disturbance commences outside the breeding season, a pre-construction survey for nesting birds is not required. If active nests of migratory birds are not detected on or within approximately 500 feet of the project site, further mitigation is not required. Results of the pre-construction survey shall be submitted to the Tuolumne County Community Resources Agency for verification.*

If active nests are found within 500 feet of the project site, the County's Community Resources Agency shall be notified, and an appropriate no disturbance buffer shall be established around all active nests. The size of the no disturbance buffers shall be 250 feet for migratory bird species and 500 feet for non-listed raptor species. The no disturbance buffers shall be monitored periodically by the project biologist to ensure compliance. After the nesting is completed (i.e. the birds have fledged and are no longer reliant upon the nest or parental care for survival), as determined by the biologist, the buffers would no longer be required. Buffers shall remain in place for the duration of the breeding season or until a qualified biologist has confirmed that all chicks have fledged and are independent of their parents.

b,c. The project site consists primarily of ruderal grasslands, mixed oak woodlands, and the Curtis Creek riparian corridor. The creek borders the site to the north and supports valley oaks and black oaks, as well as a variety of willows, white alder, and Oregon ash. The creek is used by Tuolumne Utility District (TUD) for water conveyance which has substantially modified the flow from natural conditions. In addition, the proposed project would include construction of a stormwater retention basin to the west of the proposed residences. Stormwater would be collected and directed to the retention basin prior to discharge into Curtis Creek at a rate similar to what currently exists for the project site. Moore Biological Consultants determined that the Curtis Creek corridor adjacent to the project site does not represent suitable habitat for special-status plant or animal species because the corridor is primarily shaded and covered with thick blackberry brambles. Development of the project site associated with implementation of the proposed project would take place primarily within body of the upland woodlands and grasslands areas of the site, outside of the riparian corridor; however, the proposed retention basin could include an outfall within Curtis Creek, the construction of which would require ground-disturbing activity within or near the Creek.

The nearby Curtis Creek, located at the northern boundary of the project site, represents the only potentially jurisdictional water of the U.S. and/or wetland within the project site. The creek receives water from the Soulsbyville Ditch, located several miles east of the

site. According to Moore Biological, the potential U.S. Army Corps of Engineers (USACE) jurisdiction is defined either by the ordinary high water mark along the banks of the creek or the adjacent wetlands. A wetland delineation would need to be conducted and submitted to the USACE for verification in order to determine the jurisdictional boundary. Considering the uncertainty regarding the jurisdictional status of Curtis Creek and the final design of the retention basin, construction and ground disturbing activities associated with the project could include ground-disturbing activity within Curtis Creek which could result in a ***potentially significant*** impact to state or federally protected wetlands. Implementation of Mitigation Measure IV-3 would reduce this impact to a *less-than-significant* level.

Mitigation Measure(s)

The following mitigation measures would reduce the above impact to a *less-than-significant* level.

IV-3 *To the extent feasible, the future residential development shall be designed to avoid and minimize adverse effects to the Curtis Creek within the northern portion of the project site. If impacts to the creek would occur as a result of implementation of the future residential development or retention basin outfall structure, then prior to issuance of any grading permits, the project applicant shall acquire a Section 404 permit for fill of jurisdictional wetlands, and mitigation for impacts to jurisdictional waters that cannot be avoided shall be provided in conformance with the U.S. Army Corps of Engineers (USACE) "no-net-loss" policy. If a Section 404 permit is required, the applicant must also obtain a water quality certification from the Regional Water Quality Control Board (RWQCB) under Section 401 of the Clean Water Act (CWA) prior to issuance of any grading permits for lots on which construction could impact Curtis Creek. In addition, prior to issuance of any grading permits for lots on which construction would affect Curtis Creek, the applicant shall enter into a 1602 Streambed Alteration Agreement with California Department of Fish and Wildlife. To avoid or minimize adverse impacts to downstream fish and wildlife resources, the applicant shall implement avoidance and minimization measures to the satisfaction of the Tuolumne County Community Resources Agency, which may include but not necessarily be limited to:*

- *Prior to construction, the authorized construction limits shall be marked in coordination with a qualified biologist.*
- *Vegetation shall not be removed outside of this marked area and construction debris, equipment, or soils shall not be placed outside of the marked area.*
- *Throughout construction, all equipment storage, equipment maintenance, lighting, and staging, shall occur outside of California Department of Fish and Wildlife jurisdictional habitat except for any work authorized through a 1602 Agreement.*

- *Debris, soil, silt, sand, bark, slash, sawdust, rubbish, construction waste, cement or concrete or washings thereof, asphalt, paint, oil or other petroleum products or any other substances which could be hazardous to aquatic life, or other organic or earthen material from any logging, construction, or other associated project-related activity shall not be allowed to contaminate the soil and/or enter into or placed where it may be washed by rainfall or runoff into, waters of the State.*

IV-4 *During project construction, if any ground disturbing activities are to take place within 300 feet of Lot A, as designated on the Vesting Tentative Map, the boundary of Lot A shall be marked with orange construction webbed fencing prior to initiation of such construction activity. Compliance with the above measure shall be noted on improvement plans and completed to the satisfaction of the Tuolumne County Community Resources Agency.*

d. The project site is located in a relatively urbanized area and is bordered by existing roadways to the south, and commercial and industrial developments to the north and east. Thus, the surrounding area does not support any wildlife movement corridors. According to Moore Biological, the project site or surrounding area does not contain streams or other waterways that could be used by migratory fish or as a wildlife corridor for other wildlife species. Although, the San Joaquin roach may be present in Curtis Creek, other fish were not identified as having suitable habitat on the project site and the above mitigation measures would serve to ensure impacts to the Curtis Creek would not occur with implementation of the proposed project. Implementation of the proposed project would include retention of the majority of the on-site riparian areas. The retained riparian areas within the site would continue to facilitate the movement of wildlife, to the extent that such movement currently occurs. As such, the project would not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites. Thus, a ***less-than-significant*** impact would occur.

e. The proposed project would result in the removal of approximately 1.25 acres of oak canopy from the project site. Although the majority of the proposed residential lots would be located on the previously disturbed field located in the eastern portion of the project site, trees around the edges of the field, along the proposed access roads, in the vicinity of the proposed detention basin and along the southern edge of the site would also be removed. Chapter 9.25 of the Tuolumne County Ordinance Code mandates mitigation for the loss of native oak trees or oak canopy due to premature removal. Because the proposed project would remove approximately 1.25 acres of oak canopy from the project site, a ***potentially significant*** impact related to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance could occur. Implementation of Mitigation Measure IV-4 would reduce the impact to a *less-than-significant* level.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant level.*

IV-5 *Prior to issuance of a grading permit, impacts to oak woodland shall be mitigated through on-site replanting, payment into the Tuolumne County Oak Woodland Conservation Fund, or a combination of both methods. The Applicant shall conduct on-site replanting at a ratio of 2:1 with a species composition similar to that found on the project site in order to compensate for the loss of oak woodland habitat.*

If adequate space to complete full on-site replanting is not feasible, the applicant shall pay fees to the Tuolumne County Oak Woodland Conservation Fund in accordance with Chapter 9.24.050 of the Tuolumne County Ordinance Code. Fees shall be paid within sixty days of a determination that removal of oak trees has occurred on the project site. Compliance with the above measures shall be noted on improvement plans and completed to the satisfaction of the Tuolumne County Community Resources Agency.

f. The project site is not located within an area that is subject to an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the proposed project would have ***no impact*** related to a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.

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

Discussion

a-c. The following responses are based primarily on a Cultural Resource Assessment for the project site conducted by Peak & Associates, Inc. in August 2015 (see Appendix C).[5] As part of the Cultural Resource Assessment, previous cultural resource surveys and maps of recorded sites within the project area were reviewed by the Central California Information Center of the California Historical Resources Information System (CHRIS).[6]

Currently, the site is predominantly vacant and undeveloped with the exception of two residential buildings and a barn located near the western border of the site. Historical resources are features that are associated with the lives of historically-important persons and/or historically-significant events, that embody the distinctive characteristics of a type, period, region or method of construction, or that have yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation. Examples of typical historical resources include, but are not limited to, buildings, farmsteads, rail lines, bridges, and trash scatters containing objects such as colored glass and ceramics. The results of the CHRIS records search of the project site area indicated that a single recorded resource (P-55-003745), which consists of the remains of two old Curtis Creek bridges, exists within the project site.

On May 11, 2015, a field review of the project site was conducted by Michael Lawson of Peak and Associates. Surface vegetation throughout the site obscured ground visibility and was removed at intervals to provide visibility. Along the banks of Curtis Creek, thick riparian growth made surface inspection infeasible. P-55-003745, which straddles the northwestern border of the project site, was determined to be potentially eligible for listing on the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). Although the bridges were not associated with a historically important person, do not represent an architecturally important work, or have the potential to provide data through archeological means, they are remnants of an important historical route to the gold fields from Sonora and represent the historical evolution of small highway bridges at a single location.

[5] Peak & Associates, Inc. *Cultural Resource Assessment for the Krag Brotby Property, Tuolumne, California.* August, 2015.

[6] Central California Information Center. *File No. 9317/O.* April 27, 2015.

Two existing residential buildings located near the western edge of the property and a barn with associated outbuildings were surveyed during the site visit and are collectively referred to as Brotby 1. The three structures which comprise Brotby 1 were determined to lack architectural merit and their materials and construction techniques are considered the norm for the era in which they were constructed. As a result, the buildings associated with Brotby 1 would not be eligible for listing on the NRHP or the CRHP.

A surface find consisting of five red chert percussion flakes, one quartz crystal primary flake, a red chert projectile point base, an obsidian biface fragment, and a mano fragment was discovered and given the designation Brotby 2. Peak & Associates determined that the prehistoric artifacts associated with Brotby 2 could indicate that tool making and food preparation were practiced on the site in a temporary fashion; however, because Brotby 2 was discovered within an existing disturbed area and further artifacts outside of the area were not uncovered, the potential exists for the prehistoric artifacts associated with Brotby 2 to have been graded in with onsite material. Thus, Peak & Associates has determined that, without more information, Brotby 2 is not eligible for listing on the NRHP or CRHR.

Based on the above, P-55-003745 represents the only resource potentially eligible for listing on the NRHP or CRHR. However, because the proposed project would not include development within the northwestern portion of the project site, alterations or disturbances to P55-00375 would not occur. In contrast, Brotby 2 is located in an area where modular homes are proposed and could potentially be disturbed during site construction and grading. Due to the location of Brotby 2 within the potential disturbance area, on September 20, 2016, Peak & Associates conducted test excavations to determine site boundaries, depth, and the research potential of Brotby 2. The excavations and analysis performed by Peak & Associates determined that the likelihood of the Brotby 2 artifacts to have originated off-site is highly likely and, thus, Brotby 2 does not demonstrate any potential to yield information important in prehistory or history. Thus, Brotby 2 is not eligible for listing on the NRHP or CRHR and does not require any mitigation.

Grading and other land disturbing activities have previously occurred throughout the site and would have disturbed any historic features existing within the site at the time. Considering the predominantly undeveloped nature of the site and the previous grading of the project site, surficial historic resources are not expected within the project site. Nevertheless, the potential exists for site grading associated with implementation of the proposed project to result in the disturbance of previously unknown subsurface historical resources, including human remains, and/or historic resources.

Considering that unknown archaeological resources, including human remains, and/or historic resources have the potential to exist on-site, ground-disturbing activity related to project construction could encounter such resources. Therefore, the proposed project could cause a substantial adverse change in the significance of a historic or archaeological resource pursuant to CEQA Guidelines Section 15064.5 and/or disturb human remains, including those interred outside of formal cemeteries during

construction. Therefore, impacts could be considered ***potentially significant***. Implementation of Mitigation Measures V-1 and V-2 below would ensure that impacts related to Brotby 2 would be reduced to a *less-than-significant* level.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

V-1. *If any prehistoric artifacts or other indications of archaeological resources are found during grading and construction activities, all work within 100 feet of the find shall cease and the applicant shall retain a qualified archaeologist to evaluate the find(s). If the resource is determined to be eligible for inclusion in the California Register of Historical Resources and project impacts cannot be avoided, data recovery shall be undertaken. Pursuant to CEQA Guidelines Section 15126.4(b)(3)(C), a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation. This language of this mitigation measure shall be included on any future grading plans and/or utility plans approved by the County for future development on the proposed project site.*

V-2. *If human remains are discovered during grading and construction activities occurring on the project site, further disturbance shall not occur within 100 feet of the vicinity of the find(s) until the Tuolumne County Coroner has made the necessary findings as to origin. (California Health and Safety Code Section 7050.5) Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the Tuolumne County Coroner determines the remains to be Native American, the NAHC must be contacted within 24 hours. The NAHC must then identify the "most likely descendant(s)" (MLD). The landowner shall engage in consultations with the MLD. The MLD shall make recommendations concerning the treatment of the remains within 48 hours, as provided in Public Resources Code 5097.98. This language of this mitigation measure shall be included on any future grading plans and/or utility plans approved by the County for future development on the proposed project site.*

VI. ENERGY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	✖	☐

Discussion

a,b. The main forms of available energy supply are electricity, natural gas, and oil. A description of the 2016 California Green Building Standards Code and the Building Energy Efficiency Standards, with which the proposed project would be required to comply, as well as discussions regarding the proposed project's potential effects related to energy demand during construction and operations are provided below.

California Green Building Standards Code

The 2016 California Green Building Standards Code, otherwise known as the CALGreen Code (CCR Title 24, Part 11), is a portion of the California Building Standards Commission (CBSC), which became effective with the rest of the CBSC on January 1, 2017. The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the CALGreen Code include, but are not limited to, the following measures:

- Compliance with regulations related to future installation of Electric Vehicle charging infrastructure in residential structures;
- Indoor water use consumption is reduced through the establishment of maximum fixture water use rates;
- Outdoor landscaping must comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills;
- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board.

Building Energy Efficiency Standards

The 2016 Building Energy Efficiency Standards is a portion of the CBSC, which expands upon energy efficiency measures from the 2013 Building Energy Efficiency Standards

resulting in a 28 percent reduction in energy consumption from the 2013 standards for residential structures. Energy reductions relative to previous Building Energy Efficiency Standards are achieved through various regulations including requirements for the use of high efficacy lighting, improved water heating system efficiency, and high-performance attics and walls.

Construction Energy Use

Construction of the proposed project would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the site where energy supply cannot be met via a hookup to the existing electricity grid. Project construction would not involve the use of natural gas appliances or equipment.

Even during the most intense period of construction, due to the different types of construction activities (e.g., site preparation, grading, building construction), only portions of the project site would be disturbed at a time, with operation of construction equipment occurring at different locations on the project site, rather than a single location. In addition, all construction equipment and operation thereof would be regulated per the CARB In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. The In-Use Off-Road Diesel Vehicle Regulation would subsequently help to improve fuel efficiency and reduce GHG emissions. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to reduce demand on oil and emissions associated with construction.

The CARB has recently prepared the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan),[7] which builds upon previous efforts to reduce GHG emissions and is designed to continue to shift the California economy away from dependence on fossil fuels. Appendix B of the 2017 Scoping Plan includes examples of local actions (municipal code changes, zoning changes, policy directions, and mitigation measures) that would support the State's climate goals. The examples provided include, but are not limited to, enforcing idling time restrictions for construction vehicles, utilizing existing grid power for electric energy rather than operating temporary gasoline/diesel-powered generators, and increasing use of electric and renewable fuel-powered construction equipment. The regulation described above, with which the proposed project must comply, would be consistent with the intention of the 2017 Scoping Plan and the recommended actions included in Appendix B of the 2017 Scoping Plan.

[7] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.

Based on the above, the temporary increase in energy use occurring during construction of the proposed project would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, the proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

Operational Energy Use

Following implementation of the proposed project, PG&E would provide electricity to the project site. Energy use associated with operation of the proposed project would be typical of residential uses, requiring electricity and natural gas for interior and exterior building lighting, heating, ventilation, and air conditioning (HVAC), electronic equipment, appliances, and more. Maintenance activities during operations, such as landscape maintenance, would involve the use of electric or gas-powered equipment. In addition to on-site energy use, the proposed project would result in transportation energy use associated with vehicle trips generated by resident commutes.

The proposed residential subdivision project would be subject to all relevant provisions of the most recent update of the CBSC, including the Building Energy Efficiency Standards. Adherence to the most recent CALGreen Code and the Building Energy Efficiency Standards would ensure that the proposed residences would consume energy efficiently through the incorporation of such features as door and window interlocks, direct digital controls for HVAC systems, and high efficiency outdoor lighting. Required compliance with the CBSC would ensure that the building energy use associated with the proposed project would not be wasteful, inefficient, or unnecessary. In addition, electricity supplied to the project by PG&E would comply with the State's RPS, which requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 and to 60 percent by 2030. Thus, a portion of the energy consumed during project operations would originate from renewable sources.

Conclusion

Based on the above, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Thus, a ***less-than-significant*** impact would occur.

VII. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 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 geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	✖	☐
d. Be located on expansive soil, as defined in Table 18-1B 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 wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	✖	☐
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	✖	☐	☐

Discussion

a,c Potential seismic activity and ground shaking associated with the Foothills fault zone represents the primary source of geologic hazards in Tuolumne County. According to the California Department of Conservation, Tuolumne County is not listed within an Alquist-Priolo earthquake fault zone.[8] In addition, the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan indicates that Tuolumne County is within a portion of the state that does not have any record of damaging shaking events since 1800, and earthquake activity throughout the county is substantially below the California State average. As such, the proposed project would not cause substantial adverse effects related to rupture

[8] California Department of Conservation. *Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones.* Available at: https://www.conservation.ca.gov/cgs/Pages/Earthquakes/affected.aspx. Accessed April 1, 2019.

of a known earthquake fault or strong seismic groundshaking due to the location of the project site and the

Liquefaction typically occurs during or following an earthquake. Due to the low risk of severe earthquakes to occur in the County, the risk and danger of liquefaction occurring within the project site is considered low. In addition, subsidence potential is also known to be minimal throughout Tuolumne County, and the County has very "Low" to "Moderate" risk for landslides. Furthermore, the Tuolumne County General Plan Safety Element includes policies intended to minimize the risks associated with ground shaking, fault rupture, ground failure, liquefaction, subsidence, and slope instability.

Therefore, adherence to General Plan policies and the standards of the CBSC would ensure that the proposed project and future residential development would not be subject to a high risk of earthquakes, ground shaking, liquefaction or landslides. As a result, a ***less-than-significant*** impact would occur.

b,d,e. Approval of the proposed project would subdivide the 5.0-acre site into 29 lots allowing for the future development of up to 29 residential units. Future residential development would include grading and construction of building pads on the parcels along with access improvements. Grading for the required access improvements and building pads would be reviewed and approved by the Engineering Division and the Division of Building and Safety, respectively. Grading necessary to construct these improvements would not result in a significant impact on the soil resource provided all grading and excavation on the site adheres to the requirements contained in Chapter 12.20 of the Tuolumne County Ordinance Code – Grading. In addition, because even minor earth moving activities can lead to erosion, the project proponent or subsequent developer(s) must comply with all applicable County regulations governing erosion control which are designed to minimize impacts.

Pursuant to Section 12.20.050(C) of the Tuolumne County Ordinance Code, an Erosion Control Plan is required and must be reviewed and approved by the Engineering Division of the Community Resources Agency for any construction to take place between October 15th and May 15th of any year. All soils disturbed by grading must be reseeded, hydromulched or stabilized as soon as possible before October 15th of the construction year. In the absence of such approved and implemented plans, all construction must cease on or before October 15th of each year. Therefore, compliance with the County Ordinance Code ensures a ***less-than-significant*** impact would occur.

f. According to the County's General Plan EIR, areas of Tuolumne County possess the potential to contain sensitive cultural or paleontological resources. Grading activities associated with buildout of the General Plan could disturb archeological or paleontological resources or human remains from historic populations, in addition to paleontological resources such as fossils. [9] The General Plan puts forth Policies and Programs designed to reduce impacts to such resources such as Implementation Program 9.B.q which requires discretionary entitlements for new development projects subject to

[9] Tuolumne County. *Tuolumne County General Plan Update Draft EIR.* [pg. 4.5-9]. December 2015.

CEQA with the potential to impact subsurface cultural resources to comply with provisions set forth in Sections 21083.2 and 21084.1 of CEQA.

As discussed in section V, Cultural Resources, of this IS/MND, unknown archeological resources, including human remains and/or historic resources, have the potential to exist within the project site and ground-disturbing activity associated with project construction could encounter such resources. As such, the proposed project could have a ***potentially significant*** impact with regard to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Implementation of Mitigation measure VII-1 below would reduce the impact to a *less-than-significant* level.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

VII-1 Implement Mitigation Measures V-1 and V-II.

VIII. GREENHOUSE GAS EMISSIONS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 gasses?	☐	✖	☐	☐

a,b. Emissions of greenhouse gases (GHGs) contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

The California Air Resources Board is the lead agency for implementing AB 32. The Air Resources Board's preliminary recommendations in the Climate Change Scoping Plan for reducing greenhouse gas emissions in California to 1990 levels include:

- Expansion and strengthening of existing energy efficiency programs and building and appliance standards.
- Expansion of the State's investments in renewables portfolios to 33 percent.
- Development of a California cap and trade program that links with other Western Climate Initiative Partner programs to create a regional market system.
- Implementation of existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.
- Targeted fees to fund the State's long-term commitment to AB 32.

The Climate Change Scoping Plan identifies the amount that each sector contributes to California's greenhouse gas emissions. The largest contributor is the transportation sector, which contributes 38 percent of the State's total greenhouse gas emissions. The transportation sector is largely made up of the cars and trucks that move goods and people. Advances in car technology and increases in fuel efficiency are expected to move this sector toward meeting the 1990 emissions standard and reducing overall carbon emissions.

The Electricity and Commercial/Residential Energy sector is the next largest contributor with over 30 percent of the greenhouse gas emissions. Although electricity imported into California accounts for only about 22 percent of our electricity, imports contribute nearly half of the greenhouse gas emissions from electricity because much of the imported

electricity is generated at coal-fired power plants. AB 32 specifically requires the Air Resources Board to address emissions from electricity sources both inside and outside of the State. The amount of carbon dioxide created for a unit of energy combusted is dependent upon how that energy was created. Certain energy providers and sources produce cleaner energy than others. Energy provided to this project site is via Pacific Gas and Electric, which creates a relatively low amount of carbon dioxide per kilowatt produced compared to the rest of the State and the Country.

Future residential development would emit greenhouse gases primarily from direct sources: construction equipment and activities, building operations, and operational project activities, which includes vehicle trips associated with the proposed future residential uses on the site.

The proposed project would be subject to compliance with mitigation measures set forth in the Tuolumne County Regional Blueprint Greenhouse Gas Study (TCRBGGS), which was prepared in January 2012. The purpose of the TCRBGGS is to determine the sources of greenhouse gas emissions in Tuolumne County, identify any direct, indirect, and/or cumulative impacts, and suggest mitigation measures, if necessary, to aid Tuolumne County in meeting the 1990 greenhouse gas emissions standard and reduce overall carbon emissions.

Section 5.2.1 of the TCRBGGS sets forth two sets of screening criteria options to provide lead agencies and project applicants with an indication of whether a proposed project would result in emissions consistent with AB 32 and the countywide target. If a proposed project either is equal to or less than the project size screening criteria in Table 5-8 of the TCRBGGS or incorporates all of the measures identified in Table 5-9 (P-1 through P-4) of the TCRBGGS, then the lead agency or applicant would not need to perform a detailed GHG emissions assessment. If a project does not meet either set of screening criteria, a project specific greenhouse gas study would be required. The screening criteria tables are best used for typical development projects processed by the County, such as residential subdivisions, multi-family residential apartments, condominiums and townhouses, retail commercial, office buildings, and typical warehousing.

Because the project exceeds the maximum size of 4 parcels found in Table 5-8, of the TCRBGGS, the project must comply with all measures identified in Table 5-9 of the TCRBGGS. In addition, Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The Energy Efficiency Standards are found in Title 24 of the California Code of Regulations. Title 24 evaluates the energy budget of the heating, cooling, and domestic hot water systems in a building, and provides a target energy budget that must be achieved within the building envelope. A combination of measures can be taken by a builder to meet the required energy budget, such as increasing insulation, using double pane windows, installing high efficiency heating and cooling systems, installation of Energy Star appliances (water heater, washer, dryer, refrigerator, stove, oven, etc.), and installing solar power for the home.

Without application of the mitigation measures set forth in Table 5-9 of the TCRBGGS, the proposed project could result in a ***potentially significant*** impact related to GHG emissions. Implementation of Mitigation Measure VIII-1 would require the project to adhere to the measures listed in Table 5-9 of the TCRBGG. Thus, with implementation of Mitigation Measure VIII-1, impacts related to GHG emissions resulting from implementation of the proposed project would be reduced to a *less-than-significant* level.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

VIII-1 *Prior to approval of improvement plans, the proposed project shall comply with all measures identified in Table 5-9 of the TCRBGGS as follows:*

- *The proposed project shall be subject to the 2019 CalGreen (California Code of Regulations, Title 24, Part 11) requirements (or the applicable CalGreen code at the time of building permitting), which exceeds the California Energy Code requirements by more than seven percent, based on the 2016 Energy Efficiency Standards requirements, through the installation of energy efficient design, lighting, equipment, appliances, or solar photovoltaic panels that provide 15 percent or more of the project's energy needs.*
- *Should the proposed project include combustion-based heating or cooking elements, the proposed project shall include the use of propane, and not include fuel oil as a heating source.*
- *The proposed project shall provide dedicated and accessible recycling and green waste bins with instructions/education program explaining how to use the bins, what can go into each bin, and the importance of recycling.*

Compliance with the above measures shall be noted on improvement plans and completed to the satisfaction of the Tuolumne County Community Resources Agency.

IX. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	✖	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely 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 Section 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 the risk of loss, injury or death involving wildland fires?	☐	☐	✖	☐

Discussion

a-b. Construction activities associated with the proposed project would involve the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used at the project site and transported to and from the site during construction. However, the project contractor would be required to comply with all California Health and Safety Codes and local County ordinances regulating the handling, storage, and transportation of hazardous and toxic materials. Thus, construction of the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

Residential land uses such as the proposed project are not typically associated with the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. Future residents of the proposed residential subdivision may use common household cleaning products, fertilizers, and herbicides on-site, any of which could contain potentially hazardous chemicals; however, such products would be expected to be used in accordance with label instructions. Due to the regulations governing use of such products and the amount utilized on the site, routine use of such products would not represent a substantial risk to public health or the environment.

Therefore, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and is not located within a quarter mile of an existing school. Thus, a ***less-than-significant*** impact would occur.

c. The project site is not located within a quarter mile of any existing or proposed schools. The nearest school is the Curtis Creek Elementary School, located approximately 0.75-mile northeast of the site. Therefore, the proposed project would have ***no impact*** related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. A review of the Department of Toxic Substances Control (DTSC) database, EnviroStor, which includes lists of hazardous materials sites compiled pursuant to California Government Code Section 65962.5, did not identify any sites on or adjacent to the project site that have used, stored, disposed of, or released hazardous materials.[10] Therefore, the project would not create a significant hazard to the public or the environment associated with such, and ***no impact*** would occur.

e. The nearest airport to the site is the Columbia airport, which is located approximately 7.25 northwest of the site. As such, the project site is not located within two miles of any public airports or private airstrips, and does not fall within an airport land use plan area. Therefore, ***no impact*** related to a safety hazard for people residing or working in the project area related to such would occur.

f. The County adopted the *Emergency Operations Plan for Tuolumne County* in June 2012.[11] The plan provides a basis for future responses to a wide range of countywide hazards and vulnerabilities. The plan outlines the general authority, organization, and response actions for County staff when disasters occur. Implementation of the proposed project would involve the construction of a new access road that would connect to the north side of Tuolumne Road. Construction of the primary and emergency access roads would not result in any substantial modifications to the existing roadway system and, thus, would not physically interfere with the Emergency Plan, particularly with any emergency evacuation routes. Furthermore, the proposed project would not include land uses or operations that could impair implementation of the plan. Therefore, the proposed

[10] California Department of Toxic Substances Control. *EnviroStor*. Available at: https://www.envirostor.dtsc.ca.gov/public/. Accessed April 2, 2019.

[11] County of Tuolumne. *Emergency Operations Plan for Tuolumne County*. June 2012.

project would not interfere with an emergency evacuation or response plan, and a ***less-than-significant*** impact would occur.

g. According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, the project site is not located within a Very High Fire Hazard Severity Zone.[12] Therefore, the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, and a ***less-than-significant*** impact would occur.

[12] California Department of Forestry and Fire Protection. *Tuolumne County Very High Fire Hazard Severity Zones in LRA*. September 2, 2008.

X. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 offsite;	☐	☐	✖	☐
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?	☐	☐	✖	☐

Discussion

a. During the early stages of construction activities, topsoil would be exposed due to grading and excavation of the portions of the site identified for development. After grading and prior to overlaying the ground surface with impervious surfaces, landscaping and the proposed single-family residences, the potential exists for wind and water erosion to discharge sediment and/or urban pollutants into stormwater runoff, which could adversely affect water quality downstream.

The State Water Resources Control Board (SWRCB) regulates stormwater discharges associated with construction activities where clearing, grading, or excavation results in a land disturbance of one or more acres. The County's National Pollutant Discharge Elimination System (NPDES) permit requires applicants to show proof of coverage under the State's General Construction Permit prior to receipt of any construction permits. The State's General Construction Permit requires a Storm Water Pollution Prevention Plan

(SWPPP) to be prepared for the site. A SWPPP describes Best Management Practices (BMPs) to control or minimize pollutants from entering stormwater and must address both grading/erosion impacts and non-point source pollution impacts of the development project. Because the proposed project would disturb greater than one acre of land, the proposed project would be subject to the requirements of the State's General Construction Permit.

Based on the above and pursuant to implementation of the proposed conditions requiring the preparation of a SWPPP, compliance with County Code Section 16.26.230, approved safety provisions pursuant to County Code Section 13.04.060(C), the submittal of a Notice of Intent (NOI), and the enforcement of the County's Grading Ordinance, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality during construction.

Operation

Relative to the current project site conditions or conditions during construction, the proposed project would result in an increase of impervious surfaces and exposed topsoil would be decreased. As a result, the potential for impacts to water quality resulting from exposed topsoil would be reduced. However, impervious surfaces on the project site could contribute incrementally to the degradation of downstream water quality through the release of pollutants during storm events. Typical urban pollutants that would likely be associated with the proposed project include sediment, pesticides, oil and grease, metals, and trash. However, as stated above, the proposed project would be subject to the Construction General Permit and be required to eliminate and reduce pollutant discharged through development of a SWPPP and implementation of BMPs. In addition, the proposed project would include construction of a stormwater retention basin to the west of the proposed residences. Stormwater would be collected within the site and directed to the retention basin prior to discharge into Curtis Creek at a rate similar to what currently exists for the project site.

Conclusion

Based on the above, the proposed project would not result in the violation of water quality standards and degradation of water quality during construction or operation, and a ***less-than-significant*** impact would occur.

b,e. Because the County of Tuolumne is primarily located within the foothills and higher elevations of the Sierra Nevada, subsurface material primarily consists of impermeable granitic and greenstone bedrock which can contribute to low water yield. Individual wells utilize water stored in fractured rock formations and, therefore, are oftentimes located on separate formations than those of neighboring wells.

Water service to the proposed project would be provided by the Tuolumne Utilities District by way of a new connection to an existing water main within the Striker Court ROW. According to the Tuolumne Utilities District, adequate water supply and treatment

capacity exists to support the proposed project.[13] Because the project would utilize connections to existing utility infrastructure and not make use of on-site wells for water supply, the project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

As stated above, the proposed project would make use of a stormwater retention basin that would help to ensure the rate of runoff at project buildout would be similar to pre-project conditions. Additionally, with implementation of the proposed detention basin and the aforementioned BMPs, the proposed project would not create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Based on the above, the proposed project would not substantially decrease groundwater supplies, substantially interfere with groundwater recharge, or conflict with or obstruct implementation of a water quality control plan and a ***less-than-significant*** impact would occur.

ci-ciii. As discussed above and in section IV, Biological Resources, of this IS/MND, Curtis Creek to the north of the project site represents potential jurisdictional waters of the U.S. and/or wetland within the project site. In order to determine the status of the waters in Curtis Creek, a wetland delineation would need to be conducted and submitted to the USACE for verification in order to determine the jurisdictional boundary. Because project operation would make use of a stormwater retention basin that would discharge into Curtis Creek, the potential exists for an increase in surface water runoff from the project site to occur, such that flooding on- or off-site could occur.

Per the County's Phase II MS4 permit, new development is required to reduce pollutant and runoff flows using BMPs to the maximum extent practicable. MS4 Permittees must also comply with Low Impact Development (LID) standards. Development projects, such as the proposed project, are typically required to demonstrate hydromodification management of stormwater such that post-project runoff is maintained equal to or below pre-project flow rates for the 2-year, 24-hour storm event, generally by way of infiltration, rooftop, and impervious area disconnection, bio-retention, or other LID measures that result in post-project flows that mimic pre-project conditions.

As stated above, the proposed project would make use of a stormwater retention basin that would help to ensure the rate of runoff at project buildout would be similar to pre-project conditions. Additionally, with implementation of the proposed detention basin and the aforementioned BMPs, the proposed project would not create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

[13] Antonio Ramirez, Engineering Services Technician, Tuolumne Utilities District. Personal Communication Letter with Quincy Yaley, Tuolumne County Resources Agency. January 29, 2018.

Given that the proposed project would be required to implement BMPs and LID standards to ensure that post-project runoff resulting from the proposed detention basin would remain unchanged from pre-project conditions, the proposed project would result in a ***less-than-significant*** impact.

civ. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for the project site, with the exception of the portions of the site bordering Curtis Creek wherein project development would not occur, the project site is located within an Area of Minimal Flood Hazard (Zone X).[14] In addition, the County will require, as a condition of approval, that disturbance within the Zone X flood zone shall not occur with implementation of the proposed project. The site is not classified as a Special Flood Hazard Area or otherwise located within a 100-year or 500-year floodplain. Therefore, development of the proposed project would not impede or redirect flood flows and ***no impact*** would result.

d. As discussed under question 'civ' above, the project site is not located within a flood hazard zone. Tsunamis are defined as sea waves created by undersea fault movement, whereas a seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir. The project area is not located in proximity to a coastline and would not be potentially affected by flooding risks associated with tsunamis. Seiches do not pose a risk to the proposed project, as the project site is not located adjacent to a large closed body of water. Based on the above, the proposed project would not pose a risk related to the release of pollutants due to project inundation due to flooding, tsunami, or seiche, and ***no impact*** would occur.

[14] Federal Emergency Management Agency. *Flood Insurance Rate Map 06109C0854C*. Effective April 16, 2009.

XI. LAND USE AND PLANNING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	✖	☐

Discussion

a. A project risks dividing an established community if the project would introduce infrastructure or alter land use so as to change the land use conditions in the surrounding community, or isolate an existing land use. The project site currently contains two existing single-family residences and the single-family residential development associated with the proposed project would be consistent with the existing site uses. The proposed project would not alter the existing general development trends in the area or isolate an existing land use. As such, the proposed project would not physically divide an established community and a ***less-than-significant*** impact would occur.

b. The current General Plan land use designation for the project site is LI which provides for industrial land uses with an emphasis on manufacturing, processing, assembly, storage, distribution, and research and development activities. In order for the proposed residential use to comply with the General Plan, the project would require a General Plan Amendment to change the land use of the site from LI to LDR. The proposed project would adhere to the General Plan goals, policies, and objectives regarding economic vitality, fiscal balance, safety, and planning consistency. In addition, the proposed project would be required to adhere to standards established in Chapter 17.18 of the County's Ordinance Code, such as minimum density, building intensity, and parcel size. Furthermore, as discussed throughout this IS/MND, the proposed project would not result in any significant environmental effects that cannot be mitigated to a less-than-significant level by the mitigation measures provided herein. Therefore, a ***less-than-significant*** impact would occur.

XII. MINERAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	☐	✖

Discussion

a,b. According to the United States Geological Survey, known mineral resource recovery sites have not been identified in the immediate project vicinity.[15] Additionally, the General Plan EIR determined that buildout of the planning area, including the project site, would not result in the loss of availability of known mineral resources that would be of value to the region and the residents of the state or a locally important mineral resource recovery site delineated on a local general plan. Therefore, ***no impact*** to mineral resources would occur as a result of development of the project.

[15] Unites States Geological Survey. *Mineral Resources Online Spatial Data.* Available at http://mrdata.usgs.gov/mineral-resources/mrds-us.html. Accessed March 2019.

XIII. NOISE. *Would the project result in:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	✖	☐
e. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?	☐	☐	☐	✖

Discussion

a. Some land uses are considered more sensitive to noise than others, and, thus, are referred to as sensitive noise receptors. Land uses often associated with sensitive noise receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise. In the vicinity of the project site, the nearest existing noise sensitive land uses include the two single-family residences located in the western portion of the project site, approximately 300 feet west from where the majority of construction activities associated with the proposed project would be anticipated to occur.

Sound levels are presented in various ways with the standard unit of measurement being the decibel (dB). Typically, a change in three dB is considered barely perceptible, a change in five dB is considered noticeable, but not a dramatic change, and a change in 10 dB is considered a reduction by half or doubling in loudness. To correlate sound levels measured using a microphone with the manner in which humans perceive noise, an A-weighted filter is applied. The A-weighted filter de-emphasizes low-frequency and very high-frequency sounds in a similar manner as human hearing. The abbreviation dBA is used when the A-weighted sound is used.

The noise environment surrounding the project site is primarily influenced by vehicle traffic traveling along Tuolumne Road to the south and the commercial/industrial development to the north and east. Table 4.11-1 in the General Plan EIR shows that the project site is subject to existing noise levels from Tuolumne Road in excess of 60 dBa at a distance of 200 feet, 65 dBa at a distance of 63 feet, and 70 dBa at a distance of 20 feet.

Implementation 5.A.a of the 1996 Tuolumne County General Plan requires that the County review new public and private development proposals to determine that noise levels from new development would not exceed the adopted noise level standards on land

designated for noise-sensitive uses. The project site was originally analyzed for development with light industrial uses in the General Plan EIR. The proposed project would require a General Plan Amendment and rezone to allow for development of the site with single-family residences. Because residential land uses typically produce less noise than industrial land uses, the proposed project would likely result in a reduction of noise relative to what was previously anticipated for the site in the General Plan EIR. Based on the permitted uses for the existing the RE-1 and RE-5 zoning districts, the amount of noise generated from the approval of the proposed project would result in a less-than-significant impact to generating a 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.

Project Construction Noise

During the construction of the proposed project, heavy equipment would be used for grading, excavation, paving, and building construction, which would increase ambient noise levels when in use. Noise levels would vary depending on the type of equipment used, how the equipment is operated, and how well the equipment is maintained. In addition, noise exposure at any single point outside the project site would vary depending on the proximity of construction activities to that point. Standard construction equipment, such as graders, backhoes, loaders, and trucks, would be used on-site. As such, a temporary increase in noise levels at nearby noise-sensitive receptors could occur during construction activities associated with the proposed project. Therefore, noise levels at nearby sensitive receptors could temporarily and periodically increase above existing levels and a ***potentially-significant*** impact could result. Implementation of Mitigation Measure XIII-1 would reduce the impact to a *less-than-significant* level.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

XIII-1 *Prior to approval of a grading permit, and subject to the review and approval of the Engineering Division of the Tuolumne County Community Resources Agency, construction plans shall require a notation limiting construction activities to the following:*

- *Construction activities shall be restricted to the hours between 7:00 AM and 7:00 PM Monday through Saturday.*
- *Construction activities shall be prohibited on Sundays and County holidays.*
- *All noise-producing project equipment and vehicles using internal combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition.*
- *All mobile or fixed noise-producing equipment used in the project site that are regulated for noise output by a federal, state, or local*

agency shall comply with such regulations while in the course of project activity and must be located as far as is feasible from sensitive receptors.

- *Sound attenuation devices shall be required on construction vehicles and equipment.*

b. Similar to noise, vibration involves a source, a transmission path, and a receiver. However, noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surfaces. As with noise, vibration consists of an amplitude and frequency. A person's perception of the vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration is measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of peak particle velocities (PPV) in inches per second (in/sec). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of PPV.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 2, which was developed by Caltrans, shows the vibration levels that would normally be required to result in damage to structures. As shown in the table, the threshold for architectural damage to structures is 0.20 in/sec PPV and continuous vibrations of 0.10 in/sec PPV, or greater, would likely cause annoyance to sensitive receptors.

The proposed project would only cause elevated vibration levels during construction, as the proposed project would not involve any uses or operations that would generate substantial groundborne vibration. Although noise and vibration associated with the construction phases of the project would add to the noise and vibration environment in the immediate project vicinity, construction activities would be temporary in nature and are required by Mitigation Measure XIII-1 to occur during normal daytime working hours. Because the proposed project would not cause continuous, long-term vibrations, the project would not be expected to result in extended annoyance to the nearby sensitive receptors.

The primary vibration-generating activities associated with the proposed project would occur during grading, placement of utilities, and construction of foundations. Table 3 shows the typical vibration levels produced by construction equipment at various distances. The most substantial source of groundborne vibrations associated with project construction would be the use of vibratory compactors. Use of vibratory compactors/rollers could be required during construction of the proposed on-site drive aisles and parking areas, which would extend along the southern and central portions of the project site.

Potential operation of vibratory compactors/rollers used for construction of the proposed Road A and drive aisles for internal project circulation would operate at a distance of 125 feet or further from the nearest existing structure. Thus, per the vibration levels shown in Table 3, groundborne vibrations would be below the 0.10 in/sec PPV threshold established by Caltrans for annoyance to sensitive receptors.

Based on the above, the proposed project would not expose people to or generate excessive groundborne vibration or groundborne noise levels, and a ***less-than-significant*** impact would occur.

Table 2
Effects of Vibration on People and Buildings

PPV		Human Reaction	Effect on Buildings
mm/sec	in/sec		
0.15 to 0.30	0.006 to 0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10 to 15	0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Caltrans. Transportation Related Earthborne Vibrations. TAV-02-01-R9601. February 20, 2002.

Table 3
Vibration Levels for Various Construction Equipment

Type of Equipment	PPV at 25 feet (in/sec)	PPV at 50 feet (in/sec)
Large Bulldozer	0.089	0.029
Loaded Trucks	0.076	0.025
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.029
Jackhammer	0.035	0.011
Vibratory Hammer	0.070	0.023
Vibratory Compactor/roller	0.210	0.070

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006.

e. The nearest airport to the site is the Columbia airport, which is located approximately 7.25 northwest of the site. The site is not covered by an airport land use plan. Given that the project site is not located within two miles of a public airport or public use airport, the proposed project would not expose people residing or working the project area to excessive noise levels associated with airports. Thus, ***no impact*** would occur.

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

Discussion

a,b. The proposed project would subdivide the 5.0-acre site into 29 lots and would include a General Plan Amendment to LDR and a Rezone to R-1:PD, allowing for future development of the site with 29 residential units. Based on the 2014 estimated 2.28 average household size for the County,[16] the proposed project could lead to an increase in the population growth of approximately 66 people. Although the proposed project would result in population growth in the area, an increase in approximately 66 people would not be considered a substantial amount of population growth. In addition, while the project site currently contains two existing residences on the western edge of the parcel, construction activities associated with the proposed project would take place primarily in the eastern portion of the project site and would not disturb the existing residences.

Based on the above, implementation of the proposed project would not result in substantial unplanned population growth or the displacement of substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. Therefore, the proposed project would have a ***less-than-significant*** impact.

[16] Tuolumne County. *Tuolumne County General Plan Update Draft EIR* [pg. 4.12-1]. December 2015.

XV. PUBLIC SERVICES. *Would the project 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:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	✖	☐
b. Police protection?	☐	☐	✖	☐
c. Schools?	☐	☐	✖	☐
d. Parks?	☐	☐	✖	☐
e. Other Public Facilities?	☐	☐	✖	☐

Discussion

a-e. Fire protection services are currently provided to the site by the Tuolumne County Fire Department (TCFD), which is a cooperative fire department with the California Department of Forestry and Fire Protection (CAL FIRE). The TCFD operates 13 fire stations throughout Tuolumne County and is staffed by approximately 187 professional, resident, and volunteer firefighters. The TCFD headquarters is located approximately 1.25-miles north of the project site at 19500 Hillsdale Drive and the nearest station is located immediately adjacent to the project site at 18440 Striker Court. The 2018 General Plan EIR determined that new development associated with the General Plan would be serviced by existing fire stations and would not compromise TCFD response times. However, the associated increase in population resulting from buildout of the General Plan would necessitate an increase of two on-duty full time firefighters to maintain current service ratios. The addition of two additional firefighters would be accommodated by existing facilities and would not require construction of new facilities or expansion of existing facilities. Although the proposed project would require a General Plan Amendment and Rezone, the General Plan EIR analyzed buildout of the General Plan area, including the project site, and determined that impacts related to fire protection would be less-than-significant. Development of the site for residential uses rather than light industrial uses would not result in substantial increases in demand for fire protection services; thus, the proposed project would not result in any increased impacts related to fire protection services.

Police protection services for Tuolumne County are provided by the Tuolumne County Sheriff's Office (TCSD), which provides law enforcement services to all unincorporated areas of the County. The single TCSD station is located approximately four miles northwest of the project site at 28 Lower Sunset Drive in the City of Sonora. Currently, 135 deputies provide law enforcement services to 54,337 residents in the County. While the TCSD does not adhere to specific service ratios, the General Plan EIR determined that an additional 23 deputies would be required by the year 2040 in order to maintain the current service ratios. The addition of 23 deputies would be accommodated within existing facilities and would not require expansion or creation of new facilities.

According to the General Plan EIR, all schools within the County are below capacity. The General Plan is anticipated to result in the addition of approximately 3,611 students by the year 2040; however, new development under the General Plan would be required to pay impact mitigation fees, which would allow school facilities to expand incrementally as needed. Development of the site for residential uses rather than light industrial uses would result in a small increase in new students relative to what was previously analyzed for the site in the General Plan EIR. However, the proposed project would be required to pay impact mitigation fees to schools. As such, the proposed project would not result in any impacts to area schools.

Development associated with the General Plan would result in an increase for other public services such as library and County services. Development associated with the General Plan would occur primarily within the proximity of existing libraries and other County facilities, and the provision and payment of the County Services Impact Mitigation Fee would ensure that all service-providing functions of County government agencies are adequate at buildout.

Although the proposed project would require a General Plan Amendment and Rezone which would result in the addition of 66 residents to the area (29 du x 2.28 persons per household per the General Plan EIR), buildout of the site would not be anticipated to result in an increase in demand for fire protection, police protection, schools, parks, or other public services beyond what was analyzed in the General Plan EIR. Thus, the project would not require the provision of new or physically altered fire protection or police protection facilities beyond what was analyzed in the General Plan EIR. Furthermore, population growth associated with the proposed project would be mitigated for through the payment of the County Services Impact Mitigation and State-manded school impact fees. Therefore, the proposed project would have a ***less-than-significant*** impact related to the need for new or physically altered fire protection, police protection, schools, parks, or other public facilities, the construction of which could cause significant environmental impacts.

XVI. RECREATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	✖	☐

Discussion

a,b. The Standard Park Sports Complex, a 12-acre, County owned and operated facility, is located approximately 0.3-mile east of the project site. Implementation Program 8.D.b. of the Tuolumne County General Plan requires new residential development of five units or more to participate in the provision of recreational facilities for their residents.

Section 16.26.120 of the Tuolumne County Ordinance Code states the following:

> *The Board of Supervisors will require either the dedication of land or the payment of fees in lieu of such dedication, or a combination of any of the above, for the purpose of providing park and recreational facilities to serve future residents of the subdivision.*

Because recreational facilities are not included as part of the proposed project, the project applicant must, therefore, pay an in-lieu recreation fee. Section 16.26.120(F) of the Ordinance Code states that all park and recreation fees collected shall be placed in a special fund independent of the general fund and expended only for park and recreation acquisition and development. In addition, any fees collected shall be committed within five years after the payment of such fees or the issuance of building permits on one-half the lots created by a subdivision, whichever occurs first.

Therefore, if approved, with payment of in-lieu recreation fees on a per lot basis at the time of building permit issuance for each lot, the proposed project would have a ***less-than-significant*** impact on recreation facilities.

XVII. TRANSPORTATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 section 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?	☐	☐	✖	☐

Discussion

a. Tuolumne County has adopted a land use impact program to establish policies to maintain the level of service (LOS) standards outlined in the Transportation and Circulation Element of the General Plan. LOS is used to describe the quality of traffic flow on streets and highways by assigning a letter grade from A to F that corresponds to progressively worsening traffic conditions on a particular roadway that exceed capacity. LOS A is indicative of free-flowing traffic, while LOS E and F are indicative of roadways capacities and long delays at intersections. The County considers a LOS of D or better to be acceptable.

The proposed project is located north of Tuolumne Road, generally between Nugget Road to the northwest and Standard Road to the east. Table 4.15-3 in the General Plan EIR shows existing roadways within the County that operate at an unacceptable LOS, and the proposed project is not located within close proximity to roads or intersections identified in the General Plan EIR as having an unacceptable LOS.

The proposed project would subdivide the 5.0-acre site into 29 residential lots to be developed with 29 single-family residences. The introduction of 29 residences to the project site would generate traffic on local roadways. In order to determine the effect of the proposed project on the surrounding circulation network, the 9th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual was used. The ITE Trip Generation Manual provides trip generation rates for a wide variety of land uses, including single-family residential. Based on the buildout of the project site with 29 residences, the proposed project would be anticipated to result in 276 average daily trips (ADT), with approximately 22 trips during the AM peak hour and 29 trips during the PM peak hour. The addition of 22 AM peak hour and 29 PM peak hour trips would not be considered substantial. Thus, the proposed project would not result in a degradation of LOS and the surrounding circulation network would maintain acceptable levels of service during peak hours.

The General Plan EIR analyzed buildout of the project site with light industrial uses. The ITE Trip Generation Manual estimated buildout of the 5.0-acre project site with light industrial uses would result in 259 ADTs, with approximately 38 trips during the AM peak hour and 36 trips during the PM peak hour. Compared to buildout of the existing General Plan land use designations, the proposed project would result in a reduction of 16 AM trips and seven PM peak hour trips. Considering that the proposed project would result in a reduction in AM and PM peak hour trips, relative to what was anticipated for the site in the General Plan EIR, impacts to the circulation system resulting from buildout of the project site with 29 single-family residences would remain similar to those anticipated for buildout of the site with light industrial uses.

Based on the above, the surrounding roadways would be expected to operate at an acceptable LOS with implementation of the proposed project. Although the proposed project would require a General Plan Amendment to change the site's land use designation from LI to LDR, the proposed project would be anticipated to result in a decrease in AM and PM peak hour trips relative to what was anticipated for the site in the General Plan EIR. Thus, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, and a ***less-than-significant*** impact would result.

b. Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Per Section 15064.3, analysis of VMT attributable to a project is the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in Section 15064.3 (b)(2) regarding roadway capacity, a project's effect on automobile delay does not constitute a significant environmental impact under CEQA. It should be noted that currently, the provisions of Section 15064.3 apply only prospectively; determination of impacts based on VMT is not required Statewide until July 1, 2020.

Per Section 15064.3(3), a lead agency may analyze a project's VMT qualitatively based on the availability of transit, proximity to destinations, etc. The proposed project is located within close proximity to a Tuolumne County Transit stop for bus Route 5, located at the Interfaith Community Services building approximately 1,000 feet east of the site. In addition, the project is located within close proximity to employment and recreational uses. Furthermore, the proposed project would include construction of pedestrian walkways throughout the project site. Thus, the proximity of the project site to existing public transit infrastructure as well as a variety of land uses would act to reduce VMT associated with project operations.

Based on the above, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and a ***less-than-significant*** impact would occur.

c,d. Site access would be provided from Tuolumne Road by way of a new ROW designated as Road A. A left turn pocket would be required into the project site from Tuolumne Road in the southeast bound lane. An additional restricted access point on Tuolumne

Road to the west of the project site would provide emergency vehicle access to the proposed residences. As shown in Figure 4, the proposed drive aisles would be sufficient to accommodate the movement of emergency vehicles throughout the site.

Based on the information presented above, adequate access would be provided to the project site. With the exception of the left turn pocket into the project site on the southeast bound lane on Tuolumne Road, the proposed project would not include any modifications to the existing circulation system in the project vicinity. All improvements on Tuolumne Road will occur within the existing road right of way. Therefore, the proposed project would not include any modifications to the existing circulation system that would result in a traffic safety hazard. As such, the project would not substantially increase hazards due to design features or incompatible uses, and emergency access to the site would be adequate. Therefore, the project would result in a ***less-than-significant*** impact.

XVIII. TRIBAL CULTURAL RESOURCES. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 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:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. 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).	☐	✖	☐	☐
b. 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	✖	☐	☐

Discussion

a,b. A search of the CHRIS by the NWIC did not identify any known cultural resources within the project site. The project site has been previously disturbed as a result of previous agricultural uses of the site. However, as discussed in Section V, Cultural Resources, of this IS/MND, Brotby 2, a surface find consisting of five red chert percussion flakes, one quartz crystal primary flake, a red chert projectile point base, an obsidian biface fragment, and a mano fragment was discovered in the southwest corner of the site. Peak & Associates determined that the artifacts associated with Brotby 2 were surface lithic scatter and are not eligible for listing on the NRHP or CRHR.

In compliance with AB 52 (Public Resources Code Section 21080.3.1), a project notification letter was distributed to the Chicken Ranch Rancheria of Me-Wuk Indians. The letter was distributed on March 25, 2019 and a request to consult was not received.

Based on the history of disturbance at the project site and the results of the site survey performed by Peak & Associates, with the exception of Brotby 2, on-site Tribal Cultural resources were not uncovered. Nevertheless, the possibility exists that construction of the proposed project could result in a substantial adverse change in the significance of a Tribal Cultural Resource if previously unknown Tribal Cultural Resources are uncovered during grading or other ground-disturbing activities. Thus, a ***potentially significant*** impact to Tribal Cultural Resources could occur. Implementation of Mitigation Measure XVII-1 would reduce the impact to a *less-than-significant* level.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

XVII-1. Implement Mitigation Measures V-1 and V-2.

XIX. UTILITIES AND SERVICE SYSTEMS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 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?	☐	☐	✖	☐

Discussion

a-c. Water supply and sewer utilities for the proposed development would be provided by the TUD through connections to an existing water main, located south of the site within the Tuolumne Road ROW, and sewer line, located southeast of the project site within the Striker Court ROW. In addition, stormwater from the proposed project would be conveyed into a new, on-site detention basin prior to being discharged into Curtis Creek at a rate that will mimic existing rates of run-off from the site. Electricity, natural gas, and telecommunications utilities would be provided by way of connections to existing infrastructure located within the immediate project vicinity.

Although the proposed project would require a General Plan Amendment to change the current land use designation of the site from LI to LDR, the TUD has indicated, in a letter dated January 29, 2018, that adequate water and wastewater capacity exists to serve the proposed project. The General Plan EIR concluded that the policies within the General Plan would be sufficient to ensure that buildout of the General Plan would result in a less-than-significant impact related to standard utility improvements associated with buildout of the City. Moreover, because development of the project site and area has been previously anticipated for light industrial development in the General Plan, the utility

infrastructure within the project vicinity has been designed with adequate capacity to accommodate demand from development of the project site.

Considering that utility infrastructure within the project vicinity has been designed to accommodate development of the project site, and TUD has indicated that adequate capacity exists to serve the proposed project, the project would result in a ***less-than-significant*** impact related to 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.

d,e. Solid waste in Tuolumne County is collected by three solid waste providers: Cal Sierra Disposal; Burns Refuse Service; and Moore Bros. Scavenger Co. and is disposed of at the Highway 59 landfill in Merced. The Highway 59 landfill has a maximum permitted throughput of 1,500 tons per day and receives 677.6 tons per day six days per week.[17] The General Plan EIR determined that buildout of the General Plan, including the anticipated buildout of the project site with industrial uses, would contribute to approximately 26.1 tons per day to the Highway 59 landfill. The Merced County Regional Waste Management Authority estimates that the Highway 59 landfill will have remaining capacity until at least 2080. Therefore, the buildout of the project site with single-family residences associated with the proposed project would not 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 and would comply with federal, State, and local management and reduction statutes and regulations related to solid waste. Therefore, a ***less-than-significant*** impact related to solid waste would occur as a result of the proposed project.

[17] Tuolumne County. *Tuolumne County General Plan Update Draft EIR* [pg. 4.16-18]. December 2015.

XX. WILDFIRE. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	✖	☐

Discussion

a-d. According to the CAL FIRE Fire and Resource Assessment Program, the project site is not located within a Very High Fire Hazard Severity Zone.[18] The project site is located within a relatively urbanized area in unincorporated Tuolumne County, within close proximity to existing development to the north, south, and east, and is not located in a State Responsibility Area (SRA).[19] The nearest SRA is located approximately 300 feet south of the project site, across Tuolumne Road. Therefore, the proposed project would not be subject to excess risks related to wildfires, and a ***less-than-significant*** impact would occur.

[18] California Department of Forestry and Fire Protection. *Tuolumne County Very High Fire Hazard Severity Zones in LRA*. September 2, 2008.

[19] California Department of Forestry and Fire Protection. *Tuolumne County Fire Hazard Severity Zones in SRA.* November 7, 2007.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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?	☐	☐	✖	☐

Discussion

a. As discussed in Section IV, Biological Resources, of this Initial Study, while the potential exists for bats as well as nesting raptors and migratory birds protected by the MBTA to occur on-site, Mitigation Measures IV-1 through IV-3 would ensure that impacts to special-status species would be less-than-significant. The project site is predominantly undeveloped, has been previously disturbed, and, although historic resources such as the existing bridges occur on-site, project implementation would take place on the eastern portion of the site, away from such resources. Thus, implementation of the proposed project is not anticipated to have the potential to result in impacts related to historic or prehistoric resources. Nevertheless, Mitigation Measures V-1 and V-2 would ensure that in the event that historic or prehistoric resources are discovered within the project site, such resources are protected in compliance with the requirements of CEQA.

Considering the above, the proposed project would not result in significant impacts associated with the following: 1) degrade the quality of the environment; 2) substantially reduce or impact the habitat of fish or wildlife species; 3) cause fish or wildlife populations to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; or 6) eliminate important examples of the major periods of California history or prehistory. Therefore, a ***less-than-significant*** impact would occur.

b. The proposed project in conjunction with other development within Tuolumne County could incrementally contribute to cumulative impacts in the area. However, as demonstrated in this IS/MND, all potential environmental impacts that could occur as a result of project implementation would be reduced to a less-than-significant level through compliance with the mitigation measures included in this IS/MND, as well as applicable General Plan policies, Ordinance Code standards, and other applicable local and State regulations. As demonstrated throughout this IS/MND, the proposed project would not result in any significant environmental impacts peculiar to the project, and, thus, the proposed project would not contribute any new or additional impacts not previously analyzed in the General Plan EIR. Therefore, when viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, development of the proposed project would not result in a cumulatively considerable contribution to cumulative impacts in Tuolumne County and the project's incremental contribution to cumulative impacts would be ***less than significant.***

c. As described in this IS/MND, the proposed project would comply with all applicable General Plan policies, Ordinance Code standards, other applicable local and State regulations, and mitigation measures included herein. In addition, as discussed in Section III, Air Quality, Section IX, Hazards and Hazardous Materials, and Section XIII, Noise, of this IS/MND, the proposed project would not cause substantial effects to human beings, including effects related to exposure to air pollutants, hazardous materials and noise. Therefore, the proposed project's impact would be ***less than significant***.

APPENDIX A

Oxbow Investments Project

Tuolumne County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	29.00	Dwelling Unit	5.00	52,200.00	83

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	66
Climate Zone	1			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	269.5	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E RPS Calculator

Land Use - *

Construction Phase - *

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	230.00
tblConstructionPhase	PhaseEndDate	2/22/2021	11/30/2021
tblConstructionPhase	PhaseStartDate	1/28/2021	1/13/2021
tblLandUse	LotAcreage	9.42	5.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	269.5

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3118	2.7996	2.3888	3.9000e-003	0.0847	0.1555	0.2402	0.0419	0.1458	0.1877	0.0000	337.4062	337.4062	0.0816	0.0000	339.4468
2021	0.8575	0.3035	0.3745	5.9000e-004	2.9300e-003	0.0174	0.0204	7.8000e-004	0.0169	0.0177	0.0000	51.2806	51.2806	8.3500e-003	0.0000	51.4894
Maximum	**0.8575**	**2.7996**	**2.3888**	**3.9000e-003**	**0.0847**	**0.1555**	**0.2402**	**0.0419**	**0.1458**	**0.1877**	**0.0000**	**337.4062**	**337.4062**	**0.0816**	**0.0000**	**339.4468**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3118	2.7996	2.3888	3.9000e-003	0.0847	0.1555	0.2402	0.0419	0.1458	0.1877	0.0000	337.4058	337.4058	0.0816	0.0000	339.4464
2021	0.8575	0.3035	0.3745	5.9000e-004	2.9300e-003	0.0174	0.0204	7.8000e-004	0.0169	0.0177	0.0000	51.2805	51.2805	8.3500e-003	0.0000	51.4893
Maximum	**0.8575**	**2.7996**	**2.3888**	**3.9000e-003**	**0.0847**	**0.1555**	**0.2402**	**0.0419**	**0.1458**	**0.1877**	**0.0000**	**337.4058**	**337.4058**	**0.0816**	**0.0000**	**339.4464**

Oxbow Investments Project - Tuolumne County APCD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	0.9498	0.9498
2	**4-1-2020**	**6-30-2020**	0.7118	0.7118
3	**7-1-2020**	**9-30-2020**	0.7197	0.7197
4	**10-1-2020**	**12-31-2020**	0.7210	0.7210
5	**1-1-2021**	**3-31-2021**	0.3888	0.3888
6	**4-1-2021**	**6-30-2021**	0.2885	0.2885
7	**7-1-2021**	**9-30-2021**	0.2917	0.2917
		Highest	0.9498	0.9498

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1117	0.0380	2.4617	4.0800e-003		0.3161	0.3161		0.3161	0.3161	29.9558	12.9148	42.8705	0.0280	2.3600e-003	44.2723
Energy	1.8900e-003	0.0162	6.8900e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	49.5121	49.5121	3.6700e-003	1.0300e-003	49.9104
Mobile	0.1742	0.5847	1.9902	3.5600e-003	0.2868	4.6300e-003	0.2915	0.0772	4.3500e-003	0.0815	0.0000	322.7557	322.7557	0.0204	0.0000	323.2645
Waste						0.0000	0.0000		0.0000	0.0000	4.2121	0.0000	4.2121	0.2489	0.0000	10.4352
Water						0.0000	0.0000		0.0000	0.0000	0.5994	1.7595	2.3589	0.0618	1.4900e-003	4.3477
Total	**2.2877**	**0.6389**	**4.4588**	**7.7400e-003**	**0.2868**	**0.3221**	**0.6089**	**0.0772**	**0.3218**	**0.3990**	**34.7673**	**386.9419**	**421.7092**	**0.3627**	**4.8800e-003**	**432.2301**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1117	0.0380	2.4617	4.0800e-003		0.3161	0.3161		0.3161	0.3161	29.9558	12.9148	42.8705	0.0280	2.3600e-003	44.2723
Energy	1.8900e-003	0.0162	6.8900e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	49.5121	49.5121	3.6700e-003	1.0300e-003	49.9104
Mobile	0.1742	0.5847	1.9902	3.5600e-003	0.2868	4.6300e-003	0.2915	0.0772	4.3500e-003	0.0815	0.0000	322.7557	322.7557	0.0204	0.0000	323.2645
Waste						0.0000	0.0000		0.0000	0.0000	4.2121	0.0000	4.2121	0.2489	0.0000	10.4352
Water						0.0000	0.0000		0.0000	0.0000	0.5994	1.7595	2.3589	0.0618	1.4900e-003	4.3477
Total	**2.2877**	**0.6389**	**4.4588**	**7.7400e-003**	**0.2868**	**0.3221**	**0.6089**	**0.0772**	**0.3218**	**0.3990**	**34.7673**	**386.9419**	**421.7092**	**0.3627**	**4.8800e-003**	**432.2301**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Oxbow Investments Project - Tuolumne County APCD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	2/4/2020	5	5	
3	Grading	Grading	2/5/2020	2/14/2020	5	8	
4	Building Construction	Building Construction	2/15/2020	1/1/2021	5	230	
5	Paving	Paving	1/2/2021	1/27/2021	5	18	
6	Architectural Coating	Architectural Coating	1/13/2021	11/30/2021	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 105,705; Residential Outdoor: 35,235; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Oxbow Investments Project - Tuolumne County APCD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	10.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-003	1.2100e-003	0.0114	1.0000e-005	1.1800e-003	1.0000e-005	1.2000e-003	3.1000e-004	1.0000e-005	3.3000e-004	0.0000	1.1292	1.1292	1.0000e-004	0.0000	1.1318
Total	**1.5000e-003**	**1.2100e-003**	**0.0114**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.2000e-003**	**3.1000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.1292**	**1.1292**	**1.0000e-004**	**0.0000**	**1.1318**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-003	1.2100e-003	0.0114	1.0000e-005	1.1800e-003	1.0000e-005	1.2000e-003	3.1000e-004	1.0000e-005	3.3000e-004	0.0000	1.1292	1.1292	1.0000e-004	0.0000	1.1318
Total	**1.5000e-003**	**1.2100e-003**	**0.0114**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.2000e-003**	**3.1000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.1292**	**1.1292**	**1.0000e-004**	**0.0000**	**1.1318**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4253
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4253**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.6000e-004	3.4300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3388	0.3388	3.0000e-005	0.0000	0.3395
Total	**4.5000e-004**	**3.6000e-004**	**3.4300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3388**	**0.3388**	**3.0000e-005**	**0.0000**	**0.3395**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4252
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4252**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.6000e-004	3.4300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3388	0.3388	3.0000e-005	0.0000	0.3395
Total	**4.5000e-004**	**3.6000e-004**	**3.4300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3388**	**0.3388**	**3.0000e-005**	**0.0000**	**0.3395**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0262**	**5.0900e-003**	**0.0313**	**0.0135**	**4.6900e-003**	**0.0182**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.9000e-004	4.5700e-003	1.0000e-005	4.7000e-004	1.0000e-005	4.8000e-004	1.3000e-004	1.0000e-005	1.3000e-004	0.0000	0.4517	0.4517	4.0000e-005	0.0000	0.4527
Total	**6.0000e-004**	**4.9000e-004**	**4.5700e-003**	**1.0000e-005**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**1.3000e-004**	**1.0000e-005**	**1.3000e-004**	**0.0000**	**0.4517**	**0.4517**	**4.0000e-005**	**0.0000**	**0.4527**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0262**	**5.0900e-003**	**0.0313**	**0.0135**	**4.6900e-003**	**0.0182**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	4.9000e-004	4.5700e-003	1.0000e-005	4.7000e-004	1.0000e-005	4.8000e-004	1.3000e-004	1.0000e-005	1.3000e-004	0.0000	0.4517	0.4517	4.0000e-005	0.0000	0.4527
Total	**6.0000e-004**	**4.9000e-004**	**4.5700e-003**	**1.0000e-005**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**1.3000e-004**	**1.0000e-005**	**1.3000e-004**	**0.0000**	**0.4517**	**0.4517**	**4.0000e-005**	**0.0000**	**0.4527**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2427	2.1968	1.9292	3.0800e-003		0.1279	0.1279		0.1203	0.1203	0.0000	265.1934	265.1934	0.0647	0.0000	266.8109
Total	**0.2427**	**2.1968**	**1.9292**	**3.0800e-003**		**0.1279**	**0.1279**		**0.1203**	**0.1203**	**0.0000**	**265.1934**	**265.1934**	**0.0647**	**0.0000**	**266.8109**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0300e-003	0.0479	0.0176	9.0000e-005	2.2300e-003	3.0000e-004	2.5300e-003	6.4000e-004	2.8000e-004	9.3000e-004	0.0000	8.8937	8.8937	3.0000e-004	0.0000	8.9011
Worker	0.0115	9.2600e-003	0.0872	1.0000e-004	9.0400e-003	1.1000e-004	9.1500e-003	2.4000e-003	1.0000e-004	2.5000e-003	0.0000	8.6197	8.6197	7.8000e-004	0.0000	8.6392
Total	**0.0135**	**0.0572**	**0.1047**	**1.9000e-004**	**0.0113**	**4.1000e-004**	**0.0117**	**3.0400e-003**	**3.8000e-004**	**3.4300e-003**	**0.0000**	**17.5133**	**17.5133**	**1.0800e-003**	**0.0000**	**17.5404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2427	2.1968	1.9292	3.0800e-003		0.1279	0.1279		0.1203	0.1203	0.0000	265.1931	265.1931	0.0647	0.0000	266.8106
Total	**0.2427**	**2.1968**	**1.9292**	**3.0800e-003**		**0.1279**	**0.1279**		**0.1203**	**0.1203**	**0.0000**	**265.1931**	**265.1931**	**0.0647**	**0.0000**	**266.8106**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0300e-003	0.0479	0.0176	9.0000e-005	2.2300e-003	3.0000e-004	2.5300e-003	6.4000e-004	2.8000e-004	9.3000e-004	0.0000	8.8937	8.8937	3.0000e-004	0.0000	8.9011
Worker	0.0115	9.2600e-003	0.0872	1.0000e-004	9.0400e-003	1.1000e-004	9.1500e-003	2.4000e-003	1.0000e-004	2.5000e-003	0.0000	8.6197	8.6197	7.8000e-004	0.0000	8.6392
Total	**0.0135**	**0.0572**	**0.1047**	**1.9000e-004**	**0.0113**	**4.1000e-004**	**0.0117**	**3.0400e-003**	**3.8000e-004**	**3.4300e-003**	**0.0000**	**17.5133**	**17.5133**	**1.0800e-003**	**0.0000**	**17.5404**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5000e-004	8.7200e-003	8.2900e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.5000e-004	4.5000e-004	0.0000	1.1582	1.1582	2.8000e-004	0.0000	1.1652
Total	**9.5000e-004**	**8.7200e-003**	**8.2900e-003**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**1.1582**	**1.1582**	**2.8000e-004**	**0.0000**	**1.1652**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	1.9000e-004	7.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0387	0.0387	0.0000	0.0000	0.0387
Worker	5.0000e-005	4.0000e-005	3.4000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0365	0.0365	0.0000	0.0000	0.0366
Total	**6.0000e-005**	**2.3000e-004**	**4.1000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0752**	**0.0752**	**0.0000**	**0.0000**	**0.0753**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5000e-004	8.7200e-003	8.2900e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.5000e-004	4.5000e-004	0.0000	1.1582	1.1582	2.8000e-004	0.0000	1.1652
Total	**9.5000e-004**	**8.7200e-003**	**8.2900e-003**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**1.1582**	**1.1582**	**2.8000e-004**	**0.0000**	**1.1652**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	1.9000e-004	7.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0387	0.0387	0.0000	0.0000	0.0387
Worker	5.0000e-005	4.0000e-005	3.4000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0365	0.0365	0.0000	0.0000	0.0366
Total	**6.0000e-005**	**2.3000e-004**	**4.1000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0752**	**0.0752**	**0.0000**	**0.0000**	**0.0753**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0113	0.1163	0.1319	2.1000e-004		6.1000e-003	6.1000e-003		5.6100e-003	5.6100e-003	0.0000	18.0211	18.0211	5.8300e-003	0.0000	18.1668
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0113**	**0.1163**	**0.1319**	**2.1000e-004**		**6.1000e-003**	**6.1000e-003**		**5.6100e-003**	**5.6100e-003**	**0.0000**	**18.0211**	**18.0211**	**5.8300e-003**	**0.0000**	**18.1668**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	9.9000e-004	9.2100e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9852	0.9852	8.0000e-005	0.0000	0.9873
Total	**1.2800e-003**	**9.9000e-004**	**9.2100e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9852**	**0.9852**	**8.0000e-005**	**0.0000**	**0.9873**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0113	0.1163	0.1319	2.1000e-004		6.1000e-003	6.1000e-003		5.6100e-003	5.6100e-003	0.0000	18.0211	18.0211	5.8300e-003	0.0000	18.1668
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0113**	**0.1163**	**0.1319**	**2.1000e-004**		**6.1000e-003**	**6.1000e-003**		**5.6100e-003**	**5.6100e-003**	**0.0000**	**18.0211**	**18.0211**	**5.8300e-003**	**0.0000**	**18.1668**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	9.9000e-004	9.2100e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9852	0.9852	8.0000e-005	0.0000	0.9873
Total	**1.2800e-003**	**9.9000e-004**	**9.2100e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9852**	**0.9852**	**8.0000e-005**	**0.0000**	**0.9873**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8166					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0252	0.1756	0.2090	3.4000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	29.3624	29.3624	2.0200e-003	0.0000	29.4128
Total	**0.8417**	**0.1756**	**0.2090**	**3.4000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**29.3624**	**29.3624**	**2.0200e-003**	**0.0000**	**29.4128**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1800e-003	1.6800e-003	0.0157	2.0000e-005	1.8200e-003	2.0000e-005	1.8400e-003	4.8000e-004	2.0000e-005	5.0000e-004	0.0000	1.6785	1.6785	1.4000e-004	0.0000	1.6820
Total	**2.1800e-003**	**1.6800e-003**	**0.0157**	**2.0000e-005**	**1.8200e-003**	**2.0000e-005**	**1.8400e-003**	**4.8000e-004**	**2.0000e-005**	**5.0000e-004**	**0.0000**	**1.6785**	**1.6785**	**1.4000e-004**	**0.0000**	**1.6820**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8166					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0252	0.1756	0.2090	3.4000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	29.3624	29.3624	2.0200e-003	0.0000	29.4128
Total	**0.8417**	**0.1756**	**0.2090**	**3.4000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**29.3624**	**29.3624**	**2.0200e-003**	**0.0000**	**29.4128**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1800e-003	1.6800e-003	0.0157	2.0000e-005	1.8200e-003	2.0000e-005	1.8400e-003	4.8000e-004	2.0000e-005	5.0000e-004	0.0000	1.6785	1.6785	1.4000e-004	0.0000	1.6820
Total	**2.1800e-003**	**1.6800e-003**	**0.0157**	**2.0000e-005**	**1.8200e-003**	**2.0000e-005**	**1.8400e-003**	**4.8000e-004**	**2.0000e-005**	**5.0000e-004**	**0.0000**	**1.6785**	**1.6785**	**1.4000e-004**	**0.0000**	**1.6820**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1742	0.5847	1.9902	3.5600e-003	0.2868	4.6300e-003	0.2915	0.0772	4.3500e-003	0.0815	0.0000	322.7557	322.7557	0.0204	0.0000	323.2645
Unmitigated	0.1742	0.5847	1.9902	3.5600e-003	0.2868	4.6300e-003	0.2915	0.0772	4.3500e-003	0.0815	0.0000	322.7557	322.7557	0.0204	0.0000	323.2645

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	276.08	287.39	249.98	769,364	769,364
Total	276.08	287.39	249.98	769,364	769,364

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	37.30	20.70	42.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.483457	0.047842	0.208016	0.157307	0.049674	0.007506	0.019049	0.011796	0.003290	0.001259	0.006861	0.001784	0.002160

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	30.7612	30.7612	3.3100e-003	6.8000e-004	31.0480
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	30.7612	30.7612	3.3100e-003	6.8000e-004	31.0480
NaturalGas Mitigated	1.8900e-003	0.0162	6.8900e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	18.7509	18.7509	3.6000e-004	3.4000e-004	18.8623
NaturalGas Unmitigated	1.8900e-003	0.0162	6.8900e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	18.7509	18.7509	3.6000e-004	3.4000e-004	18.8623

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	351379	1.8900e-003	0.0162	6.8900e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	18.7509	18.7509	3.6000e-004	3.4000e-004	18.8623
Total		**1.8900e-003**	**0.0162**	**6.8900e-003**	**1.0000e-004**		**1.3100e-003**	**1.3100e-003**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**18.7509**	**18.7509**	**3.6000e-004**	**3.4000e-004**	**18.8623**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	351379	1.8900e-003	0.0162	6.8900e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	18.7509	18.7509	3.6000e-004	3.4000e-004	18.8623
Total		**1.8900e-003**	**0.0162**	**6.8900e-003**	**1.0000e-004**		**1.3100e-003**	**1.3100e-003**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**18.7509**	**18.7509**	**3.6000e-004**	**3.4000e-004**	**18.8623**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	251639	30.7612	3.3100e-003	6.8000e-004	31.0480
Total		**30.7612**	**3.3100e-003**	**6.8000e-004**	**31.0480**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	251639	30.7612	3.3100e-003	6.8000e-004	31.0480
Total		**30.7612**	**3.3100e-003**	**6.8000e-004**	**31.0480**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.1117	0.0380	2.4617	4.0800e-003		0.3161	0.3161		0.3161	0.3161	29.9558	12.9148	42.8705	0.0280	2.3600e-003	44.2723
Unmitigated	2.1117	0.0380	2.4617	4.0800e-003		0.3161	0.3161		0.3161	0.3161	29.9558	12.9148	42.8705	0.0280	2.3600e-003	44.2723

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0817					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.8196	0.0355	2.2462	4.0700e-003		0.3149	0.3149		0.3149	0.3149	29.9558	12.5630	42.5188	0.0276	2.3600e-003	43.9121
Landscaping	6.5100e-003	2.4900e-003	0.2156	1.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	0.3517	0.3517	3.4000e-004	0.0000	0.3602
Total	**2.1117**	**0.0380**	**2.4617**	**4.0800e-003**		**0.3161**	**0.3161**		**0.3161**	**0.3161**	**29.9558**	**12.9148**	**42.8705**	**0.0280**	**2.3600e-003**	**44.2723**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0817					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.8196	0.0355	2.2462	4.0700e-003		0.3149	0.3149		0.3149	0.3149	29.9558	12.5630	42.5188	0.0276	2.3600e-003	43.9121
Landscaping	6.5100e-003	2.4900e-003	0.2156	1.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	0.3517	0.3517	3.4000e-004	0.0000	0.3602
Total	**2.1117**	**0.0380**	**2.4617**	**4.0800e-003**		**0.3161**	**0.3161**		**0.3161**	**0.3161**	**29.9558**	**12.9148**	**42.8705**	**0.0280**	**2.3600e-003**	**44.2723**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.3589	0.0618	1.4900e-003	4.3477
Unmitigated	2.3589	0.0618	1.4900e-003	4.3477

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	1.88947 / 1.19119	2.3589	0.0618	1.4900e-003	4.3477
Total		**2.3589**	**0.0618**	**1.4900e-003**	**4.3477**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	1.88947 / 1.19119	2.3589	0.0618	1.4900e-003	4.3477
Total		**2.3589**	**0.0618**	**1.4900e-003**	**4.3477**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.2121	0.2489	0.0000	10.4352
Unmitigated	4.2121	0.2489	0.0000	10.4352

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	20.75	4.2121	0.2489	0.0000	10.4352
Total		**4.2121**	**0.2489**	**0.0000**	**10.4352**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	20.75	4.2121	0.2489	0.0000	10.4352
Total		**4.2121**	**0.2489**	**0.0000**	**10.4352**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Oxbow Investments Project

Tuolumne County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	29.00	Dwelling Unit	5.00	52,200.00	83

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	66
Climate Zone	1			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	269.5	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E RPS Calculator

Land Use - *

Construction Phase - *

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	230.00
tblConstructionPhase	PhaseEndDate	2/22/2021	11/30/2021
tblConstructionPhase	PhaseStartDate	1/28/2021	1/13/2021
tblLandUse	LotAcreage	9.42	5.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	269.5

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.2663	42.5381	22.9356	0.0402	18.2141	2.1991	20.4132	9.9699	2.0232	11.9931	0.0000	3,881.5422	3,881.5422	1.2061	0.0000	3,908.2873
2021	8.7445	17.8659	17.6760	0.0286	0.1397	0.9608	1.0632	0.0370	0.9034	0.9310	0.0000	2,725.6964	2,725.6964	0.7452	0.0000	2,741.3366
Maximum	**8.7445**	**42.5381**	**22.9356**	**0.0402**	**18.2141**	**2.1991**	**20.4132**	**9.9699**	**2.0232**	**11.9931**	**0.0000**	**3,881.5422**	**3,881.5422**	**1.2061**	**0.0000**	**3,908.2873**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.2663	42.5381	22.9356	0.0402	18.2141	2.1991	20.4132	9.9699	2.0232	11.9931	0.0000	3,881.5422	3,881.5422	1.2061	0.0000	3,908.2873
2021	8.7445	17.8659	17.6760	0.0286	0.1397	0.9608	1.0632	0.0370	0.9034	0.9310	0.0000	2,725.6964	2,725.6964	0.7452	0.0000	2,741.3366
Maximum	**8.7445**	**42.5381**	**22.9356**	**0.0402**	**18.2141**	**2.1991**	**20.4132**	**9.9699**	**2.0232**	**11.9931**	**0.0000**	**3,881.5422**	**3,881.5422**	**1.2061**	**0.0000**	**3,908.2873**

Oxbow Investments Project - Tuolumne County APCD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	46.0183	0.8943	57.1792	0.0994		7.6945	7.6945		7.6945	7.6945	805.3802	342.0727	1,147.4529	0.7474	0.0634	1,185.0157
Energy	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296
Mobile	1.1581	3.0868	11.5678	0.0217	1.7195	0.0267	1.7461	0.4611	0.0250	0.4861		2,171.6496	2,171.6496	0.1329		2,174.9708
Total	**47.1868**	**4.0699**	**68.7847**	**0.1217**	**1.7195**	**7.7283**	**9.4478**	**0.4611**	**7.7267**	**8.1878**	**805.3802**	**2,626.9789**	**3,432.3591**	**0.8824**	**0.0654**	**3,473.9161**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	46.0183	0.8943	57.1792	0.0994		7.6945	7.6945		7.6945	7.6945	805.3802	342.0727	1,147.4529	0.7474	0.0634	1,185.0157
Energy	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296
Mobile	1.1581	3.0868	11.5678	0.0217	1.7195	0.0267	1.7461	0.4611	0.0250	0.4861		2,171.6496	2,171.6496	0.1329		2,174.9708
Total	**47.1868**	**4.0699**	**68.7847**	**0.1217**	**1.7195**	**7.7283**	**9.4478**	**0.4611**	**7.7267**	**8.1878**	**805.3802**	**2,626.9789**	**3,432.3591**	**0.8824**	**0.0654**	**3,473.9161**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	2/4/2020	5	5	
3	Grading	Grading	2/5/2020	2/14/2020	5	8	
4	Building Construction	Building Construction	2/15/2020	1/1/2021	5	230	
5	Paving	Paving	1/2/2021	1/27/2021	5	18	
6	Architectural Coating	Architectural Coating	1/13/2021	11/30/2021	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 105,705; Residential Outdoor: 35,235; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Oxbow Investments Project - Tuolumne County APCD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	10.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**		**1.6587**	**1.6587**		**1.5419**	**1.5419**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1582	0.1007	1.1824	1.3600e-003	0.1232	1.4200e-003	0.1246	0.0327	1.3100e-003	0.0340		133.8373	133.8373	0.0119		134.1337
Total	**0.1582**	**0.1007**	**1.1824**	**1.3600e-003**	**0.1232**	**1.4200e-003**	**0.1246**	**0.0327**	**1.3100e-003**	**0.0340**		**133.8373**	**133.8373**	**0.0119**		**134.1337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**		**1.6587**	**1.6587**		**1.5419**	**1.5419**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1582	0.1007	1.1824	1.3600e-003	0.1232	1.4200e-003	0.1246	0.0327	1.3100e-003	0.0340		133.8373	133.8373	0.0119		134.1337
Total	**0.1582**	**0.1007**	**1.1824**	**1.3600e-003**	**0.1232**	**1.4200e-003**	**0.1246**	**0.0327**	**1.3100e-003**	**0.0340**		**133.8373**	**133.8373**	**0.0119**		**134.1337**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1898	0.1208	1.4189	1.6300e-003	0.1479	1.7100e-003	0.1496	0.0392	1.5700e-003	0.0408		160.6047	160.6047	0.0142		160.9604
Total	**0.1898**	**0.1208**	**1.4189**	**1.6300e-003**	**0.1479**	**1.7100e-003**	**0.1496**	**0.0392**	**1.5700e-003**	**0.0408**		**160.6047**	**160.6047**	**0.0142**		**160.9604**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1898	0.1208	1.4189	1.6300e-003	0.1479	1.7100e-003	0.1496	0.0392	1.5700e-003	0.0408		160.6047	160.6047	0.0142		160.9604
Total	**0.1898**	**0.1208**	**1.4189**	**1.6300e-003**	**0.1479**	**1.7100e-003**	**0.1496**	**0.0392**	**1.5700e-003**	**0.0408**		**160.6047**	**160.6047**	**0.0142**		**160.9604**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5523**	**1.2734**	**7.8258**	**3.3675**	**1.1716**	**4.5390**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1582	0.1007	1.1824	1.3600e-003	0.1232	1.4200e-003	0.1246	0.0327	1.3100e-003	0.0340		133.8373	133.8373	0.0119		134.1337
Total	**0.1582**	**0.1007**	**1.1824**	**1.3600e-003**	**0.1232**	**1.4200e-003**	**0.1246**	**0.0327**	**1.3100e-003**	**0.0340**		**133.8373**	**133.8373**	**0.0119**		**134.1337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5523**	**1.2734**	**7.8258**	**3.3675**	**1.1716**	**4.5390**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1582	0.1007	1.1824	1.3600e-003	0.1232	1.4200e-003	0.1246	0.0327	1.3100e-003	0.0340		133.8373	133.8373	0.0119		134.1337
Total	**0.1582**	**0.1007**	**1.1824**	**1.3600e-003**	**0.1232**	**1.4200e-003**	**0.1246**	**0.0327**	**1.3100e-003**	**0.0340**		**133.8373**	**133.8373**	**0.0119**		**134.1337**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0173	0.4067	0.1421	8.3000e-004	0.0202	2.5600e-003	0.0227	5.7900e-003	2.4500e-003	8.2500e-003		86.2124	86.2124	2.7300e-003		86.2808
Worker	0.1055	0.0671	0.7883	9.0000e-004	0.0822	9.5000e-004	0.0831	0.0218	8.7000e-004	0.0227		89.2249	89.2249	7.9000e-003		89.4225
Total	**0.1227**	**0.4738**	**0.9304**	**1.7300e-003**	**0.1023**	**3.5100e-003**	**0.1058**	**0.0276**	**3.3200e-003**	**0.0309**		**175.4373**	**175.4373**	**0.0106**		**175.7033**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0173	0.4067	0.1421	8.3000e-004	0.0202	2.5600e-003	0.0227	5.7900e-003	2.4500e-003	8.2500e-003		86.2124	86.2124	2.7300e-003		86.2808
Worker	0.1055	0.0671	0.7883	9.0000e-004	0.0822	9.5000e-004	0.0831	0.0218	8.7000e-004	0.0227		89.2249	89.2249	7.9000e-003		89.4225
Total	**0.1227**	**0.4738**	**0.9304**	**1.7300e-003**	**0.1023**	**3.5100e-003**	**0.1058**	**0.0276**	**3.3200e-003**	**0.0309**		**175.4373**	**175.4373**	**0.0106**		**175.7033**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0143	0.3730	0.1257	8.2000e-004	0.0202	1.3300e-003	0.0215	5.7900e-003	1.2700e-003	7.0700e-003		85.8239	85.8239	2.5000e-003		85.8865
Worker	0.0997	0.0608	0.7089	8.8000e-004	0.0822	8.9000e-004	0.0830	0.0218	8.2000e-004	0.0226		86.5086	86.5086	7.0900e-003		86.6858
Total	**0.1140**	**0.4338**	**0.8346**	**1.7000e-003**	**0.1023**	**2.2200e-003**	**0.1045**	**0.0276**	**2.0900e-003**	**0.0297**		**172.3325**	**172.3325**	**9.5900e-003**		**172.5723**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0143	0.3730	0.1257	8.2000e-004	0.0202	1.3300e-003	0.0215	5.7900e-003	1.2700e-003	7.0700e-003		85.8239	85.8239	2.5000e-003		85.8865
Worker	0.0997	0.0608	0.7089	8.8000e-004	0.0822	8.9000e-004	0.0830	0.0218	8.2000e-004	0.0226		86.5086	86.5086	7.0900e-003		86.6858
Total	**0.1140**	**0.4338**	**0.8346**	**1.7000e-003**	**0.1023**	**2.2200e-003**	**0.1045**	**0.0276**	**2.0900e-003**	**0.0297**		**172.3325**	**172.3325**	**9.5900e-003**		**172.5723**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1495	0.0912	1.0634	1.3100e-003	0.1232	1.3400e-003	0.1246	0.0327	1.2300e-003	0.0339		129.7629	129.7629	0.0106		130.0288
Total	**0.1495**	**0.0912**	**1.0634**	**1.3100e-003**	**0.1232**	**1.3400e-003**	**0.1246**	**0.0327**	**1.2300e-003**	**0.0339**		**129.7629**	**129.7629**	**0.0106**		**130.0288**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1495	0.0912	1.0634	1.3100e-003	0.1232	1.3400e-003	0.1246	0.0327	1.2300e-003	0.0339		129.7629	129.7629	0.0106		130.0288
Total	**0.1495**	**0.0912**	**1.0634**	**1.3100e-003**	**0.1232**	**1.3400e-003**	**0.1246**	**0.0327**	**1.2300e-003**	**0.0339**		**129.7629**	**129.7629**	**0.0106**		**130.0288**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**7.3195**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0199	0.0122	0.1418	1.8000e-004	0.0164	1.8000e-004	0.0166	4.3600e-003	1.6000e-004	4.5200e-003		17.3017	17.3017	1.4200e-003		17.3372
Total	**0.0199**	**0.0122**	**0.1418**	**1.8000e-004**	**0.0164**	**1.8000e-004**	**0.0166**	**4.3600e-003**	**1.6000e-004**	**4.5200e-003**		**17.3017**	**17.3017**	**1.4200e-003**		**17.3372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**7.3195**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0199	0.0122	0.1418	1.8000e-004	0.0164	1.8000e-004	0.0166	4.3600e-003	1.6000e-004	4.5200e-003		17.3017	17.3017	1.4200e-003		17.3372
Total	**0.0199**	**0.0122**	**0.1418**	**1.8000e-004**	**0.0164**	**1.8000e-004**	**0.0166**	**4.3600e-003**	**1.6000e-004**	**4.5200e-003**		**17.3017**	**17.3017**	**1.4200e-003**		**17.3372**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1581	3.0868	11.5678	0.0217	1.7195	0.0267	1.7461	0.4611	0.0250	0.4861		2,171.6496	2,171.6496	0.1329		2,174.9708
Unmitigated	1.1581	3.0868	11.5678	0.0217	1.7195	0.0267	1.7461	0.4611	0.0250	0.4861		2,171.6496	2,171.6496	0.1329		2,174.9708

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	276.08	287.39	249.98	769,364	769,364
Total	276.08	287.39	249.98	769,364	769,364

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	37.30	20.70	42.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.483457	0.047842	0.208016	0.157307	0.049674	0.007506	0.019049	0.011796	0.003290	0.001259	0.006861	0.001784	0.002160

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296
NaturalGas Unmitigated	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	962.681	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296
Total		**0.0104**	**0.0887**	**0.0378**	**5.7000e-004**		**7.1700e-003**	**7.1700e-003**		**7.1700e-003**	**7.1700e-003**		**113.2566**	**113.2566**	**2.1700e-003**	**2.0800e-003**	**113.9296**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0.962681	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296
Total		**0.0104**	**0.0887**	**0.0378**	**5.7000e-004**		**7.1700e-003**	**7.1700e-003**		**7.1700e-003**	**7.1700e-003**		**113.2566**	**113.2566**	**2.1700e-003**	**2.0800e-003**	**113.9296**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	46.0183	0.8943	57.1792	0.0994		7.6945	7.6945		7.6945	7.6945	805.3802	342.0727	1,147.4529	0.7474	0.0634	1,185.0157
Unmitigated	46.0183	0.8943	57.1792	0.0994		7.6945	7.6945		7.6945	7.6945	805.3802	342.0727	1,147.4529	0.7474	0.0634	1,185.0157

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4474					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1171					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	44.3815	0.8667	54.7841	0.0993		7.6813	7.6813		7.6813	7.6813	805.3802	337.7647	1,143.1449	0.7432	0.0634	1,180.6038
Landscaping	0.0723	0.0276	2.3951	1.3000e-004		0.0132	0.0132		0.0132	0.0132		4.3080	4.3080	4.1600e-003		4.4119
Total	**46.0183**	**0.8943**	**57.1792**	**0.0994**		**7.6945**	**7.6945**		**7.6945**	**7.6945**	**805.3802**	**342.0727**	**1,147.4529**	**0.7474**	**0.0634**	**1,185.0157**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4474					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1171					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	44.3815	0.8667	54.7841	0.0993		7.6813	7.6813		7.6813	7.6813	805.3802	337.7647	1,143.1449	0.7432	0.0634	1,180.6038
Landscaping	0.0723	0.0276	2.3951	1.3000e-004		0.0132	0.0132		0.0132	0.0132		4.3080	4.3080	4.1600e-003		4.4119
Total	**46.0183**	**0.8943**	**57.1792**	**0.0994**		**7.6945**	**7.6945**		**7.6945**	**7.6945**	**805.3802**	**342.0727**	**1,147.4529**	**0.7474**	**0.0634**	**1,185.0157**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Oxbow Investments Project

Tuolumne County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	29.00	Dwelling Unit	5.00	52,200.00	83

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	66
Climate Zone	1			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	269.5	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per PG&E RPS Calculator

Land Use - *

Construction Phase - *

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	230.00
tblConstructionPhase	PhaseEndDate	2/22/2021	11/30/2021
tblConstructionPhase	PhaseStartDate	1/28/2021	1/13/2021
tblLandUse	LotAcreage	9.42	5.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	269.5

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.2772	42.5775	22.9409	0.0401	18.2141	2.1991	20.4132	9.9699	2.0232	11.9931	0.0000	3,870.1418	3,870.1418	1.2056	0.0000	3,896.8775
2021	8.7542	17.8963	17.6747	0.0285	0.1397	0.9609	1.0632	0.0370	0.9034	0.9310	0.0000	2,716.8852	2,716.8852	0.7448	0.0000	2,732.5252
Maximum	**8.7542**	**42.5775**	**22.9409**	**0.0401**	**18.2141**	**2.1991**	**20.4132**	**9.9699**	**2.0232**	**11.9931**	**0.0000**	**3,870.1418**	**3,870.1418**	**1.2056**	**0.0000**	**3,896.8775**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.2772	42.5775	22.9409	0.0401	18.2141	2.1991	20.4132	9.9699	2.0232	11.9931	0.0000	3,870.1418	3,870.1418	1.2056	0.0000	3,896.8775
2021	8.7542	17.8963	17.6747	0.0285	0.1397	0.9609	1.0632	0.0370	0.9034	0.9310	0.0000	2,716.8852	2,716.8852	0.7448	0.0000	2,732.5252
Maximum	**8.7542**	**42.5775**	**22.9409**	**0.0401**	**18.2141**	**2.1991**	**20.4132**	**9.9699**	**2.0232**	**11.9931**	**0.0000**	**3,870.1418**	**3,870.1418**	**1.2056**	**0.0000**	**3,896.8775**

Oxbow Investments Project - Tuolumne County APCD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	46.0183	0.8943	57.1792	0.0994		7.6945	7.6945		7.6945	7.6945	805.3802	342.0727	1,147.4529	0.7474	0.0634	1,185.0157
Energy	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296
Mobile	1.0003	3.5129	12.0212	0.0203	1.7195	0.0268	1.7463	0.4611	0.0252	0.4863		2,025.4469	2,025.4469	0.1310		2,028.7226
Total	**47.0290**	**4.4960**	**69.2381**	**0.1202**	**1.7195**	**7.7285**	**9.4479**	**0.4611**	**7.7268**	**8.1879**	**805.3802**	**2,480.7762**	**3,286.1564**	**0.8806**	**0.0654**	**3,327.6679**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	46.0183	0.8943	57.1792	0.0994		7.6945	7.6945		7.6945	7.6945	805.3802	342.0727	1,147.4529	0.7474	0.0634	1,185.0157
Energy	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296
Mobile	1.0003	3.5129	12.0212	0.0203	1.7195	0.0268	1.7463	0.4611	0.0252	0.4863		2,025.4469	2,025.4469	0.1310		2,028.7226
Total	**47.0290**	**4.4960**	**69.2381**	**0.1202**	**1.7195**	**7.7285**	**9.4479**	**0.4611**	**7.7268**	**8.1879**	**805.3802**	**2,480.7762**	**3,286.1564**	**0.8806**	**0.0654**	**3,327.6679**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	2/4/2020	5	5	
3	Grading	Grading	2/5/2020	2/14/2020	5	8	
4	Building Construction	Building Construction	2/15/2020	1/1/2021	5	230	
5	Paving	Paving	1/2/2021	1/27/2021	5	18	
6	Architectural Coating	Architectural Coating	1/13/2021	11/30/2021	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 105,705; Residential Outdoor: 35,235; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Oxbow Investments Project - Tuolumne County APCD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	10.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**		**1.6587**	**1.6587**		**1.5419**	**1.5419**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1672	0.1335	1.1877	1.2400e-003	0.1232	1.4200e-003	0.1246	0.0327	1.3100e-003	0.0340		122.4368	122.4368	0.0115		122.7239
Total	**0.1672**	**0.1335**	**1.1877**	**1.2400e-003**	**0.1232**	**1.4200e-003**	**0.1246**	**0.0327**	**1.3100e-003**	**0.0340**		**122.4368**	**122.4368**	**0.0115**		**122.7239**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**		**1.6587**	**1.6587**		**1.5419**	**1.5419**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1672	0.1335	1.1877	1.2400e-003	0.1232	1.4200e-003	0.1246	0.0327	1.3100e-003	0.0340		122.4368	122.4368	0.0115		122.7239
Total	**0.1672**	**0.1335**	**1.1877**	**1.2400e-003**	**0.1232**	**1.4200e-003**	**0.1246**	**0.0327**	**1.3100e-003**	**0.0340**		**122.4368**	**122.4368**	**0.0115**		**122.7239**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2007	0.1602	1.4253	1.4900e-003	0.1479	1.7100e-003	0.1496	0.0392	1.5700e-003	0.0408		146.9242	146.9242	0.0138		147.2687
Total	**0.2007**	**0.1602**	**1.4253**	**1.4900e-003**	**0.1479**	**1.7100e-003**	**0.1496**	**0.0392**	**1.5700e-003**	**0.0408**		**146.9242**	**146.9242**	**0.0138**		**147.2687**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2007	0.1602	1.4253	1.4900e-003	0.1479	1.7100e-003	0.1496	0.0392	1.5700e-003	0.0408		146.9242	146.9242	0.0138		147.2687
Total	**0.2007**	**0.1602**	**1.4253**	**1.4900e-003**	**0.1479**	**1.7100e-003**	**0.1496**	**0.0392**	**1.5700e-003**	**0.0408**		**146.9242**	**146.9242**	**0.0138**		**147.2687**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5523**	**1.2734**	**7.8258**	**3.3675**	**1.1716**	**4.5390**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1672	0.1335	1.1877	1.2400e-003	0.1232	1.4200e-003	0.1246	0.0327	1.3100e-003	0.0340		122.4368	122.4368	0.0115		122.7239
Total	**0.1672**	**0.1335**	**1.1877**	**1.2400e-003**	**0.1232**	**1.4200e-003**	**0.1246**	**0.0327**	**1.3100e-003**	**0.0340**		**122.4368**	**122.4368**	**0.0115**		**122.7239**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5523**	**1.2734**	**7.8258**	**3.3675**	**1.1716**	**4.5390**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1672	0.1335	1.1877	1.2400e-003	0.1232	1.4200e-003	0.1246	0.0327	1.3100e-003	0.0340		122.4368	122.4368	0.0115		122.7239
Total	**0.1672**	**0.1335**	**1.1877**	**1.2400e-003**	**0.1232**	**1.4200e-003**	**0.1246**	**0.0327**	**1.3100e-003**	**0.0340**		**122.4368**	**122.4368**	**0.0115**		**122.7239**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0184	0.4196	0.1636	8.1000e-004	0.0202	2.6300e-003	0.0228	5.7900e-003	2.5200e-003	8.3100e-003		84.8046	84.8046	2.9900e-003		84.8795
Worker	0.1115	0.0890	0.7918	8.3000e-004	0.0822	9.5000e-004	0.0831	0.0218	8.7000e-004	0.0227		81.6246	81.6246	7.6500e-003		81.8159
Total	**0.1299**	**0.5086**	**0.9554**	**1.6400e-003**	**0.1023**	**3.5800e-003**	**0.1059**	**0.0276**	**3.3900e-003**	**0.0310**		**166.4292**	**166.4292**	**0.0106**		**166.6954**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0184	0.4196	0.1636	8.1000e-004	0.0202	2.6300e-003	0.0228	5.7900e-003	2.5200e-003	8.3100e-003		84.8046	84.8046	2.9900e-003		84.8795
Worker	0.1115	0.0890	0.7918	8.3000e-004	0.0822	9.5000e-004	0.0831	0.0218	8.7000e-004	0.0227		81.6246	81.6246	7.6500e-003		81.8159
Total	**0.1299**	**0.5086**	**0.9554**	**1.6400e-003**	**0.1023**	**3.5800e-003**	**0.1059**	**0.0276**	**3.3900e-003**	**0.0310**		**166.4292**	**166.4292**	**0.0106**		**166.6954**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0154	0.3837	0.1451	8.1000e-004	0.0202	1.3900e-003	0.0216	5.7900e-003	1.3300e-003	7.1200e-003		84.3959	84.3959	2.7600e-003		84.4647
Worker	0.1054	0.0806	0.7082	8.0000e-004	0.0822	8.9000e-004	0.0830	0.0218	8.2000e-004	0.0226		79.1255	79.1255	6.8300e-003		79.2962
Total	**0.1208**	**0.4642**	**0.8533**	**1.6100e-003**	**0.1023**	**2.2800e-003**	**0.1046**	**0.0276**	**2.1500e-003**	**0.0297**		**163.5213**	**163.5213**	**9.5900e-003**		**163.7609**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0154	0.3837	0.1451	8.1000e-004	0.0202	1.3900e-003	0.0216	5.7900e-003	1.3300e-003	7.1200e-003		84.3959	84.3959	2.7600e-003		84.4647
Worker	0.1054	0.0806	0.7082	8.0000e-004	0.0822	8.9000e-004	0.0830	0.0218	8.2000e-004	0.0226		79.1255	79.1255	6.8300e-003		79.2962
Total	**0.1208**	**0.4642**	**0.8533**	**1.6100e-003**	**0.1023**	**2.2800e-003**	**0.1046**	**0.0276**	**2.1500e-003**	**0.0297**		**163.5213**	**163.5213**	**9.5900e-003**		**163.7609**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1581	0.1208	1.0623	1.2000e-003	0.1232	1.3400e-003	0.1246	0.0327	1.2300e-003	0.0339		118.6882	118.6882	0.0102		118.9443
Total	**0.1581**	**0.1208**	**1.0623**	**1.2000e-003**	**0.1232**	**1.3400e-003**	**0.1246**	**0.0327**	**1.2300e-003**	**0.0339**		**118.6882**	**118.6882**	**0.0102**		**118.9443**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1581	0.1208	1.0623	1.2000e-003	0.1232	1.3400e-003	0.1246	0.0327	1.2300e-003	0.0339		118.6882	118.6882	0.0102		118.9443
Total	**0.1581**	**0.1208**	**1.0623**	**1.2000e-003**	**0.1232**	**1.3400e-003**	**0.1246**	**0.0327**	**1.2300e-003**	**0.0339**		**118.6882**	**118.6882**	**0.0102**		**118.9443**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**7.3195**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0211	0.0161	0.1416	1.6000e-004	0.0164	1.8000e-004	0.0166	4.3600e-003	1.6000e-004	4.5200e-003		15.8251	15.8251	1.3700e-003		15.8592
Total	**0.0211**	**0.0161**	**0.1416**	**1.6000e-004**	**0.0164**	**1.8000e-004**	**0.0166**	**4.3600e-003**	**1.6000e-004**	**4.5200e-003**		**15.8251**	**15.8251**	**1.3700e-003**		**15.8592**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**7.3195**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0211	0.0161	0.1416	1.6000e-004	0.0164	1.8000e-004	0.0166	4.3600e-003	1.6000e-004	4.5200e-003		15.8251	15.8251	1.3700e-003		15.8592
Total	**0.0211**	**0.0161**	**0.1416**	**1.6000e-004**	**0.0164**	**1.8000e-004**	**0.0166**	**4.3600e-003**	**1.6000e-004**	**4.5200e-003**		**15.8251**	**15.8251**	**1.3700e-003**		**15.8592**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0003	3.5129	12.0212	0.0203	1.7195	0.0268	1.7463	0.4611	0.0252	0.4863		2,025.4469	2,025.4469	0.1310		2,028.7226
Unmitigated	1.0003	3.5129	12.0212	0.0203	1.7195	0.0268	1.7463	0.4611	0.0252	0.4863		2,025.4469	2,025.4469	0.1310		2,028.7226

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	276.08	287.39	249.98	769,364	769,364
Total	276.08	287.39	249.98	769,364	769,364

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	37.30	20.70	42.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.483457	0.047842	0.208016	0.157307	0.049674	0.007506	0.019049	0.011796	0.003290	0.001259	0.006861	0.001784	0.002160

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296
NaturalGas Unmitigated	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	962.681	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296
Total		**0.0104**	**0.0887**	**0.0378**	**5.7000e-004**		**7.1700e-003**	**7.1700e-003**		**7.1700e-003**	**7.1700e-003**		**113.2566**	**113.2566**	**2.1700e-003**	**2.0800e-003**	**113.9296**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0.962681	0.0104	0.0887	0.0378	5.7000e-004		7.1700e-003	7.1700e-003		7.1700e-003	7.1700e-003		113.2566	113.2566	2.1700e-003	2.0800e-003	113.9296
Total		**0.0104**	**0.0887**	**0.0378**	**5.7000e-004**		**7.1700e-003**	**7.1700e-003**		**7.1700e-003**	**7.1700e-003**		**113.2566**	**113.2566**	**2.1700e-003**	**2.0800e-003**	**113.9296**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	46.0183	0.8943	57.1792	0.0994		7.6945	7.6945		7.6945	7.6945	805.3802	342.0727	1,147.4529	0.7474	0.0634	1,185.0157
Unmitigated	46.0183	0.8943	57.1792	0.0994		7.6945	7.6945		7.6945	7.6945	805.3802	342.0727	1,147.4529	0.7474	0.0634	1,185.0157

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4474					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1171					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	44.3815	0.8667	54.7841	0.0993		7.6813	7.6813		7.6813	7.6813	805.3802	337.7647	1,143.1449	0.7432	0.0634	1,180.6038
Landscaping	0.0723	0.0276	2.3951	1.3000e-004		0.0132	0.0132		0.0132	0.0132		4.3080	4.3080	4.1600e-003		4.4119
Total	**46.0183**	**0.8943**	**57.1792**	**0.0994**		**7.6945**	**7.6945**		**7.6945**	**7.6945**	**805.3802**	**342.0727**	**1,147.4529**	**0.7474**	**0.0634**	**1,185.0157**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4474					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1171					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	44.3815	0.8667	54.7841	0.0993		7.6813	7.6813		7.6813	7.6813	805.3802	337.7647	1,143.1449	0.7432	0.0634	1,180.6038
Landscaping	0.0723	0.0276	2.3951	1.3000e-004		0.0132	0.0132		0.0132	0.0132		4.3080	4.3080	4.1600e-003		4.4119
Total	**46.0183**	**0.8943**	**57.1792**	**0.0994**		**7.6945**	**7.6945**		**7.6945**	**7.6945**	**805.3802**	**342.0727**	**1,147.4529**	**0.7474**	**0.0634**	**1,185.0157**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Oxbow Investments Project

Tuolumne County APCD Air District, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	4	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Forklifts	Diesel	No Change	0	3	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	2	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	6	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	10	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Paving Equipment	Diesel	No Change	0	2	No Change	0.00
Welders	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	2.51700E-002	1.75590E-001	2.09020E-001	3.40000E-004	1.08200E-002	1.08200E-002	0.00000E+000	2.93624E+001	2.93624E+001	2.02000E-003	0.00000E+000	2.94128E+001
Concrete/Industrial Saws	4.18000E-003	3.29900E-002	3.68700E-002	6.00000E-005	1.98000E-003	1.98000E-003	0.00000E+000	5.37656E+000	5.37656E+000	3.40000E-004	0.00000E+000	5.38508E+000
Cranes	4.56100E-002	5.42290E-001	2.12800E-001	5.80000E-004	2.23500E-002	2.05700E-002	0.00000E+000	5.10094E+001	5.10094E+001	1.65000E-002	0.00000E+000	5.14218E+001
Excavators	8.33000E-003	8.20300E-002	1.11110E-001	1.80000E-004	3.97000E-003	3.66000E-003	0.00000E+000	1.54258E+001	1.54258E+001	4.99000E-003	0.00000E+000	1.55505E+001
Forklifts	4.96600E-002	4.47460E-001	4.07170E-001	5.30000E-004	3.33300E-002	3.06600E-002	0.00000E+000	4.63305E+001	4.63305E+001	1.49800E-002	0.00000E+000	4.67051E+001
Generator Sets	4.58700E-002	3.99880E-001	4.26130E-001	7.60000E-004	2.25500E-002	2.25500E-002	0.00000E+000	6.49989E+001	6.49989E+001	3.66000E-003	0.00000E+000	6.50903E+001
Graders	1.90000E-003	2.53000E-002	7.26000E-003	3.00000E-005	8.10000E-004	7.40000E-004	0.00000E+000	2.33226E+000	2.33226E+000	7.50000E-004	0.00000E+000	2.35112E+000
Pavers	4.43000E-003	4.67100E-002	5.22900E-002	8.00000E-005	2.26000E-003	2.08000E-003	0.00000E+000	7.43084E+000	7.43084E+000	2.40000E-003	0.00000E+000	7.49092E+000
Paving Equipment	3.46000E-003	3.49200E-002	4.57500E-002	7.00000E-005	1.72000E-003	1.59000E-003	0.00000E+000	6.44120E+000	6.44120E+000	2.08000E-003	0.00000E+000	6.49328E+000
Rollers	3.41000E-003	3.46400E-002	3.38500E-002	5.00000E-005	2.12000E-003	1.95000E-003	0.00000E+000	4.14910E+000	4.14910E+000	1.34000E-003	0.00000E+000	4.18265E+000
Rubber Tired Dozers	3.40000E-002	3.56970E-001	1.30150E-001	2.70000E-004	1.74800E-002	1.60800E-002	0.00000E+000	2.36424E+001	2.36424E+001	7.65000E-003	0.00000E+000	2.38336E+001
Tractors/Loaders/Backhoes	6.78200E-002	6.81530E-001	7.38310E-001	1.01000E-003	4.30900E-002	3.96400E-002	0.00000E+000	8.83703E+001	8.83703E+001	2.85800E-002	0.00000E+000	8.90848E+001
Welders	3.93200E-002	1.80670E-001	2.03180E-001	2.90000E-004	9.99000E-003	9.99000E-003	0.00000E+000	2.16454E+001	2.16454E+001	3.20000E-003	0.00000E+000	2.17253E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	2.51700E-002	1.75590E-001	2.09020E-001	3.40000E-004	1.08200E-002	1.08200E-002	0.00000E+000	2.93624E+001	2.93624E+001	2.02000E-003	0.00000E+000	2.94128E+001
Concrete/Industrial Saws	4.18000E-003	3.29900E-002	3.68700E-002	6.00000E-005	1.98000E-003	1.98000E-003	0.00000E+000	5.37656E+000	5.37656E+000	3.40000E-004	0.00000E+000	5.38507E+000
Cranes	4.56100E-002	5.42280E-001	2.12800E-001	5.80000E-004	2.23500E-002	2.05700E-002	0.00000E+000	5.10093E+001	5.10093E+001	1.65000E-002	0.00000E+000	5.14217E+001
Excavators	8.33000E-003	8.20300E-002	1.11110E-001	1.80000E-004	3.97000E-003	3.66000E-003	0.00000E+000	1.54258E+001	1.54258E+001	4.99000E-003	0.00000E+000	1.55505E+001
Forklifts	4.96600E-002	4.47460E-001	4.07170E-001	5.30000E-004	3.33300E-002	3.06600E-002	0.00000E+000	4.63305E+001	4.63305E+001	1.49800E-002	0.00000E+000	4.67051E+001
Generator Sets	4.58700E-002	3.99880E-001	4.26130E-001	7.60000E-004	2.25500E-002	2.25500E-002	0.00000E+000	6.49988E+001	6.49988E+001	3.66000E-003	0.00000E+000	6.50902E+001
Graders	1.90000E-003	2.53000E-002	7.26000E-003	3.00000E-005	8.10000E-004	7.40000E-004	0.00000E+000	2.33226E+000	2.33226E+000	7.50000E-004	0.00000E+000	2.35111E+000
Pavers	4.43000E-003	4.67100E-002	5.22900E-002	8.00000E-005	2.26000E-003	2.08000E-003	0.00000E+000	7.43083E+000	7.43083E+000	2.40000E-003	0.00000E+000	7.49091E+000
Paving Equipment	3.46000E-003	3.49200E-002	4.57400E-002	7.00000E-005	1.72000E-003	1.59000E-003	0.00000E+000	6.44119E+000	6.44119E+000	2.08000E-003	0.00000E+000	6.49327E+000
Rollers	3.41000E-003	3.46400E-002	3.38500E-002	5.00000E-005	2.12000E-003	1.95000E-003	0.00000E+000	4.14910E+000	4.14910E+000	1.34000E-003	0.00000E+000	4.18264E+000
Rubber Tired Dozers	3.40000E-002	3.56970E-001	1.30150E-001	2.70000E-004	1.74800E-002	1.60800E-002	0.00000E+000	2.36424E+001	2.36424E+001	7.65000E-003	0.00000E+000	2.38335E+001
Tractors/Loaders/Backhoes	6.78200E-002	6.81530E-001	7.38310E-001	1.01000E-003	4.30900E-002	3.96400E-002	0.00000E+000	8.83702E+001	8.83702E+001	2.85800E-002	0.00000E+000	8.90847E+001
Welders	3.93200E-002	1.80670E-001	2.03180E-001	2.90000E-004	9.99000E-003	9.99000E-003	0.00000E+000	2.16454E+001	2.16454E+001	3.20000E-003	0.00000E+000	2.17253E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.36229E-006	1.36229E-006	0.00000E+000	0.00000E+000	1.01996E-006
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85698E-006
Cranes	0.00000E+000	1.84403E-005	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17625E-006	1.17625E-006	0.00000E+000	0.00000E+000	1.16682E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.29653E-006	1.29653E-006	0.00000E+000	0.00000E+000	1.28613E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.07920E-006	1.07920E-006	0.00000E+000	0.00000E+000	1.28466E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.23079E-006	1.23079E-006	0.00000E+000	0.00000E+000	1.22906E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	4.25329E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.34574E-006	1.34574E-006	0.00000E+000	0.00000E+000	1.33495E-006
Paving Equipment	0.00000E+000	0.00000E+000	2.18579E-004	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.55251E-006	1.55251E-006	0.00000E+000	0.00000E+000	1.54005E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.39083E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	8.45938E-007	8.45938E-007	0.00000E+000	0.00000E+000	8.39153E-007
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.13160E-006	1.13160E-006	0.00000E+000	0.00000E+000	1.12253E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.23985E-007	9.23985E-007	0.00000E+000	0.00000E+000	1.38088E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	

No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Demolition	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Fugitive Dust	0.03	0.01	0.03	0.01	0.00	0.00
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.05	0.02	0.05	0.02	0.00	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value 3
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	Use Low VOC Paint (Parking)	250.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value

Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

APPENDIX B

MOORE BIOLOGICAL CONSULTANTS

December 29, 2017

Mr. Krag Brotby
Oxbow Investments, LLC
223311 Oxbow Lane North
Sonora, CA 95370

Subject: BASELINE BIOLOGICAL RESOURCES ASSESSMENT: "6+/- ACRE CURTIS CREEK", SITE, TUOLUMNE COUNTY, CALIFORNIA

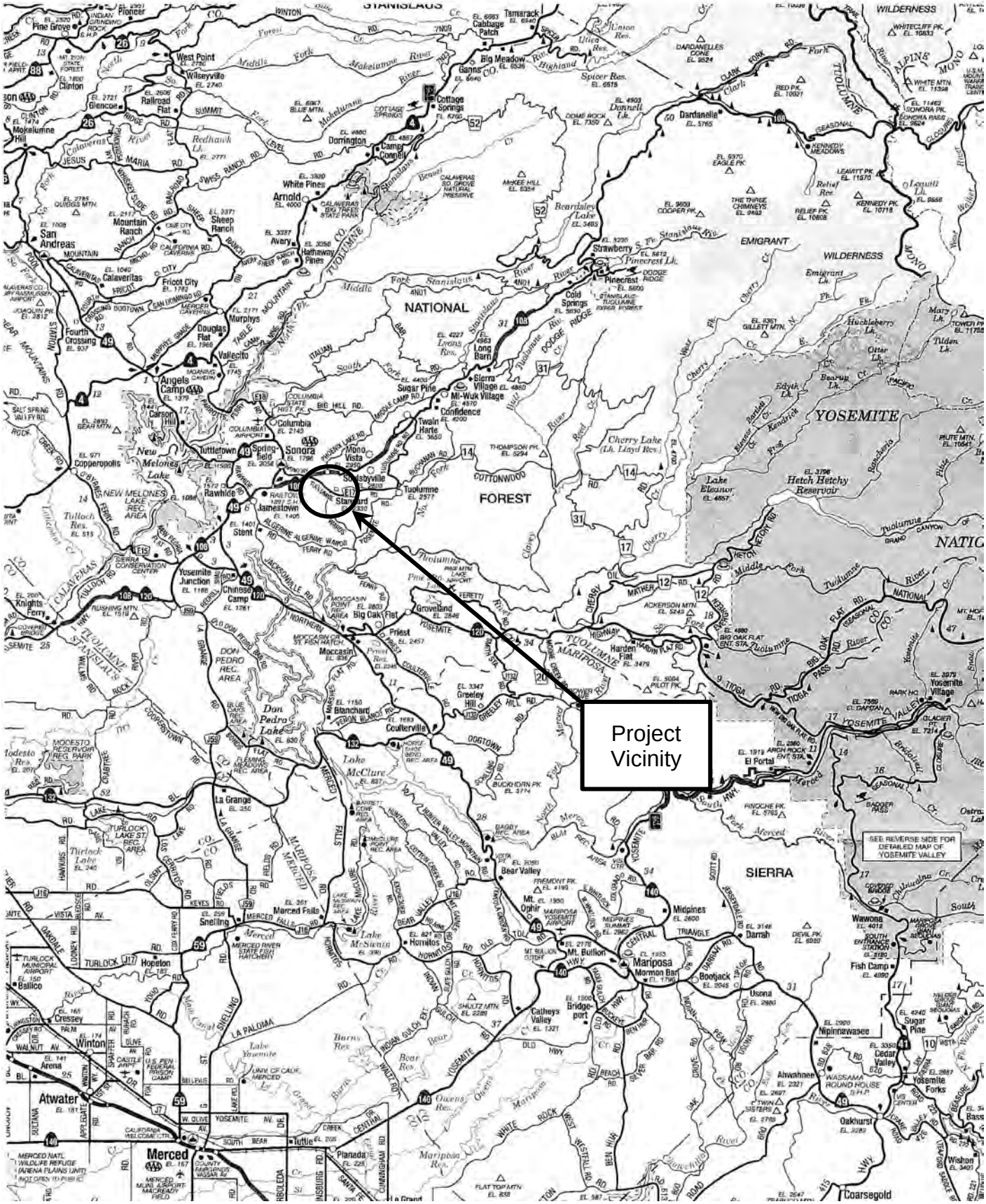
Dear Krag:

Thank you for asking Moore Biological Consultants to conduct a baseline biological resources assessment of this 6+/- acre site near Standard, in Tuolumne County, California (Figures 1 and 2). The purpose of this assessment is to describe existing biological resources in the site, identify potentially significant impacts to biological resources from the proposed project, and provide recommendations for how to reduce those impacts to a less-than-significant level. The work involved reviewing databases, aerial photographs, and documents, and conducting field surveys. This report details the methodology and results of our investigation.

Project Overview

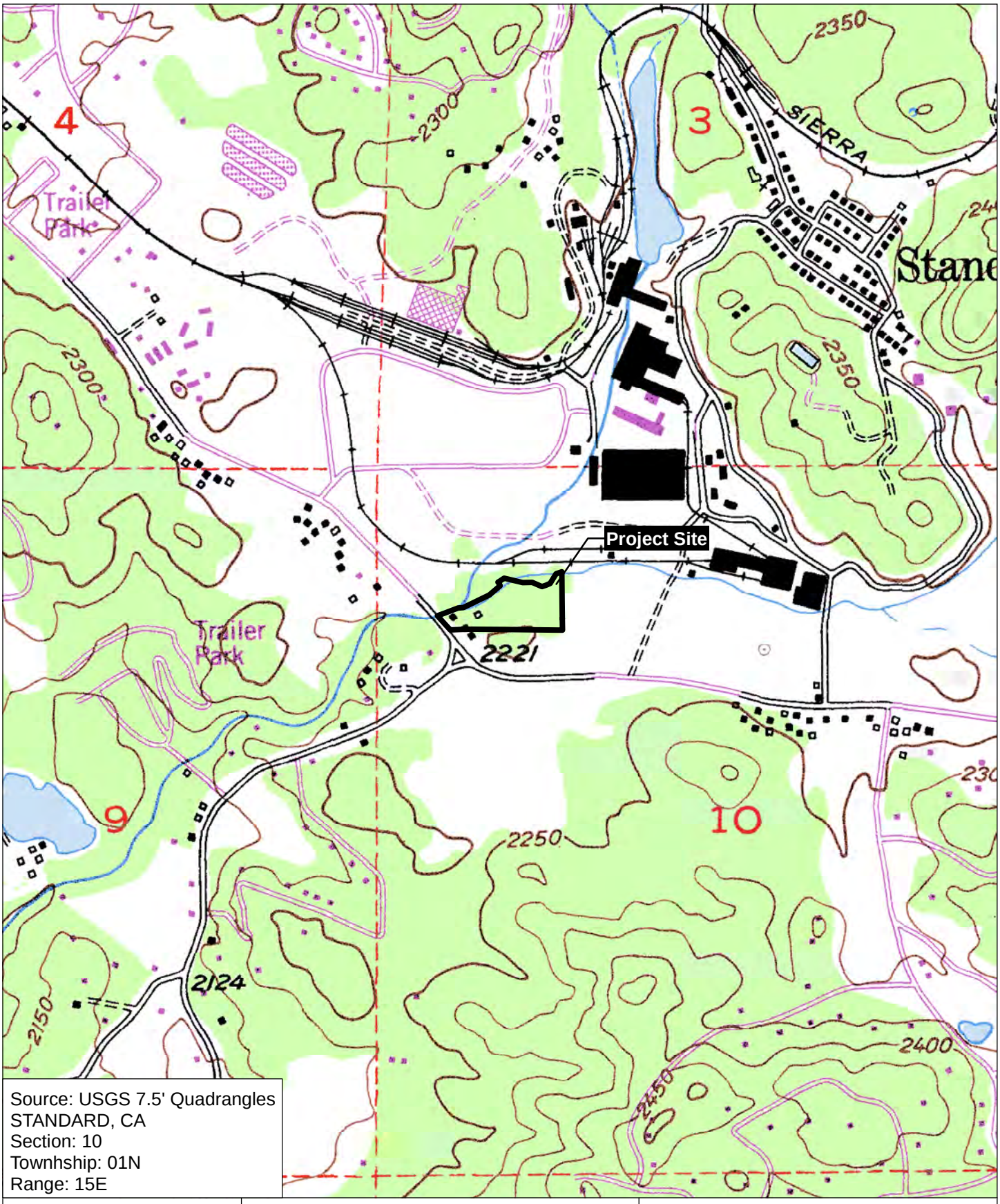
The site consists of a 1.06+/- acre parcel with three homes and a 5.00+/- acre parcel containing a barn and some outbuildings and a large open field that was formerly a vineyard. The proposed project is to divide the eastern 5+/- acre parcel into twenty-nine (29) residential parcels ranging in size from 3,107 to 6,164 square feet with an associated road network (Attachment A). The lots fronting Curtis Creek will be constructed outside the 100-year floodplain, and set back from the creek approximately 30 to 60 feet from the active channel.

10330 Twin Cities Rd., Ste. 30 • Galt, CA 95632
(209) 745-1159 • Fax (209) 745-7513
e-mail: moorebio@softcom.net



Source: Calif. State Automobile Association

Moore Biological Consultants	0 18 Miles N W E S	**FIGURE 1** **PROJECT VICINITY**



Source: USGS 7.5' Quadrangles
STANDARD, CA
Section: 10
Townhship: 01N
Range: 15E

Figure 2

Moore Biological Consultants

0 500 1,000

1 inch = 1,000 feet

N W E S

USGS

Curtis Creek

Tuolumne County, CA

Map Date: 12/27/2017

C:\Users\owner\Documents\Fremont Environmental Consulting\Projects\Moore Biological\Curtis Creek\MXD\curtis_creek_figure_2.mxd

Access to the new subdivision will be from Tuolumne Road, via a new road through a county-owned parcel just south of the site. A secondary road through the 1.06+/- acre parcel will provide emergency access to Tuolumne Road. Sewer and water will be provided by Tuolumne Utilities District. Storm water from the new subdivision will be conveyed to a new detention basin and discharged in to Curtis Creek at a rate that will mimic existing rates of run-off from the site. Other than the outfall of the detention basin and a retaining wall along the lots fronting the creek, the project will not involve improvements in the riparian corridor.

Methods

Prior to the field surveys, we conducted a search of California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB, 2015); an updated search was conducted in 2017. The CNDDB search included the USGS 7.5-minute Standard and Columbia SE topographic quadrangles, encompassing approximately 120+/- square miles surrounding the site (Attachment B). The United States Fish and Wildlife Service (USFWS*)* IPaC Trust Resource Report of Federally Threatened and Endangered species that may occur in or be affected by projects in the project vicinity was also reviewed (Attachment B). This information was used to identify special-status wildlife and plant species that have been previously documented in the vicinity or have the potential to occur based on suitable habitat and geographical distribution. Additionally, the CNDDB depicts the locations of sensitive habitats. The USFWS on-line-maps of designated critical habitat in the area were also downloaded.

Field surveys of the site were conducted on February 20 and May 5, 2015. The surveys consisted of walking throughout the site making observations of habitat conditions and noting surrounding land uses, habitat types, and plant and wildlife species. The fieldwork included an assessment of potentially jurisdictional Waters of the U.S. and wetlands as defined by the U.S. Army Corps of Engineers (ACOE, 1987; 2008) and a search for special-status species and suitable habitat

for special-status species (e.g., vernal pools, blue elderberry shrubs, cliffs, caves, areas with unique soils). Additionally, trees near the site were assessed for the potential use by bats, nesting raptors, and other nesting birds.

Results

The 6+/- acre site is in Tuolumne County, California (Figure 1). The site is within Section 10, within Township 1 North, Range 15 East of the USGS 7.5-minute Standard topographic quadrangle (Figure 2). The site is hilly, slopes down generally to the northwest, and is at elevations of approximately 2,175 to 2,250 feet above mean sea level. The site consists of annual grassland and mixed oak woodland habitats, the Curtis Creek riparian corridor, three homes, associated landscaped areas, and some outbuildings (Figure 3).

Land uses in this part of Tuolumne County are a mixture of large lot residential, industrial, commercial, open space, rangeland, and recreation. Tuolumne Road is located along the west edge of the site and there are Tuolumne County Fire Department facilities to the east of the site. Commercial and industrial parcels are located to the north of the site, across Curtis Creek. There is open space and rangeland to the south and west of the site, interspersed with a few residential parcels.

VEGETATION: Mixed oak series and California annual grassland series (Sawyer and Keeler-Wolf, 1995) best describe the habitat types in the portions of the site that will be developed (Figure 3 and photographs in Attachment C). There is a large field of annual grassland in the east part of the site was a vineyard through 2011 to 2012 when the vines were removed. Oak woodlands cover most of the west part of the site, interspersed with a few open areas of grassland. There has been disturbance in parts of the site from past farming, development on the site and surrounding lands, human occupancy, and construction and maintenance of farm roads and fences.

Figure 3

Moore Biological Consultants

0 200 400

1 inch = 150 feet

N W E S

Map Date: 12/27/2017
Aerial Source: NAIP (2016)

AERIAL

Curtis Creek

Tuolumne County, CA

Native and non-native grasses including oats (*Avena fatua*), foxtail barley (*Hordeum murinum*), soft chess brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), perennial ryegrass (*Lolium perenne*), and dogtail (*Cynosurus echinatus*) are dominant grasses in the site. Other grassland species such as black mustard (*Brassica nigra*), fiddleneck (*Amsinckia menziesii*), Italian thistle (*Carduus pycnocephalus*), torilis (*Torilis nodosa*), rose clover (*Trifolium hirtum*), hairy navarretia (*Navarretia pubescens*), wild radish (*Raphanus sativus*), and filaree (*Erodium botrys*) are intermixed with the grasses. Plant species observed in the site are listed in Table 1.

Live oaks (*Quercus wislizenii*) and blue oaks (*Quercus douglasii*) are the most common trees in the portions of the site that will be developed; valley oaks (*Quercus lobata*) and black oaks (*Quercus kelloggii*) are more prevalent along the Curtis Creek riparian corridor. A few foothill pine (*Pinus sabiniana*), Ponderosa pine (*Pinus ponderosae*), and California buckeye (*Aesculus californica*) are interspersed among the oaks. In the portions of the site that will be developed, the oak woodland understory is relatively open in most places and notably lacking shrubs; there are patches of poison oak (*Toxicodendron diversilobum*) in many parts of the woodlands. The oak woodlands also contain a subset of the grasses and other herbaceous vegetation found in the on-site grasslands.

The Curtis Creek riparian corridor supports valley oaks and black oaks, as well as a variety of willows (Salix spp.), white alder (*Alnus rhombifolia*), and Oregon ash (*Fraxinus latifolia*). Himalayan blackberry (*Rubus discolor*) brambles and California wild rose (*Rosa californica*) brambles are prevalent in the understory there are also some California wild grape (*Vitis californica*) vines. Along much of the length of Curtis Creek, the Himalayan blackberry forms a dense and essentially inpenetrable blanket extending upslope up to 50 feet or more from the active channel. With the dense overstory canopy and blackberries, there is little to no herbaceous vegetation throughout much of the Curtis Creek riparian corridor.

TABLE 1
PLANT SPECIES OBSERVED IN THE SITE

Achillea millefolium	yarrow
Aesculus californica	California buckeye
Ailanthus altissima	tree-of-heaven
Alnus rhombifolia	white alder
Amsinckia menziesii	fiddleneck
Avena sp.	oat
Brassica nigra	black mustard
Bromus diandrus	ripgut brome
Bromus hordeaceus	soft chess brome
Bromus madritensis	red brome
Chamomilla suaveolens	pineapple weed
Carduus pycnocephalus	Italian thistle
Cerastium glomeratum	mouse-eared chickweed
Conium maculatum	poison hemlock
Convolvulus arvensis	field bindweed
Cynodon dactylon	Bermuda grass
Cynosurus echinatus	dogtail
Erodium botrys	filaree
Fraxinus latifolia	Oregon ash
Gallium sp.	bedstraw
Geranium dissectum	cut-leaf geranium
Geranium molle	geranium
Hordeum murinum	foxtail barley
Lactuca serriola	prickly lettuce
Lamium amplexicaule	clasping henbit
Lolium perenne	perennial ryegrass
Mentha pulegium	pennyroyal
Montia perfoliata	miner’s lettuce
Navarretia pubescens	hairy navarretia
Pinus ponderosae	Ponderosa pine

TABLE 1 (Continued)
PLANT SPECIES OBSERVED IN THE SITE

Pinus sabiniana	foothill pine
Poa annua	annual bluegrass
Quercus douglasii	blue oak
Quercus kelloggii	black oak
Quercus lobata	valley oak
Quercus wislizenii	interior live oak
Raphanus sativus	wild radish
Rosa californica	California wild rose
Rubus discolor	Himalayan blackberry
Rumex crispus	curly dock
Salix exigua	narrow-leaved willow
Salix spp.	willow
Silybum marianum	milk thistle
Symphoricarpus albus	snowberry
Torilis nodosa	torilis
Toxicodendron diversilobum	poison oak
Trifolium hirtum	rose clover
Vicia americana	winter vetch
Vitis californica	California wild grape
Vulpia myuros	rattail fescue

The trees in the site vary in size, structure, and health. Many of the live oak trees and blue oaks have multiple stems, with most of the stems being 8 to12 inches in diameter at breast height (DBH) (see photographs in Attachment C). There are lesser numbers of relatively larger single-trunk oaks. Some of the valley oaks along Curtis Creek have single stems and are in excess of 24 inches DBH. There are also some standing dead oaks (snags), a few of which appear to have died in the past few years, possibly from the drought.

No blue elderberry (*Sambucus mexicana*) shrubs were observed in or adjacent to the site.

WILDLIFE: A variety of wildlife species that are common in Tuolumne County were observed in the site. Turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), acorn woodpecker (*Melanerpes formicivorous*), northern flicker (*Colaptes auratus*), American robin (*Turdus migratorius*), western scrub jay (*Aphelocoma coerulescens*), western bluebird (*Sialia mexicana*), and mourning dove (*Zenaida macroura*) are some of the more common birds observed at the site (Table 2).

Given the presence of numerous oaks and other trees and shrubs throughout the site, it is considered likely that one or more pairs of raptors, plus a variety of songbirds, nest in trees in the site each year. A variety of other protected migratory birds (mostly songbirds) likely nest in the vegetation along the Curtis Creek corridor or the on-site grasslands during most years.

Several mammals are expected to use habitats in or move through the site on occasion. Western gray squirrel (*Sciurus griseus*) was observed in the site; sign of mule (black-tail) deer (*Odocoileus hemionus*) and raccoon (*Procyon lotor*) was also observed. A striped skunk (*Mephitis mephitis*) was observed on Tuolumne Road, just southeast of the site. Coyote (*Canis latrans*), Virginia opossum (*Didelphis virginiana*), black-tailed hare (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), and California ground squirrel (*Spermophilus beecheyi*) are expected to occur in the area. Mountain lions (*Felis concolor*) and bobcats (*Felis rufus*) may occur on-site on occasion; however, no evidence of either of these species was observed. Small rodents including mice (*Mus musculus, Reithrodontomys megalotis,* and *Peromyscus maniculatus*) and voles (*Microtus californicus*) also likely occur. The oak woodlands in the site also provide suitable foraging and/or roosting habitat for a variety of bats.

TABLE 2

WILDLIFE SPECIES DOCUMENTED IN THE SITE

Birds	
Turkey vulture	*Cathartes aura*
Red-shouldered hawk	*Buteo lineatus*
Red-tailed hawk	*Buteo jamaicensis*
American kestrel	*Falco sparverius*
California quail	*Callipepla californica*
Mourning dove	*Zenaida macroura*
Acorn woodpecker	*Melanerpes formicivorus*
Northern flicker	*Colaptes auratus*
Black phoebe	*Sayornis nigricans*
Western kingbird	*Tyrannus verticalis*
Western scrub jay	*Aphelocoma coerulescens*
American crow	*Corvus brachyrhynchos*
Western bluebird	*Sialia mexicana*
American robin	*Turdus migratorius*
Northern mockingbird	*Mimus polyglottos*
Dark-eyed junco	*Junco hyemalis*
Brewer's blackbird	*Euphagus cyanocephalus*
American goldfinch	*Carduelis tristis*
Mammals	
Mule deer	*Odocoileus hemionus columbianus*
Striped skunk	*Mephitis mephitis*
Raccoon	*Procyon lotor*
Western gray squirrel	*Sciurus griseus*
Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Bullfrog	*Rana catesbeiana*
Pacific chorus frog	*Pseudacris regilla*
Fish	
Bluegill	*Lepomis macrochirus*

Based on habitat types present, a variety of amphibians and reptiles may occur on-site. Western fence lizard (*Sceloporus occidentalis*) was the only reptile observed; Pacific chorus frog (*Pseudacris regilla*) and bullfrog (*Rana catesbeiana*) were also observed. The site is within the range of northern alligator lizard (*Gerrhonotus coeruleus*), mountain king snake (*Lampropeltis zonata*), and western rattlesnake (*Crotalis viridis*), and common garter snake (*Thamnophis sirtalis*); these and other common amphibian and reptile species may also occur on-site.

WATERS OF THE U.S. AND WETLANDS: Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations (CFR) 328 to include navigable waterways, their tributaries, and adjacent wetlands. State and federal agencies regulate these habitats and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill materials into any waters of the U.S., including wetlands. ACOE, CDFW, and the California Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to riverbanks, lakes, stream channels and other wetland features.

"Waters of the U.S.", as defined in 33 CFR 328.4, encompasses Territorial Seas, Tidal Waters, and Non-Tidal Waters; Non-Tidal Waters includes interstate and intrastate rivers and streams, as well as their tributaries. The limit of federal jurisdiction of Non-Tidal Waters of the U.S. extends to the "ordinary high water mark". The ordinary high water mark is established by physical characteristics such as a natural water line impressed on the bank, presence of shelves, destruction of terrestrial vegetation, or the presence of litter and debris.

Jurisdictional wetlands are vegetated areas that meet specific vegetation, soil, and hydrologic criteria defined by the ACOE *Wetlands Delineation Manual* and Regional Supplement (ACOE, 1987; 2008). Jurisdictional wetlands are usually adjacent to or hydrologically associated with Waters of the U.S; isolated wetlands are outside federal jurisdiction.

Jurisdictional wetlands and Waters of the U.S. include, but are not limited to, perennial and intermittent creeks and drainages, lakes, seeps, and springs; emergent marshes; riparian wetlands; and seasonal wetlands. Wetlands and Waters of the U.S. provide critical habitat components, such as nest sites and a reliable source of water, for a wide variety of wildlife species.

Curtis Creek is the only potentially jurisdictional Water of the U.S. and/or wetland observed in the site. Curtis Creek flows generally northeast to southwest along the north edge of the site and is depicted on the USGS topographic map as a perennial "blue-line" stream (Figure 2). The limits of potential ACOE jurisdiction is defined either by the ordinary high water mark (OHWM) along the banks of the creek or the outside edge of a fringe of wetlands that are adjacent to and upslope of the OHWM. The adjacent wetlands are situated in low floodplain terraces adjacent to the active channels and support hydrophytic (i.e., wetland) plant species such as willows and alders. The width of the potentially jurisdictional Waters of the U.S. and/or wetlands along Curtis Creek varies along the length of the creek and all of the potentially jurisdictional areas are located well within the 100-year floodplain.

As described above, the riparian corridor supports valley oaks and black oaks, as well as a variety of willows, white alder, and Oregon ash. Himalayan blackberry brambles, and California wild rose brambles are prevalent in the understory, with Himalayan blackberry extending upslope up to 50 feet or more from the active channel in some locations. Substrates in the active channel range from gravels to bedrock.

Similar to other creeks in the project vicinity, Curtis Creek is utilized by Tuolumne Utility District (TUD) for water conveyance. Several miles east of the site, Curtis Creek receives water from the Soulsbyville Ditch, which may be a primary cause of its perennial flows. Near Tuolumne Road, TUD's "Phoenix Ditch" is tributary to Curtis Creek. The use of the creek for water conveyance has resulted in a flow regime that is substantially modified from natural conditions.

Curtis Creek is tributary Don Pedro Reservoir several miles southwest of the site. Don Pedro Reservoir is an impoundment of the Tuolumne River, which is a jurisdictional Water of the U.S. that is navigable further downstream. The tributary relationship of Curtis Creek to the Tuolumne River forms the basis for Curtis Creek being a potentially jurisdictional Waters of the U.S.

Other than Curtis Creek, no other potential jurisdictional Waters of the U.S. or wetlands were observed in the site. There are no other creeks or drainages in the site exhibiting attributes of jurisdictional Waters of the U.S.; there are also no open bodies or water such as ponds or lakes in the site. The portions of the site that will be developed consist of upland grassland and woodland habitats, and no areas with potential to fall under the jurisdiction of ACOE as regulated wetlands were observed in the proposed subdivision or along the access roads.

SPECIAL-STATUS SPECIES: Special-status species are plants and animals that are legally protected under the state and/or federal Endangered Species Act or other regulations. The Federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California species. Both FESA and CESA prohibit unauthorized “take” (i.e., killing) of listed species, with take broadly defined in both acts to include activities such as harassment, pursuit and possession.

Special-status wildlife species also includes species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. The federal Migratory Bird Treaty Act and Fish and Game Code of California protect special-status bird species year-round, as well as their eggs and nests during the nesting season. Fish and Game Code of California also provides protection for mammals and fish.

Special-status plants are those which are designated rare, threatened, or endangered and candidate species for listing by the USFWS. Special-status plants also include species considered rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those plant species identified on Lists 1A, 1B and 2 in the Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2017). Finally, special-status plants may include other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on CNPS List 3.

Table 3 summarizes the listing status and habitat requirements of special-status species that have been documented in the CNDDB (2017) in the greater vicinity of the site, or for which there is potentially suitable habitat in or near the site. This table also includes an assessment of the likelihood of occurrence of each of these species in the site. The evaluation of the potential for occurrence of each species is based on the distribution of regional occurrences (if any), habitat suitability, and field observations.

SPECIAL-STATUS PLANTS: Special-status plants recorded in the CNDDB (2017) within the search area (i.e., the USGS 7.5-minute Standard and Columbia SE topographic quadrangles) include big-scale balsamroot (*Balsamorhiza macrolepis var. macrolepis*), Tuolumne button celery (*Eryngium pinnatisectum*), Stanislaus monkeyflower (*Erythranthe marmorata*), Tuolumne fawn lily (*Erythronium tuolumnense*), Parry's horkelia (*Horkelia parryi*), Tuolumne iris (*Iris hartwegii* spp. *columbiana*), and yellow-lip pansy monkeyflower (*Mimulus pulchellus)* (Table 3 and Attachment B). The USFWS IPaC Trust Report does not include any special-status plants.

Special-status plants found in the low Sierra Nevada foothills generally occur in relatively undisturbed areas within unique vegetation communities such as chaparral, seeps and springs, marshes and swamps, and areas with unique soils

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[1]	CNPS List[2]	Habitat	Potential for Occurrence in the Project Site
PLANTS						
Big-scale balsamroot	*Balsamorhiza macrolepis var. macrolepis*	None	None	1B	Valley and foothill grassland, cismontane woodland; sometimes on serpentine substrates.	Unlikely: grasslands and woodlands in the site could potentially provide suitable habitat for big-scale balsamroot; however, no serpentine substrates were observed. The only occurrence of this species in the CNDDB (2017) search area is a 1925 record near Sonora whose precise location is not known.
Tuolumne button celery	*Eryngium pinnatisectum*	None	None	1B	Vernal pools and other mesic habitats within cismontane woodland and lower montane coniferous forest.	Unlikely: the site consists of grasslands and woodlands that do not provide suitable habitat for Tuolumne button celery; the shaded Curtis Creek corridor provides low quality habitat for this species. The nearest occurrence of Tuolumne button celery in the CNDDB (2017) search area is approximately 1.5 miles east of the site.
Stanislaus monkeyflower	*Erythranthe marmorata*	None	None	1B	Lower and upper montane coniferous forest and cismontane woodland. Meadows and seeps.	Unlikely: the habitat within this site is not suitable for Stanislaus monkeyflower. The only occurrence of this species in the CNDDB (2017) search area is approximately 10 miles north of the site. .
Tuolumne fawn lily	*Erythronium tuolumnense*	None	None	1B	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest; often on clay soils, cliffs, or near drainages.	Unlikely: the upland woodlands in the site potentially provide suitable habitat for this species. The only occurrence of this species in the CNDDB (2017) search area near the site is a record from 1922 found somewhere near Standard whose precise location is not known; there are also several occurrences approximately 8 to 10 miles north of the site.
Parry's horkelia	*Horkelia parryi*	None	None	1B	Chaparral, and cismontane woodland, almost always Ione formation soils.	Unlikely: there are no areas of chaparral vegetation in the site and no Ione formation soils were observed. The only occurrence of Parry's horkelia in the CNDDB (2017) search area is approximately 12 miles north of the site.

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[1]	CNPS List[2]	Habitat	Potential for Occurrence in the Project Site
Toulumne iris	*Iris hartwegii* ssp. *columbiana*	None	None	1B	Cismontane woodland, lower montane coniferous forest.	Unlikely: the woodlands in the site could provide suitable habitat for this species. The nearest occurrence of Tuolumne iris in the CNDDB (2017) search area is approximately 8 miles north of the site.
Yellow-lip pansy monkeyflower	*Mimulus pulchellus*	None	None	1B	Wet areas within lower montane coniferous forest and meadow vegetation.	Unlikely: the site does not provide suitable habitat for yellow-lip pansy monkeyflower. The nearest occurrence of this species in the CNDDB (2017) search area is approximately 1 mile northwest of the site.
BIRDS						
Great gray owl	*Strix nebulosa*	None	E	N/A	Mixed conifer or red fir forests habitat, in or along the edge of meadows. Nests in large snags.	Unlikely: the oak woodlands and upland grassland vegetation communities in the site do not provide suitable habitat for great gray owl. Great gray owl is primarily known from coniferous woodlands with open meadows at somewhat higher elevations than those in the site, and would not be expected in an area of substantial human activity. The nearest occurrence of this species in the CNDDB (2017) search area is approximately 6 miles north of the site
Burrowing owl	*Athene cunicularia*	None	SC	N/A	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Unlikely: while there are grasslands in the site, no ground squirrel burrows or other potentially suitable burrows for burrowing owls were observed. The nearest occurrence of burrowing owl in the CNDDB (2017) search area is approximately 6 miles southwest of the site.
Tricolored blackbird	*Agelaius tricolor*	None	CE/SC	N/A	Nests in dense brambles and emergent wetland vegetation associated with open water habitat.	Unlikely: the densely vegetated and shaded Curtis Creek corridor does not provide suitable nesting habitat for tricolored blackbird. This species may occasionally fly over or forage in the site. The nearest occurrence of tricolored blackbird in the CNDDB (2017) search area is approximately 3 miles north of the site.

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[1]	CNPS List[2]	Habitat	Potential for Occurrence in the Project Site
MAMMALS						
Townsend's big-eared bat	*Corynorhinus townsendii*	None	SC	N/A	Wide variety of habitats, most common in mesic sites.	Possible: trees within the site may be suitable roost sites for this species. This species may also fly over or forage in the site on occasion. The nearest occurrence of Townsend's big-eared bat in the CNDDB (2017) search area is approximately 7 miles northwest of the site.
Western mastiff bat	*Eumops perotis californicus*	None	SC	N/A	Open, dry habitats with crevices in cliff faces, high buildings, trees and tunnels for roosting.	Possible: while there are no cliffs or notable rock outcrops, trees in the site may be used by this species for roosting. Most of the nearby records in the CNDDB are on cliffs on table mountains; the nearest occurrence of western mastiff bat in the CNDDB (2017) search area is approximately 4 miles east of the site.
Pallid bat	*Antrozous pallidus*	None	SC	N/A	Open, dry habitats with rocky areas for roosting.	Unlikely: no rocky areas were observed in the site. The nearest occurrence of pallid bat in the CNDDB (2017) search area is approximately 6 miles south of the site.
Spotted bat	*Euderma maculatum*	None	SC	N/A	Requires crevices in caves or cliffs for roosting.	Unlikely: there is no suitable roost habitat in the site. This species may occasionally fly over or forage in the site. The nearest occurrence of spotted bat in the CNDDB (2017) search area is 3+/- miles southeast of the site.
REPTILES & AMPHIBIANS						
California red-legged frog	*Rana aurora draytonii*	T	SC	N/A	Lowlands and foothills in or near permanent sources of water with vegetation.	Unlikely: Curtis Creek provides marginal, yet potentially suitable habitat for for this species. However, there are no occurrences of California red-legged frog recorded in the CNDDB (2017) within the search area and no populations are known to exist within Tuolumne County. The site is not within designated critical habitat for California red-legged frog (USFWS, 2006).
Foothill yellow-legged frog	*Rana boylii*	None	CT/SC	N/A	Rocky perennial streams in the Sierra and coastal foothills.	Unlikely: Curtis Creek provides marginal, yet potentially suitable habitat for foothill yellow-legged frog. The nearest occurrences of this species in the CNDDB (2017) search area are approximately 10 miles north of the site.

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[1]	CNPS List[2]	Habitat	Potential for Occurrence in the Project Site
Western pond turtle	*Emys marmorata*	None	SC	N/A	Permanent or semi-permanent bodies of water in a variety of habitats; require basking sites such as logs.	Unlikely: due to canopy cover and shading, Curtis Creek provides marginal, yet potentially suitable habitat for this species, which prefer sunny open areas. The nearest occurrence of western pond turtle in the CNDDB (2017) search area is approximately 10 miles north of the site.
FISH						
San Joaquin roach	*Lavinia symmetricus ssp. 1*	None	SC	N/A	Tributaries to the San Joaquin River, from the Cosumnes River south.	Moderate: Curtis Creek provides suitable aquatic habitat for this species. The nearest occurrence of San Joaquin roach in the CNDDB (2017) search area is in Curtis Creek, upstream and approximately 2.5 miles northeast of the site.
Delta smelt	*Hypomesus transpacificus*	T	T	N/A	Shallow lower delta waterways with submersed aquatic plants and other suitable refugia.	None: this species only occurs in Delta waterways. There are no occurrences of delta smelt recorded in the CNDDB (2017) within the search area. The site is not within designated critical habitat for delta smelt (USFWS, 1994).
INVERTEBRATES						
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	None	N/A	Elderberry shrubs in the Central Valley and surrounding foothills	Unlikely: no blue elderberry shrubs were observed in or near the site. The site is also well above 500 feet in elevation above which this species is not expected to occur (USFWS, 2017). The nearest occurrence of this species in the CNDDB (2017) search area is approximately 2 miles northeast of the site and was likely a similar species that was not correctly identified. The site is not within designated critical habitat for valley elderberry longhorn beetle (USFWS, 1980).

1 T= Threatened; E = Endangered; CE = Candidate for listing as Endangered; Ct = Candidate for listing as Threatened; SC = California Species of Special Concern.

2 CNPS List 1B includes species which are rare, threatened, or endangered in California and elsewhere.

(i.e., serpentine, gabbroic). The body of the site consists of disturbed annual grassland and oak woodland vegetation and no unique habitat types or highly suitable habitat for special-status plants were observed.

Several of the species in Table 3 can occur in oak woodlands, but have little potential for occurrence in the site due to an absence of serpentine and/or gabbroic soils. For example, big-scale balsamroot and Parry's horkelia can occur in oak woodlands, but only if appropriate soils are present. The oak woodlands could potentially provide suitable habitat Tuolumne fawn lily; however preferred microhabitats such as cliffs and/or clay soils are absent. The upland woodlands may provide suitable habitat for Tuolumne iris. However, this species primarily occurs at higher elevations than the site and in upland woodlands containing manzanita and other shrubs. In contrast, the on-site woodlands are open and lack shrubs.

There is no highly suitable habitat for most other species in Table 3 and many of these species have very little chance of occurring on-site due to lack of habitat, and because they have not been documented nearby. For example, Tuolumne button celery grows in vernal pools and other mesic (i.e., wet) habitats; there are no vernal pools in the site. The Curtis Creek corridor north of the proposed lots is shaded and the creek banks covered with blackberry brambles are not suitable for Tuolumne button celery. Yellow-lip pansy monkeyflower grows in mesic areas, but only in lower montane coniferous forest and meadows, neither of which are found in the site. Similarly, Stanislaus monkeyflower is restricted to meadows and seeps, which do not occur in the site. The Curtis Creek corridor is also not suitable for special-status plants that occur in riparian or other mesic habitats. Due to lack of suitable habitat, it is unlikely special-status plant species occur in the site.

In summary, the body site consists of oak woodland and upland grassland vegetation that is unremarkable and no unique habitat types or highly suitable habitat for special-status plants was observed within the site.

SPECIAL-STATUS WILDLIFE: The potential for intensive use of habitats within the site by special-status wildlife species is also low. Special-status wildlife species recorded in the CNDDB (2017) in the search area include great gray owl (*Strix nebulosa*), burrowing owl (*Athene cunicularia*), tricolored blackbird (*Agelaius tricolor*), Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), pallid bat (*Antrozous pallidus*), spotted bat (*Euderma maculatum*), California red-legged frog (*Rana aurora draytonii*), foothill yellow-legged frog (*Rana boylii*), western pond turtle (*Emys marmorata*), San Joaquin roach (*Lavinia symmetricus ssp. 1*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). The USFWS IPaC Trust Report includes California red-legged frog and delta smelt (*Hypomesus transpacificus*).

Few of the species identified in Table 3 have potential to occur in the site on more than an occasional or transitory basis. Special-status birds may fly over the site on occasion, but none would be expected to nest in the area due to lack of preferred nesting habitat. For example, there are no marshes with open water and cattails for nesting tricolored blackbirds. While there are blackberry brambles in the understory of the Curtis Creek riparian corridor, shaded riparian corridors are not use by nesting tricolored blackbirds. The site does not provide suitable forest/meadow edge habitat for great gray owl, which is primarily known from more coniferous woodlands with open meadows at somewhat higher elevations than those in the site. Great gray owl would also not be expected to occur, especially for nesting, in an area of substantial human activity. No burrowing owls or suitable burrow habitat were observed in the site.

Townsend's big-eared bat, western mastiff bat, pallid bat, spotted and other special-status bats may fly over or forage in the site, but few would be expected to use the site intensively. Townsend's big-eared bat, western mastiff bat, and other bats that roost in trees may use some of the trees in the site for roosting. The site does not contain cliffs, caves, tunnels, or rocky areas used by other species of bats.

Curtis Creek provides aquatic habitat for San Joaquin roach, which is documented in the CNDDB (2017) in Curtis Creek, upstream and approximately 2.5 miles northeast of the site. The creek does not provide habitat for delta smelt or other species of special-status fish.

Curtis Creek provides marginal, yet potentially suitable habitat for foothill yellow-legged frog. The presence of bullfrogs in the creek reduces the potential for occurrence of foothill yellow-legged frog, and also reduces the suitability of Curtis Creek for other amphibians, including California red-legged frog, which is very unlikely to occur in or near the site. There are no occurrences of California red-legged frog recorded in the CNDDB (2017) within the search area and no populations are known to exist within Tuolumne County. Curtis Creek also provides marginal, yet potentially suitable habitat for western pond turtle. However, this species requires open sunny waterways for basking, which are not present in Curtis Creek within the site.

There are no blue elderberry shrubs in the site, precluding the potential occurrence of valley elderberry longhorn beetle. The site is also above 2,000 feet in elevation, and this species is not expected to occur at elevations over 500 feet (USFWS, 2017).

CRITICAL HABITAT: The site is not within designated critical habitat for California red-legged frog (USFWS, 2006), California tiger salamander (USFWS, 2005b), any vernal pool shrimp or plant species (USFWS, 2005a), or other federally listed species (Attachment D).

Discussion, Conclusions and Recommendations

- The portions of the site that will be developed consist of upland grassland and woodland habitats. Similar woodlands and upland grasslands are widespread in Tuolumne County, supporting a variety of mostly common plant and wildlife species.

- The majority of the new lots will be located in the disturbed grassland in the east part of the site. The project will involve clearing trees around the edges of the field, along the proposed access roads, in the vicinity of the detention basin, and along the south edge of the site. Because oaks and oak woodlands are valued by residents for aesthetic purposes, wildlife habitats, and privacy, tree removal will be limited to the footprint of areas to be graded. In total, the project will result in the conversion of approximately 2 acres of oak woodland habitat to residential uses. Similar oak woodlands occur throughout the west slope of the Sierra Nevada in Tuolumne County and numerous other counties. This future potential conversion of a small area of oak woodland habitat is a less than significant impact.

- Curtis Creek is the only potentially jurisdictional Water of the U.S. and/or wetland observed in the site. The creek flows along the north edge of the site in a broad riparian corridor. The potential limit of ACOE jurisdiction is defined either by the OHWM along the banks of the creek or the adjacent wetlands. All of the potentially jurisdictional areas are located well within the 100-year floodplain. A wetland delineation would need to be conducted and submitted to ACOE for verification to firmly establish the jurisdictional boundary.

- There are no potentially jurisdictional Waters of the U.S. or wetlands in the body of the site where development will occur. The body of the site consists of upland woodlands and grasslands.

- Construction of the outfall from the proposed detention basin to Curtis Creek will involve work within the riparian corridor. Depending on the limits of ACOE jurisdiction and the final design of the storm drain system, construction of the outfall may involve work within jurisdictional Waters of the U.S. Permits from ACOE, CDFW, and the Regional Water Quality Control Board RWQCB should be secured prior to the placement of any fill material within jurisdictional Waters of the U.S.

- If the outfall is constructed in uplands adjacent to the creek and outside the limits of ACOE jurisdiction, a 404 permit from ACOE would not be needed. However, notification to CDFW pursuant to Section 1602 of Fish and Game Code of California would be required for any work within the riparian corridor, including the storm drain outfall and construction of the retaining wall along the lots fronting the Curtis Creek corridor.

- Due to the lack of suitable habitat, it is unlikely special-status plants occur in the site.

- The likelihood of occurrence of special-status wildlife species in the site is considered low. Other than San Joaquin roach that may be present in Curtis Creek, no special-status wildlife species are expected to occur at or near the site on more than a very occasional or transitory basis. Special-status bats and birds may roost and/or nest in the site on occasion.

- To prevent potential impacts to special-status bats that may roost in the site, tree removal is recommended when daytime temperatures are 50^{o} F or higher to ensure bats are active and can abandon any potential roosts as disturbance from the clearing activities occurs. Mid-November through early-March is outside of the maternity season and the low elevation of the site is expected to preclude hibernation activities. Therefore, clearing activities between mid-November through early-March is also

recommended to substantially decrease the probability of occupancy of the site by bats.

- On-site trees, blackberry brambles, grasslands, and other vegetation may be used by nesting birds protected by the Migratory Bird Treaty Act of 1918 and Fish and Game Code of California. In order to avoid take of protected raptors and migratory birds, any vegetation removal should be scheduled for between September 1 and January 31, if possible. If vegetation removal occurs between February 1 and August 31, a pre-construction nesting bird survey should be conducted by a qualified biologist. If active nests are found within the survey area, vegetation removal should be delayed until the biologist determines nesting is complete.

Thank you again for asking Moore Biological Consultants to assist with this project. Please call me at (209) 745-1159 with any questions.

Sincerely,

Diane S. Moore, M.S.
Principal Biologist

References and Literature Consulted

ACOE (U.S. Army Corps of Engineers). 1987. Technical Report Y87-1. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MI.

ACOE. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. U.S. Army Engineer Research and Development Center, Vicksburg, MS. September.

CNDDB (California Natural Diversity Database). 2015. California Department of Fish and Wildlife's Natural Heritage Program, Sacramento, California.

CNDDB. 2017. California Department of Fish and Wildlife's Natural Heritage Program, Sacramento, California.

CNPS (California Native Plant Society). 2017. On-line Inventory of Rare and Endangered Vascular Plants of California, 8th Edition. California Native Plant Society, Sacramento, California. www.rareplants.cnps.org.

Jennings, M.R. and M.P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. Prepared for California Department of Fish and Game, Rancho Cordova, California. November.

National Oceanic and Atmospheric Administration (NOAA). 2005. Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California; Final Rule. Federal Register 70 (170): 52488-52585. September 2, 2005.

Sawyer, J.O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society, Sacramento. California.

USFWS (United States Fish and Wildlife Service). 1980. Part II, Department of the Interior, Fish and Wildlife Service. 50 CFR Part 17. Listing the Valley Elderberry Longhorn Beetle as a Threatened Species with Critical Habitat. Federal Register 45 No. 155, pp. 52803-52807, August 8.

USFWS. 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). U.S. Fish and Wildlife Service; Sacramento, California. 28pp.

USFWS. 1994. Final Critical Habitat for the Delta Smelt (*Hypomesus transpacificus*). Federal Register Vol. 59, No. 242, December 19, 1994, pp. 65256 – 65279.

USFWS. 2005a. Part II, Department of the Interior, Fish and Wildlife Service. 50 CFR Part 17: Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon; Evaluation and Economic Exclusions from August 2003 Final Designation, Final Rule. Federal Register Vol. 70, No. 154, August 11.

USFWS. 2005b. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population; Final Rule. Federal Register Vol. 70, No. 162, August 23, 2005, pp. 49390 – 49458.

USFWS. 2006. Part II, Department of the Interior, Fish and Wildlife Service. 50 CFR Part 17: Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for California Red-Legged Frog, and Special Rule Exemption Associated with Final Listing for Existing Routine Ranching Activities, Final Rule. Federal Register Vol. 71, No. 71, April 13.

Attachment A

Project Maps (Tentative Map, Existing Site Plan & Proposed Site Plan)

VESTING TENTATIVE SUBDIVISION MAP

BEING PARCEL A-1 & PARCEL A-2 OF THAT CERTAIN PARCEL MAP FILED FOR RECORD IN VOLUME 42 OF PARCEL MAPS AT PAGE 18, TUOLUMNE COUNTY RECORDS AND LYING WITHIN THE NORTHWEST ¼ OF THE NORTHWEST ¼ OF SECTION 10, T.1N., R.15E., M.D.M., TUOLUMNE COUNTY, CALIFORNIA

DECEMBER 2017

N

0 40 80

GENERAL NOTES

OWNER / DEVELOPER:

KRAG BROTHBY
OXBOW INVESTMENTS, LLC
223311 OXBOW LANE NORTH
SONORA, CA 95370

ASSESSOR'S PARCEL NUMBER:

PARCEL A-1 = APN 061-150-024
PARCEL A-2 = APN 061-150-025

EXISTING ZONING:

RE-1 & RE-5

PROPOSED ZONING:

R-1

GENERAL PLAN DESIGNATION:

LIGHT INDUSTRIAL

WATER PROVIDER:

TUOLUMNE UTILITIES DISTRICT

SEWER PROVIDER:

TUOLUMNE UTILITIES DISTRICT

MISCELLANEOUS UTILITY PROVIDERS:

ELECTRIC: PG&E
TELEPHONE: AT&T
CABLE: VERIZON OR AT&T
GAS: KAMPS OR JS WEST

PROJECT ACREAGE:

PARCEL A-1 = 1.06 ACRES
PARCEL A-2 = 5.00 ACRES

PROPOSED SETBACKS:

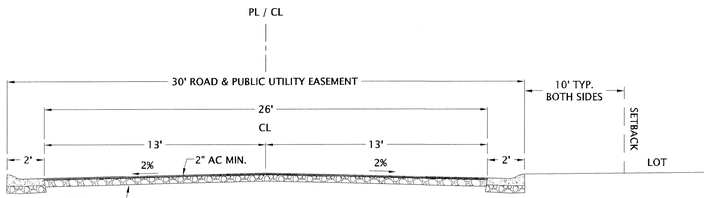
FRONT: 10'
SIDE: 0'/5', 3'/3'
REAR: 5'

ROADS WILL BE PRIVATELY MAINTAINED BY A HOME OWNERS ASSOCIATION. ALL ROADS WILL BE NAMED ON THE FINAL SUBDIVISION MAP.

ALL UTILITIES INCLUDING WATER, SEWER, ELECTRICITY, TELEPHONE, DATA AND CABLE LOCATED WITHIN THE PROJECT WILL BE UNDERGROUND.

15' WIDE PRIVATE ROAD AND PUBLIC UTILITY EASEMENT ALONG ALL LOT FRONTAGES.

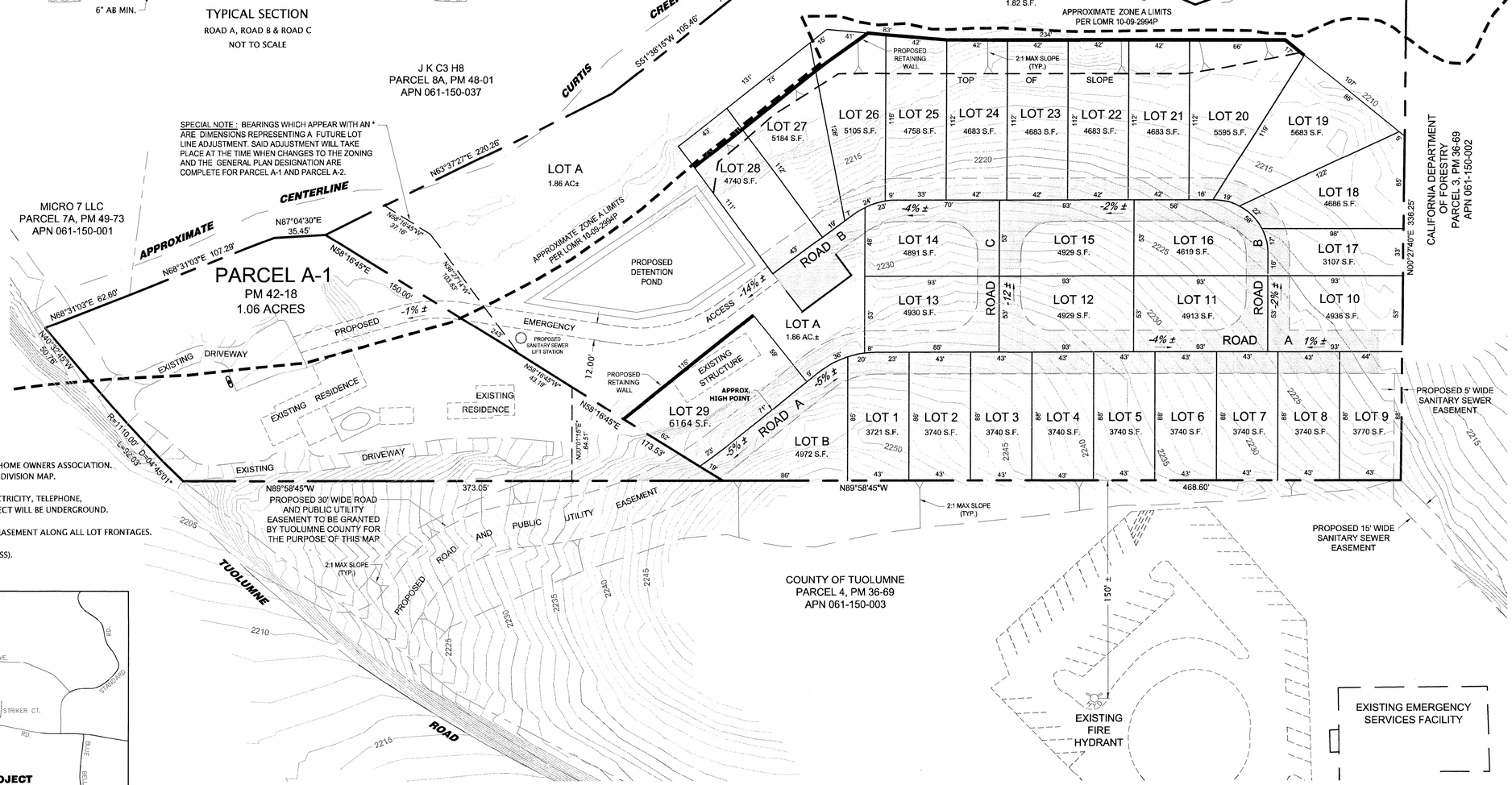
MINIMUM LOT SIZE IS 3100 SQUARE FEET (GROSS).

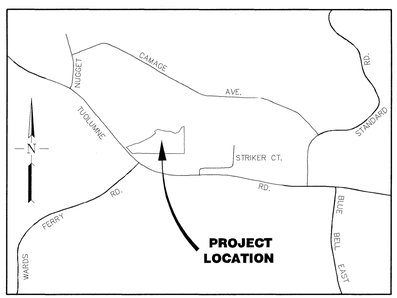


TYPICAL SECTION

ROAD A, ROAD B & ROAD C

NOT TO SCALE





VICINITY MAP

NOT TO SCALE

REVISIONS			
REV. No	DESCRIPTION	REV. DATE	BY
1			
2			
3			
4			
5			

PROJECT NAME:
TENTATIVE PARCEL MAP
OXBOW INVESTMENTS, LLC
14698 TUOLUMNE ROAD
SONORA, CA 95370
TUOLUMNE COUNTY CALIFORNIA

STAMP:

Weber, Ghio & Associates, Inc.
Professional Engineers
394 East Saint Charles
P.O. Box 251
SAN ANDREAS, CALIFORNIA 95249

PRJ. No.:	2687
PRJ. DATE:	12/11/2017
SCALE:	AS SHOWN
DRAWN BY:	JES
CHECKED BY:	DJB

SHEET: **TPM1**

SHT. 1 of SHT. 1

EXISTING SITE PLAN

Land & Structure
SURVEYING | ENGINEERING | DESIGN
105 SOUTH STEWART STREET, SONORA, CALIFORNIA, 95370 T: 209.532.5173 F: 209.532.5220

REVISIONS:

rev	date	description

OWNER INFORMATION:

Oxbow Investments Inc
23311 Oxbow Ln N.
Sonora, CA. 95370
Ph (209) 206-2469

SITE INFORMATION:

061-150-25
14698 Tuolumne Rd.
Sonora, CA 95370

PROJECT INFORMATION:

A Site Review Plan for:
Oxbow Investments, LLC
Krag Brotby
14698 Tuolumne Rd.
Sonora, CA 95370
Ph (209) 206-2469

ENGINEER OF RECORD:

PRELIMINARY NOT FOR CONSTRUCTION

ISSUE DATE: 08.28.15
DRAWN BY: ZPG
CHECKED BY: -
SCALE: 1"=40'
DRAWING: Brotby Topo
PROJECT NO: 15-01.02
SHEET: 4 OF: 4

LEGEND

(D)	PROPOSED DRAIN INLET
(S)	PROPOSED SANITARY SEWER MANHOLE
	FIRE HYDRANT
- - - -	PROPOSED DRAINAGE CULVERT
SEWER	PROPOSED SANITARY SEWER LINE
WATER	PROPOSED WATERLINE
▬	PROPOSED RETAINING WALL
◄ ###	SLOPE (FINISHED SURFACE)
⊕ ###	ELEVATION (FINISHED SURFACE)
⇐	FLOW DIRECTION

Land & Structure
SURVEYING | ENGINEERING | DESIGN
105 SOUTH STEWART STREET, SONORA, CALIFORNIA, 95370 T: 209.532.5173 F: 209 532 5220

REVISIONS:

rev	date	description

OWNER INFORMATION:
Oxbow Investments Inc
23311 Oxbow Ln N.
Sonora, CA. 95370
Ph (209) 206-2469

SITE INFORMATION:
061-150-25
14698 Tuolumne Rd.
Sonora, CA 95370

PROJECT INFORMATION:

A Site Review Plan for:
Oxbow Investments, LLC
Krag Brotby
14698 Tuolumne Rd.
Sonora, CA 95370
Ph (209) 206-2469

ENGINEER OF RECORD:

REGISTERED PROFESSIONAL ENGINEER
ZACHARIAH P. CARMAN
No. 69194
EXP. 06/30/16
CIVIL
STATE OF CALIFORNIA
PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE DATE:	*08.28.15*
DRAWN BY:	*ZPG*
CHECKED BY:	-
SCALE:	*1"=40'*
DRAWING:	*Brotby Topo*
PROJECT NO:	*15-01.02*
SHEET: 2	OF: 4

SCALE 1" = 40'

PROPOSED SITE PLAN

Attachment B

CNDDB Summary Report and Exhibits

& USFWS IPaC Trust Resource Report

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Columbia SE (3812013) OR Standard (3712083))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Banksula melones Melones Cave harvestman	ILARA14010	None	None	G1	S1	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Diplacus pulchellus yellow-lip pansy monkeyflower	PDSCR1B280	None	None	G2	S2	1B.2
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Eryngium pinnatisectum Tuolumne button-celery	PDAPI0Z0P0	None	None	G2	S2	1B.2
Erythranthe marmorata Stanislaus monkeyflower	PDPHR01130	None	None	G2?	S2?	1B.1
Erythronium tuolumnense Tuolumne fawn lily	PMLIL0U0H0	None	None	G2G3	S2S3	1B.2
Euderma maculatum spotted bat	AMACC07010	None	None	G4	S3	SSC
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Horkelia parryi Parry's horkelia	PDROS0W0C0	None	None	G2	S2	1B.2
Iris hartwegii ssp. columbiana Tuolumne iris	PMIRI090D2	None	None	G4T1	S1	1B.2
Larca laceyi Lacey's Cave pseudoscorpion	ILARA39010	None	None	G1G2	S1	
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lavinia symmetricus ssp. 1 San Joaquin roach	AFCJB19021	None	None	G4T3Q	S3	SSC

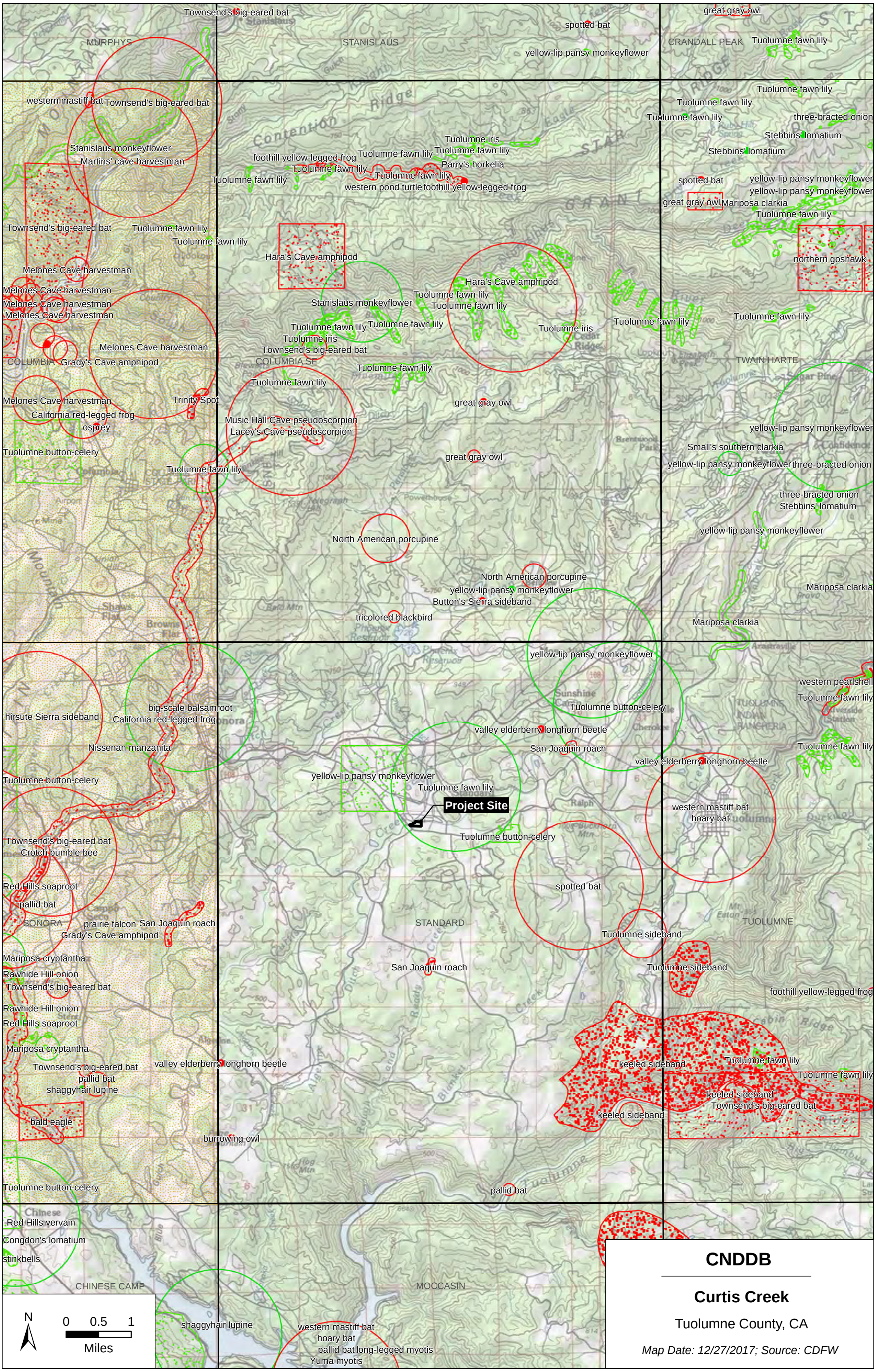
Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Monadenia circumcarinata keeled sideband	IMGASC7020	None	None	G1	S1	
Monadenia mormonum buttoni Button's Sierra sideband	IMGASC7071	None	None	G2T1	S1S2	
Monadenia tuolumneana Tuolumne sideband	IMGASC7100	None	None	G1	S1	
Pseudogarypus orpheus Music Hall Cave pseudoscorpion	ILARA40010	None	None	G1G2	S1	
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Strix nebulosa great gray owl	ABNSB12040	None	Endangered	G5	S1	
Stygobromus harai Hara's Cave amphipod	ICMAL05470	None	None	G1G2	S1S2	

Record Count: 28



CNDDB

Curtis Creek

Tuolumne County, CA

Map Date: 12/27/2017; Source: CDFW

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Tuolumne County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.

2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or are known to have particular vulnerabilities in your project location. To learn more about the levels of concern for birds on your list, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your specific project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the E-bird data mapping tool (search for the scientific name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain time-frame) and the E-bird Explore Data Tool (perform a query to see a list of all birds sighted in your county or region and within a certain time-frame). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found below.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC), but is of concern in this area either because of the Eagle Act, or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Mar 20 to Sep 15
Black Swift *Cypseloides niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black-chinned Sparrow *Spizella atrogularis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31
Burrowing Owl *Athene cunicularia* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
California Thrasher *Toxostoma redivivum* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC), but is of concern in this area either because of the Eagle Act, or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Apr 1 to Aug 31
Lewis's Woodpecker *Melanerpes lewis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Long-billed Curlew *Numenius americanus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Nuttall's Woodpecker *Picoides nuttallii* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20

Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
White Headed Woodpecker Picoides albolarvatus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9411	Breeds May 1 to Aug 15
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

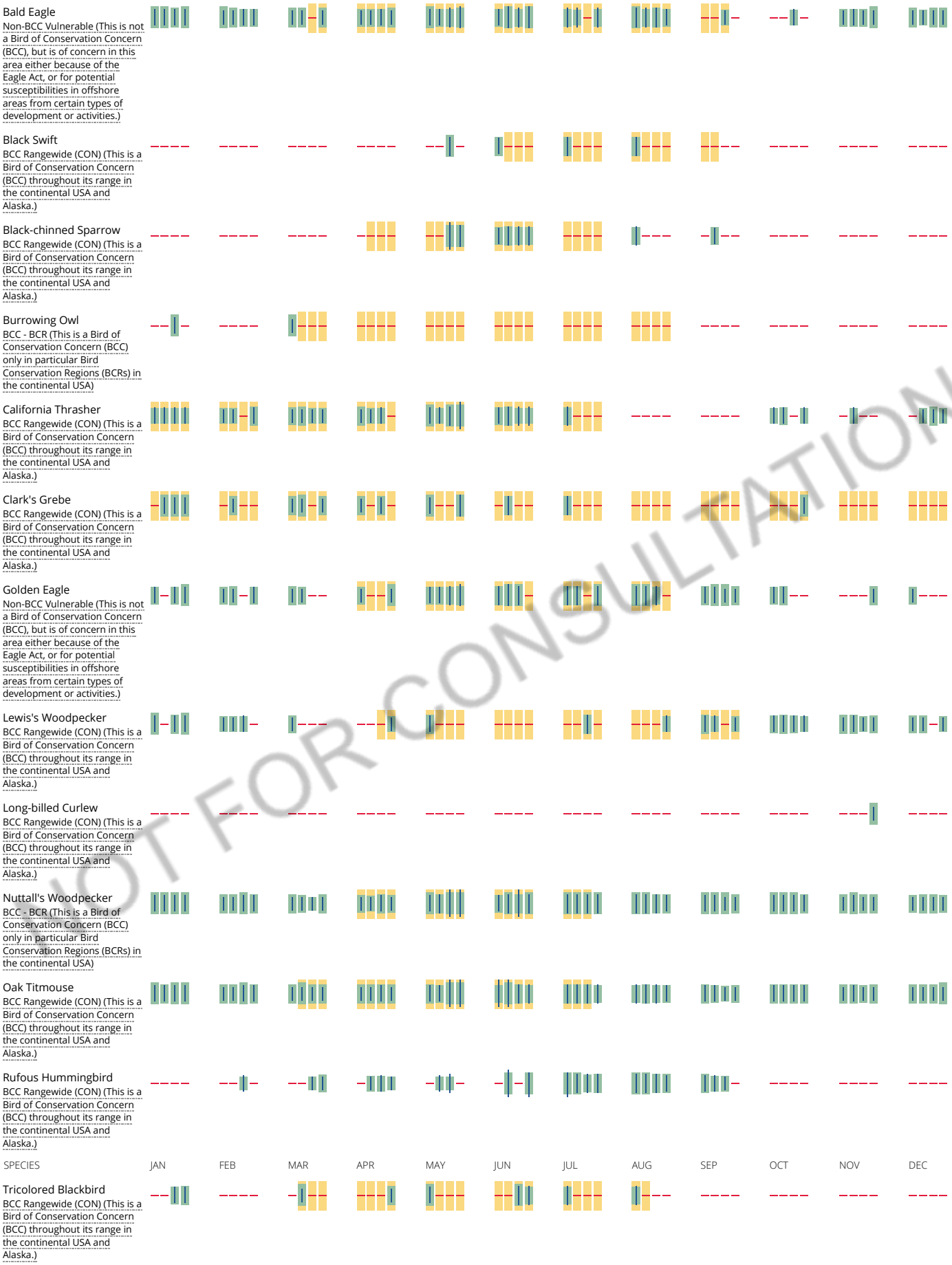
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

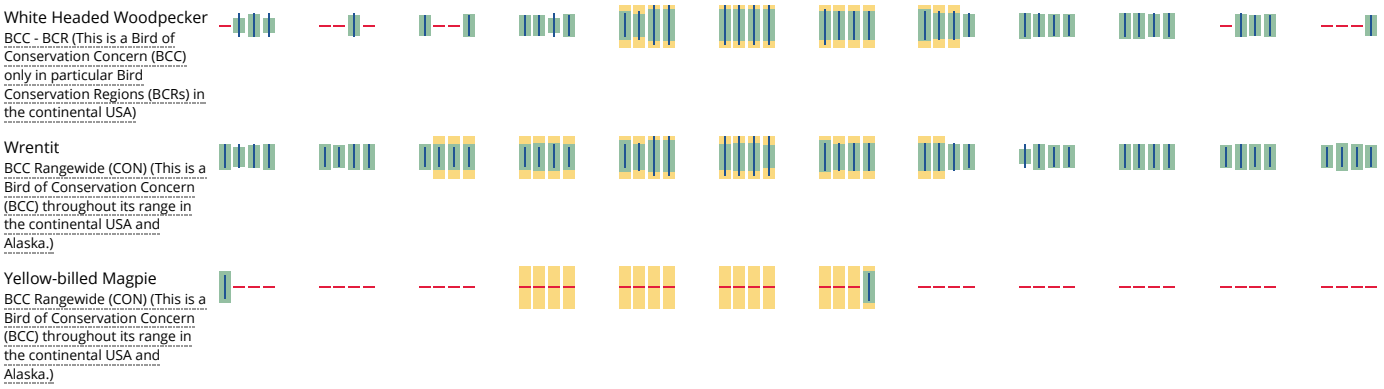
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.

■ probability of presence ■ breeding season | survey effort – no data

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in Birds of North America (BNA) Online under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a subscription. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the Endangered Species Act (ESA).

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets. The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Avoidance and minimization measures should be implemented to reduce impacts to birds on your list, and all other birds that may occur in your project area. Nationwide Standard Conservation Measures can be applied for any project, regardless of project type or location.

If measures exist that are specific to your activity or to any of the species on your list that are confirmed to exist at your project area, these should also be considered for implementation in addition to the Nationwide Standard Conservation Measures. Implementation of avoidance and minimization measures is particularly important for BCC birds of rangewide concern.

If your project has the potential to disturb or kill eagles, you will need to obtain a permit to avoid violating the BGEPA should such impacts occur.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND
PEMA

FRESHWATER FORESTED/SHRUB WETLAND
PFOA

FRESHWATER POND
PUBFx

A full description for each wetland code can be found at the National Wetlands Inventory website: https://ecos.fws.gov/ipac/wetlands/decoder

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment C

Photographs

Oak woodlands just north of the barn, looking southwest; 05/05/15. There will be no project development in this part of the site.

Annual grassland in the east part of the site, looking northeast; 05/05/15. The majority of the proposed lots are in this open field.

Curtis Creek in the north-central part of the site, looking northeast; 05/05/15. Proposed lots 27 and 28 will be developed in this area, with grading 50+/- feet or further from the top of bank.

Cluster of trees in the northeast part of the site, looking east; 05/05/15. The home sites will be situated south of the fence, primarily in the open grassland area that was a former vineyard.

Existing home in the west part of the site, looking east from Tuolumne Road; 05/05/15. The primary road to the proposed lots will be parallel to and south of the existing driveway.

Lawn area just east of the existing home along Tuolumne Road, looking east; 05/05/15. The secondary (emergency) access road to the proposed lots will pass through this lawn area.

Low terrace between the barn and Curtis Creek, looking west; 05/05/15. A secondary road and the proposed detention basin will be constructed in this area.

Curtis Creek, just north of the proposed detention basin, looking west; 05/05/15. The existing existing homes in the west part of the site near Tuolumne Road will remain.

Existing barn and sheds in the south-central part of the site, looking northwest; 05/05/15. These structures will be demolished.

Curtis Creek just upstream of Tuolumne Road, looking northeast; 02/20/15. Ash, alders, and willows are dominant trees near the creek, while oaks are dominant further upslope.

Attachment D

Designated Critical Habitat

CRITICAL HABITAT

Curtis Creek

Tuolumne County, CA

Map Date: 12/27/2017; Source: USFWS

- Colusa grass
- Fleshy owl's-clover
- Greene's tuctoria
- Hoover's spurge

N

0 0.75 1.5

Miles

Project Site

FORT MOUNTAIN
DORRINGTON
CALAVERITAS
MURPHYS
STANISLAUS
CRANDALL
ANGELS CAMP
COLUMBIA
COLUMBIA SE
TWAIN HARTE
HULL CREEK
MELONES DAM
SONORA
STANDARD
TUOLUMNE
DUCKWALL MOUNTAIN
KEYSTONE
CHINESE CAMP
MOCCASIN
GROVELAND
JAWBONE RIDGE
COOPERSTOWN
LA GRANGE
PENON BLANCO PEAK
COULTERVILLE
BUCKHORN PEAK

APPENDIX C

CULTURAL RESOURCE ASSESSMENT

FOR THE KRAG BROTBY PROPERTY,

TUOLUMNE COUNTY, CALIFORNIA

Prepared by

Peak & Associates, Inc.
3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95762 (916) 939-2405

Prepared for

Krag Brotby
Oxbow Investments LLC
24311 Oxbow Lane N.
Sonora, CA 95370

August 2015
(Job #15-023)

INTRODUCTION

The Krag Brotby Property lies in the northwest quarter of Section 10, T1N, R15E, mapped on the Standard USGS topographic quadrangle. The Project Area is located on the south banks of Curtis Creek north and east of Tuolumne Road and north of the CalFire compound. (Figure 1).

The property is divided into Parcel A1, a parcel of about 1.6 acres at the front (west) side of the property, and Parcel A2, 6 acres on the east side of the property. The proposed project would convert Parcel A-2 to a mobile home park, including manager's apartment/office, a recreation hall and about 25 mobile home lots.

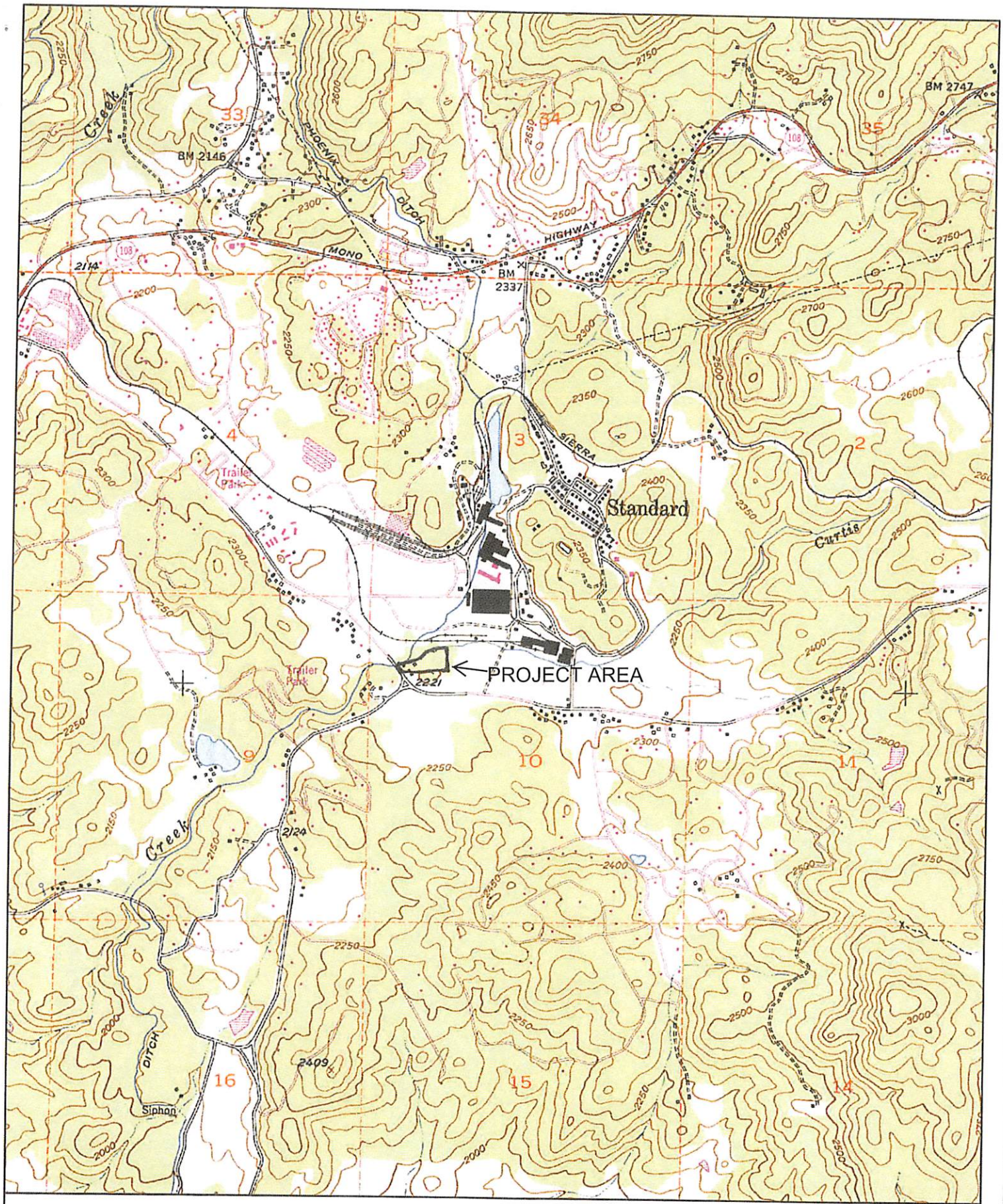
This report describes the study done by Peak & Associates, Inc. To evaluate the potential effects of the project on cultural resources. Melinda Peak served as principal investigator for the current study. Michael Lawson conducted the current field survey (resumes, Appendix 1).

REGULATORY CONTEXT

State historic preservation regulations affecting this project include the statutes and guidelines contained in the California Environmental Quality Act (CEQA; Public Resources Code sections 21083.2 and 21084.1 and sections 15064.5 and 15126.4 (b) of the CEQA Guidelines). CEQA Section 15064.5 requires that lead agencies determine whether projects may have a significant effect on archaeological and historical resources. Public Resources Code Section 21098.1 further cites: A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

An "historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record or manuscript that is historically or archaeologically significant (Public Resources Code section 5020.1).

Advice on procedures to identify such resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research (OPR), CEQA and Archaeological Resources, 1994. The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including, but not limited to, museums, historical commissions, associations and societies be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of the antiquity and provides for the sensitive treatment and disposition of those remains (California Health and Safety Code Section 7050.5, California Public Resources Codes Sections 5097.94 et al).



Name: STANDARD
Date: 8/10/2015
Scale: 1 inch equals 2000 feet

Location: 10 735879 E 4204802 N
Caption: 15-023
Krag Brotby Property
Ron Kopf

MAP 1

The California Register of Historical Resources (Public Resources Code Section 5020 et seq.)

The State Historic Preservation Office (SHPO) maintains the California Register of Historical Resources (CRHR). Properties listed, or formally designated as eligible for listing, on the National Register of Historic Places are automatically listed on 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.

For the purposes of CEQA, an historical resource is a resource listed in, or determined eligible for listing in the California Register of Historical Resources. When a project will impact a site, it needs to be determined whether the site is an historical resource. The criteria are set forth in Section 15064.5(a)(3) of the CEQA Guidelines, and are defined as any resource that does any of the following:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B. Is associated with the lives of persons important in our past;

C. 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; or

D. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, the CEQA Guidelines, Section 15064.5(a)(4) states:

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code section 5020.1(j) or 5024.1.

California Health and Safety Code Sections 7050.5, 7051, And 7054

These sections collectively address the illegality of interference with human burial remains, as well as the disposition of Native American burials in archaeological sites. The law protects such remains from disturbance, vandalism, or inadvertent destruction, and establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project, including the treatment of remains prior to, during, and after evaluation, and reburial procedures. [California Public Resources Code Section 15064.5(e)]

This law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction. The section establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project and establishes the Native American Heritage Commission as the entity responsible to resolve disputes regarding the disposition of such remains.

CULTURAL HISTORY

Archeological Background

Interest in Sierran archeology has developed considerably since Heizer and Elsasser (1953) and Elsasser (1960) presented the first effective synthesis or overview. The investigation of areas to be impacted by various water projects in the foothills has produced several regional cultural chronologies (Fitzwater 1962; Moratto 1972; Johnson 1967; Ritter 1970; Fitting et al. 1979; Moratto and Riley 1980). Other management-based surveys, such as Bennyhoff's (1956) and Napton's (1978) for Yosemite Valley, have produced regional cultural chronologies that are still generally accepted. The extensive field investigations conducted for the New Melones project and associated facilities, conducted from 1968 to the mid-1980s, has provided detailed information on the prehistoric cultures of an area less than ten miles from Murphys. This work was summarized by Moratto, Tordoff and Shoup in 1988. Additional data was added by excavations on Clarks Flat near Vallecito as part of the North Fork Stanislaus River Project (Peak and Crew 1990).

For years researchers have found vague indications of some occupation of the west slopes of the Sierra Nevada during the early holocene, *circa* 6,000-8,000 B.C., or earlier, by representatives of the Western Pluvial Lakes Tradition (Bedwell 1973). Elston defined the Tahoe Reach Phase.for the Lake Tahoe region based on finds of large lanceolate and broad-stemmed projectile points (Elston et al. 1977), including two Parman point bases that were found near Truckee. Lower down the slopes of the Sierra, Crew (1980) reported that a "Parman point" was found at Clarks Flat during Science Application Inc.'s (SAI) excavation of CA-CAL-S347, during Phase 2 of the New Melones Lake Project. Peak & Associates, Inc. (1981) found a Silver Lake point at the 5400 foot elevation in 1980 on the South Fork of the American River, and reported a basalt Lake Mojave point from Plumas National Forest. Bedwell suggested the Western Pluvial Lakes Tradition was essentially a lacustrine-based Late Pleistocene and Anathermal occupation, but these finds indicate it was more broadly based in geographic expression. Because these early cultures are not restricted to lacustrine habitats, the associated projectile points have sometimes been called the Western Stemmed Series or the Great Basin Stemmed Series.

Moratto suggested an initial occupation in the New Melones area sometime before 6,000 B.C. termed the **Clarks Flat Phase**, characterized by large-stemmed bifaces, a single Great Basin Transverse point (crescent) and large basalt side scrapers (Moratto et al. 1984:506-508). The evidence of this phase collected during the New Melones project was too sketchy to provide more

detail, but later work at CA-Cal-S275 (Peak 1987) and CA-Cal-S342 (Peak and Crew 1990) on Clarks Flat provided many more artifacts of this time period in stratigraphic context. Enough material was recovered to suggest that the Clarks Flat Phase could be divided into early and late periods. The Early Clarks Flat Phase at CA-Cal-S342, beginning at about 7,600 B.C. or earlier, is characterized by 13 varieties of the Western Stemmed Series points, five varieties of scraper, notched tools, beaked gravers, discoidals and retouched flakes (Peak and Crew 1990 227-228). All of these types are still present in the Late Clarks Flat Phase, beginning at least by 4,800 B.C., along with four more point types five more scraper types and the first appearance of ground stone artifacts. The temporal separation of the two phases is established by their occurrence in separate soil strata. The cultural difference may be primarily in an increase in the length and intensity of site occupation in the later period, rather than a major cultural change.

At about 4,550 B.C. there is an introduction of a series of broad-stemmed, concave-based projectile points at CA-Cal-S342 that has been designated as the Stanislaus Broad Stemmed type. The temporally diagnostic form at CA-CAL-S342 is a shouldered, expanding stem point with a concave base. Typologically, they generally conform to the Pinto Series as defined by Campbell and Campbell (1935), Rogers (1939), Harrington (1957), Heizer and Clewlow (1968), and Hester and Heizer (1973), but there is enough variation from the norm to justify assigning a different name. A suite of five radiocarbon age determinations indicate an appearance of these Stanislaus Broad Stemmed points at about 4,550 B.C. and terminal use can be calculated at about 4,250 B.C. Other characteristic traits are an intensive use of ground stone implements including subrectangular-shaped manos, atlatl weights, net weights, mesh gauges, and the use of steatite for a variety of objects. The period characterized by the presence of this point series has been termed the **Stanislaus Phase** by Peak and Crew (1990:229-230). Most of the earlier point types persist as do all of the other types of lithic tools. Other flaked stone tool types make their first appearance (denticulates, adze-like tools etc.) and the ground stone industry includes a greater variety of milling stone types and the use of steatite objects.

The period between 6,000 and 3,500 B.C. is poorly represented at the sites investigated in the New Melones project, but as Moratto points out:

> *At no time during the [project] did paleoenvironmental specialists conduct field surveys to inventory the relict ancient landforms and paleosols most likely to harbor early and middle Holocene archeological remains. All of the known cultural materials of such antiquity in the study area were discovered fortuitously, insofar as they occurred below younger, more visible archeological deposits.* (Moratto et al. 1988: 509)

The earliest well-defined cultural phase at CA-Cal-S286, the site that provided the bulk of the data for the New Melones cultural sequence, is the **Texas Charley Phase**, *circa* 3,500 to 2,500 B.C. Characteristic artifacts are choppers, large Lanceolate bifaces, a contracting-stem biface fragment, scrapers, and possibly manos. There is a lack of midden and a low incidence of artifacts, which implies minimal site use (Moratto et al. 1984:195). A high proportion of the lithic material in this

phase is a high quality chert available at quarries in the Valecito area and at Moaning Cave. There is a break in the record at CA-Cal-S286 after the Texas Charley Phase and the succeeding phase is known primarily from other sites in the New Melones area.

The **Calaveras Phase** tool kit generally corresponds to the Stanislaus Phase, as defined by Peak and Crew, in everything but date. The Calaveras Phase is dated at about 2,500 to 1,000 B.C (Moratto et al. 1984:1.103). It is tempting to view this as two different names for the same cultural expression, but both phases are quite reliably dated by multiple radiocarbon dates. In addition, the Texas Charley Phase lies between the Stanislaus and Calaveras Phases in time. One way to explain this would be if the Texas Charley phase is equivalent to the Late Clarks Flat Phase and one set of dates or the other is significantly skewed. Another explanation might be that an early population using the Stanislaus/Calaveras tool kit was displaced for a time by an unrelated group (Texas Charley Phase) then reoccupied the area. The wide range of dates assigned to the Pinto Series points, as early as 5,500 B.C. (Warren 1980) to as late as 700 B.C. (Heizer and Hester 1978), makes this a feasible explanation.

The Calaveras Phase is marked by the presence of millingstones, manos, scrapers and a wide range of chipped stone tools, including Humboldt Concave Base, Sierra Side-notched Pinto Sloping Shoulder, Pinto Square Shoulder and Large Lanceolate projectile points. Obsidian debitage occurs in higher proportions than the earlier phases. Finds of "pestle-like objects," that do not appear to have functioned as pestles, are an interesting feature of this phase. There are low quantities of fire-altered rock, charcoal, and artifacts that, again, suggest that site use was limited in intensity.

The **Sierra Phase** was found in stratum B at CA-Cal-S286, a buried midden yielding higher quantities of all types of cultural material than the lower strata. Moratto gives dates of about 1,000 B.C. to A.D. 500 for this phase (Moratto et al. 1988:511-513). Ground stone is abundant, and includes millingstones, manos, cobble mortars, and pestles. There are numerous types of chipped stone tools, including perforators and "double-sided" scrapers. Projectile points that characterize the phase are: Elko Eared, Elko Corner Notched, Sierra Concave Base, Bipoint, Medium Corner Notched, Triangular Contracting Stem, Medium Triangular Contracting Stem, and Sierra Side Notched forms. The maximum intensity of site use at Texas Charley Gulch occurred during this phase. The discovery of a living floor at CA-Sac-S286, the appearance of mortar and pestle technology suitable for exploiting acorns as a major food source and the density of artifact distribution all imply a "...degree of sedentism not evidenced in the older components...." (Moratto et. al 1988: 273) Stable trade relationships to both the east and west are indicated by the presence of a large amount of obsidian traded in, primarily, from the Bodie Hills source and the use of *Haliotis* and *Olivella* beads and ornaments from the coast.

The **Redbud Phase**, from about A.D. 500 to 1,300, is poorly defined at CA-Cal-S286. In fact, all of the sites in the New Melones project area that have Sierra Phase components have little or no evidence of occupation in the Redbud Phase. The modest evidence of habitation in this phase found at a few sites in the New Melones project area suggests a low intensity of use by small, probably mobile, populations with no cultural continuity with the preceding phases. The breakdown of trade

relationships (obsidian is relatively rare in components of this phase) also suggests a major cultural break. The appearance of Rosegate Series points and "possible" Gunther Barbed points is a hallmark for the introduction of the bow and arrow during this phase. Peak (1973) saw the diminished use of CA-Cal-S347 in this period as a co-occurrence with the expansion of site use at CA-Cal-S276 on Clarks Flat, perhaps due to a larger area at the latter site to accommodate a growing population. However, this does not explain the minimal evidence of the period at most other sites in the vicinity.

Ericson's (1977) study of the obsidian exchange systems in California has provided a large corpus of comparative data and emphasized the importance of exchange systems in the prehistory of the region. The postulated slowdown or cessation of Sierran quarry operations after A.D. 500 (Singer and Ericson 1977) is an event of considerable importance in the prehistory of the region, since it coincides with the increased intensity of quarry operations in Napa Valley. This relationship, whether due to the better logistical situation of the Napa quarries in respect to valley trade or increased consumer populations in the Sierra -- which absorbs most of the Sierran production -- and/or the impacts due to the introduction of the bow and arrow at the same time, are all unknown equations that will have to be addressed.

The Redbud Phase is followed by a period of intensive occupation representing the **Horseshoe Bend Phase** from *circa* A.D. 1300 to 1848. Of 68 excavated sites in the New Melones project area, 42 included middens, bedrock mortars and other evidence of long-term or repeated occupation dating to the Horseshoe Bend Phase. The analysis indicates:

> *...that late prehistoric times witnessed larger populations, more sedentism, tighter spatial clustering of settlements, and higher levels of both intra- and inter-site organization than in any earlier time period.* (Moratto et al. 1988:517)

Characteristics of this phase include Desert Side Notched, Cottonwood Triangular, and Gunther Barbed projectile point forms, *Olivella*, *Saxidomus* and steatite beads and a wide variety of flake tools. The use of mano and millingstone technology continues beside the common pestle and bedrock mortar grinding technology. In all respects this material culture is similar to that known from ethnography for the Central Sierra Miwok.

The post-contact archeology of the Central Sierra Miwok is reflected in the 33 components of the **Peoria Bend Phase** identified in the New Melones project area. This material reflects generally ephemeral occupation after A.D. 1848 and the introduction of many items of European manufacture into the material culture. In some cases traditional tools are made using new materials, such as Desert Side Notched and Cottonwood Triangular points made on bottle glass. After the initial Gold Rush forced the Miwok out of most of their original territory, the consolidation of mining into a few of the most productive areas after 1852 allowed the Native Americans to filter back into their traditional areas, albeit in much reduced numbers (Hall 1978). There is evidence from archeology (Johnson 1973:72) and recent ethnography (Theodoratus 1976:450) to indicate that Clarks Flat was home to some 35 Miwok in the late 1800s. Historical evidence (Peters 1988:58) indicates that this may have been seasonal or transitory use rather than permanent habitation.

Ethnographic Background

Ethnographic literature is often uncertain in definition of cultural boundaries for Indian groups. Early displacement by white intrusion resulted in population shifts to avoid conflict with the Spanish, and later with the miners and settlers. The ravages of disease and warfare decimated the native people, further weakening cultural identity. Informants were often uncertain of original territories of the various tribal groupings.

The area near Avery -- on both sides of the Stanislaus, which was not as much a barrier to Indian transportation as it is to modern travel -- has generally been assigned to the Central Miwok (Barrett 1908; Bennyhoff 1977; Levy 1978; Kroeber 1925). Regardless of cultural affines at the time of white contact, the subsistence base and material culture were markedly similar throughout the foothill region. Within physiographic regions, neighboring Indian groups, although perhaps of different linguistic families, have more traits in common than with related stock in dissimilar zones.

Miwok territorial boundaries are given as the Cosumnes River to the north, the Fresno River to the south, east to the Sierra Nevada crest, and west to the eastern edge of the Great Valley plains, with an extension onto the plains north of the Calaveras River. Their area comprised the whole or part of the present political units of Sacramento, Amador, Calaveras, San Joaquin, Stanislaus, Tuolumne, Mariposa, Merced, and Madera counties. The greater part of seven large river drainages is covered by the units: the Cosumnes, Mokelumne, Calaveras, Stanislaus, Tuolumne, Merced, and Fresno.

Three major physiographic units are spanned by the Miwok lands: the high Sierran ranges on the east, the foothills, and a section of the San Joaquin Valley on the west. Climatic variation is extreme, consistent with the changes in physiographic setting.

The severity of winter in the upper elevations of the Sierra Nevada precluded permanent villages, with aboriginal use restricted to summer and fall. Temporary camps within the mountain ranges permitted seasonal exploitation of the rich resource area, with the population returning to the foothill zones below 4000 feet, where a more moderate winter climate prevailed (Barrett and Gifford 1933).

Settlement was predicated upon topographic variables as well as on cultural selectivity. Canyons are often very steep, with few flat lands where villages could be located. As a result, most villages were situated on ridges or terraces above the streams. Available fresh water was a limiting factor to location, although small campsites established for special purposes are found with no nearby water source.

Subsistence was based on the acorn and supplemented by gathering of seeds, berries, nuts, and edible roots. Fish, game, and small mammals augmented the diet. Processing of acorns required use of mortar and pestle to reduce the nutmeats to meal. Bread and mush were made from the leached meal.

There are four ethnographic period syntheses or overviews that pertain to the study area. Theodoratus (1976) prepared an extensive ethnographic report on the Central Miwok, but she did not focus upon the acculturation of the Miwok after the Gold Rush began.

The other two major reports are concerned with the acculturation of the Miwok in the Melones region (Hall 1978; Van Beuren 1983). Hall's Study is ethnohistoric in orientation, with only one chapter concerned with the archeological evidence. Van Bueren's study, on the other hand, is concerned primarily with the archeological evidence. He provides a synopsis of all historical artifacts found on the site in the Melones region, and his study is valuable in this regard.

Hall has utilized the systems theory approach to acculturation studies that was formulated by Barnett *et al.* (1972). Barnett *et al.* (1972) provide a model to assess adjustments made by cultural systems in an acculturative situation, particularly where one system is dominant. Based upon Barnett *et al.*'s (1972) model, Hall assessed both of the cultural systems involved (Miwok and Euro-American) in terms of the "flexibility of their social structure, boundary maintaining mechanisms, and self-correcting mechanisms." The Miwok social structure had the needed flexibility, she concluded, since much of it survived to the turn of the century. The early Euro-American's cultural system (1850-1865), composed of mainly males, had basically no cohesive community structure. Thus,, there was no concerted policy toward dealing with the Miwok, besides punitive raids and racially-motivated crimes such as rape and murder. The decimation of the miwok population was severe. As Hall noted, it was surprising how well the social structure of the Miwok was able to adjust to the dramatic changes that came with white intrusion.

The original boundary-maintaining mechanism of the Miwok was the *nena* -- the tribal territory -- and it, of course, was overwhelmed by the influx of the gold miners and the heavy decimation of the Miwok population. The extent to which territories were modified, and how long they endured, is not known; this problem remains a major research concern. Hall (1978) believes the Clarks Flat sites represent refuge sites where small groups attempted to establish new settlements (territories) removed from the white settlements during the 1850s. The Miwok later moved back into some of their former territory after the 1860s, and it is necessary to distinguish these later sites from refuge sites of the first decade of contact.

The aboriginal self-correcting mechanisms of the Miwok cultural system were the *pota* ceremony and perhaps some shamanistic practices. Their major effect was to channel aggressive behavior into acceptable outlets. Since they were internal correcting mechanisms, they were useless in controlling the destruction of the miwok social system by outside forces such as the population decimation, habitat destruction, and expropriation of land by the white cultural system. In the ensuing decades, the "self-correcting mechanisms" of the Euro-American cultural system became dominant (laws and the government apparatus to ensure their compliance). Hall concludes by outlining the lacuna in our knowledge of the Miwok acculturative process, and provides a list of the research required to address the problems.

Van Bueren (1983), as stated earlier, focused mainly on assessing the extant archeological evidence. He did not excavate any site, but he did study some historic artifacts recovered from earlier excavations and attempted to synthesize all such information for the Melones area. Van Bueren (1983), in particular, examined the adoption of certain European artifact forms as replacements for the native manufactures. He also provides a detailed and valuable study of glass beads, and assessed their relative value for dating.

His approach was not guided by any systematic research design or format. Thus, while he archeologically documented the widespread evidence for acculturation in the final chapter, that it might be appropriate to use an "under development model" that argues "that the dominant colonial system exploits the native system by expropriating land and extracting value from the products of native labor" (Van Bueren 1983:164). Earlier, he is critical of Hall's use of systems theory, since he believes it assumes systems are autonomous and, second, it assumes "some kind of progressive adjustment is taking place between interacting cultures" (Van Bueren 1983:160). Van Bueren does not understand systems theory, since it does not make either of these assumptions. Systems theory can encompass "couples systems" as well as the full incorporation of one system into a larger system (the former becomes a sub-system). In brief, it is proposed to utilize the acculturation model proposed by Hall, since it can be archeologically initiated.

Historical Background

A large project evaluating the cultural resources of the New Standard Project was completed by Infotec Research, Inc. (King *et al.* 1991). The history in this document, prepared by Carlo De Ferrari, provides the bulk of the information presented below.

The Standard area was not an important gold mining region, although it is in a region that had several productive gold districts, particularly Soulsbyville less than three miles to the northeast and outlying mines such as the Draper, Black Oak and Junction. Curtis Creek was placer mined, but the locations of recorded claims are further down the creek, southwest of the project area (De Ferrari 1991:7)

The project vicinity was used for agriculture through virtually all of its history, although early on timber production was also an active operation. The land that includes the project area was patented in 1873. By this time a dam had been constructed southwest of the property on Curtis Creek by the Tuolumne River Water Company and a sawmill that was active in the 1850s lay to the northwest. The latter was also the site of Daniel McAuley's residence. He was the individual who first patented the land that includes the project area.

The route of modern day Tuolumne Road follows in general the route of a road that has been used since the 1850s. The portion of this road lying west of Curtis Creek to Sonora was made a county road in 1854. The eastern portion, extending to Cherokee Camp, was made a county road in 1860 (De Ferrari 1991:23).

The town of Standard was established to house workers at the very large lumber mill operated by the Standard Lumber Company starting in the early 1900s. The post office was established by 1910. It had a general store, a slaughterhouse, a barber shop and a variety of residential structures. It followed the pattern of the company town, popular in that era, where everything was constructed and owned by the company and rented or leased to the workers.

One of the reasons for locating Standard where it is was the presence of the Sierra Railroad adjacent to the town. The Sierra RR, established in 1897, made for convenient transport of logs and finished lumber and also provided a connection to the company's own logging railroad, the Sugar Pine Railway, which terminated at Ralph's Station, about two miles, as the crow flies, east of Standard. The facility of the lumber company that lies nearest to the project area is a branch of the railroad that leads to the railroad shops located on the north side of Curtis Creek.

In 1925 the Standard Lumber Company was sold to the Pickering Lumber Company, but the name of the town remained. Fiberboard Paper Products purchased Pickering Lumber Company in 1965 and Louisiana Pacific bought the facility and sold it in 1995 by its current owners, Sierra Pacific Industries.

RESEARCH

Records of previous cultural resource surveys and maps of recorded sites within the Project Area were reviewed by the Central California Information Center of the California Historical Resources Information System (File No. 9317/O).

The Project Area had been partially surveyed in the past (King *et al.* 1991) and there have been other surveys in the immediate area. The only recorded resource within the project property is the remains of two old Curtis Creek bridges that were on an older alignment of the Tuolumne Road. Verbal information from a long time resident of the area indicates that these were covered bridges (De Ferrari 1991:24). The remains have been assigned the designation P-55-003745 (CA-TUO-002759H) by the Information Center.

Unclassified portions of the record search may be found in Appendix 2.

FIELD SURVEY

A field review was made of the property by Michael Lawson on May 11, 2015 (resume, Appendix 1), using 15 meter wide transects. Ground visibility was not very good over much of the property, requiring the investigator to clear surface vegetation at intervals to provide visibility. On the

immediate banks of Curtis Creek the riparian growth is so thick that surface inspection was not feasible.

The site of the bridges was reinspected and the abutments and associated features are in the same condition as when recorded. There is considerably more brush in the area ,ow, based on comparison with photographs accompanying the site record, but this has not damaged the features.

The two current use houses and a barn on the property were recorded.

A prehistoric site was located near the southwest corner of the property. Artifacts were only identified in the graded road that crosses this area.

SITE DESCRIPTIONS

P-55-003745 is partially on the far western end of the property and partially off the property. Although largely reporting the remains of a pre-1912 bridge and a concrete arch bridge dating to 1912. The modern bridge was also included in the recording. Also associated is a small earthen ditch which is located out of the project area. The earliest bridge is represented by rubble abutments but the 1912 bridge is reasonably intact and still in use as access to the property.

The standing buildings on the property were assigned the designation Brotby 1. The residences are close together near the west edge of the property. The main (westernmost) house is a Craftsman Style with modifications. It has aluminum slider windows and a cinderblock enclosed porch. Otherwise, it is an unadorned example of this style which was very popular in the early twentieth century. Just east of this is another residence that displays the same colors and aluminum sliders as the first on, but is very different in style. It is a low, narrow frame house with large closed eaves and a shed roof that is barely sloped. There is a masonry chimney at one narrow end. The style is vernacular and plain. Farther east on the property is a tall narrow frame barn. This was used as a tasting room in the past. It has no distinguishing features.

The prehistoric site, Brotby 2, consists of surface finds of 5 red chert percussion flakes, 1 quartz crystal primary flake, a red chert projectile point base, an obsidian biface fragment and a mano fragment. In the same area were a number of historic objects including an old horseshoe and a fragment of embossed aqua glass with several bubbles. More modern trash was also present. All of this was found on a graded access road to the area. An intensive search of surrounding, un-graded, land produced no other artifacts, but the grass cover was very heavy in this area.

EVALUATIONS

The bridge remnants, P-55-003745, would probably qualify for the National Register of Historic Places (NRHP) at the local level of significance and, therefore, would be eligible for the California Register of Historical Resources (CRHP). Although they were not associated with a historically important person or represent an architecturally important work or have the potential to provide data through archeological means, they are remnants of an important historical route to the gold fields from Sonora. Along with the current use highway bridge, they represent the historical evolution of small highway bridges at a single location.

The structures on the property, Brotby 1, are not associated with historically important persons or events. They are of common design and very plain. They lack unusual architectural merit and their materials and construction techniques are the norm for the era. One residence and the barn appear on the 1948 edition of the USGS map and they are well maintained, however, their style does not indicate unusual age. Landscaping, including terracing, has removed any chance of obtaining valuable data through archeological techniques. The structures are not eligible for the NRHP or the CRHP.

Brotby 2 is impossible to evaluate based on the information at hand. The prehistoic artifacts observed in the site area indicate that tool making and food preparation were both practiced at the site, indicating a temporary camp at the least and a potential for significant information. On the other hand, the inability to find anything off of the road area could indicate materials were graded in. Also the boundaries of the site are entirely unknown. Until more information is developed, it cannot be evaluated for NRHP or CRHP eligibility.

EFFECTS OF THE PROPOSED PROJECT

The only portion of P-55-003745 that is in the project area is the southern abutment os the oldest bridge. There is no work planned in this area as long as the location is flagged and avoided during any ground disturbing activities, there should be no impact to the site.

The existing buildings of Brotby 1 are to be retained, with modifications in the case of the barn. Since they are not register eligible, this is not a significant effect.

Brotby 2 is in an area where trailer pads are proposed. There will be impact to the site. At present we cannot evaluate whether this is a significant effect or not. We recommend that test excavations be conducted to determine if a subsurface deposit is present or not and, if so, the areal extent and depth of the deposit. With this information in hand, the significance of the site can be determined and future steps to mitigate adverse effect, if any, can be proposed.

REFERENCES

Barnett, Homer G., Leonard Broom, Bernard J. Siegel, Yvon Z. Vogt, and James B. Watson
1972 Acculturation: An Exploratory Formulation. In *The Emergent Native Americans: A reader in Culture Contact*, edited by Edward E. Walker, Jr., pp. 19-43. Little Brown, Boston.

Barrett, Samuel A.
1908 The Geography and Dialects of the Miwok Indians. *University of California Publications in American Archaeology and Ethnology* 6(2):333-368. Berkeley.

Barrett, Samuel A., and Edward W. Gifford
1933 Miwok Material Culture. *Bulletin of the Public Museum of Milwaukee* 2(4):117-376. Milwaukee.

Bedwell, Stephen F.
1973 *Fort Rock Basin: Prehistory and Environment.* University of Oregon Books, Eugene.

Bennyhoff, James A.
1956 An Appraisal of the Archaeological Resources of Yosemite National Park. *University of California Archaeological Survey Reports* 34:1-71. Berkeley.

1977 Ethnogeography of the Plains Miwok. *Center for Archaeological Research at Davis, Publications* 5. University of California, Davis.

Campbell, Elizabeth W. C., and William H. Campbell
1935 The Pinto Basin Site. *Southwest Museum Papers* 9. Los Angeles.

Crew, Harvey L.
1980 The Results of the Prehistoric Investigations, New Melones Lake Project, Phase 1. Paper presented at the Society for California Archaeology Meetings, Redding.

Davis-King, Shelly, Carlo De Ferrari and Terry Brejla
1991 *Cultural Resources Investigations for the Proposed New Standard Project, Tuolumne County, California.* MS on file: Central California Information Center, Turlock.

De Ferrari, Carlo
1991 Historical Background. Chapter 2 in Davis-King *et al.* 1991.

Elsasser, Albert B.
1960 The Archaeology of the Sierra Nevada in California and Nevada. *University of California Archaeological Survey Reports* 51:1-93. Berkeley.

Elston, Robert G., Jonathan O. Davis, Alan Levanthal, and Cameron Covington
1977 The Archeology of the Tahoe Reach of the Truckee River. A Report to the Tahoe-Truckee Sanitation Agency. Ms. on file, University of Nevada Northern Division of the Nevada Archaeological Survey, Reno

Ericson, Jonathan E.
1977 *Prehistoric Exchange Systems in California.* Ph.D. dissertation, Department of Anthropology, University of California, Los Angeles.

Fitting, James, Julia Costello, and Harvey Crew (compilers)
1979 Cultural Resources Mitigation Program, New Melones Lake Project, Phase 1 (draft report). Unpublished Ms. on file the Sacramento District, Corps of Engineers and Science Application, Inc., La Jolla.

Fitzwater, Robert J.
1962 Final Report on Two Seasons' Excavations at El Portal, Mariposa County, California. *Annual Reports of the University of California Archaeological Survey* 4:235-305. Los Angeles.

Hall, Alice Louise
1978 *Ethnohistorical Studies of the Central Sierra Miwok, 1800-1900.* Unpublished M.A. thesis, Department of Anthropology, San Francisco State University, San Francisco

Harrington, Mark Raymond
1957 A Pinto Site at Little Lake, California. *Southwest Museum Papers* 17. Los Angeles.

Heizer, Robert F., and C. William Clewlow, Jr.
1968 Projectile Points from Hidden Cave (NV-CH-15), Churchill County, Nevada. In Papers on Great Basin Prehistory, pp. 59-88. *University of California Archaeological Survey Reports* 71. Berkeley.

Heizer, Robert F., and Albert B. Elsasser
1953 Some Archaeological Sites and Cultures of the Central Sierra Nevada. *University of California Archaeological Survey Reports* 21:1-42. Berkeley.

Heizer, R.F. and Thomas R. Hester
1978 Great Basin Projectile Points: Forms and Chronology. *Ballena Press Publications in Archaeology, Ethnology, and History* 10. Socorro, New Mexico.

Hester, Thomas Roy, and Robert F. Heizer
1973 Review and Discussion of Great Basin Projectile Points: Forms and Chronology. Ms. on file, Archaeological Research Facility, Department of Anthropology, University of California, Berkeley.

Johnson, Jerald J.
1967 The Archeology of the Camanche Reservoir Locality, California. *Sacramento Anthropological Society Papers* 6. Sacramento.

Johnson, Patti J.
1973 New Melones Reservoir Archeological Project, Calaveras and Tuolumne Counties, California: Phase IV. Ms. on file, National Park Service, Tucson.

Kroeber, Alfred L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology Bulletin* 78. Washington.

Levy, Richard S.
1978 Eastern Miwok. In *California*, edited by Robert F. Heizer, pp. 398-413. Handbook of North American Indians, vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Moratto, Michael J.
1972 A Study of Prehistory in the Southern Sierra Nevada Foothills, California. Unpublished Ph.D. dissertation, Department of Anthropology, University of Oregon, Eugene.

Moratto, Michael J., Marcus R. Arguelles, Susan K. Goldberg, Steven O'Brien, Lynn Riley, and William L. Singleton
1984 New Melones Archeological Project, California: Indian Sites 04-Cal-S-286, 04-Cal-S-347, and 04-Cal-S-461. Ms. on file, National Park Service, Washington, D.C.

Moratto, Michael J., and Lynn M. Riley
1980 Balsam Meadow: Archaeological Testing at Six Sites in Eastern Fresno County. Ms. on file, Southern California Edison Company, Rosemead.

Moratto, Michael J., Judith D. Tordoff, and Laurence H. Shoup
1988 Culture Change in the Central Sierra Nevada, 8000 B.C. - A.D. 1950. Ms. on file, National Park Service, Washington, D.C.

Napton, L. Kyle
1978 Archaeological Overview of Yosemite National Park, California. Ms. on file, National Park Service, Tucson.

Peak, Ann S. and Harvey Crew
1990 Cultural Resource Studies North Fork Stanislaus River Hydroelectric Development Project, Vol. II: An Archeological Data Recovery Project at CA-Cal-S342, Clarks Flat, Calaveras County, California. Ms. on file, Northern California Power Agency, Roseville.

Peak & Associates, Inc.
1981 SOFAR Upper Mountain Project Cultural Resources Study, Phase II: Test Excavations. Ms. on file, County of El Dorado Irrigation District, Placerville.

Peters, Mary Pyle
1988 Cultural Resource Studies: North Fork Stanislaus River Hydroelectric Development Project: Volume I: Ethnohistory. Ms. on file, Northern California Power Agency, Roseville, California.

Ritter, Eric W.
1970 Northern Sierra Foothill Archaeology. In Papers on California and Great Basin Prehistory, edited by Eric W. Ritter, Peter D. Schulz, and Robert Kautz, pp. 171-184. *University of California, Center for Archaeological Research Publications* 2. Davis

Rogers, Malcolm J.
1939 Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas. *San Diego Museum of Man Papers* 3. San Diego.

Singer, C. A., and Jonathan E. Ericson
1977 Quarry Analysis at Bodie Hills, Mono County, California: A Case Study. In *Exchange Systems in Prehistory*, edited by T. K. Earle and J. E. Ericson, pp. 171-190. Academic Press, New York.

Theodoratus, Dorothea J. (compiler)
1976 An Ethnographic Study of the New Melones Lake Project. Ms. on file, U.S. Army Corps of Engineers, Sacramento.

Van Bueren, Thad
1983 *Archaeological Perspectives on Central Sierra Miwok Culture Change During the Historic Period.* Master's thesis, Department of Anthropology, San Francisco State University, San Francisco.

Warren, Claude N.
1980 The Pinto Point: A Historical View of the Use and Misuse of the Concept in the Mojave Desert and the Western Great Basin. Paper presented at the 17th Great Basin Anthropological Conference, Salt Lake City.

APPENDIX 2

Information Center Report

CENTRAL CALIFORNIA INFORMATION CENTER

California Historical Resources Information System

Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307 - FAX (209) 667-3324

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: 4/27/2015

Records Search File No.: 9317/O
Re: Project: Brotby Development Project
Access and Use Agreement No.: 137

Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Avenue
Chico, CA 95973

The Central California Information Center received your record search request for the project area referenced above, located on the Standard USGS 7.5' quadrangle in Tuolumne County. The following reflects the results of the records search for the project area and a 500-foot radius:

As per data currently available at the CCaIC, the locations of resources and reports are provided in the following format: ☐ custom GIS maps ☐ shapefiles ☒ hand-drawn maps

Summary Data:

Resources within project area:	1 (historic) reported to the Information Center.
Resources within 500-foot radius:	6 resources reported (1 unrecorded) and 1 historic district
Reports within project area:	2 possibly in project area
Reports within 500-foot radius:	8 reported (3 of these directly adjacent)

Resource Database Printout (list): hardcopy ☒ 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): hardcopy ☒ enclosed ☐ not requested ☐ nothing listed

Report Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Report Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Resource Record Copies: hardcopy ☒ enclosed ☐ not requested ☐ nothing listed

Report Copies: hardcopy-project area ☒ enclosed ☐ not requested ☐ nothing listed

OHP Historic Properties Directory:	hardcopy	☒ 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

Nothing plotted on our maps; see Bridge Inventory on Caltrans webpage for more info

Ethnographic Information:		☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:		☐ enclosed	☒ not requested	☐ nothing listed
Historical Maps:	hardcopies	☒ enclosed	☐ not requested	☐ nothing listed
Local Inventories:	Tuo. Co local not on file	☐ enclosed	☐ not requested	☐ nothing listed
GLO and/or Rancho Plat Maps:	hardcopies	☒ enclosed	☐ not requested	☐ nothing listed

The following details the results of the records search:

Prehistoric or historic resources within the project area:

(1) One resource reported; copy of records attached:

Primary # P-55-	Trinomial CA-TUO-	Resource
003745	2759H	Two standing bridges and remnants of older bridge; plus segment of ditch. Site does not have an entry on the ADOE.

(2) Please also see the following attached historic maps for more information (others are available at usgs.gov):

1. GLO Plat T1N/R15E (Sheet #41-043, dated 1855-1870)
2. July 1897 Sonora USGS 30'
3. Official Map of Tuolumne County, California (1907)
4. 1948 Standard USGS 7.5'

Prehistoric or historic resources within a 500-foot radius of the project area:

(1) Reported resources are as follows; records attached:

Directly adjacent:

Primary # P-55-	Trinomial CA-TUO-	Resource
003751	2765H	Phoenix Ditch; selected records (nearest this area) attached. The only formal DOE we have on file (p. 8 HPDF printout) is based on a Caltrans evaluation of a segment of the ditch that would be impacted by the East Sonora Bypass project.
006813	--	Historic refuse scatters/dumps; no DOE on file.
008270	--	District: TUD Ditch and Flume System / Tuolumne County Water Company Ditch and Flume System (includes Phoenix Ditch). No formal DOE on file.

Others within radius:

Primary # P-55-	Trinomial CA-TUO-	Resource
000123	--	MCauley House; no DOE on file.
000347	2774H	Unrecorded box factory spur of the Sierra Railroad. There are reports that the spur is no longer extant. For your reference, however, we have attached selected records for the Sierra Railroad. The Tuolumne Line has status code 3 (appears eligible), and another segment (location undetermined) has code 6Y (HPDF printout p. 8 & 30 attached).
001378	355	Bedrock milling features and lithic scatter; no DOE on file.
001425	402	Bedrock milling features and lithics; no DOE on file.

Resources known to have value to local cultural groups:

None have been formally reported to the CCalC. However, the following persons wish to be contacted in reference to the evaluation of historic buildings, structures or objects:

Sharon Marovich, Chair
Tuolumne Heritage Committee
24 S. Washington Street
Sonora, CA 95370 209-532-6937

Joe Sparagna, Chair
Tuolumne County Historical Society Landmarks Committee
21398 Montgomery Road
Sonora, CA 95370 209-533-8687

Previous investigations within the project area:

Report hardcopies and Report database list printout attached:

CCIC report # TO-	Author/Date	
1375	Davis-King, De Ferrari, and Brejla (1991)	
7874	Cox and Harper (2013)	(In or directly adjacent--?)

Previous investigations within a 500-foot radius of the project area:

Report database list printout attached:

CCIC report # TO-	Author/Date	
3010	Davis-King (1997)	(Directly adjacent)
5239	Francis (2003)	(Directly adjacent—copy of report also attached)
7521	Foothill Resources, Ltd. and Francis Heritage, LLC (2012) (Directly adjacent)	
1226	Napton (1985)	
2268	Davis-King and Marvin (1994)	(assoc'd with record P-55-000123)
2665	Francis (1995)	
3871	Francis (2000)	
3716	Davis-King (2000)	

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 the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of 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 archeological 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, or the State Historical Resources Commission.

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

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Note: Billing will be transmitted separately via email by our Financial Services office* ($ 333.45), payable within 60 days of receipt of the invoice.

Sincerely,

Robin Hards, Assistant Research Technician
Central California Information Center
California Historical Resources Information System

*Invoice to: Roubina Yadegarian, Financial Services (ryadegarianbadalbo@csustan.edu or MSR270@csustan.edu)

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY
42 Years: 1975-2017

December 5, 2017

Mr. Ron Kopf
17757 Mountain Ridge Drive
Sonora, CA 95370

Dear Sir:

In August of 2015 we submitted our report: "Cultural Resource Assessment and Testing of Site Brotby 2 for the Krag Brotby Property, Tuolumne County, California" describing our surface inspection and conclusions on the proposed trailer park project. A prehistoric site, given the field designation of Brotby 2, was discovered. The site consisted of surface finds of five red chert percussion flakes, one quartz crystal primary flake, a red chert projectile point base, an obsidian biface fragment and a handstone fragment. In the same area were a number of historic objects including an old horseshoe and a fragment of embossed aqua glass with several bubbles. More modern trash was also present. All of this was found on a graded access road in the area. An intensive search of surrounding, un-graded, land produced no other artifacts, but the grass cover was very heavy.

Brotby 2 was impossible to evaluate based on the information at hand. The prehistoric artifacts observed in the site area indicate that tool making and food preparation were both practiced at the site, indicating a temporary camp at the least and a potential for significant information. On the other hand, the inability to find anything off of the road area could indicate materials were graded in. Also the boundaries of the site were entirely unknown. Until more information was developed, it could not be evaluated for National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR) eligibility. Brotby 2 is in an area where trailer pads are proposed. There will be impact to the site.

On September 20, 2016, we conducted a test excavation to obtain more information to determine site boundaries, depth and research potential. Four test units were excavated with soils passed through 1/8 inch mesh shaker screens. The units were placed near the previous surface discoveries but off of the graded road, to determine the likelihood that the surface finds originated elsewhere. This turned out to be very likely. The four units produced a total of two tiny trimming flakes. These were replaced in the units they came from before backfilling. The soil was extremely compact and difficult to dig with no evidence of midden development.
We concluded that the artifacts found in this area were a surface lithic scatter and no additional investigation will produce significant data regarding prehistoric society and

O 3941 Park Drive, Suite 20, #329, El Dorado Hills, CA 95762/Phone: (916)939-2405/Fax: 939-2406/email: peakinc@jps.net
G 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/Fax: 342-0273/email: peakinc@cmc.net

culture in this area. Criterion D for inclusion in the NRHP and Criterion 4 for the CRHR is:

> *[Properties that] that have yielded, or may be likely to yield, information important in prehistory or history.*

This site has demonstrated no such potential; therefore, it is not eligible for either register. Impact to the site does not require mitigation. The site record describing what was found at the location will be filed with the Central California Information Center.

Sincerely,

Robert A. Gerry
Consulting Archeologist

Encl.

O 3941 Park Drive, Suite 20, #329, El Dorado Hills, CA 95762/Phone: (916)939-2405/Fax: 939-2406/email: peakinc@jps.net

G 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/Fax: 342-0273/email: peakinc@cmc.net