SR 20/Kibbe Road Intersection Project

SCH# 2021040495

Draft Environmental Impact Report

Prepared for
Yuba County

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Draft Environmental Impact Report

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TABLE OF CONTENTS

TABLE OF CONTENTS

Appendices

LIST OF FIGURES

FIGURE **PAGE**

3. Project Description

4.2. Biological Resources

4.3. Cultural and Tribal Cultural Resources

4.4. Noise

4.5. Transportation

5. Alternatives Analysis

LIST OF TABLES

TABLE **PAGE**

2. Executive Summary

4.1. Air Quality and Greenhouse Gas Emissions

4.2. Biological Resources

4.4. Noise

TABLE **PAGE**

4.5. Transportation

5. Alternatives Analysis

1. Introduction

1. INTRODUCTION

1.1 TYPE AND PURPOSE OF THE EIR

The SR 20/Kibbe Road Intersection Project (proposed project) Environmental Impact Report (EIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970, Public Resources Code (PRC) Sections 21000-21178, as amended, and the Guidelines for Implementation of the California Environmental Quality Act, California Code of Regulations, Title 14, Sections 15000-15387 (CEQA Guidelines). Yuba County is the lead agency for the environmental review of the proposed project evaluated herein and has the principal responsibility for approving the project. As required by Section 15121 of the CEQA Guidelines, this EIR will (a) inform public agency decision-makers, and the public generally, of the environmental consequences of approving the proposed project, (b) identify possible ways to minimize the significant adverse environmental effects, and (c) describe reasonable and feasible project alternatives which reduce environmental effects. The public agency shall consider the information in the EIR along with other information that may be presented to the agency.

As provided in the CEQA Guidelines Section 15021, public agencies are charged with the duty to avoid or minimize environmental damage where feasible. The public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social issues. CEQA requires the preparation of an EIR prior to approving any project that may have a significant effect on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]). With respect to the proposed project, the County has determined that the proposed development is a "project" within the definition of CEQA, which has the potential for resulting in significant environmental effects.

The lead agency is required to consider the information in the EIR along with any other available information in deciding whether to approve the application. The basic requirements for an EIR include discussions of the environmental setting, environmental impacts, mitigation measures, alternatives, growth inducing impacts, and cumulative impacts.

The CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a *project-level EIR* pursuant to CEQA Guidelines Section 15161, which is an analysis that examines the environmental impacts of a specific development project. A *project-level EIR* focuses primarily on the changes in the environment that would result from the development of the project, and examines all phases of the project including planning, construction, and operation.

Background

Teichert Aggregates (Teichert) owns and operates the Hallwood mine, an existing 720-acre mining and processing facility. Teichert's Hallwood mine is currently accessed through Hallwood Boulevard and Walnut Avenue. The neighborhood surrounding the existing haul route has been slowly transitioning from agricultural uses to rural residential uses. As such, Teichert has proposed the project as an effort to alleviate the Hallwood mine's traffic impacts on the Hallwood Boulevard and Walnut Avenue neighborhoods.

The proposed project would include the construction of a private haul road to connect the Teichert Aggregates' Hallwood mine directly to State Route (SR) 20, at the existing intersection of SR 20 and Kibbe Road. The proposed project would also include the addition of a left-turn pocket for westbound SR 20 traffic and the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection.

In 2003, Teichert partially constructed the private haul road portion of the project pursuant to a ministerial grading permit issued by Yuba County. Although the private haul road was constructed as a ministerial project, the proposed improvements at the SR 20/Kibbe Road intersection required additional County and Caltrans approvals. Therefore, in December 2003, an Initial Study/Mitigated Negative Declaration was prepared and circulated for public review on the proposed intersection improvements. The Initial Study/Mitigated Negative Declaration received public comments, to which responses were prepared by the Yuba County Community Development and Services Agency. Based upon the issues raised on the project, including whether the existing private roadway construction was addressed, the County determined that an EIR shall be prepared in order to ensure full public disclosure of the potential environmental effects of both the previously constructed private haul road and the proposed intersection improvements.

An EIR was prepared for the proposed project and certified by Yuba County in 2006. However, the project was subject to litigation that ultimately resulted in the Yuba County Superior Court invalidating the EIR for the project based on several identified legal deficiencies, such as failing to adequately analyze drainage easement impacts, single event traffic noise (including Jake Brake usage), and an alternative alignment along the Cordua Canal. Teichert has resubmitted an application for the proposed project with the intent to prepare this EIR to address the deficiencies in the 2006 EIR identified by the Court, and to update the environmental analysis based on current environmental conditions.

1.2 PROJECT SUMMARY

The approximately 10-acre project site is located at the intersection of SR 20 and Kibbe Road, approximately three miles northeast of the City of Marysville, within Yuba County (see Figure 3-1 in Chapter 3, Project Description, of this EIR). The project site extends north from the 720-acre mining and processing facility of the Hallwood mine towards SR 20. Existing land uses in the vicinity of the site include agricultural, industrial (aggregate mining and associated uses), and rural residential uses. The northwest and southwest portions of the site are currently in use as grazing/pasture land. Several rural residences exist northeast of the Kibbe Road/SR 20 intersection, and three residences exist southeast of Kibbe Road/SR 20 intersection (see Figure 3-2 in Chapter 3, Project Description, of this EIR). The haul road proposed as part of the project would be located to the west of the residences that exist in the southeast quadrant of the project site. The northernmost and the southernmost residences are owned by Teichert, and the southernmost residence is currently vacant. The middle residence (located between the Teichert-owned residences) is currently occupied. In addition, unmarked bus loading areas are provided in the northeast and southwest corners of the SR 20/Kibbe Road intersection which service four schools in the Marysville Joint Unified School District (MJUSD).

The development of the proposed project would include the construction of intersection improvements at the SR 20/Kibbe Road intersection for the purpose of connecting the intersection to the private haul road. The private haul road is approximately 3,250 feet in length measured from the northern property line of the Hallwood site to the SR 20 right-of-way. The previously completed section of the private haul road ends approximately 50 feet south of SR 20.

The proposed project would also include the westerly realignment of approximately 600 feet of Kibbe Road, north of SR 20, to connect with the relocated intersection. Driveway access would be constructed to connect existing homes north of SR 20 with the realigned segment of Kibbe Road. The segment of Kibbe Road which is being replaced north of SR 20 would be decommissioned and removed. The proposed roadway and intersection improvements would include a left-turn pocket for westbound SR 20 traffic, the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection, and additional improvements to SR 20 as determined by Caltrans.

A full description of the proposed project is included in Chapter 3, Project Description, of this EIR.

1.3 EIR PROCESS

The EIR process begins with the decision by the lead agency to prepare an EIR, either during a preliminary review of a project or at the conclusion of an Initial Study. Once the decision is made to prepare an EIR, the lead agency sends a Notice of Preparation (NOP) to appropriate government agencies and, when required, to the State Clearinghouse (SCH) in the Office of Planning and Research (OPR), which will ensure that responsible and trustee State agencies reply within the required time. The SCH assigns an identification number to the project, which then becomes the identification number for all subsequent environmental documents on the project. Commenting agencies have 30 days to respond to the NOP and provide information regarding alternatives and mitigation measures they wish to have explored in the Draft EIR and to provide notification regarding whether the agency will be a responsible agency or a trustee agency for the project.

Upon completion of the Draft EIR and prior to circulation to State and local agencies and interested members of the public, a notice of completion is filed with the SCH and a public notice of availability is published to inform interested parties that a Draft EIR is available for agency and public review. In addition, the notice provides information regarding the location where copies of the Draft EIR are available for public review and any public meetings or hearings that are scheduled. The Draft EIR is circulated for a minimum period of 45 days, during which time reviewers may submit comments on the document to the lead agency. The lead agency must respond to comments in writing. If significant new information, as defined in CEQA Guidelines Section 15088.5, is added to an EIR after public notice of availability is given, but before certification of the EIR, the revised EIR or affected chapters must be recirculated for an additional public review period with related comments and responses.

A Final EIR will be prepared, containing public comments on the Draft EIR and written responses to those comments, as well as a list of changes to the Draft EIR text necessitated by public comments, as warranted. Before approving a project, the lead agency shall certify that the EIR (consisting of the Draft EIR and Final EIR) has been completed in compliance with CEQA, and that the EIR has been presented to the decision-making body of the lead agency, which has reviewed and considered the EIR. The lead agency shall also certify that the EIR reflects the lead agency's independent judgment and analysis.

The findings prepared by the lead agency must be based on substantial evidence in the administrative record and must include an explanation that bridges the gap between evidence in the record and the conclusions required by CEQA. If the decision-making body elects to proceed with a project that would have unavoidable significant impacts, then a Statement of Overriding Considerations explaining the decision to balance the benefits of the project against unavoidable environmental impacts must be prepared.

1.4 SCOPE OF THE EIR

This EIR constitutes a project-level analysis for the proposed project and, pursuant to CEQA Guidelines Section 15161, covers "all phases of the project including planning, construction, and operation." State CEQA Guidelines Section 15126.2(a) states, in pertinent part:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced.

The following environmental issue areas are addressed in the EIR:

- Air Quality and Greenhouse Gas Emissions;
- Biological Resources;
- Cultural and Tribal Cultural Resources;
- Noise; and
- Transportation.

In addition to the foregoing resource areas, an Initial Study was prepared and attached to the NOP for the proposed project to present information regarding resource areas that the proposed project has been found not to have the potential to affect (see Appendix A). A summary of each environmental issue addressed in the Initial Study is provided in Chapter 4.0, Introduction to the Analysis, of this EIR.

The evaluation of effects is presented on a resource-by-resource basis in Chapters 4.1 through 4.5 of this EIR. Each chapter is divided into the following four sections: Introduction, Existing Environmental Setting, Regulatory Context, and Impacts and Mitigation Measures. Impacts that are determined to be significant in Chapters 4.1 through 4.5, and for which feasible mitigation measures are not available to reduce those impacts to a less-than-significant level, are identified as *significant and unavoidable*. Alternatives to the proposed project are discussed in Chapter 5 of the EIR. Chapter 6 of the EIR presents a discussion of growth-inducing impacts, summary of cumulative impacts, and significant irreversible environmental changes associated with the project.

1.5 SIGNIFICANCE CRITERIA

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance." In addition, the Guidelines state, "An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant." (CEQA Guidelines Section 15382).

The level of significance of an impact prior to mitigation is included at the end of each impact discussion throughout the technical chapters of this EIR. The following levels of significance prior to mitigation are used in this EIR:

- Less-than-Significant: Impacts that may be considered adverse, but that do not exceed the specified thresholds of significance;
- Significant: Impacts that exceed the defined standards of significance and require mitigation;
- Less than Cumulatively Considerable: Where cumulative impacts have been identified, but the project's incremental contribution towards the cumulative impacts would not be considered significant; and
- Cumulatively Considerable: Where cumulative impacts have been identified and the project's incremental contribution towards the cumulative impacts would be considered significant.

If an impact is determined to be significant or cumulatively considerable, mitigation is included in order to reduce the specific impact to the maximum extent feasible. A statement of the level of significance of an impact after mitigation is also included in each impact discussion throughout the technical chapters of this EIR. The following levels of significance after implementation of mitigation are used in the EIR:

- Less-than-Significant: Impacts that exceed the defined standards of significance but can be eliminated or reduced to a less-than-significant level through the implementation of feasible mitigation measures;
- Less than Cumulatively Considerable: Where the project's incremental contribution towards cumulative impacts would be eliminated or reduced to a less than cumulatively considerable level through the implementation of feasible mitigation measures; and
- Significant and Unavoidable: An impact (project-level or cumulative) that cannot be eliminated or reduced to a less-than-significant or less than cumulatively considerable level though the implementation of feasible mitigations measures.

Each environmental area of analysis uses a distinct set of significance criteria. Where measurable and explicit quantification of significance is identified, such as violation of an ambient noise level standard, this measurement is used to assess the level of significance of a particular impact in this EIR. If criteria for determining significance relative to a specific environmental resource impact are not identified in the CEQA Guidelines, criteria were developed for this EIR.

The significance criteria are identified at the beginning of the Impacts and Mitigation Measures section in each of the technical chapters of this EIR. Although significance criteria are necessarily different for each resource considered, the provided significance levels ensure consistent evaluation of impacts for all resource areas evaluated.

1.6 NOTICE OF PREPARATION AND SCOPING

In accordance with CEQA Guidelines Section 15082, an NOP was circulated to the public, local, State and federal agencies, and other known interested parties for a 30-day public and agency review period from April 21, 2021 to May 20, 2021 (see Appendix A). The purpose of the NOP was to provide notification that an EIR for the proposed project was being prepared and to solicit public input on the scope and content of the document.

In addition, pursuant to CEQA Guidelines Section 15082, the County held an NOP scoping meeting during the public review period on May 12, 2021 at 6:00 PM, for the purpose of receiving comments on the scope of the environmental analysis to be prepared for the proposed project. Agencies and members of the public were invited to attend and provide input on the scope of the EIR. Verbal comments were provided by two commenters at the NOP scoping meeting, and five written letters were submitted during the NOP public review period. The comment letters are provided as Appendix B to this EIR. All comments were taken into consideration during the preparation of this EIR, and a summary of the NOP comments received, including verbal and written comments, is provided in Section 1.7 below.

1.7 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

During the NOP scoping meeting and public review period, the County received comments from two verbal commenters and five written comment letters. A copy of each letter is provided in Appendix B of this EIR. The comment letters received during the NOP public review period were authored by the following representatives of public agencies and individual members of the public:

Public Agencies

- California Department of Fish and Wildlife – Kelley Barker;
- California Highway Patrol – Sergeant Kip Schilhabel; and
- Native American Heritage Commission – Nancy Gonzalez-Lopez.

Groups and General Public

- Ron and Cheryl Epperson; and
- United Auburn Indian Community – Anna Starkey.

The following list, categorized by issue, summarizes the concerns brought forth in the verbal and written comments received on the scope of the EIR:

Introduction to Analysis (and Initial Study) *(Chapter 4.0)*	Concerns related to: • Light pollution from additional vehicles on the roadway. • Project-related changes to drainage patterns and water quality in the vicinity of the project site.
Air Quality and GHG Emissions *(Chapter 4.2)*	Concerns related to: • Dust impacts and the health impacts related to dust.

Biological Resources
(Chapter 4.2)
	Concerns related to:
	• The direct and indirect impacts to rare, threatened, endangered, and other sensitive species including, but not limited to:
	  ○ Valley Longhorn Elderberry Beatles;
	  ○ Golden eagle;
	  ○ White tailed kite;
	  ○ Bald eagle; and
	  ○ California black rail.
	• Impacts related to a vernal, seasonal pond located in the project vicinity.
	• Impacts related wildlife-human interactions created by lighting, noise, and human activity associated with the proposed project.

	• The relocation, salvage, and/or transplantation of species in the project area.
Cultural and Tribal Cultural Resources *(Chapter 4.3)*	Concerns related to: • Consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project.
Noise *(Chapter 4.4)*	Concerns related to: • Additional roadway/traffic noise in the project area. • A general increase in ambient noise levels.
Transportation *(Chapter 4.5)*	Concerns related to: • The impacts to, and disruption of, an existing bus stop located within the project vicinity which serves the Marysville Joint Unified School District. • The safety of the bus stop located within the project vicinity. • The safety of the Cordua Canal undercrossing of SR 20 as it relates to obstructed views from land fog and a "blind hill" at the crossing. • Other non-Teichert businesses using the private haul road. • The impact that COVID-19 restrictions may have had on trip generation along SR 20, as there may have been less vehicle traffic on the roadway than normal circumstances. • The reduced speed along SR 20 due to intersection improvements. • The compatibility of large vehicles, tractors, and farm equipment at the proposed intersection.
Alternatives Analysis *(Chapter 5)*	Concerns related to: • An additional alternative which would consider a by-pass around town.

All of these issues are addressed in this EIR, in the relevant sections identified in the first column, as well as in the Initial Study, attached to the NOP, and included in Appendix A.

1.8 DRAFT EIR AND PUBLIC REVIEW

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

https://www.yuba.org/departments/community_development/planning_department/document_library.php

In addition, the Draft EIR is available at the following address during normal business hours:

Yuba County Community Development and Services Agency
915 8th Street, Suite 123
Marysville, CA 95901

All comments or questions regarding the Draft EIR should be addressed to:

Kevin Perkins, Planning Manager
Yuba County Community Development and Services Agency
915 8th Street, Suite 123
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1.9 ORGANIZATION OF THE DRAFT EIR

The EIR is organized into the following sections:

Chapter 1 – Introduction

The Introduction chapter of the EIR provides an introduction and overview describing the intended use of the EIR and the review and certification process, as well as summaries of the chapters included in the EIR and summaries of the issues and concerns received from the public and public agencies during the NOP review period.

Chapter 2 – Executive Summary

The Executive Summary chapter of the EIR summarizes the elements of the project and the environmental impacts that would result from implementation of the proposed project, describes proposed mitigation measures, and indicates the level of significance of impacts after mitigation. In addition, the Executive Summary includes a summary of the project alternatives and areas of known controversy.

Chapter 3 – Project Description

The Project Description Chapter of the EIR provides a detailed description of the proposed project, including the project's location, background information, objectives, and technical characteristics.

Chapter 4.0 – Introduction to the Analysis

The Introduction to the Analysis chapter of the EIR provides a list of issues addressed in the EIR and presents the format of each technical chapter, as well as summarizes the environmental issues addressed in the Initial Study, and therefore, will not be discussed further in the EIR.

Chapter 4.1 – Air Quality and GHG Emissions

The Air Quality and Greenhouse Gas (GHG) Emissions chapter of the EIR describes the impacts of construction and operation of the proposed project related to air quality and global climate change. In addition, the chapter includes a summary of the Health Risk Assessment which was prepared to address potential health impacts related to toxic air contaminants. The chapter was prepared using methodologies and assumptions recommended within the Feather River Air Quality Management District's (FRAQMD's) CEQA Guidelines.

Chapter 4.2 – Biological Resources

The Biological Resources chapter of the EIR evaluates the biological resources known to occur or potentially occur within the proposed project area. The chapter describes potential impacts to such resources and identifies measures to eliminate or substantially reduce any impacts to the maximum extent feasible.

Chapter 4.3 – Cultural and Tribal Cultural Resources

The Cultural and Tribal Cultural Resources chapter of the EIR evaluates archaeological, tribal, paleontological, and historical resources known to be located within the proposed project area. The chapter summarizes the existing setting with respect to the aforementioned resources, identifies thresholds of significance and project impacts to such resources, and sets forth mitigation measures that would be necessary to reduce impacts to the maximum extent feasible.

Chapter 4.4 – Noise

The Noise chapter of the EIR describes the existing noise environment in the project vicinity and identifies potential impacts and mitigation measures related to the construction and operation of the proposed project. The method by which the potential impacts are analyzed is discussed, followed by the identification of potential impacts and the recommended mitigation measures designed to reduce significant impacts to the maximum extent feasible.

Chapter 4.5 – Transportation

The Transportation chapter of the EIR discusses existing transportation and circulation conditions within the project area and the effects to the roadway network as a result of the proposed project and future, projected growth. Vehicle Miles Traveled (VMT) is used as the metric for assessing transportation impacts under CEQA. The analysis includes consideration of automobile traffic impacts on roadway capacity, transit impacts, bicycle impacts, and pedestrian impacts.

Chapter 5 – Alternatives Analysis

The Alternatives Analysis chapter of the EIR describes and evaluates the alternatives to the proposed project. It should be noted that the alternatives will be analyzed at a level of detail less than that of the proposed project; however, the analyses will include sufficient detail to allow for a meaningful comparison of impacts.

Chapter 6 – Statutorily Required Sections

The Statutorily Required Sections chapter of the EIR provides discussions required by CEQA regarding impacts that would result from the proposed project, including a summary of cumulative impacts, potential growth-inducing impacts, significant and unavoidable impacts, and significant irreversible changes to the environment.

Chapter 7 – References

The References chapter of the EIR provides bibliographic information for all references and resources cited.

Chapter 8 – EIR Authors and Persons Consulted

The EIR Authors and Persons Consulted chapter of the EIR lists EIR and technical report authors who provided technical assistance in the preparation and review of the EIR.

Appendices

The Appendices include the NOP with the Initial Study attached, comments received during the NOP comment period, and all technical reports prepared for the proposed project.

1.10 FINAL EIR AND EIR CERTIFICATION

Upon completion of the public review period, a Final EIR will be prepared that will include written comments on the Draft EIR received during the public review period and responses to those comments. The Final EIR will also include the Mitigation Monitoring and Reporting Plan (MMRP) prepared in accordance with PRC Section 21081.6. The Final EIR will include any revisions to the Draft EIR made in response to public comments. The Draft EIR and Final EIR together will comprise the EIR for the proposed project. Before the County can consider approval of the project, it must first certify that the EIR has been completed in compliance with CEQA, that the Board of Supervisors has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the County. The County will also be required to adopt Findings of Fact; however, the County will not be required to adopt a Statement of Overriding Considerations because, as demonstrated throughout this EIR, the proposed project was not determined to result in any significant and unavoidable impacts.

2. Executive Summary

2. EXECUTIVE SUMMARY

2.1 INTRODUCTION

The Executive Summary chapter of the EIR provides an overview of the proposed project (see Chapter 3, Project Description, for further details) and provides a table summary of the conclusions of the environmental analysis provided in Chapters 4.1 through 4.5. This chapter also summarizes the alternatives to the proposed project that are described in Chapter 5, Alternatives Analysis, and identifies the Environmentally Superior Alternative. Table 2-1 provides a summary of the environmental impacts associated with the proposed project, and incudes the mitigation measures described throughout this EIR that would reduce the associated impacts.

2.2 SUMMARY DESCRIPTION OF THE PROPOSED PROJECT

The project site consists of approximately 10 acres and is located at the intersection of State Route (SR) 20 and Kibbe Road, approximately three miles northeast of the City of Marysville, within Yuba County. The project site extends north from the 720-acre mining and processing facility of Hallwood mine towards SR 20. Existing land uses in the vicinity of the site include agricultural, industrial (aggregate mining and associated uses), and rural residential uses. The northwest and southwest portions of the site are currently in use as grazing/pasture land, while rural residential uses are located in the northeastern and southeastern quadrants of the existing SR 20/Kibbe Road intersection. Several rural residences exist northeast of SR 20/Kibbe Road intersection, and three residences exist southeast of SR 20/Kibbe Road intersection. The haul road proposed as part of the project would be located to the west of the residences that exist in the southeast quadrant of the project site. The northernmost and the southernmost residences are owned by Teichert, and the southernmost residence is currently vacant. In addition, unmarked bus loading areas are provided in the northeast and southwest corners of the SR 20/Kibbe Road intersection which service four schools in the Marysville Joint Unified School District (MJUSD).

The proposed project would include the construction of intersection improvements at the SR 20/Kibbe Road intersection for the purpose of connecting the intersection to the previously constructed portion of the private haul road, which ends approximately 50 feet south of SR 20. The private haul road is approximately 3,250 feet in length measured from the northern property line of the Hallwood mine to the SR 20 right-of-way. The proposed project would also include the westerly realignment of approximately 600 feet of Kibbe Road, north of SR 20, to connect with the relocated intersection. Driveway access would be constructed to connect existing homes north of SR 20 with the realigned segment of Kibbe Road. The segment of Kibbe Road which is being replaced north of SR 20 would be decommissioned and removed. A left-turn pocket for westbound SR 20 traffic, the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection, and additional improvements to SR 20 as determined by Caltrans would also be included in the construction of the proposed project.

Implementation of the proposed project would require the following discretionary actions by Yuba County:

- Certification of the Environmental Impact Report;
- Adoption of the Mitigation Monitoring and Reporting Program;

- Acquisition of right-of-way along the 13 parcels adjacent to Kibbe Road; and
- Encroachment permit from Yuba County.

Additionally, the proposed project would require the following discretionary approval:

- Encroachment permit from Caltrans;
- Section 401 permit from the U.S. Army Corps of Engineers (USACE); and
- Section 404 permit from USACE.

Please refer to Chapter 3, Project Description, of this EIR for a detailed description of the proposed project and entitlements, as well as a full list of the project objectives.

2.3 ENVIRONMENTAL IMPACTS AND PROPOSED AND RECOMMENDED MITIGATION

Under CEQA, a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, mineral, flora, fauna, ambient noise, and objects of historic or aesthetic significance. Mitigation measures must be implemented as part of the proposed project to reduce potential adverse impacts to a less-than-significant level. Such mitigation measures are noted in this EIR and are found in the following technical chapters: Air Quality and Greenhouse Gas Emissions; Biological Resources; Cultural and Tribal Cultural Resources; Noise; and Transportation. In addition, an Initial Study was prepared for the proposed project, and includes mitigation measures. The mitigation measures presented in the Initial Study and the EIR will form the basis of the Mitigation Monitoring and Reporting Program. Any impact that remains significant after implementation of mitigation measures is considered a significant and unavoidable impact.

A summary of the identified impacts in the Initial Study and in the technical chapters of the EIR is presented in Table 2-1, included at the end of this chapter.

2.4 SUMMARY OF PROJECT ALTERNATIVES

The following section presents a summary of the alternatives evaluated in this EIR for the proposed project, which include the following:

1. No Project Alternative;
2. Existing Alignment Alternative; and
3. Cordua Canal Alternative.

For a more thorough discussion of project alternatives that were evaluated in this EIR, please refer to Chapter 5, Alternatives Analysis.

1. No Project Alternative

The No Project Alternative uses, as a baseline, the existing conditions of the project site such that an intersection relocation and a roadway realignment would not occur, and that the trucks associated with the Hallwood mine would continue to use Walnut Avenue and Hallwood Boulevard as their hauling route from the Hallwood mine. The project site would remain as is: undeveloped except for the previously constructed 3,250 lineal feet of an unused private haul road located to the south of the SR 20/Kibbe Road intersection. However, the alternative's nullification of the proposed project would continue to impact the neighborhoods surrounding

Walnut Avenue and Hallwood Boulevard. The No Project Alternative would result in greater impacts related to Noise and Transportation as compared to the proposed project.

2. Existing Alignment Alternative

The Existing Alignment Alternative would involve the easterly realignment of the private haul road to connect with the existing SR 20/Kibbe Road intersection. Access to the Hallwood mine would be provided in the same location as the proposed project and, also similar to the proposed project, would be located along the majority of the previously constructed private haul road located to the south of the SR 20/Kibbe Road intersection. The Existing Alignment Alternative would result in similar impacts to all issue areas except Biological Resources, which would be greater than the proposed project.

3. Cordua Canal Alternative

The Cordua Canal Alternative would involve construction of a roadway along the Stahl Ditch, west of the existing private haul road. Under the Cordua Canal Alternative, the haul route would access the Hallwood mine in the same location as the proposed project and, also similar to the proposed project, would be located along the previously constructed haul route for approximately 1,800 feet, from the Hallwood mine access to just north of the Cordua Canal crossing. However, once across Cordua Canal, the Cordua Canal Alternative would follow the east bank of the Stahl Ditch for approximately 1,070 feet before straightening to intersect with SR 20, approximately 975 feet west of the existing SR 20/Kibbe Road intersection. Therefore, the Alternative would include the construction of approximately 2,045 feet of additional roadway, as well as improvements to SR 20 to create a new intersection where the alternative haul route would connect to the existing roadway. The Alternative would result in greater impacts related to Air Quality and Greenhouse Gas Emissions, Biological Resources, and Transportation as compared to the proposed project.

Environmentally Superior Alternative

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. Section 15126.6(e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated and states, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." The No Project Alternative would result in greater impacts related to Noise and Transportation, and the Cordua Canal Alternative would result in greater impacts related to Air Quality and Greenhouse Gas Emissions, Biological Resources, and Transportation as compared to the proposed project. However, the Existing Alignment Alternative would result in similar impacts as the proposed project to all issue areas. Therefore, the Existing Alignment Alternative is identified as the Environmentally Superior Alternative.

2.5 AREAS OF KNOWN CONTROVERSY

Areas of controversy that were identified in NOP comment letters, and are otherwise known for the project area, include the following:

- Concerns related to light pollution from additional vehicles on the roadway (see Section I, Aesthetics of the Initial Study prepared for the proposed project);
- Project-related changes to drainage patterns and water quality in the vicinity of the project site (see Section X, Hydrology and Water Quality, of the Initial Study prepared for the proposed project);

- Health impacts related to dust (see Chapter 4.1, Air Quality and Greenhouse Gas Emissions, of this EIR);
- Impacts associated with potentially adverse changes to wildlife and plant habitats in the project vicinity (see Chapter 4.2, Biological Resources, of this EIR);
- Concerns related to consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project (see Chapter 4.3, Cultural and Tribal Cultural Resources, of this EIR);
- Impacts related to increases in the noise levels, especially related to roadway/traffic noise in the project area (see Chapter 4.4, Noise, of this EIR);
- Concerns related to the impacts to the existing roadways in the project area, including the disruption of an existing bus stop (see Chapter 4.5, Transportation of this EIR);
- The safety of the Cordua Canal undercrossing of SR 20 as it relates to obstructed views from land fog and a "blind hill" at the crossing (see Chapter 4.5, Transportation of this EIR); and
- An additional alternative which would consider a by-pass around town (see Chapter 6, Alternatives Analysis, of this EIR).

2.6 SUMMARY OF IMPACTS AND MITIGATION MEASURES

A summary of the identified impacts in the Initial Study and in the technical chapters of the EIR is presented in Table 2-1. In Table 2-1, the proposed project impacts are identified for each technical chapter (Chapters 4.1 through 4.5) of the EIR, as well as for impact areas which were determined to require mitigation in the Initial Study. In addition, Table 2-1 includes the level of significance of each impact, any mitigation measures required for each impact, and the resulting level of significance after implementation of mitigation measures for each impact.

Table 2-1
Summary of Impacts and Mitigation Measures

Impact		Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
			4.1. Air Quality and GHG Emissions	
4.1-1	**Conflict with or obstruct implementation of the applicable air quality plan during project construction.**	LS	*None required.*	N/A
4.1-2	**Conflict with or obstruct implementation of the applicable air quality plan during project operation.**	LS	*None required.*	N/A
4.1-3	**Expose sensitive receptors to substantial pollutant concentrations.**	LS	*None required.*	N/A
4.1-4	**Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard.**	LCC	*None required.*	N/A
4.1-5	**Generate GHG emissions that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.**	LS	*None required.*	N/A

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.2. Biological Resources			
4.2-1 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 CDFW or USFWS.	S	***Vernal Pool Fairy Shrimp*** *4.2-1(a) The project applicant shall comply with all construction site Best Management Practices (BMPs) specified in the Storm Water Pollution Prevention Plan (SWPPP), as required in Mitigation Measure X-1 of the Initial Study prepared for the proposed project (see Appendix A), and any other permit conditions to minimize the introduction of construction related contaminants and mobilization of sediment in wetlands and non-wetland waters in and adjacent to the project site. These BMPs will address soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-stormwater management, and waste management practices. The BMPs will be based on the best conventional and best available technology. Prior to issuance of grading permits, the SWPPP shall be prepared and submittal for review and approval to the RWQCB.* ***Nesting Birds and Raptors*** *4.2-1(b) Where vegetation removal is required to construct project features, the project applicant shall conduct this activity during the nonbreeding season for migratory birds and raptors (generally*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		between September 1 and February 28), to the extent feasible. *If construction activities (including vegetation removal) cannot be confined to the nonbreeding season, the project applicant shall retain a qualified wildlife biologist with knowledge of the relevant species specific to the area to conduct nesting surveys before the start of construction. The migratory bird and raptor nesting surveys shall include a minimum of two separate surveys to look for active migratory bird and raptor nests. Surveys shall include a search of all trees and shrubs that provide suitable nesting habitat in the construction area. In addition, a 0.5-mile area around the construction area shall be surveyed for Swainson's hawk, a 500-foot area around the construction area shall be surveyed for nesting raptors, and a 50-foot area around the construction area shall be surveyed for songbirds. One survey should occur within 14 days prior to construction and the second survey within 48 hours prior to the start of construction or vegetation removal. If no active nests are detected during these surveys, no additional measures are required. Survey results shall be submitted for review and approval to the Yuba*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		County Community Development and Services Agency. *If an active nest is found in the survey area, a no-disturbance buffer shall be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project site (this date varies by species). The extent of these buffers shall be determined by the biologist in coordination with USFWS and/or CDFW as applicable, and will depend on the level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.*	
4.2-2 Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) or any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or	S	*4.2-2(a) Prior to construction, the project applicant shall submit an Aquatic Resources Delineation Report to the USACE and RWQCB to determine if the seasonal wetlands, roadside ditches, and agricultural ditches would be regulated by the USACE under Section 404 of the Clean Water Act and/or by the Regional Water Board under Section 401 of the Clean Water Act or the*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact		Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
	by the CDFW or USFWS through direct removal, filling, hydrological interruption, or other means.			*Porter-Cologne Water Quality Control Act. If the RWQCB and/or the USACE determines that the wetlands and non-wetland waters are not regulated under State and federal laws, further mitigation is not required.* *If the RWQCB and/or the USACE determines that the wetlands and non-wetland waters are regulated under State and federal laws, the project applicant shall obtain the required permits and implement any required compensation for the loss of waters of the U.S. and/or waters of the State. The actual mitigation ratio and associated credit acreage shall be based on USACE and RWQCB permitting, which will dictate the ultimate compensation for permanent or temporary impacts to waters of the U.S./waters of the State. RWQCB and USACE determinations, as well as proof of required permits, if any, shall be submitted to the Yuba County Community Development and Services Agency for review.*	
			4.2-2(b)	*Implement Mitigation Measure 4.2-1(a).*	
4.2-3	**Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with**	LS	*None required.*		N/A

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact		Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
	established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.				
4.2-4	**Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.**	LS	*None required.*		N/A
4.2-5	**Cumulative impact on biological resources.**	LS	*None required.*		N/A
4.3. Cultural and Tribal Cultural Resources					
4.3-1	**Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines, Section 15064.5.**	LS	*None required.*		N/A
4.3-2	**Cause a substantial adverse change in the significance of a unique archeological resource pursuant to CEQA Guidelines, Section 15064.5 or disturb human remains, including those interred outside of dedicated cemeteries.**	S	*4.3-2*	*The following requirements shall be included via notation on all project improvement plans prior to the issuance of grading permits, to the satisfaction of the Yuba County Community Development and Services Agency.* *In the event subsurface deposits believed to be cultural or human in origin are discovered during construction, all work shall halt within a 50-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		for precontact and historic archaeologist, shall be retained by the applicant to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find: • *If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and agency notifications are not required.* • *If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify Yuba County and applicable landowner. The project applicant shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work shall not resume within the no-work radius until the applicant, through consultation as appropriate and concurrence with the County, determines that the site either: 1) is not a historical resource under*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to the County's satisfaction. • *If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (Assembly Bill [AB] 2641). The archaeologist shall notify the Yuba County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner shall notify the NAHC, which then shall designate a Native American Most Likely Descendant (MLD) for the proposed project (Section 5097.98 of the PRC). The designated MLD shall have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		NAHC shall mediate (Section 5097.94 of the PRC). If an agreement is not reached, the landowner shall rebury the remains where they shall not be further disturbed (Section 5097.98 of the PRC). The burial shall also include either recording the site with the NAHC or the appropriate information center, using an open space or conservation zoning designation or easement, or recording a reinternment document with Yuba County (AB 2641). Work shall not resume within the no-work radius until the County, through consultation as appropriate, determines that the treatment measures have been completed to their satisfaction.	
4.3-3 Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code, Section 21074.	S	*4.3-3(a) Implement Mitigation Measure 4.3-1.* *4.3-3(b) Prior to initiation of ground-disturbing activities associated with the proposed project, a consultant and construction worker tribal cultural resources awareness brochure and training program for all personnel involved in project implementation shall be developed in coordination with interested Native American Tribes. The brochure shall be distributed and the training shall be conducted in coordination with qualified cultural resources specialists and*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Native American Representatives and Monitors from culturally affiliated Native American Tribes before any stages of project implementation and construction activities begin on the project site. The program shall include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The worker cultural resources awareness program shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site and shall outline what to do and whom to contact if any potential tribal cultural resources are encountered. The program shall also underscore the requirement for confidentiality and culturally-appropriate treatment of any find of significance to Native Americans and behaviors, consistent with Native American Tribal values. Documentation of the brochure and training program (i.e., a sign-in sheet) shall be retained at the project site and shall be submitted with applicable reports to the Yuba County Community Development and Services Agency.	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.3-4 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	S	*4.3-4 Prior to the issuance of grading permits, the following language shall be included via notation on the Improvement Plans: "Should construction or grading activities result in the discovery of unique paleontological resources, all work within 100 feet of the discovery shall cease. The Yuba County Community Development and Services Agency shall be notified, and the resources shall be examined by a qualified archaeologist, paleontologist, or historian, at the developer's expense, for the purpose of recording, protecting, or curating the discovery as appropriate. The archaeologist, paleontologist, or historian shall submit to the Community Development and Services Agency for review and approval a report of the findings and method of curation or protection of the resources. Work may only resume in the area of discovery when the preceding work has occurred."*	LS
4.3-5 Cause a cumulative loss of cultural resources.	LS	*None required.*	N/A
		4.4. Noise	
4.4-1 Generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise	S	*4.4-1 Prior to issuance of a grading permit, the project contractor shall prepare a construction noise management plan that identifies measures to be taken to minimize construction noise on surrounding sensitive land uses and include*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
ordinance, or applicable standards of other agencies.		*specific noise management measures to be included within the project plans and specifications, subject to review and approval by the Yuba County Community Development and Services Agency. The project contractor shall demonstrate, to the satisfaction of the County, that the project complies with the following:* • *Noise-generating construction activities, including truck traffic coming to and from the project site for any purpose, shall be limited to the hours outlined in Section 8.20.310 of the County's Code of Ordinances, specifically, construction activities shall be prohibited outside of the hours of 7:00 AM to 10:00 PM.* • *All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications. Mobile or fixed "package" equipment (e.g., arc welders, air compressors) shall be equipped with shrouds and noise-control features that are readily available for that type of equipment.*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• *All mobile or fixed noise-producing equipment used on 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.* • *Electrically powered equipment shall be used instead of pneumatic or internal combustion-powered equipment, where feasible.* • *Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.* • *Construction site and access road speed limits shall be established and enforced during the construction period.* • *The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.* *Project-related public address or music systems shall not be audible at any adjacent receptor.*	
4.4-2 Generation of a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the	LS	*None required.*	N/A

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact		Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
	local general plan or noise ordinance, or applicable standards of other agencies.				
4.4-3	**Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.**	LS	*None required.*		N/A
4.4-4	**Cumulative noise impacts.**	LS	*None required.*		N/A
			4.5. Transportation		
4.5-1	**Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.**	S	*4.5-1*	*Prior to approval of Improvement Plans, the project applicant shall show on the plans construction of an eastbound bus pullout on the far side of the SR 20/Kibbe Road intersection (i.e., just east of the intersection) to eliminate the conflict between school buses and right-turning vehicles. Design of the eastbound bus pullout shall be included on project Improvement Plans to be reviewed and approved by the Yuba County Community Development and Services Agency, and the County Engineer, and Caltrans.*	LS
4.5-2	**Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).**	LS	*None required.*		N/A
4.5-3	**Substantially increase hazards to vehicle safety due to a geometric design feature (e.g., sharp curves or dangerous**	S	*4.5-3(a)*	*Prior to issuance of construction permits, the project applicant shall prepare a Construction Traffic Management Plan (CTMP) to the satisfaction of the Yuba County Community Development and Services Agency, and*	LS

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Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
intersections) or incompatible uses (e.g., farm equipment).		*Caltrans. The plan shall include (but not be limited to) items such as:* • *Guidance on the number and size of trucks per day entering and leaving the project site;* • *Identification of arrival/departure times that would minimize traffic impacts;* • *Approved truck circulation patterns;* • *Locations of staging areas;* • *Locations of employee parking and methods to encourage carpooling;* • *Methods for partial/complete street closures (e.g., timing, signage, location and duration restrictions);* • *Criteria for use of flaggers and other traffic controls;* • *Preservation of safe and convenient passage for bicyclists and pedestrians through/around construction areas;* • *Monitoring for roadbed damage and timing for completing repairs;* • *Limitations on construction activity during peak/holiday weekends and special events;* • *Preservation of emergency vehicle access;* • *Coordination of construction activities with construction of other projects that occur concurrently in Yuba County to minimize*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		potential additive construction traffic disruptions, avoid duplicative efforts (e.g., multiple occurrences of similar signage), and maximize effectiveness of traffic mitigation measures (e.g., joint employee alternative transportation programs); • *Removing traffic obstructions during emergency evacuation events; and* • *Providing a point of contact for Yuba County residents and guests to obtain construction information, have questions answered, and convey complaints.* *The CTMP shall be developed such that the following minimum set of performance standards is achieved throughout project construction. It is anticipated that additional performance standards will be developed once details of project construction are better known.* • *Delivery trucks do not idle/stage on SR 20.* • *SR 20 and Kibbe Road do not feature any construction-related lane closures on peak activity days.* • *All construction employees shall park in designated lots owned by the project*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		applicant or on private lots otherwise arranged for by the project applicant. • *Roadways, unmarked crosswalks, and bicycle facilities (e.g., roadway shoulders that could be used by bicyclists) shall be maintained clear of debris (e.g., rocks) that could otherwise impede travel and impact public safety.* *4.3(b) Prior to issuance of construction permits, the maintenance and removal of trees in the vicinity of the SR 20/Kibbe Road intersection, as well as the relocation of picnic tables and signs in order to not hinder sight distance of the drivers on the westbound approach of the proposed roadway realignment shall be conducted. The project applicant shall formulate an agreement with adjacent property owners which would allow for off-site improvements to occur to the satisfaction of the Yuba County Community Development and Services Agency, and Caltrans.*	
4.5-4 Cumulative impacts to transportation.	LS	*None required.*	N/A
Initial Study: X. Hydrology and Water Quality			
a. Violate any water quality standards or waste discharge requirements or otherwise	S	*X-1. Prior to issuance of grading permits, the contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) for review and*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
substantially degrade surface or ground water quality?		*approval by the RWRCB. The contractor shall file the Notice of Intent (NOI) and associated fee to the SWRCB. The SWPPP shall serve as the framework for identification, assignment, and implementation of BMPs. The contractor shall implement BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable. Construction (temporary) BMPs for the Project may include, but are not limited to: fiber rolls, straw bale barrier, straw wattles, storm drain inlet protection, velocity dissipation devices, silt fences, wind erosion control, stabilized construction entrance, hydroseeding, revegetation techniques, and dust control measures. The SWPPP shall be submitted to the Director of Public Works/County Engineer for review and approval and shall remain on the project site during all phases of construction. Following implementation of the SWPPP, the contractor shall subsequently demonstrate the SWPPP's effectiveness and provide for necessary and appropriate revisions, modifications, and improvements to reduce pollutants in stormwater discharges to the maximum extent practicable.*	

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3. Project Description

3. PROJECT DESCRIPTION

3.1 INTRODUCTION

Section 15125 of CEQA Guidelines requires an environmental impact report (EIR) to include a description of the physical environmental conditions of the project site and the site vicinity, as they exist at the time the Notice of Preparation (NOP) is published, from a local and regional perspective. Knowledge of the existing environmental setting is critical to the assessment of environmental impacts. Per CEQA Guidelines Section 15125, the description of the environmental setting shall not be longer than necessary to understand the potential significant effects of the project. Please note that detailed discussions of the existing setting in compliance with CEQA Guidelines Section 15125, specific to each environmental resource area, are included in each corresponding technical chapter of this EIR.

The Project Description chapter of the EIR provides a comprehensive description of the proposed SR 20/Kibbe Road Intersection Project (proposed project). A detailed description of the background, the project location, the project objectives, the project components, and required public approvals is presented below.

3.2 PROJECT BACKGROUND

Teichert Aggregates (Teichert) owns and operates the Hallwood mine, an existing 720-acre mining and processing facility. Teichert's Hallwood mine is currently accessed through Hallwood Boulevard and Walnut Avenue. The neighborhood surrounding the existing haul route has been slowly transitioning from agricultural uses to rural residential uses. As such, Teichert has proposed the project as an effort to alleviate the Hallwood mine's traffic impacts on the Hallwood Boulevard and Walnut Avenue neighborhoods. The proposed project would include the construction of a private haul road to connect the Teichert Aggregates' Hallwood mine directly to SR 20 at the existing intersection of SR 20 and Kibbe Road. The proposed project would also include a left-turn pocket for westbound SR 20 traffic and the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection.

In 2003, Teichert partially constructed the private haul road portion of the project pursuant to a ministerial grading permit issued by Yuba County. Although the private haul road was constructed as a ministerial project, the proposed improvements at the SR 20/Kibbe Road intersection required additional County and Caltrans approvals. Therefore, in December 2003, an Initial Study/Mitigated Negative Declaration was prepared and circulated for public review on the proposed intersection improvements. The Initial Study/Mitigated Negative Declaration received public comments, to which responses were prepared by the Yuba County Community Development and Services Agency. Based upon the issues raised on the project, including whether the existing private roadway construction was addressed, the County determined that an EIR shall be prepared in order to ensure full public disclosure of the potential environmental effects of both the previously constructed private haul road and the proposed intersection improvements.

An EIR was prepared for the proposed project and certified by Yuba County in 2006. However, the project was subject to litigation that ultimately resulted in the Yuba County Superior Court invalidating the EIR for the project based on several identified legal deficiencies such as failing to adequately analyze drainage easement impacts, single event traffic noise (including Jake brake usage), and an alternative alignment along the Cordua Canal. Teichert is now resubmitting its application for the proposed project with the intent to address the deficiencies in the 2006 EIR identified by the court, and to update the environmental analysis based on current environmental conditions.

To assess a project's significant impacts, an EIR ordinarily compares the project's impacts to an existing environmental conditions baseline. In *Riverwatch v County of San Diego (1999) 76 CA4th 1428, 1451*, the court held that the proper baseline is the existing condition of the site, even if that condition may be the result of prior illegal activity. The court also noted that illegal conduct is subject to enforcement action and that it would place an undue burden on EIR preparers to determine the merits of illegal conduct claims. The court explained that an EIR is not the appropriate forum for determining the nature and consequences of a prior conduct of a project applicant. Similarly, court cases *Eureka Citizens for Responsible Gov'tv City of Eureka (2007) 147 CA4th 357,371*; *Banning Ranch Conservancy v City of Newport Beach (2012) 211 CA4th 1209, 1233;* and *Fat v County of Sacramento (2002) 97 CA4th 1270, 1277* upheld the determination of *Riverwatch* such that a lead agency has the discretion to use existing conditions as a baseline for a project. In *Fat v County of Sacramento,* the court noted that amended CEQA Guidelines Section 15125 defines the environmental setting as the conditions at the time environmental analysis is commenced, which will "normally" constitute the baseline.

The previously constructed portion of the private haul route was constructed pursuant to a ministerial grading permit issued by Yuba County and, therefore, was not constructed illegally. However, potential impacts of the roadway's construction were not analyzed under CEQA prior to the initiation of roadway development. Nonetheless, because the roadway was constructed in 2003, the roadway is currently considered an existing environmental condition and is included as part of the baseline conditions. Therefore, the analysis included in this EIR will focus on the improvements to the Kibbe Road/SR 20 intersection, and will not address previous environmental impacts associated with construction of the private haul road.

3.3 PROJECT SETTING

The following section includes a description of the project's location and existing setting, as well as the existing land use designations in the project vicinity.

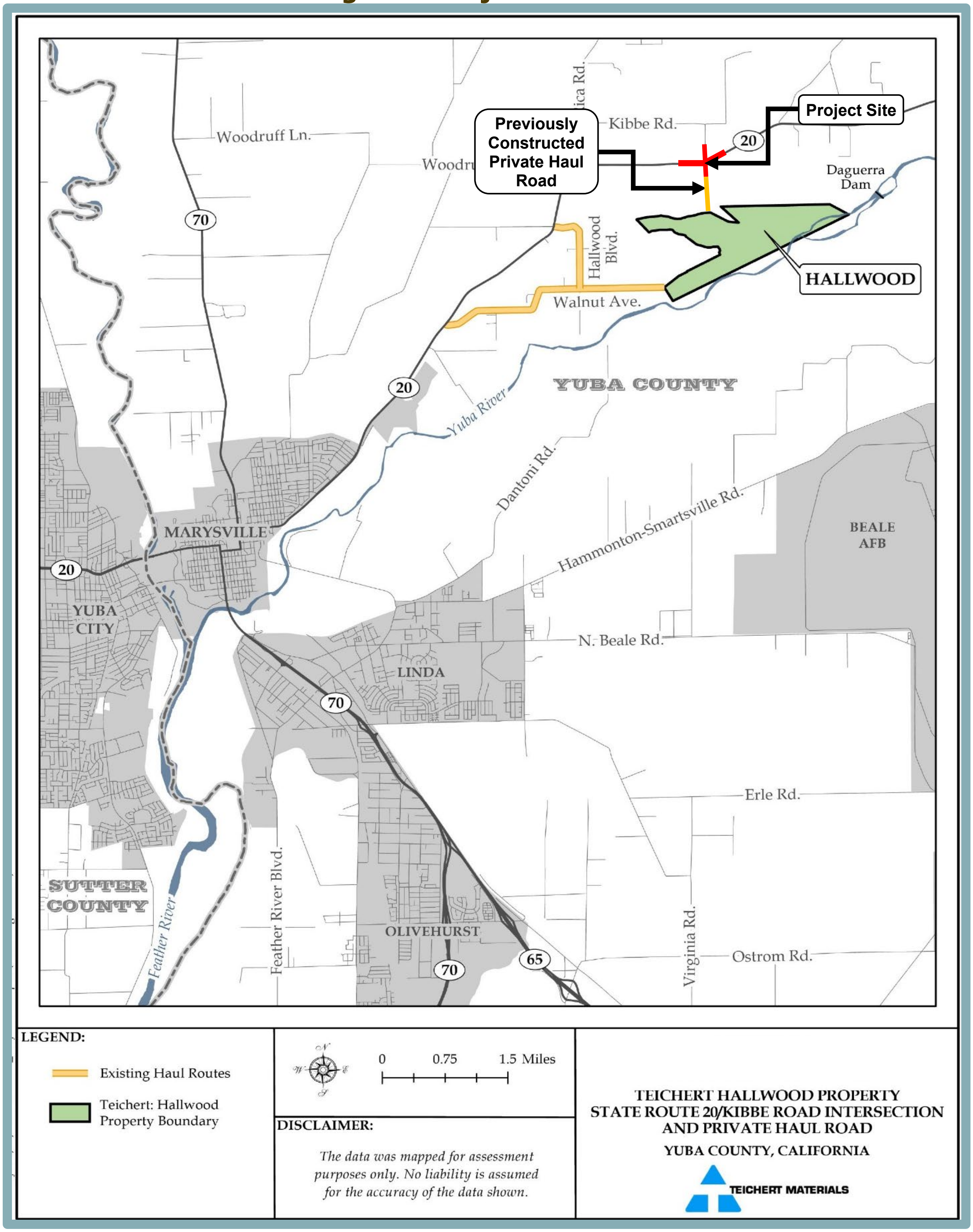
Project Location

The project site consists of approximately 10 acres and is located at the intersection of SR 20 and Kibbe Road, approximately three miles northeast of the City of Marysville, within Yuba County (see Figure 3-1). The project site extends north from the 720-acre mining and processing facility of Hallwood mine towards SR 20 through a connection to a previously constructed portion of a private haul road, discussed in further detail below. Existing land uses in the vicinity of the site include agricultural, industrial (aggregate mining and associated uses), and rural residential uses. Kibbe Road is an east-to-west and north-to-south two-lane County road that connects to SR 20. The proposed project would require right-of-way acquisition from portions of approximately 13 parcels.

Existing Setting

Currently, Kibbe Road north of SR 20 is a paved roadway, and the segment to be realigned includes access to driveways for homes located on the eastern side. Kibbe Road south of SR 20 is currently an unpaved private road and provides driveway access to three homes on the east side of the roadway. Kibbe Road south of SR 20 terminates after the southernmost residence.

Figure 3-1
Regional Project Location



The northwest and southwest portions of the project site are currently in use as grazing/pasture land, while rural residential uses are located in the northeastern and southeastern quadrants of the existing SR 20/Kibbe Road intersection (see Figure 3-2). Several rural residences exist northeast of Kibbe Road/SR 20 intersection, and three residences exist southeast of Kibbe Road/SR 20 intersection.

The haul road proposed as part of the project would connect to the previously constructed portion of a private haul road which extends north from the Hallwood mine towards SR 20, and is located to the west of the residences that exist in the southeast quadrant of the intersection. The northernmost and the southernmost residences are owned by Teichert, and the southernmost residence is currently vacant. In addition, unmarked bus loading areas are provided in the northeast and southwest corners of the SR 20/Kibbe Road intersection which service four schools in the Marysville Joint Unified School District (MJUSD).

The previously constructed portion of the proposed haul road alignment crosses three existing canals. The Cordua Canal is owned and operated by the Cordua Irrigation District, while the Stahl Ditch and an unnamed irrigation ditch are owned and operated by the Hallwood Irrigation District. Culverts were installed at each of these canal crossings with the permission of the Cordua and Hallwood irrigation districts as part of the construction of the existing portion of the private haul road in 2003.

Existing Land Use Designations

The current General Plan Land Use Designations for all of the parcels on the project site are Natural Resources. Current zoning for the project site consists of Exclusive Agricultural (AE) and Residential Estate (RE). The proposed project would not change the existing zoning and would not result in inconsistency with the General Plan Land Use Designations.

3.4 PROJECT OBJECTIVES

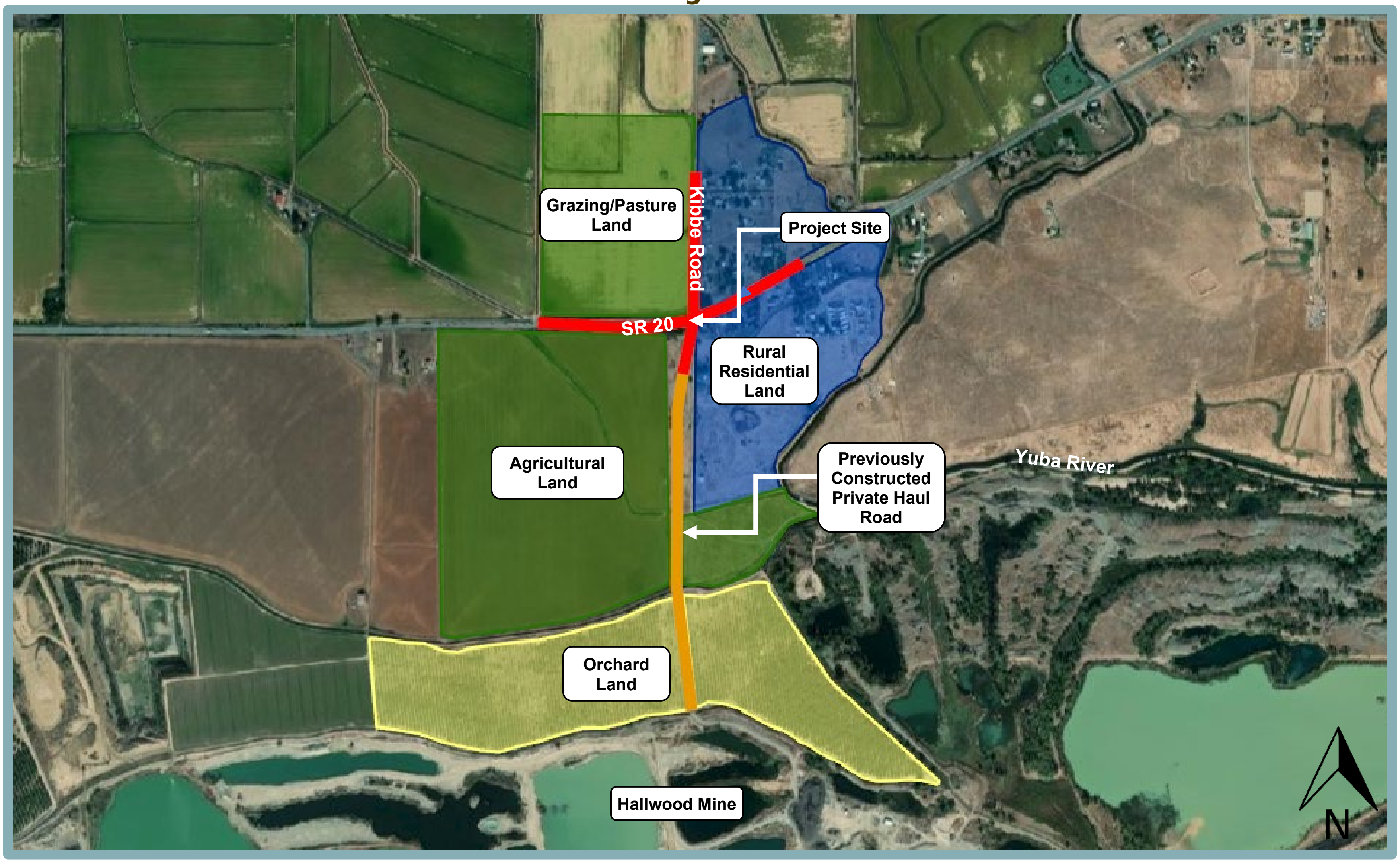
The following project objectives have been developed by the project applicant:

1) Minimize, to the extent feasible, Teichert-generated truck traffic and its associated effects on the neighborhoods along Hallwood Boulevard and Walnut Avenue.
2) Identify the shortest possible route from Teichert's on-site scalehouse to SR 20.
3) Acquire property from willing property owners.
4) Facilitate the ongoing operation of the Hallwood mining facility.
5) Minimize, to the extent feasible, impacts to the natural environment, including riparian habitat and the Yuba River.

3.5 PROJECT COMPONENTS

The proposed project consists of the completion of a previously constructed private haul road and improvements to the intersection of SR 20 and Kibbe Road. The purpose of such improvements would be to provide a new haul route for Teichert's existing Hallwood mine to alleviate existing traffic-related impacts on rural residences in the Hallwood Boulevard and Walnut Avenue neighborhoods. The Roadway Plan below describes the proposed project.

Figure 3-2
Surrounding Land Uses



Roadway Plan

The development of the proposed project would include the relocation of the SR 20/Kibbe Road intersection, as well as construction of associated intersection improvements for the purpose of connecting the intersection to the existing private haul road.

The private haul road is approximately 3,250 feet in length measured from the northern property line of the Hallwood mine to the SR 20 right-of-way. The previously completed section of the private haul road ends approximately 50 feet south of SR 20.

The proposed project would also include the westerly realignment of approximately 600 feet of Kibbe Road, north of SR 20, to connect with the relocated intersection and account for the distance that would be created between the existing roadway and the proposed intersection. Without realignment, Kibbe Road north would be located east of the proposed intersection, and the location of the existing roadway could create traffic hazards at the proposed intersection. Driveway access would be constructed to connect existing homes north of SR 20 with the realigned segment of Kibbe Road. The segment of Kibbe Road which is being replaced north of SR 20 would be decommissioned and removed. The proposed roadway and intersection improvements would include a left-turn pocket for westbound SR 20 traffic, the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection, and additional improvements to SR 20 as determined by Caltrans (Figure 3-3).

Teichert anticipates the installation of a traffic signal, following approval by Caltrans. Nonetheless, for the purposes of the analysis included in this EIR, three different intersection control options: a stop sign, a traffic signal (see Figure 3-3), and a roundabout (Figure 3-4) will be considered and evaluated. However, the analysis will draw conclusions based on the most impactful intersection control option. As such, analysis of the proposed project will consider the worst-case scenario traffic control option for the environmental factors that would potentially be affected.

After completion of the proposed intersection improvements, the existing truck traffic to and from the Hallwood mine would be relocated to the new haul road and would access SR 20 through the realigned Kibbe Road intersection. The existing access on Walnut Road would then be used for employee and vendor access only.

The proposed project would require a grading permit and an encroachment permit from Yuba County, and an encroachment permit from Caltrans. Contingent upon the approval of the encroachment permit and associated improvement plans, the County and Caltrans would require additional right-of-way acquisition.

Construction Plan

Construction is estimated to begin in 2022, and would last approximately one to two months. Construction activities would include grading/excavation, drainage/utilities/sub-grade installation, and paving. During construction of the proposed project, various types of equipment and vehicles would be used including, but not limited to: excavators, backhoes, pavers, rollers, and scrapers.

Approximately 12,400 cubic yards of soil would be exported as part of the proposed project. Additionally, the proposed project would use 17,760 tons of aggregate base and 6,000 tons of hot mix asphalt (HMA) paving during project construction. Project construction would also include the installation of 1,876 linear feet of 18-inch to 24-inch underground storm drain culverts. Installation would include trenching, grading, laying, shading, and backfilling the storm drain culverts.

Figure 3-3
Proposed Intersection Layout

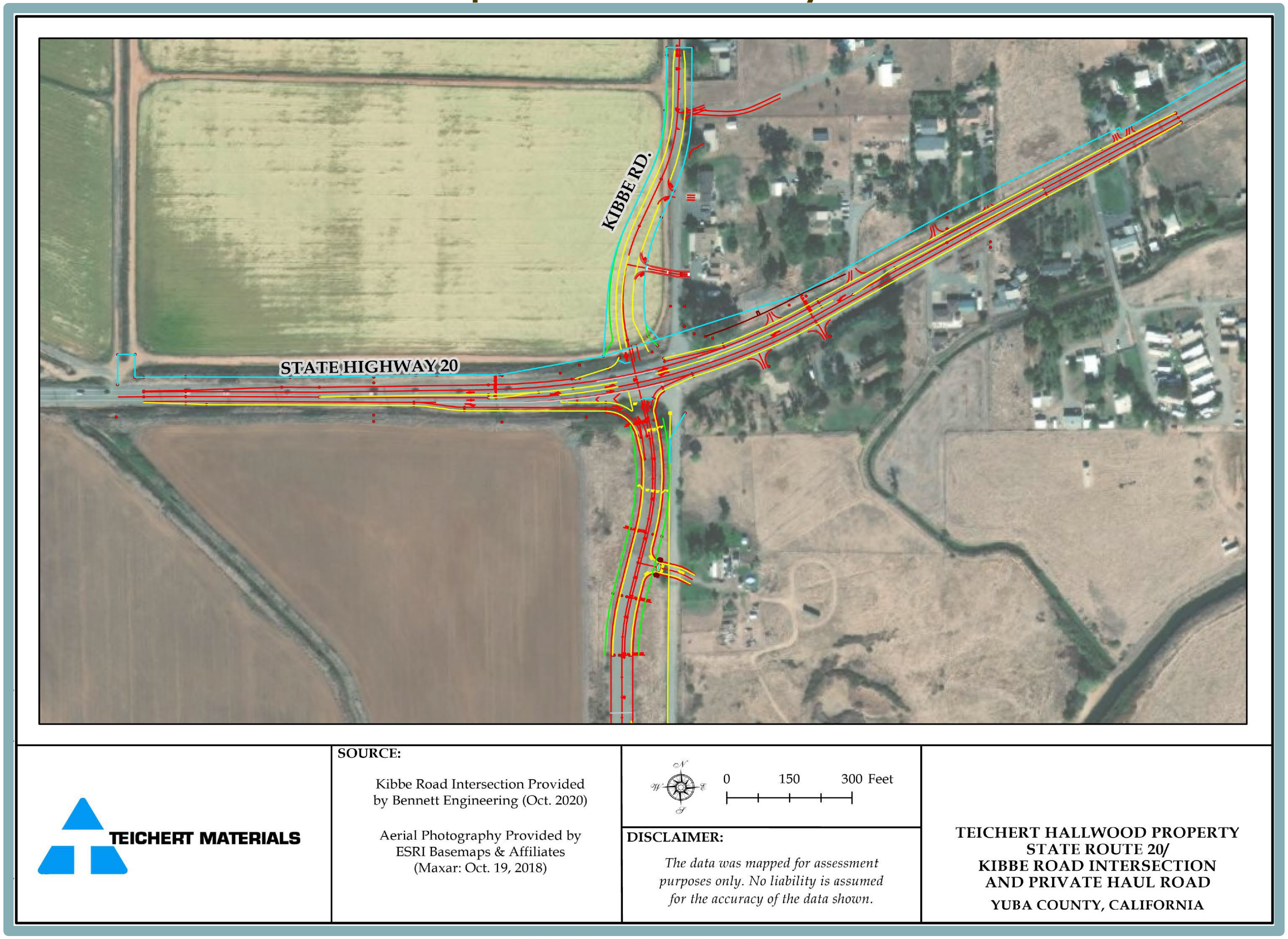
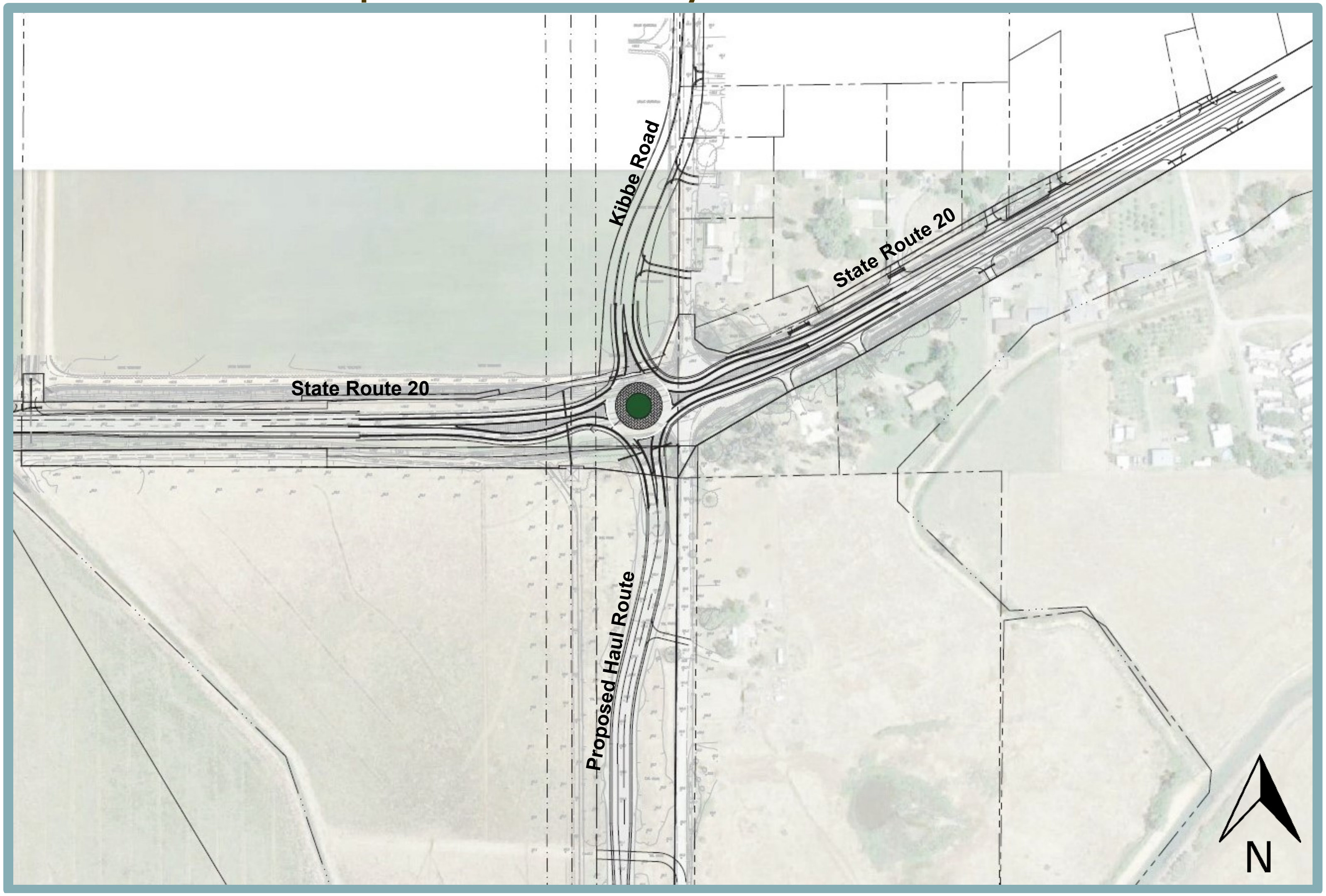


Figure 3-4
Proposed Intersection Layout with Roundabout



The existing portion of Kibbe Road north of SR 20 would remain in place during project construction to allow the adjacent properties to access SR 20 through the existing SR 20/Kibbe Road intersection. Once the new intersection is constructed and all driveways are connected to the new alignment of Kibbe Road, operations shall commence at the proposed intersection and the properties would access SR 20 through the new intersection.

Thereafter, unused portions of the existing roadway alignment would be demolished. However, a temporary (up to three days) loss of direct access to SR 20 from the residences north of Kibbe Road could occur during the transition from the existing intersection to the new intersection. In such cases, the residences on Kibbe Road to the north of SR 20 could be accessed to and from SR 20 through Loma Rica Road. In addition, a one-time four-hour period during which the residences would not have access to Kibbe Road would be required to conform driveways for the three residences along Kibbe Road north of SR 20.

3.6 REQUIRED DISCRETIONARY APPROVALS

Implementation of the proposed project would require the following discretionary actions by Yuba County:

- Certification of the Environmental Impact Report;
- Adoption of the Mitigation Monitoring and Reporting Program;
- Acquisition of right-of-way along the 13 parcels adjacent to Kibbe Road; and
- Encroachment permit from Yuba County.

Implementation of the proposed project would require the following discretionary approvals from other agencies:

- Encroachment permit from Caltrans;
- Section 401 permit from the U.S. Army Corps of Engineers (USACE); and
- Section 404 permit from USACE.

4.0 Introduction to Analysis

4.0 Introduction to the Analysis

4.0.1 INTRODUCTION

The technical chapters of this EIR include the analysis of the potential impacts of the proposed project on a range of environmental issue areas. Chapters 4.1 through 4.5 include the focus of the analysis, references and other data sources for the analysis, the environmental setting related to each specific issue area, project-specific impacts and mitigation measures, and the cumulative impacts of the project for each issue area. The format of each of the technical chapters is described at the end of this chapter.

4.0.2 DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial or potentially substantial adverse change in the environment (Public Resources Code Section 21068). The CEQA Guidelines require that the determination of significance be based on scientific and factual data. The specific criteria for determining the significance of a particular impact are identified within in each technical chapter, and are consistent with significance criteria set forth in the CEQA Guidelines or as based on the professional judgment of the Lead Agency with support of substantial evidence.

4.0.3 ENVIRONMENTAL ISSUES ADDRESSED IN THE INITIAL STUDY

The Initial Study prepared for the proposed project (Appendix A) includes a detailed environmental checklist addressing a range of technical environmental issues. For each technical environmental issue, the Initial Study identifies the level of impact for the proposed project. The Initial Study identifies the environmental effects as “no impact,” “less than significant,” “less than significant with mitigation incorporated,” and “potentially significant.” Impacts identified in the Initial Study as less than significant with mitigation incorporated, less than significant, or no impact are presented below. All remaining issues identified in the Initial Study as potentially significant are discussed in the subsequent technical chapters of this EIR.

- *Aesthetics (All Sections):* State Route (SR) 20 is not designated by Caltrans as a Scenic Highway, and the Yuba County General Plan EIR does not designate scenic vistas in the vicinity of the SR 20/Kibbe Road intersection. Thus, the proposed project would result in *no impact* related to scenic vistas and scenic resources.

  The proposed project would consist only of minor aesthetic changes to the project area and would not add any above-grade structures to the project vicinity. As such, following implementation of the proposed project, the visual character of the site as seen from SR 20 would be generally consistent with the existing character. As proposed, the project would include one of three different intersection control options: a stop sign, a roundabout, or a traffic signal. If signalization is warranted, the proposed project would increase light in the area as the project site currently does not contain a traffic signal; however, the addition of signalization to the SR 20/Kibbe Road intersection would be considered a typical roadway use. In addition, substantial light and glare from truck traffic is not anticipated because the majority of truck traffic would occur during daylight hours when headlights are not used. Therefore, the proposed project would result in *less-than-*

significant impacts related to the degradation of the existing character of the area surrounding the project site, and the creation of new sources of substantial light and glare.

- *Agriculture and Forest Resources (All Sections):* The land within the project site is designated as "Grazing Land" under the California Department of Conservation's Farmland Mapping and Monitoring Program. As such, a *less-than-significant* impact would occur related to converting Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, or involving 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.

  Yuba County does not participate in the Williamson Act program. Additionally, the project site is not considered forestland, timberland, and is not zoned Timberland Production. Therefore, *no impact* would occur related to the proposed project conflicting with a Williamson Act contract, conflicting with existing zoning for, or causing rezoning of, forest land, timberland, or timberland zoned Timberland Production, or resulting in the loss of forest land or conversion of forest land to non-forest use.

- *Air Quality (d):* The proposed project would not introduce any typical odor-generating land uses, and operations at the project site would be consistent with operations in the project vicinity. Therefore, construction and operation of the proposed project would have a *less-than-significant* impact related to creation of objectionable odors affecting a substantial number of people.

- *Biological Resources (f)*: The project site is located in an area that does not have an approved Habitat Conservation Plan, Natural Community Conservation Plan, or local, regional, or State habitat conservation plan. Therefore, *no impact* would occur related to conflict with a Habitat Conservation Plan, Natural Conservation Community Plan.

- *Energy (All Sections):* Energy resources would be consumed during construction and operation of the project. However, the energy usage would not be considered a wasteful, inefficient, or unnecessary, and would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Thus, the proposed project would result in a *less-than-significant* impact related to energy.

- *Geology and Soils (All Sections):* The project site is not underlain by any known faults. In addition, the proposed project would not involve installation of septic tanks. As a result, *no impact* would occur related to substantial adverse effects involving rupture of a known earthquake fault or strong seismic ground shaking, or related to having soils incapable of supporting the use of septic tanks or alternative wastewater disposal systems.

  The proposed project would not involve the construction of structures, and the project site is relatively flat and does not contain open faces. In addition, per the General Plan EIR, the project region is identified to have soils that are not highly expansive and are not prone to shrink/swell activity. Implementation of Yuba County General Plan Policy HS3.8, Policy HS8.5, and Action HS8.1, along with all other applicable federal, State, and local regulations, would reduce the potential for substantial soil erosion or loss of topsoil caused by construction of the proposed project. Therefore, the proposed project would result in *less-than-significant* impacts related to causing adverse effects involving seismic-related ground failure, including liquefaction and landslides, resulting in substantial soil erosion or the loss of topsoil, being located on a geologic unit or soil that is unstable or could become unstable as a result of the project, and being located on expansive soil.

- *Hazards and Hazardous Materials (All Sections):* Operations of the proposed project would not involve the routine transport, use, or disposal of hazardous materials. In addition, project construction would not include the demolition or removal of any structures. Therefore, exposure to common contaminants such as asbestos and lead-based paints are not a concern. In addition, historical uses of pesticides or other chemicals on the site are not documented and would not constitute and significant hazard. Project construction and operation would comply with all standards set forth in the County's adopted Emergency Operations Plan, and the proposed project would be in compliance with the County's Improvement Standards designated by the Department of Public Works. Therefore, the proposed project would result in *less-than-significant* impacts related to creating a significant hazard through the routine transport, use or disposal of hazardous materials, through reasonably foreseeable upset and accident conditions involved the likely release of hazardous materials into the environment, or related to impairing implementation of an adopted emergency response plan or emergency evacuation plan.

  Schools do not currently exist, nor are expected to be constructed, within one-quarter mile of the project site, the project site is not located within an airport land use planning zone or within two miles of an airport, and the project site is not located within a High or Very High Fire Hazard Severity Zone. In addition, the project site is not listed as a hazardous materials site. As a result, *no impact* would occur related to emitting hazardous emissions or handling hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, resulting in a safety hazard or excessive noise for people residing or working in the project area for projects located within an airport land use plan, or related to exposing people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires.

- *Hydrology and Water Quality (All Sections):* During project construction, after grading and prior to overlaying the ground surface with impervious surfaces, the potential exists for wind and water erosion to discharge sediment into stormwater runoff, which could adversely affect water quality. However, Mitigation Measure X-1, set forth in the Initial Study, requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). Implementation of Mitigation Measure X-1 would reduce the impact related to the violation of water quality standards or waste discharge requirements to a *less-than-significant* level.

  The proposed project would not require regular water usage during operations. Any water required during construction would be hauled to the site and would represent a minor and temporary increase in demand for water and, therefore, would not interfere with groundwater supply. In addition, because the amount of surface area being converted from pervious to impervious is minor when considered in comparison to the entire project area, the proposed project would not add impervious surfaces to a degree that would result in a substantial decrease in groundwater infiltration rates and/or an increase in stormwater runoff rates. The grading and excavation activities associated with the proposed project would disturb topsoil and create the potential for increased erosion, and sedimentation, which could negatively affect water quality. However, implementation of the required best management and design practices included in the Yuba County General Plan, and compliance with State and County permits and standards, would ensure that significant water quality impacts do not occur during construction of the project. Additionally, the project site is located within FEMA Zone X, which is considered an area of minimal flood hazard. Therefore, a *less-than-significant* impact would occur related to substantially decreasing groundwater supplies or groundwater recharge, substantially altering the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation, substantially increasing the rate or amount of surface runoff, creating or contributing runoff water which would exceed the capacity of stormwater drainage systems, or impeding or redirecting flood flows, and related to conflicting with or obstructing implementation of a water quality control plan or sustainable groundwater management plan.

The proposed project is located in an area of minimal flood hazard, approximately 120 miles from the nearest coastline, and is not located near a closed body of water. Therefore, *no impact* would occur related to the release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone.

- *Land Use and Planning (All Sections):* The proposed project would not physically divide an established community because the proposed intersection improvements would not alter the existing general development trends in the area or isolate an existing land use. In addition, the proposed project would be compatible with the intensity of development in the agricultural and rural residential land uses surrounding the project site. Furthermore, the proposed project would not conflict with County policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect and the project would be consistent with nearby urban development. As such, the proposed project would result in a *less-than-significant* impact related to land use and planning.

- *Mineral Resources (All Sections):* The proposed project would not have any effect on availability of important mineral resources because the Hallwood mine would continue to make aggregate materials available regardless of whether or not the project was constructed. Because the project would not result in the loss of availability of a known mineral resource or locally important recovery site, a *less-than-significant* impact would occur.

- *Noise (c):* 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. The nearest airport is located approximately five miles southeast of the project site at Beale Air Force Base. Therefore, the project would not expose people working or residing in the project area to excessive noise produced by an airport, and *no impact* would occur.

- *Population and Housing (All Sections):* Because the proposed project would predominantly serve Teichert's existing Hallwood mine, the proposed project would not induce population growth by providing access to previously inaccessible areas. In addition, given that the proposed project is an allowed improvement within the site's land use and zoning designations, any potential growth associated with implementation of the proposed project has been anticipated by the County and analyzed in the General Plan EIR. Homes or people would not be displaced with the construction of the proposed intersection improvements. Therefore, *no impact* would occur related to population and housing.

- *Public Services (All Sections):* Due to the nature of the proposed project, an increase in demand for fire protection or police protection is not anticipated. The proposed project would not include construction of new residences or other structures, and thus, would not result in population growth in the project vicinity. Therefore, an increased demand for schools, parks, or other public facilities would not occur as a result of the project. Overall, the proposed project would result in a *less-than-significant* impact related to public services.

- *Recreation (All Sections):* Because the proposed project would not induce population growth, an increased demand for parks and recreational facilities would not occur. Therefore, *no impact* would occur related to recreation.

- *Transportation (d):* Per the Yuba County General Plan Policy HS9.3, the County will coordinate with Caltrans to maintain SR 20 as a primary emergency access route. The proposed project would not impede emergency access in the vicinity of the project site, because the intersection improvements would comply with all standards set in the Yuba County General Plan and General Plan EIR. Furthermore, the existing haul route would become an emergency access road for the surrounding neighborhoods, so the proposed project would increase accessibility within the project area. Therefore, the proposed project would result in *no impact* related to inadequate emergency access.

- *Utilities and Service Systems (All Sections):* The proposed roadway improvement project would not increase demand for water or wastewater treatment facilities, nor require the construction or expansion of water or wastewater treatment facilities. If street lighting or signalization are warranted, electricity would be provided by Pacific Gas & Electric Company through existing power lines in the project area. Natural gas or telecommunications facilities would not be required. Additionally, the proposed intersection improvements would not involve operations typically associated with the generation or discharge of polluted water, and the implementation of construction best management practices and compliance with applicable County standards would ensure adequate stormwater drainage capacity exists. Therefore, the proposed project would result in *less-than-significant* impacts related to requiring or resulting in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, and resulting in a determination by the wastewater treatment provider which may serve the proposed project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

  In addition, operation of the proposed project would not require a permanent water supply, and would not result in the generation of solid waste. During construction, water demand would be met by using water transported from the Hallwood mine, and would represent a minor and temporary increase in demand for water. In addition, the proposed project would be required to comply with all applicable regulations related to the disposal of construction waste. Therefore, the proposed project would result in *no impact* related to having sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, generating 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 complying with federal, state, and local management and reduction statutes and regulations related to solid waste.

- *Wildfire (All Sections):* 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 High or Very High Fire Hazard Severity Zone. In addition, the proposed project would not include the construction of structures or infrastructure that would result in an increased hazard due to wildfires. Thus, *no impact* would result from the proposed project related to substantial risk or hazards related to wildfires.

4.0.3 ENVIRONMENTAL ISSUES ADDRESSED IN THIS EIR

The EIR provides the analysis necessary to address the environmental impacts of the proposed project. The following environmental issues are addressed in separate technical chapters of this EIR:

- Air Quality and Greenhouse Gas Emissions;
- Biological Resources;
- Cultural and Tribal Cultural Resources;
- Noise; and
- Transportation.

Chapter 6 of the EIR presents a discussion of any growth-inducing impacts, significant irreversible environmental changes, significant and unavoidable impacts identified in Chapters 4.1 through 4.5, as applicable, as well as additional information on the scope of the cumulative impact analysis.

4.0.4 TECHNICAL CHAPTER FORMAT

Each technical chapter addressing a specific environmental issue begins with an **introduction** describing the purpose of the chapter. The introduction is followed by a description of the project's **existing environmental setting** pertaining to that particular environmental issue. The setting description is followed by the **regulatory context** and the **impacts and mitigation measures** discussion. The discussion contains the **standards of significance**, followed by the **method of analysis**. The standards of significance section includes references to the specific Initial Study checklist questions consistent with Appendix G of the CEQA Guidelines. The **impacts and mitigation measures** discussion includes impact statements prefaced by a number in bold-faced type. An explanation of each impact and an analysis of the impact's significance follow each impact statement, followed by all mitigation measures pertinent to each individual impact. The degree of relief provided by identified mitigation measures is also evaluated. An example of the format is shown below:

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in comparison with the standards of significance.

4.X-1 Statement of Project-Specific Impact

Discussion of impact for the proposed project in paragraph format.

Statement of ***level of significance*** of impact prior to mitigation is included at the end of each impact discussion. The following levels of significance are used in the EIR: less than significant, significant, or significant and unavoidable.

Mitigation Measure(s)

If an impact is determined to be significant, mitigation will be included in order to reduce the specific impact to the maximum extent feasible. Impacts that cannot be reduced to a less-than-significant level with implementation of all feasible mitigation would be considered to remain significant and unavoidable.

Statement of *level of significance* after the mitigation is included immediately preceding mitigation measures.

4.X-1(a) *Required mitigation measure(s) presented in italics and numbered in consecutive order.*

4.X-1(b) *Required additional mitigation measure, if necessary.*

Cumulative Impacts and Mitigation Measures

The following discussion of cumulative impacts is based on implementation of the proposed project in combination with cumulative development within the applicable area or region.

4.X-2 Statement of Cumulative Impact

Discussion of cumulative impacts for the proposed project in paragraph format.

As discussed in detail in Chapter 6, Statutorily Required Sections, of the EIR, the cumulative setting for the proposed project is generally considered to be development anticipated to occur upon buildout of the Yuba County General Plan as well as buildout of approved or reasonably foreseeable projects within the project region.

Statement of ***level of significance*** of cumulative impact prior to mitigation is included at the end of each impact discussion. The following levels of significance are used in the EIR for cumulative impacts: less than significant, less than cumulatively considerable, cumulatively considerable, or significant and unavoidable.

Mitigation Measure(s)

If an impact is determined to be cumulatively considerable, mitigation will be included in order to reduce the specific impact to the maximum extent feasible. Impacts that cannot be reduced to a less than cumulatively considerable level with the implementation of all feasible mitigation would be considered to remain significant and unavoidable.

Statement of *level of significance* after the mitigation is included immediately preceding mitigation measures.

4.X-2(a) *Required mitigation measure(s) presented in italics and listed in consecutive order.*

4.X-2(b) *Required additional mitigation measure, if necessary.*

4.1 Air Quality and Greenhouse Gas Emissions

4.1 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

4.1.1 INTRODUCTION

The Air Quality and Greenhouse Gas Emissions chapter of the EIR describes the potential impacts of the proposed project on local and regional air quality. The chapter includes a discussion of the existing air quality and greenhouse gas (GHG) setting, construction-related air quality impacts resulting from grading and equipment emissions, direct and indirect emissions associated with the project, the impacts of these emissions on both the local and regional scale, and mitigation measures warranted to reduce or eliminate any identified significant impacts. This chapter is based on the Yuba County General Plan[1] and associated EIR,[2] emissions modeling results obtained from the Sacramento Metropolitan Air Quality Management District's (SMAQMD's) Construction Mitigation Tool Version 9.0[3] and Road Construction Emissions Model (RoadMod), Version 9.0.0.,[4] and is primarily based on information, guidance, and analysis protocol provided by the Feather River Air Quality Management District (FRAQMD) per the FRAQMD's *Indirect Source Review Guidelines*.[5]

4.1.2 EXISTING ENVIRONMENTAL SETTING

The following information provides an overview of the existing environmental setting in relation to air quality within the proposed project area. Air basin characteristics, ambient air quality standards (AAQS), attainment status and regional air quality plans, local air quality monitoring, odors, sensitive receptors, and greenhouse gases are discussed.

Air Basin Characteristics

The project is located in southwestern Yuba County, which is within the Sacramento Valley Air Basin (SVAB). Air flows into the SVAB through the Carquinez Strait, moves across the Delta and carries pollutants from the heavily populated San Francisco Bay Area into the SVAB. The climate is characterized by hot, dry summers and cool, rainy winters. Characteristic of SVAB winter weather are periods of dense and persistent low-level fog, which are most prevalent between storms. From May to October, the region's intense heat and sunlight lead to high ozone concentrations. Prevailing winds are from the south and southwest, and as a result of prevailing winds coming generally from south to southwest, air quality in the area is heavily influenced by mobile and stationary sources of air pollution located upwind in the Sacramento Metropolitan Area.

Most precipitation in the SVAB results from air masses moving in from the Pacific Ocean during the winter months. Storms usually move through the area from the west or northwest. During the winter rainy season (November through February) over half the total annual precipitation falls

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1 Yuba County. *Yuba County 2030 General Plan*. June 7, 2011.
2 Yuba County. *Final Yuba County 2030 General Plan EIR*. May 2011.
3 Sacramento Metro Air Quality Management District. *SMAQMD Construction Mitigation Tool, Version 9.0*. June 2021.
4 Sacramento Metro Air Quality Management District. *Road Construction Emissions Model, Version 9.0.0*. May 2018.
5 Feather River Air Quality Management District. *Indirect Source Review Guidelines: A Technical Guide to Assess the Air Quality Impact of Land Use Projects Under the California Environmental Quality Act*. June 7, 2010.

while the average winter temperature is a moderate 49 degrees Fahrenheit. During the summer, daytime temperatures can exceed 100 degrees Fahrenheit. Dense fog occurs mostly in mid-winter and rarely in the summer. Daytime temperatures from April through October average between 60- and 80-degrees Fahrenheit with low humidity. The inland location and surrounding mountains shelter the valley from much of the ocean breeze that keeps the coastal regions moderate in temperature. The only breech in the mountain barrier is the Carquinez Strait, which exposes the midsection of the valley to the coastal air mass.

The SVAB has been further divided into two planning areas called the Northern Sacramento Valley Air Basin (NSVAB) and the Greater Sacramento Air region. The project, in Yuba County, is located in the NSVAB. The project site is located within the jurisdiction of the FRAQMD, which consists of Yuba and Sutter counties.

Ambient Air Quality Standards

Both the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established AAQS for common pollutants. The federal standards are divided into primary standards, which are designed to protect the public health, and secondary standards, which are designed to protect the public welfare. The AAQS for each contaminant represent safe levels that avoid specific adverse health effects. Pollutants for which air quality standards have been established are called “criteria” pollutants. Table 4.1-1 identifies the major pollutants, characteristics, health effects and typical sources. The federal and California ambient air quality standards (NAAQS and CAAQS, respectively) are summarized in Table 4.1-2. The NAAQS and CAAQS were developed independently with differing purposes and methods. As a result, the federal and State standards differ in some cases. In general, the State of California standards are more stringent than the federal standards, particularly for ozone and particulate matter (PM).

A description of each criteria pollutant and its potential health effects is provided in the following section.

Ozone

Ozone is a reactive gas consisting of three oxygen atoms. In the troposphere, ozone is a product of the photochemical process involving the sun's energy, and is a secondary pollutant formed as a result of a complex chemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NO_X) emissions in the presence of sunlight. As such, unlike other pollutants, ozone is not released directly into the atmosphere from any sources. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation. The primary source of ozone precursors is mobile sources, including cars, trucks, buses, construction equipment, and agricultural equipment. Ground-level ozone reaches the highest level during the afternoon and early evening hours. High levels occur most often during the summer months. Ground-level ozone is a strong irritant that could cause constriction of the airways, forcing the respiratory system to work harder in order to provide oxygen. Ozone at the Earth's surface causes numerous adverse health effects and is a major component of smog. High concentrations of ground-level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments.

Table 4.1-1
Summary of Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive gas produced by the photochemical process involving a chemical reaction between the sun's energy and other pollutant emissions. Often called photochemical smog.	• Eye irritation • Wheezing, chest pain, dry throat, headache, or nausea • Aggravated respiratory disease such as emphysema, bronchitis, and asthma	Combustion sources such as factories, automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	An odorless, colorless, highly toxic gas that is formed by the incomplete combustion of fuels.	• Impairment of oxygen transport in the bloodstream • Impaired vision, reduced alertness, chest pain, and headaches • Can be fatal in the case of very high concentrations	Automobile exhaust, combustion of fuels, and combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	A reddish-brown gas that discolors the air and is formed during combustion of fossil fuels under high temperature and pressure.	• Lung irrigation and damage • Increased risk of acute and chronic respiratory disease	Automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
Sulfur Dioxide	A colorless, irritating gas with a rotten egg odor formed by combustion of sulfur-containing fossil fuels.	• Aggravation of chronic obstruction lung disease • Increased risk of acute and chronic respiratory disease	Diesel vehicle exhaust, oil-powered power plants, and industrial processes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	A complex mixture of extremely small particles and liquid droplets that can easily pass through the throat and nose and enter the lungs.	• Aggravation of chronic respiratory disease • Heart and lung disease • Coughing • Bronchitis • Chronic respiratory disease in children • Irregular heartbeat • Nonfatal heart attacks	Combustion sources such as automobiles, power generation, industrial processes, and wood burning. Also from unpaved roads, farming activities, and fugitive windblown dust.
Lead	A metal found naturally in the environment as well as in manufactured products.	• Loss of appetite, weakness, apathy, and miscarriage • Lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract	Industrial sources and combustion of leaded aviation gasoline.

Sources:
- ***California Air Resources Board. California Ambient Air Quality Standards (CAAQS). Available at: http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm. Accessed June 2021.***
- ***Sacramento Metropolitan, El Dorado, Feather River, Placer, and Yolo-Solano Air Districts, Spare the Air website. Air Quality Information for the Sacramento Region. Available at: http://www.sparetheair.com/health.cfm?page=healthoverall. Accessed June 2021.***
- ***California Air Resources Board. Glossary of Air Pollution Terms. Available at: http://www.arb.ca.gov/html/gloss.htm. Accessed June 2021.***

Table 4.1-2
Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS	NAAQS	
			Primary	Secondary
Ozone	1 Hour	0.09 ppm	-	Same as primary
	8 Hour	0.070 ppm	0.070 ppm	
Carbon Monoxide	8 Hour	9 ppm	9 ppm	None
	1 Hour	20 ppm	35 ppm	
Nitrogen Dioxide	Annual Mean	0.030 ppm	53 ppb	Same as primary
	1 Hour	0.18 ppm	100 ppb	
Sulfur Dioxide	24 Hour	0.04 ppm	-	-
	3 Hour	-	-	0.5 ppm
	1 Hour	0.25 ppm	75 ppb	-
Respirable Particulate Matter (PM_{10})	Annual Mean	20 ug/m³	-	Same as primary
	24 Hour	50 ug/m³	150 ug/m³	
Fine Particulate Matter ($PM_{2.5}$)	Annual Mean	12 ug/m³	12 ug/m³	15 ug/m³
	24 Hour	-	35 ug/m³	Same as primary
Lead	30 Day Average	1.5 ug/m³	-	-
	Calendar Quarter	-	1.5 ug/m³	Same as primary
	Rolling 3-month Average	-	0.15 ug/m³	
Sulfates	24 Hour	25 ug/m³	-	-
Hydrogen Sulfide	1 Hour	0.03 ppm	-	-
Vinyl Chloride	24 Hour	0.010 ppm	-	-
Visibility Reducing Particles	8 Hour	see note below	-	-

ppm = parts per million
ppb = parts per billion
μg/m³ = micrograms per cubic meter

Note: Statewide Visibility Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

***Source:** California Air Resources Board. Ambient Air Quality Standards. May 4, 2016. Available at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed August 2021.*

Reactive Organic Gas

ROG is a reactive chemical gas composed of hydrocarbon compounds typically found in paints and solvents that contributes to the formation of smog and ozone by involvement in atmospheric chemical reactions. A separate health standard does not exist for ROG. However, some compounds that make up ROG are toxic, such as the carcinogen benzene.

Oxides of Nitrogen

NO_X are a family of gaseous nitrogen compounds and are precursors to the formation of ozone and particulate matter. NO_X results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of NO_X. NO_X reacts with ROG to form smog, which could result in adverse impacts to human health, damage the environment, and cause poor visibility. Additionally, NO_X emissions are a major component of acid rain. Health effects related to NO_X include lung irritation and lung damage and can cause increased risk of acute and chronic respiratory disease.

Nitrogen Dioxide

A particular oxide of nitrogen that is of concern to human health is nitrogen dioxide (NO_2). NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO), which is a colorless, odorless gas.

A large body of health science literature indicates that exposure to NO_2 can induce adverse health effects. The strongest health evidence, and the health basis for the AAQS for NO_2, results from controlled human exposure studies that show that NO_2 exposure can intensify responses to allergens in allergic asthmatics. In addition, several epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses. Infants and children are particularly at risk because they have disproportionately higher exposure to NO_2 than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration. Several studies have shown that long-term NO_2 exposure during childhood, the period of rapid lung growth, can lead to smaller lungs at maturity in children with higher compared to lower levels of exposure. In addition, children with asthma have a greater degree of airway responsiveness compared with adult asthmatics. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, poisonous gas produced by incomplete burning of carbon-based fuels such as gasoline, oil, and wood. When CO enters the body, the CO combines with chemicals in the body, which prevents blood from carrying oxygen to cells, tissues, and organs. Symptoms of exposure to CO can include problems with vision, reduced alertness, and general reduction in mental and physical functions. Exposure to CO can result in chest pain, headaches, reduced mental alertness, and death at high concentrations.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, irritating gas with a rotten egg odor formed primarily by the combustion of sulfur-containing fossil fuels from mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Similar to airborne NO_X, suspended sulfur oxide particles contribute to poor visibility. Sulfur oxide particles are also a component of PM_{10} (discussed below).

Sulfates

Sulfates are the fully oxidized ionic form of sulfur and are colorless gases. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. The sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The sulfates standard established by CARB is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, because they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide

Hydrogen sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations, especially in enclosed spaces (800 parts per million [ppm] can cause death).

Particulate Matter

Particulate matter, also known as particle pollution or PM, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of several components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health impacts. The USEPA is concerned about particles that are 10 micrometers in diameter or smaller (PM_{10}) because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, the particles could affect the heart and lungs and cause serious health effects. USEPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles ($PM_{2.5-10}$)," which are found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5-10}$ is deposited in the thoracic[6] region of the lungs.
- "Fine particles ($PM_{2.5}$)," which are found in smoke and haze, are 2.5 micrometers in diameter and smaller. $PM_{2.5}$ particles could be directly emitted from sources such as forest fires, or could form when gases emitted from power plants, industries, and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very, very small particles (less than 0.1 micrometers in diameter) largely resulting from the combustion of fossil fuels, meat, wood, and other hydrocarbons. While UFP mass is a small portion of $PM_{2.5}$, their high surface area, deep lung penetration, and transfer into the bloodstream could result in disproportionate health impacts relative to their mass. UFP is not currently regulated separately but is analyzed as part of $PM_{2.5}$.

PM_{10}, $PM_{2.5}$, and UFP include primary pollutants, which are emitted directly to the atmosphere and secondary pollutants, which are formed in the atmosphere by chemical reactions among precursors. Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM_{10} sources include the same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust. Long-term PM pollution, especially fine particles, could result in significant health problems including, but not limited to, the following: increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing; decreased lung function; aggravated asthma; development of chronic respiratory disease in children; development of chronic bronchitis or obstructive lung disease; irregular heartbeat; heart attacks; and increased blood pressure.

6 The thoracic region of the lungs includes the trachea and main bronchi.

Lead

Lead is a relatively soft and chemically resistant metal that is a natural constituent of air, water, and the biosphere. As an air pollutant, lead is present in small particles. Sources of lead emissions in California include a variety of industrial activities. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically. However, because lead was emitted in large amounts from vehicles when leaded gasoline was used, lead is present in many soils (especially urban soils) as a result of airborne dispersion and could become re-suspended into the air.

Because lead is only slowly excreted by the human body, exposures to small amounts of lead from a variety of sources could accumulate to harmful levels. Effects from inhalation of lead above the level of the AAQS may include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms could include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children. Lead also causes cancer.

Vinyl Chloride

Vinyl chloride (C_2H_3Cl, also known as VCM) is a colorless gas that does not occur naturally, but is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloro-ethylene are broken down. Vinyl chloride is used to make polyvinyl chloride (PVC) which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Visibility-Reducing Particles

Visibility-reducing particles are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are also a category of environmental concern. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and State agencies based on a review of available scientific evidence. In California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over five years.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a variety of sources, including stationary sources, such as dry cleaners, gas stations, diesel back-up generators, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) basis.

Diesel Particulate Matter

Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90 percent of DPM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$. DPM is typically composed of carbon particles ("soot," also called black carbon) and numerous organic compounds, including more than 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM; 17 California Code of Regulations [CCR] 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, cars, and off-road diesel engines, including locomotives, marine vessels, heavy-duty construction equipment, stationary diesel back-up generators, among others. Approximately 70 percent of all airborne cancer risk in California is associated with DPM. To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000. Because DPM is a part of $PM_{2.5}$, DPM also contributes to the same noncancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies. Those most vulnerable to noncancer health effects are children, whose lungs are still developing, and older adults, who often have chronic health problems.

Naturally-Occurring Asbestos

Another concern related to air quality is naturally-occurring asbestos (NOA). Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. When rock containing asbestos is broken or crushed, asbestos fibers may be released and become airborne. Exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs). Because asbestos is a known carcinogen, NOA is considered a TAC. Sources of asbestos emissions include: unpaved roads or driveways surfaced with ultramafic rock; construction activities in ultramafic rock deposits; or rock quarrying activities where ultramafic rock is present.

NOA is typically associated with fault zones, and areas containing serpentinite or contacts between serpentinite and other types of rocks. According to *A General Location Guide For Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos* prepared by the Department of Conservation, the project site is located within an area that does not include ultramafic rocks, and therefore, would not be likely to contain NOA, because faults and serpentinite outcroppings are not known to be in the project area.[7]

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[7] California Department of Conservation, Division of Mines and Geology. *A General Location Guide For Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*. August 2000.

Attainment Status and Regional Air Quality Plans

The Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA) require all areas of California to be classified as attainment, nonattainment, or unclassified as to their status under the NAAQS and/or CAAQS. The FCAA and CCAA require that the CARB, based on air quality monitoring data, designate portions of the State where the federal or State AAQS are not met as "nonattainment areas." Because of the differences between the national and State standards, the designation of nonattainment areas is different under the federal and State legislation. The CCAA requires local air pollution control districts to prepare air quality attainment plans. These plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods or, provide for adoption of "all feasible measures on an expeditious schedule."

Per the USEPA's listing of *Current Nonattainment Counties for All Criteria Pollutants*, as of March 31, 2021, Yuba County is not listed among the counties in the U.S. currently designated as nonattainment for criteria pollutants.[8] As such, the County is in attainment or unclassified for all AAQS. However, it is noted that the FRAQMD jurisdiction includes both Yuba County and Sutter County, and Sutter County is designated as nonattainment for several criterial pollutants. As detailed in Table 4.1-3, the FRAQMD includes areas designated serious nonattainment and nonattainment-transitional for the State 1-hour ozone standard, nonattainment-transitional for the State 8-hour ozone and serious nonattainment for the federal 8-hour ozone standard, and nonattainment for the State PM_{10} standard.

Table 4.1-3
FRAQMD Attainment Status Designations

Pollutant	California Standards	Federal Standards
1-Hour Ozone	**S. Sutter County – Serious Nonattainment; Remainder of District – Nonattainment-Transitional**	**Revoked in 2005**
8-Hour Ozone	**Nonattainment-Transitional**	**S. Sutter County – Serious Nonattainment**; Elevations over 2,000 feet in Sutter Buttes – Attainment; Remainder of District – Unclassified/Attainment
Carbon Monoxide	Sutter County – Attainment; Yuba County – Unclassified	-
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified/Attainment
Respirable Particulate Matter (PM_{10})	**Nonattainment**	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Attainment	Attainment
Lead	Attainment	-
Sulfates	Attainment	-
Hydrogen Sulfide	Unclassified	-
Visibility Reducing Particles	Unclassified	-

***Source:** Feather River Air Quality Management District. State and National Ambient Air Quality Standards. Available at: https://www.fraqmd.org/state-and-national-ambient-air-quality-standards. Accessed April 2021.*

8 U.S. Environmental Protection Agency. *Green Book: Current Nonattainment Counties for All Criteria Pollutants*. Available at: https://www3.epa.gov/airquality/greenbook/ancl.html. Accessed April 2021.

Due to the nonattainment designations within Sutter County, the FRAQMD is required to develop plans to attain the federal and State standards for ozone and particulate matter. The air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control measures have worked, and show how air pollution would be reduced. In addition, the plans include the estimated future levels of pollution to ensure that the area would meet air quality goals. Information related to the attainment plans currently in effect is presented in the Regulatory Context section of this chapter.

Local Air Quality Monitoring

Air quality is monitored by CARB at various locations to determine which air quality standards are being violated, and to direct emission reduction efforts, such as developing attainment plans and rules, incentive programs, etc. Two monitoring stations exist within the boundaries of the FRAQMD. The Yuba City-Almond Street monitoring station, located at 773 Almond Street, Yuba City, is the nearest air quality monitoring station to the project site, located approximately nine miles southwest of the project site. The number of days exceeding the ambient air quality standards from 2017 to 2019 are presented in Table 4.1-4. While the Yuba City-Almond Street monitoring station is located in Sutter County, the data collected at the station is indicative of air quality levels in the Yuba City-Marysville area, according to FRAQMD.[9] Therefore, the data collected at the monitoring station is generally representative of the air quality experienced in the project vicinity.

Table 4.1-4
Air Quality Data Summary (2017-2019)

Pollutant	Monitoring Station	Standard	Days Standard Was Exceeded		
			2017	2018	2019
1-Hour Ozone	Yuba City	State	0	0	0
8-Hour Ozone		State	2	1	0
		Federal	2	1	0
24-Hour $PM_{2.5}$	Yuba City	Federal	2.4	8.4	2
24-Hour PM_{10}	Yuba City	State	19.3	ND	27
		Federal	0	8	0
1-Hour Nitrogen Dioxide	Yuba City	State	0	0	0
		Federal	0	0	0

Note: ND = insufficient data available to determine value.

***Source:** California Air Resources Board. iADAM: Air Quality Data Statistics. Available at: https://www.arb.ca.gov/adam. Accessed April 2021.*

Odors

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. In a phenomenon known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only

9 Feather River Air Quality Management District. *Stations and Data*. Available at: https://www.fraqmd.org/stations-and-data. Accessed April 2021.

occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, day care centers, playgrounds, and medical facilities. Nearby sensitive receptors include the residential developments that exist in the immediate vicinity to the project site, directly to the east of Kibbe Road and on both sides of State Route (SR) 20. The nearest sensitive receptor is located approximately 19.8 feet to the east of Kibbe Road.

GHG Emissions and Climate Change

The following sections provide an overview of the topic of climate change, information regarding specific GHGs, the global warming potential (GWP) of GHGs, and the potential effects of climate change.

Climate Change Overview

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period (decades or longer). The Earth's climate depends on the balance between energy entering and leaving the planet's system. Many factors, both naturally occurring and anthropogenic, can cause changes in Earth's energy balance, including variations in the Sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere.

The greenhouse effect is the trapping and build-up of heat in the atmosphere near the Earth's surface (troposphere). The greenhouse effect traps heat in the troposphere through a threefold process: short-wave radiation emitted by the Sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit the long-wave radiation into space and back toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a livable environment on Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of long-wave radiation that gets absorbed by the atmosphere before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of Earth's climate shows that the climate system varies naturally over a wide range of time scales, and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. However, recent climate changes, specifically the warming observed over the past century, cannot be explained by natural causes alone. Rather, it is virtually certain that human activities have been the dominant cause of that warming since the mid-twentieth century, and that human activities are the most significant driver of observed climate change. Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system. The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions, and secondarily from emissions associated with land use changes, such as deforestation and urban development. Continued emissions of GHGs will cause further warming and changes in all components of the climate system. Potential effects are discussed in further depth below.

GHGs

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g), for purposes of administering many of the State's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (see also 14 CCR 15364.5).[10] Some GHGs, such as CO_2, CH_4, and N_2O, are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs have a much greater heat-absorption potential than CO_2 and include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[11]

Carbon Dioxide

CO_2 is a naturally occurring gas and a by-product of human activities, and is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungi; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 include the combustion of fuels such as coal, oil, natural gas, and wood.

Methane

CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide

N_2O is produced mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

Fluorinated Gases

Fluorinated gases are synthetic powerful GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric ozone-depleting

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10 Climate-forcing substances include GHGs and other substances, such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in California Health and Safety Code Section 38505.

11 The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change's Fourth Assessment Report (2007), CARB's "Glossary of Terms Used in GHG Inventories" (2018), and the USEPA's "Climate Change" (2017).

substances (e.g., CFCs, HCFCs, and halons). The most prevalent fluorinated gases include the following:

- Hydrofluorocarbons: HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.
- Perfluorocarbons: PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, with HFCs, to ozone-depleting substances. The two main sources of PFCs are aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, HFCs have long lifetimes, ranging between 10,000 and 50,000 years.
- Sulfur Hexafluoride: SF_6 is a colorless gas soluble in alcohol and ether and slightly soluble in water. SF_6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.
- Nitrogen Trifluoride: NF_3 is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.

Chlorofluorocarbons

Chlorofluorocarbons (CFCs) are synthetic chemicals that have been used as cleaning solvents, refrigerants, and aerosol propellants. Although CFCs are chemically unreactive in the troposphere, the production of CFCs was prohibited in 1987 due to the chemical destruction of stratospheric ozone.

Hydrochlorofluorocarbons

Hydrochlorofluorocarbons (HCFCs) are a large group of compounds, with a similar structure to that of CFCs—containing hydrogen, fluorine, chlorine, and carbon atoms—but including one or more hydrogen atoms. Like HFCs, HCFCs are used in refrigerants and propellants. HCFCs were also used in place of CFCs for some applications; however, the use of HCFCs in general is being phased out.

Black Carbon

Black carbon is a component of $PM_{2.5}$, which has been identified as a leading environmental risk factor for premature death. Black carbon is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest fires. Black carbon warms the atmosphere by absorbing solar radiation, influencing cloud formation, and darkening the surface of snow and ice, which accelerates heat absorption and melting. Black carbon is a short-lived substance that varies spatially, which makes the GWP of the substance difficult to classify. Diesel exhaust emissions are a major source of black carbon. Because DPM is considered a TAC, DPM has been regulated and controlled in California for several decades to protect public health. In relation to declining DPM as a result of CARB's regulations pertaining to diesel engines, diesel fuels, and burning activities, CARB estimates that annual black carbon emissions in California have been reduced by 70 percent between 1990 and 2010, with 95 percent control anticipated by 2020. The CARB has not formally identified whether 95 percent control was achieved by 2020.

Water Vapor
The primary source of water vapor is evaporation from the ocean, with additional vapor generated by sublimation (change from solid to gas) from ice and snow, evaporation from other water bodies, and transpiration from plant leaves. Water vapor is the most important, abundant, and variable GHG in the atmosphere, and maintains a climate necessary for life.

Ozone
Tropospheric ozone is created when photochemical reactions involving gases from both natural sources and human activities act as GHGs. Stratospheric ozone, which is created by the interaction between solar ultraviolet radiation and molecular oxygen, plays a decisive role in the stratospheric radiative balance. Depletion of stratospheric ozone due to chemical reactions that may be enhanced by climate change results in an increased ground-level flux of ultraviolet-B radiation.

Aerosols
Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

GWP
GWP is one type of simplified index (based upon radiative properties) that can be used to estimate the potential future impacts of emissions of various gases. According to the USEPA, the GWP of a gas, or aerosol, to trap heat in the atmosphere is the "cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas." The reference gas for comparison is CO_2. GWP is based on a number of factors, including the heat-absorbing ability of each gas relative to that of CO_2, as well as the decay rate of each gas relative to that of CO_2. Each gas's GWP is determined by comparing the radiative forcing associated with emissions of that gas versus the radiative forcing associated with emissions of the same mass of CO_2, for which the GWP is set at one. Methane gas, for example, is estimated by the USEPA to have a comparative global warming potential 21 times greater than that of CO_2, as shown in Table 4.1-5.

As shown in the table, at the extreme end of the scale, SF_6 is estimated to have a comparative GWP 22,800 times that of CO_2. The "specified time horizon" is related to the atmospheric lifetimes of such GHGs, which are estimated by the USEPA to vary from 50 to 200 years for CO_2, to 50,000 years for CF_4. Longer atmospheric lifetimes allow GHG to buildup in the atmosphere; therefore, longer lifetimes correlate with the global warming potential of a gas. The common indicator for GHG is expressed in terms of metric tons of CO_2 equivalents ($MTCO_2e$), which is calculated based on the global warming potential for each pollutant.

Potential Effects of Climate Change
Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The Intergovernmental Panel on Climate Change's (IPCC) Climate Change 2021: The Physical Science Basis report indicated that warming of the climate system is unequivocal, and since the

1950s, many of the observed changes are unprecedented over decades to millennia.[12] Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, rising sea levels, and ocean acidification.

Table 4.1-5
Global Warming Potentials and Atmospheric Lifetimes of Select GHGs

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO_2)	50-200[1]	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-23	230-270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

1 For a given amount of carbon dioxide emitted, some fraction of the atmospheric increase in concentration is quickly absorbed by the oceans and terrestrial vegetation, some fraction of the atmospheric increase will only slowly decrease over a number of years, and a small portion of the increase will remain for many centuries or more.

***Source:** USEPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013, April 15, 2015.*

In California, climate change impacts have the potential to affect sea-level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, frequency of severe weather events, and electricity demand and supply. The primary effect of global climate change has been a rise in average global tropospheric temperature. Reflecting the long-term warming trend since pre-industrial times, observed global mean surface temperature for the decade 2011–2020 was 1.09 degree Celsius (°C) (likely between 0.95°C and 1.20°C) higher than the average over the 1850–1900 period. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. Observed increases in well-mixed GHG concentrations since around 1750 are unequivocally caused by human activities. Since 2011, concentrations have continued to increase in the atmosphere, reaching annual averages of 410 ppm for CO_2, 1,866 ppb for CH_4, and 332 ppb for N_2O in 2019. Land and ocean have taken up a near-constant proportion of CO_2 emissions from human activities over the past six decades, with regional differences.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The Office of Environmental Health Hazard Assessment (OEHHA) identified various indicators of climate change in California, which are scientifically based measurements that track trends in various aspects of climate change. Many indicators reveal discernable evidence that climate change is occurring in California and is having significant, measurable impacts in the State.

12 Intergovernmental Panel on Climate Change. *Climate Change 2021: The Physical Science Basis Summary for Policymakers*. Available at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf. Accessed August 2021.

Changes in the State's climate have been observed, including an increase in annual average air temperature with record warmth from 2012 to 2016, more frequent extreme heat events, more extreme drought, a decline in winter chill, and an increase in variability of statewide precipitation.

Warming temperatures and changing precipitation patterns have altered California's physical systems—the ocean, lakes, rivers and snowpack—upon which the State depends. Winter snowpack and spring snowmelt runoff from the Sierra Nevada and southern Cascade Mountains provide approximately one-third of the State's annual water supply. Impacts of climate on physical systems have been observed, such as high variability of snow-water content (i.e., amount of water stored in snowpack), decrease in snowmelt runoff, glacier change (loss in area), rise in sea levels, increase in average lake water temperature and coastal ocean temperature, and a decrease in dissolved oxygen in coastal waters.

Impacts of climate change on biological systems, including humans, wildlife, and vegetation, have also been observed, including climate change impacts on terrestrial, marine, and freshwater ecosystems. As with global observations, species responses include those consistent with warming: elevational or latitudinal shifts in range, changes in the timing of key plant and animal life cycle events, and changes in the abundance of species and in community composition. Humans are better able to adapt to a changing climate than plants and animals in natural ecosystems. Nevertheless, climate change poses a threat to public health as warming temperatures and changes in precipitation can affect vector-borne pathogen transmission and disease patterns in California, as well as the variability of heat-related deaths and illnesses. In addition, since 1950, the area burned by wildfires each year has been generally increasing.

Uncertainties exist as to exactly what the climate changes will be in various areas of the Earth. According to the IPCC's Working Group II Report, *Climate Change 2007: Impacts, Adaptation and Vulnerability*,[13,14] climate change impacts to North America may include:

- Diminishing snowpack;
- Increasing evaporation;
- Exacerbated shoreline erosion;
- Exacerbated inundation from sea level rising;
- Increased risk and frequency of wildfire;
- Increased risk of insect outbreaks;
- Increased experiences of heat waves; and
- Rearrangement of ecosystems as species and ecosystems shift northward and to higher elevations.

For California, climate change has the potential to cause/exacerbate the following environmental impacts:

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13 Intergovernmental Panel on Climate Change, 2014: Summary for policymakers. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1-32.

14 It should be noted that the Working Group I's contribution to the IPCC's Sixth Assessment Report for *Climate Change 2021: The Physical Science Basis* has been finalized. As such, the report is cited above. However, the Working Group II's contribution, *Climate Change 2022: Impacts, Adaptation and Vulnerability*, has not yet been finalized. Therefore, this EIR cites the 2007 report.

- Increased frequency, duration, and intensity of conditions conducive to air pollution formation (particularly ozone);
- Reduced precipitation, changes to precipitation and runoff patterns, reduced snowfall (precipitation occurring as rain instead of snow), earlier snowmelt, decreased snowpack, and increased agricultural demand for water;
- Increased growing season and increased growth rates of weeds, insect pests and pathogens;
- Inundation by sea level rise;
- Increased incidents and severity of wildfire events; and
- Expansion of the range and increased frequency of pest outbreaks.

4.1.3 REGULATORY CONTEXT

Air quality and GHG emissions are monitored and regulated through the efforts of various international, federal, State, and local government agencies. Agencies work jointly and individually to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for regulating and improving the air quality within the project area, monitoring or reducing GHG emissions, and monitoring or reducing energy consumption are discussed below. Although significant overlap exists within the regulatory environment for air quality and GHG emissions, the following discussion presents regulations primarily focused on air quality and GHG emissions separately to the extent feasible.

Federal Regulations Related to Air Quality

The following are the federal regulations relevant to air quality.

Criteria Pollutants

The FCAA, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The USEPA is responsible for implementing most aspects of the FCAA, including setting NAAQS for major air pollutants; setting hazardous air pollutant standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric ozone protection measures, and enforcement provisions. Under the FCAA, NAAQS are established for the following criteria pollutants: ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for ozone, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for ozone, NO_2, SO_2, PM_{10}, $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The FCAA requires the USEPA to reassess the NAAQS at least every five years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a State implementation plan (SIP) that demonstrates how those areas will attain the standards within mandated time frames.

Hazardous Air Pollutants

The 1977 FCAA amendments required the USEPA to identify national emission standards for hazardous air pollutants to protect public health and welfare. Hazardous air pollutants include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 FCAA Amendments, which expanded the control program for hazardous air pollutants, 189 substances and chemical families were identified as hazardous air pollutants.

Federal Regulations Related to GHGs

The following are the federal regulations relevant to GHGs.

Federal Vehicle Standards

In 2007, in response to the *Massachusetts v. EPA* U.S. Supreme Court ruling, the Bush Administration issued Executive Order (EO) 13432 directing the USEPA, the Department of Transportation (DOT), and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the National Highway Transportation Safety Administration (NHTSA) issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the USEPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (75 FR 25324–25728).

In 2010, President Obama issued a memorandum directing the DOT, Department of Energy, USEPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the USEPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards were projected to achieve emission rates as low as 163 grams per mile of CO_2 by model year 2025 on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if the foregoing emissions level was achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021 (77 FR 62624–63200), and NHTSA intended to set standards for model years 2022–2025 in future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by six to 23 percent over the 2010 baselines (76 FR 57106–57513).

In August 2016, the USEPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program would have applied to vehicles with model years 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types of sizes of buses and work trucks. The final standards were expected to lower CO_2 emissions by approximately 1.1 billion metric tons, and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.

In August 2018, the USEPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new, less-stringent standards for model years 2021 through 2026. Compared to maintaining the post-2020 standards that were previously in place, the 2018 proposal would increase U.S. fuel consumption by approximately 0.5 million barrels per day (two-three percent of total daily consumption, according to the Energy

Information Administration), and would impact the global climate by 3/1000th of 1°C by 2100. California and other states stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures, and committed to cooperating with other countries to implement global climate change initiatives.

On September 27, 2019, the USEPA and NHTSA published the "Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program" (84 FR 51,310), which became effective November 26, 2019. The Part One Rule revokes California's authority to set its own GHG emissions standards and set zero-emission-vehicle mandates in California. On March 31, 2020, the USEPA and NHTSA issued the Part Two Rule, which sets CO_2 emissions standards and corporate average fuel economy standards for passenger vehicles and light-duty trucks for model years 2021 through 2026. On January 20, 2021, President Joe Biden issued an EO on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, which includes review of Part One Rule by April 2021 and review of the Part Two Rule by July 2021. Implementation of both rules will be determined by the results of these reviews. The results have not been published to date.

State Regulations Related to Air Quality

The following are applicable State regulations related to air quality. Only the most prominent and applicable California air quality-related legislation is included below; however, an exhaustive list and extensive details of California air quality legislation can be found at the CARB website (http://www.arb.ca.gov/html/lawsregs.htm).

Criteria Air Pollutants

The FCAA delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the CCAA of 1988, responding to the FCAA, and regulating emissions from motor vehicles and consumer products.

CARB has established CAAQS, which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. Air quality is considered "in attainment" if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for ozone, CO, SO_2 (one-hour and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 4.1-2.

TACs

The State Air Toxics Program was established in 1983 under AB 1807 (Tanner), and involved definition of a list of TACs. The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) Hazardous Air Pollutants. In 1987, the Legislature enacted the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over five years. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

Air Quality and Land Use Handbook

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB Handbook) addresses the importance of considering health risk issues when siting sensitive land uses, including residential development, in the vicinity of intensive air pollutant emission sources including freeways or high-traffic roads, distribution centers, ports, petroleum refineries, chrome plating operations, dry cleaners, and gasoline dispensing facilities.[15] The CARB Handbook draws upon studies evaluating the health effects of traffic traveling on major interstate highways in metropolitan California centers within Los Angeles (Interstate-405 and Interstate-710), the San Francisco Bay, and San Diego areas. The recommendations identified by CARB, including siting residential uses a minimum distance of 500 feet from freeways or other high-traffic roadways, are consistent with those adopted by the State of California for location of new schools. Specifically, the CARB Handbook recommends, "Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day".[16]

Importantly, the Introduction chapter of the CARB Handbook clarifies that the guidelines are strictly advisory, recognizing that: "[l]and use decisions are a local government responsibility. The Air Resources Board Handbook is advisory and these recommendations do not establish regulatory standards of any kind." CARB recognizes that there may be land use objectives as well as meteorological and other site-specific conditions that need to be considered by a governmental jurisdiction relative to the general recommended setbacks, specifically stating, "[t]hese recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues".[17]

DPM

In 2000, CARB approved a comprehensive diesel risk reduction plan to reduce diesel emissions from new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk by 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. The aforementioned regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. Several Airborne Toxic Control Measures (ATCMs) exist that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

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15 California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.
16 *Ibid.*
17 *Ibid.*

California Health and Safety Code Section 41700

Section 41700 of the Health and Safety Code states that a person must not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. Section 41700 also applies to sources of objectionable odors.

Heavy-Duty Vehicle Idling Emission Reduction Program

On October 20, 2005, CARB approved a regulatory measure to reduce emissions of toxics and criteria pollutants by limiting idling of new and in-use sleeper berth equipped diesel trucks.[18] The regulation established new engine and in-use truck requirements and emission performance requirements for technologies used as alternatives to idling the truck's main engine. For example, the regulation requires 2008 and newer model year heavy-duty diesel engines to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling, or optionally meet a stringent NO_X emission standard. The regulation also requires operators of both in-state and out-of-state registered sleeper berth equipped trucks to manually shut down their engine when idling more than five minutes at any location within California. Emission producing alternative technologies such as diesel-fueled auxiliary power systems and fuel-fired heaters are also required to meet emission performance requirements that ensure emissions are not exceeding the emissions of a truck engine operating at idle.

In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, CARB adopted a regulation to reduce DPM and NO_X emissions from in-use (existing), off-road, heavy-duty diesel vehicles in California.[19] Such vehicles are used in construction, mining, and industrial operations. The regulation is designed to reduce harmful emissions from vehicles by subjecting fleet owners to retrofit or accelerated replacement/repower requirements, imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. The idling limits require operators of applicable off-road vehicles (self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on-road) to limit idling to less than five minutes. The idling requirements are specified in Title 13 of the CCR.

State Regulations Related to GHGs

The statewide GHG emissions regulatory framework is summarized below. The following text describes executive orders, legislation, regulations, and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

State Climate Change Targets

California has taken a number of actions to address climate change. These include executive orders, legislation, and CARB plans and requirements, which are summarized below.

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[18] California Air Resources Board. *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling*. October 24, 2013. Available at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm. Accessed December 2020.

[19] California Air Resources Board. *In-Use Off-Road Diesel Vehicle Regulation*. December 10, 2014. Available at: http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm. Accessed December 2020.

EO S-3-05

EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets. The EO established the following targets:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

EO S-3-05 also directed the California EPA to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team was formed, which subsequently issued reports from 2006 to 2010.

AB 32

In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32 (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive, multiyear program to limit California's GHG emissions at 1990 levels by 2020, and initiate the transformations required to achieve the state's long-range climate objectives.

EO B-18-12

EO B-18-12 (April 2012) directed state agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10 percent by 2015 and 20 percent by 2020, as measured against a 2010 baseline. EO B-18-12 also established goals for existing state buildings for reducing grid-based energy purchases and water use.

EO B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050 as set forth in EO S-3-05. To facilitate achieving this goal, EO B-30-15 called for an update to the CARB's Climate Change Scoping Plan: A Framework for Change (Scoping Plan) to express the 2030 target in terms of million metric tons (MMT) CO_2e. The EO called for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

Senate Bill (SB) 32 and AB 197

SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to the Board as nonvoting members; requires CARB to make available and update (at least annually via the CARB's website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

CARB's 2007 Statewide Limit on GHG Emissions

In 2007, in accordance with California Health and Safety Code Section 38550, CARB approved a statewide limit on GHG emissions by 2020, consistent with the determined 1990 baseline (427 MMT CO_2e).

CARB's Climate Change Scoping Plan

One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Health and Safety Code Section 38561[a]), and to update the Scoping Plan at least once every five years. In 2008, CARB approved the first Scoping Plan. The Climate Change Scoping Plan: A Framework for Change (Scoping Plan) included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives. The key elements of the Scoping Plan include the following:

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
2. Achieving a statewide renewable energy mix of 33 percent;
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions;
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (LCFS) (17 CCR, Section 95480 et seq.); and
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15 percent from then levels (2008) by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The First Update to the Climate Change Scoping Plan: Building on the Framework (First Update) defined the state's GHG emission reduction priorities for the next five years and laid the groundwork to start the transition to the post-2020 goals set forth in EO S-3-05 and EO B-16-2012. The First Update concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuation of action to reduce emissions. The First

Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050, including energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies. As part of the First Update, CARB recalculated the state's 1990 emissions level using more recent GWPs identified by the IPCC, from 427 MMT CO_2e to 431 MMT CO_2e.

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40 percent below 1990 levels by 2030 to keep California on a trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050, as set forth in EO S-3-05. Governor Jerry Brown called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In summer 2016, the Legislature affirmed the importance of addressing climate change through passage of SB 32 (Pavley, Chapter 249, Statutes of 2016).

In December 2017, CARB adopted California's 2017 Climate Change Scoping Plan (2017 Scoping Plan) for public review and comment. The 2017 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update while identifying new, technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target as established by SB 32 and define the state's climate change priorities to 2030 and beyond. Strategies within the 2017 Scoping Plan include implementing renewable energy and energy efficiency measures (including the mandates of SB 350), increased stringency of the LCFS, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant (SLCP) Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, the 2017 Scoping Plan recommends continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20 percent.

For local governments, the 2017 Scoping Plan replaced the initial Scoping Plan's 15 percent reduction goal with a recommendation to aim for a community-wide goal of no more than six $MTCO_2e$ per capita by 2030, and no more than two $MTCO_2e$ per capita by 2050, which are consistent with the State's long-term goals. Such goals are also consistent with the Under 2 Memorandum of Understanding (Under 2 Coalition 2019) and the Paris Agreement, which were developed around the scientifically based levels necessary to limit global warming to below an increase of 2°C. The 2017 Scoping Plan recognized the benefits of local government GHG planning (e.g., through Climate Action Plans [CAPs]) and provide more information regarding tools CARB is working on to support those efforts. The 2017 Scoping Plan also recognizes the CEQA streamlining provisions for project-level review where there is a legally adequate CAP.[20]

When discussing project-level GHG emissions reduction actions and thresholds in the context of CEQA, the 2017 Scoping Plan states that "achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development" for project-level CEQA analysis, but also recognizes that such a standard may not be appropriate or feasible for every development project. The 2017 Scoping Plan further provides

20 *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490; *San Francisco Tomorrow et al. v. City and County of San Francisco* (2015) 229 Cal.App.4th 498; *San Franciscans Upholding the Downtown Specific Plan v. City & County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoyah Hills Homeowners Assn. V. City of Oakland* (1993) 23 Cal.App.4th 704, 719.

that "the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA."

CARB's Regulations for the Mandatory Reporting of GHG Emissions

CARB's Regulation for the Mandatory Reporting of GHG Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that the USEPA promulgated in its Final Rule on Mandatory Reporting of GHGs (40 CFR Part 98). Specifically, Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that the USEPA promulgated in the Federal Register on October 30, 2009; July 12, 2010; September 22, 2010; October 28, 2010; November 30, 2010; December 17, 2010; and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit more than 10,000 $MTCO_2e$ per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 $MTCO_2e$ per year threshold are required to have their GHG emission report verified by a CARB-accredited third party.

SB 605 and SB 1383

SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of SLCPs in the state, and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40 percent below 2013 levels by 2030 for CH_4 and HFCs, and 50 percent below 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, CARB adopted its SLCP Reduction Strategy in March 2017. The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, CH_4, and fluorinated gases.

EO B-55-18

EO B-55-18 (September 2018) establishes a statewide policy for California to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net-negative emissions thereafter. The goal is an addition to the existing statewide targets of reducing the State's GHG emissions. CARB will work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

Mobile Sources

The following regulations relate to the control of emissions from mobile sources. Mobile sources include both on-road vehicles and off-road equipment.

AB 1493

AB 1493 (Pavley) (July 2002) was enacted in response to the transportation sector accounting for more than half of California's CO_2 emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards would result in a reduction of approximately 22 percent of GHG emissions compared to the emissions from the 2002 fleet, and the mid-term (2013–2016) standards would result in a reduction of approximately 30 percent. However, as described within the Federal Vehicle Regulations section above, the USEPA's SAFE Vehicles

Rule Part One, adopted in November 2019, revokes California's authority to set GHG emissions standards. As the USEPA rule is the subject of pending legal challenges and President Biden issued an EO to review Part One and Part Two, the analysis within this EIR uses the best available information at this time, as set forth in CARB's EMFAC.

Heavy-Duty Diesel Truck and Bus Regulation

CARB adopted the final Heavy-Duty Truck and Bus Regulation, Title 13, Division 3, Chapter 1, Section 2025, on December 31, 2014, to reduce DPM and NO_x emissions from heavy-duty diesel vehicles. The rule requires DPM filters be applied to newer heavier trucks and buses by January 1, 2012, with older vehicles required to comply by January 1, 2015. The rule requires nearly all diesel trucks and buses to be compliant with the 2010 model year engine requirement by January 1, 2023. CARB also adopted an ATCM to limit idling of diesel-fueled commercial vehicles on December 12, 2013. This rule requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than five minutes at any location (13 CCR 2485).

EO S-1-07

EO S-1-07 (January 2007, implementing regulation adopted in April 2009) set a declining LCFS for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020 (17 CCR 95480 et seq.). Carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered.

SB 375

SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035, and to update those targets every eight years. SB 375 requires the state's 18 regional metropolitan planning organizations to prepare a sustainable communities strategy as part of their Regional Transportation Plans that will achieve the GHG reduction targets set by CARB. If a metropolitan planning organization is unable to devise a sustainable communities strategy to achieve the GHG reduction target, the metropolitan planning organization must prepare an alternative planning strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to California Government Code Section 65080(b)(2)(K), a sustainable communities strategy does not (1) regulate the use of land, (2) supersede the land use authority of cities and counties, or (3) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with the sustainable community strategy. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the State-mandated housing element process.

Advanced Clean Cars Program and Zero-Emissions Vehicle Program

The Advanced Clean Cars program (January 2012) is an emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars. To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. By 2025, implementation of the rule is anticipated to reduce emissions of smog-forming pollution from cars by 75 percent compared to the average new car sold in 2015. To reduce GHG emissions, CARB, in conjunction with the USEPA and NHTSA, adopted GHG standards for model year 2017 to 2025 vehicles; the standards were estimated to reduce GHG emissions by 34 percent by 2025. The zero-emissions vehicle program acts as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of zero-emissions vehicles and plug-in hybrid electric vehicles in the 2018 to 2025 model years. However, implementation of the Advanced Clean Cars program is contingent upon the outcome of the on-going SAFE Vehicles Rule litigation.

EO B-16-12

EO B-16-12 (March 2012) required that state entities under the governor’s direction and control support and facilitate the rapid commercialization of zero-emissions vehicles. The order directed CARB, California Energy Commission (CEC), California Public Utilities Commission (CPUC), and other relevant agencies to work with the Plug-In Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve goals by 2015, 2020, and 2025. On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050. This directive did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare.

AB 1236

AB 1236 (October 2015) (Chiu) required a city, county, or city and county to approve an application for the installation of electric-vehicle charging stations, as defined, through the issuance of specified permits unless the city or county makes specified written findings based on substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill provided for appeal of that decision to the planning commission, as specified. AB 1236 required electric-vehicle charging stations to meet specified standards. The bill required a city, county, or city and county with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that created an expedited and streamlined permitting process for electric-vehicle charging stations. The bill also required a city, county, or city and county with a population of less than 200,000 residents to adopt this ordinance by September 30, 2017.

EO N-79-20

EO N-79-20 (September 2020) establishes a Statewide goal that 100 percent of in-state vehicle sales of new passenger cars and trucks shall be zero-emission by the year 2035. The order directed the CARB to develop and propose passenger vehicle and truck regulations requiring increasing volumes of new zero-emission vehicles sold in the State in order to achieve the goal by 2035. In addition, the order required that a Zero-Emissions Vehicle Market Development Strategy be created and updated and three years to ensure coordinated and expeditious implementation of the EO.

Water

The following regulations relate to the conservation of water, which reduces GHG emissions related to electricity demands from the treatment and transportation of water.

EO B-29-15

In response to a drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives subsequently became permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources modified and adopted a revised version of the Model Water Efficient Landscape Ordinance (MWELO) that, among other changes, significantly increases the requirements for landscape water use efficiency, and broadens the applicability of the ordinance to include new development projects with smaller landscape areas.

EO B-37-16

Issued in May 2016, EO B-37-16 directed the State Water Resources Control Board (SWRCB) to adjust emergency water conservation regulations through the end of January 2017 to reflect differing water supply conditions across the State. The SWRCB also developed a proposal to achieve a mandatory reduction of potable urban water usage that builds off the mandatory 25 percent reduction called for in EO B-29-15. The SWRCB and Department of Water Resources were directed to develop new, permanent water use targets that build upon the existing State law requirements that the State achieve 20 percent reduction in urban water usage by 2020. EO B-37-16 also specifies that the SWRCB permanently prohibit water-wasting practices such as hosing off sidewalks, driveways, and other hardscapes; washing automobiles with hoses not equipped with a shut-off nozzle; using non-recirculated water in a fountain or other decorative water feature; watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation; and irrigating ornamental turf on public street medians.

EO B-40-17

EO B-40-17 (April 2017) lifted the drought emergency in all California counties except Fresno, Kings, Tulare, and Tuolumne. It also rescinded EO B-29-15, but expressly stated that EO B-37-16 remains in effect and directed the SWRCB to continue development of permanent prohibitions on wasteful water use.

Solid Waste

The following regulations relate to the generation of solid waste and means to reduce GHG emissions from solid waste produced within the state.

AB 939 and AB 341

In 1989, AB 939, known as the Integrated Waste Management Act (PRC Sections 40000 et seq.), was passed because of the observed increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by 2000.

AB 341 (Chapter 476, Statutes of 2011 [Chesbro]) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the State that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery to develop strategies to achieve the State's policy goal.

Other State Actions

The following regulations relate to regulations of GHG emissions broadly.

SB 97

SB 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Governor's Office of Planning and Research issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities. The advisory further recommended that the lead agency determine the significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The California Natural Resource Agency (CRNA) adopted the CEQA Guidelines amendments in December 2009, and the amended CEQA Guidelines became effective in March 2010.

Under the amended CEQA Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis, or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4[a]). The CEQA Guidelines require a lead agency to consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]). The CEQA Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures. The adopted amendments do not establish a GHG emission threshold, instead allowing a lead agency to develop, adopt, and apply the lead agency's own thresholds of significance or those developed by other agencies or experts. CNRA acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions.

With respect to GHG emissions, the CEQA Guidelines state that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions (14 CCR 15064.4[a]). The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards" (14 CCR 15064.4[a]). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]).

EO S-13-08

EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the EO directs State agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009, and an update, *Safeguarding California: Reducing Climate Risk*, followed in July 2014. To assess the State's vulnerability, the report summarizes key climate change impacts to the state for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water. Issuance of the *Safeguarding California: Implementation Action Plans* followed in March 2016. In January 2018, the CNRA released the *Safeguarding California Plan: 2018 Update,* which communicates current and needed actions that state government should take to build climate change resiliency.

Local Regulations Related to Air Quality and GHGs

The most prominent local regulations related to air quality and GHG emissions are established by the FRAQMD and the County of Yuba.

FRAQMD

With regard to air quality, the FRAQMD is the primary agency responsible for planning to meet NAAQS and CAAQS in Yuba and Sutter counties. The FRAQMD develops rules and regulations for stationary sources and equipment, prepares emissions inventories and air quality management planning documents, and conducts source testing and inspections. Projects within the FRAQMD must comply with all rules and regulations, including, but not limited to, the following:

- Regulation IV – Stationary Emissions Sources Permit System and Registration: Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from FRAQMD prior to equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or internal combustion engine could require a permit. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment, etc.) with an internal combustion engine over 50 horsepower are required to have a FRAQMD permit of a CARB portable equipment registration.
- Rule 3.0 - Visible Emissions: As provided by Section 41701 of the California Health and Safety Code, a person shall not discharge into the atmosphere from any single source of emissions whatsoever, any air contaminants for a period or periods aggregating more than three minutes in any one hour which is a.) as dark or darker in shade as that designated as No. 2 on the Ringlemen Chart published by the United States Bureau of Mines; or b.) of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection 'a.'
- Rule 3.2 – Particulate Matter Concentration: A person shall not discharge into the atmosphere from any source, except as allowed by Rule 3.1, section 'a' and 'c' of these Rules and Regulations, particulate matter in excess of 0.3 grains per cubic foot of gas at standard conditions. When the source involves a combustion process, the concentration must be calculated to 12 percent CO_2. In measuring the combustion contaminants from incinerators used to dispose of combustible refuse by burning the CO_2 produced by combustion of any liquid or gaseous fuels shall be excluded from the calculation to 12 percent of CO_2.
- Rule 3.3 – Dust and Fumes: A person shall not discharge in any one hour from any source whatsoever, except as provided by Rule 3.1, section 'a' and 'c,' dust or fumes in total quantities in excess of the amounts specified in Table 4.1-6.
- Rule 3.9 – Organic Liquid Storage and Transfer: The rule limits emissions of volatile organic compounds (VOCs) from the storage and transfer of organic liquids. The rule applies to any storage tank with a capacity of 250 gallons or greater that stores or transfers an organic liquid with a true vapor pressure of 1.5 pound per square inch (psi) or greater.

Table 4.1-6
FRAQMD Rule 3.3 – Maximum Dust Discharge Rates

Process Weight		Rate of Emission
lb/hr	**ton/hr**	**lb/hr**
100	0.15	0.551
200	0.1	0.877
400	0.2	1.4
600	0.3	1.83
800	0.4	2.22
1,000	0.5	2.58
1,500	0.75	3.38
2,000	1	4.1
2,500	1.25	4.7
3,000	1.5	5.38
3,500	1.75	5.96
4,000	2	6.52
5,000	2.5	7.58
6,000	3	8.56
7,000	3.5	9.49
8,000	4	10.4
9,000	4.5	11.2
10,000	5	12
12,000	6	13.6
16,000	8	16.5
18,000	9	17.9
20,000	10	19.2
30,000	15	25.2
40,000	20	30.5
50,000	25	35.4
60,000	30	40
70,000	35	41.3
80,000	40	42.5
90,000	45	43.6
10,000	50	44.6
120,000	60	46.3
140,000	70	47.8
180,000	80	49
200,000	100	51.2

Source: Spaethe, Sondra, Planning and Engineering Supervisor, Feather River Air Quality Management District. Personal Communication [email] with Briette Shea, Associate/Air Quality Technician, Raney Planning & Management, Inc. May 21, 2020.

- Rule 3.15 – Architectural Coatings: Except as provided in subsections C.2 or C.3 of Rule 3.15, with respect to VOC content limits, no person shall a.) manufacture, blend, or repackage within the FRAQMD; b.) supply, sell, or offer for sale for use within the district; or c.) solicit for application or apply within the FRAQMD, any architectural coating with VOC content in excess of the corresponding limit specified in Table 1 of Rule 3.15, after the specified effective date in Table 1 [of the FRAQMD Guidelines].

- Rule 3.16 – Fugitive Dust Emissions: A person shall take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution impacts under CEQA. Such an advisory role may include recommendations regarding significance thresholds, analytical tools to estimate emissions and assess impacts, and mitigation for potentially significant impacts. The FRAQMD has not adopted specific guidance or thresholds applicable to the analysis of a project's contribution to GHG emissions or associated climate change effects.

Air Quality Attainment Plan

Due to the nonattainment designations, FRAQMD, along with the other air districts in the SVAB region, is required to develop plans to attain the federal and State AAQS for ozone and particulate matter. The attainment plans currently in effect for the SVAB are the *2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (2013 Ozone Attainment Plan), *$PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area* ($PM_{2.5}$ Implementation/Maintenance Plan), and the 1991 Air Quality Attainment Plan (AQAP), including triennial reports. In addition to the foregoing plans related to attainment statuses in the SVAB, the FRAQMD is also party to the *Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan*, which was specifically developed to cover the Planning Areas of Shasta, Tehama, Glenn, Butte, Colusa, and Feather River. The air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control measures have worked, and show how air pollution would be reduced. In addition, the plans include the estimated future levels of pollution to ensure that the area would meet air quality goals.

Yuba County General Plan

The Yuba County General Plan's Community Development Element, Public Health & Safety Element, and Natural Resources Element describe the following goals and policies that pertain to the project:

Community Development Element

Goal CD17 Reduce costs of transportation infrastructure, increase freedom of mode choice, maintain air quality, and improve the local quality of life by managing travel demand.

Policy CD17.6 New developments and specific plans shall analyze and mitigate impacts related to increased travel demand, as feasible and consistent with County General Plan policy.

Policy CD17.7 The County will help to manage travel demand within Rural Communities by encouraging the development of services that are needed by, and located convenient to the local population.

Public Health & Safety Element

Goal HS5 Provide greenhouse-gas efficient development patterns and successfully adapt to future changes in Yuba County's climate.

Policy HS5.1 The County will guide land use change, direct investments, and apply its fees and programs to encourage more GHG-efficient development patterns, as feasible.

Policy HS5.2 The County's regulations, investments, and fee programs should be structured to reduce net greenhouse gas emissions for new development in the unincorporated County consistent with the level of emissions needed per-capita or per service population to achieve the County's fair share of the state's emissions mandate.

Policy HS5.3 Since transportation is the largest sector contributing to GHG emissions both locally and at the statewide level, the County will prioritize land use/transportation projects that manage travel demand by increasing housing/employment density, placing homes in closer proximity with destinations, increasing accessibility to transit, or otherwise decreasing vehicle miles traveled (per household, per capita, and/ or per employee).

Policy HS5.5 For proposed industrial projects, including those with new stationary sources of emissions, and other uses where location, land use mix, and density is not an important indicator of GHG emissions rate, the County will require incorporation of feasible technologies or management practices and best available control technologies, in coordination with Feather River Air Quality Management District, and in compliance with regulations effective at the time of project review.

Policy HS5.6 The County relies, in part, on infrastructure planning and funding controlled by regional, State, and other local agencies, and will work cooperatively with these agencies to provide infrastructure and public facilities needed to support GHG-efficient development patterns.

Policy HS5.7 The County will work collaboratively with State agencies and public/private utility providers charged with regulating building efficiency, mobile-source emissions controls, energy sources and uses, and other components of GHG emissions to create the opportunity for more GHG-efficient local development.

Natural Resources Element

Goal NR2 Improve Yuba County's urban areas and the environment through development of green public spaces.

Policy NR2.1 The County will encourage urban greening projects that are designed to:

- Improve air and water quality;

- Protect natural resources;
- Increase the attractiveness of affordable housing and existing developed areas;
- Promote public health and the development of a healthy community;
- Increase access to safe areas for physical activity;
- Improve access to healthy, local food sources;
- Improve and use existing infrastructure systems and other community resources;
- Promote public health;
- Reduce greenhouse gas emissions; and
- Adapt to future climate conditions.

4.1.4 IMPACTS AND MITIGATION MEASURES

The standards of significance and methodology used to analyze and determine the potential project-specific impacts related to air quality and GHG emissions are described below. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, the effects of a project are evaluated to determine if they would result in a significant adverse impact on the environment. For the purposes of this EIR, an impact is considered significant if the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people;
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

The following issue related to whether the proposed project would result in impacts has already been dismissed in the Initial Study for the proposed project, included as Appendix A to this EIR, and will not be discussed further:

- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Criteria Pollutant Emissions and TAC Emissions

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) indicates that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to determine whether the project would have a significant impact on air quality. The attainment plans currently in effect for the SVAB are the 2013 Ozone

Attainment Plan, $PM_{2.5}$ Implementation/Maintenance Plan, and the AQAP, including triennial reports. The FRAQMD is also party to the *Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan*.

Nearly all development projects in the SVAB region have the potential to generate air pollutants that may increase the difficultly of attaining federal and State AAQS. Therefore, for most projects, evaluation of air quality impacts is required to comply with CEQA. In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants that the area is designated nonattainment, FRAQMD has developed the *Indirect Source Review Guidelines*, which includes recommended thresholds of significance, including mass emission thresholds for construction-related and operational ozone precursors and PM_{10}, as the area is under nonattainment for ozone and PM_{10}.

The FRAQMD's recommended thresholds of significance for ROG, NO_X, and PM_{10} are summarized in Table 4.1-7 below.

Table 4.1-7
FRAQMD Thresholds of Significance

Pollutant	Construction Thresholds	Operational Thresholds
NO_X	25 lbs/day multiplied by the project length, not to exceed 4.5 tons/year	25 lbs/day
ROG	25 lbs/day multiplied by the project length, not to exceed 4.5 tons/year	25 lbs/day
PM_{10}	80 lbs/day	80 lbs/day

Note: Construction-related NO_X and ROG emissions may be averaged over the life of the project, but may not exceed 4.5 tons/year.

Source: FRAQMD, June 7, 2010.

As shown in the table, the FRAQMD's recommended threshold for construction-related emissions of ROG and NO_X is 25 lbs/day multiplied by the total length of the construction period of a project. Construction of the proposed project is anticipated to occur over a period of approximately 1.2 months (or 26 working days); thus, the maximum allowable total construction-related emissions of ROG and NO_X pursuant to the FRAQMD thresholds of significance would be 650 lbs over the entire construction period (26 days X 25 lbs/day = 650 lbs). The maximum allowable total construction emissions of 650 lbs would equate to 0.325 tons, which would be less than the annual threshold of 4.5 tons/year. Therefore, this analysis applies 650 lbs total over the length of the construction period as the threshold of significance for construction-related ROG and NO_X emissions.

The FRAQMD established thresholds of significance for CEQA purposes to achieve and maintain the NAAQS and CAAQS. Because an AAQS is based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of the AAQS, a project that complies with the thresholds established by a local air district, such as the FRAQMD, would not result in adverse effects to human health related to criteria pollutant emissions.

For the evaluation of health risks, the FRAQMD directs lead agencies to use the recommendations set forth in the CARB's Air Quality and Land Use Handbook and the California Air Pollution Control Officers Association's (CAPCOA's) Health Risk Assessments for Land Use

Projects. The FRAQMD has not formally adopted threshold of significance for health risk associated with changes in land use or construction projects. However, the District has informally approved the use of the stationary source health risk thresholds of significance (see Table 4.1-8) for the evaluation of land use or construction projects.[21]

Table 4.1-8
Thresholds of Significance for Health Risks

Risk Factor	Threshold
Cancer	Increased cancer risk of >10.0 cases per million persons
Non-Cancer	Increased non-cancer risk of >1.0 Hazard Index (Chronic or Acute)

Source: FRAQMD. AB2588 Air Toxics "Hot Spots" Program Annual Report. November 30, 2020.

GHG Emissions and Other Cumulative Emissions

At this time, neither the FRAQMD nor the County has adopted numerical thresholds of significance for GHG emissions that would apply to the project. The FRAQMD, however, recommends that all projects subject to CEQA review be considered in the context of GHG emissions and climate change impacts, and that CEQA documents include a quantification of GHG emissions from all project sources, as well as including measures to minimize and mitigate GHG emissions as feasible. The project would generate GHG emissions through short-term construction activities.

Considering the lack of established GHG emissions thresholds that would apply to the project, CEQA allows lead agencies to identify thresholds of significance applicable to a project that are supported by substantial evidence. Substantial evidence is defined in the CEQA statute to mean "facts, reasonable assumptions predicated on facts, and expert opinion supported by facts" (14 CCR 15384[b]).[22] Substantial evidence can be in the form of technical studies, agency staff reports or opinions, expert opinions supported by facts, and prior CEQA assessments and planning documents. Therefore, to establish additional context in which to consider the order of magnitude of the project's GHG emissions, this analysis accounts for the following considerations by other government agencies and associations about what levels of GHG emissions constitute a cumulatively considerable incremental contribution to climate change:

- The SMAQMD established thresholds, including 1,100 $MTCO_2e$ per year for the construction or operational phase of land use development projects, or 10,000 direct $MTCO_2e$ per year from stationary source projects.
- The Placer County Air Pollution Control District (PCAPCD) recommends a tiered approach to determine if a project's GHG emissions would result in a significant impact. First, project GHG emissions are compared to the de minimis level of 1,100 $MTCO_2e$ per year. If a project does not exceed this threshold, the project does not have significant GHG

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[21] Spaethe, Sondra, Planning and Engineering Supervisor, Feather River Air Quality Management District. Personal Communication [phone] with Briette Shea, Associate/Air Quality Technician, Raney Planning & Management, Inc. May 21, 2020.

[22] 14 CCR 15384 provides the following discussion: "Substantial evidence" as used in the Guidelines is the same as the standard of review used by courts in reviewing agency decisions. Some cases suggest that a higher standard, the so called "fair argument standard" applies when a court is reviewing an agency's decision whether or not to prepare an EIR. Public Resources Code section 21082.2 was amended in 1993 (Chapter 1131) to provide that substantial evidence shall include "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." The statute further provides that "argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous, or evidence of social or economic impacts which do not contribute to, or are not caused by, physical impacts on the environment, is not substantial evidence."

emissions. If the project exceeds the de minimis level and does not exceed the 10,000 $MTCO_2e$ per year bright line threshold, then the project's GHG emissions can be compared to the efficiency thresholds. The efficiency thresholds are 4.5 $MTCO_2e$ per-capita for residential projects in an urban area, and 5.5 $MTCO_2e$ per-capita for residential projects in a rural area. For nonresidential development, the efficiency thresholds are 26.5 $MTCO_2e$ per 1,000 square feet for projects in urban areas, and 27.3 $MTCO_2e$ per 1,000 square feet for projects in rural areas. The PCAPCD bright-line GHG threshold of 10,000 $MTCO_2e$ per year is also applied to land use projects' construction and operational phases as well as stationary source projects' construction and operational phases. Generally, GHG emissions from a project that exceed 10,000 $MTCO_2e$ per year would be deemed to have a cumulatively considerable contribution to global climate change.

- The Bay Area Air Quality Management District (BAAQMD) has adopted 1,100 $MTCO_2e$ per year as a project-level bright-line GHG significance threshold that would apply to operational emissions from mixed land-use development projects, a threshold of 10,000 $MTCO_2e$ per year as the significance threshold for operational GHG emissions from stationary-source projects, and an efficiency threshold of 4.6 $MTCO_2e$ per service population per year.
- The South Coast Air Quality Management District (SCAQMD) formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. In December 2008, the SCAQMD adopted an interim 10,000 $MTCO_2e$ per-year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency.

In order to present the most conservative evaluation, the SMAQMD's and BAAQMD's 1,100 $MTCO_2e$ per year construction GHG threshold has been applied to project construction. As discussed in further detail below, a substantial number of new GHG emissions would not be generated during project operations, and operational emissions were not calculated for the purpose of this EIR.

Issues Dismissed in the Initial Study

The proposed project would not introduce any odor-generating land uses and is not located in the vicinity of any such existing or planned land uses. The proposed project is not anticipated to result in the creation of objectionable odors, and operations at the project site would be consistent with operations in the project vicinity. Therefore, the following impact was dismissed in the Initial Study (Appendix A):

- Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Accordingly, the above impact is not analyzed further in this EIR.

Method of Analysis

The analysis protocol and guidance provided by the FRAQMD's *Indirect Source Review Guidelines*, including pollutant thresholds of significance, was used to analyze the proposed project's air quality impacts.

Construction Emissions

The proposed project's construction emissions have been estimated using two modeling tools that were developed by SMAQMD: SMAQMD's Construction Mitigation Tool Version 9.0 and SMAQMD's RoadMod, Version 9.0.0. While the project site is not located within the jurisdiction of SMAQMD, the models are industry standard tools for evaluating construction emissions throughout the State.

SMAQMD's Construction Mitigation Tool was used to calculate the ROG and NO_X emissions associated with the use of heavy equipment on the project site. The Construction Mitigation Tool relies on specific construction equipment emission rates to calculate heavy equipment emissions. The user is required to input information related to type of heavy equipment, manufacturer, model number, CARB equipment ID, engine model year, engine horsepower, and total hours of use.

SMAQMD's RoadMod was used to calculated the PM_{10} emissions associated with project construction. RoadMod requires the user to input information related to the area of disturbance, the length of time a project would occur, and, for linear non-roadway projects, a list of equipment that would be used during project construction. Based on applicant-provided information, modeling of the proposed project included the following assumptions:

- Construction start year – 2022;
- Project construction time – 1.2 months (or 26 working days);
- Working days per month – 22 days;
- Project length – 0.97 miles;
- Total project area – 8.78 acres;
- Maximum area disturbed per day – 0.33 acres;
- No water trucks used; and
- Haul trip length – 20 miles.

The results of construction emissions estimations were compared to the standards of significance discussed above in order to determine the associated level of impact. All modeling results are included in Appendix C to this EIR.

Operational Emissions

Considering the nature of the proposed roadway improvement project, new substantial criteria pollutant and GHG emissions would not be generated during project operations. Haul route emissions would still occur as they currently do; however, the existing emissions would be relocated to occur along the route of the proposed project. In fact, as discussed in further detail in Chapter 4.5, Transportation, VMT would decrease following implementation of the proposed project and, consequently, the associated mobile-sourced operational emissions would decrease with implementation of the proposed project as well. As a result, operational emissions were not calculated for the purpose of this EIR.

Health Risks

As discussed below, the proposed project would result in the relocation of existing emissions of TACs. In particular, potential health risks could occur due to emissions of DPM from heavy truck traffic using the improved SR 20/Kibbe Road intersection. As a result, potential health risks posed to nearby existing receptors were analyzed.

DPM is considered a subset of $PM_{2.5}$ emissions. Thus, the estimated concentration of $PM_{2.5}$ was used as a proxy to represent emissions of DPM. DPM emissions associated with the net change in truck trips under the proposed project was conducted using emissions factors for the Yuba County region for year 2022 as reported by the CARB's EMFAC2021 Web Database v1.0.1 tool for EMFAC2011 vehicle categories. Additional model inputs include aggregated model years, aggregated speeds, and diesel fuel. Emission factors for Medium-Heavy Duty Diesel Trucks, or T6 public trucks, were used as a conservative estimate to represent the type of trucks that would travel along the SR 20/Kibbe Road intersection.

Once the emissions of DPM from the heavy trucks along SR 20 and Kibbe Road were determined, the concentration of DPM at nearby receptors was then estimated using the American Meteorological Society/Environmental Protection Agency (AMS/EPA) Regulatory Model (AERMOD). Finally, the associated cancer risk and non-cancer hazard index were calculated using the CARB's Hotspot Analysis Reporting Program Version 2 (HARP 2) Risk Assessment Standalone Tool (RAST), which calculates the cancer and non-cancer health impacts using the risk assessment guidelines of the 2015 Office of Environmental Health Hazard Assessment (OEHHA) Guidance Manual for Preparation of Health Risk Assessments.[23] The modeling was performed in accordance with the USEPA's User's Guide for the AMS/EPA Regulatory Model – AERMOD[24] and the 2015 OEHHA Guidance Manual. The maximum annual average and maximum one-hour average concentrations from each of the aforementioned AERMOD runs were applied to HARP 2 RAST to calculate the cancer risk and non-cancer hazard index, respectively, to the maximally exposed individuals in each scenario. The exposure period in HARP 2 RAST was set to a 30-year period.

In order to determine the location of existing residences, aerial images of the surrounding area were used to identify individual residences. Receptor locations were then input into AERMOD using either a single receptor point to represent a single residence, or a grid of receptor points to represent more dense or clustered housing areas.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on implementation of the proposed project in comparison with the standards of significance identified above. It should be noted that GHG emissions are inherently cumulative; thus, the discussion of impacts associated with GHG emissions is included under the Cumulative Impacts and Mitigation Measures section below.

4.1-1 Conflict with or obstruct implementation of the applicable air quality plan during project construction. Based on the analysis below, the impact is *less than significant*.

During construction of the project, various types of equipment and vehicles would temporarily operate on the project site. Construction-related emissions would be generated from construction equipment, vegetation clearing and earth movement activities, construction workers' commute, and construction material hauling for the entire construction period. The aforementioned activities would involve the use of

23 Office of Environmental Health Hazard Assessment. *Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments* [pg. 8-18]. February 2015.

24 U.S. Environmental Protection Agency. *User's Guide for the AMS/EPA Regulatory Model (AERMOD)*. December 2016.

diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM_{10} emissions. As construction of the proposed project would generate emissions of criteria air pollutants, including ROG, NO_X, and PM_{10} intermittently within the site and in the vicinity of the site, until all construction has been completed, construction is a potential concern, as FRAQMD includes nonattainment areas for ozone and PM_{10}.

The proposed project is required to comply with all FRAQMD rules and regulations, including Rule 3.0 related to visible emissions and Rule 3.2 related to particulate matter concentration. In addition, all projects under the jurisdiction of the FRAQMD without an operational phase, such as new roadways, are recommended to implement the following Standard Construction Mitigation Measures provided in the FRAQMD's *Indirect Source Review Guidelines*:

1. Implement the Fugitive Dust Control Plan.
2. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0).
3. The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of on-site operation.
4. Limiting idling time to five minutes.
5. Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
6. Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
7. Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (CARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the CARB or FRAQMD to determine registration and permitting requirements prior to equipment operation at the site.

The County shall condition the project, if approved, to require the applicant to fully implement the foregoing Standard Construction Mitigation Measures, which would help reduce criteria pollutant emissions during project construction.

The maximum construction-related emissions were estimated for development of the proposed project and are presented in Table 4.1-9. The Construction Mitigation Program was used to model ROG and NO_X emissions associated with the use of heavy equipment on the project site. RoadMod was used to estimate the emissions of dust (PM_{10}) from earth-moving activities and material hauling. Although FRAQMD recommends that all construction activity within the SVAB implement the above listed Standard Construction Mitigation Measures, the proposed project was modeled without the inclusion of such measures to provide a conservative, worst-case emissions scenario.

Table 4.1-9
Maximum Unmitigated Construction Emissions

Pollutant	Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	39.9 lbs	650 lbs	**NO**
NO_X	402.3 lbs	650 lbs	**NO**
PM_{10}	31.98 lbs/day	80 lbs/day	**NO**
Source: Construction Mitigation Program, November 2021; and RoadMod, April 2021 (see Appendix C).			

Modeling assumptions are discussed in the Method of Analysis section above. As presented in Table 4.1-9, implementation of the proposed project would result in construction-related emissions of ROG, NO_X, and PM_{10} below the applicable thresholds of significance. Therefore, construction of the proposed project would not significantly contribute to the region's nonattainment status for ozone, and a ***less-than-significant*** impact associated with construction-related emissions would result.

Mitigation Measure(s)
None required.

4.1-2 Conflict with or obstruct implementation of the applicable air quality plan during project operation. Based on the analysis below, the impact is *less than significant*.

While implementation of the proposed project would result in the redistribution of truck traffic associated with the Hallwood mine, the proposed project would accommodate existing traffic volumes on streets near and within the project site. Furthermore, as noted in Table 4.5-6 of the Transportation chapter of this EIR, implementation of the proposed project would result in a 0.25-mile reduction in trip lengths for both Hallwood mine trucks and employees, as compared to baseline conditions. Therefore, operation of the proposed project would not increase emissions, as the operational phase would not generate any new vehicle trips, and the project would actually result in a net decrease of trip lengths for vehicles associated with the Hallwood mine. The only sources of operational emissions for the proposed project would be off-gassing of asphalt and any indirect emissions associated with the potential traffic signal (i.e., electricity). Such off-gassing would emit a negligible volume of criteria pollutants. Thus, operational emissions of NO_X, ROG, and PM_{10} would be well below the FRAQMD's applicable thresholds of significance.

Based on the above, operation of the proposed project would not to contribute to the FRAQMD's nonattainment status for criteria pollutants, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)
None required.

4.1-3 Expose sensitive receptors to substantial pollutant concentrations. Based on the analysis below, the impact is *less than significant*.

The major pollutants of concern are localized CO emissions, TAC emissions, and criteria pollutants, which are addressed below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. High levels of localized CO concentrations are only expected where background levels are high, and traffic volumes and congestion levels are high. Emissions of CO are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood. CO emissions are particularly related to traffic levels.

Although FRAQMD does not have an established threshold for CO, per the SMAQMD's CEQA Guidelines, emissions of CO are generally of less concern than other criteria pollutants, as operational activities are not likely to generate substantial quantities of CO, and the SVAB has been in attainment for CO for multiple years. Additionally, the PCAPCD, which has authority over a portion of the SVAB and is adjacent to the FRAQMD, has a screening level for localized CO impacts. According to the PCAPCD screening levels, a project could result in a significant impact if the project would result in CO emissions from vehicle operations in excess of 550 lbs/day. Per RoadMod estimates calculated for the proposed project, construction activities would result in maximum CO emissions of 37.88 lbs/day, which is significantly under the PCAPCD screening level. Therefore, based on the guidance of the SMAQMD and PCAPCD, the proposed project would not expose sensitive receptors to substantial concentrations of localized CO and impacts related to localized CO emissions would be less than significant.

TAC Emissions

Another category of environmental concern is TACs. 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 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.

Construction

Short-term, construction-related activities could result in the generation of TACs, primarily DPM, from on-road haul trucks and off-road equipment exhaust emissions. Although DPM emissions from on-road haul trucks would be widely dispersed throughout the project area, as haul trucks move goods and material to and from the site, exhaust from off-road equipment would primarily occur within the project site.

Consequently, the operation of off-road equipment within the project site during project construction could result in exposure of nearby residents to DPM.

All construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation, which is intended to help reduce emissions associated with off-road diesel vehicles and equipment, including DPM. The In-Use Off-Road Diesel Vehicle Regulation includes the following standards:

- Imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles;
- Requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled;
- Restricts the adding of older vehicles into fleets; and
- Requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits).

In addition, construction equipment would operate intermittently throughout the day and only on portions of the site at a time, and construction activity occurring adjacent to existing residential uses would be limited to the hours of 7:00 AM to 10:00 PM per Section 8.20.310 of the County's Code of Ordinances. Additionally, construction is estimated to last for approximately 1.2 months. Because construction equipment on-site would not operate for long periods of time and would be used at varying locations within the site, associated emissions of DPM would not occur at the same location (or be evenly spread throughout the entire project site) for long periods of time. Due to the temporary nature of construction and the relatively short duration of potential exposure to associated emissions, the potential for any one sensitive receptor in the area to be exposed to concentrations of pollutants for a permanent or substantially extended period of time would be low. Therefore, construction of the proposed project would not be expected to expose nearby sensitive receptors to substantial pollutant concentrations.

Operations

As noted throughout this EIR, the proposed project would re-route haul trucks along Kibbe Road, towards and from SR 20. As a result, heavy trucks would operate along the improved intersection, and could expose nearby sensitive receptors to additional DPM, as compared to existing conditions. Operational cancer risk and hazard indexes are presented in Table 4.1-10. As shown in Table 4.1-10, implementation of the proposed project would not result in cancer risk, acute hazards, or chronic hazards in excess of the FRAQMD's standards of significance. Even at the maximally exposed receptor, the cancer risk is 4.97 cases per million persons, which is below the FRAQMD's threshold of significance for health risk assessments. All other receptors in the vicinity would be exposed to lower concentrations of DPM from the proposed project.

Table 4.1-10 Maximum Unmitigated Cancer Risk and Hazard Index Associated with Project Operational DPM			
	Cancer Risk (per million persons)	**Acute Hazard Index**	**Chronic Hazard Index**
Operations	4.97	0.00	0.001
Thresholds of Significance	*10*	*1.0*	*1.0*
Exceed Thresholds?	**NO**	**NO**	**NO**
Sources: AERMOD, and HARP 2 RAST, July 2021 (see Appendix C).			

Criteria Pollutants

It is noted that numerous scientific and technological complexities exist that are associated with correlating criteria air pollutant emissions from an individual project to specific health effects or potential additional nonattainment days, such as the disconnect between mass emissions and concentrations due to secondary pollutant (such as ozone) generation and pollutant transport, as well as the inaccuracy of applying regional and population-wide models to a local level in order to estimate health effects, and modeling tools endorsed by an expert agency (i.e., FRAQMD) that could provide reliable and meaningful additional information regarding health effects from criteria air pollutants generated by individual projects do not currently exist. Nonetheless, the following discussion represents a good faith effort to present such information.

ROG and NO_X are precursors to ozone, for which portions of the FRAQMD is designated as nonattainment with respect to the NAAQS and CAAQS. As discussed previously, the health effects associated with ozone are generally associated with reduced lung function. The contribution of ROG and NO_X to regional ambient ozone concentrations is the result of complex photochemistry. The increases in ozone concentrations in the FRAQMD due to ozone precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive ozone concentrations would also depend on the time of year that the ROG or NO_X emissions would occur because exceedances of the ozone NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of ozone precursors is speculative due to the lack of quantitative methods to reliably and meaningfully assess the impact. Thus, a project's ROG and NO_X emissions are evaluated in the context of the FRAQMD significance thresholds, which define the levels of emissions that can occur without causing or contributing to violations of the NAAQS or CAAQS. In turn, the NAAQS and CAAQS define the pollutant concentrations above which adverse health effects are expected to occur. Because NO_X emissions associated with project construction would be significant, the project could contribute to regional ozone concentrations and the associated health effects.

Construction of the proposed project would result in ROG, NO_X and PM_{10} emissions below the FRAQMD threshold. As such, the project would not obstruct the FRAQMD from coming into attainment for the pollutants. In addition, the project would be required to comply with FRAQMD Rule 3.2, Particulate Matter Concentration as well as Rule 3.16, Fugitive Dust Emissions, which would limit the amount of dust generated during project implementation. As a result, the proposed project would not expose sensitive receptors to excess concentrations of criteria pollutants causing substantial adverse health impacts.

Conclusion

Project-related CO emissions would not exceed thresholds, and, as such, the project would not expose sensitive receptors to excess concentrations of CO. Table 4.1-10 demonstrates that emissions of TACs would not result in health risks to nearby receptors in excess of FRAQMD thresholds. In addition, criteria pollutant emissions from project construction would not expose receptors to substantial concentrations of pollutants. As a result, the project could result in a ***less-than-significant*** impact with respect to exposing receptors to substantial concentrations.

Mitigation Measure(s)

None required.

Cumulative Impacts and Mitigation Measures

A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. The geographic context for the cumulative air quality analysis includes Yuba County and surrounding areas within the portions of the SVAB designated nonattainment for ozone and/or PM_{10}.

As mentioned above, global climate change is, by nature, a cumulative impact. Emissions of GHG contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change (e.g., sea level rise, impacts to water supply and water quality, public health impacts, impacts to ecosystems, impacts to agriculture, and other environmental impacts). A single project could not generate enough GHG emissions to contribute noticeably to a change in the global average temperature. However, the combination of GHG emissions from a project with other past, present, and future projects could contribute substantially to the world-wide phenomenon of global climate change and the associated environmental impacts. Although the geographical context for global climate change is the Earth, for analysis purposes under CEQA, and due to the regulatory context pertaining to GHG emissions and global climate change applicable to the proposed project, the geographical context for global climate change in this EIR is limited to the State of California.

4.1-4 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard. Based on the analysis below, the project's incremental contribution to this impact is *less than cumulatively considerable*.

Past, present, and future development projects may contribute to adverse air quality impacts in the SVAB on a cumulative basis. In developing thresholds of significance for air pollutants, FRAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, the project's emissions would be considered cumulatively considerable, resulting in a significant adverse incremental contribution to the region's existing air quality conditions. Therefore, if the project's emissions are below the FRAQMD's thresholds, then the project would not result in a cumulatively considerable increase of any criteria air pollutant.

Impact 4.1-1 compares the estimated project emissions to the FRAQMD's thresholds of significance. In particular, Table 4.1-9 presents the estimated unmitigated project emissions from construction. As demonstrated therein, implementation of the project would not conflict with the applicable air quality plans.

Therefore, emissions resulting from the implementation of the proposed project would not represent a cumulatively considerable contribution of any criteria pollutant for which the project region is in nonattainment. As such, the impact could be ***less than cumulatively considerable***.

Mitigation Measure(s)

None required.

4.1-5 Generate GHG emissions that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Based on the analysis below, the project's cumulative impact is *less than significant*.

Implementation of the proposed project would contribute to increases of GHG emissions that are associated with global climate change during construction. Construction of the project would result in GHG emissions primarily through the use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, worker vehicles, and emergency generator testing and maintenance.

Although neither FRAQMD nor the County have adopted numerical thresholds of significance for GHG emissions that would apply to the proposed project, as discussed in the Method of Analysis section above, to establish additional context in which to consider the order of magnitude of the proposed project's GHG emissions, this analysis incorporates thresholds established by SMAQMD to provide a conservative evaluation of the project's contribution to cumulative GHG emissions. SMAQMD's thresholds include 1,100 $MTCO_2e$ per year for the construction phase of land use development projects. Per RoadMod emissions estimates calculated for the proposed project's construction activities, the project would generate 195.52 $MTCO_2e$, which is well below the thresholds established by SMAQMD.

With regard to project operations, as discussed previously, the proposed project would accommodate existing traffic volumes on streets near and within the project site. The only sources of operational emissions for the proposed project would be related to the off-gassing of asphalt and any indirect emissions associated with the potential traffic signal (i.e., electricity). Such off-gassing would emit a negligible volume of emissions. Therefore, operation of the proposed project would not be expected to increase emissions, as the operational phase would not generate new vehicle trips.

Therefore, the proposed project would not be considered to generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs during construction or operation and the project's incremental contribution of GHG emissions would be ***less than significant***.

Mitigation Measure(s)

None required.

4.2 Biological Resources

4.2 BIOLOGICAL RESOURCES

4.2.1 INTRODUCTION

The Biological Resources chapter of the EIR evaluates the biological resources known to occur or potentially occur within the project site. The chapter describes the proposed project's potential impacts to biological resources and identifies measures to eliminate or substantially reduce impacts to a less-than-significant level. Existing plant communities, wetlands, wildlife habitats, and potential for special-status species and communities are discussed for the project region. The information contained in the analysis is primarily based on a Biological Resources Assessment (BRA)[1] and Aquatic Resources Delineation Report[2] prepared for the proposed project by ICF, Inc. (see Appendix D). Further information was sourced from the Yuba County General Plan[3] and the associated General Plan EIR.[4]

4.2.2 EXISTING ENVIRONMENTAL SETTING

The following sections describe the existing environmental setting and biological resources occurring in the project region and include discussions on the regional setting in which the project site is located, the setting of the project site, the project site's biological communities, and special-status species potentially occurring on-site.

Regional Setting

The project site is located at the State Route (SR) 20/Kibbe Road Intersection approximately three miles northeast of Marysville in Yuba County, California (see Figure 3-1 in the Project Description chapter of this EIR). Yuba County encompasses 640 square miles, ranging from the Sacramento Valley floor to the lower western ridge of the Sierra Nevada mountain range. The County has a Mediterranean climate and consists of a mosaic of forest, grassland, riparian areas, and other natural habitats which have been greatly modified from their historic expanses, due to changes caused by human settlement. The County's location is within the range of several species common to either bioregion. At lower elevations, the County is characterized by annual grasslands, intermittent streams, and riparian vegetation. At higher elevations, oak woodland, mixed evergreen forest, scrub and chaparral, and riparian vegetation dominate. The County provides thousands of acres of critical habitat for waterfowl using the Pacific Flyway, as well as for other wetland-dependent wildlife and fisheries. For many years, the principal land use of the region was agriculture. Agricultural land uses are still prevalent in the County, but are gradually being replaced with residential, commercial, and industrial land uses.

The project site is located in a rural agricultural portion of the County and is dominated by rice and grain fields. The lowland portion of the County is comprised primarily of annual grassland habitat, which is the most common herbaceous-dominated habitat in Yuba County. The annual grassland habitat is dominated by non-native annual grasses, primarily of the Mediterranean

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1 ICF, Inc. *Kibbe Road/State Route 20 Intersections Improvement Project Biological Resources Assessment Report*. July 2021.
2 ICF, Inc. *Kibbe Road/State Route 20 Intersections Improvement Project Aquatic Resources Delineation Report.* August 2021.
3 Yuba County. *Yuba County 2030 General Plan*. June 7, 2011.
4 Yuba County. *Final Yuba County 2030 General Plan EIR.* May 2011.

origin as well as a variety of native herbaceous species. Non-native grassland have replaced most native perennial grasslands in the County; therefore, the abundance and composition of native species varies greatly depending on the environmental conditions of a particular area. The region surrounding the project site once supported a vast mosaic of vernal pools and grassland. However, the current habitats within the project site include non-native annual grasslands, seasonal wetlands, orchard, roadside ditches, and agricultural ditches/canals.

Project Setting

The project site encompasses approximately 10 acres, and is located at the intersection of SR 20 and Kibbe Road, and extends north from the 720-acre Hallwood mine towards SR 20. Existing land uses in the vicinity of the site include agricultural, industrial (aggregate mining and associated uses), and rural residential uses. Currently, Kibbe Road north of SR 20 is a paved roadway, and Kibbe Road south of SR 20 is an unpaved private road.

The southern portions of the private haul road located south of the SR 20/Kibbe Road intersection are dominated by walnut orchards, with the portion of the road leading up to SR 20 consisting of disturbed annual grasslands. Fallow agricultural land is located east and west of the existing road, and the portions of the project site along SR 20 and Kibbe Road consist of roadside ditches, active agricultural land, and disturbed annual grasslands. The northwest and southwest portions of the project site are currently in use as grazing/pasture land, while rural residential uses are located in the northeastern and southeastern quadrants of the existing SR 20/Kibbe Road intersection. Additionally, various trees and shrubs are scattered alongside SR 20 and Kibbe Road in the project vicinity including, but not limited to, Fremont's cottonwood trees, eucalyptus trees, and oak trees.

The proposed haul road alignment would cross three existing canals: the Cordua Canal; the Stahl Ditch; and an unnamed irrigation ditch. However, culverts have already been installed at each of these canal crossings with the permission of the Cordua and Hallwood irrigation districts. The Cordua Canal and its associated ditches convey Yuba River water for agricultural purposes.

Topography in the project site is relatively level. Elevations range from approximately 90 to 100 feet above Mean Sea Level (MSL). Surface runoff appears to enter the roadside and agriculture ditches surrounding Kibbe Road, SR 20, and the gravel driveway to the east of the project site. Most of the project site is comprised of soils which are regarded as hydric soils or contain inclusions of hydric soils. Hydric soils are permanently or seasonally saturated by water, resulting in anaerobic conditions, as found in wetlands. The soils within the project site include Bruella loam, zero to one percent slopes; Holillipah loamy sand, zero to one percent slopes; Redding gravelly loam, three to eight percent slopes; and San Joaquin loam, zero to one percent slopes.

While a BRA conducted in the project vicinity in 2004 reported irrigated pasture in the project site, the surveys were conducted immediately after the private haul road was constructed in the spring of 2003. Left relatively undisturbed for eighteen years, the project site has reverted back to into a wetland mosaic given its historic vernal pool distribution and presumed decades of irrigation.

During the surveys conducted for the BRA prepared for the proposed project (2021), 139 plant species were observed at the project site, 66 percent of which were non-native species. The high proportion of non-native species reflects the high degree to which the landscape has been disturbed by agriculture and rural development.

Biological Communities Within the Project Site

According to the BRA, five biological communities occur within the project site: non-native annual grassland, orchard, and three types of aquatic resources including seasonal wetland, roadside ditch, and agricultural ditch/canal. The characteristics of the biological communities within the project site are discussed below.

Non-native Annual Grassland

Non-native annual grassland vegetation is the dominant land cover type in the project site and occurs along both sides of the haul road. The grassland is dominated by Italian ryegrass (*Festuca perennis*) and Mediterranean barley (*Hordeum marinum* subsp. *gussoneanum*). Associated species include prickly lettuce (*Lactuca serriola*), curly dock (*Rumex crispus*), and panicled willow-herb (*Epilobium brachycarpum*), with scattered clumps of soft rush (*Juncus effusus*).

Orchard

A walnut orchard is present at the south end of the project site. The understory vegetation is managed (mowed or sprayed) and consists of annual grassland species. Orchard habitats, although man-made, provide foraging and shelter opportunities for several species of wildlife including, rodents such as mice, rats and squirrels, and various song bird species. In addition, orchards provide potential foraging opportunities for a number of raptor species, such as the red tail hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and white-tailed kite (*Elanus leucurus).*

Aquatic Resources

Aquatic resources, including seasonal wetland, roadside ditch, and agricultural ditch/canal, occur within the project site's footprint (see Figure 4.2-1 through Figure 4.2-5). Each are discussed in further detail below.

Seasonal Wetland

Approximately 2.18 acres of seasonal wetlands were delineated in the project site. Seasonal wetlands within the project site occur along both sides of the private haul road in areas that were formerly irrigated for agriculture. Seasonal wetlands in the project site are vegetated by a mix of native wetland species that are often found in vernal pools and non-native wetland species that colonized disturbed wetlands, including Carter's buttercup (*Ranunculus bonariensis*), water pygmyweed (*Crassula aquatica*), purslane speedwell (*Veronica peregrina*), bracted popcornflower (*Plagiobothrys bracteatus*), and non-native grasses Italian rye grass (*Lolium multiflorum*) and Mediterranean barley: the native wetland species occur in the topographic lows of the seasonal wetlands, whereas a majority of the wetlands are dominated by Italian rye grass and Mediterranean barley (*Hordeum marinum*). Further evaluation is required to determine if the seasonal wetlands would be considered waters of the U.S. or waters of the State.

Roadside Ditch

Approximately 0.51-acre of roadside ditches were mapped in the project site. Of the roadside ditches in the project site, 0.1-acre is primarily unvegetated roadside ditch and 0.42-acre is dominated by wetland vegetation. Roadside ditches are present along both sides of SR 20 and convey rainfall runoff from the surrounding watershed and paved highway. Vegetation along the ditches is composed of a mix of ruderal and wetland species, with wetland species including umbrella sedge (*Cyperus eragrostis*), toad rush (*Juncus bufonius*), rabbits foot grass (*Polypogon monspeliensis*), little rattle snake grass (*Briza minor*), Italian ryegrass, soft chess (*Bromus hordeaceus*), brome fescue (*Festuca bromoides),* and scattered patches of broadleaved cattail (*Typha latifolia*).

Figure 4.2-1
Aquatic Resources Delineation Map Areas

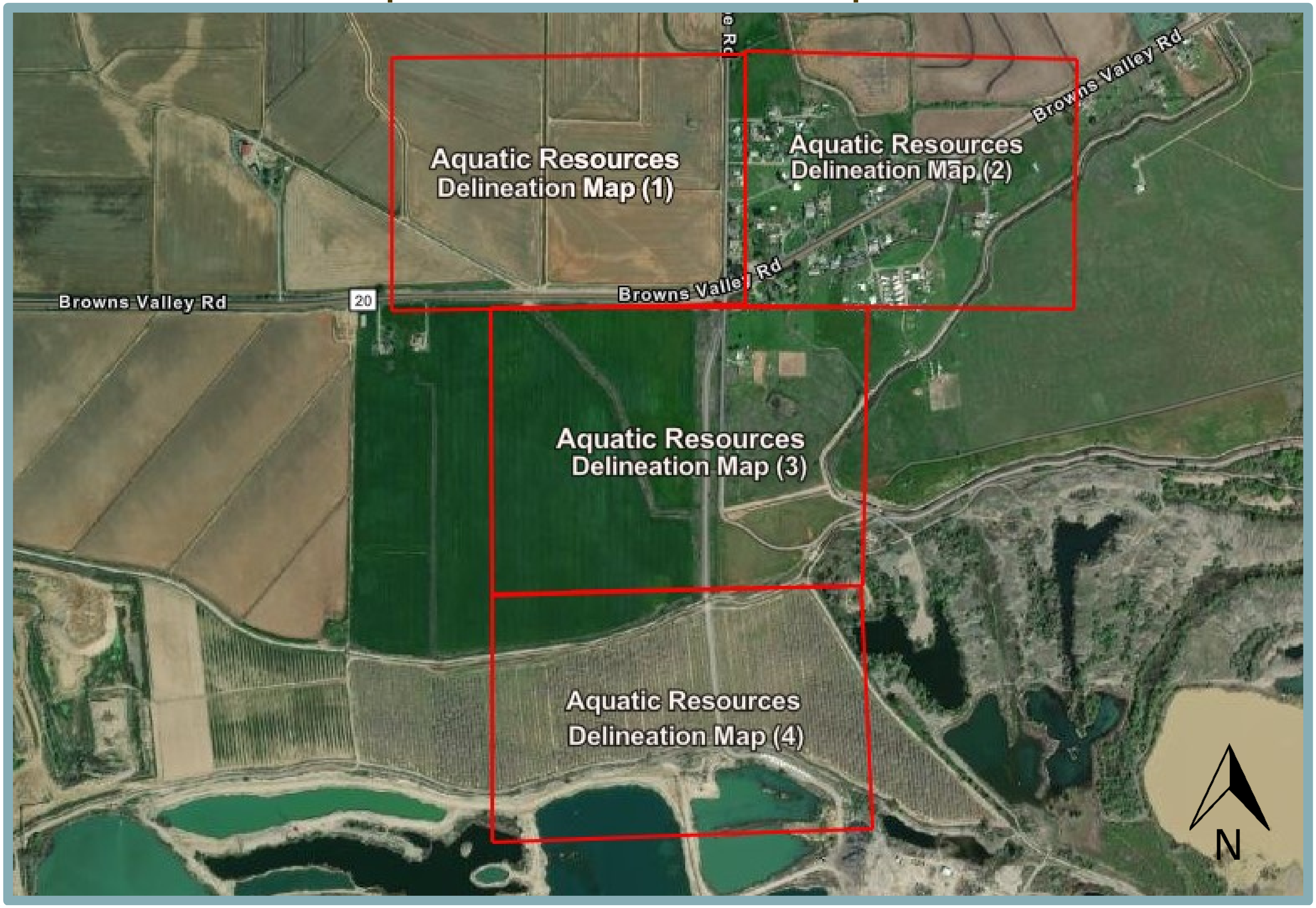

Figure 4.2-2
Aquatic Resources Delineation Map (1)

Source: ICF, Inc., 2021.

Figure 4.2-3
Aquatic Resources Delineation Map (2)

Source: ICF, Inc., 2021.

Figure 4.2-4
Aquatic Resources Delineation Map (3)

Source: ICF, Inc., 2021.

Figure 4.2-5
Aquatic Resources Delineation Map (4)

Source: ICF, Inc., 2021.

Roadside ditches appear to be excavated in uplands for the purpose of conveying surface runoff from rainfall and landscaping irrigation. The roadside ditches do not replace existing natural drainages, connect a natural drainage to a downstream tributary, intersect groundwater, or support wetland vegetation; therefore, the roadside ditches may not be considered waters of the U.S. or waters of the State.

Agricultural Ditch/Canal

As shown in Appendix B of the BRA (see Appendix D of this EIR), 0.086-acre of agricultural ditches/canals were documented in the project site, consisting of the Cordua Canal, Stahl Ditch, and an unnamed irrigation ditch. A fourth canal occurs to the south and adjacent to the project site, and parallels the project site's southern boundary. Agricultural ditches/canals receive water from the Yuba River at Daguerre Point Dam. Turn screws on Daguerre Point Dam are physically opened for water to be gravity-fed into six-foot diameter pipes that drain into diversion ditches. Due to the manual control on the turn screws, water does not readily flow to and from the Yuba River. Agricultural ditches/canals appear to be excavated in uplands for the purpose of conveying irrigation water. Agricultural ditches do not replace existing natural drainages, connect a natural drainage to a downstream tributary, intersect groundwater, or support wetland vegetation, and therefore, agricultural ditches may not be considered waters of the U.S. or waters of the State.

On-Site Special-Status Species

Special-status species are species that have been listed as threatened or endangered under the Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), or are of special concern to federal resource agencies, the State, or private conservation organizations. A species may be considered special-status due to declining populations, vulnerability to habitat change, or restricted distributions.

Several species of plants and animals within California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the State's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described below, State and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the State. A number of native plants and animals have been formally designated as threatened or endangered under State and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFW. In addition, the California Native Plant Society (CNPS) has developed a set of lists of native plants considered rare, threatened, or endangered. Collectively, these plants and animals are referred to as "special-status species."

Listed and Special-Status Plants

Based on queries of the resources listed above, 20 species of special-status plants have the potential to occur within the project site. Table 4.2-1 provides a list of all special-status plant species that are known to occur or have the potential to occur within the query area. The table provides information for each species, including common and scientific name, protected status, distribution of the species, habitat suitability of the site, and potential for each species to occur based on surveys of the project site and existing conditions within the site.

Special-status plants have not been previously documented in the project site, and none were observed during the April 14^{th} and July 8^{th} 2021 floristic surveys.

Listed and Special-Status Wildlife

Based on queries of the resources listed above, 19 special-status wildlife species and three special-status fish were determined to have the potential to occur within the query area. Table 4.2-2 provides a list of all special-status wildlife species that are known to occur or have the potential to occur within the query area. The table provides information for each species, including common and scientific name, protected status, habitat suitability of the site, and potential for each species to occur based on surveys of the project site and existing conditions within the site.

As noted in the Table 4.2-2, field surveys for the presence of special-status wildlife species have been conducted of the project site as part of the BRA analysis. After field surveys were completed, 11 of the 19 wildlife species and all of the fish species were determined to have no potential of occurring in the project site due to the project site having a lack of suitable habitat, or being outside the species' known range. Potential habitat is present in the project site for eight special-status wildlife species. The following set of criteria was used to determine the potential for special-status wildlife species to occur within the project site:

- Present: Species known to occur within the project site based on California Natural Diversity Database (CNDDB) records and/or observed within the project site during the biological surveys;
- High: Species known to occur within or in the vicinity of the project site (based on CNDDB records within five miles and/or based on professional expertise specific to the project site or species), and suitable habitat exists within the project site;
- Moderate Potential: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site;
- Low: Species known to occur in the vicinity of the project site and marginal habitat exists within the project site; or species is not known to occur in the vicinity of the project site, but suitable habitat exists in the project site; or
- None: Species is not known to occur within or in the vicinity of the project site and suitable habitat does not exist within the project site; or the species was surveyed for during the appropriate season with negative results; or the project site occurs outside the known elevation or geographic ranges.

Each of the eight species considered to have the potential to occur within the project site are discussed in further depth below.

Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp (*Branchinecta lynchi*) is federally listed as a threatened species. Vernal pool fairy shrimp inhabit vernal pools that form in depressions, usually in grassland habitats. Pools must remain inundated long enough for the species life cycle to be completed. Vernal pool fairy shrimp reach sexual maturity within a minimum of 18 days. Vernal pool fairy shrimp also occur in other wetlands that provide habitat similar to vernal pools, such as alkaline rain pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stock ponds, vernal swales, and some seasonal wetlands. Occupied wetlands range in size from as small as several square feet to more than 10 acres. Vernal pool fairy shrimp and other fairy shrimp have been observed in artificial depressions and drainages where water ponds for a sufficient duration. Examples of such areas include roadside ditches and ruts left behind by off-road vehicles or heavy equipment. Soil compaction from construction activity can sometimes create an artificial hardpan, or restrictive layer, which allows water to pond and form suitable habitat for vernal pool fairy shrimp.

Table 4.2-1
On-Site Special-Status Plant Species

Species	Status	Distribution	Habitat	Potential for Occurrence
Depauperate milk-vetch *(Astragalus pauperculus)*	-/-/4.3	Cascade Range, northern Sierra Nevada foothills, northern Sacramento Valley.	On stony flats and in shallow depressions, in vernally mesic areas of grasslands, chaparral, and oak woodlands; at 200–3,985 feet; blooms March–May.	**None** – Habitat not present; species not expected to occur.
Ferris' milk-vetch *(Astragalus tener var. ferrisiae)*	-/-/1B.1	Sacramento Valley.	Subalkaline flats and flood lands, usually on adobe soil; blooms March–June.	**None** – Habitat not present; species not expected to occur.
Mexican mosquito fern *(Azolla microphylla)*	-/-/4.2	Scattered locations in non-desert areas of California.	Ponds, still water of streams and canals; between 100–325 feet.	**None** – Habitat not present; species not expected to occur.
Valley brodiaea *(Brodiaea rosea subsp. Vallicola)*	-/-/4.2	North Sierra Nevada Foothills, eastern Sacramento Valley, northeastern San Joaquin Valley.	Grasslands; below 1,100 feet; blooms April–May.	**None** – Habitat not present; species not expected to occur.
Sierra Foothills brodiaea *(Brodiaea sierrae)*	-/-/4.3	Northern Sierra Nevada.	Open areas in chaparral, foothill woodland, generally on serpentine or gabbro; 590–3,100 feet; blooms May–August.	**None** – Habitat not present; species not expected to occur.
Brandegee's clarkia *(Clarkia biloba ssp. Brandegeeae)*	-/-/4.2	Northern Sierra Nevada foothills from Butte County to El Dorado County.	Chaparral, oak woodland; 970–2,900 feet; blooms May–July.	**None** – Habitat not present; species not expected to occur.
Red-stemmed cryptantha *(Cryptantha rostellata)*	-/-/4.2	Inner North Coast Ranges, Sacramento Valley, northern Sierra Nevada Foothills, northwestern Modoc Plateau.	Dry, rocky sites, grassland, oak woodland, chaparral; at 130–2,625 feet; blooms April–June.	**None** – Habitat not present; species not expected to occur.
Recurved larkspur *(Delphinium recurvatum)*	-/-/1B.2	San Joaquin Valley and interior valleys of the South Coast Ranges, from Contra Costa County to Kern County.	Subalkaline soils in annual grassland, saltbush scrub; at 100–1,970 feet; blooms March–June.	**None** – Habitat not present; species not expected to occur.
Dwarf downingia *(Downingia pusilla)*	-/-/2B.2	Central Valley from Tehama to Fresno Counties, northern San Francisco Bay Area, southern South Coast Ranges.	Vernal pools; below 490 feet; blooms March–May.	**None** – Potential habitat present; species not observed during 2021 surveys.

(Continued on next page)

Table 4.2-1
On-Site Special-Status Plant Species

Species	Status	Distribution	Habitat	Potential for Occurrence
Shield-bracted monkeyflower *(Erythranthe glaucescens)*	-/-/4.3	Southern Cascade Range foothills, northern Sierra Nevada foothills.	Serpentine seeps in valley and foothill grassland, chaparral, cismontane woodland, lower montane coniferous forest; 195–4,070 feet; blooms February- August.	**None** – Habitat not present; species not expected to occur.
Stinkbells *(Fritillaria agrestis)*	-/-/4.2	Outer North Coast Ranges, Sierra Nevada Foothills, Central Valley, central western California.	Grasslands, foothill woodlands, and open grassy areas in chaparral; between 30–5,100 feet; blooms March–June.	**None** – Potential habitat present; species not observed during 2021 surveys.
Ahart's dwarf rush *(Juncus leiospermus var. Ahartii)*	-/-/1B.2	East edge of Sacramento Valley from Butte County to Sacramento County.	Vernal pools; from 100–330 feet; blooms March–May.	**None** – Potential habitat present; species not observed during 2021 surveys.
Red Bluff dwarf rush *(Juncus leiospermus var. Leiospermus)*	-/-/1B.1	Interior North Coast Ranges, Cascade Range foothills, Modoc Plateau, Sacramento Valley, northern Sierra Nevada foothills.	Vernally mesic sites in chaparral, valley and foothill grassland, cismontane woodlands; 110–3,315 feet; blooms April–June.	**None** – Potential habitat present; species not observed during 2021 surveys.
Legenere *(Legenere limosa)*	-/-/1B.1	Southern North Coast Ranges, southern Sacramento Valley, northern San Joaquin Valley, San Francisco Bay Area.	Vernal pools; below 2,885 feet; blooms May–June.	**None** – Potential habitat present; species not observed during 2021 surveys.
Veiny monardella *(Monardella venosa)*	-/-/1B.1	Butte County.	Annual grasslands, on heavy clay soils; 165–1,310 feet; blooms June-July.	**None** – Habitat not present; species not expected to occur.
Ahart's paronychia *(Paronychia ahartii)*	-/-/1B.1	Northern Central Valley.	Vernal swales and margins of vernal pools, in clay soils; below 1,640 feet; blooms April–June.	**None** – Habitat not present; species not expected to occur.
Cedar Crest popcornflower *(Plagiobothrys glyptocarpus var. modestus)*	-/-/3	Interior North Coast Ranges (Lake Co.), northern Sierra Nevada foothills (Butte, Nevada Counties).	Vernal pools, moist places in grassland, woodland, forest; at 165–2,855 feet; blooms April–May.	**None** – Habitat not present; species not expected to occur.

(Continued on next page)

Table 4.2-1
On-Site Special-Status Plant Species

Species	Status	Distribution	Habitat	Potential for Occurrence
Hartweg's sunburst *(Pseudobahia bahiifolia)*	E/E/1B.1	Eastern San Joaquin Valley and adjacent foothills, formerly as far north as Yuba County.	Clay soils in grasslands, adjacent to vernal pools and streams; at 325–655 feet; blooms March–May.	**None –** Habitat not present; species not expected to occur.
Sanford's arrowhead *(Sagittaria sanfordii)*	-/-/1B.2	Scattered locations in Central Valley and Coast Ranges.	Freshwater marsh, sloughs, canals, and other slow-moving water habitats; below 2,130 feet; blooms May–October.	**None –** Habitat not present; species not expected to occur.
Brazilian watermeal *(Wolffia brasiliensis)*	-/-/2B.2.3	Northern Sacramento Valley.	Ponds, sloughs, ditches; below 330 feet.	**None –** Potential habitat present; species not observed during 2021 surveys.

Status codes:
Federal
– = No status
E = Listed as "endangered" under the federal Endangered Species Act.

State
– = No status
E = Listed as "endangered" under the California Endangered Species Act.

California Rare Plant Rank
1B = Rare, threatened, or endangered in California and elsewhere.
2B = Rare, threatened, or endangered in California, but more common elsewhere.
4 = Plants of limited distribution.
.1 = Seriously endangered in California
.2 = Fairly endangered in California
.3 = Not very endangered in California

Source: ICF, Inc. Biological Resources Assessment. July 2021.

Table 4.2-2
On-Site Special-Status Wildlife Species

Species	Status	Habitat	Potential for Occurrence
Conservancy fairy shrimp' *(Branchinecta Conservation)*	FE/-	Found in large turbid playa pools. Occurs from Butte and Tehama Counties to Ventura County.	**None –** Species known range does not overlap with the project site and seasonal wetlands in the project site do not represent typical habitat for the species.
Vernal pool fairy shrimp *(Branchinecta lynchi)*	FT/-	Found in Central Valley, central and south Coast Ranges from Tehama to Santa Barbara County; isolated populations also in Riverside County; common in vernal pools; also found in sandstone rock outcrop pools. The species has been observed reproducing as soon as 18 days and with an average of 40 days with continuous habitat ponding.	**Moderate –** Portions of the seasonal wetlands mapped in the project site may support sufficient hydrology (minimum ponding of three weeks) to support the species.
Vernal pool tadpole shrimp *(Lepidurus packardi)*	FE/-	Found from Shasta County south to Merced County; occurs in vernal pools and ephemeral stock ponds. The species has been observed reproducing as soon as 41 days and with an average of 54 days with continuous habitat ponding.	**None –** Based on the observed size, shape, and depths, the seasonal wetlands in the project site are shallow-ponding features and do not appear to have sufficient duration of ponding to support the species.
Valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*	FT/-	Streamside habitats below 500 feet throughout the Central Valley; occurs in riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant.	**Low –** An isolated elderberry shrub is located within the project site; however, exit holes were not observed on the shrub and the shrub is located in ruderal grassland (non-riparian). The closest CNDDB record for the species is 0.35-mile to east and riparian or woodland vegetation linking the two locations does not exist.
Western spadefoot toad *(Spea hammondi)i*	-/SSC	In winter, breeds in vernal pools and seasonal wetlands. Eggs are laid in clusters and usually hatch in three to four days, with the average larval period reported to last 58 days. Juveniles leave natal ponds shortly after metamorphosis from April to June. Spends summer in grassland habitat, in soil crevices, and rodent burrows. Species is found throughout the Central Valley and coastal lowlands from Shasta County in Northern California to Baja California in Mexico, at elevations ranging from sea level to 4,500 feet.	**None –** Based on the observed size, shape, and depths, the seasonal wetlands in the project site do not appear to have sufficient duration of ponding to support egg development and larval rearing.

(Continued on next page)

Table 4.2-2
On-Site Special-Status Wildlife Species

Species	Status	Habitat	Potential for Occurrence
California red-legged frog *(Rana draytonii)*	FT/SSC	Found along the coast and coastal mountain ranges of California from Mendocino to San Diego County and in the Sierra Nevada from Butte to Tuolumne County; occurs in permanent and semipermanent aquatic habitats, such as creeks and ponds, with emergent and submergent vegetation; uses upland areas for cover (burrows, logs, rocks, and crevices) and dispersal.	**None –** The project site lacks deep pools required for breeding. The project site is on the edge of the species' known range and CNDDB occurrences do not occur within five miles.
Western pond turtle *(Emys marmorata)*	-/SSC	Occurs throughout California west of the Sierra-Cascade crest; found from sea level to 6,000 feet; does not occur in desert regions except along the Mojave River and its tributaries; occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms.	**None –** Water levels in the agricultural and roadside ditches in the project site fluctuate seasonally; the project site lacks perennial aquatic habitat needed to support the species.
Giant garter snake *(Thamnophis gigas)*	FT/ST	Sloughs, canals, low-gradient streams, and freshwater marsh habitats with a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.	**None –** Agricultural and roadside ditches within the project site are intermittent during the summer months when the species is active. Although nearby perennial canals are present, confirmed populations of the species do not occur in the project vicinity and the project site is located within an area that was determined to have a low likelihood of species occurrence.
Swainson's hawk *(Buteo swainsoni)*	-/ST	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley; highest nesting densities occur near Davis and Woodland, Yolo County; nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields.	**High –** Suitable nest trees, grassland, and agricultural fields (foraging habitat) are present in the project site and vicinity.
Northern harrier *(Circus cyaneus)*	-/SSC	Nests on the ground among herbaceous vegetation, such as grasses or cattails; forages in grasslands, agricultural fields, and marshes. Breeding range encompasses much of lowland California; winter range expands to include the remaining lowland areas.	**Moderate –** Potential nesting habitat is present in the vicinity of the project site within adjacent grassland and species could forage in the project site; however, the species is not expected to nest within roadside habitats.

(Continued on next page)

Table 4.2-2
On-Site Special-Status Wildlife Species

Species	Status	Habitat	Potential for Occurrence
White-tailed kite *(Elanus leucurus)*	-/FP	Inhabits low-elevation, open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Forages in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches and nests in nearby uplands in valley/foothill riparian or other trees associated with compatible foraging habitat. Year-round range spans the Central Valley, Coast Ranges and coast, Sierra Nevada foothills, and Colorado River.	**Moderate –** Suitable nest trees, grassland, drainage ditches, and agricultural fields (foraging habitat) are present in the project site and vicinity.
California black rail (*Laterallus jamaicensis coturniculus)*	–/ST (FP)	Nests and forages in saline, freshwater, or brackish emergent marshes with gently grading slopes and upland refugia with vegetative cover beyond the high-water line. Year-round range includes Suisun Marsh, San Pablo Bay, Morro Bay, a few patches in the Sierra Nevada foothills, and portions of southern California; winter range expands to include San Francisco Bay and the Marin County coast.	**None –** The project site lacks emergent marshes that provide suitable habitat for the species.
Burrowing owl *(Athene cunicularia)*	-/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast; level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows.	**Low –** Potential nesting and foraging habitat is present in the project site; however, no burrowing owls or burrows suitable for nesting or refuge were observed in the project site during the 2021 field survey.
Western yellow-billed cuckoo *(Coccyzus americanus Occidetalis)*	FT/SE	Nests in valley, foothill, and desert riparian forest with densely foliaged deciduous trees and shrubs, especially willows; other associated vegetation includes cottonwood trees, blackberry, nettle, and wild grape. Potential habitat also occurs in valley marshland with willow riparian corridors, such as that found in the Llano Seco area of Butte County. Historically common throughout the Central Valley, the current known breeding populations of breeding western yellow-billed cuckoo in California include the Colorado River system in Southern California, the South Fork Kern River east of Bakersfield, and several disjunct locations in isolated	**None –** Suitable riparian habitat does not occur in the project site or vicinity.

(Continued on next page)

Table 4.2-2
On-Site Special-Status Wildlife Species

Species	Status	Habitat	Potential for Occurrence
		sites along the Sacramento River in Northern California, including Sutter Basin and Butte County.	
Bank swallow *(Riparia riparia)*	-/ST	Occurs along the Sacramento River from Tehama County to Sacramento County, along the Feather and lower American rivers, in the Owens Valley, and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County. Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam, along streams, coastal bluffs, and sand/gravel pits.	**None –** No suitable nesting habitat for this species is present in the project site.
Least Bell's vireo *(Vireo bellii pusillus)*	FE/SE	Nests and roosts in low riparian thickets of willows and shrubs, usually near water but sometimes along dry, intermittent streams; other associated vegetation includes cottonwood trees, blackberry, mulefat, and mesquite (in desert). Formerly a common and widespread summer resident throughout Sacramento and San Joaquin valleys and in the coastal valleys and foothills from Santa Clara County south, but its numbers have drastically declined, and the species has vanished from much of its California range.	**None –** The project site is located outside the species' current range and the project site does not provide suitable riparian habitat for the species.
Grasshopper sparrow *(Ammodramus Savannarum)*	-/SSC	Occurs in dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches. The species is more likely to be found in large tracts of habitat. Nests in slight depressions in dense grasslands.	**Low –** Grasslands in the project site lack preferred habitat conditions for the species; however, the project site provides marginal nesting and foraging habitat for the species.
Song sparrow ("Modesto" population)	-/SSC	Nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats, and infrequently in mature riparian forest and sparsely vegetated ditches and levees. Year-round range includes the Delta east of Suisun Marsh, the Sacramento Valley, and the northern San Joaquin Valley.	**Moderate –** Emergent vegetation within irrigation and roadside ditches in the project site represent suitable nesting habitat for the species.

(Continued on next page)

Table 4.2-2
On-Site Special-Status Wildlife Species

Species	Status	Habitat	Potential for Occurrence
Tricolored blackbird *(Agelaius tricolor)*	-/SP	Permanent resident in the Central Valley from Butte to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County; known to breed in low elevation grasslands in the foothills of Stanislaus, Calaveras, Amador, San Joaquin, Sacramento, El Dorado, and Placer counties; and at scattered locations in Lake, Sonoma, and Solano counties; rare nester in Siskiyou, Modoc, and Lassen counties. Species nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony.	**None –** The project site lacks suitable nesting habitat conditions (i.e., large areas of nesting substrate) for the species; however, species may forage within the project site if nesting nearby.
Central Valley steelhead *(Oncorhynchus mykiss)*	FT/-	Sacramento and San Joaquin Rivers and tributary Central Valley streams and rivers below impassable barriers; occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18 °C; habitat types are riffles, runs, and pools; adults spawn at head of riffles/tails of pools; rear young year-round for one to four years before emigrating to the ocean (Moyle 2002).	**None** – Suitable habitat is not present in the project site; Yuba River, in the vicinity of the project site, provides migration, spawning, and rearing habitat, and is designated as critical habitat for the species.
Central Valley springrun *(Chinook salmon Oncorhynchus Tshawytscha)*	FT/ST	Upper Sacramento River, Feather River, and Yuba River and several perennial tributaries of the Sacramento River (Battle, Butte, Clear, Deer, and Mill Creeks); has the same general habitat requirements as winter-run Chinook salmon; coldwater pools are needed for holding adults (Moyle 2002); adults and juveniles migrate in the lower Sacramento River and through the Delta.	**None –** Suitable habitat is not present in the project site; Yuba River, in the vicinity of the project site, provides migration, spawning, and rearing habitat, is designated as critical habitat for the species, and is considered essential fish habitat for Chinook salmon.

(Continued on next page)

Table 4.2-2
On-Site Special-Status Wildlife Species

Species	Status	Habitat	Potential for Occurrence
Delta smelt *(Hypomesus Transpacificus)*	FT/SE	Found primarily in the Sacramento–San Joaquin Estuary but has been found as far upstream as Knight's Landing on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay; occur in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of two to seven parts per thousand (Moyle 2002).	**None** – Suitable habitat is not present in the project site; Yuba River in the vicinity of the project site is outside the known range of the species. Designated critical habitat for this species does not include the Yuba River.

Status codes: CFP – CDFW Fully Protected Species
FE – Federal Endangered
FT – Federal Threatened
FP – Federally Protected
ST – State Threatened
SE – State Endangered
SP – State Protected
SSC – CDFW Species of Special Concern

Source: ICF, Inc. Biological Resources Assessment. July 2021

The proposed project is within the current range of vernal pool fairy shrimp. However, based on the USFWS Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, the project site does not lie within a core area and does not overlap with designated critical habitat for vernal pool fairy shrimp.[5] While surveys for vernal pool fairy shrimp were not conducted as part of ICF's analysis, a habitat assessment of the project site was completed on March 24, 2021, where potential habitat for vernal pool fairy shrimp was observed in the southern half of the project site (see Figure 4.2-6).

The closest CNDDB occurrence for vernal pool fairy shrimp is approximately 1.6 miles southeast of the project site. In the southern portion of the project site, some of the seasonal wetlands included small, pooled sections that could provide suitable habitat for vernal pool fairy shrimp based on the depth of ponding observed during the field survey. Therefore, the potential exists for vernal pool fairy shrimp to occur on-site because portions of the seasonal wetlands mapped in the project site may sustain sufficient hydrology to support the species. However, because potential on-site habitat for the vernal pool fairy shrimp occurs in the southern portion of the project site, the habitat would be more than 230 feet from the disturbance area for the proposed project.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is federally listed as a threatened species. Valley elderberry longhorn beetle habitat includes both riparian and non-riparian areas where elderberry shrubs are present. In riparian settings, elderberry shrubs are most common where roots can reach the water table and the shrubs are not inundated for long periods. In non-riparian areas, elderberry occurs in oak woodland and annual grasslands. Valley elderberry longhorn beetle emergence, mating, and egg-laying occurs from March to July, in conjunction with the elderberry flowering season. Adult beetles lay eggs on leaves or stem junctions; after hatching, larvae bore into the elderberry stem to pupate and emerge as adults through an exit hole approximately one month later. Presence of an exit hole is the only exterior evidence of the beetle's use of an elderberry shrub.

One isolated blue elderberry (*Sambucus mexicana*) shrub is present approximately 25 feet east of the previously constructed haul road at the south end of the project site just north of Cordua Canal (Figure 4.2-6). The shrub is located within ruderal grassland that was formerly agricultural lands and does not support riparian vegetation.

Based on the USFWS 2017 Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Framework),[6] occupancy of valley elderberry longhorn beetle within non-riparian habitats is assessed based on several factors including presence of exit holes, proximity to known occupied sites and riparian areas, and site locality in relation to historic riparian corridors. The presence of exit holes in a shrub increases the likelihood that the shrub is occupied by valley elderberry longhorn beetles; however, a lack of exit holes does not preclude occupancy. Furthermore, the Framework considers a shrub to be fully avoided if a buffer of 50 meters (165 feet) is observed between the shrub and project impacts.

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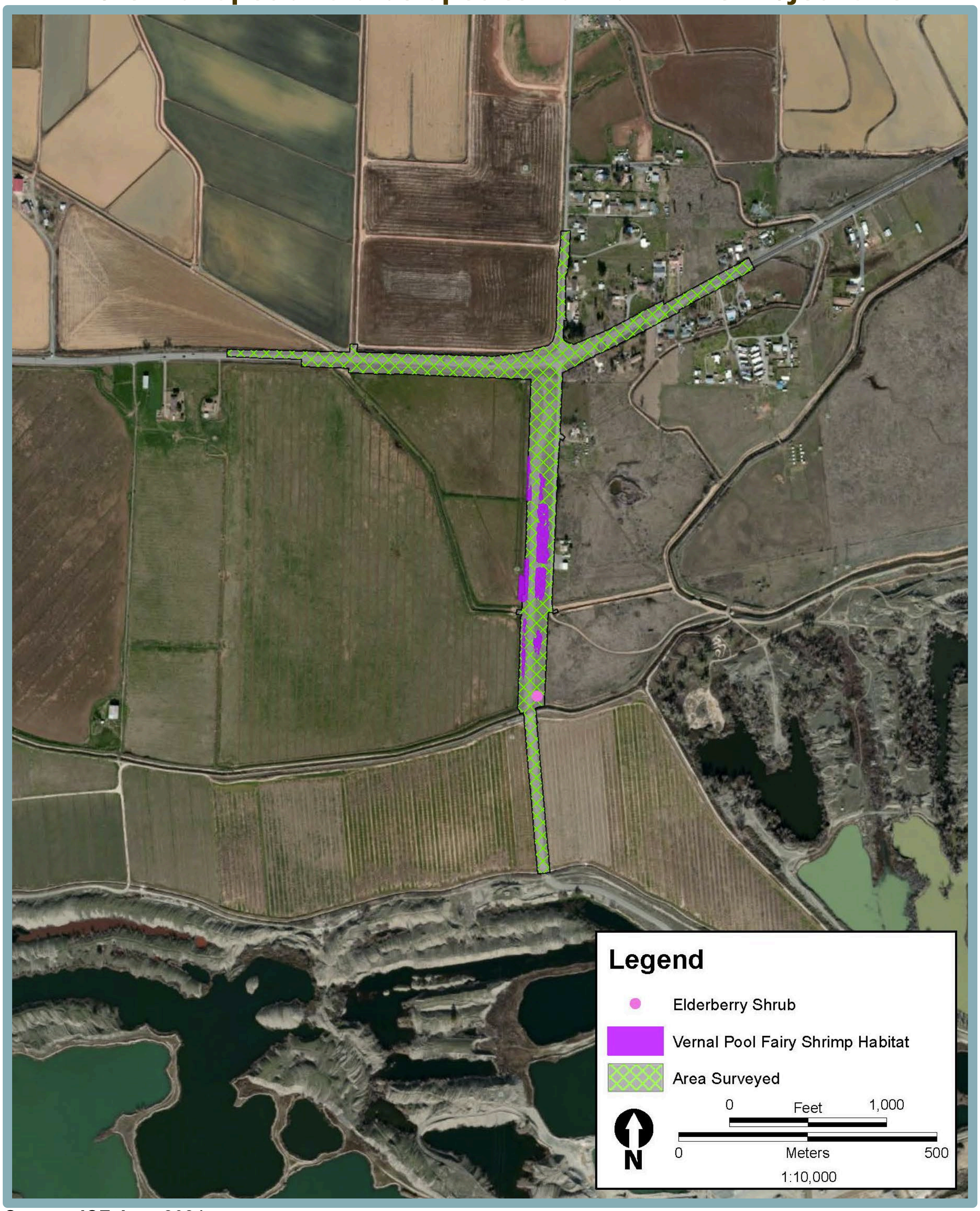
5 U.S. Fish and Wildlife Service. *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon*. Updated November 28, 2017.

6 U.S. Fish and Wildlife Service. *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle*. May 2017.

Figure 4.2-6
Potential Special-Status Species Habitat in the Project Site



Source: ICF, Inc., 2021.

The elderberry shrub within the project site was surveyed for exit holes on March 24, 2021. Exit holes were not identified during the survey. Based on the lack of exit holes, additional information was assessed to determine likelihood of occupancy by valley elderberry longhorn beetle. The closest known occupied habitat is along the Yuba River located 0.3-mile east of the project site.

The closest riparian habitat is 750 feet to the east, and land uses between the shrub and the closest riparian habitat consists of orchard and fallow agricultural lands. The elderberry shrub present within the project site is not a remnant from a historic riparian corridor but is a recent sprout within fallowed agricultural lands likely a result of birds dispersing elderberry seeds.

Valley elderberry longhorn beetles are poor dispersers and require contiguous or nearly contiguous vegetated habitat to successfully disperse. Because the species physical dispersal capability is limited, the lack of a nearby riparian dispersal corridor decreases the likelihood of successful colonization of unoccupied habitat. Therefore, the lack of dispersing capability and the distance between the elderberry shrub in the project site and the closest suitable riparian habitat make the potential of the species to colonize the onsite elderberry shrub very low.

Nesting Birds and Raptors

Avian species forage and nest in a variety of habitats throughout the County. The trees and annual grassland within the project site provide nesting and foraging habitat for protected birds. Special-status birds identified to potentially occur within the project site include Swainson's hawk, northern harrier (*Circus hudsonius*), white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), grasshopper sparrow (*Ammodramus savannarum*), and Modesto song sparrow (*M.m. mailliardi*). Additionally, cliff swallows (*Petrochelidon pyrrhonota*) barn swallows (*Hirundo rustica*), and black phoebe (*Sayornis nigricans*), which are protected under the Federal Migratory Bird Treaty Act (MBTA), have the potential to occur within the project site. Further discussion of the potential for each species to occur within the project site is provided below.

Swainson's Hawk, Northern Harrier, and White-Tailed Kite

Swainson's hawk is a State listed threatened species. In the Central Valley, nests are constructed in riparian woodlands, isolated trees, trees along roadsides, bordering fields, along the edges of remnant oak woodlands, and in small groves. Nests are usually constructed as high as possible in the tree, which provides good visibility and nest protection. Swainson's hawks most commonly nest in large native trees such as valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii*), Hinds' walnut (*Juglans hindsii*), and willows (*Salix* spp.), and in non-native trees, such as eucalyptus (*Eucalyptus* spp.). Swainson's hawks are highly responsive to farming and management activities that expose and concentrate prey, such as cultivating, harvesting, and disking. During farming activities, particularly late in the season, Swainson's hawks will hunt behind tractors searching for exposed prey. Other activities, such as flood irrigation, also expose prey and attract foraging Swainson's hawks. Swainson's hawks arrive on their breeding grounds in the Central Valley between March and April, and begin nest-building and egg-laying shortly after arrival. Post-breeding foraging flocks of up to 100 birds often congregate on recently mowed or disked fields such as alfalfa or other row crops. Migration back to the wintering grounds begins mid-August and most individuals leave California by October.

Northern harrier is a State species of special concern. Breeding and foraging habitat for northern harrier includes treeless habitats with adequate prey, cover, and perches (such as fence posts). Suitable habitat includes freshwater marshes, brackish and saltwater marshes, wet meadows, margins of lakes, rivers, and streams, grasslands, weed fields, croplands, sagebrush flats, and desert sinks. Nests are built of sticks or grasses and typically placed on the ground in wet areas of tall, dense vegetation. The species tends to forage over vegetated, often wet fields more than in grazed or harvested fields, for rodents, passerines, reptiles, and frogs. Northern harrier is a year-round resident in California. Breeding occurs from April to September, with peak in June through July.

White-tailed kite is a State species of special concern and is designated as fully protected under California Fish and Game Code (CFGC) Section 3511. White-tailed kites generally inhabit low-elevation grassland, savannah, oak woodland, wetlands, agricultural, and riparian habitats. Some large shrubs or trees are required for nesting and for communal roosting sites. Nest trees range from small, isolated shrubs and trees to trees in relatively large stands. White-tailed kites make nests of loosely piled sticks and twigs, lined with grass and straw, near the top of dense oaks, willows, and other tree stands. The breeding season lasts from February through October and peaks between May and August. White-tailed kite forage in undisturbed, open grassland, meadows, farmland, and emergent wetlands.

Focused nest surveys for Swainson's hawk, northern harrier, and white-tailed kite were not conducted as part of the BRA. Trees within and in the vicinity of the project site provide potential nesting habitat for Swainson's hawk and white-tailed kite. Grassland in the vicinity of the project site provides nesting habitat for northern harrier. CNDDB records for northern harrier or white-tailed kite do not exist within five miles of the project site, and the closest CNDDB occurrence for Swainson's hawk is 2.5 miles southeast of the project site. Additionally, Swainson's hawks, northern harriers, and white-tailed kites were not observed in the project site during the wildlife surveys conducted in March 2021 by ICF, Inc. However, the potential occurs for Swainson's hawk, northern harrier, white-tailed kite to occur on-site because suitable nest trees, grassland, drainage ditches, and agricultural fields (foraging habitat) are present in the project site and vicinity.

Burrowing Owl

The burrowing owl is not listed pursuant to either CESA or FESA; however, the burrowing owl is designated as a federal Bird of Conservation Concern and a California Species of Special Concern. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. The burrowing owl can also inhabit developed areas such as golf courses, cemeteries, road sides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds. The burrowing owl species typically uses burrows created by other mammals, most notably the California ground squirrel, but may also use manmade structures such as cement culverts or pipes, cement, asphalt, wood debris piles, or openings beneath cement or asphalt pavement. The breeding season typically occurs between February 1 and August 31.

Due to the presence of grassland habitat within the project site, portions of the site are considered suitable habitat for the species. During the wildlife survey, the site was inspected for burrowing owls, but did not identify any such features or individual burrowing owls. It should be noted that the past and on-going disturbance of grassland areas due to agriculture within the project site reduces the suitability of the site as habitat for the species. Nevertheless, the project site includes potential nesting and foraging habitat for the burrowing owl; therefore, the species has low potential to occur within the project site.

Grasshopper Sparrow

The grasshopper sparrow is a State species of special concern. The species occurs in dry, dense grasslands, especially in grasslands which consist of a variety of grasses, tall forbs, and scattered shrubs for singing perches. The grasshopper sparrow is more likely to be found in large tracts of habitat. Nests are built in slight depressions in the dense grassland habitat of the species. Grasshopper sparrow occur year-round in California, and breeding occurs from late-April to July.

Focused nest surveys for the grasshopper sparrow were not conducted. Within the project site, the grasslands present provide foraging habitat for the species; however, the project site lacks the preferred habitat conditions for the grasshopper sparrow. Therefore, the species has a low potential to occur within the project site.

Modesto Song Sparrow

Modesto song sparrow is a State species of special concern. Little is known about the specific habitat requirements for the Modesto song sparrow. However, emergent marsh and riparian scrub provide breeding habitat. The species has also been observed to nest in valley oak riparian forests with a dense blackberry understory, vegetated irrigation canals and levees, and recently planted valley oak restoration sites. Nests are commonly concealed by overhead vegetation and placed on the ground or low in vegetation. Song sparrows forage on bare ground and leaf litter under and around bushes for seeds and insects. Modesto song sparrow occurs year-round in California, and breeding occurs from mid-March to early August.

Focused nest surveys for the Modesto song sparrow were not conducted. The closest CNDDB occurrence for Modesto song sparrow is approximately 6.5 miles southwest of the project site in Marysville; however, the record is from 1915 and notes the amount of suitable habitat has been reduced due to development. Potential nesting habitat for Modesto song sparrow occurs along vegetated irrigation ditches within the project site. Modesto song sparrows were not observed during the wildlife surveys conducted in March 2021. However, the species has a moderate potential to occur within the project site because emergent vegetation within irrigation and roadside ditches in the project site represent suitable nesting habitat for the species.

Cliff Swallows, Barn Swallows, and Black Phoebe

Cliff swallows, barn swallows, and black phoebe are protected species under the MBTA. Cliff swallows and barn swallows are species that frequently build mud nests on the undersides of artificial structures such as bridges. Swallows winter in South America and return to California to breed during February. Swallows nest from April to August and migrate south during September and October. Black phoebes also build mud nests on, near, or over water on cliff faces, on walls of old buildings, under bridges, under eaves, and on other natural and artificial sheltered locations near water. Black phoebes breed from March to August. Based on the March 2021 wildlife survey, the bridge over the Cordua Canal provides nesting habitat for non-special-status birds including cliff swallows and black phoebe. Remnant cliff swallow nests were observed on the underside of the bridge. Therefore, occupied nests and eggs of cliff swallows, barn swallows, and black phoebe have a high potential for occurrence within the project site.

4.2.3 REGULATORY CONTEXT

A number of federal, State, and local policies provide the regulatory framework that guides the protection of biological resources. The following discussion summarizes those laws that are most relevant to biological resources in the vicinity of the project site.

Federal Regulations

The following are the Federal environmental laws and policies relevant to biological resources:

Federal Endangered Species Act

Under the FESA, the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 USC Section 1533[c]). Two federal agencies oversee the FESA: the USFWS has jurisdiction over plants, wildlife, and resident fish, while the National Marine Fisheries Service (NMFS) has jurisdiction over anadromous fish and marine fish and mammals. Section 7 of the FESA mandates that federal agencies consult with the USFWS and NMFS to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species.

Section 10 requires the issuance of an "incidental take" permit before any public or private action may be taken that could take an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan (HCP) that would offset the take of individuals that may occur, incidental to implementation of a proposed project, by providing for the protection of the affected species.

Pursuant to the requirements of the FESA, a federal agency reviewing a project within the jurisdiction of the agency must determine whether any federally listed threatened or endangered species may be present on-site and whether the proposed project will have a potentially significant impact on such species. In addition, the agency is required to determine whether the proposed action is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC Section 1536[3], [4]).

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal MBTA prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

Waters of the U.S. and the Clean Water Act

The U.S. Army Corps of Engineers (USACE) regulates "Waters of the U.S." under Section 404 of the Clean Water Act (CWA). Waters of the U.S. are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (51 Fed. Reg. 41250 (Nov. 13, 1986), as amended by 58 Fed. Reg. 45036 (Aug. 25, 1993))). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the Corps of Engineers Wetlands Delineation Manual, are identified by the presence of hydrophytic vegetation, hydric soils, and wetland hydrology.

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR Section 328.3[c][16]). Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" (i.e., non-wetland waters) and are often characterized by an ordinary high-water mark (OHWM). The OHWM is defined by the USACE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[c][7]). Other waters, for example, generally include lakes, rivers, and streams.

In January 2020, the U.S. Environmental Protection Agency (USEPA) and USACE signed an agreement on a new definition of waters of the U.S. known as the Navigable Waters Protection Rule (NWPR). In the NWPR, roadside ditches and agricultural ditches are both listed as excluded features. However, following a recent U.S. District Court decision (*Pascua Yaqui Tribe v. U.S. Environmental Protection Agency,* Case No. CV-20-00266-TUC-RM (D. Ariz. 2021)), the NWPR was vacated. Accordingly, the USEPA and USACE have halted implementation of the NWPR and are currently interpreting "waters of the United States" consistent with the pre-2015 regulations set forth above until a new definition of waters of the U.S. can be adopted.

The placement of fill material into waters of the U.S. generally requires an individual or nationwide permit from the USACE under Section 404 of the CWA.

State Regulations

The following are the State environmental laws and policies relevant to biological resources:

California Department of Fish and Wildlife

CDFW administers a number of laws and programs designed to protect fish and wildlife resources under the CFGC, such as CESA (CFGC Section 2050, et seq.), Fully Protected Species (CFGC Section 3511) and the Lake or Streambed Alteration Agreement Program (CFGC Sections 1600 to 1616). Such regulations are summarized in the following sections.

California Endangered Species Act

The State of California enacted CESA in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires State agencies to consult with CDFW when preparing CEQA documents to ensure that the State lead agency actions do not jeopardize the existence of listed species. CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that "overriding considerations" exist; however, the agencies are prohibited from approving projects that would result in the extinction of a listed species.

CESA prohibits the taking of State-listed endangered or threatened plant and wildlife species. CDFW exercises authority over mitigation projects involving State-listed species, including those resulting from CEQA mitigation requirements. CDFW may authorize taking if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. CDFW requires preparation of mitigation plans in accordance with published guidelines.

Fish and Game Code Section 3505

Birds of prey are protected in California under provisions of the CFGC, Section 3503.5, (1992), which states, "it is unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by CDFW.

Lake or Streambed Alteration Program

The CDFW is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the CFGC, Section 1602, requires notification to CDFW of any proposed activity that may substantially modify a river, stream, or lake. Notification is required by any person, business, state or local government agency, or public utility that proposes an activity that will:

- Substantially divert or obstruct the natural flow of any river, stream or lake;
- Substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

For the purposes of Section 1602, rivers, streams, and lakes must flow at least intermittently through a bed or channel. If notification is required and CDFW believes the proposed activity is likely to result in adverse harm to the natural environment, the CDFW will require that the parties enter into a Lake or Streambed Alteration Agreement.

CDFW Species of Special Concern

In addition to formal listings under FESA and CESA, plant and wildlife species receive additional consideration during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern" developed by CDFW. Species whose numbers, reproductive success, or habitat may be threatened are tracked by CDFW in California.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. Currently 64 species, subspecies, and varieties of plants are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations, emergencies, and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations.

Regional Water Quality Control Board

Any action requiring a CWA Section 404 permit, or a Rivers and Harbors Act Section 10 permit, must also obtain a CWA Section 401 Water Quality Certification. The State of California Water Quality Certification (WQC) Program was formally initiated by the State Water Resources Control Board (SWRCB) in 1990 under the requirements stipulated by Section 401 of the federal CWA. Although the CWA is a federal law, Section 401 of the CWA recognizes that states have the primary authority and responsibility for setting water quality standards. In California, under Section 401, the State and Regional Water Quality Control Boards (RWQCBs) are the authorities that certify that issuance of a federal license or permit does not violate California's water quality standards (i.e., that they do not violate Porter-Cologne (defined below) and the Water Code). The WQC Program currently issues the WQC for discharges requiring USACE permits for fill and dredge discharges within waters of the U.S., and also implements the State's wetland protection and hydromodification regulation program under the Porter-Cologne Water Quality Control Act.

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 et seq.) is California's statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the SWRCB and RWQCBs under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce WDRs, National Pollution Discharge Elimination System (NPDES) permits, Section 401 WQC, or other approvals.

On April 2, 2019, the SWRCB adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California Plan. The Procedures consist of four major elements: (1) a wetland definition; (2) a framework for determining if a feature that meets the wetland definition is a water of the State; (3) wetland delineation procedures; and (4) procedures for the submittal, review, and approval of applications for WQCs and Waste Discharge Requirements (WDRs) for dredge or fill activities. The State Office of Administrative Law approved the Procedures on August 28, 2019, and the Procedures became effective May 28, 2020.

Under the Procedures and the State Water Code (Water Code Section 13050[e]), "waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Unless excluded by the Procedures, any activity that could result in discharge of dredged or fill material to waters of the State, which includes waters of the U.S. and non-federal waters of the State, requires filing of an application under the Procedures.

Local Regulations

The following are the local environmental laws and policies relevant to biological resources:

Yuba County General Plan

The Yuba County General Plan's Natural Resource Element describes the following goals and policies that pertain to the proposed project:

Natural Resource Element

Goal NR5 — Protect and restore habitat for special-status species that have the potential to occur in Yuba County.

Policy NR5.1 — New developments that could adversely affect special-status species habitat shall conduct a biological resources assessment and identify design solutions that avoid such adverse effects. If, after examining all feasible means to avoid impacts to special-status species habitat through project design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species, including pre-construction surveys conducted according to applicable standards and protocols, where necessary.

Policy NR5.4 New developments shall be located and designed to preserve and incorporate existing native vegetation to the maximum extent feasible. Fire safety standards may override consideration of retaining existing vegetation in certain circumstances.

Policy NR5.7 New developments and public investments near Yuba County's streams and rivers shall be designed to avoid tree removal, erosion, or other modifications that would adversely affect salmonid habitat.

Policy NR5.8 New private developments adjacent to riparian areas shall provide a buffer designed and maintained to preserve existing wildlife habitat; provide habitat conditions favorable to native local wildlife; restrict activities that may adversely affect wildlife habitat quality; and restore degraded habitat, where feasible.

Policy NR5.8 New developments shall be designed to avoid the loss of jurisdictional wetlands. If loss is unavoidable, the County will require applicants to mitigate the loss on a "no net loss" basis through a combination of avoidance, minimization, restoration, and/or constructed wetlands, in accordance with federal and state law.

Policy NR5.13 New developments that could adversely affect wildlife movement corridors shall conduct a biological assessment and avoid placing any temporary or permanent barriers within such corridors, if they are determined to exist on-site. Avoiding barriers to wildlife movement may be accomplished at the project or community plan level.

Policy NR5.15 Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve unincorporated County development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest extent feasible.

Goal NR10 Preserve the County's trees and other vegetation that provide aesthetic and habitat benefits.

Policy NR10.1 Building placement, grading, and circulation should be planned to retain as much existing native vegetation as feasible, with a priority on preserving existing oak trees that have a diameter at breast height (dbh) of 6 inches or greater and all other trees that have a dbh of 30 inches or greater. The County's policies and standards for fire safety may override consideration of retaining existing vegetation in certain circumstances.

Yuba County Code of Ordinances

Section 11.44.060 of the Yuba County Code of Ordinances provides protection for natural and cultural resources. The provisions of the Chapter which are directly applicable to the proposed project are reproduced below:

Section 11.44.060 – Protection of natural and cultural resources.

(a) *Resource protection*. Sensitive habitat areas, archeological resources, and designated and potential historic resources shall be shown and identified on all tentative maps, and on any improvement and landscape plans. Such features shall be preserved as required by the Development Review Committee or Planning Commission as part of tentative map approval.

(b) *Existing trees.*

(1) All existing oak trees that have a dbh of six inches or greater and all other trees that have a dbh of 30 inches or greater shall be shown on the tentative map or tentative parcel map with a notation as to the size, species and dripline. All trees proposed for removal shall be clearly designated.
(2) Existing trees may be required to be preserved. In cases in which tree preservation is required, all grading and necessary tree trimming shall be conducted under the supervision of a certified arborist or registered forester reviewed and approved by the Community Development and Services Agency.
(3) Trees within a proposed public right-of-way shall be removed only for good cause to protect the public safety or to allow the installation of adequate public facilities as may be approved by the Public Works Director

4.2.4 IMPACTS AND MITIGATION MEASURES

The following section describes the standards of significance and methodology used to analyze and determine the proposed project's potential impacts related to biological resources. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the County's General Plan, and professional judgment, a significant impact would occur if the proposed project would result in the following:

- 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 CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Issues Dismissed in the Initial Study

The project site is located in an area that does not have an approved HCP, Natural Community Conservation Plan, or local, regional, or State habitat conservation plan. Therefore, the following impact was dismissed in the Initial Study (Appendix A):

- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan (NCCP), or other approved local, regional, or State habitat conservation plan.

Accordingly, the above impact is not analyzed further in this EIR.

Method of Analysis

The information contained in this Chapter is primarily based on the BRA prepared by ICF, Inc. The BRA was conducted by evaluating the potential changes to existing biological communities based on the anticipated project construction activities listed below that could cause direct and indirect impacts of varying degrees on sensitive biological resources present in the project site:

- Vegetation removal;
- Grading, excavating, compacting, and fill placement during construction;
- Temporary stockpiling and side-casting of soil, construction materials, or other construction wastes; and
- Runoff into sensitive biological resource areas (e.g., wetlands and streams) of herbicides, fertilizers, diesel fuel, gasoline, oil, raw concrete, or other toxic materials used for project construction and maintenance.

A list of special-status species with potential to occur within the project site was developed by reviewing the following sources:

- The 2006 EIR which was previously prepared for the proposed project;
- CNDDB plant records query of the Browns Valley and eight surrounding USGS 7.5-minute quadrangles (CDFW, 2021);
- CNDDB animal species records within five miles of the project site (CDFW, 2021);
- CNPS 8th Edition Inventory of Rare and Endangered Plants of California query of the Browns Valley and eight surrounding U.S. Geological Survey (USGS) 7.5-minute quadrangles (2021);
- USFWS Information for Planning and Consultation online system list of federally threatened or endangered species for the project site (2021);
- Caltrans' Initial Study with Proposed Mitigated Negative Declaration prepared for the Loma Rica Road to Spring Valley Road Widening and Rehabilitation Project (2016);
- Foothill Associates' State Route 20/Kibbe Road Intersection and Haul Road Project Biological Resources Assessment prepared for Teichert Aggregates (2004); and
- Aerial photographs of the project site (Google Earth, 2021).

Field surveys were conducted by ICF botanists and wildlife biologists on March 24, 2021, March 30, 2021, April 14, 2021, and July 8, 2021. During the surveys, biologists walked the project site to document existing conditions. The purpose of the surveys was to:

- Characterize land cover types and their associated wildlife habitat uses.

- Assess the project site for its potential to contain sensitive biological resources (i.e., sensitive natural communities and aquatic resources).
- Conduct spring and summer floristic surveys to document presence or absence of special-status plants.
- Conduct an aquatic resource delineation to document wetlands and non-wetland waters that may be subject to federal and state regulation.
- Provide biological resource information to Teichert for their consideration in project design and planning and assist in developing a regulatory strategy.

Floristic Survey

During the April 14th and July 8th 2021 field surveys, ICF botanists conducted a floristic survey to determine if special-status plants were present at the project site. Surveys were based on CDFW's Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities. The surveys were floristic, with every species encountered identified to the lowest taxonomic level necessary to determine whether it is a special-status species. Botanists traversed the project site on foot, using meandering parallel transects spaced at a distance that enabled visibility of all plant species present. The floristic surveys corresponded to the identification periods for special-status plants that could occur in the project region. A list of all plants observed in the project site was compiled and included in Appendix D of the BRA (see Appendix D of this EIR).

Wildlife Survey

During the March 24th 2021 survey, ICF wildlife biologists, conducted reconnaissance-level field surveys of the project site to assess whether suitable habitat exists for special-status wildlife species. Protocol-level surveys were not conducted to support the analysis, as they were deemed unnecessary. A list of all wildlife observed in the project site during the March field survey was compiled and is contained in Appendix D of the BRA (see Appendix D of this EIR).

Aquatic Resources Delineation

On May 6, 2021, ICF botanists conducted an aquatic resources delineation to identify the location and extent of potential aquatic resources, including wetlands and non-wetland waters, in the project site (see Figure 4.2-1 through Figure 4.2-5). The delineation was conducted in accordance with the Corps of Engineers Wetlands Delineation Manual, 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, and A Field Guide to the Identification of the Ordinary High-Water Mark in the Arid West Region of the Western United States: A Determination Manual. Detailed delineation methods are described in the Aquatic Resources Delineation Report prepared for the proposed project (see Appendix D). It is noted that the delineations prepared for the project site have not yet been verified by the USACE.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts related to biological resources is based on implementation of the proposed project in comparison to existing conditions and the standards of significance presented above:

4.2-1 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 CDFW or

USFWS. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

Currently, the project site is developed with a previously constructed private haul road, and the existing SR 20/Kibbe Road intersection. The land surrounding the site includes walnut orchards, disturbed annual grasslands, fallow agricultural land, and roadside ditches.

As part of the BRA, a search of the CNDDB and a series of field surveys were conducted for the proposed project to identify if any special-status species have the potential to exist within the project site. Based on the results of the BRA, 20 special-status plant species and 19 special-status wildlife species are known to occur within the project region. The potential for the special-status species identified by ICF to occur on the project site is discussed in further detail below.

Special-Status Plants

Based on the results of the BRA, a total of 20 special-status plant species have been documented to occur within the project region. Habitat requirements for the species include, but are not limited to, grasslands, dry rocky sites, stony flats, foothill woodlands, and freshwater marsh. As such, the project site does not include the habitat requirements for many of the species that have been documented to occur within the project region. For the species that have potential habitat present within the project site, none were observed during the field surveys conducted by ICF. Therefore, of the 20 special-status plants recorded in the query area, none have the potential to occur within the project site. Additionally, loss of annual grassland vegetation in the project site is not considered a significant impact from a botanical standpoint because the habitat is common and is not considered a sensitive natural community. Further discussion of special-status plants is not included within this EIR.

Special-Status Wildlife

Based on the results of the BRA, a total of 19 special-status wildlife species have been documented to occur within the project region. Habitat requirements for the species include, but are not limited to, standing and flowing waters, wetlands, grassland, and grain fields.

Based on the habitat requirements of the species identified in the CNDDB and results of the field surveys conducted by ICF, 11 of the 19 wildlife species and all of the fish species were determined to have no potential of occurring in the project site. Potential habitat is present in the project site for eight special-status wildlife species, which are discussed in further detail below.

Vernal Pool Fairy Shrimp

Potential direct effects on vernal pool fairy shrimp would include the direct loss of suitable habitat from the grading and filling of seasonal wetlands in the project site. The nearest ground disturbance caused by the proposed project would be more than 230 feet north of the suitable vernal pool fairy shrimp habitat in the project site, which exists along the previously constructed haul road (see Figure 4.2-6). Therefore, direct impacts on seasonal wetlands that provide potential habitat for vernal pool fairy shrimp would be avoided because grading or filling of suitable vernal pool fairy shrimp habitat would not occur.

Potential indirect effects on vernal pool fairy shrimp include changes in hydrology and degradation of seasonal wetlands due to water quality resulting from construction within the vicinity of suitable vernal pool fairy shrimp habitat. Vernal pool habitat would be considered indirectly impacted where it is damaged by a loss of watershed, human intrusion, introduced species, and pollution caused by the project. If the extent of these effects cannot be determined definitively, habitat within 250 feet of proposed disturbance may be assumed to be indirectly affected. Proposed ground disturbance would include minor surface disturbance to the existing roadbed just north of the end of the existing pavement. Ground disturbing activities would not substantially change the topography and would not require excavation that has a potential to disrupt any restrictive soil layers that support local hydrology. Therefore, the hydrology supporting the nearest suitable vernal pool fairy shrimp habitat would not likely change such that it no longer has a potential to support vernal pool fairy shrimp, if present. However, the proposed project could result in indirect effects on several seasonal wetlands considered habitat for vernal pool fairy shrimp due to fuel or oil leaks or spills that result in discharge to nearby seasonal wetlands that could result in injury to or mortality of vernal pool fairy shrimp and degradation of habitat. Although surveys for vernal pool fairy shrimp were not conducted for the proposed project, habitat in the project site that supports suitable habitat characteristics is presumed to be occupied by vernal pool fairy shrimp as a conservative approach for the analysis within this EIR. If a Clean Water Act Section 404 permit is required for the project, information regarding potential indirect effects would be provided to the USACE for purposes of consultation with the USFWS pursuant to Section 7 of the FESA.

Although ground disturbance in the vicinity of potential vernal pool fairy shrimp habitat along the previously constructed private haul road would occur more than 200 feet away, the habitat areas could potentially be impacted by spills of construction related materials that could reach the wetlands, particularly during rain events, and result in the injury and mortality of vernal pool fairy shrimp, if present.

Valley Elderberry Longhorn Beetle

As discussed above, one isolated blue elderberry shrub is present approximately 25 feet east of the existing haul road at the south end of the project site just north of Cordua Canal (see Figure 4.2-6). The shrub was surveyed for exit holes during the March 24, 2021 field survey. Exit holes were not identified during the survey. As such, the proposed project would not directly or indirectly affect valley elderberry longhorn beetle because the one elderberry shrub that is present in the project site does not contain exit holes, which is an indicator of species presence, and would not be removed by the proposed project. Additionally, the nearest ground disturbing activities to the elderberry shrub would be approximately 1,700 feet (0.33-mile) to the north, well above the distance required by USFWS for avoidance of elderberry shrubs (165 feet).

Nesting Birds and Raptors

The project site contains potential habitat for raptors and nesting birds that are protected by the MBTA including Swainson’s hawk, northern harrier, white-tailed kite, burrowing owl, grasshopper sparrow, and song sparrow, as well as cliff swallows, barn swallows, and black phoebe. Loss of foraging habitat (annual grassland and agricultural lands) in the project site is not considered a significant impact on special-status bird species because the habitat loss would be less than 2.0 acres and would not substantially decrease the available foraging habitat for locally nesting birds and raptors, including Swainson's hawks. The minimum patch sizes for Swainson's hawk foraging are generally considered to be between 5 and 25 acres.

However, the project has the potential to affect migratory birds and raptors either through direct injury or mortality during ground disturbing activities (i.e., vegetation removal) or by disrupting normal behaviors, including nesting. Construction noise and activities during the nesting season (February 1 to September 30) could result in the loss or disturbance of fertile eggs or nestlings or otherwise lead to nest abandonment of these special-status birds, which would violate the CFGC and MBTA.

Conclusion

Based on the above, implementation of the proposed project could have a substantial adverse effect either directly or through habitat modifications, on vernal pool fairy shrimp and nesting birds and raptors covered by the MBTA, which are species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. Thus, a ***significant*** impact could occur.

Mitigation Measure(s)

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

Vernal Pool Fairy Shrimp

4.2-1(a) *The project applicant shall comply with all construction site Best Management Practices (BMPs) specified in the Storm Water Pollution Prevention Plan (SWPPP), as required in Mitigation Measure X-1 of the Initial Study prepared for the proposed project (see Appendix A), and any other permit conditions to minimize the introduction of construction related contaminants and mobilization of sediment in wetlands and non-wetland waters in and adjacent to the project site. These BMPs will address soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-stormwater management, and waste management practices. The BMPs will be based on the best conventional and best available technology. Prior to issuance of grading permits, the SWPPP shall be prepared and submittal for review and approval to the RWQCB. In addition, if a Clean Water Act Section 404 permit is required for the project, the USACE will consult with the USFWS, pursuant to Section 7 of the FESA, regarding potential indirect impacts to vernal pool fairy shrimp as a result of project activities. The project applicant will comply with any mitigation measures identified by USACE and USFWS as a result of this consultation.*

Nesting Birds and Raptors

4.2-1(b) *Where vegetation removal is required to construct project features, the project applicant shall conduct this activity during the nonbreeding* *season for migratory birds and raptors (generally between September 1 and February 28), to the extent feasible.*

If construction activities (including vegetation removal) cannot be confined to the nonbreeding season, the project applicant shall retain a qualified wildlife biologist with knowledge of the relevant species specific to the area to conduct nesting surveys before the start of construction. The migratory bird and raptor nesting surveys shall include a minimum of two separate surveys to look for active migratory bird and raptor nests. Surveys shall include a search of all trees and shrubs that provide suitable nesting habitat in the construction area. In addition, a 0.5-mile area around the construction area shall be surveyed for Swainson's hawk, a 500-foot area around the construction area shall be surveyed for nesting raptors, and a 50-foot area around the construction area shall be surveyed for songbirds. One survey should occur within 14 days prior to construction and the second survey within 48 hours prior to the start of construction or vegetation removal. If no active nests are detected during these surveys, no additional measures are required. Survey results shall be submitted for review and approval to the Yuba County Community Development and Services Agency.

If an active nest is found in the survey area, a no-disturbance buffer shall be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project site (this date varies by species). The extent of these buffers shall be determined by the biologist in coordination with USFWS and/or CDFW as applicable, and will depend on the level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.

4.2-2 Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) or any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS through direct removal, filling, hydrological interruption, or other means. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

The proposed project could result in the direct removal, filling, or hydrological interruption of approximately 0.26-acre of aquatic resources, including the permanent loss of 0.13-acre of aquatic resources and temporary disturbance of 0.13-acre of aquatic resources that may be regulated by the USACE and/or the SWRCB under the Porter-Cologne Water Quality Control Act (see Table 4.2-3).

As mentioned, although the NWPR exempts ditches constructed in upland areas from jurisdiction under Section 404 of the Clean Water Act, this rule was recently vacated, and the Corps will determine jurisdiction of ditches and other aquatic features on a case-by-case basis. The ditches within the project site which would be disturbed with implementation of the proposed project are artificial and were constructed in uplands and area less than one acre in size. Therefore, the project site ditches may not qualify as waters of the United States and/or waters of the State. However, the preliminary jurisdictional determination of these features must be verified by the USACE and RWQCB. Loss or filling of the aquatic resources within the project site, if regulated by the RWQCB or the USACE, would be considered a substantial adverse effect. Therefore, impacts on aquatic resources could be considered ***significant.***

Table 4.2-3
Temporary and Permanent Impacts on Aquatic Resources

Aquatic Resource Type/Number	Permanent Impact (Acres)	Temporary Impact (Acres)	Total Impact
Wetlands			
WD-3	0.001	0.002	0.003
Non-Wetland Waters			
RD-5	0.003	0.003	0/006
RD-7	0.008	0.008	0.015
RD-9	0.031	0.031	0.063
RD-11	0.024	0.024	0.048
RD-12	0.001	0.002	0.003
RD-13	0.009	0.009	0.018
RD-14	0.000	0.001	0.001
RD-15	0.042	0.042	0.084
RD-16	0.002	0.004	0.006
RD-17	0.002	0.002	0.004
RD-18	0.001	0.001	0.002
RD-19	0.002	0.003	0.005
Total	**0.126**	**0.131**	**0.257**
Source: ICF, Inc., July 2021.			

Mitigation Measure(s)

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

4.2-2(a) *Prior to construction, the project applicant shall submit an Aquatic Resources Delineation Report to the USACE and RWQCB to determine if the seasonal wetlands, roadside ditches, and agricultural ditches would be regulated by the USACE under Section 404 of the Clean Water Act and/or by the Regional Water Board under Section 401 of the Clean Water Act or the Porter-Cologne Water Quality Control Act. If the RWQCB and/or the USACE determines that the wetlands and non-wetland waters are not regulated under State and federal laws, further mitigation is not required.*

If the RWQCB and/or the USACE determines that the wetlands and non-wetland waters are regulated under State and federal laws, the project applicant shall obtain the required permits and implement any required compensation for the loss of waters of the U.S. and/or waters of the State. The actual mitigation ratio and associated credit acreage shall be based on USACE and RWQCB permitting, which will dictate the ultimate compensation for permanent or temporary impacts to waters of the U.S./waters of the State. RWQCB and USACE determinations, as well as proof of required permits, if any, shall be submitted to the Yuba County Community Development and Services Agency for review.

4.2-2(b) *Implement Mitigation Measure 4.2-1(a).*

4.2-3 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Based on the analysis below, the impact is *less than significant*.

Movement corridors serve two primary purposes: first, to enable migratory animals to move seasonally from and between winter and summer habitats, and second, to allow animals to move within their home range or residence areas. Seasonal corridors also sustain overall habitat values and insure population density and diversity. Migratory corridors are not necessarily individual paths, but can also be characterized as zones or corridors through which animals move. In general, animal movement generally occurs along riparian corridors and/or low-lying "saddles" which connect various micro-habitat areas.

For many species, a landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that provide a link between different habitats, while also providing cover. Development that fragments natural habitats (i.e., breaks them into smaller, disjunct pieces) can have a twofold impact on wildlife. First, as habitat patches become smaller, the habitats are then unable to support as many individuals due to patch size. Secondly, the area between habitat patches could be unsuitable for wildlife species to traverse.

The proposed project would consist of the completion of a previously constructed private haul road and improvements to the intersection of SR 20 and Kibbe Road. Given the existing setting of the roadways in the project site, the proposed project would not develop the project site such that the proposed project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites Therefore, the proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)
None required.

4.2-4 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Based on the analysis below, the impact is *less than significant*.

The proposed project would require the removal of two Fremont's cottonwood trees, which are presumed to have a dbh exceeding 30 inches, Therefore, the two trees proposed for removal are protected under Yuba County Code of Ordinances Chapter 11.44.060. However, the project would be implemented and conditioned consistent with provisions of the County's tree preservation ordinance. In addition, as recommended by a Sight Distance Analysis prepared by Fehr & Peers (see Appendix G) a group of trees located in the northeast corner of the SR 20/Kibbe Road intersection would be required in order to not hinder sight distance.

As a part of the project conditions, the project applicant would identify all existing protected trees in the project vicinity including oak trees that have a dbh of six inches or greater and all other trees that have a dbh of 30 inches or greater on the engineering drawings for the proposed project with a notation as to the size, species and dripline of each tree. All trees proposed for removal would be clearly designated.

In addition, the Yuba County General Plan describes a variety of policies to protect and restore habitat for special-status species and their habitats in the County. As described above, General Plan policies require applicants for new developments to conduct biological resource studies, avoid and minimize potential impacts, and compensate for impacts. Thus, a ***less-than-significant*** impact would occur.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

As defined in Section 15355 of the CEQA Guidelines, "cumulative impacts" refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region. Other proposed and pending projects in the region under the cumulative context would generally include buildout of the Yuba County General Plan. Any habitat loss resulting from the proposed project would combine with related effects resulting from cumulative development in the cumulative geographic setting. In addition, cumulative habitat loss could result in indirect adverse effects to the long-term viability of special-status species populations within the cumulative geographic setting due to loss of their habitats.

4.2-5 Cumulative impact on biological resources. Based on the analysis below, the project's impact is *less than significant*.

As discussed in the Project Description chapter of this EIR, because the proposed project serves to connect a previously constructed private haul road to an existing intersection, the vast majority of impacts associated with the proposed project would only be temporary and associated with construction. In the long-term, the project site would serve as a new route for hauling trucks from the Hallwood mine. The proposed project would not involve the construction of new structures on the project site.

The General Plan EIR concluded significant and unavoidable impacts related to biological resources would result from buildout of the General Plan, and also concluded that buildout of the General Plan would have a cumulatively considerable contribution to impacts on biological resources within the County.

With regard to biological impacts associated with the proposed project, Mitigation Measures 4.2-1(a) and 4.2-2(a) would ensure that the project applicant obtains the required permits and implements any required compensation for the loss of waters of the U.S. and/or waters of the State, as well as comply with all construction site BMPs specified in the SWPPP, which would mitigate impacts to wetlands to a less-than-significant level. Additionally, the proposed project would be required to adhere to all applicable federal, State, and local policies and regulations that exist to protect against impacts to biological resources.

Although the County General Plan EIR identified significant and unavoidable impacts associated with General Plan buildout, the proposed project's contribution to this cumulative impact would be ***less than significant***.

Mitigation Measure(s)

None required.

4.3 Cultural and Tribal Cultural Resources

4.3 CULTURAL AND TRIBAL CULTURAL RESOURCES

4.3.1 INTRODUCTION

The Cultural and Tribal Cultural Resources chapter of the EIR addresses known historic and prehistoric cultural resources, including tribal cultural resources, as well as paleontological resources in the vicinity of the project area. Cultural resources can be categorized into prehistoric or historic resources. Prehistoric resources are those sites and artifacts associated with indigenous, non-Euroamerican populations, generally prior to contact with people of European descent. Historic resources include structures, features, artifacts, and sites that date from Euroamerican settlement of the region. The chapter summarizes the existing setting with respect to cultural, tribal cultural, and paleontological resources, identifies thresholds of significance, evaluates project impacts to such resources, and sets forth mitigation measures as necessary.

Information presented in the chapter is primarily drawn from the Cultural Resources Survey Memorandum prepared by ICF, Inc. (see Appendix E).[1] The information provided in this report is intended to be used as an update to a Cultural Resource Assessment which was prepared by Peak & Associates for the proposed project in 2003,[2] and included as an appendix to the current memorandum.

The majority of the project area was adequately surveyed in 2003 during the Peak & Associates Cultural Resource Assessment. However, because a substantial amount of time has elapsed since the Cultural Resource Assessment was conducted, and due to the changing landscape and revised project area, the Cultural Resources Survey Memorandum was conducted by ICF to update and verify all previously recorded sites and conclusions made by Peak & Associates. Further information was sourced from the Yuba County General Plan[3] and the associated General Plan EIR.[4]

4.3.2 EXISTING ENVIRONMENTAL SETTING

Yuba County contains a rich cultural resource heritage that includes archeological and historical sites and resources. According to the Yuba County General Plan, a total of 2,876 cultural resource sites have been recorded in Yuba County. Of these, 1,032 sites were prehistoric sites, 925 sites were related to mining activities, 888 sites were designated as Other Historic Sites, and 31 were combined prehistoric and historic sites. Given the rich heritage of the area, many archeological and historical sites and resources are predicted to remain undiscovered.

The approximately 10-acre project site is located at the intersection of State Route (SR) 20 and Kibbe Road, approximately three miles northeast of the City of Marysville, within Yuba County. The proposed project is located within 0.65-mile of the SR 20 right-of-way (ROW), approximately 0.14-mile of the Kibbe Road ROW north of SR 20, and approximately 0.63-miles of the unnamed

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1 ICF, Inc. *Cultural Resources Survey Memorandum.* April 7, 2021.
2 Peak & Associates, Inc. *Cultural Resource Assessment of the Proposed Hallwood Service Road, Yuba County, California.* March 20, 2003.
3 Yuba County. *Yuba County 2030 General Plan*. June 7, 2011.
4 Yuba County. *Final Yuba County 2030 General Plan EIR.* May 2011.

partially-built private haul road heading south from SR 20 down to the northern end of the 720-acre Teichert Aggregates Hallwood mine. The portions of the project area south of SR 20 are currently dominated by walnut orchards at the southern end, with the portion leading up to SR 20 consisting of disturbed annual grasslands and fallow agricultural land east and west of the existing road. The portions of the project site along the SR 20 and Kibbe Road ROWs consist of roadside ditches, active agricultural land, and densely vegetated areas of road ROW, all of which have been previously disturbed.

The following sections provide further details regarding the prehistoric overview, ethnographic overview, and historic overview of the project area, as well as a description of any identified cultural resources associated with the project site and a discussion of tribal cultural resources.

Prehistoric Overview

The prehistoric period in California is distinguished by a number of cultural periods that can be characterized by similar technological skills and devices, similar economic modes, including participation in trade networks and practices surrounding wealth, and similar mortuary and ceremonial practices. The chronological sequence for these cultural periods consists of the Paleo-Indian Period (8,000 to 12,000 years ago), the Lower Archaic Period (5,000 to 8,000 years ago), the Middle Archaic Period (3,000 to 5,000 years ago), the Upper Archaic Period (1,500 to 3,000 years ago), and the Emergent Period (200 to 1,500 years ago).

Paleo-Indian Period

The Paleo-Indian period saw the first entry and spread of humans into California. Known occupation sites were located along lake shores, and a developed milling tool technology may have existed at this time. Social units of people were not heavily dependent upon exchange of resources, with exchange activities occurring on an infrequent basis. Rather, most resources were acquired by a change in habitat. Characteristic artifacts of this period include fluted projectile points and chipped stone crescents. Traditionally, the Paleo-Indian people have been viewed as big game hunters. However, more recent research suggests that they pursued much more varied subsistence and economic systems than previously thought.

Lower Archaic Period

The beginning of the Lower Archaic Period coincided with the mid-Holocene climatic change and generally drier conditions that brought about the drying up of many pluvial lakes across California. The people from this time period appear to have been focused on the consumption of plant foods rather than food obtained by hunting, while settlement appears to have been semisedentary with little emphasis on wealth. Most tools were manufactured of local materials and exchange remained on an infrequent basis. Distinctive artifact types of this period are large dart points, the milling slab, and handstones.

Middle Archaic Period

The Middle Archaic Period began at the end of the mid-Holocene period when the climate became similar to present day conditions. Cultural change during this time was primarily in response to technology. Hunting remained an important source of food, but human populations became more sedentary, followed by a generational growth and expansion of native populations. Little evidence shows development of regularized exchange relations. Artifacts characterized by this period include the bowl mortar and pestle and the continued use of large projectile points. It is also during this time that evidence for Native American use of the northern and central Sierra Nevada appears. There is evidence that the people of this time occupied the mountains of eastern Yuba

County along the western slopes of the northern Sierra Nevada which may have represented a wave of immigration of Penutian-speaking peoples who settled in the Central Valley and became identified as Nisenan.

Upper Archaic Period

The beginning of the Upper Archaic Period is identified by the growth of sociopolitical complexity. Documentation indicates that development status distinctions based upon wealth began during this period. Additionally, this period marks the emergence of group-oriented religions. There was greater complexity of exchange systems with evidence of regular, sustained exchanges between groups. Shell beads gained in significance as possible indicators of personal status and as important trade items. Although there is indication of the continued use of large dart points of different styles, evidence suggests that the bowl mortar and pestle had replaced the milling stone and handstone throughout most of the state of California during this period.

Emergent Period

Several technological and social changes distinguished the Emergent Period. The bow and arrow were introduced at this time, ultimately replacing the use of dart points. Territorial boundaries between groups were well established and it became increasingly common during this period that distinctions in an individual's social status could be linked to acquired wealth. Exchange of goods between groups became more regularized with more trade goods, including raw materials and manufactured products, entering into the exchange networks during this period. In the latter portion of this period, approximately 150 to 450 years ago, exchange relations became highly regularized and sophisticated, and the clan disk bead arose to govern various aspects of production and exchange. It was also during the latter decades of this period that large-scale Euro-American related impacts on Native American groups took place.

Ethnographic Overview

At the time of the Gold Rush, the project vicinity was occupied by the Nisenan or Southern Maidu Indians, identified by the language they spoke. The Nisenan peoples occupied the drainages of the Yuba, Bear, and the American rivers from the Sacramento River on the west to the summit of the Sierra in the east. The Foothill and Hill Nisenan peoples were distinctive from the Valley Nisenan and were loosely organized into tribelets or districts with large central villages, surrounded by smaller villages. Both the Valley Nisenan and the Foothill and Hill Nisenan are believed to have interacted more with their non-Nisenan neighbors than with each other.

The Nisenan depended on activities centered around the seasonal ripening of plant foods and the seasonal movements and migration of the animals and the runs of fish. Competition for resources was likely minimal except in lean years. While the Hill Nisenan to the east in the foothills carried on trade with the valley peoples and shared some of the cultural traits, they lacked the complexity or richness of the Valley Nisenan. The Hill Nisenan had a different resource base to work with which required greater mobility and a more intense use of the available resources. They developed a local culture that was more oriented to the gathering, storage and year-round use of the acorn, continual foraging of resources by everyone in the village group, specialized hunting strategies and availability of different plants to gather and process. Thus, they had to be much more mobile in their use of the land and its resources.

The continual movement of the Hill Nisenan meant the foothill people did not have large year-round villages. However, hundreds of small campsites and villages were scattered across the foothills and mountains with certain localities as the centers for these hill peoples. The hill people were presumably more socially organized around the extended family than to the village and would often camp in informal family groups around the central village. Because they did some foraging and extensive fishing and hunting in the winter they needed to have some access to a resource base at all times. However, due to the ability to store acorns and other dried foods and take advantage of the winter concentrations of game, birds, and fish, they could congregate in larger villages in the wintertime.

At the central villages, more substantial houses were built and maintained for winter living. Larger family houses, a dance house, and acorn granaries were part of these winter quarters. The availability of firewood may also have been a factor in the preference for living in the oak woodlands of the foothills. Winter was the time of ceremonies, social gatherings, and marriages. Shamans had contests, children were trained, and trade items, tools, baskets and equipment were made and repaired.

Historic Overview

The following sections provide an overview of the Spanish, Mexican, and American Periods, as well as local history associated with the project area.

Spanish, Mexican, and American Periods

Post-contact history for the State of California is generally divided into the following three periods: the Spanish Period from 1769 to1822; the Mexican Period from 1822 to 1848; and the American Period from 1848 to present. Although brief visits by Spanish, Russian, and British explorers occurred from 1529 to 1769, the beginning of Spanish settlement in California occurred in 1769 at San Diego. The Spanish and Franciscan Order established 21 missions between 1769 and 1823 along the coast between San Diego and San Francisco. The Spanish expeditions into the Central Valley in 1806 and 1808, led by Lieutenant Gabriel Moraga, explored along the main rivers, including the American, Calaveras, Cosumnes, Feather, Merced, Mokelumne, Sacramento, San Joaquin, and Stanislaus. Moraga is credited with naming the lower Sacramento River and valley region, “Sacramento” (“the Holy Sacrament”). In 1813, Moraga led another expedition in the lower portion of the Central Valley and named the San Joaquin River. The abundance of wildlife, such as waterfowl, fish, and fur-bearing animals, within or along the banks of the rivers attracted immigrants to the Central Valley region. The last Spanish expedition into California’s interior was led by Luis Arguello in 1817 and traveled up the Sacramento River, past the future site of the City of Sacramento to the mouth of the Feather River, before returning to the coast.

After the end of the Mexican Revolution (1810 to 1821), the Mexican Period is marked by extensive land grants, most of which were in the interior of the State, as well as by exploration by American fur trappers west of the Sierra Nevada Mountains. Most of the land grants to Mexican citizens in California (*Californios*) were in the interior because the Mexican Republic sought to increase the population away from the more settled coastal areas where the Spanish settlements had been concentrated. The largest land grants in the Sacramento Valley were awarded to John Sutter who had become a Mexican citizen. In 1839, he founded a trading and agricultural empire called New Helvetia that was headquartered at Sutter’s Fort near the divergence of the Sacramento and American rivers in today’s City of Sacramento. Only a small portion of the 48,839-acre New Helvetia land grant was located in Sacramento County; the majority was located in today’s Sutter and Yuba counties on the east and west sides of the Feather River.

The first American trapper to enter California, Jedediah Smith, explored along the Sierra Nevada in 1826 and in 1827. He spent these years exploring the Sacramento Valley and traveling along the American and Cosumnes rivers, and in 1827, Smith traveled through the San Joaquin Valley. Other trappers soon followed, including employees of the Hudson's Bay Company in 1832. Between 1830 and 1833, and again in 1837, diseases introduced by the non-indigenous explorers, trappers, and settlers, as well as relocation to the missions, military raids, and settlement by non-native groups, decimated native Californian populations, communities, and tribes in the Sacramento and San Joaquin valleys.

The end of the Mexican-American war, marked by the signing of the Treaty of Guadalupe Hidalgo in 1848, initiated the beginning of the American Period. In the same year, gold was discovered at Sutter's Mill on the American River in Coloma, and by 1849, nearly 90,000 people had journeyed to the gold fields. California became the 31st state in 1850, largely as a result of the Gold Rush, and in 1854, Sacramento became the State capital. In contrast to the economic prosperity and population growth associated with statehood, the loss of land and territory, including traditional hunting and gathering locales, as well as malnutrition, starvation, and violence, further contributed to the decline of indigenous Californians in the Central Valley and along the Sierra Nevada foothills.

Local History

The first permanent non-Maidu resident of Yuba County was Theodore Cordua, who, in 1842, had leased a portion of Sutter's former holdings, and built an adobe building at what is now the foot of D Street in Marysville. In 1844, Cordua obtained a Mexican Land Grant that included most of present-day Yuba County. The California-Oregon Trail passed by Cordua's Ranch, and by 1846, his adobe became an important way station and trading post for the emigrants and others in the region.

Between 1848 and 1850 Cordua sold off his holdings, and by 1850, with the advent of the Gold Rush and influx of new temporary and permanent residents, the town of Marysville was laid out. Marysville was the principal settlement in the newly formed Yuba County, and has always been the county seat. The City was located at the head of navigation on the Feather River and was an important center for trade with the northern mines. Originally, the City looked out on the Feather and Yuba rivers, and boats could dock at the downtown plaza. However, hydraulic mining upstream deposited so much silt and debris, that the level of the rivers rose approximately 70 feet above their former level, necessitating the construction of a series of levees that still surround the town today.

Upstream from Marysville along the Yuba River, a series of temporary mining camps were established to work the rich stream bed. In response to the problems created by upstream silt and sediment, the California Debris Commission was established in 1893 by Grover Cleveland to regulate hydraulic mining and to restore the Sacramento and San Joaquin River systems. By 1910, the Daguerre Point Dam, located approximately two miles east of the proposed project area, had been constructed to control the flow of unwanted silt and sediment along the Yuba River. The high water of December 1964 washed away two-thirds of the original Daguerre Point Dam, and it was rebuilt after this period.

The Hallwood-Cordua Canal, and Stahl Ditch were constructed sometime after World War I in response to high prices paid for rice. Both systems used the diversion at the Daguerre Point Dam for their source of water. By 1929, the Hallwood-Cordua Canal extended approximately eight miles west of the dam.

Known Historic Resources

Archival research was carried out as part of the Cultural Resources Survey Memorandum prepared for the proposed project by ICF, including a review of available historic documents and a records search. The records search conducted by ICF included a search of the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS) at California State University, Sacramento, on February 9, 2021. In addition, a field survey of the project area was conducted by ICF on February 26, 2021 to examine indications of surface or subsurface cultural resources (see Figure 4.3-1). As shown in Figure 4.3-1, the field survey included an examination of the Area of Potential Effects (APE) associated with implementation of the proposed project, and all potential alternatives associated with the proposed project. The APE included the previously constructed private haul road, and portions of SR 20 and Kibbe Road.

The records search determined that eight cultural resource investigations have been conducted within a 0.25-mile radius of the APE between 1985 and 2013, one of which was conducted for the proposed project in 2003. As such, one previously conducted study encompassed the majority of the project site. A total of three previously recorded historic-period cultural resources are located within 0.25-miles of the APE, consisting of the Stahl Ditch (P-58-1754), the Cordua Canal (P-58-1755), and a segment of an unnamed irrigation ditch (P-58-3332, CA-YUB-2067H). All three cultural resource sites are located within the project APE and are discussed further below. According to the Cultural Resources Survey Memorandum, the field survey did not identify any new or previously unrecorded cultural resources within the APE.

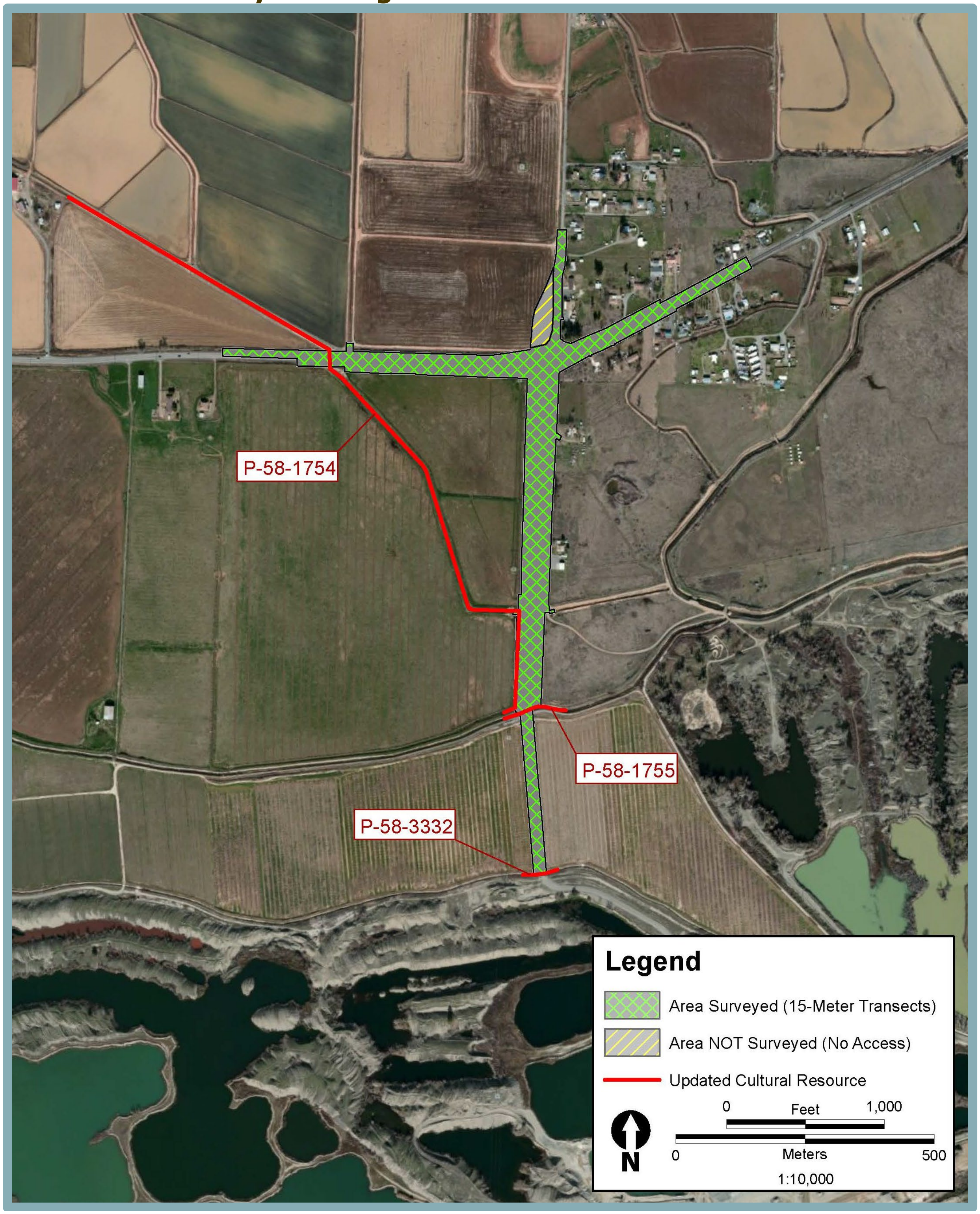
Stahl Ditch

Stahl Ditch (P-58-1754) is unlined and varies in width from six to 16 feet, and is two to four feet deep. According to the U.S. Geologic Survey (USGS) topographic map quadrangle, Stahl Ditch was constructed sometime between 1947 and 1973. A northern segment may have been constructed after 1973 as it does not appear on that map. A small portion of the segment of Stahl Ditch that is located within the project's APE was originally recorded in 1998 during a Historic Property Survey Report conducted by Caltrans during the widening of SR 20. The additional segments of the ditch included in the project's APE were later recorded in 2003, during the Cultural Resource Survey conducted for the Hallwood service road project.

Cordua Canal

Cordua Canal (P-58-1755) is unlined within the area inspected in the Cultural Resources Survey Memorandum, but appears to be lined with concrete to the west of the project's APE. The canal is approximately 22 feet wide and six feet deep. According to the USGS historic maps, the Cordua Canal was constructed sometime between 1911 and 1947. A modern diversion feature (metal gate) diverts water from this ditch into the Stahl Ditch. The segment of canal within the project site was first recorded in 2003 as part of the Hallwood service road project.

Figure 4.3-1
Survey Coverage and Area of Potential Effect



Source: ICF, Inc., 2021

Unnamed Irrigation Ditch

The unnamed irrigation ditch (P-58-3332, CA-YUB-2067H) was constructed prior to 1947 and is observed as a concrete-lined ditch measuring 14 feet wide and two to three feet deep. A modern diversion feature (metal gate) diverts water into the adjacent orchard located to the north of this feature. The ditch presumably uses the Cordua Canal as its main water source. The segment of the ditch located within the project site was first recorded in 2003 as part of the Hallwood service road project.

Tribal Cultural Resources

Based on a search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF), as described in further detail in the Method of Analysis section below, recorded Native American sacred sites or traditional cultural properties are not known to exist within the project site.

In addition, pursuant to Assembly Bill (AB) 52 (Public Resources Code [PRC] Section 21080.3.1), a project notification letter was distributed to the United Auburn Indian Community on March 31, 2021. Requests to consult were not received during the 30-day notification period.

Paleontological Resources

Based on a Stratigraphic Inventory and Paleontological Resource Inventory conducted for the Yuba County General Plan EIR, as described in further detail in the Method of Analysis section below, paleontological finds have not been discovered within Yuba County. [5]

4.3.3 REGULATORY CONTEXT

Federal, State, and local governments have developed laws and regulations designed to protect significant cultural resources that may be affected by actions that they undertake or regulate. The following section contains a summary of basic federal, State, and local regulations governing preservation of historic and archaeological resources of national, regional, State, and local significance.

Federal Regulations

The following are the federal environmental laws and policies relevant to cultural and tribal cultural resources.

National Historical Preservation Act of 1966

Federal regulations for cultural resources are governed primarily by Section 106 of the National Historical Preservation Act (NHPA) of 1966. Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Council's implementing regulations, "Protection of Historic Properties," are found in 36 Code of Federal Regulations (CFR) Part 800. The goal of the Section 106 review process is to offer a measure of protection to sites, which are determined eligible for listing on the National Register of Historic Places (NRHP). The criteria for determining NRHP eligibility are found in 36 CFR Part 60. Amendments to the Act (1986 and 1992) and subsequent revisions to the implementing regulations have, among other things, strengthened the provisions for Native American consultation and participation in the Section 106 review process. While federal agencies must follow federal regulations, most projects by private developers and landowners do not require this

5 Yuba County. *Final Yuba County 2030 General Plan EIR.* [pg. 4.6-33]. May 2011.

level of compliance. Federal regulations only come into play in the private sector if a project requires a federal permit or uses federal funding.

National Register of Historic Places

NRHP is the nation's master inventory of known historic resources. The NRHP includes listings of resources, including: buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, State, or local level. Resources over 50 years of age may be listed on the NRHP. However, properties under 50 years of age that are of exceptional significance or are contributors to a district may also be included on the NRHP. Four criteria are used to determine if a potential resource may be considered significant and eligible for listing on the NRHP. Potentially eligible resources include resources that:

A. Are associated with events that have made a significant contribution to the broad patterns of history; or
B. Are associated with the lives of persons significant in our past; or
C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. Have yielded or may likely yield information important in prehistory or history.

A resource can be individually eligible for listing on the NRHP under any of the above four criteria, or can be listed as contributing to a group of resources that are listed on the NRHP.

A resource can be considered significant in American history, architecture, archaeology, engineering, or culture. Once a resource has been identified as significant and potentially eligible for the NRHP, the resource's historic integrity must be evaluated. Integrity is a function of seven factors: location, design, setting, materials, workmanship, feeling, and association. The factors closely relate to the resource's significance and must be intact for NRHP eligibility.

Historical buildings, structures, and objects are usually eligible under Criteria A, B, and C based on historical research and architectural or engineering characteristics. Archaeological sites are usually eligible under Criterion D, the potential to yield information important in prehistory or history. An archaeological test program may be necessary to determine whether the site has the potential to yield important data. The lead federal agency makes the determination of eligibility based on the results of the test program and seeks concurrence from the State Historic Preservation Officer (SHPO).

Effects to NRHP-eligible resources (historic properties) are adverse if the project may alter, directly or indirectly, any of the characteristics of an historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

State Regulations

The following are the State environmental laws and policies relevant to cultural resources.

California Environmental Quality Act and California Register of Historic Places

State historic preservation regulations affecting this project include the statutes and guidelines contained in CEQA (PRC Sections 21083.2 and 21084.1 and Sections 15064.5 and 15126.4 (b) of the CEQA Guidelines). CEQA requires lead agencies to consider the potential effects of a project on historic resources and unique archaeological resources. A "historic resource" includes, but is not limited to, any object, building, structure, site, area, place, record or manuscript that is historically or archaeologically significant (PRC Section 5020.1). Under Section 15064.5 of the CEQA Guidelines, a resource is considered "historically significant" if one or more of the following California Register of Historic Resources (CRHR) criteria have been met:

1. The resource is associated with events that have made a significant contribution to the broad patterns of California history;
2. The resource is associated with the lives of important persons from our past;
3. The resource 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
4. The resource has yielded, or may be likely to yield, important information in prehistory or history.

In addition, the resource must retain integrity. Cultural resources determined eligible for the NRHP by a federal agency are automatically eligible for the CRHR.

CEQA requires preparation of an EIR if a proposed project would cause a "substantial adverse change" in the significance of a historical resource. A "substantial adverse change" would occur if a proposed project would result in physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (CEQA Guidelines Section 15064.5[b][1]).

In addition to historically significant resources, which can include archeological resources that meet the criteria listed above, CEQA also requires consideration of "unique archaeological resources." If a site meets the definition of a unique archaeological resource, the site must be treated in accordance with the provisions of PRC Section 21083.2. Under PRC Section 20183.2(g), an archaeological resource is considered "unique" if it:

1. Is associated with an event or person of recognized significance in California or American history or recognized scientific importance in prehistory;
2. Can provide information that is of demonstrable public interest and is useful in addressing scientifically consequential and reasonable research questions;
3. Has a special kind or particular quality such as oldest, best example, largest, or last surviving example of its kind;
4. Is at least 100 years old and possesses substantial stratigraphic integrity; or
5. Involves important research questions that can be answered only with archaeological methods.

CEQA also includes specific guidance regarding the accidental discovery of human remains. Specifically, CEQA Guidelines Section 15064.5(e) requires that if human remains are uncovered, excavation activities must be stopped and that the county coroner be contacted. If the county coroner determines that the remains are Native American, the coroner must contact the NAHC within 24 hours. The NAHC identifies the most likely descendant, and that individual or individuals can make recommendations for treatment of the human remains under the procedures set forth in Section 15064.5 of the CEQA Guidelines.

The SHPO maintains the CRHR. Properties that are listed on the NRHP are automatically listed on the CRHR, along with State Landmarks and Points of Interest. The CRHR can also include properties designated under local ordinances or identified through local historical resource surveys.

Assembly Bill 52

AB 52 adds tribal cultural resources to the categories of cultural resources in CEQA, which had formerly been limited to historic, archaeological, and paleontological resources. "Tribal cultural resources" are defined as either:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
   (A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
   (B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
2. 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Under AB 52, a project that may cause a substantial adverse change in the significance of a Tribal Cultural Resource is defined as a project that may have a significant effect on the environment. Where a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document must discuss the impact and whether feasible alternatives or mitigation measures could avoid or substantially lessen the impact. AB 52 (PRC Section 21080.3.1) requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if they have requested notice of projects proposed within that area. If the tribe(s) requests consultation within 30 days upon receipt of the notice, the lead agency must consult with the tribe(s). Consultation may include discussing the type of environmental review necessary, the significance of tribal cultural resources, the significance of the project's impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe(s).

Local Regulations

The following are the local environmental laws and policies relevant to cultural resources.

Yuba County General Plan

The Yuba County General Plan's Natural Resource Element describes the following goals and policies that pertain to the proposed project:

Natural Resource Element

Goal NR6	Identify, protect, and preserve Yuba County's important prehistoric and historic resources.

Policy NR6.1	The County will require environmental assessment and mitigation to reduce or avoid impacts to significant cultural resources, as feasible, per state and federal legislation and regulations.
Policy NR6.2	If potential paleontological or prehistoric resources are detected during construction, work shall stop and consultation is required to avoid further impacts.
Policy NR6.3	New developments, roads, water and sewer lines, and stormwater infrastructure should be located to avoid impacts to significant cultural resources.
Policy NR6.4	The County will encourage adaptive reuse of historic structures in a way that maintains the character defining elements of the historic structure.
Policy NR6.5	Priority investment should go to preserving or rehabilitating historic structures that are grouped in close proximity, are particularly good examples of a specific architectural style, or are associated with important people or events in the County's history.
Policy NR6.6	The County will disseminate information to property owners regarding tax incentives and other federal and state programs that support the rehabilitation of historic structures.

4.3.4 IMPACTS AND MITIGATION MEASURES

The following section describes the standards of significance and methodology used to analyze and determine the proposed project's potential impacts related to cultural and tribal cultural resources. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, an impact related to cultural or tribal cultural resources is considered significant if the proposed project would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines, Section 15064.5;
- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines, Section 15064.5;
- Disturb any human remains, including those interred outside of dedicated cemeteries;
- Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resource Code, Section 21074; and/or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Method of Analysis

The analysis presented within this chapter is based primarily on the Cultural Resources Inventory Report prepared for the proposed project. The Cultural Resources Inventory Report included a cultural resources literature search, archival research, consultation with the NAHC, the Yuba Historical Society, the Mary Aaron Museum, and a field survey. The methods of analysis are described in further detail below, along with a discussion of the tribal consultation efforts conducted by the County pursuant to AB 52, and the Paleontological Resource Inventory methods conducted by the County for the General Plan EIR.

Records Search Methods

A cultural resources records search for the project area was completed at the NCIC of the CHRIS at California State University, Sacramento, on February 9, 2021. The records search was conducted to determine the extent of previous surveys within a 0.25-mile radius of the proposed project location, and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within the area. The archival searches of the archaeological and historical records, and national and State databases included the following:

- National Register Information System website;
- Office of Historic Preservation (OHP), California Historical Landmarks website (OHP 2021);
- Historic Property Data File for Yuba County (OHP 2012a);
- Archeological Determinations of Eligibility for Yuba County (OHP 2012b);
- General Land Office (GLO) land patent records (BLM 2021); and
- Caltrans Local and State Highway Bridge Results – California State Geoportal website (California Department of Technology 2020a and 2020b).

In addition, ICF reviewed historical maps and aerial photographs of the project location to identify buildings, features, and landforms to aid in the identification of cultural resources within the project area. The following historic maps and aerial photographs were reviewed:

- 1888 USGS California, Smartsville Sheet (1:125,000);
- 1911 USGS Browns Valley, California (1:31,680);
- Aerial photograph taken in 1947; and
- 1947 USGS Browns Valley, California (7.5-minute scale).

Consultation with Interested Parties

ICF contacted the NAHC on February 11, 2021 to request a search of the SLF to determine whether known tribal cultural resources are located within or near the project area. The SLF is populated by members of the Native American community who have knowledge about the locations of tribal resources. In requesting a search of the SLF, ICF solicited information from the Native American community regarding tribal cultural resources; however, the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable State and federal law. A discussion of formal tribal outreach efforts conducted by the County pursuant to AB 52 is provided further below.

Additionally, ICF sent letters to the Yuba Historical Society and the Mary Aaron Museum, both located in Marysville, on March 22, 2021. The letters requested any information related to significant historic or built-environment resources that may be affected by the proposed project. A response from either the Yuba Historical Society or the Mary Aaron Museum has not been received to date.

Field Survey Methods

On February 26, 2021, ICF subjected the project area to an intensive-level pedestrian survey using transects spaced at 15 meters. Visible ground surface within the project area was examined for indications of surface or subsurface cultural resources, such as circular depressions or ditches. Whenever possible, the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances were examined for artifacts or for indications of buried deposits. Two areas in the project area could not be intensively surveyed due to property access. However, both were observed from roadways or accessible areas. Subsurface investigations or artifact collections were not undertaken during the pedestrian survey.

Native American Tribal Consultation

In addition, pursuant to AB 52 (PRC Section 21080.3.1), a project notification letter was distributed by Yuba County to the United Auburn Indian Community on March 31, 2021. Requests to consult were not received within the consultation period.

Paleontological Resource Inventory Methods

A Stratigraphic Inventory and Paleontological Resource Inventory were conducted to develop a baseline inventory of paleontological resources within the areas addressed by the General Plan, including the project site. Geologic maps and reports covering the geology of the County were reviewed to determine the exposed rock units and to delineate the rock units' respective aerial distributions in areas addressed by the 2030 General Plan. Published and unpublished geologic and paleontological literature was reviewed to document the number and locations of previously recorded fossil sites from rock units exposed in areas within Yuba County, as well as the types of fossil remains produced in each rock type. The literature review was supplemented by an archival search conducted at the University of California Museum of Paleontology (UCMP) in Berkeley, California on August 3, 2010. According to the Stratigraphic Inventory and Paleontological Resource Inventory, paleontological finds have not been discovered within Yuba County.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on implementation of the proposed project in comparison with the standards of significance identified above.

4.3-1 Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines, Section 15064.5. Based on the analysis below, the impact is *less than significant*.

As discussed previously, according to the Cultural Resources Survey Memorandum, three previously recorded cultural resources were identified within the project site. Cultural resource sites P-58-1754 (Stahl Ditch), P-58-1755 (Cordua Canal), and P-58-3332, CA-YUB-2067H (unnamed irrigation ditch), are irrigation ditches within the project area of disturbance that were constructed prior to 1947. While cultural resource sites were identified within the overall project site, the cultural resource sites are located along the previously constructed portion of the private haul road. The proposed project would only include the construction of intersection improvements at the SR 20/Kibbe Road intersection; thus, ground-disturbing activities would occur approximately 0.2-mile from the nearest cultural resource site.

In their 2003 investigation, Peak & Associates concluded that the three irrigation ditches in the project vicinity do not appear to be associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. Additionally, the segments of the irrigation ditches located in the project vicinity do not possess any distinctive features such as control gates or bridges, and they do not embody any distinctive characteristics of type, religion, or method of construction, or possess high artistic value. Irrigation ditches are widespread in the area, and are continually being constructed to meet the needs of agriculture. As such, the irrigation ditches are not anticipated to yield any important historical information beyond what has been obtained during their recordation. Based on the above, the irrigation ditches, while considered cultural resource sites per the records search, would not meet any of the CRHR criteria to be considered a historically significant resource. In addition, considering the year of construction, the irrigation ditches are not eligible for listing on the NRHP. Based on the updated analysis conducted for the Cultural Resources Survey Memorandum, ICF concurs with the conclusion of Peak & Associates in that the identified cultural resource sites are not considered historical resources under CEQA.

Based on the above, the cultural resource sites within the project site, along the previously construction haul road, are not considered eligible for listing under CEQA. Therefore, the proposed project would not result in a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines, Section 15064.5, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)
None required.

4.3-2 Cause a substantial adverse change in the significance of a unique archeological resource pursuant to CEQA Guidelines, Section 15064.5 or disturb human remains, including those interred outside of dedicated cemeteries. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

As part of the investigation of the project site for cultural resources, ICF conducted a field survey, which did not reveal any evidence of unique archaeological resources and/or human remains. The project site has been heavily modified due to agricultural use, road construction, and features associated with irrigation and water delivery; therefore, the potential for buried archeological deposits to occur beneath the surface of the project site is low. However, visibility throughout the project site during the field survey was generally fair to poor, averaging 20 percent surface visibility due to the thick grasses covering most of the areas within the project site that had not already been developed by road construction. Additionally, the following two areas within the APE could not be intensively surveyed due to property access: a segment of land that followed the Stahl Ditch south of SR 20 and west of the access road, and a small portion of land northwest of the intersection of Kibbe Road and SR 20 (see Figure 4.3-1). As such, although archeological resources have not been previously recorded within the project site, and the likelihood for discovery is low due to past disturbance, the potential exists for unknown archaeological resources and/or human remains to exist in the project area.

In addition, the project site is located in a region which was once occupied by the Nisenan people. While field surveys did not detect human remains within the project's APE, the potential for human remains to be discovered during construction cannot be eliminated due to the known prehistoric occupation of the project area by Native American tribes.

In an effort to minimize impacts to archeological resources and human remains, Yuba County General Plan Policy NR6.2 requires work to stop and consultation to take place if any prehistoric resources are discovered during construction activities. Therefore, the applicant would be required to halt construction and initiate consultation with the appropriate agency, should any unique archeological resources and/or human remains be identified. However, Policy NR6.2 does not include further direction regarding the consultation process nor identify standards for the appropriate course of action, and would not necessarily preclude substantial adverse changes to previously unknown archeological resources.

Although archeological resources and human remains have not been identified in the immediate project vicinity, while unlikely, the possibility exists that previously unknown resources could be discovered within the project site or off-site improvement areas during construction activities. Therefore, construction activities associated with buildout of the proposed project, including off-site improvements, could uncover undocumented archaeological resources, including human remains. Compliance with General Plan Policy NR6.2 would generally help ensure that work would stop if archeological resources or human remains are identified during construction, but does not specify the appropriate course of action if such resources are discovered. As a result, without mitigation, the proposed project could cause a substantial adverse change in the significance of a unique archeological resource pursuant to CEQA Guidelines, Section 15064.5 or disturb human remains, including those interred outside of dedicated cemeteries, and a ***significant*** impact could occur.

Mitigation Measure(s)

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

4.3-2 *The following requirements shall be included via notation on all project improvement plans prior to the issuance of grading permits, to the satisfaction of the Yuba County Community Development and Services Agency.*

In the event subsurface deposits believed to be cultural or human in origin are discovered during construction, all work shall halt within a 50-foot *radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for precontact and historic archaeologist, shall be retained by the applicant to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:*

- *If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and agency notifications are not required.*
- *If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify Yuba County and applicable landowner. The project applicant shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work shall not resume within the no-work radius until the applicant, through consultation as appropriate and concurrence with the County, determines that the site either: 1) is not a historical resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to the County's satisfaction.*
- *If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (Assembly Bill [AB] 2641). The archaeologist shall notify the Yuba County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner shall notify the NAHC, which then shall designate a Native American Most Likely Descendant (MLD) for the proposed project (Section 5097.98 of the PRC). The designated MLD shall have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC shall mediate (Section 5097.94 of the PRC). If an agreement is not reached, the landowner shall rebury the remains where they shall not be further disturbed (Section 5097.98 of the PRC). The burial shall also include either recording the site with the NAHC or the appropriate information center, using an open space or conservation zoning designation or easement, or recording a reinternment document with Yuba County (AB 2641). Work shall not resume within the no-work radius until the County, through consultation as appropriate, determines that the treatment measures have been completed to their satisfaction.*

4.3-3 Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code, Section 21074. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

As part of AB 52 requirements, the County sent a project notification letter to the United Auburn Indian Community. The letters were distributed on March 31, 2021 and requests to consult were not received within the consultation period.

As noted previously, a records search of the NAHC SLF did not indicate the presence of tribal cultural resources within the project's APE. Furthermore, considering the results of the literature search and the prehistory and history of the area, the project site was determined by ICF to have a low probability for tribal cultural resources. Nonetheless, even though the likelihood is low, the possibility exists that buried tribal cultural resources associated with local tribes could occur in the project site. Thus, ground-disturbing activities associated with the proposed project could cause a substantial change in the significance of a Tribal Cultural Resource as defined in PRC Section 21074, and a ***significant*** impact could occur.

Mitigation Measure(s)

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

4.3-3(a) Implement Mitigation Measure 4.3-1.

4.3-3(b) Prior to initiation of ground-disturbing activities associated with the proposed project, a consultant and construction worker tribal cultural resources awareness brochure and training program for all personnel involved in project implementation shall be developed in coordination with interested Native American Tribes. The brochure shall be distributed and the training shall be conducted in coordination with qualified cultural resources specialists and Native American Representatives and Monitors from culturally affiliated Native American Tribes before any stages of project implementation and construction activities begin on the project site. The program shall include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The worker cultural resources awareness program shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site and shall outline what to do and whom to contact if any potential tribal cultural resources are encountered. The program shall also underscore the requirement for confidentiality and culturally-appropriate treatment of any find of significance to Native Americans and behaviors, consistent with Native American Tribal values. Documentation of the brochure and training program (i.e., a sign-in sheet) shall be retained at the project site and shall be submitted with applicable reports to the Yuba County Community Development and Services Agency.

4.3-4 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

A Stratigraphic Inventory and Paleontological Resource Inventory were conducted to develop a baseline inventory of paleontological resources within the areas addressed by the General Plan, including the project site. According to the Stratigraphic Inventory and Paleontological Resource Inventory, paleontological finds have not been discovered within Yuba County. Additionally, the project site has been previously disturbed through grading activities when the current roadway was built, therefore the project site does not include any unique geologic features.

Although unlikely, the potential exists for previously unknown paleontological resources to be discovered during ground-disturbing activities associated with the remaining roadway construction and intersection improvements. As a result, the proposed project could directly or indirectly destroy a unique paleontological resource or unique geologic feature, and a ***significant*** impact could occur.

Mitigation Measure(s)

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

4.3-4 Prior to the issuance of grading permits, the following language shall be included via notation on the Improvement Plans: "Should construction or grading activities result in the discovery of unique paleontological resources, all work within 100 feet of the discovery shall cease. The Yuba County Community Development and Services Agency shall be notified, and the resources shall be examined by a qualified archaeologist, paleontologist, or historian, at the developer's expense, for the purpose of recording, protecting, or curating the discovery as appropriate. The archaeologist, paleontologist, or historian shall submit to the Community Development and Services Agency for review and approval a report of the findings and method of curation or protection of the resources. Work may only resume in the area of discovery when the preceding work has occurred."

Cumulative Impacts and Mitigation Measures

As defined in Section 15355 of the CEQA Guidelines, "cumulative impacts" refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

Generally, while some cultural resources may have regional significance, the resources themselves are site-specific, and impacts to them are project-specific. For example, impacts to a subsurface archeological find at one project site would not necessarily be made worse by impacts to a cultural resource at another site due to development of another project. Rather, the resources and the effects upon them are generally independent. A possible exception to the aforementioned general conditions would be where a cultural resource represents the last known example of its kind or is part of larger cultural resources such as a single building along an intact historic Main Street. For such a resource, cumulative impacts, and the contribution of a project to them, may be considered cumulatively significant. The cumulative context for this analysis generally assumes buildout of the Yuba County General Plan.

4.3-5 Cause a cumulative loss of cultural resources. Based on the analysis below, the cumulative impact is *less than significant*.

As described throughout this chapter, three cultural resource sites are located along the previously constructed portion of the private haul road within the project site; however, none are considered eligible historic, cultural, or tribal cultural resources under CEQA. Furthermore, implementation of the project-specific mitigation measures set forth in this chapter (Mitigation Measures 4.3-1, 4.3-2[a], and 4.3-2[b]) would ensure that potential impacts related to disturbance of unknown cultural or tribal cultural resources within the site are reduced to less-than-significant levels.

Similar to the proposed project, future development projects within the County would be required to implement project-specific mitigation to ensure any potential impacts to identified cultural resources are reduced to a less-than-significant levels. For example, General Plan Policy NR6.1 requires environmental assessment and mitigation per state and federal legislation and regulations. In addition, General Plan Policy NR6.2 requires work to stop and consultation to take place if any cultural resources or human remains are uncovered during construction. Given that cultural resource impacts are generally site-specific and each future project within the County would be required to adhere to County policies, any potential impacts associated with cumulative buildout of the County's planning area would not combine to result in a significant cumulative impact.

Based on the above information, implementation of the aforementioned mitigation measures would reduce all project-specific impacts to less-than-significant levels, and impacts related to the proposed project's contribution to a cumulative loss of cultural resources would be ***less than significant.***

Mitigation Measure(s)

None required.

4.4 NOISE

4.4 NOISE

4.4.1 INTRODUCTION

The Noise chapter of the EIR describes the existing noise environment in the project vicinity, and evaluates potential noise and vibration impacts associated with implementation of the proposed project. The method by which the potential impacts are analyzed is discussed, followed by the identification of potential impacts and the recommended mitigation measures designed to reduce significant noise and vibration impacts to less-than-significant levels, if required. The analysis presented herein is primarily drawn from an Environmental Noise and Vibration Assessment prepared by Bollard Acoustical Consultants, Inc. for the proposed project (see Appendix F).[1] Further information presented in this chapter was sourced from the Yuba County General Plan[2] and the associated General Plan EIR.[3]

4.4.2 EXISTING ENVIRONMENTAL SETTING

The Existing Environmental Setting section provides a discussion on the fundamentals of acoustics (background information on noise and vibration as well as a discussion of acoustical terminology), the effects of noise on people, existing sensitive receptors in the project vicinity, existing sources and noise levels in the project vicinity, and groundborne vibration.

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound.

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound

1 Bollard Acoustical Consultants, Inc. *Environmental Noise & Vibration Assessment – Teichert Kibbe Road Project*. May 4, 2021.
2 Yuba County. *Yuba County 2030 General Plan*. June 7, 2011.
3 Yuba County. *Final Yuba County 2030 General Plan EIR.* May 2011.

levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. L_{dn} based noise standards are commonly used to assess noise impacts associated with traffic, railroad, and aircraft noise sources.

Figure 4.4-1 lists several examples of the noise levels associated with common situations.

Effects of Noise on People

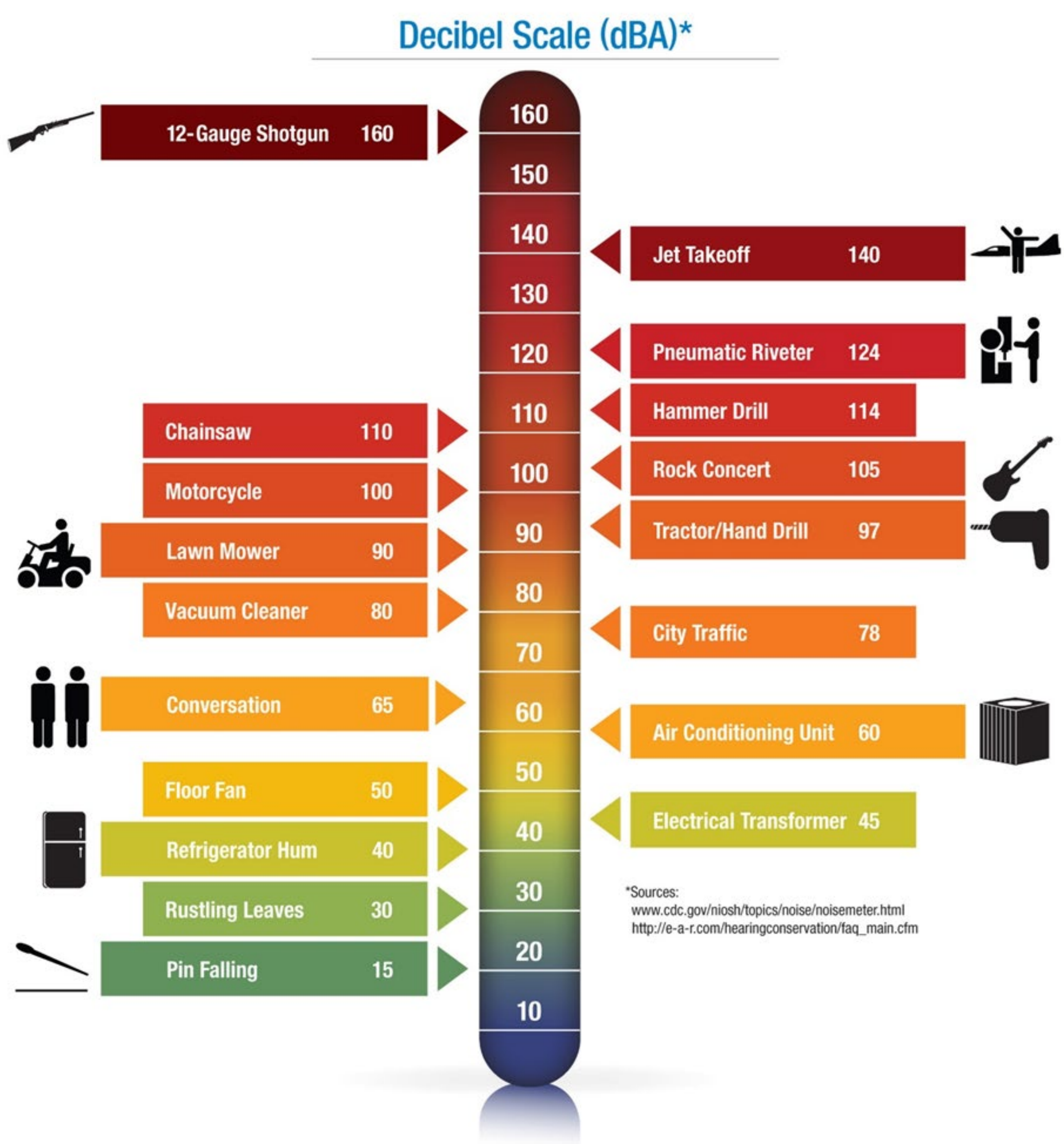
The effects of noise on people can be placed in the following three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; or
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual’s past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

Figure 4.4-1
Noise Levels Associated with Common Noise Sources



Source: Bollard Acoustical Consultants, Inc. (2021).

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

Existing Conditions

The existing surrounding land uses, as well as the ambient noise levels and sources in the project area are discussed below.

Surrounding Land Uses and Sensitive Receptors

Currently, land uses surrounding the project site include agricultural and residential. Agricultural uses include primarily grazing/pasture land, and an orchard. Residential development in the surrounding area includes rural residential homes which are located to the northeast and southeast of the project site.

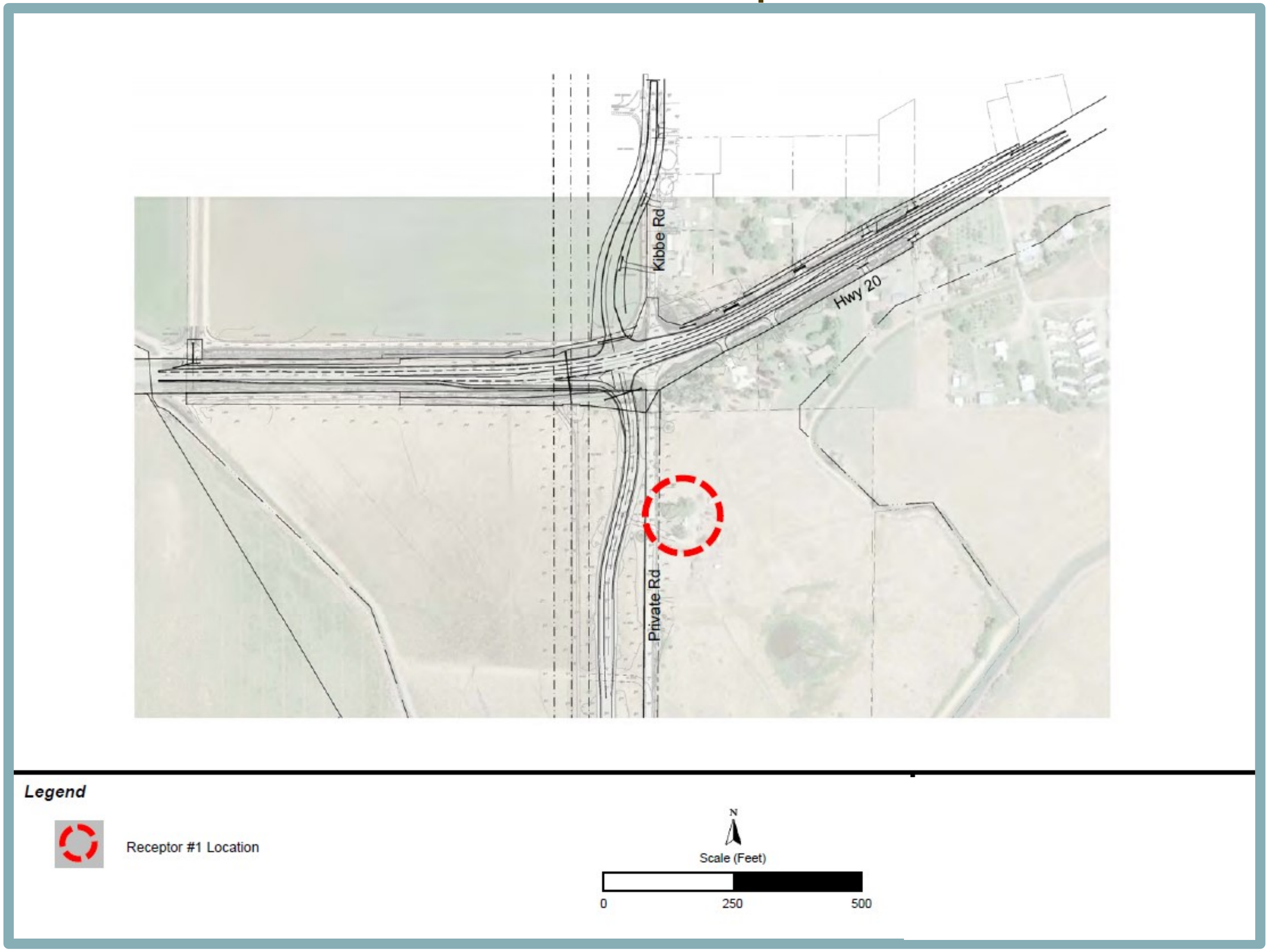
Certain land uses are more sensitive to ambient noise levels than others due to the amount of noise exposure (in terms of both exposure time and shielding from noise sources) and the type of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, parks, and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses, and, thus, are referred to as sensitive receptors. While residences exist northeast and southeast of the State Route (SR) 20/Kibbe Road intersection, the nearest existing sensitive land use to the project site would be one existing residence (Receptor 1) located to the southeast of the SR 20/Kibbe Road intersection, along the previously constructed private haul road (see Figure 4.4-2).

Existing Ambient Noise Levels

Currently, Teichert hauling trucks departing the Hallwood mine access SR 20 through Hallwood Boulevard. Once the departing trucks reach Hallwood Boulevard, approximately 25 percent head east, and 75 percent head west. Additionally, the trucks arriving at the Hallwood mine from the east, which account for approximately 25 percent of hauling truck traffic, use Hallwood Boulevard, whereas trucks arriving from the west, which account for the remaining 75 percent of hauling truck traffic, use Walnut Avenue.

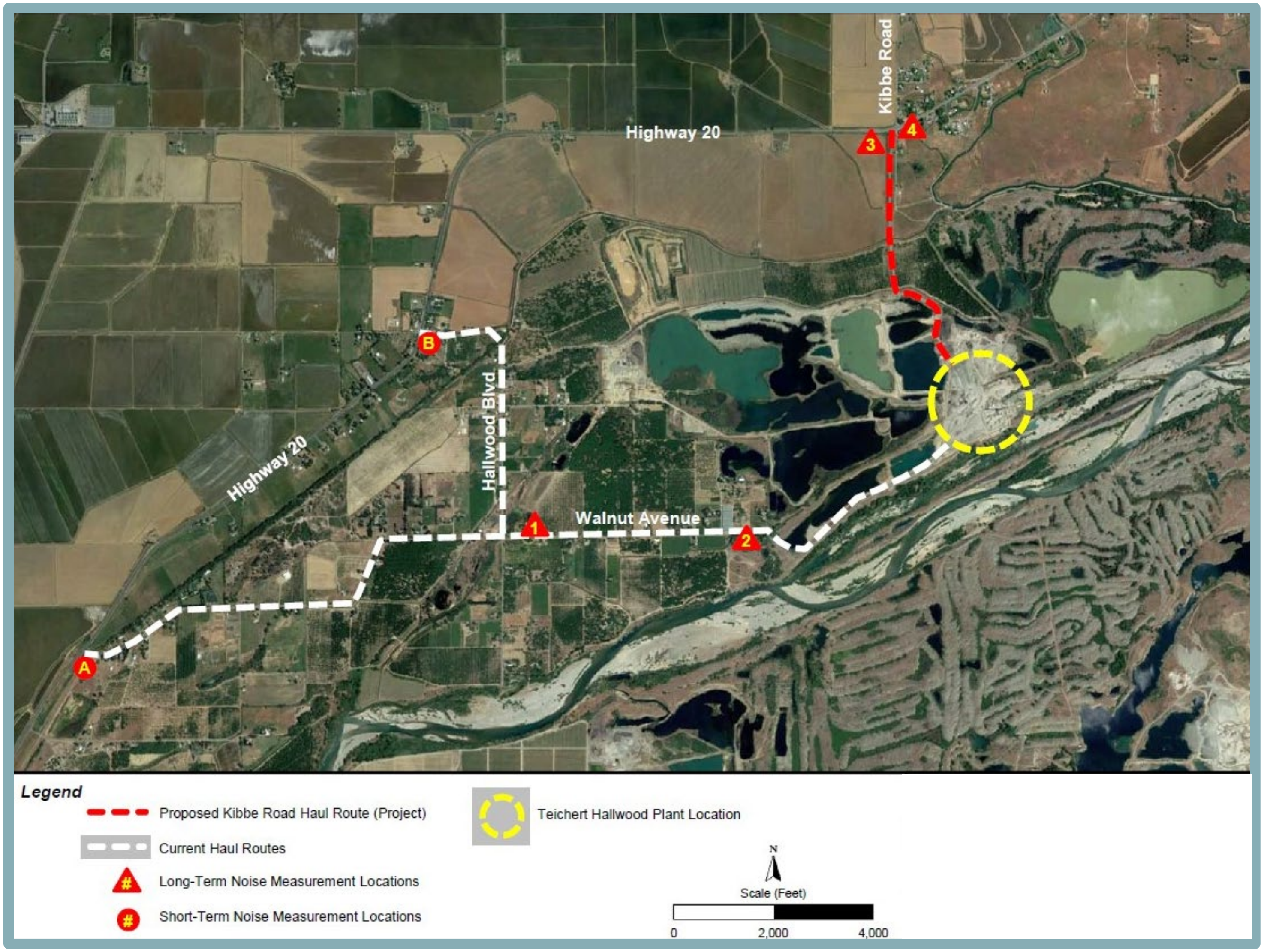
To quantify the existing ambient noise environment in the project vicinity, short-term and continuous (24-hour) noise level measurements were conducted on the project site. Short-term noise level measurements were conducted on January 26th and February 9th, 2021. The noise measurement period for the continuous noise level measurements was conducted from January 22nd through February 8th, 2021. The noise measurement locations are shown in Figure 4.4-3.

Figure 4.4-2
Nearest Sensitive Noise Receptor Location



Source: Bollard Acoustical Consultants, Inc. (2021).

Figure 4.4-3
Noise Measurement Sites



Source: Bollard Acoustical Consultants, Inc. (2021).

The long-term noise level measurement survey results are provided in Table 4.4-1. The maximum value (L_{max}) represents the highest noise level measured during an interval, while the average value (L_{eq}) represents the energy average of all of the noise measured during an interval.

Table 4.4-1
Summary of Long-Term Ambient Noise Monitoring Results

Site	L_{dn}	Average Measured Hourly Noise Levels, dB			
		Daytime (7 AM-10 PM)		Nighttime (10 PM-7 AM)	
		L_{eq}	L_{max}	L_{eq}	L_{max}
1	59	57	75	51	67
2	59	56	73	52	63
3	53	49	64	44	58
4	74	71	89	66	85

Source: Bollard Acoustical Consultants, Inc., 2021.

Long-term Noise Measurement Sites 1 and 2 were selected to be representative of the exposure of residences located adjacent to the existing haul route located between the Hallwood mine and SR 20. Site 3 was selected to be representative of the noise exposure of Receptor 1 and was located the same distance from SR 20 as Receptor 1. Site 4 was selected to be representative of existing residences located in close proximity to the location of the proposed intersection improvements.

Additionally, the short-term noise surveys were conducted at two locations (Site A and Site B) along the existing Hallwood mine hauling route to quantify the noise generation of heavy trucks accelerating as they turned onto SR 20, and decelerating as they turned onto the existing haul route, which closely mimics the acceleration and deceleration that would occur at Kibbe Road following project completion. The results of the short-term heavy truck acceleration and deceleration measurements were normalized to the same distance to SR 20 as long-term noise measurement Site 4 to provide a comparison of maximum noise levels which would be generated by heavy trucks turning on and off of Kibbe Road versus existing maximum noise levels currently occurring along SR 20 at Kibbe Road. The average of the 88 individual maximum noise levels measured at short-term noise measurement Sites A and B, after normalization to 75 feet, computes to 78 dB L_{max}. It is noted that during the short-term noise surveys, trucks decelerating to turn off of SR 20 onto either Hallwood Boulevard or Walnut Avenue did not use engine brakes (Jake brakes).

Study Roadway Segment Noise Levels

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to assess project-related traffic noise changes resulting from the proposed project along several roadway segments in the project area (see Method of Analysis section of this Chapter for further discussion of the FHWA RD-77-108). The following includes a description of the existing setting of each study roadway segment assessed as part of the Environmental Noise and Vibration Assessment.

Segment 1: SR 20 Between Walnut Avenue and Hallwood Boulevard

Currently, approximately 37 percent of the total Teichert hauling truck traffic travels along SR 20 between Walnut Avenue and Hallwood Boulevard. A total of 22 residences exist as sensitive noise receptors along SR 20 between Walnut Avenue and Hallwood Boulevard, and the existing traffic noise level along the roadway segment is 66.2 dB L_{dn}.

Segments 2, 3, and 4: SR 20 Between Hallwood Boulevard and Kibbe Road

Currently, approximately 25 percent of all of the Teichert hauling trucks travel along SR 20 between Hallwood Road and Kibbe Road. Sensitive receptors along this roadway segment include 12 residences, a school, and a church. The existing traffic noise levels along roadway segments two through four are 66.1, 67.4, and 67.1 dB L_{dn}, respectively.

Segment 5: SR 20 East of Kibbe Road

Teichert hauling truck traffic represents approximately two percent of the daily traffic volume on SR 20 east of Kibbe Road. Approximately 23 residences were identified through aerial imagery as being located adjacent to SR 20 within one mile east of Kibbe Road. The existing traffic noise level along roadway segment five is 67.0 dB L_{dn}.

Segments 6, 7, 8, and 9: Walnut Avenue and Hallwood Boulevard

Currently, all Teichert hauling truck traffic uses Walnut Avenue and Hallwood Boulevard to enter and leave the Hallwood mine. Neighborhoods of single-family residences exist along both Walnut Avenue and Hallwood Boulevard, and the existing traffic noise levels along roadway segments six through nine are 64.1, 68.2, 66.3, and 66.2 dB L_{dn}, respectively.

Vibration

While vibration is similar to noise, both involving a source, a transmission path, and a receiver, vibration differs from noise because noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. Sources of groundborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or humanmade causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or intermittent, such as explosions.

A person's perception to 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 can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration levels 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 peak particle velocities. Table 4.4-2, on the following page, presents the typical effects of various vibration levels on people and buildings.

Groundborne vibration is normally perceptible to humans at approximately 0.006 PPV in/sec. For most people, a vibration-velocity level of 0.08 PPV in/sec is the approximate dividing line between barely perceptible and distinctly perceptible levels, and a vibration level of 0.10 PPV in/sec is the point at which continuous vibrations begin to annoy people. Architectural damage is known to occur at vibration levels of 0.20 PPV in/sec.

Table 4.4-2
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: California Department of Transportation, 2002.

4.4.3 REGULATORY CONTEXT

Applicable federal laws or regulations pertaining to noise or vibration do not exist. The existing State and local laws and regulations applicable to the proposed project are listed below.

State Regulations

The following are the State environmental laws and policies relevant to noise.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes person to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations, establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses, and dwellings other than single-family dwellings.

Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or Community Noise Equivalent Level (CNEL) in any habitable room. Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

Local Regulations

The following are the local environmental goals and policies relevant to noise.

Yuba County General Plan

The Yuba County General Plan Public Health and Safety Element contains policies for assessing noise impacts within the County. Listed below are the noise policies that are applicable to the proposed project.

Public Health and Safety Element

Policy HS10.1 New developments that generate traffic or are affected by traffic noise shall provide design and mitigation, if necessary, to ensure acceptable daytime and nighttime land use/noise environment at outdoor activity areas of affected properties, as defined in Figure 4.4-4 [General Plan Table Public Health & Safety-1].

Policy HS10.3 New developments that would generate or be affected by non-transportation noise shall be located, designed, and, if necessary, mitigated below maximum levels specified in Table 4.4-3 [General Plan Table Public Health & Safety-2], as measured at outdoor activity areas of affected noise-sensitive land uses.

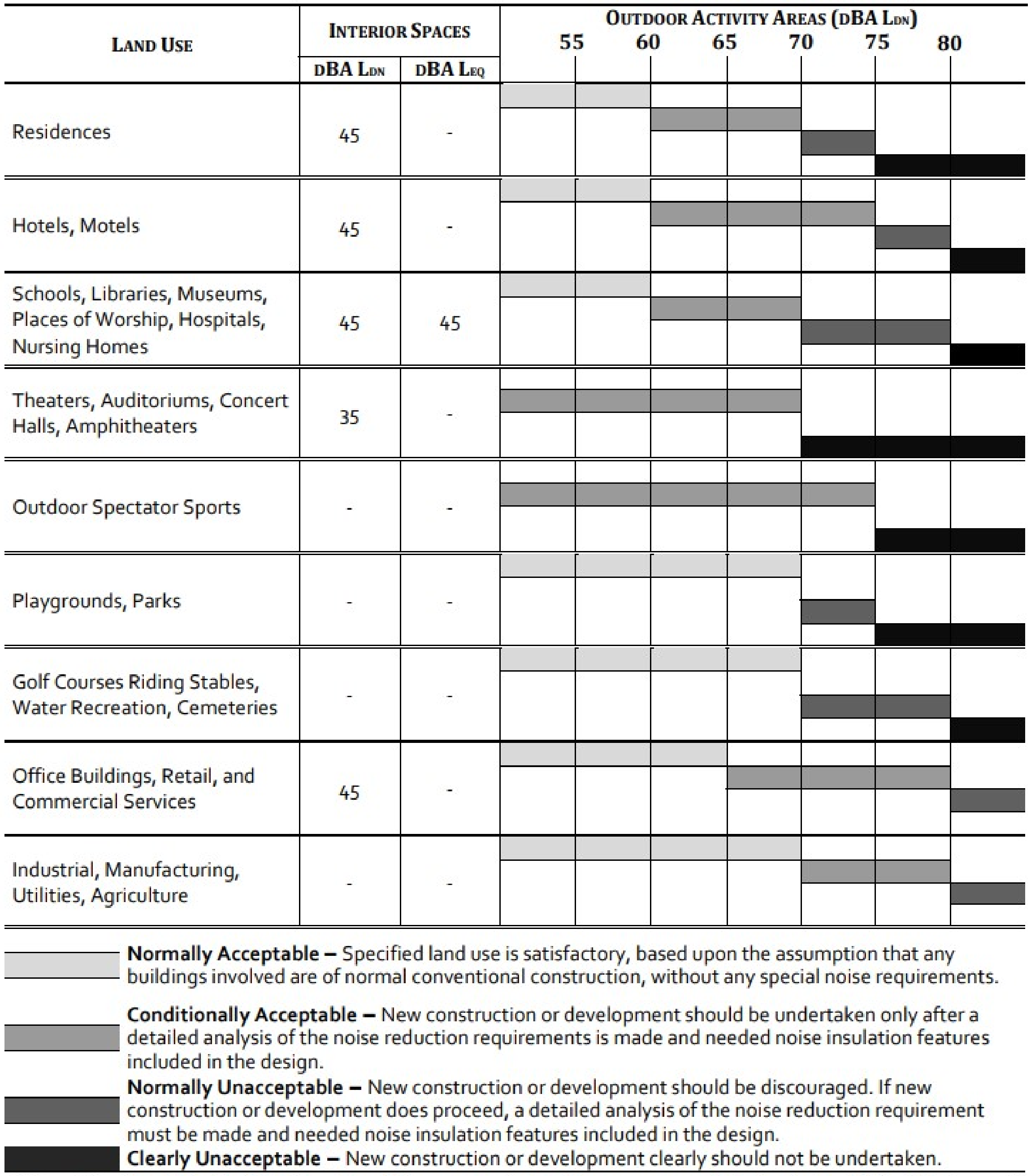
Policy HS10.5 The maximum noise level shall not exceed the performance standards shown in Table 4.4-4 [General Plan Table Public Health & Safety-3], as measured at outdoor activity areas of any affected noise-sensitive land use except:

- If the ambient noise level exceeds the standard in Table 4.4-4, the standard becomes the ambient level plus 5 dBA.
- Reduce the applicable standards in Table 4.4-4 by 5 decibels if they exceed the existing ambient level by 10 or more dBA.

Policy HS10.6 New developments shall provide all feasible noise mitigation to reduce construction and other short-term noise and vibration impacts as a condition of approval.

Policy HS10.7 New developments shall ensure that construction equipment is properly maintained and equipped with noise control components, such as mufflers, in accordance with manufacturers' specifications.

Figure 4.4-4
Yuba County General Plan: Maximum Allowable Noise Exposure from Transportation Noise Sources at Noise-Sensitive Land Uses



Notes: dBA = A-weighted decibels; L_{dn} = day-night average noise level; L_{eq} = energy-equivalent noise level. This table does not apply to existing transportation noise sources affecting existing land uses. Outdoor activity areas are the portion of a property where activities are normally expected. This would include portions of backyards, decks, balconies, pools, sports or game courts, and patios, but would not include front yards, spaces next to parking, roads, driveways, or vehicular loading areas. Hospitals and nursing homes use the L_{dn} interior standard, whereas schools, libraries, museums, and places of worship use a L_{eq} interior standard. Office buildings have an interior standard, but retail and commercial service uses do not have an interior standard.
Source: Governor's Office of Planning and Research 2003 General Plan Guidelines.

Table 4.4-3
Yuba County General Plan:
Maximum Allowable Noise Exposure from Non-Transportation Noise Sources at Noise-Sensitive Land Uses

Noise Level Descriptor	Daytime (7:00 AM – 10:00 PM)	Nighttime (10:00 PM – 7:00 AM)
Hourly L_{eq}	60 dBA	45 dBA
L_{max}	75 dBA	65 dBA

Source: Yuba County General Plan Table Public Health & Safety-2.

Table 4.4-4
Yuba County General Plan:
Performance Standards for Non-Transportation Noise Sources

Cumulative Duration of a Noise Event[1] (Minutes)	Maximum Exterior Noise Level Standards[2]	
	Daytime dBA L_{max}[2,4]	Nighttime dBA L_{max}[3,4]
30-60	50	45
15-30	55	50
5-15	60	55
1-5	65	60
0-1	70	65

Notes: dBA = A-weighted decibel; L_{max} = maximum noise level.
1 Cumulative duration refers to time within any 1-hour period.
2 Daytime = hours between 7:00 AM and 10:00 PM
3 Nighttime = hours between 10:00 PM and 7:00 AM
4 Each of the noise level standards specified may be reduced by 5 dBA for tonal noise (i.e., a signal which has a particular and unusual pitch) or for noises consisting primarily of speech or for recurring impulsive noises (i.e., sounds of short duration, usually less than one second, with an abrupt onset and rapid decay such as the discharge of firearms).

Source: Yuba County General Plan Table Public Health & Safety-3.

Policy HS10.8 Noise attenuation barriers are strongly discouraged, except to attenuate noise for existing developed uses, and may be used in the context of new developments only when no other approach to noise mitigation is feasible.

Policy HS10.9 New developments shall disperse vehicular traffic onto a network of fully connected smaller roadways and minimize funneling of local traffic onto large-volume, high speed roadways near existing or planned noise sensitive land uses to the maximum extent feasible.

Policy HS10.10 Proposed noise-generating industrial and other land uses shall be located away from noise-sensitive land uses, shall enclose noise sources, or shall use other site planning or mitigation techniques to ensure acceptable noise levels, to the greatest extent feasible.

Policy HS10.13 New developments that propose vibration-sensitive uses within 100 feet of a railroad or heavy industrial facility shall analyze and mitigate potential vibration impacts, to the greatest extent feasible.

Policy HS10.15 New developments that would generate substantial long-term vibration shall provide analysis and mitigation, as feasible, to achieve velocity levels, as experienced at habitable structures of vibration-sensitive land uses, of less than 78 vibration decibels.

Yuba County Code of Ordinances

Chapter 8.20 of the Yuba County Code of Ordinances is titled “Noise Regulations”. The provisions of the Chapter which are directly applicable to the proposed project are reproduced below:

Section 8.20.140 – Ambient base noise level.

Where the ambient noise level is less than designated in this Section, the respective maximum noise level permitted in this Section shall govern [see Table 4.4-5].

Table 4.4-5
Yuba County Code Noise Standards

Zone	Time	Ambient Level (dB)	Maximum Noise Level Permitted (dB)
Single Family Residential	10:00 PM – 7:00 AM	45	55
	7:00 PM – 10:00 PM	50	60
	7:00 AM – 7:00 PM	55	65
Multi-family Residential	10:00 PM – 7:00 AM	50	60
	7:00 AM – 10:00 PM	55	65
Commercial -BP	10:00 PM – 7:00 AM	55	65
Commercial	7:00 AM – 10:00 PM	60	70
M-1	Anytime	65	75
M-2	Anytime	70	80

Source: Yuba County Code Section 8.20.140.

Section 8.20.310 – Construction of buildings and projects.

It shall be unlawful for any person within a residential zone, or within a radius of 500 feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hours of 10:00 p.m. of one day and 7:00 a.m. of the following day in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless a permit has been duly obtained beforehand from the Community Development and Services Agency's Director of the Planning Department as set forth in Section 8.20.710 of this Chapter. No permit shall be required to perform emergency work as defined in Article 1 of this Chapter.

Section 8.20.730 – General Exemptions.

(b) No provision contained herein shall be deemed to supersede or overrule any provision of the Yuba County General Plan, nor any noise element thereof.

(c) No provision contained herein shall be deemed to supersede or overrule any provision of Chapter 11.55 of the Yuba County Ordinance Code which relates to farming and mining operations.

Yuba County Development Code

Chapter 11.26 of the Yuba County Development Code contains performance standards related to noise and vibration. The sections of Chapter 11.26 which are pertinent to this evaluation are reproduced below.

Section 11.26.50 – Noise

A. Noise Limits. No use or activity shall create ambient noise levels that exceed the standards established in the Public Health and Safety Element of the Yuba County General Plan.
B. Acoustic Study. The Planning Director may require an acoustic study for any proposed project that could cause any of the following:

1. Locate new residential uses within the 55 Community Noise Equivalent (CNEL) impact area of the Yuba County Airport;
2. Locate new residential uses within the 55 CNEL impact area of Beale Air Force Base (excludes housing located on Base);
3. Cause noise levels to exceed the limits in Chapter 8.20, Noise Regulations, of the Yuba County Code and Yuba County General Plan;
4. Create a noise exposure that would require an acoustic study and noise attenuation measures listed in the Public Health and Safety Element of the General Plan; or Cause the Day-night equivalent (L_{dn}) noise level at noise-sensitive uses to increase 5 dB or more.

C. Noise Attenuation Measures. Any project subject to the acoustic study requirements of subsection B may be required as a condition of approval to incorporate noise attenuation measures deemed necessary to ensure that noise standards are not exceeded.

1. New noise-sensitive uses (e.g., schools, hospitals, churches, and residences) shall incorporate noise attenuation measures to achieve and maintain an interior noise level of 45 L_{dn}.
2. Noise attenuation measures identified in an acoustic study shall be incorporated into the project to reduce noise impacts to satisfactory levels.
3. Emphasis shall be placed upon site planning and project design measures. The use of noise barriers shall be considered only after all feasible design-related noise measures have been incorporated into the project.

Section 11.26.060 – Vibration

No vibration shall be produced that is transmitted through the ground and is discernible without the aid of instruments by a reasonable person at the property lines of the site. Vibrations from temporary construction, demolition, and vehicles that enter and leave the subject parcel (e.g., construction equipment, trains, trucks, etc.) are exempt from this standard.

A. New developments that propose vibration sensitive uses within 100 feet of a railroad or industrial facility shall analyze and mitigate potential vibration impacts to the greatest extent feasible.
B. New developments that would generate substantial long-term vibration shall provide analysis and mitigation to achieve velocity levels of less than 78 vibration decibels as experienced at habitable structures of vibration-sensitive land uses.

4.4.4 IMPACTS AND MITIGATION MEASURES

The following section describes the standards of significance and methodology used to analyze and determine the proposed project's potential impacts related to noise and vibration. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the effects of a project are evaluated to determine if they would result in a significant adverse impact on the environment. For the purposes of this EIR, an impact is considered significant if the proposed project would result in any of the following:

- 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; or
- Generation of excessive groundborne vibration or groundborne noise levels.

Issues Dismissed in the Initial Study

The nearest airport to the project site is the Beale Air Force Base, located approximately five miles to the southeast of the project site. Therefore, the following impact was dismissed in the Initial Study (Appendix A):

- 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.

Accordingly, the above impact is not analyzed further in this EIR.

Summary of Applicable Noise Standards

Applicable noise level standards related to noise and vibration are summarized below.

Applicable Non-Transportation Noise Criteria

The Noise Element of the General Plan sets forth performance standards for non-transportation sources, as represented in Table 4.4-3. The proposed project would be required to comply with the noise standards presented therein. As such, noise generated by typical stationary noise sources shall not exceed 75 dBA L_{max} during daytime hours or 65 dBA L_{max} during nighttime hours. In addition, Table 4.4-5 presents the noise standards set forth in the Yuba County Code of Ordinances. Considering the nearest noise-sensitive receptors to the project site are single-family residential land uses, the proposed project must not generate noise that would exceed 65 dBA during daytime hours or 55 dBA during nighttime hours at the nearby residences.

Applicable Transportation Noise Criteria

The proposed project would be subject to the Residential Land Use transportation noise exposure limits set forth in the Noise Element of the General Plan. As noted therein, and as shown in Figure 4.4-4, the maximum transportation noise at the closest residences must be limited to 70 dB L_{dn} at outdoor activity spaces and 45 dB L_{dn} at indoor spaces.

Substantial Increase Criteria

Generally, a project may have a significant effect on the environment if the project will substantially increase the ambient noise levels for adjoining areas or expose people to measurably severe noise levels. In practice, a noise impact may be considered significant if the project would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in transportation noise associated with the proposed project is a factor in determining significance.

Yuba County does not have an adopted policy for assessing noise impacts associated with increases in ambient noise levels from project-generated traffic within the project vicinity. As a result, the federal noise criteria established by the Federal Interagency Commission on Noise (FICON) was applied to the project. Table 4.4-6 was developed by FICON as a means of developing thresholds for identifying project-related noise level increases. The rationale for the graduated scales is that test subject's reactions to increases in noise levels vary depending on the starting level of noise. Specifically, in lower ambient noise environments, such as those below 60 dB L_{dn}, a larger increase in noise levels was required to achieve a negative reaction as compared to the change in noise levels that was necessary in environments where noise levels were already elevated. The approach to assessing the significance of increases in off-site traffic noise is consistent with other local EIRs and is considered to be the industry-standard approach.

Table 4.4-6
Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level Without Project, dB	Increase Required for Significant Impact
<60	+5.0 dB or more
60-65	+3.0 dB or more
>65	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON).

Vibration

Yuba County does not have specific policies or standards pertaining to vibration levels. However, vibration levels associated with construction activities and project operations are addressed as potential vibration impacts associated with project implementation. 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.

Construction activities have the potential to result in varying degrees of temporary ground vibration depending on the specific construction equipment used and operations involved. As shown in Table 4.4-2, above, groundborne vibration is normally perceptible to humans at approximately 0.006 PPV in/sec. For most people, a vibration-velocity level of 0.08 PPV in/sec is the approximate dividing line between barely perceptible and distinctly perceptible levels, and a vibration level of 0.10 PPV in/sec is the point at which continuous vibrations begin to annoy people. Architectural damage is known to occur at vibration levels of 0.20 PPV in/sec.

Method of Analysis

Below are descriptions of the methodologies used to determine traffic noise, as well as construction noise and vibration impacts. Further modeling details and calculations are provided in the Environmental Noise and Vibration Assessment (Appendix F). The results of the noise impact analyses were compared to the standards of significance discussed above in order to determine the associated level of impact.

Existing Ambient Noise Level Measurement Methodology

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute.

Traffic Noise Impact Assessment Methodology

To assess project-related traffic noise changes resulting from the proposed project, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

Direct inputs to the model included traffic volumes for Existing and Cumulative, Project and No-Project conditions provided in the Transportation Impact Assessment prepared for the proposed project by Fehr & Peers Transportation Consultants (see Appendix G). Vehicle speeds on the local roadway network were evaluated through review of posted speed limits and speed surveys. Truck usage percentages for SR 20 were based on published Caltrans truck classification counts, while truck usage percentages on Hallwood Boulevard and Walnut Avenue were computed from information contained in the Traffic Impact Assessment. A complete listing of the FHWA Model input data is included in the Environmental Noise and Vibration Assessment (Appendix F).

Construction Noise and Vibration Impact Methodology

Construction noise and vibration was analyzed using data compiled for various pieces of construction equipment at a representative distance of 25 feet and a distance of 180 feet, which is the distance between the nearest sensitive receptor and the construction area of disturbance for the proposed project. Construction activities are discussed relative to the applicable Yuba County noise policies.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on implementation of the proposed project in comparison with the baseline and standards of significance identified above.

4.4-1 Generation of a substantial temporary 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. Based on the analysis below and with implementation of mitigation, the impact is less than significant.

During the construction of the proposed project, noise from construction activities would add to the noise environment in the project vicinity. Although much of the construction of the proposed haul route extension has been previously completed, during the remaining project construction, heavy equipment would be used for grading, excavation, and paving, which would generate noise in the immediate vicinity of the construction. The noise levels generated by construction equipment vary depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction. As discussed above, while single-family residences, which are considered noise sensitive receptors, exist northeast and southeast of the SR 20/Kibbe Road intersection and could be exposed to construction noise, Receptor 1 is the nearest noise sensitive receptor, and therefore, the noise levels at Receptor 1 would be greater than at all other sensitive receptors in the vicinity of the project site.

Per the Environmental Noise and Vibration Assessment, activities involved in roadway construction would generate maximum noise levels of 85 dB to 90 dB at a distance of 100 feet. The nearest identified existing sensitive structure (Receptor 1), is located approximately 180 feet from where from construction activities would occur along the project haul route (see Figure 4.4-2). The noise levels from a source decrease at a rate of approximately 6 dB per every doubling of distance from the noise source. By applying the aforementioned rate of noise level attenuation to the maximum construction noise level of 90 dB at 100 feet, the maximum noise level at Receptor 1 (180 feet) was estimated to be approximately 85.2 dB. As a result, the maximum noise levels at Receptor 1 would exceed the County's 75 dBA L_{max} noise threshold.

Construction noise is a normal component of virtually every type of project undertaken within Yuba County. Construction activities for the proposed project would be temporary in nature and are anticipated to occur during normal daytime working hours, as regulated by Yuba County. According to Section 8.20.310 of the County's Code of Ordinances, construction activities are prohibited outside of the hours of 7:00 AM to 10:00 PM. Additionally, General Plan Policies HS10.6 and HS10.7 require new developments to incorporate all feasible noise mitigation measures and ensure that construction equipment is properly maintained and equipped with noise control components, such as mufflers, in accordance with manufacturers' specifications. The General Plan EIR concluded that, with the implementation of General Plan Policies HS10.6 and HS10.7, a less-than-significant impact related to construction noise would occur.

Based on the above, compliance with General Plan Policies HS10.6 and HS10.7 would ensure that construction activities would not result in significant adverse noise impacts at existing noise-sensitive land uses in the project vicinity. However, in the absence of mitigation, implementation of the proposed project could result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, and a ***significant*** impact could result.

Mitigation Measure(s)

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

4.4-1 *Prior to issuance of a grading permit, the project contractor shall prepare a construction noise management plan that identifies measures to be taken to minimize construction noise on surrounding sensitive land uses and include specific noise management measures to be included within the* *project plans and specifications, subject to review and approval by the Yuba County Community Development and Services Agency. The project contractor shall demonstrate, to the satisfaction of the County, that the project complies with the following:*

- *Noise-generating construction activities, including truck traffic coming to and from the project site for any purpose, shall be limited to the hours outlined in Section 8.20.310 of the County's Code of Ordinances, specifically, construction activities shall be prohibited outside of the hours of 7:00 AM to 10:00 PM.*
- *All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications. Mobile or fixed "package" equipment (e.g., arc welders, air compressors) shall be equipped with shrouds and noise-control features that are readily available for that type of equipment.*
- *All mobile or fixed noise-producing equipment used on 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.*
- *Electrically powered equipment shall be used instead of pneumatic or internal combustion-powered equipment, where feasible.*
- *Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.*
- *Construction site and access road speed limits shall be established and enforced during the construction period.*
- *The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.*
- *Project-related public address or music systems shall not be audible at any adjacent receptor.*

4.4-2 Generation of a substantial 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. Based on the analysis below, the impact is *less than significant.*

The proposed project consists of modifications to the SR 20/Kibbe Road intersection to allow hauling trucks from the Hallwood mine to access the proposed haul route. As such, the primary operational noise source associated with the development of the proposed project would be noise from the Teichert hauling truck traffic along the proposed haul route.

Because all of the Teichert hauling truck traffic would use the proposed haul route for site access, the proposed project would result in a decrease in truck activity on Walnut Avenue and West Hallwood Boulevard. Specifically, Teichert trucks which currently arrive at the Hallwood mine via Walnut Avenue, and depart the Hallwood mine via Hallwood Boulevard would not use those roadway segments following the completion of the proposed project. Further discussion of noise impacts on sensitive receptors in the project vicinity is provided below.

Noise Levels Along the Proposed Haul Route

Table 4.4-7 provides a summary of the Existing and Existing Plus Project conditions along roadway segments located at both the existing haul route and the proposed haul route.

Table 4.4-7
Existing and Existing Plus Project Traffic Noise Levels ($dB\ L_{dn}$)

Segment	Roadway Name	Segment Description	Existing	Project	Existing + Project	Change
1	SR 20	Walnut to Hallwood	66.2	60.7	67.3	1.1
2	SR 20	Hallwood to Woodruff	66.1	62.0	67.5	1.4
3	SR 20	Woodruff to Loma Rica	67.4	62.4	68.5	1.2
4	SR 20	Loma Rica to Kibbe	67.1	62.7	68.4	1.4
5	SR 20	East of Kibbe	67.0	0.0	67.0	0.0
6	Walnut Avenue	SR 20 to Hallwood	64.1	-63.8	52.0	-12.1
7	Walnut Avenue	Hallwood to Teichert Entrance	68.2	-68.1	52.2	-16.0
8	Hallwood Blvd	SR 20 to Hooper	66.3	-66.0	53.4	-12.9
9	Hallwood Blvd	Hooper to Walnut	66.2	-66.0	52.2	-14.0

Source: Bollard Acoustical Consultants, Inc. 2021.

As shown in the table, the net increase of noise levels along the study roadway segments of the proposed haul route would increase at a range of 1.1 dB to 1.4 dB. However, the net increase of noise levels along the proposed haul route would be less than the 1.5 dB L_{dn} significance criteria at the sensitive noise receptors, and therefore, project traffic noise level impacts would be considered less than significant along the proposed haul route.

Noise Levels Along the Existing Haul Route

As shown in Table 4.4-7, the noise levels along the roadway segments located at the existing haul route would decrease following implementation of the proposed project. Currently, noise levels along the existing haul route range from 64.1 dB to 68.2 dB. The proposed project would relocate haul truck traffic from the Hallwood mine to use the proposed private haul route, and, thus, noise levels along the existing haul route would decrease at a range of 12.1 dB to 16 dB due to the net decrease in truck traffic noise levels at the residences located in the immediate vicinity of the existing haul route. Therefore, the proposed project would have a less-than-significant impact related to noise levels along the existing haul route.

Noise Levels at the Nearest Sensitive Receptor

Currently, the roadway extending south of the SR 20/Kibbe Road intersection is used primarily by local vehicles accessing an existing residence on an agricultural parcel, other agricultural vehicles, and vehicles accessing adjacent irrigation delivery systems. As discussed previously in this Chapter, Receptor 1 is the only noise sensitive receptor located along the proposed haul route. It should be noted that Receptor 1 is not considered to be noise-sensitive by the County due to the agricultural zoning of the parcel. However, for the purposes of this analysis, in order to present a conservative approach, the residence is considered to be a noise sensitive receptor. Following construction of the proposed project, 100 percent of the hauling truck traffic from the Hallwood mine would travel along the proposed haul route, where a limited amount of traffic currently exists.

Single-event heavy truck passby data collected at long-term noise measurement Site 2 was used to quantify the noise levels generated by the proposed project at the interior and the outdoor activity area Receptor 1. It should be noted that the outdoor activity area of Receptor 1 is located approximately 250 feet from the proposed haul road, while the front of the residence is located approximately 180 feet from the proposed haul road. Additionally, noise levels at the interior of the residence were conservatively evaluated by subtracting 10 dB from the levels predicted at the front of the building to represent the windows of the residence in the open position. Table 4.4-8 presents the evaluations of the proposed project's worst-case noise levels at both the interior and exterior locations of Receptor 1.

As shown in Table 4.4-8, worst-case project noise levels at Receptor 1 are predicted to increase by approximately 3 dB L_{dn} relative to the existing ambient conditions at the interior locations of Receptor 1, and 2 dB L_{dn} in the rear yard of Receptor 1. However, with the addition of the noise generated by the proposed project, noise levels at both the interior and exterior locations of Receptor 1 are not predicted to exceed the County's 45 dB L_{dn} interior, and 60 dB L_{dn} exterior noise level standards. Thus, adverse noise impacts are not identified at Receptor 1 as a result of the proposed project.

As noted previously, the short-term noise surveys were conducted at two locations along the existing haul route to quantify the noise generation of heavy trucks accelerating as they turned onto SR 20, and decelerating as they turned onto the existing haul route, which closely mimics the acceleration and deceleration that would occur at Kibbe Road following project completion. During the short-term noise surveys, trucks decelerating to turn off of SR 20 onto either Hallwood Boulevard or Walnut Avenue did not use Jake brakes. Therefore, it is reasonable to assume that trucks travelling along the proposed haul route would not use Jake brakes, and noise impacts related to the use of Jake brakes would be less than significant.

Table 4.4-8
Predicted Worst-Case Noise Levels at Receptor 1

Location	Distance (feet)	Project Noise Generation				Baseline Ambient			Baseline + Project			Exceed County Standards?
		SEL	L_{max}	Pk Hr L_{eq}	L_{dn}	L_{max}	Pk Hr L_{eq}	L_{dn}	L_{max}	Pk Hr L_{eq}	L_{dn}	
Interior	180	57	47	42	42	48-54	40	42	48-54	44	45	**NO**
Rear Yard	250	65	54	50	50	59-64	50	52	59-64	53	54	**NO**

Source: Bollard Acoustical Consultants, Inc. 2021.

Conclusion

Based on the above, the proposed project would not expose noise-sensitive receptors to transportation noise levels that exceed Yuba County noise level standards. Therefore, the proposed project would have a ***less-than-significant*** impact related to the generation of a substantial permanent increase in ambient noise levels.

Mitigation Measure(s)

None required.

4.4-3 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Based on the analysis below, the impact is *less than significant*.

The primary vibration-generating activities associated with the proposed project would occur during construction activities for the proposed project. However, much of the construction of the proposed haul route has been previously completed. During the remaining project construction, heavy equipment would be used for grading, excavation, and paving, which would generate localized vibration in the immediate vicinity of the project site.

As shown in Table 4.4-2, construction vibration impacts include human annoyance and building structural damage. The threshold of significance for human annoyance occurs at a vibration level of 0.10 PPV in/sec, while building damage, which can take the form of cosmetic or structural damage, can occur at a vibration level of 0.20 PPV in/sec.

Table 4.4-9 shows the typical vibration levels produced by construction equipment at a distance of 25 feet, and a distance of 180 feet, which is the distance of Receptor 1 from the project site.

As shown in Table 4.4-9, construction vibration levels anticipated for the proposed project are well below the 0.2 PPV in/sec threshold of damage to buildings and the 0.1 PPV in/sec threshold of annoyance criteria at distances of 180 feet. Additionally, construction activities would be temporary in nature and would occur during normal daytime working hours. Therefore, construction vibrations would not cause damage to existing buildings or cause annoyance to sensitive receptors.

During project operations, loaded trucks would travel along the proposed haul route, which could generate groundborne vibration. However, as demonstrated in Table 4.4-9, the vibration levels associated with loaded trucks would be 0.002 PPV/in/sec at the nearest sensitive receptor, which is well below the 0.2 PPV in/sec threshold of damage to buildings and the 0.1 PPV in/sec threshold of annoyance criteria. Therefore, operational vibration levels associated with loading hauling trucks travelling along the proposed haul route would not cause damage to existing buildings or cause annoyance to sensitive receptors.

Table 4.4-9
Vibration Levels for Various Construction Equipment

Type of Equipment	PPV at 25 feet (in/sec)	PPV at 180 feet (in/sec)
Large Bulldozer	0.089	0.004
Hoe Ram	0.089	0.004
Caisson drilling	0.089	0.004
Loaded Trucks	0.076	0.003
Backhoe	0.051	0.002
Excavator	0.051	0.002
Grader	0.051	0.002
Loader	0.051	0.002
Jackhammer	0.035	0.001
Small Bulldozer	0.003	<0.001

Source: Federal Transit Administration. Transit Noise and Vibration Impact Assessment Manual and Bollard Acoustical Consultants calculations. 2018.

Based on the distance from construction and operational activities to the nearest structures, vibration from the proposed project would not be a concern. Additionally, construction activities would be temporary in nature. Therefore, the proposed project would not result in the generation of excessive groundborne vibration or groundborne noise levels, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

Cumulative Impacts and Mitigation Measures

As defined in Section 15355 of the CEQA Guidelines, "cumulative impacts" refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

The following cumulative discussion is based on the implementation of the proposed project in combination with other proposed and pending projects in the region. The cumulative context generally assumes buildout of the Yuba County General Plan. The cumulative traffic noise setting for the following analysis relied on traffic volumes for the Cumulative and Cumulative Plus Project conditions, which were provided in the Transportation Impact Study prepared for the proposed project (see Appendix G). As discussed in Chapter 4.5, Transportation, of this EIR, the cumulative traffic analysis relied on the Sacramento Area Council of Governments (SACOG) 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) and the Yuba County Capital Improvement Program (CIP) project list, as contained in the County's 2020-2024 Transportation Master Plan.

4.4-4 Cumulative noise impacts. Based on the analysis below, the project's incremental contribution to this significant cumulative impact is *less than significant*.

Cumulative development associated with buildout of the Yuba County General Plan would result in increased vehicle traffic along local roadways relative to existing conditions. Such increases in vehicle traffic would result in increased traffic noise levels throughout the County's Planning Area, including within the vicinity of the project site. Table 4.4-10 shows the Cumulative and Cumulative Plus Project traffic noise levels at the nearest sensitive receptors of the proposed project.

Table 4.4-10
Cumulative and Cumulative Plus Project Traffic Noise Levels (dB L_{dn})

Segment	Roadway Name	Segment Description	Cumulative	Project	Cumulative + Project	Change
1	SR 20	Walnut to Hallwood	67.5	60.7	68.4	0.8
2	SR 20	Hallwood to Woodruff	67.5	62.0	68.5	1.1
3	SR 20	Woodruff to Loma Rica	69.9	62.4	70.6	0.7
4	SR 20	Loma Rica to Kibbe	69.9	62.7	70.6	0.8
5	SR 20	East of Kibbe	69.8	0.0	69.8	0.0
6	Walnut Avenue	SR 20 to Hallwood	64.4	-63.8	55.4	-9.0
7	Walnut Avenue	Hallwood to Teichert Entrance	68.3	-68.1	54.6	-13.7
8	Hallwood Blvd	SR 20 to Hooper	66.3	-66.0	54.6	-11.7
9	Hallwood Blvd	Hooper to Walnut	66.3	-66.0	54.2	-12.2

Source: Bollard Acoustical Consultants, Inc. 2021.

Noise Levels Along the Proposed Haul Route

As shown in Table 4.4-10, the net increase of noise levels along the study roadway segments of the proposed haul route would increase at a range of 0.7 dB to 1.1 dB under Cumulative Plus Project conditions. However, project-generated traffic would not result in a substantial increase in traffic noise levels on the local roadway network relative to the County's 1.5 dB L_{dn} significance criteria. Additionally, the proposed project would not result in any additional traffic, rather, existing haul truck traffic would be directed from the existing haul route to the proposed haul route. Therefore, under Cumulative Plus Project conditions, traffic noise along the proposed haul route would not result in a substantial permanent increase in ambient noise levels in the project vicinity, and the proposed project's incremental contribution to cumulative traffic noise impacts along the proposed haul route would be less than significant.

Noise Levels Along the Existing Haul Route

As shown in Table 4.4-10, the noise levels along the roadway segments located at the existing haul route would decrease under Cumulative Plus Project conditions following implementation of the proposed project. Cumulative noise levels along the existing haul route would range from 64.4 dB to 68.3 dB. However, the proposed project would relocate haul truck traffic from the Hallwood mine to use the proposed private haul route, and, thus, Cumulative Plus Project noise levels along the existing haul route would decrease at a range of 9.0 dB to 13.7 dB due to the net decrease in truck traffic noise levels at the residences located in the immediate vicinity of the existing haul route. Therefore, under Cumulative Plus Project conditions, traffic noise along the existing haul route would not result in a substantial permanent increase in ambient noise levels in the project vicinity, and the proposed project's incremental contribution to cumulative traffic noise impacts along the existing haul route would be less than significant.

Noise Levels at the Nearest Sensitive Receptor

As discussed above, the proposed haul route would be privately owned by Teichert, and used solely for haul truck traffic travelling to and from the Hallwood mine. As such, traffic levels along the proposed haul route would not increase under Cumulative or Cumulative Plus Project conditions. Therefore, noise levels at the nearest sensitive receptor would remain below the County's 45 dB L_{dn} interior, and 60 dB L_{dn} exterior noise level standards. Thus, adverse noise impacts under Cumulative Plus Project conditions are not identified at Receptor 1 as a result of the proposed project.

Conclusion

Based on the above, the proposed project would not expose noise-sensitive receptors to transportation noise levels that exceed Yuba County noise level standards under Cumulative Plus Project conditions. Therefore, the proposed project would have a ***less-than-significant*** impact related to cumulative noise levels.

Mitigation Measure(s)

None required.

4.5 Transportation

4.5 Transportation

4.5.1 INTRODUCTION

The Transportation chapter of the EIR discusses the existing transportation facilities within the project vicinity, as well as applicable policies and guidelines used to evaluate operation of such facilities. The information contained within this chapter is primarily based on the Transportation Impact Study[1] and Sight Distance Analysis[2] prepared for the proposed project by Fehr & Peers (see Appendix G), as well as the Yuba General Plan,[3] and the Yuba County General Plan EIR.[4]

4.5.2 EXISTING ENVIRONMENTAL SETTING

The section below describes the physical and operational characteristics of the existing transportation system within the project area, including the surrounding roadway network, transit, bicycle and pedestrian facilities.

Study Intersections and Roadway Segments

The following section provides a list of the study intersections and roadway segments within the project area. The study intersections are listed below, and depicted in Figure 4.5-1.

1. State Route (SR) 20/Kibbe Road
2. SR 20/Loma Rica Road
3. SR 20/Woodruff Lane
4. SR 20/Hallwood Boulevard
5. SR 20/Walnut Avenue
6. Hallwood Boulevard/Walnut Avenue
7. Hallwood Boulevard/Hooper Road

The study roadway segments are listed below followed by additional descriptions:

1. SR 20: Walnut Avenue to Hallwood Boulevard
2. SR 20: Hallwood Boulevard to Woodruff Lane
3. SR 20: Woodruff Lane to Loma Rica Road
4. SR 20: Loma Rica Road to Kibbe Road
5. SR 20: East of Kibbe Road
6. Walnut Avenue: SR 20 to Hallwood Boulevard
7. Walnut Avenue: Hallwood Boulevard to Teichert Facility
8. Hallwood Boulevard: SR 20 to Hooper Road
9. Hallwood Boulevard: Hooper Road to Walnut Avenue

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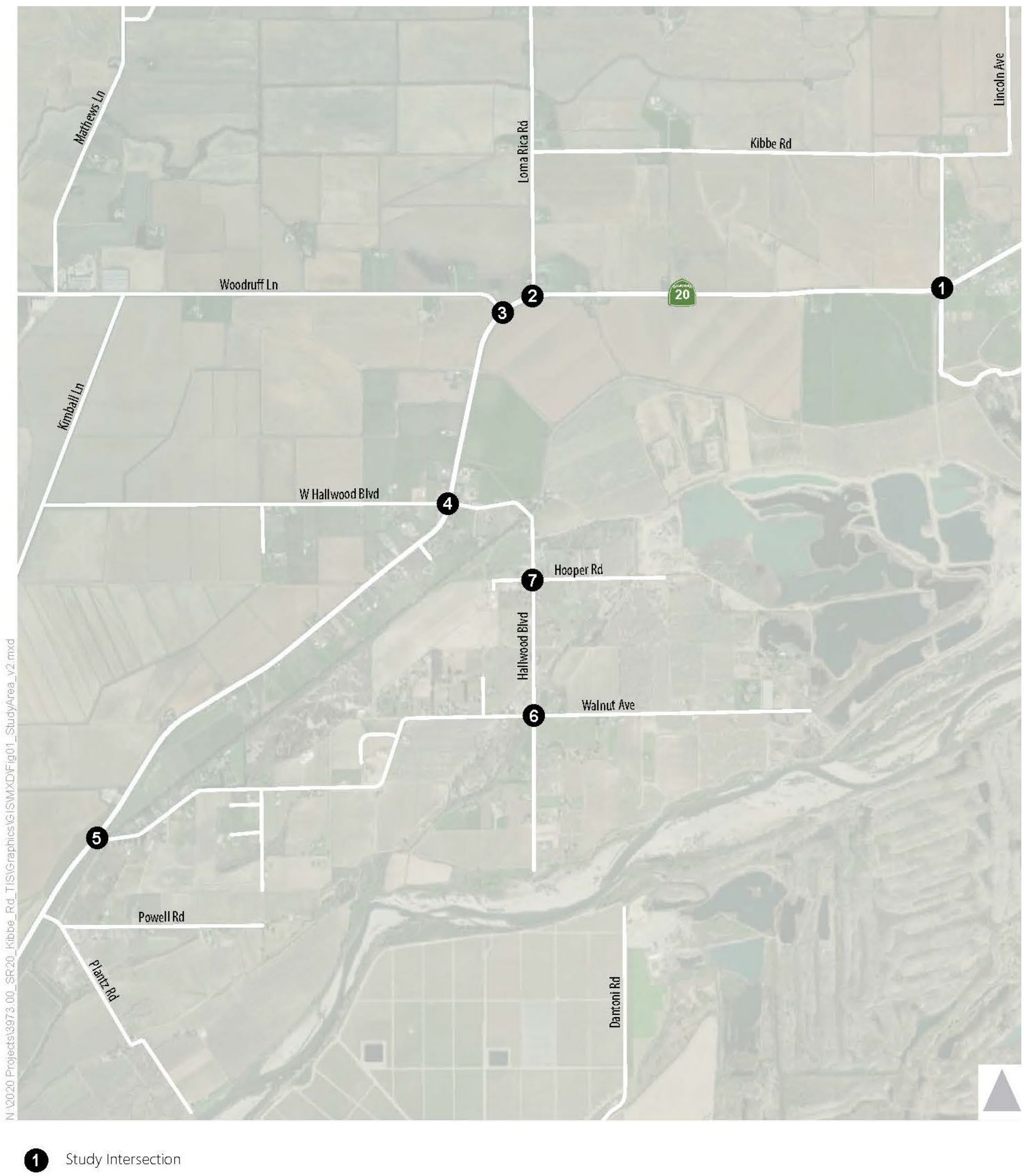
1 Fehr & Peers. *State Route 20/Kibbe Road Intersection and Haul Road Draft Transportation Impact Study*. August 2021.
2 Fehr & Peers. *SR 20/Kibbe Road Intersection and Haul Road Draft TIS – Sight Distance Analysis*. October 1, 2021
3 Yuba County. *Yuba County 2030 General Plan*. June 7, 2011.
4 Yuba County. *Final Yuba County 2030 General Plan EIR.* May 2011.

Figure 4.5-1
Study Intersection Locations



Source: Fehr & Peers, 2021.

State Route 20

SR 20 is classified as a conventional highway in the vicinity of the project site. The roadway has one eastbound and one westbound lane. The posted speed limit on SR 20 varies from 55 miles per hour (MPH) near Walnut Avenue, 45 MPH near Hallwood Boulevard, 25 MPH in the school zone at Cordua Elementary School, and 55 MPH near Woodruff Lane to Kibbe Road.

Hallwood Boulevard

Hallwood Boulevard east of SR 20 is classified as a minor collector (level terrain) in the Yuba County General Plan. The roadway is approximately 24 feet wide with minimal to no paved shoulders and has double yellow centerline striping. The posted speed limit between SR 20 and Walnut Avenue is 25 MPH.

Kibbe Road

Kibbe Road is a rural local road north and south of SR 20. The roadway is approximately 16 feet wide with no paved shoulders and does not have centerline striping. The speed limit for the roadway is not posted in the project vicinity.

Loma Rica Road

Loma Rica Road is a two-lane road that connects SR 20 with Loma Rica and is classified as a major rural collector in the Yuba County General Plan. The roadway has minimal to no paved shoulders and a posted speed limit of 55 MPH near SR 20. Loma Rica Road has a 22-ton weight limit restriction.

Walnut Avenue

Walnut Avenue is an east-west rural local road that extends from SR 20 to the western entrance of the Teichert Aggregates Hallwood mine. The roadway has one westbound and one eastbound lane with minimal to no paved shoulders. Walnut Avenue has double yellow centerline striping and the posted speed limit is 25 MPH. Mining facility trucks are permitted to enter from SR 20 at the Walnut Avenue intersection, but egress is prohibited. Instead, exiting trucks must use Hallwood Boulevard to access SR 20.

Woodruff Lane

Woodruff Lane is classified as a major rural collector road in the Yuba County General Plan. The roadway connects SR 20 and SR 70 north of the City of Marysville. Woodruff Lane is approximately 24 feet wide with minimal to no paved shoulders, double yellow centerline striping and a posted speed limit near SR 20 of 55 MPH. Several locations on Woodruff Lane consist of right angle turns, narrow ditch crossings and low speed limits. Woodruff Lane has a 22-ton weight limit restriction.

Hooper Road

Hooper Road is a rural local road within the Hallwood community that provides access to Hallwood Boulevard for several homes and businesses, including another mining facility. The roadway has minimal to no paved shoulders and does not contain a centerline. The Yuba County Code of Ordinances prohibits speeds in excess of 35 MPH on Hooper Road east of Hallwood Boulevard.

Vehicle Trip Generation and Distribution

Peak hour and daily trip generation for the Hallwood mine haul trucks and employees was estimated using detailed datasets provided by Teichert Aggregates. During the peak season (June through October), the Hallwood mine employs a maximum of 29 individuals. Employees typically arrive between 5:00 AM and 5:30 AM and depart work between 3:00 PM and 3:30 PM or 5:30 PM and 6:00 PM, depending on their shift. Because the AM peak hour occurs from 7:00 AM to 8:00 AM, employee traffic does not affect the AM peak hour. Because the PM peak hour occurs from 5:00 PM to 6:00 PM, it is conservatively assumed that all employees egress the site during the PM peak hour.

Table 4.5-1 shows the AM peak hour, PM peak hour, and daily truck 30th highest hour trip generation estimates for the October 2019 to September 2020 year and for historically busy years. As shown in Table 4.5-1, the facility generates about 122 AM peak hour, 14 PM peak hour, and 882 daily truck trips during its 30th highest loads in a historically busy year.

Table 4.5-1
Truck Trip Generation

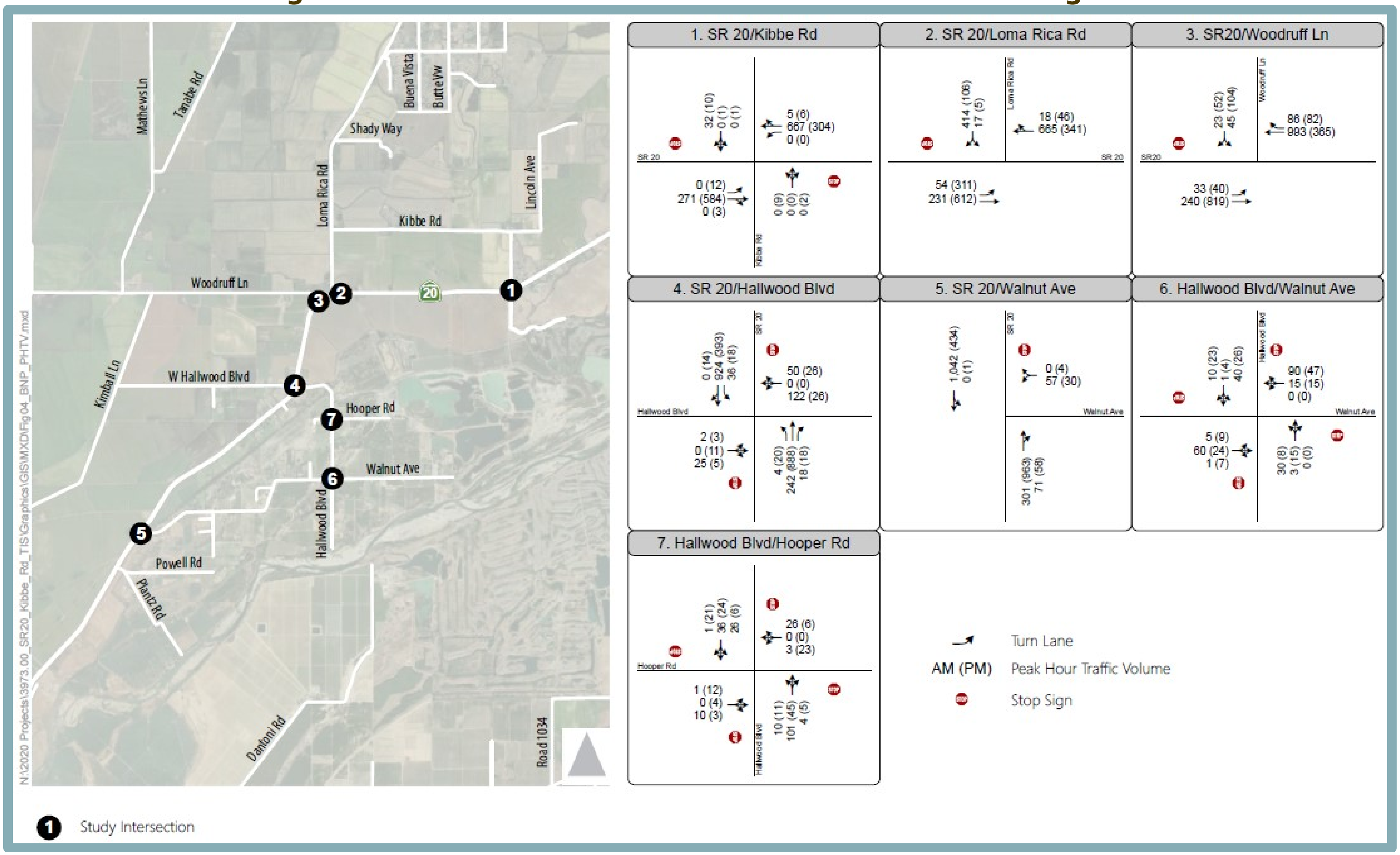
Scenario	Tons of Material Sold Per Year	Number of Truck Loads Per Year[1]	AM Peak Hour		PM Peak Hour		Daily	
			Loads	Trips[2]	Loads	Trips[2]	Loads	Trips[2]
October 2019 to September 2020 Data Year (30th Highest Load)	1,600,551	55,158	49	98	6	12	353	706
Historically Busy Year	2,000,000	68,924[3]	61[3]	122[3]	7[3]	14[3]	441[3]	882[3]
Midweek Days in October 2019	--	--	9	18	1	2	136	272

Notes:
1 Based on October 2019 to September 2020 data.
2 Based on two trips per load (one inbound trip/ one outbound trip)
3 25 percent increase assumed based on ratio of historical busy year sales volume (2.0 million tons) to sales volume in October 2019 to September 2020 data year (1.600551 million tons).

Source: Fehr & Peers, 2021, 2020.

The Hallwood mine dataset for October 2019 shows that average peak hour and daily loads were substantially lower in October than the 30th highest load trip generation estimates below. As shown in the table below, the Hallwood site only generated about 18 AM peak hour, 2 PM peak hour, and 272 daily truck trips on midweek days in October 2019. Therefore, adjustments were made to traffic volumes, resulting in a scenario with existing conditions background traffic volumes plus Hallwood site traffic consistent with the trip generation estimates shown in Table 4.5-1 for the 30th highest loads during a historically busy year. Figure 4.5-2 displays the existing conditions AM and PM peak hour volumes and lane configurations, including the above adjustment.

Figure 4.5-2
Existing Condition Peak Hour Traffic Volumes and Lane Configurations



Source: Fehr & Peers, 2021.

Currently, all traffic accessing the Hallwood mine uses one of two intersections: SR 20/Hallwood Boulevard or SR 20/Walnut Avenue. Teichert Aggregates' datasets, which include employee residence locations, showed that about 43 percent of employees travel on SR 20 west of Walnut Avenue, 39 percent travel on Woodruff Lane north and west of SR 20, 14 percent travel on Loma Rica Road north of SR 20, and 4 percent travel on SR 20 east of Kibbe Road. Assuming employees choose the shortest path to work, 43 percent of employees use SR 20/Walnut Avenue and 57 percent use SR 20/Hallwood Boulevard.

The current haul route also uses the SR 20 intersections at Hallwood Boulevard and Walnut Avenue. While inbound traffic can access the Hallwood mine through both intersections, the current outbound haul route directs all truck trips to access SR 20 via Hallwood Boulevard. Based on historical information provided by Teichert Aggregates, 75 percent of truck trips leaving the Hallwood site are estimated to travel west on SR 20 and the remaining 25 percent travel east.

Level of Service

Pursuant to Senate Bill (SB) 743 and the CEQA Guidelines (discussed in further detail below), VMT is the primary metric used to identify transportation impacts to roadway systems within this chapter. However, in order to analyze the proposed project's compliance with a program, plan, ordinance, or policy addressing the circulation system as outlined in the General Plan's Circulation Element, the analysis below will incorporate Level of Service (LOS). Vehicle LOS is a qualitative measure of traffic flow from the perspective of motorists and is an indication of the comfort and convenience associated with driving. The analysis uses procedures identified in the Highway Capacity Manual 6th Edition (HCM) published by the Transportation Research Board of the National Academies of Science. The HCM defines six levels of service ranging from LOS A (representing free-flow vehicular traffic conditions with little to no congestion) to LOS F (oversaturated conditions where traffic demand exceeds capacity resulting in long queues and delays). Table 4.5-2 provides a summary of the existing intersection LOS in the project vicinity.

Table 4.5-2
Existing Intersection LOS

Intersection	Traffic Control	Peak Hour	Existing Conditions	
			Delay[1]	LOS
SR 20/Kibbe Road	SSSC	AM	1 (15)	A (B)
		PM	1 (22)	A (C)
SR 20/Loma Rica Road	SSSC	AM	47 (150)	**E (F)**
		PM	3 (16)	A (C)
SR 20/Woodruff Lane	SSSC	AM	2 (26)	A (D)
		PM	3 (27)	A (D)
SR 20/Hallwood Boulevard	SSSC	AM	51 (>300)	**F (F)**
		PM	3 (61)	**A (F)**
SR 20/ Walnut Avenue	SSSC	AM	2 (59)	**A (F)**
		PM	1 (45)	A (E)
Walnut Avenue/Hallwood Boulevard	AWSC	AM	8	A
		PM	7	A
Hallwood Boulevard/Hooper Road	AWSC	AM	8	A
		PM	7	A

Notes: SSSC = side street stop controlled. AWSC = all-way stop controlled. Bold indicates unacceptable operations.
[1] Average delay (rounded to the nearest second). For all-way stop controlled intersections, average delay is the weighted average for all movements. For side-street stop controlled intersections, both the intersection average delay and worst movement average delay (in parentheses) is reported.

Source: Fehr & Peers, 2021.

Vehicle Miles Traveled

Per SB 743 and the CEQA Guidelines, VMT is the primary metric used to identify transportation impacts under CEQA. VMT is a measure of the total amount of vehicle travel occurring on a given roadway system.

In 2013, Senate Bill (SB) 743 was passed to amend Sections 65088.1 and 65088.4 of the Government Code, amend Sections 21181, 21183, 21186, 21187, 21189.1, and 21189.3 of the Public Resources Code (PRC), to add Section 21155.4 to the PRC, to add Chapter 2.7 (commencing with Section 21099) to Division 13 of the PRC, to add and repeal Section 21168.6.6 of the PRC, and to repeal and add Section 21185 of the PRC, relating to environmental quality. As a result of SB 743, as discussed in further detail below, local jurisdictions may not rely on vehicle LOS and similar measures related to delay as the basis for determining the significance of transportation impacts under CEQA. Thus, consistent with the CEQA Guidelines, VMT is the primary metric used to identify transportation impacts to roadway systems within this chapter.

In general, the legislative intent of SB 743 and the associated CEQA Guidelines Sections is to ensure that lead agencies analyze VMT for passenger car and light truck trips related to land use projects. SB 743 does not necessarily pertain to the movement of goods/materials in heavy trucks, such as those trips associated with the Teichert hauling truck traffic. However, in order to provide the most conservative analysis in this EIR, an evaluation of the VMT associated with the Teichert haul trucks is included in this chapter.

Based on the results of the VMT analysis, total daily VMT associated with existing hauling activity in the study area (defined as the area along SR 20 between Walnut Avenue and Kibbe Road) is approximately 4.67 miles per truck, and 5.06 miles per employee.

Pedestrian, Bicycle and Transit Facilities

The sections below describe the existing pedestrian, bicycle and transit facilities located within the vicinity of the project site.

Pedestrian and Bicycle Facilities

Pedestrian and bicycle facilities do not occur in the vicinity of the SR 20/Kibbe Road Intersection. The Yuba County Bikeway Master Plan Update identifies planned bicycle facilities in and near the project area, such as a planned Class III bike route with a multi-use shoulder along SR 20 between the City of Marysville and Nevada County and on Loma Rica Road north of SR 20, and a planned Class III bike route with “signage only” on Woodruff Lane west of SR 20. However, the project area does not contain any existing bicycle facilities, and the closest bicycle facilities to the project area are currently located in the City of Marysville.

Similarly, due to the rural nature of the project area, sidewalks are not present along any of the study roadway segments, and marked crosswalks are not provided at any of the study intersections.

Transit System

The Yuba-Sutter Transit Authority provides public transit service to Yuba County and Sutter County residents under a joint powers agreement between the counties and the cities of Marysville and Yuba City. Six local bus routes operate Monday through Saturday within and between Yuba City, Marysville, Linda, and Olivehurst, and three rural bus routes offer limited service on weekdays between the Yuba County Government Center and Wheatland, Live Oak, and Brownsville. Additionally, commuter or express service buses provide service to downtown Sacramento on weekdays, and the Yuba College Sutter Campus Shuttle provides free service on school days between the Walton Terminal in Yuba City and the Yuba College Sutter Campus. Dial-A-Ride services offer curb-to-curb shared rides for eligible passengers within specified locations of the service area.

The nearest public transit service bus route to the SR 20/Kibbe Road intersection is the Foothill rural bus route, which currently runs adjacent to the community of Hallwood on SR 20. The nearest public transit service bus stops to the project area are located at the Yuba County Government Center, approximately 8.8 miles from the project site, and north of the Loma Rica Road/Fruitland Road intersection in Loma Rica, approximately 10.5 miles from the project site. The Dial-A-Ride service is not available in the project vicinity, and the service does not include the Hallwood community, as it extends to the northeast only within the City of Marysville city limits. Rail lines, both active or inactive, do not exist within the project area.

While public transit service bus routes and bus stops do not exist within the project vicinity, unmarked bus loading areas (i.e., no signage or striping) which service the Marysville Joint Unified School District (MJUSD) are located in the southwestern and northeastern corners of the SR 20/Kibbe Road intersection. Four schools: Cordua Elementary, Foothill Intermediate, Marysville Charter Academy, and Marysville High, use the bus stop located at the SR 20/Kibbe Road intersection for daily pick-up and drop-off services during the school year. School buses stop on the “near side” SR 20 shoulder (i.e., prior to the SR 20/Kibbe Road intersection) without requiring highway traffic to stop. In addition, children are typically picked up and dropped off on the side of SR 20 closest to their home, thereby not requiring recurring pedestrian highway crossings.

4.5.3 REGULATORY CONTEXT

Applicable federal laws or regulations pertaining to transportation and circulation within the project area do not exist. State and local laws and regulations applicable to the proposed project are listed below.

State Regulations

The following are the State environmental laws and policies relevant to transportation.

Senate Bill 743

SB 743 (Stats. 2013, ch. 386) requires the Governor’s Office of Planning and Research (OPR) to establish new metrics for determining the significance of transportation impacts of projects within transit priority areas (TPAs) and allows OPR to extend use of the metric beyond TPAs. In response, OPR released the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which identified VMT as the preferred transportation impact metric. OPR applied their discretion to require the use of VMT statewide. SB 743 requires that as of April 27, 2019, vehicle LOS and similar measures related to delay shall not be used as the sole basis for determining the significance of transportation impacts. Determination of impacts based on VMT is required Statewide as of July 1, 2020.

CEQA Guidelines Section 15064.3

Section 15064.3 of the CEQA Guidelines was added in 2018 to address the requirements of SB 743 and the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA.

Section 15064.3 states the following:

(a) Purpose.

This section describes specific considerations for evaluating a project's transportation impacts. Generally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, "vehicle miles traveled" refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) below (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact.

(b) Criteria for Analyzing Transportation Impacts.

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.
(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.
(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

(c) Applicability.

The provisions of this section shall apply prospectively as described in section 15007. A lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide.

Technical Advisory on Evaluating Transportation Impacts in CEQA

The OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA includes potential significance thresholds for different types of land use projects and transportation projects. Distinct threshold recommendations are provided for residential, office, and retail projects. Such uses tend to have the greatest influence on VMT. Lead agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types. In developing thresholds for other project types, the Technical Advisory directs lead agencies to consider the purposes described in Section 21099 of the PRC and regulations in the CEQA Guidelines on the development of thresholds of significance (e.g., CEQA Guidelines Section 15064.7).

The Technical Advisory suggests that lead agencies may screen out VMT impacts using project size, map-based approaches to low-VMT areas, transit availability, and provision of affordable housing. However, none of the screening criteria included in the Technical Advisory would apply to the proposed project.

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways, in California, including those in Yuba County. Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the State highway system within the County need to be approved by Caltrans. The County does not have the ability to unilaterally make improvements to the State highway system. Caltrans' *Guide for the Preparation of Traffic Impact Studies* (December 2002) provides guidance on the evaluation of traffic impacts to State highway facilities. The document outlines when a traffic impact study is needed and what should be included in the scope of the study. The following provides a discussion of reports published by Caltrans which are applicable to the proposed project.

State Route 20 Transportation Concept Report

The SR 20 Transportation Concept Report (TCR) identifies a Concept LOS for SR 20. The Concept LOS reflects the minimum level or quality of operations acceptable for each route segment within the 20-year planning period. According to the TCR, SR 20 between 22nd Street and Marysville Road in Yuba County has a Concept LOS E. Therefore, the minimum acceptable LOS in the project area for traffic operations at Caltrans facilities is LOS E.

Vehicle Miles Traveled-Focused Transportation Impact Study Guide

In May 2020, the Caltrans published the Vehicle Miles Traveled-Focused Transportation Impact Study Guide (TISG), which replaced the Caltrans 2002 Guide for the Preparation of Traffic Impact Studies. The TISG generally endorses the policies, technical approaches, and recommendations from OPR's Technical Advisory. The TISG also indicates that Caltrans intends to "transition away from requesting LOS or other vehicle operations analyses of land use projects", instead placing the focus on VMT and safety.

As a follow-up to the TISG, Caltrans published the Interim Land Development and Intergovernmental Review (LDIGR) Safety Review Practitioners Guidance in July 2020 which provides interim guidance for conducting safety reviews of land use projects and plans that may affect the State Highway System. Although the LDIGR Safety Review Practitioners Guidance stops short of including specific thresholds of significance or providing recommendations for how safety evaluations should be included in CEQA documents, the document clearly indicates the

State's expectation that, when appropriate, CEQA studies of land use projects should include safety investigations of the State Highway System. Furthermore, the LDIGR specifies that mitigation measures for identified safety impacts should avoid increasing roadway capacity, which may induce VMT or affect conditions for vulnerable users, such as bicyclists of pedestrians.

Local Regulations

The following are the local environmental policies relevant to transportation.

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is an association of local governments in the six-county Sacramento Region which includes the counties of Sacramento, El Dorado, Placer, Sutter, Yolo, and Yuba as well as 22 cities. SACOG provides transportation planning and funding for the region and serves as a forum for the study and resolution of regional issues. In addition to preparing the region's long-range transportation plan, SACOG assists in planning for transit, bicycle networks, clean air, and airport land uses.

2020 Metropolitan Transportation Plan/Sustainable Communities Strategy

The 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) is a federally mandated long-range fiscally constrained transportation plan for the six-county area. To receive federal funding, transportation projects nominated by cities, counties, and agencies must be consistent with the MTP/SCS.

The Metropolitan Transportation Improvement Program (MTIP) is a list of transportation projects that receive federal funds, require a federal action, or are regionally significant. The 2019-2022 MTIP adopted by SACOG covers the federal fiscal years of 2019 through 2022. The document also identifies prior year funding and estimated future funding beyond the four program years for projects for information. SACOG submits the MTIP to Caltrans and amends the program on a quarterly cycle.

Yuba County General Plan

The Yuba County General Plan's Community Development Element and Public Health and Safety Element contains policies for assessing transportation impacts within the County. Listed below are the policies that are applicable to the proposed project.

Community Development Element

Policy CD16.1: The County will maintain roadway levels of service that recognize differences between urban and rural environments and consideration of other community character, economic, and environmental policies of the County.

Policy CD16.3: On County roads in rural areas, Level of Service "D" shall be maintained, as feasible, during the PM Peak Hour.

Policy CD16.4: On State highways, the level of service goals included in the adopted Yuba-Sutter Congestion Management Plan shall be maintained, as feasible.

Policy CD16.5: Where a new development would exceed the County's Level of Service policies, applicants shall first consider feasible revisions to the proposed development that would increase connectivity, enhance bicycle/pedestrian/transit access, provide additional travel demand management measures, and/or provide other revisions that would help to meet LOS standards by reducing vehicle miles traveled on roads exceeding the target LOS, prior to consideration of adding capacity to roadways and intersections.

Policy CD16.6: New developments shall analyze and provide fair-share funding of roadway improvements necessary to provide an appropriate Level of Service (LOS) and ongoing operation and maintenance of roadways. New developments abutting General Plan Roads will generally be required to construct and dedicate improved roads.

Policy CD16.7: New developments will be required to reserve County and Caltrans rights-of-way necessary to serve the 2030 General Plan at buildout according to County Level of Service policies.

Policy CD16.10: The County will not use traffic level of service policies to analyze and mitigate CEQA impacts of new developments, but instead will use its level of service policies to assess fair-share funding of transportation facilities necessary to serve new projects.

Policy CD16.11: The County will analyze and mitigate transportation impacts in CEQA documents according to their relative increase in vehicular travel demand.

Policy CD17.1: New developments shall be designed to facilitate safe and convenient travel by pedestrians, bicyclists, transit users, and drivers.

Policy CD18.4: The County will work cooperatively with Nevada County, Caltrans, and SACOG to improve capacity on State Highway 20 east of Marysville.

Policy CD18.7: New developments shall analyze impacts to Caltrans facilities and shall provide fair-share funding to address impacts to Caltrans facilities, as feasible.

Policy CD19.4: The County will plan its investments and condition new developments to provide pedestrian, bicycle, and transit facilities designed to provide multi-modal connections within neighborhoods, within unincorporated communities, and between communities and cities in the County.

Policy CD19.5: New developments shall include the construction or pro-rata funding of transportation infrastructure that may include a connected and integrated system of bicycle and pedestrian facilities, consistent with County standards.

Policy CD20.1: New developments shall be designed to discourage concentration of traffic at a few intersections. Multiple points of access shall be provided, wherever feasible.

With regard to Policy CD16.3, the policy has been interpreted to apply to both signalized and unsignalized intersections for both the weekday AM and PM peak hours. Therefore, for the purposes of the analysis included in this EIR, LOS D is the minimum acceptable LOS for County intersections and roadway segments.

Public Health and Safety Element

Policy HS5.3: Since transportation is the largest sector contributing to GHG emissions both locally and at the statewide level, the County will prioritize land use/transportation projects that manage travel demand by increasing housing/employment density, placing homes in closer proximity with destinations, increasing accessibility to transit, or otherwise decreasing vehicle miles traveled (per household, per capita, and/ or per employee).

Yuba County Bikeway Master Plan Update

The Yuba County Bikeway Master Plan was adopted by Yuba County on January 22, 2013. The Bikeway Master Plan establishes goals, policies, implementation actions, and priorities for the development of bicycle facilities in Yuba County. Key elements of the Bikeway Master Plan include maps of existing and proposed bicycle facilities and their proximity to major activity centers. The implementation plan identifies project priorities, locations, improvement descriptions, facility types, and cost estimates. The implementation plan guides development of proposed bicycle improvements.

Yuba County Public Facilities Fee

Yuba County adopted a County Public Facilities Fee (CPFF) (Title 13, Chapter 13.50) and subsequently repealed and re-enacted Chapter 13.50 as the Countywide Development Impact Fees (CDIF) to mitigate impacts attributable to new development within the County. The fees fund County public facilities needed as a result of development and assure that development pays its fair share for public facilities. The traffic impact component of the CDIF program covers various Countywide transportation improvements. The Yuba County Impact Fee Update Report lists the transportation projects included in the CDIF. Planned improvements identified in the vicinity of the proposed project include SR 20 connection improvements, signal improvements, and lane improvements.

Yuba-Sutter Transit Authority

The Yuba-Sutter Transit Authority provides public transit service in Yuba County and Sutter County, as well as commuter service to Sacramento, under a joint powers agreement between the counties and the cities of Marysville and Yuba City. The 2015 Yuba Sutter Short Range Transit

Plan assesses transit and related transportation issues and sets the stage for implementation of short-term service improvements.

4.5.4 IMPACTS AND MITIGATION MEASURES

This section describes the standards of significance and methodology utilized to analyze and determine the proposed project's potential impacts related to transportation and circulation.

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the proposed project would be considered to result in a significant adverse impact on the environment in relation to transportation and circulation if the project would result in any of the following:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impacts Found Less-than-Significant in Initial Study

The Initial Study prepared for the proposed project (see Appendix A) identified no impact related to the project resulting in inadequate emergency access.

As discussed therein, the proposed project would not impede emergency access in the vicinity of the project site. Per the Yuba County General Plan Policy HS9.3, the County will coordinate with Caltrans to maintain SR 20 as a primary emergency access route. Additionally, the General Plan policies require infrastructure and new developments to be designed so as to not adversely affect emergency vehicle access. The proposed project would not conflict with any emergency access policies and regulations because development of the project site would comply with any standards set in the Yuba County General Plan and General Plan EIR. Furthermore, the existing hauling route would become an emergency access road for the surrounding neighborhoods, so the proposed project would increase accessibility within the project area.

Method of Analysis

The information contained within this chapter is primarily based on the Transportation Impact Study and Sight Distance Analysis prepared for the proposed project by Fehr & Peers (Appendix G). The methodologies employed for the technical study are summarized below.

Level of Service

To determine the AM peak hour, PM peak hour, and daily truck trip generation of the project, trip generation rates were developed using one year of historical data ranging from October 1, 2019 to September 30, 2020. The annual data was evaluated to determine the 30th highest number of loads produced during the AM peak period (6:00 to 9:00 AM), during the PM peak period (3:00 to 6:00 PM), and on a daily basis. The 30th highest hour was used to establish the design hourly volume, which represents a busy, but not absolute peak, amount of travel. A summary of the 30th highest hour or day based on the data received from the Hallwood mine is provided in Appendix G.

The LOS at all-way stop and signal control intersections is based on the average delay experienced by all motorists traveling through the intersection. At side-street stop control intersections, the LOS is based on the movement with the greatest average delay.

Table 4.5-3 presents the delay range for each LOS category for signalized and unsignalized intersections.

Table 4.5-3
Level of Service (LOS) Definitions

LOS	Average Control Delay		Description
	Signalized Intersection	Unsignalized Intersection	
A	< 10	< 10	Volume-to-capacity ratio is low and either progression is exceptionally favorable or cycle length is very short. Most vehicles arrive during the green phase and travel through the intersection without stopping.
B	> 10 to 20	> 10 to 15	Volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
C	> 20 to 35	> 15 to 25	Progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	> 35 to 55	>25 to 35	Volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
E	> 55 to 80	> 35 to 50	Volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	> 80	> 50	Volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Note: Average control delay is listed in seconds per vehicle. Delay values are rounded to the nearest second and evaluated for LOS based on the above thresholds.

Source: Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).

The Transportation Impact Study applied HCM methodologies using the Synchro 10 capacity analysis software. The Synchro software considers vehicle volumes, lane configurations, pedestrian volumes, heavy vehicle percentages, and other pertinent parameters of intersection operations. The following describes specific inputs used in the analysis:

- Lane configurations were entered based on field observations and aerial imagery.
- A heavy vehicle percentage of six percent was used for through traffic on SR 20, based on Caltrans' Annual Average Daily Truck Traffic on the California State Highway System report (2019). A heavy vehicle percentage of three percent was used on all other roads and turning movements. For movements utilized by Teichert traffic, heavy vehicle percentages were adjusted based on expected heavy vehicle mix.
- A default value of two pedestrians per hour and one bicyclist per hour on each minor street approach to SR 20 and on all County intersection approaches was used.
- A peak hour factor (PHF) of 0.90 during the AM and PM peak hours was used based on the intersection operations and highway segment analysis in the 2004 traffic study.

Traffic volumes at the study roadway segments were compared to Yuba County's roadway segment capacity thresholds, as shown in the Yuba County General Plan, to determine LOS. The

General Plan includes capacity thresholds for both maximum peak hour and daily traffic volumes for two-lane highways and minor collectors, which encompass all study roadway segments.

Traffic Signal Warrant Evaluation

The California Manual on Uniform Traffic Control Devices (MUTCD) contains warrants to determine whether the installation of a traffic signal at a particular location is appropriate. The peak-hour signal warrant, one of nine warrants, was evaluated at unsignalized intersections for both the AM and PM peak hours under all Build and No Build scenarios. Because the surrounding community has a population of less than 10,000 people, the "rural" peak hour warrant analysis was applied.

The signal warrant analysis presented in the Transportation Impact Study examined the general correlation between the planned level of future development and the need to install new traffic signals. Future development-generated traffic was compared against one of nine standard traffic signal warrants recommended in the MUTCD. The analysis presented in this Chapter should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon one or two warrants, because the installation of traffic signals when not justified can lead to an increase in certain types of collisions. Prior to implementation, evaluation of the full set of warrants should be undertaken based on the latest traffic counts and collision data to make a determination that a traffic signal is warranted.

VMT Thresholds

The OPR *Technical Advisory On Evaluating Transportation Impacts in CEQA* recommends that lead agencies establish project-level thresholds for VMT analysis. Per Section 15064.3(b)(3) of the CEQA Guidelines, a lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household or in any other measure. Where appropriate, a lead agency may analyze a project's VMT qualitatively based on the availability of transit, proximity to destinations, etc. Existing guidance available in the *Technical Advisory On Evaluating Transportation Impacts in CEQA* includes recommended numeric thresholds for residential, office, and retail projects. The OPR Technical Advisory states that lead agencies may develop their own specific thresholds, which may include other land use types, using more location-specific information. Therefore, the County has considerable discretion in choosing a suitable VMT impact analysis approach for the purposes of the proposed project.

The County does not currently have established VMT significance thresholds for environmental review purposes. For the purposes of this EIR analysis and in accordance with the CEQA Guidelines, a VMT-related impact would be considered significant if implementation of the proposed project would trigger the following condition:

- The baseline plus project VMT is greater than baseline (no project) VMT.

For the purposes of assessing mining land use projects, VMT is a two-part formula calculated by the following equation:

$$VMT = (\text{Avg. trip length} \times \text{Vehicle trips})_{Trucks} + (\text{Avg. trip length} \times \text{Vehicle trips})_{Employees}$$

Because the proposed project would not add any new vehicle trips, the net change in VMT would depend entirely on the weighted average trip length of trucks and employees. If the proposed project were to increase the average trip length of Hallwood mine haul trucks and employees, then the change in VMT would be positive. As a result, the aforementioned threshold is appropriate for the proposed project.

Sight Distance Evaluation

The measured sight distance at the SR 20/Kibbe Road intersection was compared against guidelines in the Caltrans Highway Design Manual Seventh Edition (HDM) topics 201 (stopping sight distance) and 405.1 (corner sight distance). Per direction from Caltrans, the Sight Distance Analysis used a design speed of 65 miles per hour (MPH). The stopping sight distance for a vehicle traveling at 65 MPH is 660 feet. The information was used to ensure the available sight distance for vehicles approaching both the back of the queue and the intersection on the eastbound and westbound approaches of SR 20. Queue lengths were determined as part of the ongoing Intersection Control Evaluation (ICE) study being prepared by Caltrans. The corner sight distance was calculated to be 1,005 feet for a vehicle traveling at 65 MPH.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts related to transportation is based on implementation of the proposed project in comparison to existing conditions and the standards of significance presented above.

4.5-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Based on the analysis below and with the implementation of mitigation, the impact is *less than significant*.

The following discussions evaluate whether the proposed project would result in inconsistencies with the County's LOS standard or impacts to existing or planned pedestrian, bicycle, or transit facilities and services within the project vicinity from modifying the SR 20/Kibbe Road intersection.

Consistency with LOS Standard

As detailed above, with the implementation of SB 743, local jurisdictions may not rely on vehicle LOS and similar measures related to delay as the basis for determining the significance of transportation impacts under CEQA. However, because the County considers LOS a matter of General Plan policy, a nexus exists for requiring a project to ensure General Plan consistency. Per Yuba County General Plan Policies CD16.3 and CD16.4, LOS D is the minimum acceptable LOS for County intersections and roadway segments in the project vicinity, and the minimum acceptable LOS for traffic operations at Caltrans facilities within the project vicinity is LOS E. For the purposes of the Traffic Impact Study's analysis, if the proposed project exacerbates current or future unacceptable operations, the impact would be significant if the delay increase were five seconds or more. Similarly, a 0.05 increase in volume-to-capacity (v/c) ratio would be considered a significant impact for roadway segment analyses.

Intersection LOS

The Traffic Impact Study analyzed seven intersections in the project vicinity. Table 4.5-4 summarizes the Existing Plus Project Conditions intersection LOS results.

As shown in the table, the proposed project would cause the SR 20/Kibbe Road intersection to degrade to unacceptable LOS F during the AM peak hour. In addition, the proposed project would exacerbate already unacceptable operations at the SR 20/Loma Rica Road intersection and the SR 20/Walnut Avenue intersection during one or both peak hours. However, the plus-project delay increase at the SR 20/Walnut Avenue intersection would be less than five seconds.

Table 4.5-4
Existing Plus Project Intersection LOS

Intersection	Traffic Control	Peak Hour	Existing Conditions		Existing Plus Project Conditions	
			Delay[1]	LOS	Delay[1]	LOS
SR 20/Kibbe Road	SSSC	AM	1 (15)	A (B)	4 (52)	A (F)
		PM	1 (22)	A (C)	1 (26)	A (D)
SR 20/Loma Rica Road	SSSC	AM	47 (150)	**E (F)**	52 (175)	**F (F)**
		PM	3 (16)	A (C)	3 (17)	A (C)
SR 20/Woodruff Lane	SSSC	AM	2 (26)	A (D)	2 (28)	A (D)
		PM	3 (27)	A (D)	3 (27)	A (D)
SR 20/Hallwood Boulevard	SSSC	AM	51 (>300)	**F (F)**	11 (138)	**B (F)**
		PM	3 (61)	**A (F)**	2 (53)	**A (F)**
SR 20/ Walnut Avenue	SSSC	AM	2 (59)	**A (F)**	2 (62)	**A (F)**
		PM	1 (45)	A (E)	1 (46)	A (E)
Walnut Avenue/Hallwood Boulevard	AWSC	AM	8	A	7	A
		PM	7	A	7	A
Hallwood Boulevard/Hooper Road	AWSC	AM	8	A	7	A
		PM	7	A	7	A

Notes: SSSC = side street stop controlled. AWSC = all-way stop controlled. Bold indicates unacceptable operations.
[1] Average delay (rounded to the nearest second). For all-way stop controlled intersections, average delay is the weighted average for all movements. For side-street stop controlled intersections, both the intersection average delay and worst movement average delay (in parentheses) is reported.

Source: Fehr & Peers, 2021.

The proposed project would improve operations at the SR 20/Hallwood Boulevard intersection during both AM and PM peak hours. However, the intersection would still operate at LOS F, which is below the County's LOS D standard during both the AM and PM peak hours.

Roadway Segment LOS

The Traffic Impact Study also analyzed nine roadway segments in the project vicinity. Table 4.5-5 and Table 4.5-6 summarize the weekday peak hour and daily roadway segment operations, respectively, under Existing Plus Project Conditions. Traffic volumes were compared to Yuba County's roadway segment capacity thresholds from the County's General Plan to determine LOS.

As shown in the tables, all study roadway segments would operate at acceptable LOS D or better under Existing Plus Project Conditions.

Table 4.5-5
Existing Plus Project Maximum Peak Hour Roadway Segment Operations

Roadway Segment	Classification Code	Existing Conditions		Existing Plus Project Conditions	
		Max. Peak Hour Volume	V-C/ LOS	Max. Peak Hour Volume	V-C/ LOS
SR 20: Walnut Avenue to Hallwood Boulevard	2H – Level[2]	1,376	0.65/D	1,385	0.65/D
SR 20: Hallwood Boulevard to Woodruff Lane	2H – Level[2]	1,309	0.62/D	1,334	0.63/D
SR 20: Woodruff Lane to Loma Rica Road	2H – Level[2,3]	1,370	0.43/D	1,426	0.45/D
SR 20: Loma Rica Road to Kibbe Road	2H – Level[2]	963	0.45/D	1,013	0.48/D
SR 20: East of Kibbe Road	2H – Level[2]	943	0.44/D	943	0.44/D
Walnut Avenue: SR 20 to Hallwood Boulevard	MC – Level[4]	125	0.06/A	85	0.04/A
Walnut Avenue: Hallwood Boulevard to Teichert Facility	MC – Level[4]	205	0.11/B	83	0.04/A
Hallwood Boulevard: SR 20 to Hooper Road	MC – Level[4]	209	0.11/B	133	0.07/A
Hallwood Boulevard: Hooper Road to Walnut Avenue	MC – Level[4]	157	0.08/B	91	0.05/A

Notes:
V-C = volume-to-capacity ratio
1 Inclusive of both AM and PM peak hours.
2 2H – Level refers to the "Conventional Major 2-Lane Highway – Level Terrain" roadway classification in the Yuba County 2030 General Plan.
3 Because SR 20 between Woodruff Lane and Loma Rica Road is a three-lane segment, two-lane roadway capacity thresholds were extrapolated to account for additional capacity of the second westbound lane.
4 MC (Level) refers to the "Minor Collector – Level Terrain" roadway classification in the Yuba County 2030 General Plan.

Source: Fehr & Peers, 2021.

Table 4.5-6
Existing Plus Project Average Daily Traffic Roadway Segment Operations

Roadway Segment	Classification Code	Existing Conditions		Existing Plus Project Conditions	
		ADT	V-C/ LOS	ADT	V-C/ LOS
SR 20: Walnut Avenue to Hallwood Boulevard	2H (Level)[1]	11,130	0.49/D	11,390	0.50/D
SR 20: Hallwood Boulevard to Woodruff Lane	2H (Level)[1]	10,860	0.47/D	11,170	0.49/D
SR 20: Woodruff Lane to Loma Rica Road	2H (Level)[1,2]	11,900	0.35/D	12,270	0.36/D
SR 20: Loma Rica Road to Kibbe Road	2H (Level)[1]	9,140	0.40/D	9,540	0.42/D
SR 20: East of Kibbe Road	2H (Level)[1]	8,940	0.39/D	8,940	0.39/D
Walnut Avenue: SR 20 to Hallwood Boulevard	MC[3]	890	0.10/C	630	0.07/C
Walnut Avenue: Hallwood Boulevard to Teichert Facility	MC[3]	1,300	0.15/C	550	0.06/C
Hallwood Boulevard: SR 20 to Hooper Road	MC[3]	1,180	0.13/C	690	0.08/C
Hallwood Boulevard: Hooper Road to Walnut Avenue	MC[3]	1,100	0.12/C	610	0.07/C

Notes:
ADT = Average Daily Traffic. V-C = volume-to-capacity ratio.
1 2H (Level) refers to the "Conventional Highway – 2 Lanes (Level Terrain)" roadway classification in the Yuba County 2030 General Plan.
2 Because SR 20 between Woodruff Lane and Loma Rica Road is a three-lane segment, two-lane roadway capacity thresholds were extrapolated to account for additional capacity of the second westbound lane.
3 MC refers to the Minor Collector roadway classification in the Yuba County 2030 General Plan.

Source: Fehr & Peers, 2021.

Traffic Signal Warrant

A peak hour traffic signal warrant analysis was also conducted as part of the Traffic Impact Study. The peak hour traffic signal warrant analysis showed that the same study intersections satisfied the peak hour warrant under both Existing and Existing Plus Project Conditions during the same peak hours. The intersections which would satisfy the peak hour signal warrant are:

- Loma Rica Road – during AM and PM peak hours;
- Woodruff Lane – during PM peak hour only; and
- Hallwood Boulevard – during AM peak hour only.

As mentioned previously, evaluation of the full set of traffic signal warrants, based on existing conditions at the time an intersection improvement is triggered, should be performed prior to requiring implementation of a traffic signal. Thus, the County shall condition the project, if approved, to require the applicant to evaluate of the full set of traffic signal warrants prior to development of the proposed project.

Conclusion

Based on the above, under Existing Plus Project Conditions, the addition of project traffic could conflict with the County's applicable LOS standards at the following intersections:

- SR 20/Kibbe Road – unacceptable LOS during AM peak hour; and
- SR 20/Loma Rica Road – already unacceptable LOS exacerbated during AM peak hour.

The remaining study intersections and roadway segments would operate acceptably under Existing Plus Project Conditions.

As summarized earlier, as result of SB 743, local jurisdictions may no longer rely on vehicle level of service (LOS) and similar measures related to delay as the basis for determining the significance of transportation impacts under CEQA. However, because the County considers LOS as a matter of General Plan policy, the County retains full discretion to require a project to ensure General Plan consistency through project conditions of approval.

The County shall condition the project, if approved, to require the applicant to fully construct the following improvements:

- The SR 20/Kibbe Road intersection does not meet the peak hour signal warrant under Existing Plus Project Conditions. The applicant shall install a right turn pocket on the eastbound approach of the SR 20/Kibbe Road intersection which would result in acceptable LOS E operations. The improvement would be a fully funded project cost. It should be noted that the proposed project would include the installation of a traffic signal at the SR 20/Kibbe Road intersection, following approval by Caltrans.
- The SACOG MTP/SCS identifies installation of a traffic signal at SR 20/Loma Rica Road as a project to be completed between 2031 and 2035, with Yuba County listed as the lead agency. The peak hour traffic signal warrant analysis showed that the intersection meets the warrant under existing conditions during the AM and PM peak hours. Installation of a traffic signal at SR 20/Loma Rica Road would improve operations to LOS C in the AM peak hour under Existing Plus Project Conditions. The Countywide Traffic Impact Fee Program identified the installation of the traffic signal within the Impact Fee Study. Therefore, because intersection operations are already deficient under existing conditions, the proposed project would be required to pay a fair share

contribution of 4.4 percent to the Countywide Traffic Impact Fee Program (see Appendix G).[5]

Implementation of the project conditions of approval would ensure the proposed project would be consistent with the County's applicable LOS standards for the study intersections under Existing Plus Project conditions.

Pedestrian Facilities

Pedestrian facilities do not exist in the vicinity of the SR 20/Kibbe Road intersection. The Yuba County General Plan road standards state that sidewalks for local roads in rural locations, which would include the roads in the project area, are subject to direction from the Community Development and Services Agency Director in consideration of site-specific conditions. Thus, in compliance with the General Plan, the applicant would coordinate with the Community Development and Services Agency Director during the design process of the proposed project. Pedestrian travel demand in the project vicinity is present for school children pick-up and drop-off in the morning and afternoons. Demand would be extremely low at all other times given the remote setting, and the proposed project would not change demand. However, the proposed project would decrease safety for school children using the crosswalk on the northbound approach of SR 20/Kibbe Road. Therefore, the proposed project's impacts related to pedestrian facilities are considered potentially significant.

Transit Facilities

As discussed previously, the nearest bus route to the SR 20/Kibbe Road intersection is the Foothill rural bus route, which currently runs adjacent to the community of Hallwood on SR 20. The nearest bus stops to the project area are located at the Yuba County Government Center, approximately 8.8 miles from the project site, and north of the Loma Rica Road/Fruitland Road intersection in Loma Rica, approximately 10.5 miles from the project site. Additionally, the Dial-A-Ride service is not available in the project vicinity, and the service does not include the Hallwood community, as it extends to the northeast only within the City of Marysville city limits. Rail lines, both active or inactive, do not exist within the project area.

While public transit service bus routes and bus stops do not exist within the project vicinity, unmarked bus loading areas are provided in the northeast and southwest corners of the SR 20/Kibbe Road intersection which service the MJUSD. School buses stop on the "near side" SR 20 shoulder (i.e., prior to the SR 20/Kibbe Road intersection) without requiring highway traffic to stop, and children are typically picked up and dropped off on the side of SR 20 closest to their home, thereby not requiring pedestrian highway crossings.

The proposed project would not affect operations at the school bus stop on the northeast corner of SR 20/Kibbe Road. Inbound project traffic would use the eastbound right-turn and westbound left-turn pockets. Westbound through project traffic would not increase with implementation of the proposed project. In addition, outbound project traffic would use the northwest and southwest portions of the

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5 Fehr & Peers. *Teichert Aggregates' Fair Share Percentage Calculations for the State Route 20/Kibbe Road Intersection and Haul Road EIR (Draft)*. November 12, 2021.

intersection, thereby not affecting the northwest corner. However, the proposed project would add an eastbound right-turn pocket at SR 20/Kibbe Road, which would be heavily utilized by Hallwood facility employees and haul trucks. School bus operations on the southwest corner of the intersection would be disrupted due to the conflict between school buses loading or unloading on the SR 20/Kibbe Road eastbound approach and inbound project traffic using the eastbound right turn lane. In addition, school children crossing the unmarked crosswalk on the northbound approach would also conflict with inbound/outbound project traffic. Therefore, the proposed project's impacts related to transit facilities are considered potentially significant.

Bicycle Facilities

The Yuba County Bikeway Master Plan Update identifies a planned Class III bike route with a four-to-five-foot multi-use shoulder on both sides of SR 20 from the City of Marysville to Nevada County. While no bicycle facilities currently exist in the project area, there is a paved shoulder on the south side of SR 20 from about 600 feet west of the SR 20/Kibbe Road intersection to about 600 feet east of the intersection. A paved shoulder is also located on the north side of SR 20 from the SR 20/Kibbe Road intersection to about 600 feet east of the intersection.

In addition, the SACOG 2020 MTP/SCS contains a programmed Caltrans District 3 project which is projected to be completed between 2020 and 2025 and would rehabilitate SR 20 and widen shoulders from 0.1-mile east of Loma Rica Road to 0.2-mile west of Spring Valley Road. The proposed project would result in an improved shoulder to accommodate bicycle travel in the project vicinity because the SR 20/Kibbe Road intersection would be required to comply with all current Caltrans standards. Thus, the proposed project would improve the bicycling environment and would not create an inconsistency with planned improvements in the project vicinity. Therefore, project impacts related to bicycle facilities are considered less-than-significant.

Conclusion

Based on the above, implementation of the proposed project could conflict with the MJUSD bus stop at the southwest corner of the SR 20/Kibbe Road intersection, which would impact both pedestrian and transit facilities in the project vicinity. Therefore, the project could conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and a ***significant*** impact could occur.

Mitigation Measure(s)

An eastbound bus pullout would ensure that school children would be picked up and dropped off on the east side of the intersection, closer to where all residences on the south side of SR 20 within one-quarter mile are currently located, and would minimize the number of school children required to cross the unmarked crosswalk on the northbound approach of SR 20/Kibbe Road. Therefore, implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

4.5-1 *Prior to approval of Improvement Plans, the project applicant shall show on the plans construction of an eastbound bus pullout on the far side of the SR 20/Kibbe Road intersection (i.e., just east of the intersection) to* *eliminate the conflict between school buses and right-turning vehicles. Design of the eastbound bus pullout shall be included on project Improvement Plans to be reviewed and approved by the Yuba County Community Development and Services Agency, the County Engineer, and Caltrans.*

4.5-2 Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Based on the analysis below, the impact is *less than significant*.

Section 15064.3 of the CEQA Guidelines states that generally, VMT is the most appropriate measure for evaluating the transportation impacts of a project. Per Section 15064.3(b), VMT exceeding an applicable threshold of significance may indicate a significant impact. For the purposes of this analysis, a significant VMT impact would occur if the baseline plus project VMT is greater than baseline No Project VMT.

The proposed project is expected to change Teichert-related driving patterns on SR 20 between Walnut Avenue and Kibbe Road, within the Hallwood community, and within the Hallwood mine. Driving patterns are not expected to change outside of the project area because the proposed project does not increase the levels of production at the Hallwood mine, nor does it affect the location of employees or customers.

The OPR Technical Advisory addresses growth that may be expected from roadway expansion projects. Building new roadways, adding roadway capacity in congested areas, or adding roadway capacity to areas where congestion is expected in the future, typically induces additional vehicle travel. An accurate estimate of induced travel is needed to accurately weigh costs and benefits of a highway capacity expansion project. Although the proposed project would add a new roadway, the additional capacity would only benefit the Hallwood mine. Residents and businesses on Kibbe Road south of SR 20 would neither gain nor lose connectivity to SR 20 with implementation of the proposed project, and the project would not increase the roadway capacity of the existing connection because the new haul road would have the same number of travel lanes as the current configuration of Kibbe Road. Therefore, the proposed project is not expected to generate induced travel.

Table 4.5-7 shows the resulting average trip lengths for both trucks and employees under baseline and baseline plus project conditions. It is noted that while hauling trucks would be required to use the proposed haul route, employees would be permitted to use several options for their commute, including Hallwood Boulevard, Walnut Avenue, and the proposed haul route.

As shown in Table 4.5-7, implementation of the proposed project would result in shorter trip lengths for both Hallwood mine trucks and employees. The shorter trip lengths would, in turn, result in a reduction in VMT. Because the baseline plus project scenario would reduce VMT compared to the baseline scenario, a ***less-than-significant*** impact would occur.

Table 4.5-7
Average Trip Length within the Project Area

Scenario	Average Trip Length within the Project Area	
	Hallwood Mine Trucks	Hallwood Mine Employees
Baseline Conditions	4.67 Miles	5.06 Miles
Baseline Plus Project Conditions	4.41 Miles	4.52 Miles
Change	-0.25 Miles	-0.54 Miles

Notes:
- The project area includes SR 20 between Walnut Avenue and Kibbe Road, the Hallwood community, and the Hallwood mine.

Source: Fehr & Peers, 2021.

Mitigation Measure(s)
None required.

4.5-3 Substantially increase hazards to vehicle safety due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Based on the analysis below and with the implementation of mitigation, the impact is *less than significant*.

During operation, the proposed project would maintain employee and emergency vehicle access at the Hallwood mine entrance on Walnut Avenue. If emergency vehicle access is provided on the proposed haul road, the project would increase emergency access after construction. Additionally, as discussed in the Sight Distance Analysis prepared for the proposed project, the eastbound approach of the proposed project has adequate stopping sight distance and corner sight distance. However, the westbound approach is obstructed to some degree, by trees, picnic tables, and signs in the vicinity of the SR 20/Kibbe Road intersection, which would require removal in order to not hinder sight distance of the drivers on the westbound approach of the proposed roadway realignment.

It should be noted that comments were received on the NOP prepared for the proposed project related to the safety of the Cordua Canal undercrossing of SR 20 as it relates to obstructed views from land fog and a "blind hill" at the crossing. The Cordua Canal undercrossing of SR 20 is an existing condition within the project vicinity, and the proposed project would not affect the sight distance of traffic travelling along SR 20. Additionally, the canal undercrossing is located approximately 0.35-mile east of the project site, and therefore, would not be affected during project construction.

However, during construction the proposed project could substantially increase hazards to vehicle safety because construction activities could interfere with the movement of traffic at the SR 20/Kibbe Road intersection, which could result in a hazardous traffic situation. The proposed project would consist of various construction activities, which would generate new truck and employee trips until completion. The construction process could cause lane closures, damage to roadways, friction between construction site vehicles and travelers on SR 20, and increased conflicts with bicyclists, pedestrians, and residents on Kibbe Road.

Based on the above, the proposed project would substantially increase hazards to vehicle safety due to a geometric design feature or incompatible uses during construction activities. In addition, if trees, picnic tables, and signs in the vicinity of the SR 20/Kibbe Road intersection, the proposed project would hinder the sight distance of the drivers on the westbound approach of the proposed roadway realignment. Therefore, a ***significant*** impact could occur.

Mitigation Measure(s)

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

4.5-3(a) Prior to issuance of construction permits, the project applicant shall prepare a Construction Traffic Management Plan (CTMP) to the satisfaction of the Yuba County Community Development and Services Agency, and Caltrans. The plan shall include (but not be limited to) items such as:

- *Guidance on the number and size of trucks per day entering and leaving the project site;*
- *Identification of arrival/departure times that would minimize traffic impacts;*
- *Approved truck circulation patterns;*
- *Locations of staging areas;*
- *Locations of employee parking and methods to encourage carpooling;*
- *Methods for partial/complete street closures (e.g., timing, signage, location and duration restrictions);*
- *Criteria for use of flaggers and other traffic controls;*
- *Preservation of safe and convenient passage for bicyclists and pedestrians through/around construction areas;*
- *Monitoring for roadbed damage and timing for completing repairs;*
- *Limitations on construction activity during peak/holiday weekends and special events;*
- *Preservation of emergency vehicle access;*
- *Coordination of construction activities with construction of other projects that occur concurrently in Yuba County to minimize potential additive construction traffic disruptions, avoid duplicative efforts (e.g., multiple occurrences of similar signage), and maximize effectiveness of traffic mitigation measures (e.g., joint employee alternative transportation programs);*
- *Removing traffic obstructions during emergency evacuation events; and*
- *Providing a point of contact for Yuba County residents and guests to obtain construction information, have questions answered, and convey complaints.*

The CTMP shall be developed such that the following minimum set of performance standards is achieved throughout project construction. It is anticipated that additional performance standards will be developed once details of project construction are better known.

- *Delivery trucks do not idle/stage on SR 20.*
- *SR 20 and Kibbe Road do not feature any construction-related lane closures on peak activity days.*
- *All construction employees shall park in designated lots owned by the project applicant or on private lots otherwise arranged for by the project applicant.*
- *Roadways, unmarked crosswalks, and bicycle facilities (e.g., roadway shoulders that could be used by bicyclists) shall be maintained clear of debris (e.g., rocks) that could otherwise impede travel and impact public safety.*

4.5-3(b) *Prior to issuance of construction permits, the maintenance and removal of trees in the vicinity of the SR 20/Kibbe Road intersection, as well as the relocation of picnic tables and signs in order to not hinder sight distance of the drivers on the westbound approach of the proposed roadway realignment shall be conducted. The project applicant shall formulate an agreement with adjacent property owners which would allow for off-site improvements to occur to the satisfaction of the Yuba County Community Development and Services Agency, and Caltrans.*

Cumulative Impacts and Mitigation Measures

As defined in Section 15355 of the CEQA Guidelines, "cumulative impacts" refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

The cumulative setting for this analysis reflects reasonably foreseeable projects in the project vicinity based on the SACOG MTP/SCS and the Yuba County Capital Improvement Program (CIP) project list, as contained in the County's 2020-2024 Transportation Master Plan.

4.5-4 Cumulative impacts to transportation. Based on the analysis below, the project's incremental contribution to the significant cumulative impact would be *less than significant*.

The proposed project would involve connecting a previously constructed private haul road to an existing intersection. The proposed project would not involve the construction of new structures on the project site. Therefore, the vast majority of impacts associated with the proposed project would only occur during the construction period and, therefore, would be temporary. In the long-term, the project site would serve as the relocated haul route for trucks from the Hallwood mine. The proposed project would not generate population growth or facilitate other activities that would significantly affect pedestrian, bicycle, or transit facilities in the project area. As noted previously, project-specific impacts related to pedestrian and transit facilities would be reduced to a less-than-significant level with the implementation of Mitigation Measure 4.5-1. Additionally, the proposed project would not increase VMT because mining activities would not increase as a result of the proposed project. Rather, VMT associated with the Hallwood mine would be reduced through implementation of the proposed project. Therefore, cumulative impacts related to pedestrian, bicycle, and transit facilities, as well as VMT, are not further evaluated at the cumulative level.

However, as discussed under the Consistency with LOS Standard discussion of Impact 4.5-1, because the County considers LOS a matter of General Plan policy, a nexus exists for requiring a project to ensure General Plan consistency. The following discussion evaluates whether the proposed project would result in inconsistencies with the City's LOS standard under Cumulative Plus Project conditions.

Consistency with LOS Standard

Cumulative Conditions No Build forecasts were developed to reflect reasonably foreseeable projects in the project area based on the Yuba County General Plan, the SACOG MTP/SCS, and the Yuba County CIP project list (as contained in the Yuba County 2020-2024 Transportation Master Plan).

Cumulative Plus Project Conditions volumes were developed by reassigning the Hallwood mine truck traffic from the existing haul route to the proposed roadway network based on Plus Project travel characteristics.

Table 4.5-8 summarizes cumulative conditions intersection LOS results associated with the proposed project.

As shown in the table, the proposed project would improve operations at the SR 20/Hallwood Boulevard intersection during AM and PM peak hours. However, the proposed project would cause the SR 20/Kibbe Road intersection to degrade to unacceptable LOS F during the worst movement average delay for both the AM and PM peak hours under Cumulative Plus Project Conditions. In addition, the proposed project would exacerbate already unacceptable average delay operations at SR 20/Loma Rica Road and SR 20/Walnut Avenue during the AM peak hour; and would exacerbate already unacceptable worst movement average delay operations at SR 20/Woodruff Avenue during the AM peak hour. The Plus Project delay increase at the three aforementioned intersections would be more than five seconds.

Table 4.5-9 and Table 4.5-10 summarize the weekday peak hour and daily roadway segment operations, respectively, under Cumulative Plus Project Conditions. Traffic volumes were compared to Yuba County's roadway segment capacity thresholds from the County's General Plan to determine LOS. As shown in the tables, all County study roadway segments would operate at acceptable LOS D or better under Cumulative Plus Project Conditions. All Caltrans study roadway segments would operate at acceptable LOS E or better.

Table 4.5-8
Cumulative Plus Project Intersection LOS

Intersection	Traffic Control	Peak Hour	Cumulative Conditions		Cumulative Plus Project Conditions	
			Delay[1]	LOS	Delay[1]	LOS
SR 20/Kibbe Road	SSSC	AM	1 (24)	A (C)	21 (>300)	**C (F)**
		PM	1 (36)	A (E)	2 (56)	**A (F)**
SR 20/Loma Rica Road	SSSC	AM	241 (>300)	**F (F)**	256 (>300)	**F (F)**
		PM	5 (33)	A (D)	5 (40)	A (E)
SR 20/Woodruff Lane	SSSC	AM	6 (131)	**A (F)**	7 (149)	**A (F)**
		PM	15 (127)	**B (F)**	14 (122)	**A (F)**
SR 20/Hallwood Boulevard	SSSC	AM	>300 (>300)	**F (F)**	171 (>300)	**F (F)**
		PM	41 (>300)	**E (F)**	25 (>300)	**D (F)**
SR 20/ Walnut Avenue	SSSC	AM	36 (>300)	**E (F)**	37 (>300)	**E (F)**
		PM	5 (214)	**A (F)**	5 (214)	**A (F)**
Walnut Avenue/Hallwood Boulevard	AWSC	AM	8	A	8	A
		PM	8	A	8	A
Hallwood Boulevard/Hooper Road	AWSC	AM	8	A	7	A
		PM	8	A	7	A

Notes: SSSC = side street stop controlled. AWSC = all-way stop controlled. Bold indicates unacceptable operations.
[1] Average delay (rounded to the nearest second). For all-way stop controlled intersections, average delay is the weighted average for all movements. For side-street stop controlled intersections, both the intersection average delay and worst movement average delay (in parentheses) is reported.

Source: Fehr & Peers, 2021.

Traffic Signal Warrants

A peak hour traffic signal warrant analysis was also conducted as part of the traffic impact study. The peak hour traffic signal warrant analysis showed that the following study intersections would satisfy the peak hour warrant under Cumulative Conditions:

- SR 20/Loma Rica Road – during AM and PM peak hours;
- SR 20/Woodruff Lane – during AM and PM peak hours;
- SR 20/Hallwood Boulevard – during AM and PM peak hours; and
- SR 20/Walnut Avenue – during AM peak hour only.

Under Cumulative Plus Project conditions, the following intersections would satisfy the peak hour traffic signal warrant:

- SR 20/Kibbe Road– during AM peak hour only;
- SR 20/Loma Rica Road – during AM and PM peak hours;
- SR 20/Woodruff Lane – during AM and PM peak hours;
- SR 20/Hallwood Boulevard – during AM peak hour only; and
- SR 20/Walnut Avenue – during AM peak hour only.

The inclusion of the proposed project under Cumulative Conditions would cause the SR 20/Kibbe Road intersection to meet the peak hour signal warrant. All other intersections that satisfy the peak hour signal warrant under Cumulative Plus Project Conditions would also satisfy the warrant under the Cumulative Conditions scenario.

As discussed above, evaluation of the full set of traffic signal warrants, based on existing conditions at the time an intersection improvement is triggered, should be performed prior to requiring implementation of a traffic signal.

Table 4.5-9
Cumulative Plus Project Maximum Peak Hour Roadway Segment Operations

Roadway Segment	Classification Code	Cumulative Conditions		Cumulative Plus Project Conditions	
		Max. Peak Hour Volume	V-C/ LOS	Max. Peak Hour Volume	V-C/ LOS
SR 20: Walnut Avenue to Hallwood Boulevard	2H – Level[2]	2,060	0.97/E	2,110	1.00/E
SR 20: Hallwood Boulevard to Woodruff Lane	2H – Level[2]	1,980	0.93/E	2,040	0.96/E
SR 20: Woodruff Lane to Loma Rica Road	2H – Level[2,3]	2,110	0.66/D	2,170	0.68/D
SR 20: Loma Rica Road to Kibbe Road	2H – Level[2]	1,530	0.72/D	1,600	0.75/D
SR 20: East of Kibbe Road	2H – Level[2]	1,520	0.72/D	1,520	0.72/D
Walnut Avenue: SR 20 to Hallwood Boulevard	MC – Level[4]	170	0.09/B	140	0.07/A
Walnut Avenue: Hallwood Boulevard to Teichert Facility	MC – Level[4]	260	0.13/B	140	0.07/A
Hallwood Boulevard: SR 20 to Hooper Road	MC – Level[4]	240	0.12/B	170	0.09/B
Hallwood Boulevard: Hooper Road to Walnut Avenue	MC – Level[4]	210	0.11/B	150	0.08/A

Notes:
V-C = volume-to-capacity ratio.
1 2H (Level) refers to the "Conventional Highway – 2 Lanes (Level Terrain)" roadway classification in the Yuba County 2030 General Plan.
2 Because SR 20 between Woodruff Lane and Loma Rica Road is a three-lane segment, two-lane roadway capacity thresholds were extrapolated to account for additional capacity of the second westbound lane.
3 MC refers to the Minor Collector roadway classification in the Yuba County 2030 General Plan.

Source: Fehr & Peers, 2021.

Table 4.5-10
Cumulative Plus Project Average Daily Traffic Roadway Segment Operations

Roadway Segment	Classification Code	Cumulative Conditions		Cumulative Plus Project Conditions	
		ADT	V-C/ LOS	ADT	V-C/ LOS
SR 20: Walnut Avenue to Hallwood Boulevard	2H (Level)[1]	15,300	0.67/E	15,500	0.68/E
SR 20: Hallwood Boulevard to Woodruff Lane	2H (Level)[1]	15,000	0.66/E	15,300	0.67/E
SR 20: Woodruff Lane to Loma Rica Road	2H (Level)[1,2]	21,300	0.62/E	21,700	0.63/E
SR 20: Loma Rica Road to Kibbe Road	2H (Level)[1]	17,400	0.76/E	17,800	0.78/E
SR 20: East of Kibbe Road	2H (Level)[1]	17,200	0.75/E	17,200	0.75/E
Walnut Avenue: SR 20 to Hallwood Boulevard	MC[3]	1,400	0.16/C	1,100	0.12/C
Walnut Avenue: Hallwood Boulevard to Teichert Facility	MC[3]	1,800	0.20/C	1,000	0.11/C
Hallwood Boulevard: SR 20 to Hooper Road	MC[3]	1,700	0.19/C	1,200	0.13/C
Hallwood Boulevard: Hooper Road to Walnut Avenue	MC[3]	1,600	0.18/C	1,100	0.12/C

Notes:
ADT = Average Daily Traffic. V-C = volume-to-capacity ratio.
1 2H (Level) refers to the "Conventional Highway – 2 Lanes (Level Terrain)" roadway classification in the Yuba County 2030 General Plan.
2 Because SR 20 between Woodruff Lane and Loma Rica Road is a three-lane segment, two-lane roadway capacity thresholds were extrapolated to account for additional capacity of the second westbound lane.
3 MC refers to the Minor Collector roadway classification in the Yuba County 2030 General Plan.

Source: Fehr & Peers, 2021.

Conclusion

Based on the above, under Cumulative Plus Project Conditions, the addition of project traffic could conflict with the County's applicable LOS standards at the following intersections:

- SR 20/Kibbe Road – unacceptable LOS during AM peak hour;

- SR 20/Loma Rica Road – already unacceptable LOS exacerbated during AM peak hour;
- SR 20/Woodruff Lane – already unacceptable LOS exacerbated during AM peak hour; and
- SR 20/Walnut Avenue – already unacceptable LOS exacerbated during AM peak hour.

The remaining study intersections and roadway segments would operate acceptably under Cumulative Plus Project Conditions.

As summarized earlier, as result of SB 743, local jurisdictions may not rely on vehicle LOS and similar measures related to delay as the basis for determining the significance of transportation impacts under CEQA. However, because the County considers LOS as a matter of General Plan policy, the County retains full discretion to require a project to ensure General Plan consistency through project conditions of approval.

The County shall condition the project, if approved, to require the applicant to fully construct the following improvements. Improvements shall be noted on all Project Improvement Plans, and shall be approved by the Yuba County Community Development and Services Agency, and Caltrans prior to issuance of grading permits.

- The SR 20/Kibbe Road intersection meets the peak hour signal warrant under Cumulative Plus Project Conditions during the AM peak hour. Installation of a traffic signal control with left turn pockets on the major road approaches and a right turn pocket on the eastbound approach would result in acceptable operations. Alternatively, installation of a single lane roundabout control with a shared left/through/right turn lane on all approaches would result in acceptable operations. Improvements would be fully funded project costs.
- The SACOG MTP/SCS identifies installation of a traffic signal at SR 20/Loma Rica Road as a project to be completed between 2031 and 2035. The peak hour traffic signal warrant analysis showed that the intersection meets the warrant under Cumulative Conditions during the AM and PM peak hours. Widening of SR 20 to two westbound lanes from east of SR 20/Loma Rica Road to west of SR 20/Woodruff Lane and installation of a traffic signal at SR 20/Loma Rica Road would improve operations to LOS C in the AM peak hour under Cumulative Plus Project Conditions. The Countywide Traffic Impact Fee Program identified the installation of the traffic signal within the Impact Fee Study. Therefore, the proposed project would be required to pay a fair-share contribution of 7.7 percent to the Countywide Traffic Impact Fee Program (see Appendix G).[6]
- The SR 20/Woodruff Lane intersection meets the PM peak hour signal warrant under Cumulative Conditions. Widening of SR 20 to two westbound lanes from east of SR 20/Loma Rica Road to west of SR 20/Woodruff Lane and installation of a traffic signal at SR 20/Woodruff Lane would improve operations to LOS B in the AM peak hour under Cumulative Plus Project Conditions. The Countywide Traffic Impact Fee Program identified the roadway improvements within the Impact Fee Study. Therefore, the proposed project would be

[6] Fehr & Peers. *Teichert Aggregates' Fair Share Percentage Calculations for the State Route 20/Kibbe Road Intersection and Haul Road EIR (Draft)*. November 12, 2021.

required to pay a fair-share contribution of 7.6 percent to the Countywide Traffic Impact Fee Program (see Appendix G).[7]

- Construction of a two-way left-turn lane on the south leg of the SR 20/Walnut Avenue intersection and a southbound left turn on the north leg of the intersection would improve operations to better than Cumulative Conditions. However, the intersection would still operate at LOS F. The SR 20/Walnut Avenue intersection meets the peak hour signal warrant during the AM peak hour under Cumulative Conditions. Installation of a traffic signal would improve operations to LOS E under Cumulative Plus Project Conditions. The Countywide Traffic Impact Fee Program identified the installation of the traffic signal within the Impact Fee Study. However, the proposed project would shift northbound right-turn vehicles to the northbound through movement at SR 20/Walnut Avenue, which would not result in a net increase of vehicles to the intersection. Therefore, the proposed project would not be required to pay a fair-share contribution to the Countywide Traffic Impact Fee Program (see Appendix G).[8]

Implementation of the project conditions of approval would ensure that the proposed project would be consistent with the County's applicable LOS standards for the study intersections under Cumulative Plus Project conditions. Therefore, the proposed project's cumulative impacts related to transportation would be ***less than significant.***

Mitigation Measure(s)

None required.

7 Fehr & Peers. *Teichert Aggregates' Fair Share Percentage Calculations for the State Route 20/Kibbe Road Intersection and Haul Road EIR (Draft)*. November 12, 2021.
8 *Ibid.*

5. Alternatives Analysis

5. ALTERNATIVES ANALYSIS

5.1 INTRODUCTION

The Alternatives Analysis chapter of the EIR includes consideration and discussion of a range of reasonable alternatives to the proposed project, as required per CEQA Guidelines Section 15126.6. Generally, the chapter includes discussions of the following: the purpose of an alternatives analysis; alternatives considered but dismissed; a reasonable range of project alternatives and their associated impacts in comparison to the proposed project's impacts; and the environmentally superior alternative.

5.2 PURPOSE OF ALTERNATIVES

The primary intent of the alternatives evaluation in an EIR, as stated in Section 15126.6(a) of the CEQA Guidelines, is to "[…] describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." In the context of CEQA Guidelines Section 21061.1, "feasible" is defined as:

> ...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.

Section 15126.6(f) of CEQA Guidelines states, "The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice." Section 15126.6(f) of CEQA Guidelines further states:

> The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determined could feasibly attain most of the basic objectives of the project.

In addition, an EIR is not required to analyze alternatives when the effects of the alternative "cannot be reasonably ascertained and whose implementation is remote and speculative."

The CEQA Guidelines provide the following guidance for discussing alternatives to a proposed project:

- An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (CEQA Guidelines Section 15126.6[a]).
- Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these

alternatives would impede to some degree the attainment of the project objectives, or would be more costly (CEQA Guidelines Section 15126.6[b]).

- The EIR shall briefly describe the rationale for selecting the alternatives to be discussed. The EIR shall also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination […] Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts (CEQA Guidelines Section 15126.6[c]).
- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison (CEQA Guidelines Section 15126.6[d]).
- If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed (CEQA Guidelines Section 15126.6[d]).
- The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (CEQA Guidelines Section 15126.6[e][1]).
- If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6[e][2]).

Project Objectives

Based on the above, reasonable alternatives to the project must be capable of feasibly attaining most of the basic objectives of the project. The following objectives have been submitted by the project applicant:

1) Minimize, to the extent feasible, Teichert-generated truck traffic and its associated effects on the neighborhoods along Hallwood Boulevard and Walnut Avenue.
2) Identify the shortest possible route from Teichert's on-site scalehouse to State route (SR) 20.
3) Acquire property from willing property owners.
4) Facilitate the ongoing operation of the Hallwood mining facility.
5) Minimize, to the extent feasible, impacts to the natural environment, including riparian habitat and the Yuba River.

Impacts Identified in the EIR

In addition to attaining the majority of project objectives, reasonable alternatives to the project must be capable of reducing the magnitude of, or avoiding, identified significant environmental impacts of the proposed project. The proposed project would not result in significant impacts related to several resource areas discussed in this EIR and in the Initial Study prepared for the proposed project. Thus, a comparison of negligible and/or less-than-significant impacts associated with such resource areas as a result of project alternatives versus the proposed project is not provided in this chapter. Rather, this chapter focuses on those resource areas and specific impacts that have been identified within this EIR. A summary of the environmental impacts identified for the proposed project are provided below.

Significant and Unavoidable

The proposed project does not include impacts that have been determined to remain significant and unavoidable after implementation of the feasible mitigation measures set forth in this EIR.

Less Than Significant with Mitigation

Significant environmental impacts of the proposed project that have been identified as requiring mitigation measures to ensure that the level of significance is ultimately less than significant include the following:

- ***Biological Resources.*** The EIR determined that implementation of the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special-status species; and could have a substantial adverse effect on State or federally protected wetlands or any riparian habitat or other sensitive natural community. The EIR requires mitigation in order to ensure that the impacts are reduced to less-than-significant levels.

- ***Cultural and Tribal Cultural Resources.*** The EIR determined that implementation of the proposed project could cause a substantial adverse change in the significance of a unique archeological resource pursuant to CEQA Guidelines, Section 15064.5; could disturb human remains, including those interred outside of dedicated cemeteries; could cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in PRC, Section 21074; and could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. The EIR requires mitigation in order to ensure that the impacts are reduced to less-than-significant levels.

- ***Noise.*** The EIR determined that construction of the proposed project could result in the generation of a substantial temporary 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. The EIR requires mitigation in order to ensure that the impacts are reduced to less-than-significant levels.

- ***Transportation.*** The EIR determined that implementation of the proposed project could conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities; and could substantially increase hazards to vehicle safety due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The EIR requires mitigation in order to ensure that the impacts are reduced to less-than-significant levels.

5.3 SELECTION OF ALTERNATIVES

The requirement that an EIR evaluate alternatives to the proposed project or alternatives to the location of the proposed project is a broad one; the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained, while reducing the magnitude of, or avoiding, one or more of the significant environmental impacts of the proposed project. Thus, the following alternatives were selected to be evaluated within this EIR.

Alternatives Considered in the EIR

In light of the requirements of CEQA, the following alternatives to the proposed project were identified and considered:

- No Project Alternative;
- Existing Alignment Alternative;
- Cordua Canal Alternative; and
- Off-Site Location Alternatives 1 through 5B.

Alternatives Dismissed From Further Analysis

Consistent with CEQA, primary consideration was given to alternatives that could reduce significant impacts, while still meeting most of the basic project objectives.

As stated in Guidelines Section 15126.6(c), among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are:

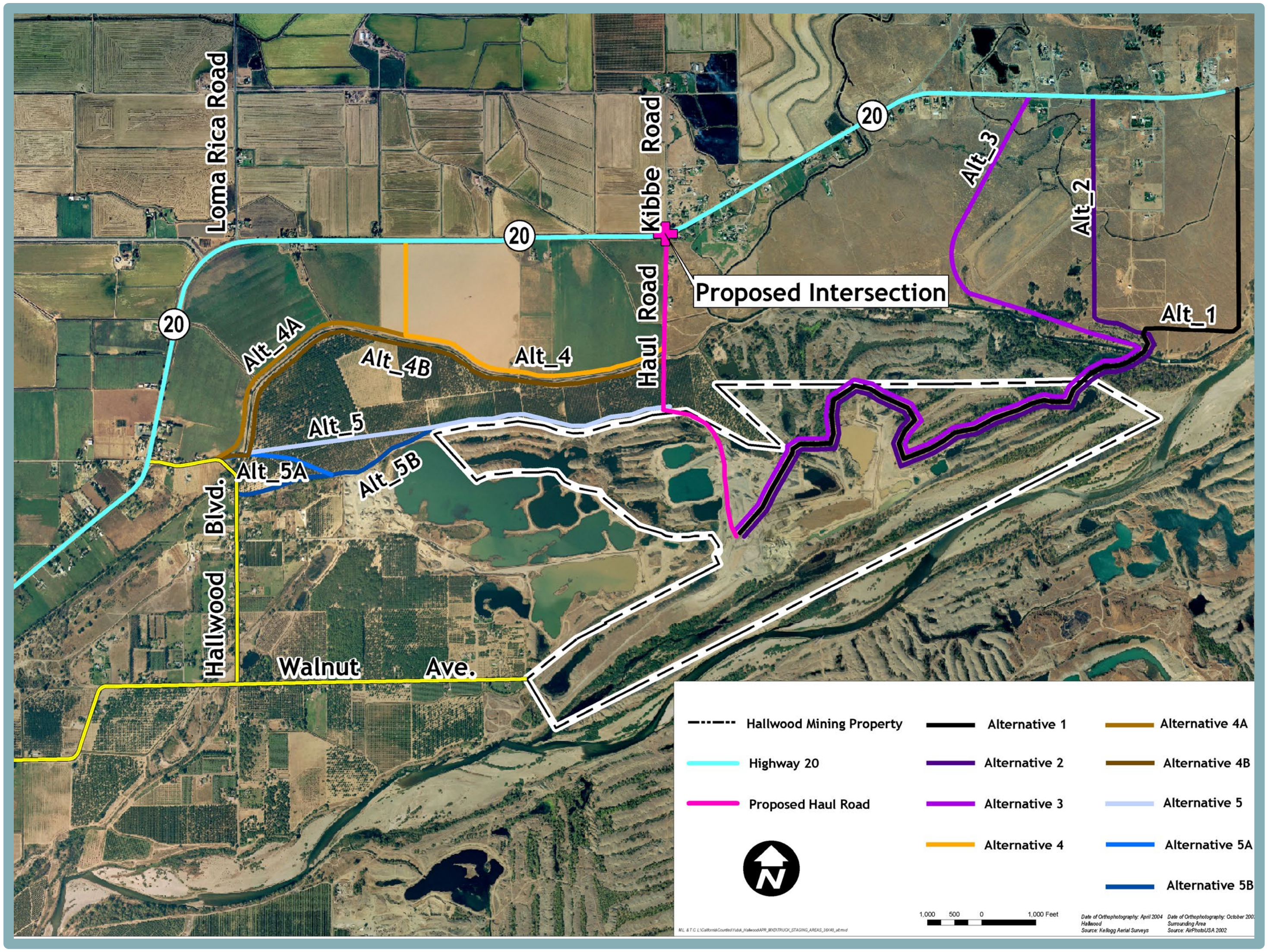
(i) failure to meet most of the basic project objectives,
(ii) infeasibility, or
(iii) inability to avoid significant environmental impacts.

Regarding item (ii), infeasibility, among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

Several Off-Site Location Alternatives have been considered and dismissed as alternatives to the proposed project (See Figure 5-1). The off-site locations include:

Alternative 1	A north-south roadway, which would begin on the eastern tip of Teichert's property and would cross the Cordua Canal and the Browns Valley Ditch to intersect with SR 20 east of Spring Valley Road.
Alternatives 2 and 3	Similar to Alternative 1, the north-south roadways of Alternatives 2 and 3 would begin on the eastern tip of Teichert's property and would cross the Cordua Canal and the Browns Valley Ditch. Alternative 2, however, would intersect with SR 20 farther east than Alternative 3.
Alternative 4	A roadway, which would begin in Teichert property and would run north-south transecting the orchard within the project site, and would cross the center irrigation ditch and immediately turn 90-degrees to the west and run east-west along the north edge of the center canal for approximately 3,000 feet and would then turn 90-degrees to the north to intersect with SR 20

Figure 5-1
Alternative Locations Dismissed for Further Review



Proposed intersection location is approximate.

Alternative 4A and 4B Variations of Alternative 4, the Alternative 4A and 4B roadways would also begin in Teichert property and would run north-south transecting the orchard along the previously constructed private haul route. Alternative 4A would then cross the center irrigation ditch, while Alternative 4B would not. The Alternatives would then immediately turn 90-degrees to the west and 4A would run east-west along the north edge of the center canal and 4B along the south edge until the ultimate connection with Hallwood Boulevard.

Alternative 5 Alternative 5 is an east-west running roadway, which would run adjacent to the southernmost irrigation ditch, then would cross the ditch and continue along the north edge of the ditch until connecting with Hallwood Boulevard.

Alternatives 5A and 5B Variations of Alternative 5, the Alternatives 5A and 5B east-west running roadways would also run adjacent to the southernmost irrigation ditch. Alternatives 5A and 5B follow the same general course as Alternative Location 5, but access Hallwood Boulevard at different locations.

Evaluation of Off-Site Location Alternatives 1, 2, and 3

Alternatives that avoid going through the neighborhood were considered to address a comment received on the NOP prepared for the proposed project. The alternatives would involve establishing a new haul route such that the hauling trucks travelling from the Hallwood mine would bypass the neighborhoods in the project region. A specific alternative hauling route that bypasses the communities along SR 20 has not been identified; therefore, this discussion generally evaluates three different scenarios: Off-Site Location Alternatives 1, 2, and 3.

The implementation of Off-Site Location Alternatives 1, 2, and 3 could result in greater overall impacts as compared to the proposed project. For example, Off-Site Location Alternatives 1, 2, and 3 would require longer lengths of roadway and would intersect with SR 20 further east than the proposed private haul road. By requiring the construction of an entirely new haul route which circumvents the existing neighborhoods and would result in a substantially larger area of ground disturbance as compared to the proposed project, impacts related to air quality and greenhouse gas (GHG) emissions, biological resources, and cultural and tribal cultural resources would be greater than the proposed project. In addition, because 75 percent of the trucks come from the west, the alternatives located east of the project site would divert the majority of the trucks along a longer, less direct haul road, which would therefore result in greater impacts related to air quality. For the same reasons, traffic noise impacts on residences located along SR 20 east of Kibbe Road would increase with the Off-Site Location Alternatives 1, 2, and 3. Furthermore, potential jurisdictional waters have been identified in the region where the alternatives to the east of the project site would intersect with the Hallwood mine. Construction of the alternatives could, therefore, result in impacts to waters of the U.S. that would not occur with the proposed project. Lastly, the construction of a roadway through the eastern area of the Hallwood mine would cross existing riparian and fresh water marsh habitat, which could result in greater impacts related to biological resources as compared to the proposed project.

Objective #2, which pertains to identifying the shortest possible route from Teichert's on-site scalehouse to SR 20, would not be met by the Alternatives. Objective #3, regarding the acquisition of property from willing property owners may not be met if willing property owners are not available. Objective #5, pertaining to minimizing impacts to the natural environment, including riparian habitat and the Yuba River, also may not be achieved under Off-Site Location Alternatives 1, 2, and 3. Furthermore, implementation of Off-Site Location Alternatives 1, 2, and 3 would not reduce any identified impacts to less than those anticipated for the proposed project.

Given the reasons above, Off-Site Location Alternatives 1, 2, and 3 would fail to meet all of the basic project objectives and would not avoid any significant environmental effects. Thus, the Alternatives are hereby dismissed from further review.

Evaluation of Off-Site Location Alternatives 4, 4A, 4B, 5, 5A, and 5B

Off-Site Location Alternatives 4, 4A, 4B, 5, 5A, and 5B would be located west of the project site and would connect with Hallwood Boulevard. Currently, only trucks exiting the Teichert facility utilize Hallwood Boulevard. However, under Off-Site Location Alternatives 4, 4A, 4B, 5, 5A, and 5B, the affected segment of Hallwood Boulevard would accommodate 100 percent of the Teichert truck traffic. As a result, implementation of the Alternative would increase noise impacts to sensitive receptors along Hallwood Boulevard, as well as sensitive receptors at the intersection of Hallwood Boulevard and SR 20, to levels greater than what would occur under the proposed project. Furthermore, impacts related to transportation would likely be greater than under the proposed project due to the fact that the haul road, as included in the proposed project, would be a private road that connects directly to SR 20. Conversely, the alternative locations that connect to Hallwood Boulevard would place 100 percent of Teichert's truck traffic on a local roadway. Consequently, under the alternatives, the truck traffic would be added to the non-commercial vehicles utilizing the roadway, whereas traffic on the private haul road, included under the proposed project, would consist predominantly of trucks. Finally, air quality and GHG impacts associated with the Alternatives would be greater than the proposed project due to the increased length of the haul route.

Off-Site Location Alternatives 4, 4A, 4B, 5, 5A, and 5B would fail to meet project Objective #1, which entails minimizing Teichert-generated truck traffic on Hallwood Boulevard and Walnut Avenue. In addition, Objective #2, which pertains to identifying the shortest possible route from Teichert's on-site scalehouse to SR 20, would not be met by the Alternatives. Objective #3, regarding the acquisition of property from willing property owners may not be met if willing property owners are not available. Objective #5, pertaining to minimizing impacts to the natural environment, including riparian habitat and the Yuba River, also may not be achieved under the Alternatives.

Therefore, due to the potentially greater impacts associated with the alternative haul road locations, and because the Alternatives would not meet all project objectives, Off-Site Location Alternatives 4, 4A, 4B, 5, 5A, and 5B are hereby dismissed from further review.

Alternatives Evaluated in this EIR

The following alternatives are evaluated in this section:

A. No Project Alternative;
B. Existing Alignment Alternative; and
C. Cordua Canal Alternative.

Each of the project alternatives is described in detail below, with a corresponding analysis of each alternative's consistency with the project objectives and evaluation of impacts to the existing environment in comparison to the proposed project's identified impacts. While an effort has been made to include quantitative data for certain analytical topics, where possible, qualitative comparisons of the various alternatives to the project are primarily provided. Such an approach to the analysis is appropriate as evidenced by CEQA Guidelines Section 15126.6(d), which states that the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. The analysis evaluates impacts that would occur with the alternatives relative to the significant impacts identified for the proposed project. When comparing the potential impacts resulting from implementation of the foregoing alternatives, the following terminology is used:

- "Fewer" = Less than Proposed Project;
- "Similar" = Similar to Proposed Project; and
- "Greater" = Greater than Proposed Project.

When the term "fewer" is used, the reader should not necessarily equate this to elimination of significant impacts identified for the proposed project. For example, in many cases, an alternative would reduce the relative intensity of a significant impact identified for the proposed project, but the impact would still be expected to remain significant under the alternative, thereby requiring mitigation. In other cases, the use of the term "fewer" may mean the actual elimination of an impact identified for the proposed project altogether. Similarly, use of the term "greater" does not necessarily imply that an alternative would require additional mitigation beyond what has been required for the proposed project. To the extent possible, this analysis will distinguish between the two implications of the comparative words "fewer" and "greater".

See Table 5-1 at the end of this chapter for a comparison of the environmental impacts resulting from the considered alternatives and the proposed project.

A. No Project Alternative

The following section includes an overview providing background related to this alternative, a description of this alternative, an evaluation of the alternative's consistency with project objectives, and an impact comparison analysis.

Overview

CEQA requires the evaluation of the comparative impacts of the "No Project" alternative (CEQA Guidelines Section 15126.6[e]). Analysis of the no project alternative shall:

> "… discuss […] existing conditions […] as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." (*Id.*, subd. [e][2]) "If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the 'no project' alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in the property's existing state versus environmental effects that would occur if the project were approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed. In certain instances, the no project alternative means 'no build,' wherein the existing environmental setting is maintained. However, where failure to proceed with the project would not result in preservation of

existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment." (*Id.*, subd. [e][3][B]).

Description of Alternative

For the purposes of this analysis, the No Project Alternative uses, as a baseline, the existing conditions of the project site such that an intersection relocation and a roadway realignment have not occurred, and would not occur, and that the trucks associated with the Hallwood mine would continue to use Walnut Avenue and Hallwood Boulevard as their hauling route from the Hallwood mine. The project site would remain as is: undeveloped except for the previously constructed 3,250 lineal feet of an unused private haul road located to the south of the SR 20/Kibbe Road intersection, which would continue to be unused. However, the alternative's nullification of the proposed project would continue to impact the neighborhoods surrounding Walnut Avenue and Hallwood Boulevard.

Consistency with Project Objectives

Under the No Project Alternative, the existing haul route would continue to impact the neighborhoods surrounding Walnut Avenue and Hallwood Boulevard. Thus, the No Project Alternative would not minimize, to the extent feasible, Teichert-generated truck traffic and its associated effects on the neighborhoods along Hallwood Boulevard and Walnut Avenue (Objective #1). Additionally, the Alternative would not identify the shortest possible route from Teichert's on-site scalehouse to SR 20 (Objective #2), or acquire property from willing property owners (Objective #3). The No Project Alternative would generally meet Objectives #4 and #5.

Impacts of Alternative

The following provides a discussion evaluating the impacts of this alternative on baseline conditions as compared to the impacts of the proposed project on baseline conditions for each impact area addressed within this EIR.

Air Quality and Greenhouse Gas Emissions

Under the No Project Alternative, the current haul route for the Hallwood mine would remain. The proposed relocation of the SR 20/Kibbe Road intersection or the realignment of the existing road would not occur. While air quality and greenhouse gas emissions would still occur in the area as a result of hauling trucks continuing to travel along the current haul route, construction-related emissions associated with implementing the proposed haul route would not occur. Therefore, the No Project Alternative would result in fewer construction-related impacts on the project site as compared to the proposed project.

Biological Resources

Under the No Project Alternative, the current haul route for the Hallwood mine would remain and the proposed relocation of the SR 20/Kibbe Road intersection or the realignment of the existing road would not occur. As such, impacts would not occur to the existing habitats of special-status plant and wildlife species, nor would impacts occur to the site's existing aquatic resources. Additionally, trees would not be removed as a result of the No Project Alternative. Thus, Mitigation Measures 4.2-1 through 4.2-5 would not be required, and the No Project Alternative would result in fewer construction-related impacts related to Biological Resources as compared to the proposed project.

Cultural and Tribal Cultural Resources

The No Project Alternative does not include any construction, including the relocation of an intersection or the realignment of an existing road. The No Project Alternative would result in no impact related to cultural resources, because the No Project Alternative would not include ground-disturbing construction activities, such as grading or excavation, which could uncover previously unknown paleontological, archaeological, or historical artifacts. Thus, mitigation measures would not be required. Therefore, the No Project Alternative would result in fewer impacts to cultural resources than the proposed project.

Noise

Under the No Project Alternative, truck traffic associated with the Hallwood mine would continue using Walnut Avenue and Hallwood Boulevard. Bollard Acoustical Consultants prepared an Environmental Noise and Vibration Assessment for the proposed project, which provided existing noise levels under the No Project scenario, which essentially represents the No Project Alternative. Under the No Project Alternative, existing noise levels for segments of Walnut Avenue and Hallwood Boulevard are between 64.1 decibels (dB) and 68.2 dB. The ambient noise levels for segments of SR 20 are between 66.1 dB and 67.4 dB. Under the No Project Alternative, noise levels in the project vicinity would remain the same. However, under the proposed project, noise levels along the existing haul route would be reduced by between 16 dB and 12.1 dB. Additionally, a larger number of sensitive receptors exist along Walnut Avenue and Hallwood Boulevard, than along the proposed haul route, and the noise level increases associated with the proposed project would be less than the County's noise standards. Under the No Project Alternative, construction noise would not occur; however, the proposed project concluded that impacts related to exposing sensitive receptors to construction noise would be less than significant with the implementation of Mitigation Measure 4.4-1.

Based on the above, the No Project Alternative would result in greater noise impacts than the proposed project because implementation of the proposed project would reduce noise levels at existing sensitive receptors, and would not increase noise levels at new sensitive receptors to a significant level.

Transportation

Under the No Project Alternative, the trucks associated with the Hallwood mine would continue to use Walnut Avenue and Hallwood Boulevard as the hauling route from the Hallwood mine, and the project site would remain as is. The proposed intersection relocation and roadway realignment would not occur. As a result, the alternative would not result in impacts to the project site because construction activities associated with implementing the proposed project would not occur. Additionally, Mitigation Measures 4.5-1, 4.5-3(a), and 4.5-3(b) would not be required. However, hauling trucks and Hallwood mine employees would travel approximately 0.25-mile to 0.54-mile more using the existing haul route, which would result in an increase in VMT compared to the proposed project. Therefore, the No Project Alternative would result in greater impacts related to transportation as compared to the proposed project.

B. Existing Alignment Alternative

The following section includes a description of this alternative, an evaluation of the alternative's consistency with project objectives, and an impact comparison analysis.

Description of Alternative

The Existing Alignment Alternative would involve the easterly realignment of the private haul road to connect with the existing SR 20/Kibbe Road intersection. As a result, the SR 20/Kibbe Road intersection would not be shifted to the west, and the relocation of Kibbe Road north and the driveways along the roadway segment would not be required. Access to the Hallwood mine would be provided in the same location as the proposed project and, also similar to the proposed project, would be located along the majority of the previously constructed private haul road located to the south of the SR 20/Kibbe Road intersection (see Figure 5-2).

Consistency with Project Objectives

Because the Existing Alignment Alternative would only include minor changes to the alignment of the proposed project, the alternative would generally be capable of meeting all of the project objectives.

Impacts of Alternative

The following provides a discussion evaluating the impacts of this alternative on baseline conditions as compared to the impacts of the proposed project on baseline conditions for each of the impact areas addressed within this EIR.

Air Quality and Greenhouse Gas Emissions

The Existing Alignment Alternative would only include minor changes to the proposed project at the SR 20/Kibbe Road intersection by providing an easterly realignment of the private haul road to connect with the existing intersection. However, the Alternative would still require the construction of a new roadway segment and roadway improvements. Therefore, the Alternative's impacts related to air quality and GHGs would be similar to the proposed project.

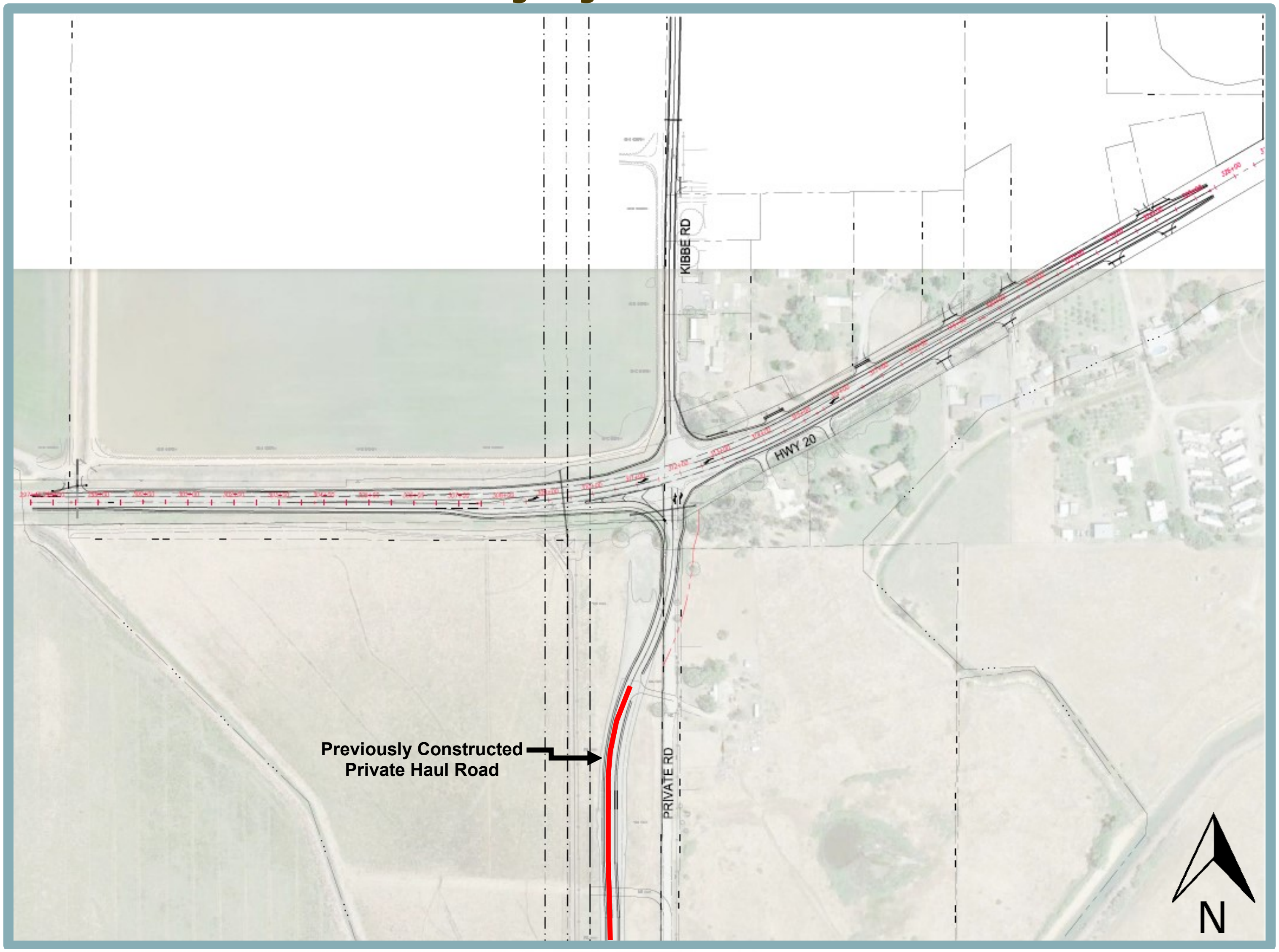
Biological Resources

The Existing Alignment Alternative would realign the previously constructed haul road to connect to the existing Kibbe Road segment south of the SR 20/Kibbe Road intersection, and would not require the realignment of the intersection. Due to the location of potential ground disturbance, impacts to vernal pool fairy shrimp and nesting birds and raptors could occur with the Existing Alignment Alternative. Additionally, the changes to the alignment would result in the loss and/or disturbance of 0.264-acre of aquatic resources in the area, which would be only marginally larger than the 0.257-acre disturbance of the proposed project. Furthermore, the Existing Alignment Alternative would result in the removal of three eucalyptus trees, and one Fremont's cottonwood, and would potentially result in the removal of one oak tree presumed to have a diameter at breast height (dbh) exceeding 30 inches. Therefore, Mitigation Measures 4.2-1(a) through 4.2-2(b) would still be required under the Alternative, and impacts related to biological resources would be similar to the proposed project.

Cultural and Tribal Cultural Resources

The Existing Alignment Alternative would realign the previously constructed haul road to connect to the existing Kibbe Road segment south of the SR 20/Kibbe Road intersection, and would not require the realignment of the intersection. As a result, the Alternative would not require the realignment of Kibbe Road north of the intersection, and would not disrupt the eastern boundary of the agricultural parcel located in the northwestern corner of the intersection.

Figure 5-2
Existing Alignment Alternative



However, the alternative would still require the construction of a new roadway segment and roadway improvements. Thus, the area of impact under the Existing Alignment Alternative would largely remain the same. Therefore, Mitigation Measures 4.3-1, 4.3-2(a) and 4.3-2(b) related to the discovery of resources during ground disturbance would still be required under the Alternative, and impacts related to cultural and Tribal Cultural Resources would be similar to the proposed project.

Noise

The Existing Alignment Alternative would realign the previously constructed haul road to connect to the existing Kibbe Road roadway south of the SR 20/Kibbe Road intersection, and would not require the realignment of the intersection. While the roadway realignment would result in moving the haul road slightly closer to the existing residences than the proposed project scenario, the Environmental Noise and Vibration Assessment prepared for the proposed project considered the potential noise impacts of the Existing Alignment Alternative and determined that the Alternative would not create additional impacts to the nearest sensitive noise receptors as compared to the proposed project. Additionally, the Alternative would require construction activities and, thus, Mitigation Measure 4.4-1 would still be required. Thus, the Existing Alignment Alternative would not significantly alter the noise levels in the project area beyond what was anticipated in the proposed project, and the Alternative's impacts related to noise would be similar to the impacts under the proposed project.

Transportation

Because the Existing Alignment Alternative would include minor changes to the alignment of the proposed haul route, like the proposed project, the Alternative would also result in reduced VMT compared to baseline conditions due to the shortened haul route trip length.

Under the Existing Alignment Alternative, the private haul road would access the Hallwood mine in the same location as the proposed project and would be located along the majority of the previously constructed private haul road located to the south of the SR 20/Kibbe Road intersection. However, the Existing Alignment Alternative would not include realignment of the existing SR 20/Kibbe Road intersection to connect with the private haul road; rather, the private haul road would be realigned to connect with the existing Kibbe Road roadway just south of the SR 20/Kibbe Road intersection. As a result, the Alternative would not result in construction-related impacts at the Kibbe Road/SR 20 intersection. However, haul truck traffic would still be routed to the SR 20/Kibbe Road intersection from the Hallwood mine; therefore, pedestrian and transit facilities in the project vicinity could still be impacted, and Mitigation Measure 4.5-1 would be required. Additionally, although construction for the Existing Alignment Alternative would not directly impact the SR 20/Kibbe Road intersection, construction activities would occur within the vicinity of the intersection in order to connect the previously constructed haul road with the existing roadway. Thus, the Existing Alignment Alternative would be required to implement the same conditions of approval as the proposed project in order to ensure consistency with the County's applicable LOS standards.

During construction, the proposed project could substantially increase hazards to vehicle safety because construction activities could cause lane closures, damage to roadways, friction between construction site vehicles and travelers on SR 20, and increased conflicts with bicyclists, and pedestrians, which could result in a hazardous traffic situation. Mitigation Measures 4.5-1, 4.5-3(a), and 4.5-3(b) would be required to ensure hazards during construction do not occur under the Existing Alignment Alternative. Thus, the Existing Alignment Alternative would result in similar impacts as compared to the proposed project.

C. Cordua Canal Alternative

The following section includes a description of this alternative, an evaluation of the alternative's consistency with project objectives, and an impact comparison analysis. In 2006, the Yuba County Superior Court invalidated the previous EIR prepared for the project based on several identified legal deficiencies. One of the identified deficiencies was failing to adequately analyze an alternative alignment along the Cordua Canal and, as such, the Cordua Canal Alternative has been evaluated in this chapter.

Description of Alternative

The Cordua Canal Alternative would involve constructing a roadway along the Stahl Ditch, west of the existing private haul road. Under the Cordua Canal Alternative, the haul route would access the Hallwood mine in the same location as the proposed project and, also similar to the proposed project, would be located along the previously constructed haul route for approximately 1,800 feet, from the Hallwood mine access to just north of the Cordua Canal crossing. However, once across Cordua Canal, the Cordua Canal Alternative would follow the east bank of the Stahl Ditch for approximately 1,070 feet before straightening to intersect with SR 20, approximately 975 feet west of the existing SR 20/Kibbe Road intersection (see Figure 5-3). Therefore, the Alternative would include the construction of approximately 2,045 feet of new roadway, as well as improvements to SR 20 to create a new intersection where the alternative haul route would connect to the existing roadway. Due to the creation of the new intersection, modifications to Kibbe Road north of the existing SR 20/Kibbe Road intersections and the associated driveways along the roadway segment would not be required.

Consistency with Project Objectives

The Cordua Canal Alternative haul route would be approximately 545 feet longer than the proposed haul route, and would include the construction of approximately 2,045 feet of additional roadway. Therefore, the Alternative would result in a greater area of disturbance and longer haul route, and, thus, would not meet Objectives #2 or #5. Objectives #1, #3, and #4 would generally be met.

Impacts of Alternative

The following provides a discussion evaluating the impacts of this alternative on baseline conditions as compared to the impacts of the proposed project on baseline conditions for each impact area addressed within this EIR.

Air Quality and Greenhouse Gas Emissions

The Cordua Canal Alternative haul route would follow the east bank of the Stahl Ditch for approximately 1,070 feet before straightening to intersect with SR 20, approximately 975 feet west of the existing SR 20/Kibbe Road intersection. Although the alternative haul route would be located further from the nearest sensitive receptors than the haul route of the proposed project, the proposed project concluded that impacts related to exposing sensitive receptors to pollutants would be less than significant. Therefore, the Alternative would not reduce an identified impact.

Figure 5-3
Cordua Canal Alternative

The Cordua Canal Alternative would include the construction of approximately 2,045 feet of roadway, as well as improvements to SR 20. Thus, implementation of the Cordua Canal Alternative would increase the amount of vegetation clearing and earth-moving activities, construction material hauling, and time of the construction period in order to complete the alternative haul route. As a result, construction-related emissions would be greater under the Cordua Canal Alternative. Therefore, the Alternative would result in greater impacts related to air quality and GHG emissions.

Biological Resources

Under the Cordua Canal Alternative, the haul route would follow the east bank of the Stahl Ditch for approximately 1,070 feet before straightening to intersect with SR 20, approximately 975 feet west of the existing SR 20/Kibbe Road intersection. Construction noise and activities during the nesting season could result in the same types of impacts on nesting birds and raptors as described for the proposed project but would occur over a longer period of time. The Cordua Canal Alternative would not result in the removal of any trees large enough to meet the County's ordinance. However, the Cordua Canal Alternative could result in the direct removal, filling or hydrological interruption of 0.627-acre of aquatic resources, including the permanent loss of 0.545-acre, and the temporary disturbance of 0.082-acre. Thus, the Cordua Canal Alternative would result in direct impacts to vernal pool fairy shrimp because one 0.23-acre seasonal wetland that is considered suitable habitat for the vernal pool fairy shrimp would be filled under the Alternative.

Supporting hydrology for suitable vernal pool fairy shrimp habitat could be altered due to the degree the topography would change and the potential excavation that may be required to construct the Cordua Canal Alternative, which could disrupt restrictive soil layers supporting the subsurface hydrology. Therefore, indirect impacts to vernal pool fairy shrimp could occur under the Alternative. Thus, potential changes under the Cordua Canal Alternative could alter the hydrology such that vernal pool fairy shrimp, if present, no longer have a potential to be supported. Finally, similar to the proposed project, the potential vernal pool fairy shrimp habitat in the project vicinity could possibly be impacted by spills of construction related materials that could reach the wetlands, particularly during rain events, and result in the injury and mortality of vernal pool fairy shrimp.

As such, Mitigation Measures 4.2-1(a) through 4.2-2(b) would still be required for the Alternative. However, due to direct impacts to vernal pool fairy shrimp which would occur under the Cordua Canal Alternative, additional mitigation would also be required. Based on the above information, the Alternative would result in greater impacts related to biological resources than the proposed project.

Cultural and Tribal Cultural Resources

Under the Cordua Canal Alternative, the haul route would follow the east bank of the Stahl Ditch for approximately 1,070 feet before straightening to intersect with SR 20, approximately 975 feet west of the existing SR 20/Kibbe Road intersection. Therefore, the area of potential effect (APE) would change under the alternative. As part of the Cultural Resources Survey Memorandum prepared for the proposed project, impacts related to the Cordua Canal Alternative were assessed; however, due to property access issues, the portion of the Alternative's APE that would differ from the proposed project's APE was unable to be intensely surveyed. As observed from the roadway and other accessible areas, the APE of the Cordua Canal Alternative is currently under agricultural production with row crops. Additionally, the irrigation canals within the

Alternative vicinity are not considered significant historical resources, and the Cultural Resources Survey Memorandum concluded that known archeological and paleontological resources do not exist within the vicinity of the Alternative. Although an intensive survey was not completed for known cultural resources in the vicinity of the alternative location, the anticipated impacts of the Cordua Canal Alternative would likely be similar to the proposed project. As such, Mitigation Measures 4.3-1, 4.3-2(a) and 4.3-2(b), related to the discovery of resources during ground disturbance, would still be required under the Alternative. Based on the above information, the Alternative would result in similar impacts related to Cultural and Tribal Cultural Resources as the proposed project.

Noise

The Cordua Canal Alternative would follow the east bank of the Stahl Ditch for approximately 1,070 feet before straightening to intersect with SR 20, approximately 975 feet west of the existing SR 20/Kibbe Road intersection, thereby shifting the proposed haul road to the west and creating a larger setback from the nearest sensitive noise receptor of the proposed project. The Alternative would require construction and, thus, Mitigation Measure 4.4-1 would still be required. However, although the Cordua Canal Alternative would locate the haul road closer to the nearest residences on the south side of SR 20, the residences would be in excess of 900 feet from the haul route and would not be adversely impacted. Therefore, the Alternative would reduce noise impacts to the proposed project's nearest sensitive receptor to below proposed project levels, would reduce noise levels at noise sensitive receptors in the neighborhoods surrounding Hallwood Boulevard and Walnut Avenue, and would not significantly increase noise levels at the nearest residences on the south side of SR 20. Thus, the Cordua Canal Alternative would result in fewer impacts related to noise as compared to the proposed project.

Transportation

The Cordua Canal Alternative would follow the east bank of the Stahl Ditch for approximately 1,070 feet before straightening to intersect with SR 20, approximately 975 feet west of the existing SR 20/Kibbe Road intersection, therefore creating a new intersection along SR 20. As such, the Alternative would result in additional truck traffic at the new intersection, and the traffic levels at the new intersection could conflict with the County's applicable LOS standards. Additionally, the Alternative would result in similar conflicts as the proposed project at all other intersections in the project vicinity, except for at the SR 20/Kibbe Road intersection, where LOS would be improved under the Cordua Canal Alternative. The County would condition the Cordua Canal Alternative to fully construct improvements to the roadways in the project vicinity, including the installation of a traffic signal control with a westbound left turn pocket, an eastbound right turn pocket, and a northbound right turn pocket at the SR 20/New Connection intersection, or the installation of a single lane roundabout control with a shared left/through/right turn lane on all approaches.

The distance of the Cordua Canal Alternative haul route to the Hallwood mine would be approximately 545 feet longer than the proposed haul route, which would result in an overall increase in VMT compared to the proposed project. Thus, the Cordua Canal Alternative would result in greater impacts related to VMT as compared to the proposed project.

The Cordua Canal Alternative would involve construction activities along SR 20 which could substantially increase hazards to vehicle safety and result in a hazardous traffic situation by interfering with the movement of traffic at the SR 20/New Connection intersection. Like the proposed project, the construction process could cause lane closures, damage to roadways, friction between construction site vehicles and travelers on SR 20, and increased conflicts with bicyclists and pedestrians. Therefore, Mitigation Measures 4.5-3(a) and 4.5-3(b) would be required under the Cordua Canal Alternative. However, because the Cordua Canal Alternative haul route would be located west of the existing SR 20/Kibbe Road intersection, the Alternative would not conflict with the school bus stops located at the intersection, and Mitigation Measure 4.5-1 would not be required. Based on the above information, the Alternative would result in greater impacts related to transportation as the proposed project.

5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. The environmentally superior alternative is generally the alternative that would be expected to generate the least amount of significant impacts. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets the goals or needs of the County. Section 15126.6(e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated and states, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." In this case, however, the No Project Alternative would not be considered the environmentally superior alternative because the Alternative would result in greater impacts to noise and transportation, as shown in Table 5-1 below. Additionally, because the No Project Alternative would continue to use the existing haul route, the Alternative would not meet Objectives #1, #2, or #3.

The Existing Alignment Alternative would result in similar impacts as the proposed project to all issue areas. Because the Existing Alignment Alternative would be substantially similar to the proposed project, all project objectives would be met.

The Cordua Canal Alternative would result in fewer impacts related to Noise, and similar impacts as compared to the proposed project related to Cultural and Tribal Cultural Resources. However, the Alternative would result in greater impacts to Air Quality and GHG Emissions, Biological Resources, and Transportation. Because the Alternative would be approximately 545 feet longer than the proposed haul route, and would include the construction of approximately 2,045 feet of roadway, the Alternative would not meet Objectives #2 or #5.

Overall, because the Existing Alignment Alternative would result in fewer impacts compared to the Cordua Canal Alternative, the Existing Alignment Alternative would be considered the environmentally superior alternative to the proposed project. However, Section 15126.6(a) of the CEQA Guidelines states that alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. As discussed throughout this chapter, the Existing Alignment Alternative would result in similar impacts to the proposed project. Therefore, although the Existing Alignment Alternative is considered the environmentally superior alternative for the purposes of this analysis, it should be noted that the proposed project would result in the same amount, or fewer impacts than all alternatives evaluated in this EIR.

Table 5-1
Comparison of Environmental Impacts for Project Alternatives

Resource Area	Proposed Project	No Project Alternative	Existing Alignment Alternative	Cordua Canal Alternative
Air Quality and Greenhouse Gas Emissions	Less-Than-Significant with Mitigation <u>and</u> Less-Than-Significant	Fewer	Similar	Greater
Biological Resources	Less-Than-Significant with Mitigation <u>and</u> Less-Than-Significant	Fewer	Similar	Greater
Cultural and Tribal Cultural Resources	Less-Than-Significant with Mitigation <u>and</u> Less-Than-Significant	Fewer	Similar	Similar
Noise	Less-Than-Significant with Mitigation <u>and</u> Less-Than-Significant	Greater	Similar	Fewer
Transportation	Less-Than-Significant with Mitigation <u>and</u> Less-Than-Significant	Greater	Similar	Greater
	Total Fewer:	**3**	**0**	**1**
	Total Similar:	**0**	**5**	**1**
	Total Greater	**2**	**0**	**3**
Note: Less than Proposed Project = "Fewer;" Similar to Proposed Project = "Similar", and Greater than Proposed Project = "Greater"				

6. Statutorily Required Sections

6. Statutorily Required Sections

6.1 INTRODUCTION

The Statutorily Required Sections chapter of the EIR includes discussions regarding those topics that are required to be included in an EIR, pursuant to CEQA Guidelines, Section 15126.2. The chapter includes a discussion of the proposed project's potential to result in growth-inducing impacts; the cumulative setting analyzed in this EIR; significant irreversible environmental changes; and significant and unavoidable impacts caused by the proposed project.

6.2 GROWTH-INDUCING IMPACTS

State CEQA Guidelines Section 15126.2(e) requires an EIR to evaluate the potential growth-inducing impacts of a proposed project. Specifically, an EIR must discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth can be induced in a number of ways, including the elimination of obstacles to growth, or by encouraging and/or facilitating other activities that could induce growth. Examples of projects likely to have growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or office complexes in areas that are currently only sparsely developed or are undeveloped.

The CEQA Guidelines are clear that while an analysis of growth-inducing effects is required, it should not be assumed that induced growth is necessarily significant or adverse. This analysis examines the following potential growth-inducing impacts related to implementation of the proposed project and assesses whether these effects are significant and adverse (see CEQA Guidelines, Section 15126.2[e]):

1. Foster population and economic growth and construction of housing.
2. Eliminate obstacles to population growth.
3. Affect service levels, facility capacity, or infrastructure demand.
4. Encourage or facilitate other activities that could significantly affect the environment.

Foster Population and Economic Growth and Construction of Housing

The proposed project would consist of the extension of a previously constructed private haul road and improvements to the intersection of State Route (SR) 20 and Kibbe Road. Because the proposed intersection improvements and the completed haul road would predominantly serve Teichert's existing Hallwood mine, the proposed project would not induce population growth by providing access to previously inaccessible areas, nor increasing business or operations at the mine. In addition, the proposed project would not involve the construction of residences or any new development that would introduce new residents to the project area; rather, the proposed improvements are intended to relocated the existing haul route from the Hallwood Boulevard and Walnut Avenue neighborhoods to a private roadway in order to alleviate the effects of hauling truck traffic on the neighborhoods.

Construction activities associated with the proposed project would provide temporary employment opportunities; however, employment patterns associated with the aforementioned work is such that workers hired to implement the proposed project would not likely, to any significant degree, relocate their households as a result of temporary employment associated with the project. Additionally, the redistribution of hauling truck traffic would not affect the mining activities that occur at the Hallwood mine; thus, the proposed project would not result in an increase in permanent employment opportunities. Therefore, although the project would provide short-term employment opportunities, likely filled by the local employee base, permanent jobs would not be created by the project. As a result, the project would not result in long-term employment growth in the area.

Based on the above information, the proposed project would not be anticipated to foster population and economic growth and construction of housing.

Eliminate Obstacles to Population Growth

The elimination of either physical or regulatory obstacles to growth is considered to be a growth-inducing effect. A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines, into areas that are not currently provided with these services, would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth.

Roadway improvement projects, such as the proposed project, are considered an extension of public service infrastructure which could eliminate obstacles to population growth and support new development. However, as discussed above, the roadway improvements that would occur as part of the proposed project would predominantly serve Teichert's existing Hallwood mine, and would not be used by the general public. In addition, Kibbe Road south of SR 20 extends parallel to the proposed haul route. Therefore, the land surrounding the project site has been, and will continue to be, accessible by way of Kibbe Road, regardless of the proposed project. Thus, implementation of the proposed project would not support new development by providing access to previously inaccessible areas in the project vicinity.

As discussed in the Initial Study prepared for the proposed project (see Appendix A), the proposed roadway improvements would not create increased demand for, nor require the construction or expansion of, water or wastewater treatment facilities. Additionally, the proposed intersection improvements would not involve operations typically associated with the generation or discharge of polluted water or require the construction or expansion of additional storm water drainage facilities.

With regard to the possibility of the project eliminating or changing a regulatory obstacle that would pave the way for new growth, the project would not include such discretionary actions or approvals. The project would require an Encroachment Permit from the County as well as an Encroachment Permit from Caltrans. However, such discretionary approvals would be carried out pursuant to established regulatory processes. As such, the discretionary approvals required by the proposed project would abide by existing regulations, and not eliminate or change regulations.

Based on the above information, the proposed project would not eliminate a physical or regulatory obstacle that would, as a result, create a growth-inducing effect.

Affect Service Levels, Facility Capacity, or Infrastructure Demand

Increases in population that would occur as a result of a project could significantly strain existing community service facilities, requiring construction of new facilities that could cause significant environmental impacts. As mentioned above, the proposed project would not involve the construction of residences or any new development that would introduce new residents to the project area. Rather, the proposed roadway improvements would alleviate hauling truck traffic at the Hallwood Boulevard and Walnut Avenue by relocating hauling truck traffic to a private haul route. Furthermore, as detailed above, the project would not necessitate the extension of public service infrastructure.

Thus, because the project would not be anticipated to directly or indirectly introduce new residents to the area or significantly impact existing public service infrastructure, the project would not increase population such that service levels, facility capacity, or infrastructure demand would require construction of new facilities that could cause significant environmental impacts.

Encourage or Facilitate other Activities That Could Significantly Affect the Environment

This EIR provides a comprehensive assessment of the potential for environmental impacts to occur associated with implementation of the proposed project. Please refer to Chapters 4.1 through 4.5 of this EIR, which comprehensively address the potential for impacts from construction and operation of the project site.

6.3 CUMULATIVE IMPACTS

CEQA Guidelines, Section 15130 requires that an EIR discuss the cumulative and long-term effects of the proposed project that would adversely affect the environment. “Cumulative impacts” are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines, Section 15355). “[I]ndividual effects may be changes resulting from a single project or a number of separate projects” (CEQA Guidelines, Section 15355, subd. [a]). “The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time” (CEQA Guidelines, Section 15355, subd. [b]).

The need for cumulative impact assessment reflects the fact that, although a project may cause an “individually limited” or “individually minor” incremental impact that, by itself, is not significant, the increment may be “cumulatively considerable,” and, thus, significant, when viewed together with environmental changes anticipated from past, present, and probable future projects (CEQA Guidelines, Section 15064, subd. [h(1)], Section 15065, subd. [c], and Section 15355, subd. [b]). Accordingly, particular impacts may be less than significant on a project-specific basis but significant on a cumulative basis if their incremental contribution, viewed against the larger backdrop, is cumulatively considerable. However, it should be noted that CEQA Guidelines, Section 15064, Subdivision (h)(5) states, “[…]the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.” Therefore, even where cumulative impacts are significant, any level of incremental contribution is not necessarily deemed cumulatively considerable.

Section 15130(b) of CEQA Guidelines indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses, but that analysis should reflect the severity of the impacts and their likelihood of occurrence, and that the analysis should be focused, practical, and reasonable. To be adequate, a discussion of cumulative effects must include the following elements:

> (1) Either (a) a list of past, present and probable future projects, including, if necessary, those outside the agency's control, or (b) a summary of projections contained in an adopted general plan or related planning document, or in a prior certified EIR, which described or evaluated regional or area-wide conditions contributing to the cumulative impact, provide that such documents are reference and made available for public inspection at a specified location;
>
> (2) A summary of the individual projects' environmental effects, with specific reference to additional information and stating where such information is available; and
>
> (3) A reasonable analysis of all of the relevant projects' cumulative impacts, with an examination of reasonable, feasible options for mitigating or avoiding the project's contribution to such effects (Section 15130[b]).

For some projects, the only feasible mitigation measures will involve the adoption of ordinances or regulations, rather than the imposition of conditions on a project-by-project basis (Section 15130[c]). Section 15130(a)(3) states that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund the project's fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

Pursuant to CEQA Guidelines Section 15130, a discussion of cumulative impacts is provided within each of the technical chapters of this EIR.

Cumulative Setting

The lead agency should define the relevant geographic area of inquiry for each impact category (id., Section 15130, subd. [b][3]), and should then identify the universe of "past, present, and probable future projects producing related or cumulative impacts" relevant to the various categories, either through the preparation of a "list" of such projects or through the use of "a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact" (id., subd. [b][1]).

As discussed above, two approaches exist for identifying cumulative projects and their associated impacts. The "list" approach identifies individual projects known to be occurring or proposed in the surrounding area in order to identify potential cumulative impacts. The "projection" approach uses a summary of projections in adopted General Plans or related planning documents to identify potential cumulative impacts. This EIR uses the projection approach for the cumulative analysis and considers the development anticipated to occur upon buildout of the Yuba County General Plan.

Limited situations exist where the geographic setting differs for the various resource areas. For example, the cumulative geographic setting for air quality is the Sacramento Valley Air Basin (SVAB), which is the air basin that the proposed project is located within. Global climate change is, by nature, a cumulative impact. Emissions of greenhouse gases (GHG) contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change (e.g., sea level rise, impacts to water supply and water quality, public health impacts, impacts to ecosystems, impacts to agriculture, and other environmental impacts). A single project could not generate enough GHG emissions to contribute noticeably to a change in the global average temperature. However, the combination of GHG emissions from a project in combination with other past, present, and future projects could contribute substantially to the world-wide phenomenon of global climate change and the associated environmental impacts. Although the geographical context for global climate change is the Earth, for analysis purposes under CEQA, and due to the regulatory context pertaining to GHG emissions and global climate change applicable to the proposed project, the geographical context for global climate change in this EIR is limited to the State of California.

As discussed in Chapter 4.5, Transportation, of this EIR, the cumulative traffic analysis relied on the Yuba County 2020-2024 Transportation Master Plan, which includes projections for the project vicinity based on the SACOG MTP/SCS and the Yuba County Capital Improvement Program project list. Specifically, the Cumulative No Build forecasts were developed using a modified version of the Yuba County travel demand forecasting (TDF) model that was used for preparation of the Magnolia Ranch EIR in 2014.

Cumulative impacts are analyzed in each of the technical chapters of this EIR, where the specific cumulative setting for each resource area is presented along with the cumulative impact discussion in the relevant resource area section of the EIR.

Summary of Cumulative Impacts

The following offers a summary of the cumulative impact analysis included in this EIR.

As discussed in Chapter 4.1, Air Quality and Greenhouse Gas Emissions, of this EIR, construction of the proposed project would not result in criteria pollutant emissions that would exceed the Feather River Air Quality Management District's thresholds of significance. Therefore, emissions resulting from implementation of the proposed project would not result in a cumulatively considerable net increase in criteria pollutant emissions, for which the region is in nonattainment for federal and State standards. Thus, the project's incremental contribution to cumulative impacts would be less than cumulatively considerable. In addition, the project would not result in the generation of substantial GHG emissions from haul trucks, employee commutes, or off-road equipment during construction or operation. Therefore, the proposed project would not be considered to generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Consequently, the project would not result in a cumulatively considerable incremental contribution to impacts related to GHG emissions or climate change and the project's impact would be less than cumulatively considerable.

As discussed in Chapter 4.2, Biological Resources, of this EIR, cumulative impacts related to biological resources that could be affected by the proposed project could result from a number of past, current, and reasonably foreseeable future projects that occur in the area. Although such projects could result in impacts on sensitive habitats and species, most current and future projects that impact special-status species and their habitats would be required to mitigate any potential impacts through the CEQA, Section 1602, or Section 404/401 permitting process, as well as through the Endangered Species Act Section 7 consultation process. As a result, most projects in the region would mitigate impacts on biological resources, minimizing cumulative impacts on species. Additionally, with implementation of Mitigation Measures 4.2-1(a) through 4.2-2(b), the project's incremental contribution to cumulative impacts would be less than cumulatively considerable.

As discussed in Chapter 4.3, Cultural and Tribal Cultural Resources, of this EIR, while some cultural resources may have regional significance, the resources themselves are site-specific, and impacts to them are project-specific. For example, impacts to a subsurface archeological find at one project site would not generally be made worse by impacts to a cultural resource at another site due to development of another project. Rather, the resources and the effects upon them are generally independent. While three cultural resource sites are located along the previously constructed private haul road within the project site, none are eligible for inclusion on the National Register of Historic Places or considered significant pursuant to CEQA. Furthermore, implementation of project-specific Mitigation Measures 4.3-1, 4.3-2(a), and 4.3-2(b) would ensure any impacts to previously unknown, subsurface resources discovered on the project site during construction activities would be reduced to less than significant. Similar to the proposed project, future development projects within the County would be required to implement project-specific mitigation to ensure any potential impacts to identified cultural resources are reduced to a less-than-significant level, where possible. Therefore, given that cultural resource impacts are generally site-specific and each future project within the County would be required to mitigate such impacts, any potential impacts associated with cumulative buildout of the County's General Plan would not combine to result in a significant cumulative impact.

As discussed in Chapter 4.4, Noise, of this EIR, cumulative development associated with buildout of the General Plan would result in increased vehicle traffic along local roadways relative to existing conditions. Such increases in vehicle traffic would result in increased traffic noise levels throughout the County, including within the vicinity of the project site, potentially resulting in new conflicts with the County's interior and exterior noise level standards. However, the net increase of noise levels along the study roadway segments of the proposed haul route would increase at a range of 0.7 dB to 1.1 dB under Cumulative Plus Project conditions, which would not result in a substantial increase in traffic noise levels on the local roadway network relative to the County's 1.5 dB L_{dn} significance criteria. Additionally, the proposed project would relocate haul truck traffic from the Hallwood mine to use the proposed private haul route and, thus, Cumulative Plus Project noise levels along the existing haul route would decrease at a range of 9.0 dB to 13.7 dB due to the net decrease in truck traffic noise levels at the residences located in the immediate vicinity of the existing haul route. The proposed haul route would be privately owned by Teichert, and used solely for haul truck traffic travelling to and from the Hallwood mine. As such, traffic levels along the proposed haul route would not increase under Cumulative or Cumulative Plus Project conditions. Therefore, noise levels at the nearest sensitive receptor would remain below the County's 45 dB L_{dn} interior, and 60 dB L_{dn} exterior noise level standards. Overall, the project's incremental contribution to cumulative traffic noise impacts would be less than significant.

As discussed in Chapter 4.5, Transportation, of this EIR, as cumulative development occurs pursuant to the County's General Plan, traffic volumes along local roadways would increase relative to existing conditions, potentially resulting in impacts to roadway facilities along SR 20 and other County intersections. However, the proposed project would not generate population growth or facilitate other activities that would significantly affect pedestrian, bicycle, or transit facilities in the project area, and project-specific impacts related to pedestrian and transit facilities would be reduced to a less-than-significant level with the implementation of Mitigation Measure 4.5-1. In addition, implementation of the project conditions of approval would ensure that the proposed project would be consistent with the County's applicable LOS standards for the study intersections under cumulative conditions. Furthermore, the proposed project would result in a decrease in VMT associated with the Hallwood mine through implementation of the proposed project. Therefore, the proposed project's incremental contribution to cumulative impacts related to transportation would be less than significant.

Per CEQA Guidelines Section 15128, the remaining environmental issue areas identified by Appendix G of the CEQA Guidelines were addressed in the Initial Study prepared for the proposed project (see Appendix A). Issue areas discussed in the Initial Study were determined to have a less-than-significant impact or no impact, and were not discussed further within this EIR. Thus, the proposed project's contribution to cumulative impacts concerning the remaining issue areas have been determined not to be significant.

6.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Per CEQA Guidelines Section 15126.2(c), this EIR is required to include consideration of significant irreversible environmental changes that would be caused by the proposed project, should the project be implemented. An impact would be determined to be a significant and irreversible change in the environment if:

- Buildout of the project area could involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of development could generally commit future generations to similar uses (e.g., a highway provides access to a previously remote area);
- Development of the proposed project could involve uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The phasing and eventual development of the project could result in an unjustified consumption of resources (e.g., the wasteful use of energy).

The proposed project consists of the extension of a previously constructed private haul road and improvements to the intersection of SR 20 and Kibbe Road to provide a new haul route for Teichert's existing Hallwood mine, and alleviate existing traffic-related impacts on rural residences in the Hallwood Boulevard and Walnut Avenue neighborhoods. Because implementation of the proposed project would consist primarily of improvements to the existing SR 20/Kibbe Road intersection and surrounding roadway, the proposed project would likely not result in significant irreversible environmental changes. It is noted that the energy consumed during the construction period would result in the irreversible consumption of resources; however, the scale of construction required for the proposed project is not considered significant, and compliance with all applicable State regulations would ensure that construction energy use is not wasteful.

6.5 SIGNIFICANT AND UNAVOIDABLE IMPACTS

According to CEQA Guidelines, an EIR must include a description of those impacts identified as significant and unavoidable should the proposed action be implemented (CEQA Guidelines Section 15126.2[b]). Such impacts would be considered unavoidable when the determination is made that either mitigation is not feasible or only partial mitigation is feasible such that the impact is not reduced to a level that is less than significant. Based on the analysis of potential impacts that would occur as part of implementing the proposed project, the proposed project would not result in any significant and unavoidable impacts.

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8. Authors

8. EIR Authors and Persons Consulted

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APPENDIX A

DATE: April 21, 2021

TO: California State Clearinghouse
Responsible and Trustee Agencies
Interested Parties and Organizations

FROM: Kevin Perkins, Planning Manager
Yuba County

SUBJECT: NOTICE OF PREPRARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED SR 20/KIBBE ROAD INTERSECTION PROJECT

Yuba County is the lead agency for the preparation of an Environmental Impact Report (EIR) for the proposed SR 20/Kibbe Road Intersection project (proposed project). The scope of the EIR has been proposed based upon a determination by Yuba County. Yuba County has directed the preparation of this EIR in compliance with the California Environmental Quality Act (CEQA).

Once a decision is made to prepare an EIR, the lead agency must prepare a Notice of Preparation (NOP) to inform all responsible and trustee agencies that an EIR would be prepared (CEQA Guidelines Section 15082). The purpose of the NOP is to provide agencies with sufficient information describing both the proposed project and the potential environmental effects to enable the agencies to make a meaningful response as to the scope and content of the information to be included in the EIR. Yuba County is also soliciting comments on the scope of the EIR from the general public.

SCOPING MEETING

A public scoping meeting will be held by the County to inform interested parties about the proposed project, and to provide agencies and the public with an opportunity to provide comments on the scope and content of the EIR. Because of current COVID-19 health emergency, the scoping meeting will be conducted as a teleconference meeting (no physical location).

EIR Scoping Meeting on the SR 20/Kibbe Road Intersection Project
Wednesday | May 12, 2021 | 6:00 pm
Teleconference Meeting (Online only – No physical location)
Zoom: https://us02web.zoom.us/j/86286536839
Phone: (669) 900-6833 | Webinar ID: 862 8653 6839

BACKGROUND

Teichert Aggregates (Teichert) owns and operates the Hallwood mine, an existing 720-acre mining and processing facility. Teichert's Hallwood facility is currently accessed through Hallwood Boulevard and Walnut Avenue. The proposed project would include the construction of a private haul road to connect the Teichert Aggregates' Hallwood facility directly to SR 20, at or to the west of the existing intersection of SR 20 and Kibbe Road, depending on the project alternative selected. The proposed project would also include a left-turn pocket for westbound SR 20 traffic and the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection. The neighborhood surrounding the existing haul route has been slowly transitioning from agricultural uses to rural residential uses. As such, Teichert has proposed the project as an effort to alleviate the Hallwood facility's traffic impacts on the Hallwood Boulevard and Walnut Avenue neighborhoods.

In 2003, Teichert partially constructed the private haul road portion of the project pursuant to a ministerial grading permit issued by Yuba County. Although the private haul road was constructed as a ministerial project, the proposed improvements at the SR 20/Kibbe Road intersection required additional County and Caltrans approvals. Therefore, in December 2003, an Initial Study/Mitigated Negative Declaration was prepared and circulated for public review on the proposed intersection improvements. The Initial Study/Mitigated Negative Declaration received public comments, to which responses were prepared by the Yuba County Community Development Department. Based upon the issues raised on the project, including whether the existing private roadway construction was addressed, the County determined that an EIR shall be prepared in order to ensure full public disclosure of the potential environmental effects of both the previously constructed private haul road and the proposed intersection improvements.

An environmental impact report (EIR) was prepared for the proposed project and certified by Yuba County in 2006. However, the project was subject to litigation that ultimately resulted in the Yuba County Superior Court invalidating the EIR for the project based on several identified legal deficiencies such as failing to adequately analyze drainage easement impacts, single event traffic noise (including Jake brake usage), and an alternative alignment along the Cordua Canal. Teichert is now resubmitting its application for the proposed project with the intent to address the deficiencies in the 2006 EIR identified by the Court, and to update the environmental analysis based on current environmental conditions.

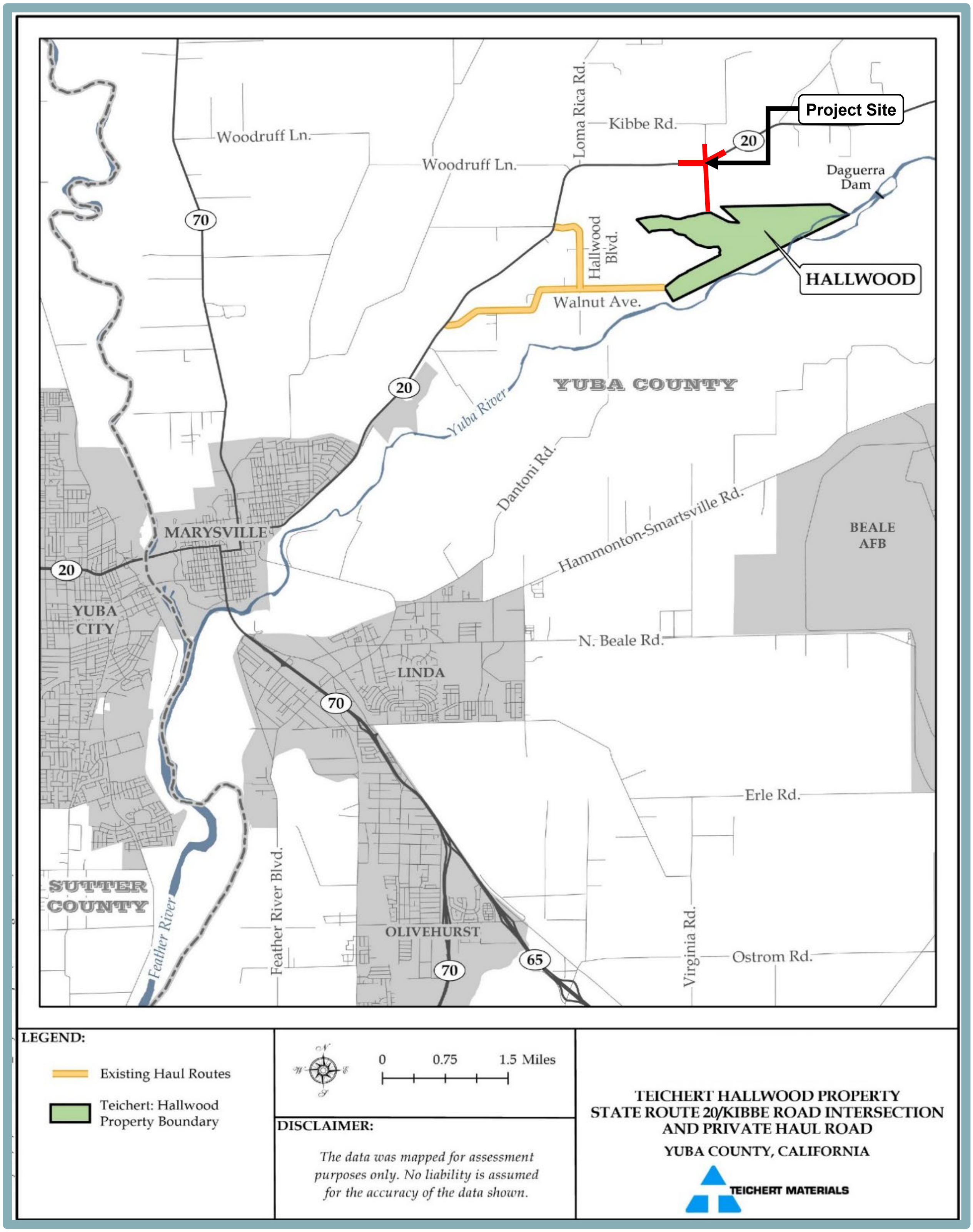
PROJECT DESCRIPTION

The following is a discussion of the project location and setting, discretionary actions, existing land use and zoning designations, and project components.

Project Location and Setting

The project site consists of approximately 10 acres and is located at the intersection of SR 20 and Kibbe Road, approximately three miles northeast of the City of Marysville, within Yuba County (see Figure 1 Regional Project Location). The project site extends north from the 720-acre mining and processing facility of Hallwood mine towards SR 20. Existing land uses in the vicinity of the site include agricultural, industrial (aggregate mining and associated uses), and rural residential uses.

Figure 1
Regional Project Location



The northwest and southwest portions of the site are currently in use as grazing/pasture land, while rural residential uses are located in the northeastern and southeastern quadrants of the existing SR 20/Kibbe Road intersection (see Figure 2 Surrounding Land Uses). Several rural residences exist northeast of Kibbe Road/SR 20 intersection, and three residences exist southeast of Kibbe Road/SR 20 intersection. The haul road proposed as part of the project would be located to the west of the residences that exist in the southeast quadrant of the project site. The northernmost and the southernmost residences are owned by Teichert, and the southernmost residence is currently vacant. In addition, a bus stop for the Marysville Joint Unified School District is currently located near the northeast corner of the existing intersection of SR 20 and Kibbe Road.

Discretionary Actions

Implementation of the proposed project would require the following discretionary actions by Yuba County:

- Certification of the Environmental Impact Report;
- Adoption of the Mitigation Monitoring and Reporting Program;
- Acquisition of right-of-way along the 13 parcels adjacent to Kibbe Road; and
- Encroachment permit from Yuba County.

The proposed project would require the following discretionary approvals from other agencies:

- Encroachment permit from Caltrans.

Existing Land Use and Zoning Designations

The Yuba County General Plan designates the site as Natural Resources and the site is zoned Exclusive Agricultural (AE) and Residential Estate (RE).

Project Components

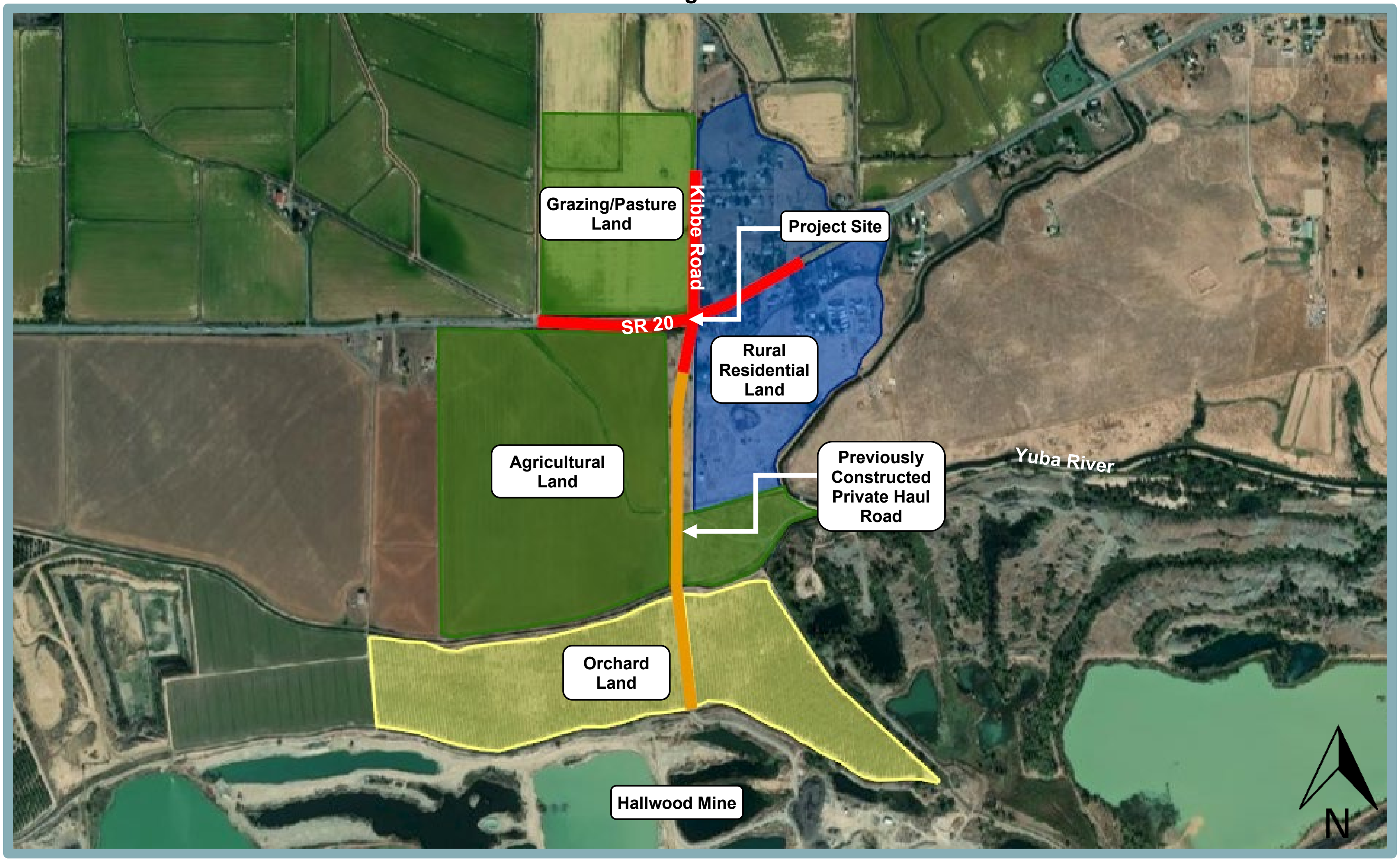
The proposed project consists of the completion of a previously constructed private haul road and improvements to the intersection of SR 20 and Kibbe Road. The purpose of such improvements would be to provide a new haul route for Teichert's existing Hallwood mining facility to alleviate existing traffic-related impacts on rural residences in the Hallwood Boulevard and Walnut Avenue neighborhoods.

<u>Roadway Plan</u>

The development of the proposed project would include the construction of intersection improvements at the SR 20/Kibbe Road intersection for the purpose of connecting the intersection to the private haul road. The private haul road is approximately 3,250 feet in length measured from the northern property line of the Hallwood site to the SR 20 right-of-way. The previously completed section of the private haul road ends approximately 50 feet south of SR 20.

The proposed project would also include the westerly realignment of approximately 600 feet of Kibbe Road, north of SR 20, to connect with the relocated intersection.

Figure 2
Surrounding Land Uses



Driveway access would be constructed to connect existing homes north of SR 20 with the realigned segment of Kibbe Road. The segment of Kibbe Road which is being replaced north of SR 20 would be decommissioned and removed.

The proposed roadway and intersection improvements would include a left-turn pocket for westbound SR 20 traffic, the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection, and additional improvements to SR 20 as determined by Caltrans (see Figure 3 Proposed Intersection Layout).

As proposed, the project would include one of three different intersection control options: a stop sign, a traffic signal (see Figure 3 Proposed Intersection Layout), or a roundabout (see Figure 4 Proposed Intersection Layout with Roundabout). As such, analysis of the proposed project will consider the worst-case scenario traffic control option for the environmental factors that would potentially be affected.

After completion of the proposed intersection improvements, the existing truck traffic to and from the Hallwood Plant would be relocated to the new haul road and would access SR 20 through the realigned Kibbe Road intersection. The existing access on Walnut Road would then be used for employee and vendor access only.

The proposed project would require a grading permit and an encroachment permit from Yuba County, and an encroachment permit from Caltrans. Contingent upon the approval of the encroachment permit and associated improvement plans, the County and Caltrans would require additional right-of-way acquisition.

ENVIRONMENTAL EFFECTS

The County has reviewed the proposed project and prepared an updated Initial Study, (see attached). Based on the analysis within the Initial Study, the County has determined that a project-level EIR shall be conducted to analyze any significant environmental effects from the project. The project-level EIR will perform several analyses considering individual and cumulative environmental effects from the project. The Initial Study would include analysis of the following topics: Aesthetics, Agriculture and Forest Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, Wildfire, and Utilities and Service Systems.

Therefore, the environmental issues anticipated to be analyzed in the EIR include: Air Quality and Greenhouse Gas Emissions, Biological Resources, Cultural and Tribal Cultural Resources, Noise, and Transportation. The EIR will incorporate by reference the Yuba County General Plan and the General Plan EIR, as well as the technical studies prepared for the project for the various impact areas discussed in the issue chapters of the project EIR. Each of the following issue chapters will include a discussion of the existing setting, thresholds of significance, specific impacts, mitigation measures, and monitoring strategies for the proposed project.

Air Quality and GHG Emissions

The air quality and GHG emissions analysis for the proposed project will be performed using the RoadMod software program and vehicle trip generation information from the project-specific Traffic Study.

Figure 3
Proposed Intersection Layout

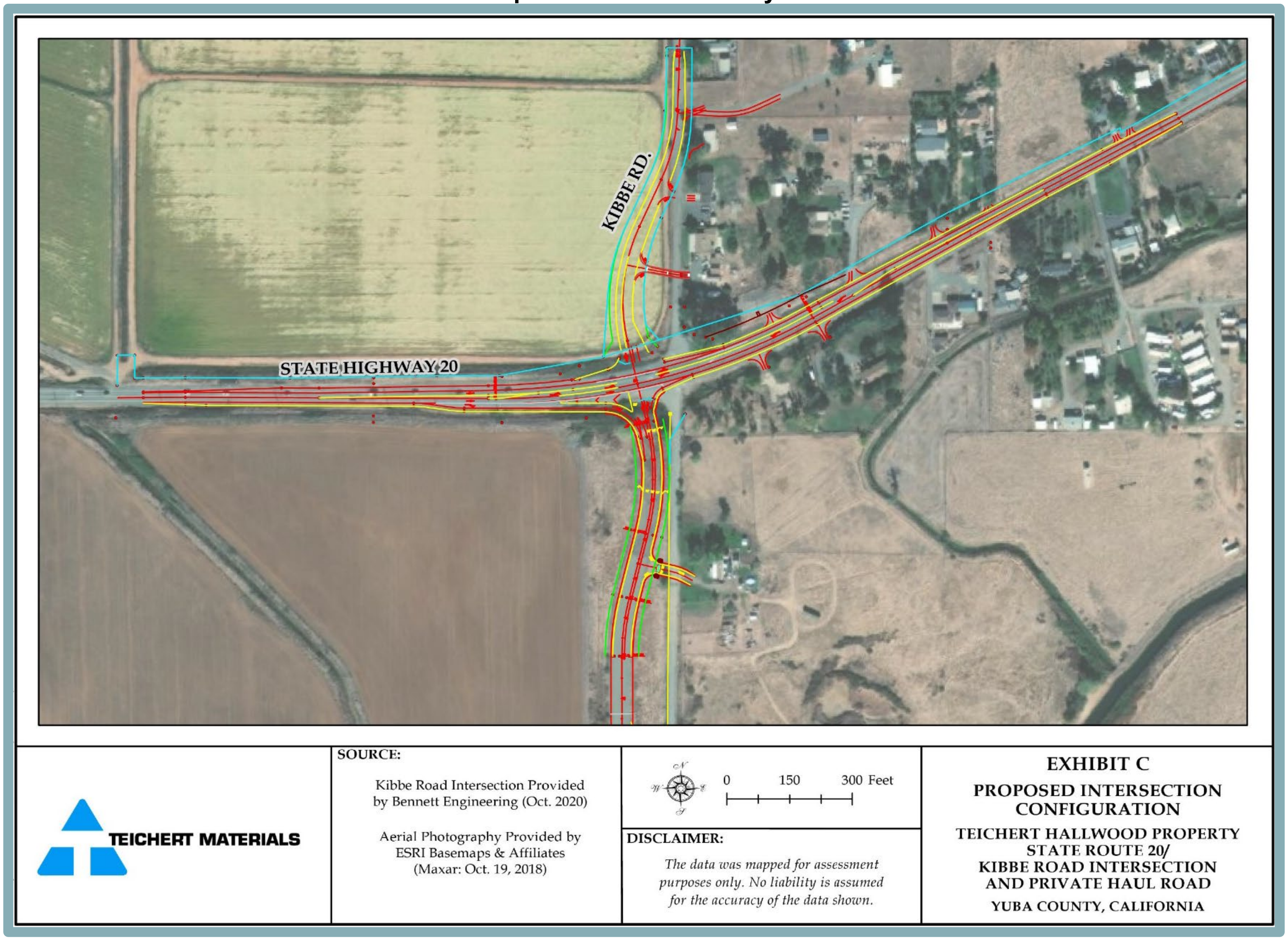
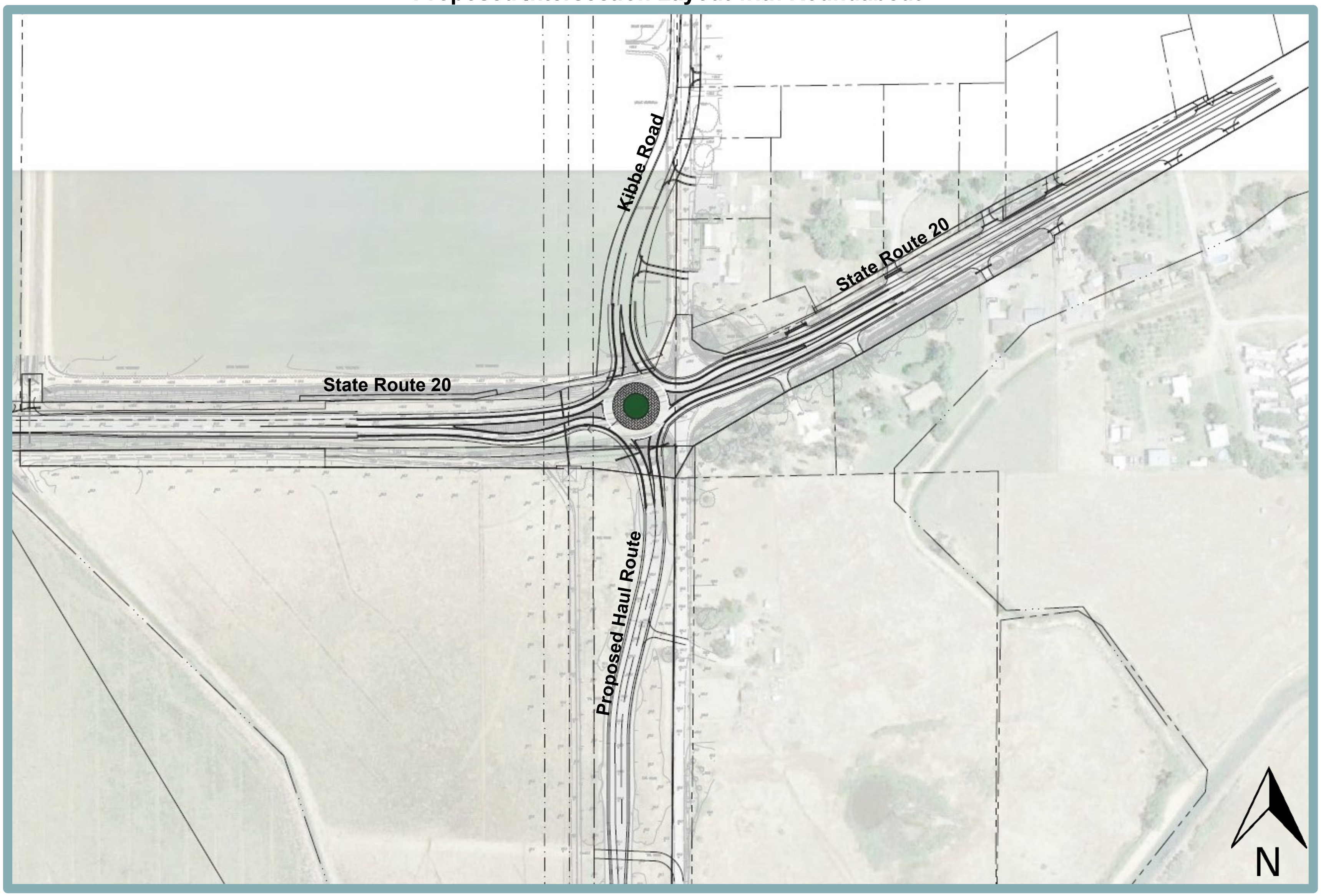


Figure 4
Proposed Intersection Layout with Roundabout



The air quality impact analysis will include a quantitative assessment of short-term (i.e., construction) increases of criteria air pollutant emissions of primary concern (i.e., ROG, NO_X, and PM_{10}) resulting from the proposed project. Operationally, the proposed project will not increase the number of truck trips; therefore, conducting a quantitative assessment of long term (i.e., operational) increases due to the operations of the new haul route is not anticipated. The RoadMod software program will also be used to produce an estimate of carbon dioxide equivalent emissions for the project, including indirect emissions of GHGs.

A Health Risk Assessment (HRA) is being conducted due to the project's proximity to sensitive receptors (the rural residences to the east) which are located approximately 1,000 feet from the project site, and the possibility that the proposed project could exceed 100 truck trips per day. The HRA will include an analysis of acute, chronic, carcinogenic, and non-carcinogenic health hazards, due to exposure of TACs. The significance of health risk impacts will be determined in comparison to the criteria identified in the California Office of Environmental Health Hazard Assessment ("OEHHA") Guidelines. The significance of carcinogenic health risk impacts will be expressed in terms of cancer cases per one million individuals. Non-carcinogenic health risk impacts will be determined using FRAQMD's recommended Hazard Index. Mitigation measures will be incorporated if necessary, to reduce any identified significant health risk impacts.

Biological Resources

The Biological Resources chapter will be based on the Biological Resources Report prepared for the proposed project. The Biological Resources chapter of the EIR will include a description of the potential effects to plant communities and wildlife, including adverse effects on rare, endangered, candidate, sensitive, and special-status species that are identified during site reconnaissance, as well as the impacts related to build-out of the proposed project.

Cultural and Tribal Cultural Resources

The Cultural and Tribal Cultural Resources chapter will summarize the setting and briefly describe the potential effects to any onsite historical, archaeological, tribal, and/or paleontological resources due to implementation of the proposed project. A Cultural Resource assessment prepared for the proposed project will be the basis for the analysis done in the Cultural Resources chapter of the project EIR. The chapter will also assess the potential for tribal cultural resources to be impacted by the proposed project, pursuant to Public Resources Code 21080.3.1.

Noise

The Noise chapter will be based on the Noise Study prepared for the proposed project. The study will quantify existing noise levels, evaluate increased traffic noise levels at existing sensitive receptors in the project vicinity as well as analyze noise levels associated with the proposed project's construction.

Transportation

Analysis of the impacts the proposed project will have on existing and future transportation systems will be done using a Traffic Study prepared for the proposed project. Regional Vehicle Miles Traveled (VMT) will be evaluated along with the project's potential impacts to the surrounding roadway network under Existing, Existing Plus Project, Cumulative, and Cumulative Plus Project scenarios.

DISCUSSION OF CUMULATIVE IMPACTS

In accordance with Section 15130 of the CEQA Guidelines, an analysis of cumulative impacts associated with the proposed project will be undertaken and discussed. In addition, pursuant to Section 21100(B)(5) of the CEQA Guidelines, the cumulative analysis will address the potential for growth-inducing impacts associated with the proposed project, and will focus on whether or not implementation of the proposed project would remove any existing impediments to growth.

DISCUSSION OF ALTERNATIVES

In accordance with Section 15126.6(a) of the CEQA Guidelines, several project alternatives, including the No Project Alternative, will be analyzed. The alternatives analysis will "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." The analysis will include sufficient information about each alternative to allow meaningful evaluation of, and comparison with, the proposed project. The significant effects of the alternatives will be discussed, but in less detail than the significant effects of the proposed project. The discussion will also identify and analyze the "environmentally superior alternative."

The proposed project EIR will evaluate at a minimum three alternatives: the No Project Alternative, the Revised Project Alternative (see Figure 5), which would revise the proposed project to align with the existing SR 20/Kibbe Road intersection, and the Cordua Canal Alternative (see Figure 6), which would intersect SR 20 just east of where the canal intersects the road. All project alternatives analyzed in the proposed EIR would include one of three different intersection control options: a stop sign, a traffic signal, or a roundabout, as discussed above.

SUBMITTING COMMENTS

To ensure that the full range of issues related to this proposed project are addressed and all significant issues are identified, written comments are invited from all interested parties. Written comments concerning the proposed project should be directed to the name and address below:

Kevin Perkins, Planning Manager
915 8th Street, Suite 123
Marysville, CA 95901
(530) 749-5470
kperkins@CO.YUBA.CA.US

Written comments are due to the Yuba County at the location addressed above by May 20, 2021 at 4:00 PM.

The Initial Study prepared for the proposed project is attached below.

Figure 5
Revised Project Alternative

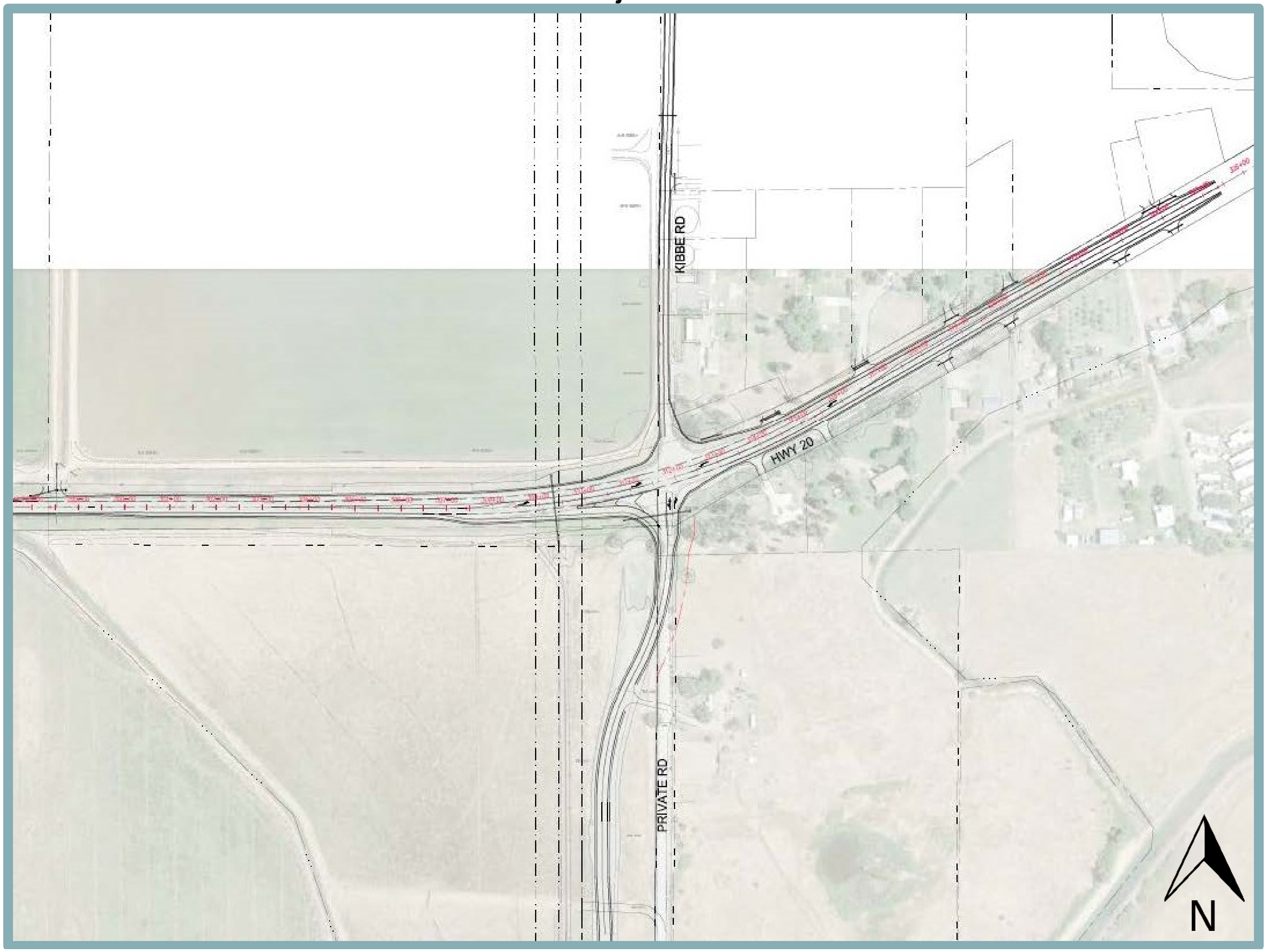


Figure 6
Cordua Canal Alternative

Yuba County
Community Development and Services Agency

State Route (SR) 20/Kibbe Road Intersection

Initial Study

April 2021

Prepared by

RANEY PLANNING & MANAGEMENT, INC. 20 years
1501 Sports Drive, Suite A, Sacramento, CA 95834

TABLE OF CONTENTS

INITIAL STUDY
April 2021

A. BACKGROUND

1.	Project Title:	SR 20/Kibbe Road Intersection
2.	Lead Agency Name and Address:	Yuba County Community Development and Services Agency 915 8th Street, Suite 123 Marysville, CA 95901
3.	Contact Person and Phone Number:	Kevin Perkins Planning Manager (530) 749-5470
4.	Project Location:	SR 20/Kibbe Road Intersection Yuba County, CA
5.	Project Sponsor's Name and Address:	Teichert Aggregates 3331 Walnut Avenue Marysville, CA 95901
6.	General Plan Designation:	Natural Resources
7.	Zoning Designation:	Exclusive Agriculture (AE) Residential Estate (RE)
8.	Required Approvals from Other Public Agencies:	Caltrans

9. Surrounding Land Uses and Setting:

The project site consists of approximately 10 acres extending from the intersection of State Route (SR) 20 and Kibbe Road to the Hallwood mine, approximately three miles northeast of the City of Marysville in Yuba County, California. The project site is currently undeveloped except for 3,250 lineal feet of an unused private haul road. Surrounding existing land uses include agricultural land to the west and northwest, scattered rural residences to the east and northeast, Knife River Aggregates' aggregate mining facility to the west, and the Hallwood mine and Yuba River to the south. SR 20 runs east to west along the project site, while Kibbe road is located north of SR 20, ending at the existing SR 20/Kibbe Road intersection. The site is bounded by grazing/pasture land to the north, agricultural land including an orchard to the south, and rural residential uses to the northeast and southeast.

10. Project Description Summary:

The proposed project would include the construction of a private haul road to connect the Teichert Aggregates' Hallwood facility directly to SR 20, to the west of the existing intersection. The proposed project would also include a westerly realignment of the SR 20/Kibbe Road Intersection, a left-turn pocket for westbound SR 20 traffic, and the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection. In addition, the proposed haul road alignment would require the crossing of three existing irrigation canals: the Cordua Canal, the Hallwood Main Canal, and the Baldwin Ditch. Culverts have already been installed at each of these canal crossings with the permission of the Cordua and Hallwood irrigation districts. After completion of the proposed intersection improvements, the existing truck traffic to and from the Hallwood mine would be relocated to the new haul road and would access SR 20 via the realigned Kibbe Road intersection. Implementation of the proposed project would require approval of a grading permit and an encroachment permit from Yuba County, and an encroachment permit from Caltrans.

11. Status of Native American Consultation Pursuant to Public Resources Code Section 21080.3.1:

    In compliance with Assembly Bill (AB) 52 (Public Resources Code Section 21080.3.1), a project notification letter was distributed to the United Auburn Indian Community on March 31, 2021. Requests to consult have not been received to date.

B. BACKGROUND AND INTRODUCTION

This Initial Study (IS) provides an environmental analysis pursuant to the California Environmental Quality Act (CEQA) for the proposed project. The applicant has submitted an application to Yuba County, which is the Lead Agency for the purposes of CEQA review. The IS contains an analysis of the environmental effects of construction and utilization of the proposed project.

An environmental impact report (EIR) was prepared for the proposed project and certified by Yuba County in 2006. However, the project was subject to litigation that ultimately resulted in the Yuba County Superior Court invalidating the EIR for the project based on several identified legal deficiencies such as failing to adequately analyze drainage easement impacts, single event traffic noise (including Jake brake usage), and an alternative alignment along the Cordua Canal. It should be noted that the private haul road intended to connect the Hallwood mine to SR 20 was constructed prior to the preparation of the 2006 EIR, and is now considered existing setting within the project site. Teichert is now resubmitting its application for the proposed project with the intent to address the deficiencies in the 2006 EIR identified by the Court. and to update the environmental analysis based on current environmental conditions.

In June 2011, Yuba County adopted the Yuba County 2030 General Plan (Yuba County General Plan) and the associated EIR. The General Plan EIR was a program-level EIR, prepared pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.). The General Plan EIR analyzed full implementation of the Yuba County General Plan and identified measures to mitigate any significant adverse project and cumulative impacts associated with the General Plan. Pursuant to CEQA Guidelines Section 15150(a), the Yuba County General Plan and General Plan EIR are incorporated by reference. Both documents are available upon request at Yuba County, 915 8th Street, Suite 123, Marysville, CA, 95901 or online at:

https://www.yuba.org/departments/community_development/planning_department/general_plan.php.

The impact discussions for each section of this IS have been largely based on information in the Yuba County 2030 General Plan and the Yuba County 2030 General Plan EIR.

The mitigation measures prescribed for environmental effects described in this IS would be implemented in conjunction with the project, as required by CEQA, and the mitigation measures would be incorporated into the project. In addition, findings and a project Mitigation Monitoring and Reporting Program (MMRP) would be adopted in conjunction with approval of the project.

C. PROJECT DESCRIPTION

The following section includes a description of the project's location and surrounding land uses, as well as a discussion of the project components and discretionary actions requested of Yuba County by the applicant.

Project Location and Setting

The project site consists of approximately 10 acres and is located at the intersection of SR 20 and Kibbe Road, approximately three miles northeast of the City of Marysville, within Yuba County (see Figure 1 Regional Project Location). The project site extends north from the 720-acre mining and processing facility of Hallwood mine towards SR 20. Existing land uses in the vicinity of the site include agricultural, industrial (aggregate mining and associated uses), and rural residential uses. The northwest and southwest portions of the site are currently in use as grazing/pasture land, while rural residential uses are located in the northeastern and southeastern quadrants of the existing SR 20/Kibbe Road intersection (see Figure 2 Surrounding Land Uses). Several rural residences exist northeast of Kibbe Road/SR 20 intersection, and three residences exist southeast of Kibbe Road/SR 20 intersection. The haul road proposed as part of the project would be located to the west of the residences that exist in the southeast quadrant of the project site. The northernmost and the southernmost residences are owned by Teichert, and the southernmost residence is currently vacant. In addition, a bus stop for the Marysville Joint Unified School District is currently located near the northeast corner of the existing intersection of SR 20 and Kibbe Road.

Project Components

The proposed project consists of the completion of a previously constructed private haul road and improvements to the intersection of SR 20 and Kibbe Road. The purpose of such improvements would be to provide a new haul route for Teichert's existing Hallwood mining facility to alleviate existing traffic-related impacts on rural residences in the Hallwood Boulevard and Walnut Avenue neighborhoods.

Roadway Plan

The development of the proposed project would include the construction of intersection improvements at the SR 20/Kibbe Road intersection for the purpose of connecting the intersection to the private haul road. The private haul road is approximately 3,250 feet in length measured from the northern property line of the Hallwood site to the SR 20 right-of-way. The previously completed section of the private haul road ends approximately 50 feet south of SR 20.

The proposed project would also include the westerly realignment of approximately 600 feet of Kibbe Road, north of SR 20, to connect with the relocated intersection. Driveway access would be constructed to connect existing homes north of SR 20 with the realigned segment of Kibbe Road. The segment of Kibbe Road which is being replaced north of SR 20 would be decommissioned and removed.

Figure 1
Regional Project Location

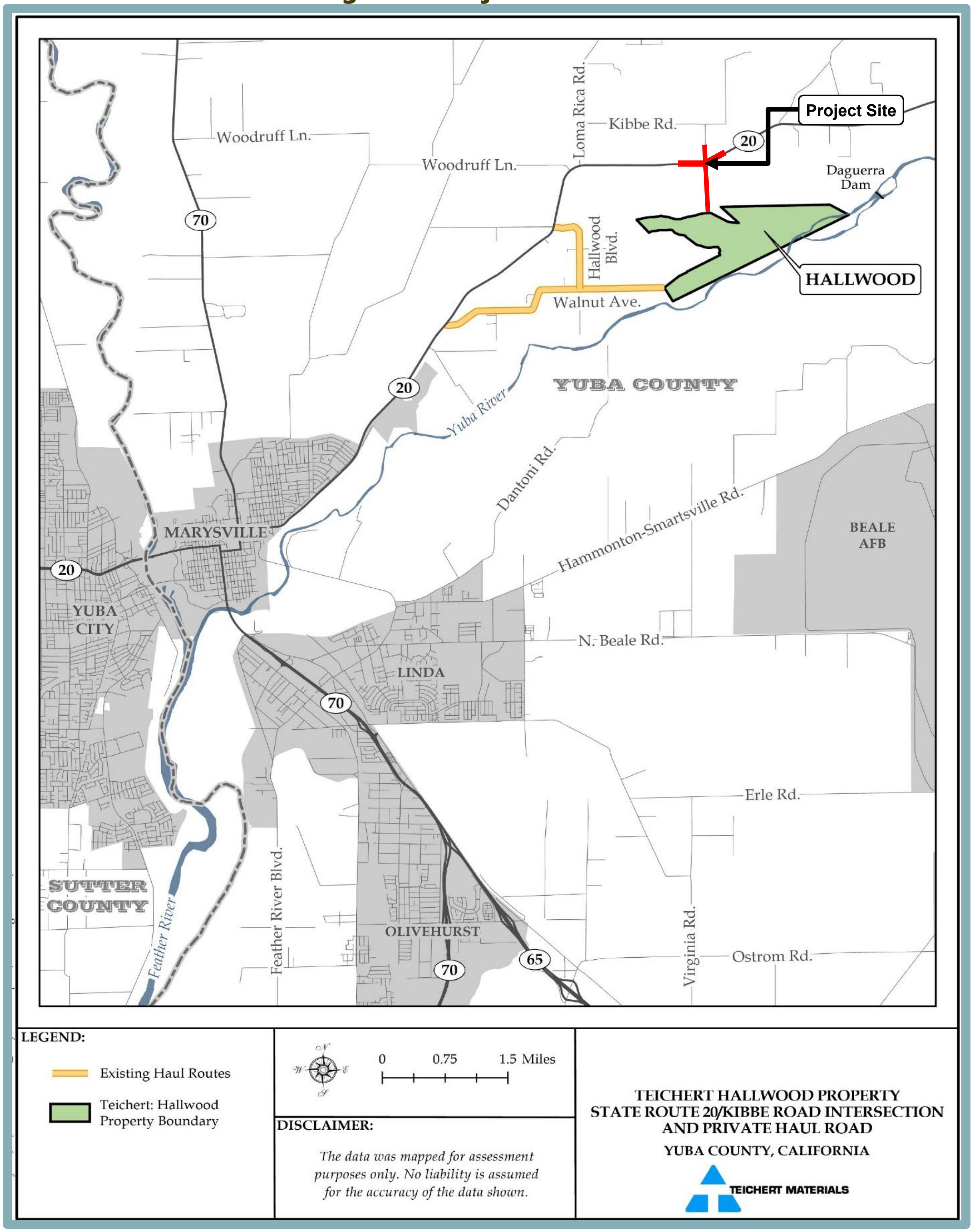
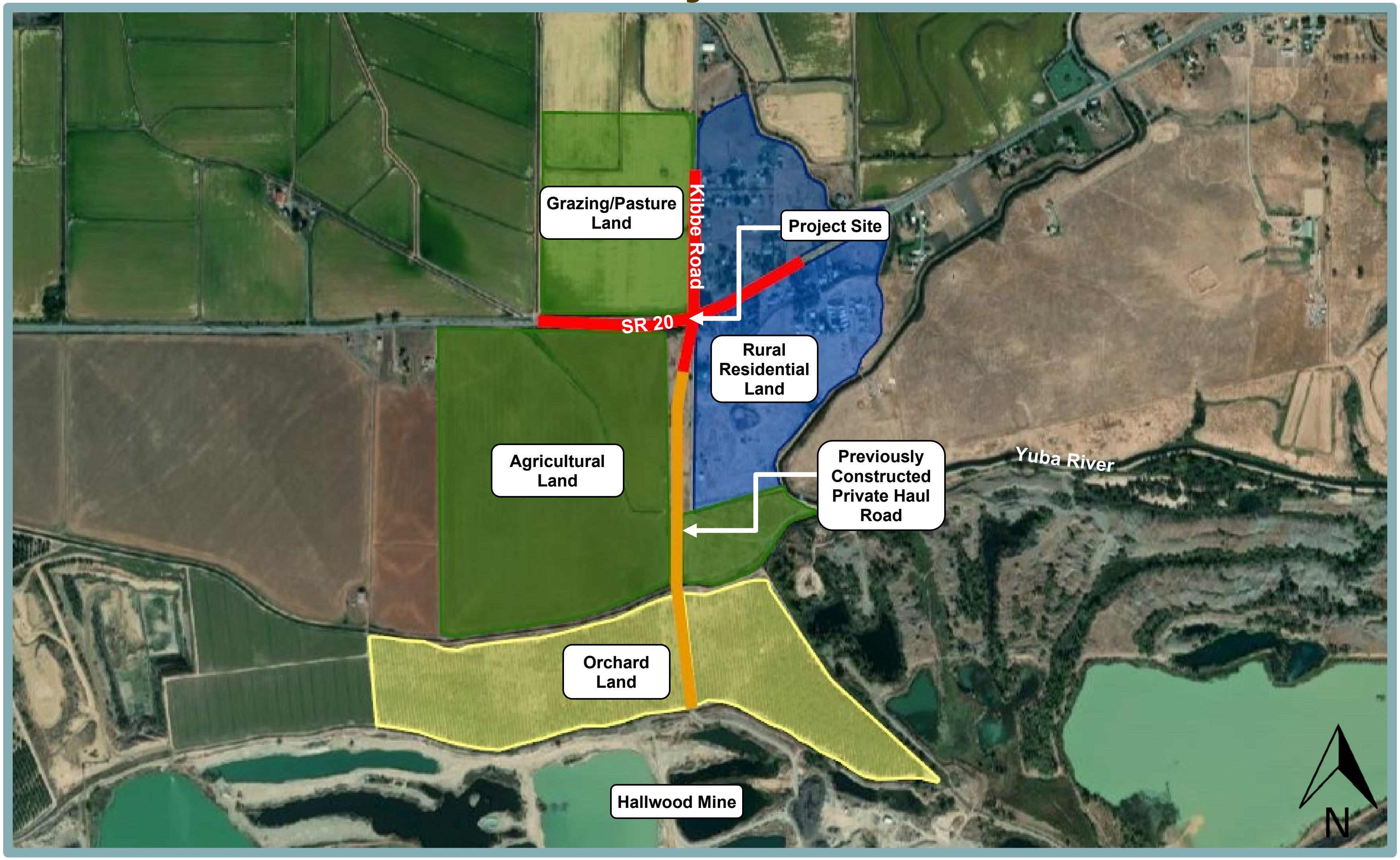


Figure 2
Surrounding Land Uses



The proposed roadway and intersection improvements would include a left-turn pocket for westbound SR 20 traffic, the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection, and additional improvements to SR 20 as determined by Caltrans (see Figure 3 Proposed Intersection Layout).

As proposed, the project would include one of three different intersection control options: a stop sign, a traffic signal (see Figure 3 Proposed Intersection layout), or a roundabout (see Figure 4 Proposed Intersection Layout with Roundabout). As such, analysis of the proposed project will consider the worst-case scenario traffic control option for the environmental factors that would potentially be affected.

After completion of the proposed intersection improvements, the existing truck traffic to and from the Hallwood Plant would be relocated to the new haul road and would access SR 20 through the realigned Kibbe Road intersection. The existing access on Walnut Road would then be used for employee and vendor access only.

The proposed project would require a grading permit and an encroachment permit from Yuba County, and an encroachment permit from Caltrans. Contingent upon the approval of the encroachment permit and associated improvement plans, the County and Caltrans would require additional right-of-way acquisition.

Discretionary Actions

Implementation of the proposed project would require the following discretionary actions by Yuba County:

- Certification of the Environmental Impact Report;
- Adoption of the Mitigation Monitoring and Reporting Program;
- Acquisition of right-of-way along the 13 parcels adjacent to Kibbe Road; and
- Encroachment permit from Yuba County.

The proposed project would require the following discretionary approvals from other agencies:

- Encroachment permit from Caltrans.

D. 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” 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**
☐	**Wildfire**	☐	**Utilities and Service Systems**	✖	**Mandatory Findings of Significance**

Figure 3
Proposed Intersection Layout

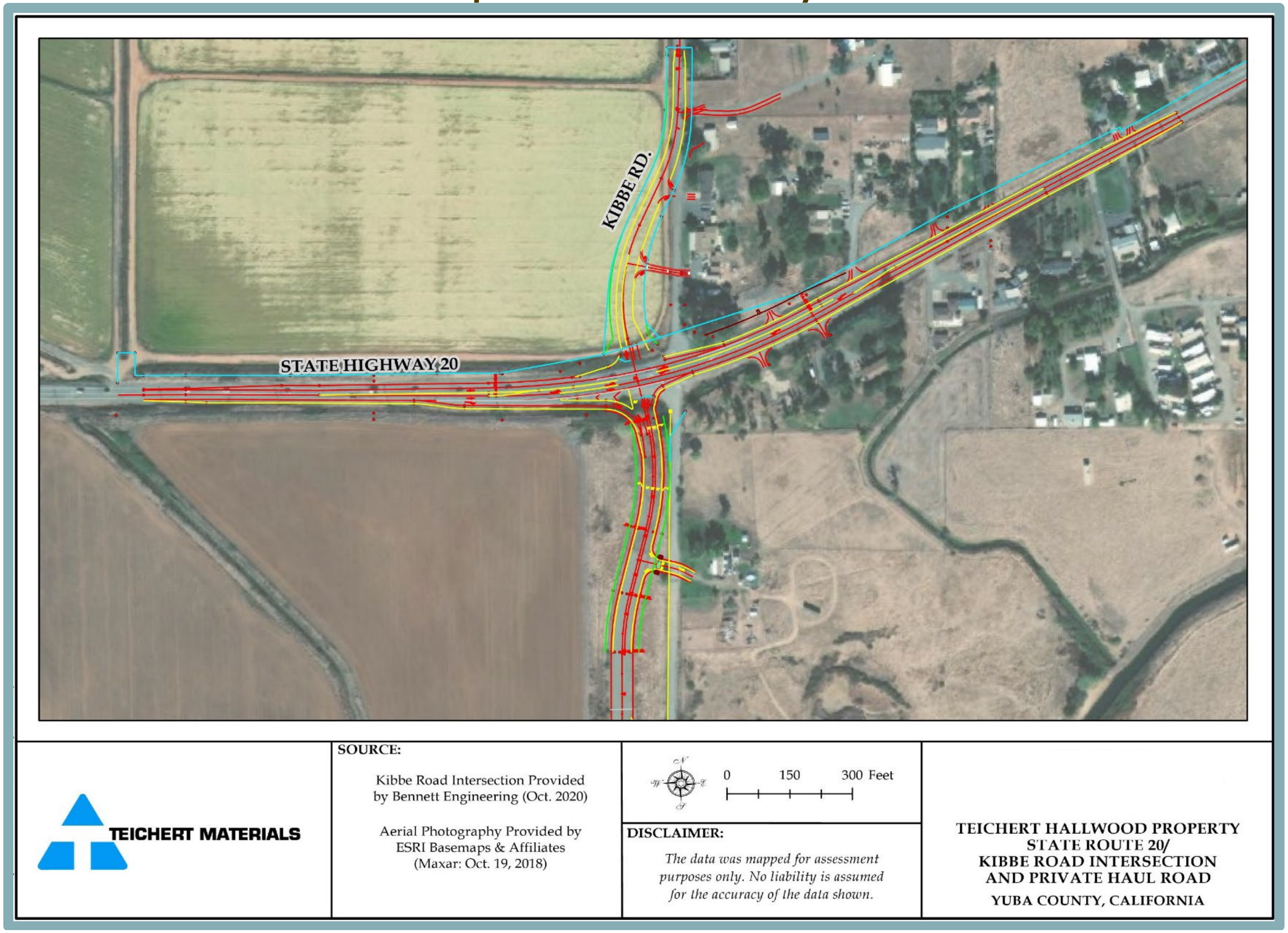
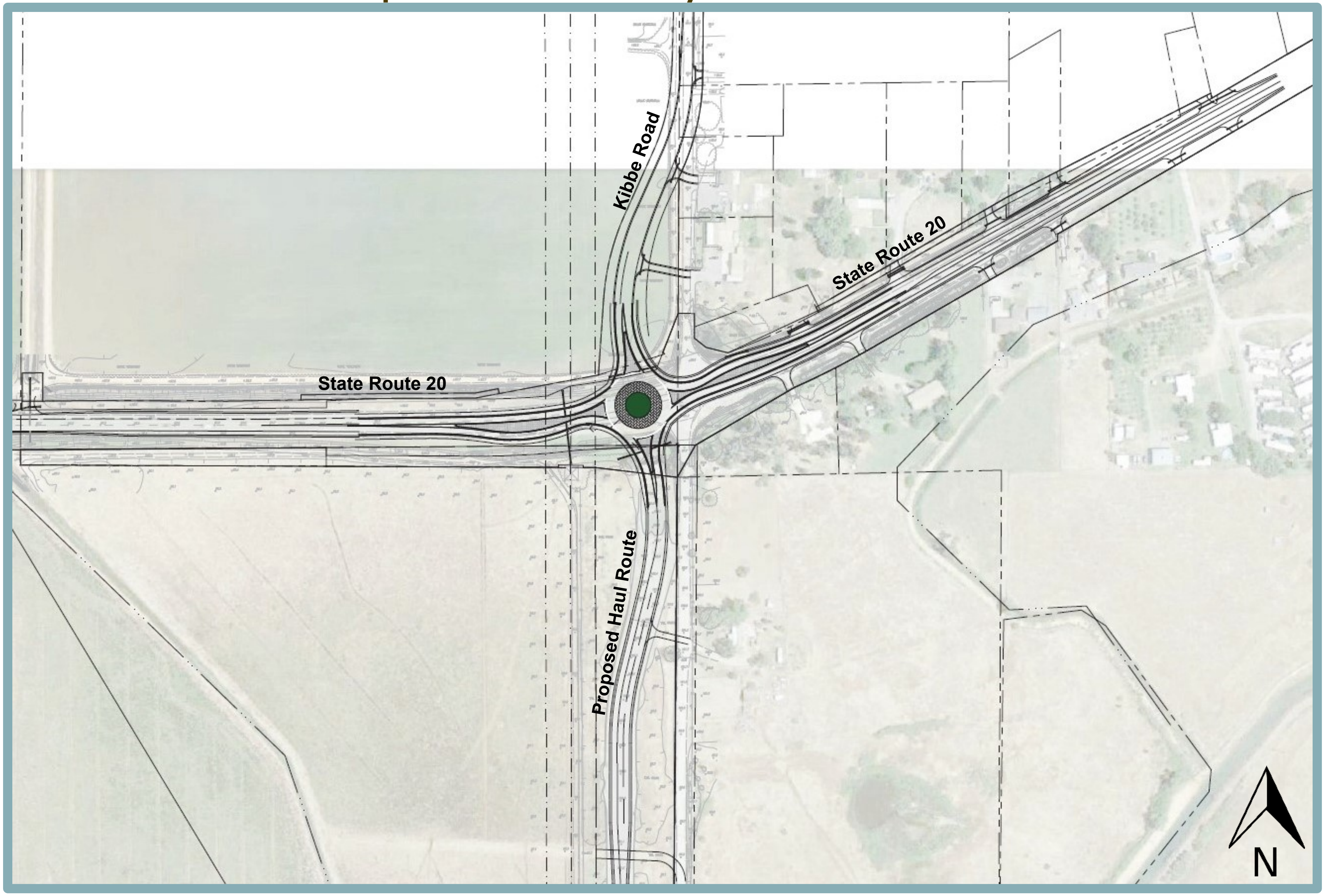


Figure 4
Proposed Intersection Layout with Roundabout



E. 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.

____________________________	____________________________
Signature	Date
Kevin Perkins, Planning Manager	Yuba County
Printed Name	For

F. 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 area identified in the checklist. Included in each discussion are project-specific mitigation measures required, where necessary, as part of the proposed project.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which mitigation has not 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. Examples of typical scenic vistas would 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's impact to a scenic vista would occur if development of the project would substantially change or remove a scenic vista. In the vicinity of the proposed project, SR 20 is not designated by Caltrans as a Scenic Highway[1], and the Yuba County General Plan EIR does not designate scenic vistas in the vicinity of the SR 20/Kibbe Road intersection; thus, the proposed project would not have a substantial adverse effect on scenic vistas nor substantially damage scenic resources within a State highway because the project site is not located near a State scenic highway and designated scenic vistas do not exist at the project site. Therefore, ***no impact*** would occur related to scenic vistas and scenic resources.

c. In the case of the proposed project, public views would consist primarily of views of the project site seen from the SR 20 roadway in the project vicinity. While private views are seen from privately-owned land and are typically viewed by individuals, such as from a private residence, public views are experienced by the collective public. CEQA (Pub. Resources Code, § 21000 et seq.) case law has established that only public views, not private views, are protected under CEQA. For example, in Association for Protection etc. Values v. City of Ukiah (1991) 2 Cal.App.4th 720 [3 Cal. Rptr.2d 488] the court determined that, "we must differentiate between adverse impacts upon particular persons and adverse impacts upon the environment of persons in general." As recognized by the court in Topanga Beach Renters Assn. v. Department of General Services (1976) 58 Cal.App.3d 188 [129 Cal.Rptr. 739]: '[A]ll government activity has some direct or indirect adverse effect on some persons. The issue is not whether [the project] will adversely affect particular persons but whether [the project] will adversely affect the environment of persons in general.'" The proposed project would consist only of minor aesthetic changes

1 California Department of Transportation. *California Scenic Highway Mapping System Yuba County*. Available at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983. Accessed February 2021.

to the project area and would not add any above-grade structures to the project vicinity. As such, following implementation of the proposed project, the visual character of the site as seen from SR 20 would be consistent with the existing character. Therefore, the proposed project would not substantially degrade the existing visual character of quality of public views of the site and its surroundings, and the impact would be considered ***less-than-significant***.

d. The project site consists of the existing SR 20/Kibbe Road intersection surrounded by agricultural and rural residential land. Currently, street lighting or signalization is not present at the SR 20/Kibbe Road intersection. As proposed, the project would include one of three different intersection control options: a stop sign, a roundabout, or a traffic signal. If signalization is warranted, the proposed project would increase light in the area as the project site currently does not contain a traffic signal; however, the addition of signalization to the SR 20/Kibbe Road intersection would be considered a typical roadway use and would not adversely affect day or nighttime views in the area because light and glare from street lights and headlights on the roadway are already present in the project area.

The main source of light and glare from the proposed project would be headlights from the hauling trucks coming from the Hallwood mine. However, substantial light and glare from truck traffic is not anticipated because the vast majority of truck traffic would occur during daylight hours when headlights are not used. A rare potential for nighttime hauling could occur under certain criteria, but this would not create substantial light and glare impacts due to the irregularity of these nighttime hauling occurrences. SR 20 is used in the current hauling route for the Hallwood mine, and the proposed project would not increase the amount of truck traffic in the vicinity, but would merely redistribute the traffic from the Hallwood Boulevard and Walnut Avenue neighborhoods to the previously constructed private hauling road. Therefore, impacts to views due to light or glare would be ***less-than-significant***.

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 land within the project site is designated as "Grazing Land" under the California Department of Conservation's Farmland Mapping and Monitoring Program.[2] Grazing land is not considered Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. As such, the proposed project would not be converting Farmland to non-agricultural use. Additionally, because most of the intersection improvement work would occur either within the SR 20 right-of-way or Kibbe Road right-of-way, actual impacts to grazing land uses would be minimal. The proposed project would consist of realignment of the existing SR 20/Kibbe Road intersection and surrounding roadway improvements. Most of the construction of the proposed project would take place on portions of the existing roadways in the project area, which are not designated as agricultural land.

The realignment, relocation, and construction of roadway segments would be an allowed improvement under the existing General Plan land use designations and zoning of the project site; therefore, development of the proposed improvements on the project site have been previously anticipated and analyzed in the General Plan EIR. Because the proposed project would not convert any Farmland to non-agricultural use, and would not preclude the agricultural operations adjacent to the site, the impact resulting from the proposed project would be ***less-than-significant.***

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2 California Department of Conservation. *Farmland mapping and Monitoring Program.* 2018. Available at: https://www.conservation.ca.gov/dlrp/fmmp. Accessed February 2021.

b. The project site is designated Natural Resources and is zoned Exclusive Agriculture (EA) to the northwest and southwest and Residential Estate (RE) to the northeast and southeast. Although the project site is zoned for agricultural use to the northwest and southwest, the project would not conflict with any Williamson Act contracts because Yuba County does not participate in the Williamson Act program;[3] therefore, ***no impact*** would occur.

c,d. The project site 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.

[3] California Department of Conservation. *Land Conservation (Williamson) Act.* Available at: https://www.conservation.ca.gov/dlrp/wa/Pages/LCA_QandA.aspx#what%20is%20the%20california%20land%20conservation%20%28williamson%29%20act. Accessed February 2021.

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?	☐	☐	✖	☐

Discussion

a-c. Yuba County is located in the region under the jurisdiction of the Feather River Air Quality Management District (FRAQMD). The Northern Sacramento Valley Planning Area (NSVPA), which includes Yuba County, is currently classified as a nonattainment area for state ambient ozone standards and California inhalable particulate matter (PM_{10}) standards.[4] Yuba County is classified as a nonattainment area for the federal inhalable particulate matter ($PM_{2.5}$) standard. In compliance with regulations, due to the nonattainment designations of the area, FRAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the Air Quality Action Plan. The current air quality plans are prepared in cooperation with NSVPA.

Construction-related air quality impacts would occur with the development of the proposed project and related infrastructure improvements. Clearing and grading activities would comprise the primary source of construction dust emissions. Project construction would require the use of diesel-fueled equipment, such as tractor-trailers, dozers, excavators, scrapers, and loaders. Emissions caused by construction of the proposed project site could exceed FRAQMD thresholds.

The operational phase of the proposed project would not involve additional vehicle trips, but the proposed project would result in the redistribution of truck traffic associated with the Hallwood mining facility. Therefore, no net new operational emissions of criteria pollutants are not anticipated.

On August 27, 1998, the California Air Resources Control Board (CARB) identified particulate matter from diesel-fueled engines as a toxic air contaminant. Fine diesel particles can be deposited in the lungs, which has been linked to a range of potential health problems including an increase in respiratory disease, lung damage, cancer and premature death. Construction equipment and haul trucks associated with the Hallwood mine would generate diesel particulate matter during use. Thus, both short-term construction activities and operation of the proposed project would result in pollutant

4 Sacramento Valley Air Quality Engineering and Enforcement Professionals (SVAQEEP). *Northern Sacramento Valley Planning Area 2018 Triennial Air Quality Attainment Plan*. July 26, 2018.

emissions that could conflict with applicable air quality plans. As such, a ***potentially significant*** impact could occur

Further analysis of this impact will be discussed in the Air Quality and GHG Emissions chapter of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

d. 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. The proposed project is not anticipated to result in the creation of objectionable odors, and operations at the project site would be consistent with operations in the project vicinity. Based on the above, construction and operation of the proposed project would have a ***less-than-significant*** impact related to creation of objectionable odors affecting a substantial number of people.

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-d. Special-status species are defined as plants and animals that are legally protected under the State and/or Federal Endangered Species Act (FESA) or other regulations. The 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.

Yuba County encompasses 640 square miles, ranging from the Sacramento Valley floor to the lower western ridge of the Sierra Nevada mountain range. The project site is located in southwestern Yuba County, which is an area characterized by the California Prairie and Riparian Forest vegetation associations. Due to changes caused by human settlement, these habitats have been greatly modified from their historic expanses. The various subtypes of Riparian Forest have been disrupted from their original condition by extensive clearing for urban development, flood control, and agriculture. In addition, the County provides thousands of acres of critical habitat for waterfowl using the Pacific Flyway, as well as for other wetland-dependent wildlife and fisheries. According to the Yuba County General Plan EIR, 25 special-status plant species and 28 special-status wildlife species have habitat within Yuba County. Of these, three plant species and 12 wildlife species are federally listed as threatened, endangered, or rare. Several of the federally listed species are listed under CESA as well.

Given the project location and the habitats occurring in the project site, special-status species could occur on or adjacent to the project area. Therefore, implementation of the proposed project could affect special-status plant and wildlife species and a ***potentially significant*** impact to biological resources could occur.

Further analysis of this impact will be discussed in the Biological Resources chapter of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

e. Section 11.44.060 of the Yuba County Municipal Code contains the County's Tree Removal Controls in cases in which tree preservation is required. According to the County's municipal code:

- All existing oak trees that have a diameter at breast height (DBH) of six inches or greater and all other trees that have a DBH of 30 inches or greater shall be shown on the tentative map or tentative parcel map with a notation as to the size, species and dripline. All trees proposed for removal shall be clearly designated.
- Existing trees may be required to be preserved. In cases in which tree preservation is required, all grading and necessary tree trimming shall be conducted under the supervision of a certified arborist or registered forester reviewed and approved by the Community Development and Services Agency.
- Trees within a proposed public right-of-way shall be removed only for good cause to protect the public safety or to allow the installation of adequate public facilities as may be approved by the Public Works Director.

Additionally, any oak tree five inches or greater in diameter at breast height proposed for removal shall be included in grading plans and specifications for the proposed project. Removal of trees along the roadway may be required as the proposed project consists of realignment of an existing intersection and trees may be present within the project area. Therefore, implementation of the proposed project could affect existing tress within the project site and a ***potentially significant*** impact related to conflicting with a local policy or ordinance to protect biological resources could occur.

Further analysis of this impact will be discussed in the Biological Resources chapter of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

f. The project site is located in an area that does not have an approved Habitat Conservation Plan, Natural Community Conservation Plan, or local, regional, or state habitat conservation plan. Yuba and Sutter Counties are currently working together to prepare the Yuba-Sutter Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). However, the NCCP/HCP has not yet been adopted. Therefore, ***no impact*** would occur related to conflict with a Habitat Conservation Plan, Natural Conservation Community 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, b. The Yuba County General Plan does not identify any historical or archeological resource sites near the project site. However, the Yuba County General Plan states that 2,876 cultural resource sites have been recorded in Yuba County, many of which are likely to qualify as historical resources or unique archaeological resources. Yuba County is considered to have a high density of cultural resources. Therefore, the potential exists for previously unknown prehistoric or historic resources to be uncovered during construction, which would result in a ***potentially significant*** impact.

Further analysis of this impact will be discussed in the Cultural and Tribal Cultural Resources chapter of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

c. Human remains are not known to be located in the project site. However, given the high density of cultural resource sites discovered throughout Yuba County, the possibility exists that unmarked burials may be discovered during construction. Unknown archaeological resources, including human bone, have the potential to be unearthed during ground-disturbing construction activities associated with the proposed project. As a result, a ***potentially significant*** impact could occur.

Further analysis of this impact will be discussed in the Cultural and Tribal Cultural Resources chapter of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

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 project site consists of the existing SR 20/Kibbe Road intersection, which does not have street lighting or signalization present. As proposed, the project would include one of three different intersection control options: a stop sign, a roundabout, or a traffic signal. If Caltrans determines that a traffic signal is warranted, energy resources would be used during project operation. However, the energy use associated with a signalized intersection would not be considered wasteful or unnecessary. Energy resources, such as natural gas and diesel fuel, would be consumed during the operation and construction process of the proposed project, however, this usage would not be considered wasteful, inefficient or unnecessary. Therefore, a ***less-than-significant*** impact would occur related to the proposed project's energy usage.

b. Yuba County does not currently have any local plans related to renewable energy or energy efficiency. Additional energy would not be consumed during use of the proposed hauling route because the amount of vehicle trips made from hauling trucks at the Hallwood mine would remain constant with or without the proposed project. Furthermore, the proposed hauling route is more efficient due to distance from the Hallwood mine to SR 20 being shortened by the proposed hauling route. Although additional energy may be consumed during the operation of the proposed project if Caltrans determines that signalization of the intersection is warranted, energy usage associated with the signalized intersection would be considered necessary. Thus, impacts from conflict with a state or local plan for renewable energy or energy efficiency would be ***less-than-significant***.

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

ai,aii. The project site is located within the northeastern portion of the Sacramento Valley, northeast of the City of Marysville, which is within the Great Valley geomorphic province. The Great Valley is generally considered less seismically active than other areas of California, and the Yuba County General Plan EIR states that no Alquist-Priolo Earthquake fault zones are located in Yuba County, though several faults located within a 60-mile radius of Yuba County have experienced displacement within the past 10,000 years. Faults located within Yuba County are primarily inactive faults in the Foothills Fault System, which runs south-southeastward across the central portion of the County. The project site is not underlain by any faults known to the County and, as a result, ground rupture is unlikely at the project site. According to the Probabilistic Seismic hazard Assessment for the State of California, Yuba County is not believed to have experienced earthquake-induced ground shaking of Modified Mercalli Intensity (MMI) VII or greater (the range of damage to buildings) since 1800.[5] Because active faults are not located in the vicinity of the project site, ***no impact*** would result related to substantial adverse effects involving rupture of a known earthquake fault or strong seismic ground shaking.

aiii,aiv, c,d. The proposed project's potential effects related to liquefaction, subsidence, landslides, lateral spreading, and expansive soils are discussed in detail below.

Liquefaction

Liquefaction is the loss of soil strength due to seismic forces generating various types of ground failure. Liquefaction occurs in clean, uniformly graded, loose, saturated, fine grained sands. Damage caused by liquefaction is usually greatest to large or heavy structures on shallow foundation.[6] The project site is located within a region that is identified as having low potential for liquefaction.[7] Furthermore, the proposed project includes the relocation and improvement of an existing intersection and realignment of an existing roadway segment, and would not involve the construction of structures, so project-specific design features related to liquefaction hazards would not be required.

Landslides

Seismically-induced landslides are trigged by earthquake ground shaking. The risk of landslide hazard is greatest in areas with steep, unstable slopes. The project site slopes imperceptibly downward towards the west, appearing essentially level. Maximum vertical relief across the site is approximately four feet, with ground surface elevations ranging from 94 to 98 feet above Mean Sea Level. Because the project area is relatively flat, landslides do not represent a likely hazard.

Lateral Spreading

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. The proposed project site does not contain open faces within a distance that would be considered susceptible to lateral spreading. Therefore, the potential for lateral spreading to affect the site is low.

Subsidence and Expansive Soils

When subsurface earth materials move, the movement can cause the gradual settling or sudden sinking of ground. The phenomenon of settling or sinking ground is referred to as subsidence, or settlement. Expansive soils are soils which undergo significant volume change with changes in moisture content. Specifically, such soils shrink and harden when dried and expand and soften when wetted, potentially resulting in damage to building foundations.

The project site is within a region that is identified in the General Plan EIR as possessing soils that are not highly expansive, and are not prone to shrink/swell activity.[8] In addition, the proposed project would not include the construction of structures. As such, the risk

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5 United States Geological Survey. *Probabilistic seismic hazard assessment for the state of California.* 1996.
6 Yuba County. *Final Yuba County 2030 General Plan Environmental Impact Report*. [pg. 4.6-14]. May 2011.
7 Yuba County. *Final Yuba County 2030 General Plan Environmental Impact Report*. [pg. 4.6-38]. May 2011
8 Yuba County. *Final Yuba County 2030 General Plan Environmental Impact Report*. [pg. 4.6-23]. May 2011.

associated with development of structures would not occur, and project-specific design features related to subsidence hazards would not be required.

Conclusion

Based on the above discussion, the proposed project would not result in potential hazards or risks related to liquefaction, landslides, lateral spreading, or subsidence. Therefore, the proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction or landslides, and would not 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. In addition, substantial risks would not occur related to being located on expansive soil. Thus, a ***less-than-significant*** impact would occur.

b. The project site is underlain by Quaternary alluvial deposits that occur in the majority of the western, valley portion of Yuba County. Alluvial material in the project area includes Pleistocene-aged deposits of the Modesto and Riverbank formations, and older alluvial deposits including Pliocene-aged Laguna formation deposits of interbedded alluvial gravel, sand, and silt. Such soils are described as having slight erosion hazard.[9] Implementation of Policy HS3.8, Policy HS8.5, and Action HS8.1 in the Yuba County General Plan, and compliance with the existing regulations included in the California Building Standards Code (CBSC) would reduce the potential for erosion caused by the construction of the proposed project.[10] Impacts related to erosion are discussed in more detail in Section X, Hydrology and Water Quality, of this Initial Study. With the incorporation of General Plan policies and compliance with existing regulations, the impact of the proposed project on soil erosion or loss of topsoil would be ***less-than-significant***.

e. The proposed project involves only roadway-related construction, and would not involve the use of septic tanks or alternative wastewater systems. Therefore, ***no impact*** would occur related to soils incapable of adequately supporting the use of septic tanks.

f. As discussed in Section 4.5, Cultural Resources, of the Yuba County General Plan EIR, paleontological finds have not been discovered in Yuba County. Additionally, the project site consists of land that has been previously disturbed through grading activities when the current roadway was built. Although unlikely, the potential exists for previously unknown paleontological resources to be discovered during ground-disturbing activities associated with the remaining roadway construction and intersection improvements. As a result, the proposed project could directly or indirectly destroy a unique paleontological resource or unique geologic feature and, thus, a ***potentially significant*** impact could occur.

Further analysis of this impact will be discussed in the Cultural and Tribal Cultural Resources chapter of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

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9 Yuba County. *Final Yuba County 2030 General Plan Environmental Impact Report*. [pg. 4.6-21]. May 2011.
10 Yuba County. *Yuba County 2030 General Plan*. June 7, 2011.

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?	✖	☐	☐	☐

Discussion

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 GHGs are inherently considered cumulative impacts.

A number of regulations currently exist related to GHG emissions, predominantly Assembly Bill (AB) 32, Executive Order S-3-05, and Senate Bill (SB) 32. AB 32 sets forth a statewide GHG emissions reduction target of 1990 levels by 2020. Executive Order S-3-05 sets forth a transitional reduction target of 2000 levels by 2010, the same target as AB 32 of 1990 levels by 2020, and further builds upon the AB 32 target by requiring a reduction to 80 percent below 1990 levels by 2050. SB 32 also builds upon AB 32 and sets forth a transitional reduction target of 40 percent below 1990 levels by 2030. In order to implement the statewide GHG emissions reduction targets, local jurisdictions are encouraged to prepare and adopt area-specific GHG reduction plans and/or thresholds of significance for GHG emissions.

Estimated GHG emissions attributable to the proposed project would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O). Buildout of the proposed project would contribute to increases of GHG emissions that are associated with global climate change during construction and potentially operations if signalization of the intersection is required. As such, the proposed project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Therefore, impacts related to GHG emissions and global climate change could be cumulatively considerable and considered ***potentially significant***.

Further analysis of this impact will be discussed in the Air Quality and GHG Emissions chapter of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

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. Although transportation of hazardous materials currently occurs on SR 20, the proposed project would not result in new land uses that would generate additional hazardous materials. Therefore, the number of vehicles transporting hazardous materials is not expected to change as a result of the proposed project. In addition, because the hauling trucks coming from the Hallwood mine do not typically transport hazardous materials, the operation of the proposed relocated haul road would not involve the routine use, transport, or disposal of hazardous materials. Thus, the impact would be considered ***less-than-significant***.

b. The proposed project area does not include any structures which will have to be removed. Therefore, common household contaminants such as asbestos and lead-based paints are unlikely to be a concern. Additionally, aboveground or underground storage tanks are not known to exist on the site, and new residences are not being constructed, thereby groundwater contamination is not a concern.

Historical uses of pesticides or other chemicals on the site are not documented. However, even if such materials were present on-site, they would not constitute a significant hazard for several reasons:

- The project site is small, with only 50 feet of roadway extension remaining, and essentially level, meaning that mass grading and large-scale soil displacement would not be required.
- The proposed project would not involve construction of any habitable structures and, thus, long-term exposure of humans to hazardous materials is not a concern.
- The proposed project would not involve groundwater use, so the effect of groundwater quality issues on the proposed project is not a concern.
- The majority of the site is currently used as grazing land, which typically does not require the use of pesticides.

For these reasons, the proposed project would not result in a significant hazard involving the likely release of hazardous materials into the environment, and the impact is ***less-than-significant***.

c. Schools do not exist, nor are any expected to be constructed, within one-quarter mile of the project site. Cordua Elementary School, the closest school to the project site, is located over two miles west of the site on SR 20. Therefore, ***no impact*** would occur related to emission of hazardous materials near an existing or proposed school.

d. According to the Department of Toxic Substances Control (DTSC) Facility Inventory Data Base Hazardous Waste and Substances Sites List, the project site is not listed as a hazardous materials site.[11] Therefore, ***no impact*** would occur related to being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

e. According to the Yuba County General Plan, the project site is not within an airport land use planning zone or within two miles of an airport.[12] The nearest airport is located approximately five miles southeast of the project site at Beale Air Force Base. Therefore, ***no impact*** would occur related to a safety hazard or excessive noise for people residing or working in the project area.

f. The County's Emergency Operation Plan (EOP), implemented by the Yuba County Office of Emergency Services (OES) addresses the County's planned response to emergencies associated with natural, man-made and technological disasters.[13] Development of the project site would not impair the implementation of, or physically interfere with, the County's adopted EOP because project construction and operation would comply with all standards set forth in the EOP. Furthermore, the proposed project would be in compliance with the County's Improvement Standards designated by the Department of Public Works which provide standard specification requirements for roadway construction projects and temporary lane closures.[14] Therefore, a ***less-than-significant*** impact would occur related to the impairment of implementation of an adopted emergency response plan or emergency evacuation plan.

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[11] Department of Toxic Substances Control. *DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List).* Available at: https://dtsc.ca.gov/dtscs-cortese-list/. Accessed February 12, 2021
[12] Yuba County. *Final Yuba County 2030 General Plan Environmental Impact Report*. [pg. 4.8-17]. May 2011.
[13] Yuba County Office of Emergency Services. *Emergency Operations Plan*. August 2015.
[14] Yuba County Department of Public Works. *Improvement Standards*. [pg. 36] December 15. 1994.

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 High or Very High Fire Hazard Severity Zone.[15] Furthermore, the proposed project would not include the construction of any habitable structures or infrastructure that would result in an increased hazard due to wildland fires. Therefore, ***no impact*** would occur related to exposure of people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires.

[15] California Department of Forestry and Fire Protection. *Map of CAL FIRE's Fire Hazard Severity Zones in Local Responsibility Areas – Yuba County*. Available at: https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/. Accessed February 2021.

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. The proposed project would involve the realignment and extension of an existing intersection in order to connect with the previously constructed portion of a private haul road. The project would require excavation and grading during construction, which could result in an increase in erosion which could affect water quality. During project construction, topsoil would be exposed due to grading of the site. After grading and prior to overlaying the ground surface with impervious surfaces, the potential exists for wind and water erosion to discharge sediment into stormwater runoff, which could adversely affect water quality. Stormwater pollution control is the responsibility of the State Water Resources Control Board and Regional Water Quality Control Board. Stormwater pollution control is implemented through the use of National Pollution Discharge Elimination System (NPDES) permits. Yuba County is responsible for ensuring compliance with the stormwater pollution control standards. The County's NPDES permit requires all construction projects that have soil disturbance to develop and submit an Erosion and Sediment Control Plan (ESCP), and projects having more than one acre of soil disturbance may be required to comply with the SWCB's Construction General Permit (CGP) and develop a Storm Water Pollution Prevention Plan (SWPPP).

The proposed intersection improvements would not involve operations typically associated with the generation or discharge of polluted water. Additionally, the roadway and intersection would be paved following construction, thereby preventing any erosion from occurring during project operations. Thus, typical operations on the project site would not violate water quality standards or waste discharge requirements, nor degrade water quality.

Based on the above, the proposed project would not include land uses typically associated with the generation or discharge of polluted water. However, a SWPPP has not yet been prepared for the proposed project. Without preparation of a SWPPP, proper compliance with the NPDES permit cannot be ensured at this time, and the project's construction activities could result in an increase in erosion, and consequently affect water quality. Thus, the project's impact would be ***less-than-significant*** with regard to violation of water quality standards and degradation of water quality.

Mitigation Measure(s)

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

X-1. *Prior to issuance of grading permits, the contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) for review and approval by the RWRCB. The contractor shall file the Notice of Intent (NOI) and associated fee to the SWRCB. The SWPPP shall serve as the framework for identification, assignment, and implementation of BMPs. The contractor shall implement BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable. Construction (temporary) BMPs for the Project may include, but are not limited to: fiber rolls, straw bale barrier, straw wattles, storm drain inlet protection, velocity dissipation devices, silt fences, wind erosion control, stabilized construction entrance, hydroseeding, revegetation techniques, and dust control measures. The SWPPP shall be submitted to the Director of Public Works/County Engineer for review and approval and shall remain on the project site during all phases of construction. Following implementation of the SWPPP, the contractor shall subsequently demonstrate the SWPPP's effectiveness and provide for necessary and appropriate revisions, modifications, and improvements to reduce pollutants in stormwater discharges to the maximum extent practicable.*

b, e. The proposed project would not require regular water usage during operation. If water were required during the construction process of the proposed project, the increase in water demand would not interfere with groundwater supplies or aquifer recharge, because any water demand during construction would be met by using water transported from the Hallwood mine, and would represent a minor and temporary increase in demand for water. In addition, the project would not add impervious surfaces to a degree that would result in a decrease in infiltration rates and an increase in stormwater runoff rates, because the amount of land surface being converted from pervious to impervious is minor when addressed within the context of the entire project area. Therefore, the impacts of the proposed project on the implementation of a water quality control plan or sustainable groundwater management plan would be considered ***less-than-significant***.

ci, cii, ciii. The Yuba County soil survey describes the soils on-site as having slight to moderate erosion potential.[16] The proposed project's grading and excavation activities would disturb soils, creating the potential for increased erosion, and consequently, sedimentation which would negatively affect water quality. However, implementation of the required best management and design practices as directed by the Yuba County General Plan, and compliance with State and County permits and standards would ensure that significant water quality impacts do not occur during construction of the project. Therefore, the impact would be considered ***less-than-significant***.

civ. The project site is located within FEMA FIRM Panel 06115C0375D and is within Zone X, which is considered an area of minimal flood hazard.[17] Thus, the project would not include development within a Special Flood Hazard Area and would not be subject to project-specific design features related to flood hazards. Therefore, the proposed project's impact on the impediment or redirection of flood flow would be considered ***less-than-significant***.

d. Impacts related to development within a flood zone are discussed under item civ. above.

Tsunamis are defined as sea waves created by undersea fault movement. The project site is located inland, approximately 120 miles away from the coastline and, thus, would not be exposed to risks of tsunamis.

A seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir, whose destructive capacity is not as great as that of tsunamis. Seiches are known to have occurred during earthquakes. However, the project is not located near a closed body of water. Therefore, the project site would not be subject to hazards related to seiches.

The above analysis indicates that the project site would not be threatened by a tsunami, or seiche therefore, ***no impact*** from such phenomena would occur.

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16 USDA Natural Resources Conservation Service. *Soil Survey of Yuba County, California*. 1998.

17 FEMA. *FEMA Flood Map Service Center*. Available at: https://msc.fema.gov/portal/home. Accessed February 2021.

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 proposed project would be compatible with the existing agricultural and rural residential uses surrounding the project site. In addition, the proposed project would not alter the existing general development trends in the area or isolate an existing land use. Moreover, the project would not physically divide an established community because of the low density of rural residential uses and because such uses are predominantly located to the east of the project site. Therefore, the proposed project would have a ***less-than-significant*** impact on the physical arrangement of the community.

b. Per the County's General Plan, the project site is designated Natural Resources and the site is zoned Exclusive Agricultural (AE) and Residential Estate (RE), and the proposed project would be an allowed improvement under the site's current land use and zoning designations. As discussed throughout this Initial Study, the proposed project would not conflict with any land use plan, policy or regulations adopted for the purpose of avoiding or mitigating an environmental effect because development of the project site would comply with all standards set in the Yuba County General Plan and General Plan EIR. Relocation and realignment of the existing SR 20/Kibbe Road intersection would not change the land uses surrounding the project site, and the proposed project would not conflict with the purposes of either land use or zoning designation. Therefore, the proposed project would not conflict with any with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigation an environmental effect, and 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 Yuba County General Plan, a mineral resource is a concentration of elements in a particular location in such a form that a usable mineral commodity can be extracted from the deposit. Mineral resources mined within Yuba County include sand and gravel, clay, stone products, silica, silver, and gold. The Hallwood mine facility produces alluvial sand and gravel.

Changes to the mining plan or rate of mineral extraction would not occur with the change in haul route for the Hallwood facility. The proposed project would not have any effect on availability of important mineral resources because the Hallwood mine would continue to make aggregate materials available regardless of whether or not the project was constructed. Therefore, the impact to mineral resources would be considered ***less-than-significant***.

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?	✖	☐	☐	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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,b. The proposed project consists of realignment of an existing intersection and operation of a previously constructed private haul road. The project site is located in an agricultural area with two sensitive receptors along the haul road. Impacts associated with construction of the proposed project could include a temporary increase in ambient noise and groundborne vibration levels from the use of heavy equipment. The operational phase of the proposed project could result in a permanent increase in ambient noise levels along the southern portion of Kibbe Road from trucks operating along the haul road. Such increases in noise levels may exceed established noise standards on and adjacent to the project site and, therefore, the construction and operation of the proposed project could result in a ***potentially significant*** impact.

Further analysis of this impact will be discussed in the Noise chapter of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

c. 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. The nearest airport is located approximately five miles southeast of the project site at Beale Air Force Base. Therefore, the project would not expose people working or residing in the project area to excessive noise produced by an airport and ***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. Because the proposed intersection improvements and the completed haul road would predominantly serve Teichert's existing Hallwood facility, the proposed project would not induce population growth by providing access to previously inaccessible areas. Homes or people would not be displaced with the construction of the proposed intersection improvements. In addition, given that the proposed project is an allowed improvement within the site's land use and zoning designations, any potential growth associated with implementation of the proposed project has been anticipated by the County and analyzed in the General Plan EIR. Thus, the proposed project would not induce substantial growth in the area nor displace existing housing or people. For these reasons, ***no impact*** to population or housing would occur with the proposed project.

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. The proposed project is located within the jurisdiction of the Yuba County Sheriff's Department and the California Department of Forestry and Fire Protection (CAL FIRE). Due to the nature of the proposed project, an increased demand for fire protection or police protection would not be anticipated. The proposed project would not include construction of new residences or other structures and would not result in increased population growth in the project vicinity. Therefore, an increased demand for schools, parks, or other public facilities would not occur as a result of the project. Based on the above, the project would not result in substantial adverse physical impacts associated with the provision of new or altered governmental facilities and, thus, ***no impact*** would occur.

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 proposed project would not include construction of residences or other structures and would not result in increased population growth in the project vicinity. Because the project would not induce population growth, the project would not result in increased demand for parks and recreational facilities. Therefore, the project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur, nor would the project include recreation facilities or require the construction or expansion of recreational facilities that may have an adverse physical effect on the environment. Thus, a ***no impact*** would occur.

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. The proposed project would result in vehicle traffic on local roadways in the project area associated with worker and haul truck trips. Vehicle trip generation associated with the project would essentially replace trip generation associated with the existing Hallwood mine hauling route and, thus, the project is not expected to result in a substantial net increase in traffic volumes. Nonetheless, further study is required to ensure that project traffic would not be substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections). In addition, the project could exceed, either individually or cumulatively, a level of service (LOS) standard established by Yuba County. Therefore, a ***potentially significant*** impact could occur related to conflicting with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Further analysis of this impact will be provided in the Transportation chapter of the SR 20/Kibbe Road EIR being prepared for the project.

b. Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Per section 15064.3, analysis of vehicle miles travelled (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.

Pursuant to section 15064.3(3) of the CEQA Guidelines, a lead agency may analyze a project's VMT qualitatively based on the availability of transit, proximity to destinations, etc. While changes to driving conditions that increase intersection delay are an important consideration for traffic operations and management, the method of analysis does not fully describe environmental effects associated with fuel consumption, emissions, and public health. Section 15064.3(3) changes the focus of transportation impact analysis in CEQA from measuring impact to drivers to measuring the impact of driving.

Operations of the Hallwood mine would not generate additional vehicle trips, but the proposed project would result in the redistribution of truck traffic associated with the

Hallwood mining facility. The redistribution of truck traffic could increase vehicle trip lengths and, therefore, increase VMT. Thus, the project could be inconsistent with CEQA Guidelines Section 15064.3(b), and a ***potentially significant*** impact could occur.

Further analysis of this impact will be provided in the Transportation chapter of the SR 20/Kibbe Road EIR being prepared for the project.

c. The proposed project would result in heavy truck traffic entering SR 20 from Kibbe Road, and additional truck traffic is associated with intersection hazards. Additionally, the project would include one of three different intersection control options: a stop sign, a roundabout, or a traffic signal. If a roundabout is constructed as part of the proposed project, it would be required to comply with all standards set in the Federal Highway Administration's (FHWA's) technical publication titled Roundabouts: An Informational Guide, and the Caltrans Design Information Bulletin (DIB).

Other public safety issues could arise from implementation of the proposed project. Construction activities could interfere with the movement of traffic at the SR 20/Kibbe Road intersection, which could result in a hazardous traffic situation. The County provides standards for contractors during construction which includes a Traffic Control Plan, and requires measures to ensure safe flow of traffic during construction. Therefore, the proposed project could increase hazards at the SR 20/Kibbe Road intersection. Thus, a ***potentially significant*** impact could occur related to increased hazards due to geometric design features or incompatible uses.

Further analysis of this impact will be provided in the Transportation chapter of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

d. The proposed project would not impede emergency access in the vicinity of the project site. Per the Yuba County General Plan Policy HS9.3, the County will coordinate with Caltrans to maintain Highway 20 as a primary emergency access route. Additionally, the General Plan Policies require infrastructure and new developments to be designed so as to not adversely affect emergency vehicle access.[18] The proposed project would not conflict with any emergency access policies and regulations because development of the project site would comply with any standards set in the Yuba County General Plan and General Plan EIR. Furthermore, the existing hauling route would become an emergency access road for the surrounding neighborhoods, so the proposed project would increase accessibility within the project area. Therefore, the proposed project would have ***no impact*** related to inadequate emergency access.

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[18] Yuba County. *Final Yuba County 2030 General Plan Environmental Impact Report*. [pg. 4.13-84]. May 2011.

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. As per a search of the Native American Heritage Commission (NAHC) Sacred Lands File, the project site is not listed or eligible for listing as a historical resource.

In compliance with Assembly Bill (AB) 52 (Public Resources Code Section 21080.3.1), a project notification letter was distributed to the United Auburn Indian Community on March 31, 2021. Requests to consult have not been received to date.

The potential for unrecorded Native American resources to exist within the project site is relatively low based on the history of ground disturbance on the project site and the lack of known tribal cultural resources on-site. Nevertheless, the possibility exists that construction of the proposed project could result in an adverse change in the significance of a tribal cultural resource. Thus, the proposed project could result in a ***potentially significant*** impact related to tribal cultural resources.

Further analysis of this impact will be provided in the Cultural and Tribal Cultural Resources chapter of the SR 20/Kibbe Road EIR being prepared for the project.

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. The proposed project would consist of roadway improvements which would not create increased demand for water or wastewater treatment facilities, nor require the construction or expansion of water or wastewater treatment facilities. During construction, portable toilet facilities would be used and workers would rely on water transported from the Hallwood mine for potable water supply.

As proposed, the project could require street lighting or signalization if it is deemed necessary by Caltrans. If street lighting or signalization are warranted, electricity would be provided by Pacific Gas & Electric Company through existing power lines in the project area. Natural gas or telecommunications facilities would not be required due to the nature of the proposed project.

The proposed intersection improvements would not involve operations typically associated with the generation or discharge of polluted water. Additionally, the roadway and intersection would be paved following construction, thereby preventing any erosion from occurring during project operations. However, paving the proposed project would not add impervious surfaces to a degree that would result in a decrease in infiltration rates and an increase in stormwater runoff rates, because the amount of land surface being converted from pervious to impervious is minor when addressed within the context of the entire project area. Thus, typical operations on the project site would not require the construction or expansion of additional storm water drainage facilities because the implementation of construction best management practices (BMPs) and compliance with the CBSC would ensure adequate stormwater drainage capacity. Therefore, a ***less-than-significant*** impact would result from the proposed project on new or expanded utilities.

b. The proposed project consists of roadway improvements which would not require a permanent water supply. Any water demand during construction would be met by using water transported from the Hallwood mine, and would represent a minor and temporary increase in demand for water. Therefore, the project would have a ***no impact*** upon water supplies.

d,e. The proposed project would not result in the generation of solid waste during operations and, therefore, the project site would not need to be served by a solid waste disposal facility. Furthermore, the project would be required to comply with applicable regulations related to the disposal of construction waste.[19] Therefore, ***no impact*** would result from the proposed project related to solid waste.

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[19] Yuba County. *Municipal Code, Section 7.05.225*. September 28, 2018.

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 California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, the project site is not located within a High or Very High Fire Hazard Severity Zone.[20] In addition, the proposed project would not include the construction of structures or infrastructure that would result in an increased hazard due to wildfires. Thus, the proposed project would ***no impact*** would result from the proposed project related to substantial risk or hazards related to wildfires.

[20] California Department of Forestry and Fire Protection. *Map of CAL FIRE's Fire Hazard Severity Zones in Local Responsibility Areas – Yuba County*. Available at: https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/. Accessed February 16, 2021.

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. Based upon the current land cover types found on-site, State and/or federally protected special-status plant and wildlife species could occupy the project site. In addition, Yuba County is known to contain habitats suitable to 25 special-status plant species and 28 special-status wildlife species. Although the Yuba County General Plan does not identify any historical or archeological resource sites near the project site, Yuba County is considered to have a high density of cultural resources and approximately 2,876 cultural resource sites have been recorded in Yuba County. Therefore, the potential exists for previously unknown prehistoric or historic resources to be uncovered during construction. Construction and operation of the proposed project could have a ***potentially significant*** impact related to degradation of the quality of the environment, reduction of the habitat of a threatened species, and/or California’s history or prehistory.

Further analysis of this impact will be discussed in the Biological Resources and Cultural Resources chapters of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

b,c. The proposed project in conjunction with other development within Yuba County could incrementally contribute to cumulative impacts in the area. As discussed in the Transportation section of this IS, haul route operations of the proposed project would not involve additional vehicle trips, but rather would result in the redistribution of truck traffic associated with the Hallwood mining facility. The redistribution would result in an increase in vehicle traffic on the street system surrounding the project area. Additionally, the emission of toxic air contaminants could result in adverse effects on human beings and the natural environment. Therefore, a ***potentially significant*** impact could occur.

Further analysis of this impact will be discussed in the Biological Resources, Transportation, Air Quality and GHG Emissions, and Statutorily Required Sections chapters of the SR 20/Kibbe Road Intersection EIR being prepared for the project.

G. SOURCES

All technical reports and modeling results prepared for the project analysis are available upon request at the Yuba County Community Development and Services Agency, located at 915 8th Street, Suite 123, Marysville, CA, 95901. The following documents are referenced information sources utilized by this analysis:

1. California Department of Conservation. *Farmland mapping and Monitoring Program.* 2018. Available at: https://www.conservation.ca.gov/dlrp/fmmp. Accessed February 2021.
2. California Department of Conservation. *Land Conservation (Williamson) Act.* Available at: https://www.conservation.ca.gov/dlrp/wa/Pages/LCA_QandA.aspx#what%20is%20the%20california%20land%20conservation%20%28williamson%29%20act. Accessed February 2021.
3. California Department of Forestry and Fire Protection. *Map of CAL FIRE's Fire Hazard Severity Zones in Local Responsibility Areas – Yuba County*. Available at: https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/. Accessed February 16, 2021.
4. California Department of Transportation. *California Scenic Highway Mapping System Yuba County*. Available at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983. Accessed February 2021.
5. Department of Toxic Substances Control. *DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List).* Available at: https://dtsc.ca.gov/dtscs-cortese-list/. Accessed February 12, 2021.
6. FEMA. *FEMA Flood Map Service Center*. Available at: https://msc.fema.gov/portal/home. Accessed February 2021.
7. Sacramento Valley Air Quality Engineering and Enforcement Professionals (SVAQEEP). *Northern Sacramento Valley Planning Area 2018 Triennial Air Quality Attainment Plan*. July 26, 2018.
8. United States Geological Survey. *Probabilistic seismic hazard assessment for the state of California.* 1996.
9. USDA Natural Resources Conservation Service. *Soil Survey of Yuba County, California*. 1998.
10. Yuba County. *Final Yuba County 2030 General Plan Environmental Impact Report*. May 2011.
11. Yuba County. *Municipal Code, Section 7.05.225*. September 28, 2018.
12. Yuba County. *Yuba County 2030 General Plan*. June 7, 2011.
13. Yuba County Department of Public Works. *Improvement Standards*. [pg. 36] December 15. 1994.
14. Yuba County Office of Emergency Services. *Emergency Operations Plan*. August 2015.

APPENDIX B

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
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GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

May 18, 2021

Kevin Perkins, Planning Manager
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Subject: SR 20/KIBBE ROAD INTERSECTION PROJECT
NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT
SCH# 2021040495

Dear Mr. Perkins:

The California Department of Fish and Wildlife (CDFW) received and reviewed the Notice of Preparation of an Environmental Impact Report (EIR) from the Yuba County Community Development and Services Agency (County) for the SR 20/Kibbe Road Intersection Project (Project) in Yuba County pursuant the California Environmental Quality Act (CEQA) statute and guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish, wildlife, plants and their habitats. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may need to exercise its own regulatory authority under the Fish and Game Code (Fish & G. Code).

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802.). Similarly, for purposes of CEQA, CDFW provides, as available, biological expertise during public agency environmental

1 CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW may also act as a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT DESCRIPTION SUMMARY

The approximately 10-acre Project site is located at the intersection of SR 20 and Kibbe Road, approximately three miles northeast of the City of Marysville, within Yuba County. The Project site extends north from Hallwood Mine towards SR 20.

The Project consists of the completion of a previously constructed private haul road, improvements to and relocation of the intersection of SR 20 and Kibbe Road, and the westerly realignment of approximately 600 feet of Kibbe Road to connect with the relocated intersection.

The Project description should include the whole action as defined in the CEQA Guidelines § 15378 and should include appropriate detailed exhibits disclosing the Project area including temporary impacted areas such as equipment stage area, spoils areas, adjacent infrastructure development, staging areas and access and haul roads if applicable.

As required by § 15126.6 of the CEQA Guidelines, the EIR should include an appropriate range of reasonable and feasible alternatives that would attain most of the basic Project objectives and avoid or minimize significant impacts to resources under CDFW's jurisdiction.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations presented below to assist the County in adequately identifying and/or mitigating the Project's significant, or potentially significant, impacts on biological resources. The comments and recommendations are also offered to enable CDFW to adequately review and comment on the proposed Project with respect to impacts on biological resources. CDFW recommends that the forthcoming EIR address the following.

Assessment of Biological Resources

Section 15125(c) of the CEQA Guidelines states that knowledge of the regional setting of a project is critical to the assessment of environmental impacts and that special emphasis should be placed on environmental resources that are rare or unique to the region. To enable CDFW staff to adequately review and comment on the Project, the EIR should include a complete assessment of the flora and fauna within and adjacent to the Project footprint, with emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats. CDFW recommends the EIR specifically include:

1. An assessment of all habitat types located within the Project footprint, and a map that identifies the location of each habitat type. CDFW recommends that floristic, alliance- and/or association-based mapping and assessment be completed following *The Manual of California Vegetation*, second edition (Sawyer 2009). Adjoining habitat areas should also be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

2. A general biological inventory of the fish, amphibian, reptile, bird, and mammal species that are present or have the potential to be present within each habitat type onsite and within adjacent areas that could be affected by the Project. CDFW recommends that the California Natural Diversity Database (CNDDB), as well as previous studies performed in the area, be consulted to assess the potential presence of sensitive species and habitats. A nine United States Geologic Survey (USGS) 7.5-minute quadrangle search is recommended to determine what may occur in the region, or larger if the Project area extends past one quad (see *Data Use Guidelines* on the Department webpage www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data). Please review the webpage for information on how to access the database to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, in the vicinity of the Project. CDFW recommends that CNDDB Field Survey Forms be completed and submitted to CNDDB to document survey results. Online forms can be obtained and submitted at: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data.

   Please note that CDFW's CNDDB is not exhaustive in terms of the data it houses, nor is it an absence database. CDFW recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the Project site. Other sources for identification of species and habitats near or adjacent to the Project area should include, but may not be limited to, State and federal resource agency lists, California Wildlife Habitat Relationship (CWHR) System, California Native Plant Society (CNPS) Inventory, agency contacts, environmental documents for other projects in the vicinity, academics, and professional or scientific organizations.

3. A complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern and California Fully Protected Species (Fish & G. Code § 3511). Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. The EIR should include the results of focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable. Species-specific surveys should be conducted in order to ascertain the presence of species with the potential to be directly, indirectly, on or within a reasonable distance of the Project activities. CDFW recommends the County rely on survey and monitoring protocols and guidelines available at: www.wildlife.ca.gov/Conservation/Survey-Protocols. Alternative survey protocols may be warranted; justification should be provided to substantiate why an alternative protocol is necessary. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Some aspects of the Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought or deluge.

4. A thorough, recent (within the last two years), floristic-based assessment of special-status plants and natural communities, following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (see www.wildlife.ca.gov/Conservation/Plants).

5. Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region (CEQA Guidelines § 15125[c]).

Analysis of Direct, Indirect, and Cumulative Impacts to Biological Resources

The EIR should provide a thorough discussion of the Project’s potential direct, indirect, and cumulative impacts on biological resources. To ensure that Project impacts on biological resources are fully analyzed, the following information should be included in the EIR:

1. The EIR should define the threshold of significance for each impact and describe the criteria used to determine whether the impacts are significant (CEQA Guidelines, § 15064, subd. (f)). The EIR must demonstrate that the significant environmental impacts of the Project were adequately investigated and discussed and it must permit the significant effects of the Project to be considered in the full environmental context.

2. A discussion of potential impacts from lighting, noise, human activity, and wildlife-human interactions created by Project activities especially those adjacent to natural areas, exotic and/or invasive species occurrences, and drainages. The EIR should address Project-related changes to drainage patterns and water quality within, upstream, and downstream of the Project site, including: volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-Project fate of runoff from the Project site.

3. A discussion of potential indirect Project impacts on biological resources, including resources in areas adjacent to the Project footprint, such as nearby public lands (e.g. National Forests, State Parks, etc.), open space, adjacent natural habitats, riparian ecosystems, wildlife corridors, and any designated and/or proposed reserve or mitigation lands (e.g., preserved lands associated with a Conservation or Recovery Plan, or other conserved lands).

4. A cumulative effects analysis developed as described under CEQA Guidelines section 15130. The EIR should discuss the Project's cumulative impacts to natural resources and determine if that contribution would result in a significant impact. The EIR should include a list of present, past, and probable future projects producing related impacts to biological resources or shall include a summary of the projections contained in an adopted local, regional, or statewide plan, that consider conditions contributing to a cumulative effect. The cumulative analysis shall include impact analysis of vegetation and habitat reductions within the area and their potential cumulative effects. Please include all potential direct and indirect Project-related impacts to riparian areas, wetlands, wildlife corridors or wildlife movement areas, aquatic habitats, sensitive species and/or special-status species, open space, and adjacent natural habitats in the cumulative effects analysis.

Mitigation Measures for Project Impacts to Biological Resources

The EIR should include appropriate and adequate avoidance, minimization, and/or mitigation measures for all direct, indirect, and cumulative impacts that are expected to occur as a result of the construction and long-term operation and maintenance of the Project. CDFW also recommends the environmental documentation provide scientifically supported discussion regarding adequate avoidance, minimization, and/or mitigation measures to address the Project's significant impacts upon fish and wildlife and their habitat. For individual projects, mitigation must be roughly proportional to the level of impacts, including cumulative impacts, in accordance with the provisions of CEQA (Guidelines § § 15126.4(a)(4)(B), 15064, 15065, and 16355). In order for mitigation measures to be effective, they must be specific, enforceable, and feasible actions that will improve environmental conditions. When proposing measures to avoid, minimize, or mitigate impacts, CDFW recommends consideration of the following:

1. *Fully Protected Species*: Several Fully Protected Species (Fish & G. Code § 3511) have the potential to occur within or adjacent to the Project area, including, but not limited to: golden eagle (*Aquila chrysaetos*), white-tailed kite (*Elanus leucurus*), bald eagle (*Haliaeetus leucocephalus*), and California black rail (*Laterallus jamaicensis coturniculus*). Fully protected species may not be taken or possessed at any time. Project activities described in the EIR should be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the Project area. CDFW also recommends the EIR fully analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends the County include in the analysis how appropriate avoidance, minimization and mitigation measures will reduce indirect impacts to fully protected species.

2. *Sensitive Plant Communities*: CDFW considers sensitive plant communities to be imperiled habitats having both local and regional significance. Plant communities, alliances, and associations with a statewide ranking of S-1, S-2, S-3, and S-4 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by querying the CNDDB and are included in *The Manual of California Vegetation* (Sawyer 2009). The EIR should include measures to fully avoid and otherwise protect sensitive plant communities from Project-related direct and indirect impacts.

3. *Mitigation*: CDFW considers adverse Project-related impacts to sensitive species and habitats to be significant to both local and regional ecosystems, and the EIR should include mitigation measures for adverse Project-related impacts to these resources. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, onsite habitat restoration, enhancement, or permanent protection should be evaluated and discussed in detail. If onsite mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, offsite mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

   The EIR should include measures to perpetually protect the targeted habitat values within mitigation areas from direct and indirect adverse impacts in order to meet mitigation objectives to offset Project-induced qualitative and quantitative losses of biological values. Specific issues that should be addressed include restrictions on access, proposed land dedications, long-term monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

4. *Habitat Revegetation/Restoration Plans*: Plans for restoration and revegetation should be prepared by persons with expertise in the regional ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a

minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) a planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria. Monitoring of restoration areas should extend across a sufficient time frame to ensure that the new habitat is established, self-sustaining, and capable of surviving drought.

5. *Nesting Birds:* Please note that it is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Migratory non-game native bird species are protected by international treaty under the federal Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 *et seq.*). CDFW implemented the MBTA by adopting the Fish and Game Code section 3513. Fish and Game Code sections 3503, 3503.5 and 3800 provide additional protection to nongame birds, birds of prey, their nests and eggs. Sections 3503, 3503.5, and 3513 of the Fish and Game Code afford protective measures as follows: section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Fish and Game Code or any regulation made pursuant thereto; section 3503.5 states that is it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by the Fish and Game Code or any regulation adopted pursuant thereto; and section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

   Potential habitat for nesting birds and birds of prey is present within the Project area. The Project should disclose all potential activities that may incur a direct or indirect take to nongame nesting birds within the Project footprint and its vicinity. Appropriate avoidance, minimization, and/or mitigation measures to avoid take must be included in the EIR.

   CDFW recommends the EIR include specific avoidance and minimization measures to ensure that impacts to nesting birds or their nests do not occur. Project-specific avoidance and minimization measures may include, but not be limited to: scheduling Project activities to avoid disturbing active nests, monitoring active nests for signs of agitation or disturbance while nearby Project activities are taking place, monitoring Project-related noise (where applicable), and/or use of sound walls and buffers, where appropriate. In addition to larger, protocol level survey efforts (e.g. Swainson's hawk surveys) and scientific assessments, CDFW recommends a final preconstruction survey be required no more than three (3) days prior to vegetation clearing or ground disturbance activities, as many bird species are capable of constructing a nest in a few days.

6. *Moving out of Harm's Way:* The Project is anticipated to result in the clearing of habitats that support native species. To avoid direct mortality, the County should state in the EIR a requirement for a qualified biologist with the proper handling permits to be onsite prior to and during all ground- and habitat-disturbing activities to move out of harm's way wildlife of low or limited mobility that would otherwise be injured or killed by Project-related activities, as needed. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise be injured or killed, and individuals should be moved only as far as necessary to ensure their safety. CDFW recommends fish and wildlife species be allowed to move out of harm's way on their own volition, if possible, and to assist their relocation as a last resort. It should be noted that the temporary relocation of onsite wildlife does not constitute effective mitigation for habitat loss.

7. *Translocation of Species*: CDFW generally does not support the use of relocation, salvage, and/or transplantation as the sole mitigation for impacts to rare, threatened, or endangered species as these efforts are generally experimental in nature and largely unsuccessful. CDFW recommends mitigation for impacts to rare, threatened, or endangered species include habitat conservation.

The EIR should incorporate mitigation performance standards that would ensure that impacts are reduced to a less-than-significant level. Mitigation measures proposed in the EIR should be made a condition of approval of the Project. Please note that obtaining a permit from CDFW by itself with no other mitigation proposal may constitute mitigation deferral. CEQA Guidelines section 15126.4, subdivision (a)(1)(B) states that formulation of mitigation measures should not be deferred until some future time. To avoid deferring mitigation in this way, the EIR should describe avoidance, minimization and mitigation measures that would be implemented should the impact occur.

California Endangered Species Act

CDFW is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to the California Endangered Species Act (CESA). CDFW recommends that a CESA Incidental Take Permit (ITP) be obtained if the Project has the potential to result in "take" (Fish & G. Code § 86 defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") of state-listed CESA species, either through construction or over the life of the Project.

State-listed species with the potential to occur in the area include, but are not limited to: Swainson's hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), giant garter snake (*Thamnophis gigas*), and Hartweg's golden sunburst (*Pseudobahia bahiifolia*).

The EIR should disclose the potential of the Project to take state-listed species and how the impacts will be avoided, minimized, and mitigated. Please note that mitigation measures that are adequate to reduce impacts to a less-than significant level to meet CEQA requirements may not be enough for the issuance of an ITP. To facilitate the issuance of an ITP, if applicable, CDFW recommends the EIR include measures to minimize and fully mitigate the impacts to any state-listed species the Project has potential to take. CDFW encourages early consultation with staff to determine appropriate measures to facilitate future permitting processes and to engage with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service to coordinate specific measures if both State and federally listed species may be present within the Project vicinity.

Native Plant Protection Act

The Native Plant Protection Act (Fish & G. Code §1900 *et seq*.) prohibits the take or possession of state-listed rare and endangered plants, including any part or product thereof, unless authorized by CDFW or in certain limited circumstances. Take of state-listed rare and/or endangered plants due to Project activities may only be permitted through an ITP or other authorization issued by CDFW pursuant to California Code of Regulations, Title 14, section 786.9 subdivision (b).

Lake and Streambed Alteration Program

The EIR should identify all perennial, intermittent, and ephemeral rivers, streams, lakes, other hydrologically connected aquatic features, and any associated biological resources/habitats present within the entire Project footprint (including utilities, access and staging areas). The environmental document should analyze all potential temporary, permanent, direct, indirect and/or cumulative impacts to the above-mentioned features and associated biological resources/habitats that may occur because of the Project. If it is determined that the Project will result in significant impacts to these resources the EIR should propose appropriate avoidance, minimization and/or mitigation measures to reduce impacts to a less-than-significant level.

Section 1602 of the Fish and Game Code requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following: substantially divert or obstruct the natural flow of any river, stream or lake; substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or deposit debris, waste or other materials that could pass into any river, stream or lake. Please note that "any river, stream or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year-round). This includes ephemeral streams and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

If CDFW determines that the Project activities may substantially adversely affect an existing fish or wildlife resource, a Lake and Streambed Alteration (LSA) Agreement will be issued which will include reasonable measures necessary to protect the resource. CDFW's issuance of an LSA Agreement is a “project” subject to CEQA (see Pub.

Resources Code 21065). To facilitate issuance of an LSA Agreement, if one is necessary, the EIR should fully identify the potential impacts to the lake, stream, or riparian resources, and provide adequate avoidance, mitigation, and monitoring and reporting commitments. Early consultation with CDFW is recommended, since modification of the Project may avoid or reduce impacts to fish and wildlife resources. Please note that other agencies may use specific methods and definitions to determine impacts to areas subject to their authorities. These methods and definitions often do not include all needed information for CDFW to determine the extent of fish and wildlife resources affected by activities subject to Notification under Fish and Game Code section1602. Therefore, CDFW does not recommend relying solely on methods developed specifically for delineating areas subject to other agencies' jurisdiction (such as United States Army Corps of Engineers) when mapping lakes, streams, wetlands, floodplains, riparian areas, etc. in preparation for submitting a Notification of an LSA.

The following information will be required for the processing of an LSA Notification and CDFW recommends incorporating this information, if applicable, into any forthcoming CEQA document(s) to avoid subsequent documentation and Project delays:

1. Mapping and quantification of lakes, streams, and associated fish and wildlife habitat (e.g., riparian habitat, freshwater wetlands, etc.) that will be temporarily and/or permanently impacted by the Project, including impacts from access and staging areas. Please include an estimate of impact to each habitat type.

2. Discussion of specific avoidance, minimization, and mitigation measures to reduce Project impacts to fish and wildlife resources to a less-than-significant level. Please refer to section 15370 of the CEQA Guidelines.

For more information and to submit an LSA Notification, please visit https://www.wildlife.ca.gov/Conservation/Environmental-Review/LSA.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database, which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be submitted online or mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov.

FILING FEES

The Project, as proposed, would have an effect on fish and wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

Pursuant to Public Resources Code sections 21092 and 21092.2, CDFW requests written notification of proposed actions and pending decisions regarding the Project. Written notifications shall be directed to: California Department of Fish and Wildlife North Central Region, 1701 Nimbus Road, Rancho Cordova, CA 95670.

CDFW appreciates the opportunity to comment on the Notice of Preparation of the EIR for the SR 20/Kibbe Road Intersection Project and recommends that the County address CDFW's comments and concerns in the forthcoming EIR. CDFW personnel are available for consultation regarding biological resources and strategies to minimize impacts.

If you have any questions regarding the comments provided in this letter, or wish to schedule a meeting and/or site visit, please contact Gabriele Quillman, Environmental Scientist at (916) 358-2955 or gabriele.quillman@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Kelley Barker
778EDA8AE45F4C9...

Kelley Barker
Environmental Program Manager

ec: Tanya Sheya, Senior Environmental Scientist (Supervisory)
Gabriele Quillman, Environmental Scientist
Department of Fish and Wildlife

Office of Planning and Research, State Clearinghouse, Sacramento

Literature Cited

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A Manual of California Vegetation, 2nd ed. California Native Plant Society Press, Sacramento, California. http://vegetation.cnps.org/

From: Schilhabel, Kip@CHP <KSchilhabel@chp.ca.gov>
Sent: Tuesday, May 18, 2021 4:51 PM
To: Perkins, Kevin <kperkins@CO.YUBA.CA.US>
Cc: state.clearinghouse@opr.ca.gov; Enciso, Blanca@CHP <Blanca.Enciso@chp.ca.gov>; Harding, Julie@CHP <Julie.Harding@chp.ca.gov>; CHP-201Administrative <201Administrative@chp.ca.gov>
Subject: FW: Subject: 063 – (BE) – Environmental Document Review – SCH # 2021040495 -- Due to Lead Agency by 05/20/2021

Good afternoon,

The Yuba-Sutter area has reviewed Environmental Document – SCH #2021040495, which is due by 5/20/2021.

This project would have a significant impact on the Yuba-Sutter area as SR-20 is a main thorough fair and traffic is only increasing. The Yuba-Sutter area believes the option which would provide the least amount of traffic congestion and safety concerns would be to use the three phase traffic light as opposed to roundabouts or a 4-way stop signs at the intersection of SR-20 and Kibbe Road.

There are several concerns with the roundabout or stop signs at SR-20 and Kibbe Road:

1. The speed limit would have to be drastically reduced for both east and westbound lanes on SR-20, prior to entering the roundabout.
2. SR-20 has large vehicles which travel this portion of roadway from tractor trailer combinations, farm equipment, and vehicles with trailer/boats. The use of a roundabout could potentially cause traffic to move slower due to larger vehicles having to slow down even more.
3. With the speed limit being reduced prior to the roundabout, this will naturally slow traffic down in both east and west directions causing backups as vehicles navigate the roundabout.
4. A 4-way stop signs at the intersection of SR-20 and Kibbe would dramatically cause traffic to back-up on SR-20 in both eastbound and westbound traffic. The 4-way stop sign would also require vehicles to slow prior to the intersection.

The use of the three phase traffic light in all directions will also impact the traffic flow of SR-20 at Kibbe Road, but it will mitigate most of the congestions and safety concerns presented by the roundabout or 4-way stop signs.

Sergeant Kip Schilhabel, ID 19704
Yuba-Sutter Area

1619 Poole Blvd.
Yuba City, CA 95993
California Highway Patrol
Office – (530) 674-5141

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

April 22, 2021

RECEIVED
APR 26 2021
COMMUNITY DEVELOPMENT & SERVICES AGENCY

Kevin Perkins, Planning Manager
Yuba County, Community Development and Services Agency
915 8th Street, Suite 123
Marysville, CA 95901

Re: 2021040495, SR 20/Kibbe Road Intersection Project, Yuba County

Dear Mr. Perkins:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

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

Sincerely,

Nancy Gonzalez

Nancy Gonzalez-Lopez
Cultural Resources Analyst

cc: State Clearinghouse

From: Cheryl Epperson <cherylepperson@aol.com>
Sent: Friday, May 14, 2021 12:02 PM
To: Perkins, Kevin <kperkins@CO.YUBA.CA.US>
Cc: bigdogepp1@aol.com
Subject: NOP Meeting 5/12/2021 Responses.

Ron Epperson
Cheryl Epperson
3713 State Hwy 20
Marysville, CA 95901
(530) 749-7407
Cherylepperosn@aol.com
Bigdogepp1@aol.com

May 14, 2021

Yuba County
Attn: Kevin Perkins
Planning Manager
915 8th Street, Suite 123
Marysville, CA 95901

Re: Notice of Preparation of an EIR for the proposed SR 20/Kibbe Road Intersection Project; Scoping Meeting of 5/12/2021

Dear Mr. Perkins

Pursuant to your instructions given at the meeting referenced above, we would like to ask additional questions, submit additional comments, and request documents.

The first and most important question we have is why the Teichert road constructed without permit is being referred to a feature? The road is a road, it is not a wetland, a vernal pond, grove of trees, etc. We find this definition of the road sugar coated nonsense, it is a man made, illegally constructed eyesore too close to an existing legal road that nobody wants to talk about for some reason. Perhaps the county agent who gave permission to Teichert without a permit can elaborate further.

In regards to the documents sent to the land owners within 1000 feet of the EIR study area, please provide the resource and/or additional copies for clearer images with scale of the study area. As all of the study area is important, figures 1-6 and the no action option could be defined more clearly. Are there preliminary blueprints available?

For example, the boundaries. It is very concerning that the most easterly boundary of the proposed study area related to the edge of my parcel appears to end just short at the Cordua Irrigation under crossing of State Hwy 20. Not including this area would be an egregious lack of concern for the 20,000 or more motorists and residents that will encounter land fog at this juncture, experience motorists that ignore the double yellow line and pass illegally as well as how unsafe it is to use our property on a daily basis.

Our point with the above is that the most recent “improvements” to that area are lacking, and only serve to add more icing on a lopsided cake, the cake still leans too far upwards for a safe view, obstructed by the hill crossing the irrigation canal. This point has been taken up with Cal Trans by us several times over the years, they have received our emails in this regard as well as heard arguments made by attorneys in the courtroom with the prior litigation. If you would like copies, we can forward them to you.

Not any less important is the amount of road noise, the light from vehicles and the invasion of privacy since the changes and Cal Trans wouldn't erect any protections for us or anyone else after raising the highway an additional 4 feet above the 2 feet we were told was in the scope of work. Cal Trans originally told us they were going to lower the road but then raised it!

As tax payers, We're at a complete loss of the lack of imagination used in the planning and completion of that other project which will tie into your proposal. According to our personal beliefs, adding additional costs to the State of California in litigation to proceed with correction may not be the best course to take currently, thus we haven't proceeded with it.

In this thinking, we propose that the issue is more thoroughly addressed while county is in discussions with Cal Trans now, thus, goodwill in the community is restored, safety is improved and the Eppersons feel a little less abused by the powers that be and that litigation genie stays in its bottle.

In reviewing all of the features provided, we congratulate you on tossing in just about all the options possible into the hat (opposed to last time we had this go-around)! However, under the do nothing, change nothing option, it is our sincerest hope that somebody at the county has considered or will at least consider keeping a by-pass around town as an option. Without listing a multitude of bullet points for this idea (which has been explored by Cal Trans back in the 20 year TCCR plan they had for our area), our feeling is that a bypass might benefit just about everyone county wide as long as it doesn't encroach upon the landowners too much with forced eminent domain proceedings and unfair recovery payments.

Our firm belief and conviction about this issue is bigger than the “in my backyard/front yard conundrum. This effects all residents county wide, including myself. It's more planning better for growth and resource management issue.

We have one of the cheapest places in the state to live, we have a small but important group of businesses along the congested routes in and out of town. Surely, not as many vehicles passing through the area are spending there money at the businesses as we would like. Perhaps shifting the pass thru traffic around the town and improving life for the citizens would improve life for everyone living here, residents may actually shop here more often, business may grown and tax revenue will increase.

On to the figures........

In regards to figure 1, this overall image of the project location, we would like to know exactly where the little arrow points to on the project site, it would be helpful if lines representing waterways were present and the scale was a little more informative.

In regards to figure 3, Exhibit C, Proposed Intersection Layout, the legend is not descriptive enough. For example, I'm assuming the blue lines are in regards to Right of Way – are these the proposed Right of Ways? Or, are they Right of Ways that exist already? The lines are so close to my parcel, this figure is useless to me for the most part. If the blue lines represent the ROW, when did the county or Cal Trans acquire these ROW's? I do not recall Mr. Matthews including himself with the prior eminent domain power play the county pulled last time, this ROW indicates you want a huge chunk of his very important, food producing land.

One can only guess if the powers that be would be offering him AG land prices for improving a haul road for another business. We have to ask ourselves this question, what if the landowner of the rice field wanted to put a rice selling stand there at the highway? A location such as that would be a valuable asset to a business, perhaps more so than being forced to sell it at dirt cheap prices for benefit another business that the county may favor more? Who is involved with this thought process?

While looking at this map, one has to wonder, why aren't any of the other businesses near the Teichert plant tied into this road? Does Teichert get preferential treatment to highway access since they follow the rules so well? Why aren't there any lines for the other gravel pit or businesses? Are those business going to use the haul road too? Do you have to obtain a special Teichert pass?

Also in figure 3, I see the blue line crosses part of our property next to a vernal, seasonal pond. The experience has been that ROW lines have a way of shifting after land agents come a calling to seek your agreement in such matters. We don't intend to have that land endangered with road improvement or foot traffic during the wet season as we anticipate seeded blue elderberry to germinate during the wet season to encourage habitat for the Valley Longhorn Elderberry Beatles. Cal Trans already hacked up the land around our parcel the last go around, and the mess is still not cleaned up. We would appreciate it greatly if that section of our land remains unmolested by construction activity.

Also, it is advisable that, if/when surveyors and the naturalists come a visiting to our parcel they acquire permission at the house. Unlike last time, where your representative encountered animals in our fenced yard. Bees are in that pasture and trespassers may encounter large livestock, including dogs if that fence is hopped over again. Permission to pass is strongly encouraged to maintain the peace and safety of all (if you please).

In regards to the current use of Kibbe Road, North of Hwy 20, there is a portable business on the corner there. Accordingly, that business enjoys revenue from travelers and local workers up and down the highway. It might be that they have a temporary boon in earnings at the beginning of the project by construction workers eating there, but you don't have to look very far ahead to see financial woe and ruin if they are permanently evicted form that sight regardless if they own the parcel or not. One way or another, surely, this project will evict them eventually – will they receive compensation? Maybe Teichert would like to help them reestablish somewhere else, how about by the corner of Hwy 20 and Walnut or at the plant?

What is the plan for the bus stop? Is the county going to make the small children walk up to Spring Valley Road on the side of the highway? Experience tells us the county has already put all of us out transporting children for educational purposes. I have fully grown children I will not allow to walk along this highway let alone little ones. Since filling in for animal control scraping of deceased wildlife from the highway for the last 18 years we can tell you cars travel too fast, too recklessly and guess where the most animals die? At the canal crossing!

As mentioned in the meeting on 5/12/2021 the most NE corner of the figure is so small and blurry one cannot determine the end of the project as illustrated. This, again, is where we insist for safety reasons the canal crossing is included if not currently, in the immediate future of the study.

While our area is studied, we strongly encourage the county to take into consideration this has been an extraordinary year with Covid restrictions as well as lack of typical rainfall. Our concern is that the study of noise, light, drainage, ground water retention and environmental issues will not be good for an aggregate survey of conditions. For example, RV's haven't made their annual migration up and down Hwy 20 as they typically do. Weather factors so far this year are minimal compared to years past. Land fog is very typical for our area, but not this year. Not to mention so many cars are not on the road as they are confined to their homes whether from illness, unemployment or working at home as forced by state/county mandate.

Figure 4, Proposed Intersection Layout with Roundabout. we realize and again thank you for putting out as many options as possible! However, we have yet to receive agreement from anyone that a roundabout is a good idea. After talking with a variety of drivers with a good range of driving experience, not one thinks this option is prudent. We really have no desire to have where we lived plastered all over YouTube with a video the pandemonium this will create, just like that other rural highway roundabout in Tennessee.
The nuisance of this option as well as a traffic signal are just a horror waiting to happen for residents from the backed up traffic. First the idiotic drivers that can't obey the speed limit, signs, passing rules etc, then the additional company parked or driving oh-so-slowly in front of homes spewing fumes into our yards and house not to mention the delightful assortment of music genres we get to experience every summer permeating us in slower motion canceling out what peace we thought we had before hand. We will probably all be able to play baseball at night from all the lighting that will invade us.

Figure 5, We're interested in how this pans out in the study, how it effects other landowners.

Figure 6, If memory serves, this option wasn't explored last time and should have been, we look forward to the findings and appreciate the people involved suggesting it the last time it was overlooked.

Figure 2, the last page of the packet, the map has labeled the parcel owned by Mr. Matthews (I believe) as Grazing/Pasture, isn't that rice land? Pretty sure that land is growing rice currently.

Although the time period for comments is listed as ending on 5/20/2021, it's clear that this project may have more questions coming, we would like to have our additional questions considered should they come up past the 5/20/21 deadline as this potential project evolves.

In closing, regarding the Zoom meeting, in hindsight we would have rather used the telephone feature rather than the computer feature and will probably do so in the future. The reason being is that there is a huge difference typing on little lap tops rather than more accommodating desk tops that do not have cameras. It is preferable, and if at all possible, we would like to exercise our rights to vocalize the concerns in the public forum. Please consider the needs of citizens that may not feel comfortable using the methods of communication imposed on everyone during the “pandemic”.

Thank you for fitting in and recording our typed comments. Certainly it seemed like the appropriate time allowance protocol for everyone, but, even though we have the ability to type 70 wpm, most of the tiny devices are not suitable for us to use and therefore a few thoughts and comments weren't as complete as they could have been.

One last question we do have, if possible, could you please forward the guidelines (if there are any) for the process of constructing a billboard on private owned land? We are in unincorporated Marysville, if it is a city manner please advise.

Sincerely,

Ron Epperson
Cheryl Epperson

From: Anna Starkey <astarkey@auburnrancheria.com>
Sent: Tuesday, May 18, 2021 3:40 PM
To: Perkins, Kevin <kperkins@CO.YUBA.CA.US>
Subject: NOP of EIR: SR 20/ Kibbe Road Intersection Project

Dear Mr. Perkins,
On behalf of the United Auburn Indian Community, thank you for the notification of the preparation of a recirculated EIR that will analyze cultural and tribal cultural resources. In the EIR, like in the Initial Study that was prepared, we ask that the Cultural Resources and Tribal Cultural Resources (TCR) chapter are separate and distinct, and not combined into a single chapter. We ask that the TCR chapter does not include a rehash of the same background information as the Cultural Resources chapter. Rather that it focuses on the contemporary tribal communities that stewards and cares for their ancestors sites. Please let me know if you require additional details on what is expected in the TCR chapter. Also in the IS that was prepared, it states that UAIC was provided with an AB 52 notification on March 31, 2021. UAIC has not received this notification and we ask that this is reflected appropriately in your documents. If we had received a notification, we would have responded in a timely manner. Lastly, our records do not indicate the presence of any known tribal cultural resources in the project area.

Thank you and I will be looking for the AB52 consultation notification.
Sincerely,
Anna Starkey

The United Auburn Indian Community is now accepting electronic consultation request, project notifications, and requests for information! Please fill out and submit through our website. Do not mail hard copy letters or documents. https://auburnrancheria.com/programs-services/tribal-preservation

Anna M. Starkey, M.A., RPA
Cultural Regulatory Specialist
Tribal Historic Preservation Department| UAIC
10720 Indian Hill Road
Auburn, CA 95603
Direct line: (916) 251-1565 | Cell: (530) 863-6503
astarkey@auburnrancheria.com |www.auburnrancheria.com

APPENDIX C

SMAQMD Construction Mitigation Program - Results

Version 9.0

11/30/2021 13:47

Project Name: Kibbe Road

Overall Life-Of-Project (LOP) Emissions

Project Start Date: 04/15/2021

Comparison of your project fleet's emissions with the statewide average for construction equipment

		NOx	ROG	PM10	PM2.5
	Project fleet and statewide average construction equipment emission rates (g/bhp-hr)				
Your fleet's emission factors based on data entered >>	Project Fleet	1.55	0.16	0.04	0.03
Calculator estimated statewide average emission factors >>	Statewide Average	3.01	0.40	0.19	0.17
	Absolute Reduction	1.46	0.24	0.15	0.14
	Percent Reduction	**48%**	**60%**	**80%**	**80%**
	Project fleet construction equipment average daily emissions (lbs/day)				
Your fleet's average daily emissions based on data entered >>	Project Fleet	13.41	1.33	0.33	0.31
Calculator estimated average daily fleet emissions using statewide average emission factors >>	Statewide Average	26.04	3.35	1.69	1.59

Project haul truck(s) daily emissions

		NOx	ROG	PM10	PM2.5
	Project haul truck(s) average daily emissions (lbs/day)				
	Project Fleet	**N/A**	**N/A**	**N/A**	**N/A**

Project construction equipment and haul truck total emissions

		NOx	ROG	PM10	PM2.5
	Project total construction equipment and haul truck average daily emissions (lbs/day)				
Days Equipment will be Used on the Project: 30	Construction Equipment	13.41	1.33	0.33	0.31
Days of Hauling:	Haul Truck(s)	N/A	N/A	N/A	N/A
	Total	**13.41**	**1.33**	**0.33**	**0.31**

NOTE: No haul truck VMT information provided.

SMAQMD Construction Mitigation Program - Project Input Data Request

INSTRUCTIONS:
(This tab allows user to provide project specific "Life-of-Project" and "Monthly Reporting" input data)
1. Please first select the input data type in cell D14 before filling in any other information.
2. After selecting the input data type, fill in all yellow highlighted cells from row 16 to row 31 (project information).
3. Fill in construction equipment and haul-truck input data in following sections:
 A1: Construction Equipment Input Data A2: Construction Equipment VDECs Data (for ULSD equipment)
 B: Haul Truck Emissions Calculation Input Data
4. Use the "Clear Input" button to clear the input and begin a new calculation.

To calculate overall project emissions, please select "Life-Of-Project (LOP) data"; for monthly reporting emissions, please select "Monthly reporting data" in cell D14.

Input Data Type:	**Life-Of-Project (LOP) data**

Clear Input

Submittal Date (mm/dd/yyyy):	11/10/2021
Contractor (Company):	A. Teichert & Son
Primary Contractor (Yes or No):	Yes
Mailing Address:	PO Box 15002, Sacramento, CA 95851
Equipment List Contact Person:	Patrick Maul
Phone #:	(916) 386-3773
Email address:	pmaul@teichert
PROJECT NAME:	Kibbe Road
Location (address or intersection):	
Project Start Date:	4/15/2021
Estimated days equipment will be used on the project (start to finish, not contract days):	30
Acres of the Project:	
On-site Contact Person:	
Phone #:	
Email address:	

A1. Construction Equipment Input Data

Current Calendar Year: 2021

LINE	Contractor (Company)	Equipment Mfgt. (Example: CAT)	Equipment Model No. (Example: 320L)	Type of Equipment (Example: Excavators)	CARB Equipment ID#	Contractor Equipment ID#	Engine Model Year	Engine HP	Estimated Total Hours of Operation for the Project	Engine Type or Fuel Use	Weekly Visual Inspection Date for this month (Yes or No)	If "Yes" Selected in Column M, Please Provide Inspection Date for this month
1	TEICHERT	CAT	631G	Scrapers	VV54V97	TEF0260	2003	490	36	ULSD		
2	TEICHERT	CAT	631G	Scrapers	XP4L74	TEF0261	2003	490	72	ULSD		
3	TEICHERT	CAT	D10T	Crawler Tractors	UW3U97	TDJ0253	2017	570	72	ULSD		
4	TEICHERT	CAT	D8T	Crawler Tractors	FA7Y64	TDM0246	2013	355	36	ULSD		
5	TEICHERT	CAT	D8T	Crawler Tractors	PY3P79	TDM0249	2015	355	36	ULSD		
6	TEICHERT	CAT	825K	Other Construction Equipment	HY3P99	RKB0063	2014	405	36	ULSD		
7	TEICHERT	CAT	14M	Graders	LU8S47	MHG0243	2013	295	144	ULSD		
8	TEICHERT	CAT	CS56	Rollers	JF5V75	RVL0207	2012	156	108	ULSD		
9	TEICHERT	CAT	CB54	Rollers	XF4R75	RVD0223	2019	137	24	ULSD		

10	TEICHERT	CAT	CB64	Rollers	CR8A64	RVD0214	2018	142	24	ULSD		
11	TEICHERT	CEDAR RAPIDS	CR552	Asphalt Pavers	FD3B66	FBD0078	2017	260	24	ULSD		
12	TEICHERT	JOHN DEERE	210K	Tractors/Loaders/Backhoes	DN4F46	LBC0590	2015	88	96	ULSD		
13	TEICHERT	CAT	336F	Excavators	VM5C66	SGF0254	2018	303	64	ULSD		
14	TEICHERT	VOLVO	L150H	Rubber Tired Loaders	RV8S63	LBP0640	2018	295	64	ULSD		
15	TEICHERT	CAT	450F	Tractors/Loaders/Backhoes	SU7D58	LBD0601	2015	128	64	ULSD		
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A2. Construction Equipment: Verified Diesel Emission Control Strategy (VDECs) Information

Input Status & Notes
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		Please Fill-in Data in Column S and T if "Yes" is Selected in Column R. If "Other" is selected in Co VDECs NOx and PM Emissions reduction percentage in column W a			
LINE	Does this Equipment have ARB VDECs?	Choose the Installed VDEC, if applicable	If "Other" Selected in Column S, Please Provide Name of the Device	VDECs NOx Emissions Reduction Percentage	VDECs PM Emissions Reduction Percentage
1	No				
2	No				
3	No				
4	No				
5	No				
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Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Kibbe Road EIR

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.05	0.71	0.06	6.66	0.03	6.63	1.39	0.01	1.38	0.00	205.09	0.00	0.01	206.84
Grading/Excavation	3.48	27.73	64.72	9.13	2.50	6.63	3.12	1.74	1.38	0.22	22,311.93	1.66	2.68	23,151.99
Drainage/Utilities/Sub-Grade	2.42	25.50	40.62	8.37	1.75	6.63	2.64	1.26	1.38	0.14	14,406.56	1.08	1.68	14,933.87
Paving	1.26	15.89	21.93	1.00	1.00	0.00	0.71	0.71	0.00	0.08	8,201.48	0.63	0.96	8,503.33
Maximum (pounds/day)	3.48	27.73	64.72	9.13	2.50	6.63	3.12	1.74	1.38	0.22	22,311.93	1.66	2.68	23,151.99
Total (tons/construction project)	0.03	0.30	0.59	0.10	0.02	0.07	0.03	0.02	0.02	0.00	206.09	0.02	0.02	213.77

Notes:
Project Start Year -> 2022
Project Length (months) -> 1
Total Project Area (acres) -> 9
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> No

Phase	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	280	0
Grading/Excavation	2,800	0	4,320	0	880	0
Drainage/Utilities/Sub-Grade	0	1750	0	2,700	600	0
Paving	0	1000	0	1,540	480	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Kibbe Road EIR

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.25
Grading/Excavation	0.02	0.16	0.38	0.05	0.01	0.04	0.02	0.01	0.01	0.00	132.53	0.01	0.02	124.76
Drainage/Utilities/Sub-Grade	0.01	0.10	0.16	0.03	0.01	0.03	0.01	0.01	0.01	0.00	57.05	0.00	0.01	53.65
Paving	0.00	0.03	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.24	0.00	0.00	15.27
Maximum (tons/phase)	0.02	0.16	0.38	0.05	0.01	0.04	0.02	0.01	0.01	0.00	132.53	0.01	0.02	124.76
Total (tons/construction project)	0.03	0.30	0.59	0.10	0.02	0.07	0.03	0.02	0.02	0.00	206.09	0.02	0.02	193.93

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 9.0.0**

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Kibbe Road EIR	
Construction Start Year	2022	Enter a Year between 2014 and 2040 (inclusive)
Project Type	2	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	1.20	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.97	miles
Total Project Area	8.78	acres
Maximum Area Disturbed/Day	0.33	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	13.00		2800.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade	13.00		1750.00
	Paving	13.00		1000.00

Mitigation Options

On-road Fleet Emissions Mitigation	2010 and Newer On-road Vehicles Fleet	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.12		1/1/2022
Grading/Excavation		0.54		1/5/2022
Drainage/Utilities/Sub-Grade		0.36		1/22/2022
Paving		0.18		2/2/2022
Totals (Months)	1			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions **User Input**	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation	20.00	30.00		216	4320.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grading/Excavation (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Paving (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.38	4.03	31.22	1.07	0.47	0.16	16,653.35	0.02	2.62	17,433.86
Tons per const. Period - Grading/Excavation	0.00	0.02	0.19	0.01	0.00	0.00	98.92	0.00	0.02	103.56
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.02	0.19	0.01	0.00	0.00	98.92	0.00	0.02	103.56

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions **User Input**	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade	20.00	30.00		135	2700.00
Miles/round trip: Paving	20.00	30.00		77	1540.00

2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grading/Excavation (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Paving (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.24	2.52	19.52	0.67	0.29	0.10	10,408.34	0.01	1.64	10,896.16
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.08	0.00	0.00	0.00	41.22	0.00	0.01	43.15
Pounds per day - Paving	0.14	1.44	11.13	0.38	0.17	0.06	5,936.61	0.01	0.93	6,214.85
Tons per const. Period - Paving	0.00	0.00	0.02	0.00	0.00	0.00	11.75	0.00	0.00	12.31
Total tons per construction project	0.00	0.01	0.10	0.00	0.00	0.00	52.97	0.00	0.01	55.45

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions **User Input**	User Override of Worker Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT
Miles/ one-way trip		20		
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		7	14	280.00
No. of employees: Grading/Excavation		22	44	880.00
No. of employees: Drainage/Utilities/Sub-Grade		15	30	600.00
No. of employees: Paving		12	24	480.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grading/Excavation (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Paving (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grubbing/Land Clearing (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Grading/Excavation (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Draining/Utilities/Sub-Grade (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Paving (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43

Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.05	0.71	0.06	0.03	0.01	0.00	205.09	0.00	0.01	206.84
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.27
Pounds per day - Grading/Excavation	0.14	2.22	0.19	0.09	0.04	0.01	644.58	0.02	0.02	650.08
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	0.00	3.83	0.00	0.00	3.86
Pounds per day - Drainage/Utilities/Sub-Grade	0.10	1.51	0.13	0.06	0.03	0.00	439.49	0.01	0.01	443.23
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	1.74	0.00	0.00	1.76
Pounds per day - Paving	0.08	1.21	0.11	0.05	0.02	0.00	351.59	0.01	0.01	354.59
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.70
Total tons per construction project	0.00	0.02	0.00	0.00	0.00	0.00	6.54	0.00	0.00	6.59

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust		0		5	0		8.00	0.00
Grading/Excavation - Exhaust		0		5	0		8.00	0.00
Drainage/Utilities/Subgrade		0		5	0		8.00	0.00
Paving		0		5	0		8.00	0.00

2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grading/Excavation (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Paving (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.33	6.63	0.01	1.38	0.00
Fugitive Dust - Grading/Excavation		0.33	6.63	0.04	1.38	0.01
Fugitive Dust - Drainage/Utilities/Subgrade		0.33	6.63	0.03	1.38	0.01

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2		Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1		Model Default Tier	Crawler Tractors	0.98	4.63	12.02	0.45	0.42	0.02	1,518.07	0.49	0.01	1,534.44
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3		Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Rollers	0.17	1.86	1.73	0.10	0.09	0.00	254.10	0.08	0.00	256.84
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2		Model Default Tier	Scrapers	1.64	12.75	17.89	0.70	0.64	0.03	2,940.59	0.95	0.03	2,972.29
0.00	2		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	4		Model Default Tier	Tractors/Loaders/Backhoes	0.16	2.24	1.68	0.09	0.08	0.00	301.24	0.10	0.00	304.48
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	2.95	21.48	33.30	1.34	1.23	0.05	5,014.00	1.62	0.05	5,068.05
	Grading/Excavation	tons per phase	0.02	0.13	0.20	0.01	0.01	0.00	29.78	0.01	0.00	30.10

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	Program-estimate				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Air Compressors	0.27	2.42	1.88	0.11	0.11	0.00	375.26	0.02	0.00	376.72
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Rollers	0.33	3.72	3.45	0.20	0.18	0.01	508.21	0.16	0.00	513.68
0.00	1		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1		Model Default Tier	Scrapers	0.82	6.38	8.94	0.35	0.32	0.02	1,470.30	0.48	0.01	1,486.14
0.00	2		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	3		Model Default Tier	Tractors/Loaders/Backhoes	0.66	8.95	6.70	0.36	0.33	0.01	1,204.96	0.39	0.01	1,217.92
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	pounds per day	2.08	21.47	20.98	1.02	0.94	0.04	3,558.72	1.05	0.03	3,594.47
	Drainage/Utilities/Sub-Grade	tons per phase	0.01	0.09	0.08	0.00	0.00	0.00	14.09	0.00	0.00	14.23

Paving	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	Program-estimate			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1		Model Default Tier	Pavers	0.21	2.88	2.10	0.10	0.09	0.00	455.26	0.15	0.00	460.17
1.00	1		Model Default Tier	Paving Equipment	0.18	2.55	1.74	0.08	0.08	0.00	394.47	0.13	0.00	398.73
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	2		Model Default Tier	Rollers	0.50	5.58	5.18	0.30	0.27	0.01	762.31	0.25	0.01	770.53
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			Model Default Tier	Scrapers		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2		Model Default Tier	Signal Boards		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Tractors/Loaders/Backhoes		0.16	2.24	1.68	0.09	0.08	0.00	301.24	0.10	0.00	304.48
			Model Default Tier	Trenchers		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment		If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier		Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day		1.05	13.25	10.69	0.57	0.53	0.02	1,913.28	0.62	0.02	1,933.90
	Paving			tons per phase		0.00	0.03	0.02	0.00	0.00	0.00	3.79	0.00	0.00	3.83
Total Emissions all Phases (tons per construction period) =>						0.03	0.24	0.30	0.01	0.01	0.00	47.66	0.02	0.00	48.17

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Kibbe Road EIR Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	22.48	0.00	22.48	4.68	0.00	4.68	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	22.48	0.00	22.48	4.68	0.00	4.68	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.80	10.15	7.01	22.85	0.38	22.48	5.03	0.35	4.68	0.02	1,477.76	0.38	0.01	1,491.08
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	0.00	0.00
Maximum (pounds/day)	0.80	10.15	7.01	22.85	0.38	22.48	5.03	0.35	4.68	0.02	1,477.76	0.38	0.01	1,491.08
Total (tons/construction project)	0.00	0.01	0.01	0.08	0.00	0.07	0.02	0.00	0.02	0.00	1.73	0.00	0.00	1.75

Notes: Project Start Year -> 2022
Project Length (months) -> 0
Total Project Area (acres) -> 9
Maximum Area Disturbed/Day (acres) -> 1
Water Truck Used? -> No

Phase	Total Material Imported/Exported Volume (yd^3/day): Soil	Asphalt	Daily VMT (miles/day): Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Kibbe Road EIR Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.04	0.00	0.04	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.01	0.01	0.03	0.00	0.03	0.01	0.00	0.01	0.00	1.73	0.00	0.00	1.59
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	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.01	0.04	0.00	0.04	0.01	0.00	0.01	0.00	1.73	0.00	0.00	1.59
Total (tons/construction project)	0.00	0.01	0.01	0.08	0.00	0.07	0.02	0.00	0.02	0.00	1.73	0.00	0.00	1.59

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 9.0.0**

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Kibbe Road EIR	
Construction Start Year	2022	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	0.36	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.97	miles
Total Project Area	8.78	acres
Maximum Area Disturbed/Day	1.12	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

Mitigation Options

On-road Fleet Emissions Mitigation	2010 and Newer On-road Vehicles Fleet	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.04		1/1/2022
Grading/Excavation		0.16		1/3/2022
Drainage/Utilities/Sub-Grade		0.11		1/8/2022
Paving		0.05		1/12/2022
Totals (Months)	0			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions **User Input**	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

2010+ Model Year Mitigation Option Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grading/Excavation (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Paving (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions **User Input**	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

2010+ Model Year Mitigation Option Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grading/Excavation (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Paving (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions **User Input**	User Override of Worker Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT
Miles/ one-way trip				
One-way trips/day				
No. of employees: Grubbing/Land Clearing			0	0.00
No. of employees: Grading/Excavation			0	0.00
No. of employees: Drainage/Utilities/Sub-Grade			0	0.00
No. of employees: Paving			0	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grading/Excavation (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Paving (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grubbing/Land Clearing (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Grading/Excavation (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Draining/Utilities/Sub-Grade (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Paving (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43

Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust								0.00
Grading/Excavation - Exhaust								0.00
Drainage/Utilities/Subgrade								0.00
Paving								0.00

2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grading/Excavation (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Paving (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing			22.48	0.01	4.68	0.00
Fugitive Dust - Grading/Excavation			22.48	0.04	4.68	0.01
Fugitive Dust - Drainage/Utilities/Subgrade			22.48	0.03	4.68	0.01

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Air Compressors	0.27	2.42	1.88	0.11	0.11	0.00	375.26	0.02	0.00	376.72
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.20	3.26	1.78	0.09	0.08	0.01	500.02	0.16	0.00	505.41
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.33	4.48	3.35	0.18	0.17	0.01	602.48	0.19	0.01	608.96
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	pounds per day	0.80	10.15	7.01	0.38	0.35	0.02	1,477.76	0.38	0.01	1,491.08
	Drainage/Utilities/Sub-Grade	tons per phase	0.00	0.01	0.01	0.00	0.00	0.00	1.73	0.00	0.00	1.75

Paving	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			Model Default Tier	Scrapers		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier		Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions all Phases (tons per construction period) =>						0.00	0.01	0.01	0.00	0.00	0.00	1.73	0.00	0.00	1.75

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

BREEZE AERMOD Model Results

Max. Annual (5 YEARS) Results of Pollutant: PM25 (ug/m**3)

Group ID	High	Avg. Conc.	UTM		Elev.	Hill Ht.	Flag Ht.	Rec. Type	Grid ID
			East (m)	North (m)	(m)	(m)	(m)		
ALL	1ST	0.00574	630996.70	4341530.10	0.00	0.00	1.80	DC	
	2ND	0.00567	630996.70	4341525.10	0.00	0.00	1.80	DC	
	3RD	0.00560	630996.70	4341520.10	0.00	0.00	1.80	DC	
	4TH	0.00553	630996.70	4341515.10	0.00	0.00	1.80	DC	
	5TH	0.00547	630996.70	4341510.10	0.00	0.00	1.80	DC	
	6TH	0.00540	630996.70	4341505.10	0.00	0.00	1.80	DC	
	7TH	0.00529	631001.70	4341530.10	0.00	0.00	1.80	DC	
	8TH	0.00524	631001.70	4341525.10	0.00	0.00	1.80	DC	
	9TH	0.00518	631001.70	4341520.10	0.00	0.00	1.80	DC	
	10TH	0.00513	631001.70	4341515.10	0.00	0.00	1.80	DC	

Highest Results of Pollutant: PM25

Avg. Per.	Grp ID	High	Type	Val	Units	Date	UTM		Elev.	Hill Ht.	Flag Ht.	Rec. Type	Grid ID
						YYMMDDHH	East (m)	North (m)	(m)	(m)	(m)		
1-HR	ALL	1ST	Avg. Conc.	0.48041	ug/m**3	10120621	630982.40	4341718.60	0.00	0.00	1.80	DC	

Summary of Total Messages

#	Message Type
0	Fatal Error Message(s)
5	Warning Message(s)
9638	Informational Message(s)
43872	Hours Were Processed
6847	Calm Hours Identified
2791	Missing Hours Identified (6.36 Percent)

Error & Warning Messages

Msg. Type	Pathway	Ref. #	Description
WARNING	CO	W276	Special proc for 1h-NO2/SO2 24hPM25 NAAQS disabled PM25 H1H
WARNING	CO	W363	Multiyr 24h/Ann PM25 processing not applicable for PM25 H1H
WARNING	OU	W565	Possible Conflict With Dynamically Allocated FUNIT PLOTFILE

WARNING	OU	W565	Possible Conflict With Dynamically Allocated FUNIT PLOTFILE
WARNING	MX	W481	Data Remaining After End of Year. Number of Hours= 48

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AERMOD Model Options

Model Options

Pathway	Keyword	Description	Value
CO	TITLEONE	Project title 1	Kibbe Road Project
CO	TITLETWO	Project title 2	
CO	MODELOPT	Model options	DFAULT,CONC,NODRYDPLT,NOWETDPLT
CO	AVERTIME	Averaging times	1,ANNUAL
CO	URBANOPT	Urban options	
CO	POLLUTID	Pollutant ID	PM25 H1H
CO	HALFLIFE	Half life	
CO	DCAYCOEF	Decay coefficient	
CO	FLAGPOLE	Flagpole receptor heights	1.8
CO	RUNORNOT	Run or Not	RUN
CO	EVENTFIL	Event file	F
CO	SAVEFILE	Save file	F
CO	INITFILE	Initialization file	
CO	MULTYEAR	Multiple year option	N/A
CO	DEBUGOPT	Debug options	N/A
CO	ERRORFIL	Error file	F
SO	ELEVUNIT	Elevation units	METERS
SO	EMISUNIT	Emission units	N/A
RE	ELEVUNIT	Elevation units	METERS
ME	SURFFILE	Surface met file	C:\Users\bshea\Desktop\METEOR~1\BEALEA~1.SFC
ME	PROFFILE	Profile met file	C:\Users\bshea\Desktop\METEOR~1\BEALEA~1.PFL
ME	SURFDATA	Surf met data info.	93216 2009
ME	UAIRDATA	U-Air met data info.	3198 2009
ME	SITEDATA	On-site met data info.	
ME	PROFBASE	Elev. above MSL	34.4
ME	STARTEND	Start-end met dates	
ME	WDROTATE	Wind dir. rot. adjust.	
ME	WINDCATS	Wind speed cat. max.	
ME	SCIMBYHR	SCIM sample params	
EV	DAYTABLE	Print summary opt.	N/A
OU	EVENTOUT	Output info. level	N/A

OU	DAYTABLE	Print summary opt.	

Source Parameter Tables

All Sources

Source ID / Pollutant ID	Source Type	Description	UTM		Elev.	Emiss. Rate	Emiss. Units	Release Height
			East (m)	North (m)	(m)			(m)
DLJZY002	VOLUME	Roadway Segment 1	630932.3	4340989.5	0	8.275783E-06	(g/s)	2.3
DLJZY003	VOLUME	Roadway Segment 1	630932.3	4341007.5	0	8.275783E-06	(g/s)	2.3
DLJZY004	VOLUME	Roadway Segment 1	630932.3	4341025.5	0	8.275783E-06	(g/s)	2.3
DLJZY005	VOLUME	Roadway Segment 1	630932.3	4341043.5	0	8.275783E-06	(g/s)	2.3
DLJZY006	VOLUME	Roadway Segment 1	630932.3	4341061.5	0	8.275783E-06	(g/s)	2.3
DLJZY007	VOLUME	Roadway Segment 1	630932.3	4341079.5	0	8.275783E-06	(g/s)	2.3
DLJZY008	VOLUME	Roadway Segment 1	630932.3	4341097.5	0	8.275783E-06	(g/s)	2.3
DLJZY009	VOLUME	Roadway Segment 1	630932.3	4341115.5	0	8.275783E-06	(g/s)	2.3
DLJZY00A	VOLUME	Roadway Segment 1	630932.3	4341133.5	0	8.275783E-06	(g/s)	2.3
DLJZY00B	VOLUME	Roadway Segment 1	630932.3	4341151.5	0	8.275783E-06	(g/s)	2.3
DLJZY00C	VOLUME	Roadway Segment 1	630932.3	4341169.5	0	8.275783E-06	(g/s)	2.3
DLJZY00D	VOLUME	Roadway Segment 1	630932.3	4341187.5	0	8.275783E-06	(g/s)	2.3
DLJZY00E	VOLUME	Roadway Segment 1	630932.3	4341205.5	0	8.275783E-06	(g/s)	2.3
DLJZY00F	VOLUME	Roadway Segment 1	630932.3	4341223.5	0	8.275783E-06	(g/s)	2.3
DLJZY00G	VOLUME	Roadway Segment 1	630932.3	4341241.5	0	8.275783E-06	(g/s)	2.3
DLJZY00H	VOLUME	Roadway Segment 1	630932.3	4341259.5	0	8.275783E-06	(g/s)	2.3
DLJZY00I	VOLUME	Roadway Segment 1	630932.3	4341277.5	0	8.275783E-06	(g/s)	2.3
DLJZY00J	VOLUME	Roadway Segment 1	630932.3	4341295.5	0	8.275783E-06	(g/s)	2.3
DLJZY00K	VOLUME	Roadway Segment 1	630932.3	4341313.5	0	8.275783E-06	(g/s)	2.3
DLJZY00L	VOLUME	Roadway Segment 1	630932.3	4341331.5	0	8.275783E-06	(g/s)	2.3
DLJZY00M	VOLUME	Roadway Segment 1	630932.3	4341349.5	0	8.275783E-06	(g/s)	2.3
DLJZY00N	VOLUME	Roadway Segment 1	630932.3	4341367.5	0	8.275783E-06	(g/s)	2.3
DLJZY00O	VOLUME	Roadway Segment 1	630932.3	4341385.5	0	8.275783E-06	(g/s)	2.3
DLJZY00P	VOLUME	Roadway Segment 1	630932.3	4341403.5	0	8.275783E-06	(g/s)	2.3
DLJZY00Q	VOLUME	Roadway Segment 1	630932.3	4341421.5	0	8.275783E-06	(g/s)	2.3
DLJZY00R	VOLUME	Roadway Segment 1	630932.3	4341439.5	0	8.275783E-06	(g/s)	2.3
DLJZY00S	VOLUME	Roadway Segment 1	630932.3	4341457.5	0	8.275783E-06	(g/s)	2.3
DLJZY00T	VOLUME	Roadway Segment 1	630932.3	4341475.5	0	8.275783E-06	(g/s)	2.3
DLJZY00U	VOLUME	Roadway Segment 1	630935.8	4341493.0	0	8.275783E-06	(g/s)	2.3
DLJZY00V	VOLUME	Roadway Segment 1	630940.9	4341510.2	0	8.275783E-06	(g/s)	2.3
DLJZY00W	VOLUME	Roadway Segment 1	630946.0	4341527.5	0	8.275783E-06	(g/s)	2.3
DLJZY00X	VOLUME	Roadway Segment 1	630951.2	4341544.7	0	8.275783E-06	(g/s)	2.3
DLJZY00Y	VOLUME	Roadway Segment 1	630952.2	4341562.6	0	8.275783E-06	(g/s)	2.3
DLJZY00Z	VOLUME	Roadway Segment 1	630952.7	4341580.6	0	8.275783E-06	(g/s)	2.3

DLJZY010	VOLUME	Roadway Segment 1	630953.2	4341598.6	0	8.275783E-06	(g/s)	2.3
DLJZY011	VOLUME	Roadway Segment 1	630953.6	4341616.6	0	8.275783E-06	(g/s)	2.3
DLJZY012	VOLUME	Roadway Segment 1	630954.1	4341634.6	0	8.275783E-06	(g/s)	2.3
DLJZY015	VOLUME	Roadway Segment 2	630222.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY016	VOLUME	Roadway Segment 2	630240.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY017	VOLUME	Roadway Segment 2	630258.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY018	VOLUME	Roadway Segment 2	630276.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY019	VOLUME	Roadway Segment 2	630294.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01A	VOLUME	Roadway Segment 2	630312.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01B	VOLUME	Roadway Segment 2	630330.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01C	VOLUME	Roadway Segment 2	630348.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01D	VOLUME	Roadway Segment 2	630366.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01E	VOLUME	Roadway Segment 2	630384.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01F	VOLUME	Roadway Segment 2	630402.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01G	VOLUME	Roadway Segment 2	630420.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01H	VOLUME	Roadway Segment 2	630438.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01I	VOLUME	Roadway Segment 2	630456.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01J	VOLUME	Roadway Segment 2	630474.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01K	VOLUME	Roadway Segment 2	630492.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01L	VOLUME	Roadway Segment 2	630510.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01M	VOLUME	Roadway Segment 2	630528.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01N	VOLUME	Roadway Segment 2	630546.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01O	VOLUME	Roadway Segment 2	630564.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01P	VOLUME	Roadway Segment 2	630582.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01Q	VOLUME	Roadway Segment 2	630600.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01R	VOLUME	Roadway Segment 2	630618.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01S	VOLUME	Roadway Segment 2	630636.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01T	VOLUME	Roadway Segment 2	630654.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01U	VOLUME	Roadway Segment 2	630672.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01V	VOLUME	Roadway Segment 2	630690.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01W	VOLUME	Roadway Segment 2	630708.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01X	VOLUME	Roadway Segment 2	630726.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01Y	VOLUME	Roadway Segment 2	630744.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY01Z	VOLUME	Roadway Segment 2	630762.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY020	VOLUME	Roadway Segment 2	630780.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY021	VOLUME	Roadway Segment 2	630798.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY022	VOLUME	Roadway Segment 2	630816.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY023	VOLUME	Roadway Segment 2	630834.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY024	VOLUME	Roadway Segment 2	630852.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY025	VOLUME	Roadway Segment 2	630870.0	4341645.6	0	6.121E-06	(g/s)	2.3
DLJZY026	VOLUME	Roadway Segment 2	630887.8	4341647.3	0	6.121E-06	(g/s)	2.3
DLJZY027	VOLUME	Roadway Segment 2	630905.5	4341650.7	0	6.121E-06	(g/s)	2.3
DLJZY028	VOLUME	Roadway Segment 2	630923.2	4341654.2	0	6.121E-06	(g/s)	2.3
DLJZY029	VOLUME	Roadway Segment 2	630940.8	4341657.6	0	6.121E-06	(g/s)	2.3
DLJZY02C	VOLUME	Roadway Segment 3	630972.8	4341665.1	0	2.050472E-06	(g/s)	2.3
DLJZY02D	VOLUME	Roadway Segment 3	630989.9	4341670.8	0	2.050472E-06	(g/s)	2.3

DLJZY02E	VOLUME	Roadway Segment 3	631007.0	4341676.5	0	2.050472E-06	(g/s)	2.3
DLJZY02F	VOLUME	Roadway Segment 3	631024.0	4341682.4	0	2.050472E-06	(g/s)	2.3
DLJZY02G	VOLUME	Roadway Segment 3	631039.8	4341691.0	0	2.050472E-06	(g/s)	2.3
DLJZY02H	VOLUME	Roadway Segment 3	631055.6	4341699.6	0	2.050472E-06	(g/s)	2.3
DLJZY02I	VOLUME	Roadway Segment 3	631071.5	4341708.1	0	2.050472E-06	(g/s)	2.3
DLJZY02J	VOLUME	Roadway Segment 3	631087.3	4341716.7	0	2.050472E-06	(g/s)	2.3
DLJZY02K	VOLUME	Roadway Segment 3	631103.1	4341725.3	0	2.050472E-06	(g/s)	2.3
DLJZY02L	VOLUME	Roadway Segment 3	631119.0	4341733.8	0	2.050472E-06	(g/s)	2.3
DLJZY02M	VOLUME	Roadway Segment 3	631134.8	4341742.4	0	2.050472E-06	(g/s)	2.3
DLJZY02N	VOLUME	Roadway Segment 3	631150.6	4341750.9	0	2.050472E-06	(g/s)	2.3
DLJZY02O	VOLUME	Roadway Segment 3	631166.5	4341759.5	0	2.050472E-06	(g/s)	2.3
DLJZY02P	VOLUME	Roadway Segment 3	631182.3	4341768.1	0	2.050472E-06	(g/s)	2.3
DLJZY02Q	VOLUME	Roadway Segment 3	631198.1	4341776.6	0	2.050472E-06	(g/s)	2.3
DLJZY02R	VOLUME	Roadway Segment 3	631214.0	4341785.2	0	2.050472E-06	(g/s)	2.3
DLJZY02S	VOLUME	Roadway Segment 3	631229.8	4341793.8	0	2.050472E-06	(g/s)	2.3
DLJZY02T	VOLUME	Roadway Segment 3	631245.6	4341802.3	0	2.050472E-06	(g/s)	2.3
DLJZY02U	VOLUME	Roadway Segment 3	631261.5	4341810.9	0	2.050472E-06	(g/s)	2.3
DLJZY02V	VOLUME	Roadway Segment 3	631277.3	4341819.5	0	2.050472E-06	(g/s)	2.3
DLJZY02W	VOLUME	Roadway Segment 3	631293.1	4341828.0	0	2.050472E-06	(g/s)	2.3
DLJZY02X	VOLUME	Roadway Segment 3	631308.7	4341837.1	0	2.050472E-06	(g/s)	2.3
DLJZY02Y	VOLUME	Roadway Segment 3	631324.2	4341846.2	0	2.050472E-06	(g/s)	2.3
DLJZY02Z	VOLUME	Roadway Segment 3	631339.7	4341855.4	0	2.050472E-06	(g/s)	2.3
DLJZY030	VOLUME	Roadway Segment 3	631355.2	4341864.5	0	2.050472E-06	(g/s)	2.3
DLJZY031	VOLUME	Roadway Segment 3	631370.7	4341873.7	0	2.050472E-06	(g/s)	2.3
DLJZY032	VOLUME	Roadway Segment 3	631386.2	4341882.8	0	2.050472E-06	(g/s)	2.3
DLJZY033	VOLUME	Roadway Segment 3	631401.7	4341892.0	0	2.050472E-06	(g/s)	2.3
DLJZY034	VOLUME	Roadway Segment 3	631417.2	4341901.1	0	2.050472E-06	(g/s)	2.3
DLJZY035	VOLUME	Roadway Segment 3	631432.7	4341910.3	0	2.050472E-06	(g/s)	2.3
DLJZY036	VOLUME	Roadway Segment 3	631448.2	4341919.4	0	2.050472E-06	(g/s)	2.3
DLJZY037	VOLUME	Roadway Segment 3	631463.7	4341928.6	0	2.050472E-06	(g/s)	2.3

Volume Sources

Source ID / Pollutant ID	Description	UTM		Elev.	Emiss. Rate	Release Height	Init. Lat. Dim.	Init. Vert. Dim.
		East (m)	North (m)	(m)	(g/s)	(m)	(m)	(m)
DLJZY002	Roadway Segment 1	630932.3	4340989.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY003	Roadway Segment 1	630932.3	4341007.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY004	Roadway Segment 1	630932.3	4341025.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY005	Roadway Segment 1	630932.3	4341043.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY006	Roadway Segment 1	630932.3	4341061.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY007	Roadway Segment 1	630932.3	4341079.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY008	Roadway Segment 1	630932.3	4341097.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY009	Roadway Segment 1	630932.3	4341115.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00A	Roadway Segment 1	630932.3	4341133.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00B	Roadway Segment 1	630932.3	4341151.5	0	8.275783E-06	2.3	8.372093	2.139535

DLJZY00C	Roadway Segment 1	630932.3	4341169.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00D	Roadway Segment 1	630932.3	4341187.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00E	Roadway Segment 1	630932.3	4341205.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00F	Roadway Segment 1	630932.3	4341223.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00G	Roadway Segment 1	630932.3	4341241.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00H	Roadway Segment 1	630932.3	4341259.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00I	Roadway Segment 1	630932.3	4341277.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00J	Roadway Segment 1	630932.3	4341295.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00K	Roadway Segment 1	630932.3	4341313.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00L	Roadway Segment 1	630932.3	4341331.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00M	Roadway Segment 1	630932.3	4341349.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00N	Roadway Segment 1	630932.3	4341367.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00O	Roadway Segment 1	630932.3	4341385.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00P	Roadway Segment 1	630932.3	4341403.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00Q	Roadway Segment 1	630932.3	4341421.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00R	Roadway Segment 1	630932.3	4341439.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00S	Roadway Segment 1	630932.3	4341457.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00T	Roadway Segment 1	630932.3	4341475.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00U	Roadway Segment 1	630935.8	4341493.0	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00V	Roadway Segment 1	630940.9	4341510.2	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00W	Roadway Segment 1	630946.0	4341527.5	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00X	Roadway Segment 1	630951.2	4341544.7	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00Y	Roadway Segment 1	630952.2	4341562.6	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY00Z	Roadway Segment 1	630952.7	4341580.6	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY010	Roadway Segment 1	630953.2	4341598.6	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY011	Roadway Segment 1	630953.6	4341616.6	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY012	Roadway Segment 1	630954.1	4341634.6	0	8.275783E-06	2.3	8.372093	2.139535
DLJZY015	Roadway Segment 2	630222.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY016	Roadway Segment 2	630240.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY017	Roadway Segment 2	630258.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY018	Roadway Segment 2	630276.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY019	Roadway Segment 2	630294.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01A	Roadway Segment 2	630312.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01B	Roadway Segment 2	630330.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01C	Roadway Segment 2	630348.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01D	Roadway Segment 2	630366.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01E	Roadway Segment 2	630384.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01F	Roadway Segment 2	630402.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01G	Roadway Segment 2	630420.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01H	Roadway Segment 2	630438.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01I	Roadway Segment 2	630456.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01J	Roadway Segment 2	630474.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01K	Roadway Segment 2	630492.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01L	Roadway Segment 2	630510.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01M	Roadway Segment 2	630528.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535

DLJZY01N	Roadway Segment 2	630546.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01O	Roadway Segment 2	630564.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01P	Roadway Segment 2	630582.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01Q	Roadway Segment 2	630600.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01R	Roadway Segment 2	630618.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01S	Roadway Segment 2	630636.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01T	Roadway Segment 2	630654.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01U	Roadway Segment 2	630672.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01V	Roadway Segment 2	630690.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01W	Roadway Segment 2	630708.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01X	Roadway Segment 2	630726.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01Y	Roadway Segment 2	630744.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY01Z	Roadway Segment 2	630762.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY020	Roadway Segment 2	630780.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY021	Roadway Segment 2	630798.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY022	Roadway Segment 2	630816.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY023	Roadway Segment 2	630834.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY024	Roadway Segment 2	630852.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY025	Roadway Segment 2	630870.0	4341645.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY026	Roadway Segment 2	630887.8	4341647.3	0	6.121E-06	2.3	8.372093	2.139535
DLJZY027	Roadway Segment 2	630905.5	4341650.7	0	6.121E-06	2.3	8.372093	2.139535
DLJZY028	Roadway Segment 2	630923.2	4341654.2	0	6.121E-06	2.3	8.372093	2.139535
DLJZY029	Roadway Segment 2	630940.8	4341657.6	0	6.121E-06	2.3	8.372093	2.139535
DLJZY02C	Roadway Segment 3	630972.8	4341665.1	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02D	Roadway Segment 3	630989.9	4341670.8	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02E	Roadway Segment 3	631007.0	4341676.5	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02F	Roadway Segment 3	631024.0	4341682.4	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02G	Roadway Segment 3	631039.8	4341691.0	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02H	Roadway Segment 3	631055.6	4341699.6	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02I	Roadway Segment 3	631071.5	4341708.1	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02J	Roadway Segment 3	631087.3	4341716.7	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02K	Roadway Segment 3	631103.1	4341725.3	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02L	Roadway Segment 3	631119.0	4341733.8	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02M	Roadway Segment 3	631134.8	4341742.4	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02N	Roadway Segment 3	631150.6	4341750.9	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02O	Roadway Segment 3	631166.5	4341759.5	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02P	Roadway Segment 3	631182.3	4341768.1	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02Q	Roadway Segment 3	631198.1	4341776.6	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02R	Roadway Segment 3	631214.0	4341785.2	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02S	Roadway Segment 3	631229.8	4341793.8	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02T	Roadway Segment 3	631245.6	4341802.3	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02U	Roadway Segment 3	631261.5	4341810.9	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02V	Roadway Segment 3	631277.3	4341819.5	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02W	Roadway Segment 3	631293.1	4341828.0	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02X	Roadway Segment 3	631308.7	4341837.1	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY02Y	Roadway Segment 3	631324.2	4341846.2	0	2.050472E-06	2.3	8.372093	2.139535

DLJZY02Z	Roadway Segment 3	631339.7	4341855.4	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY030	Roadway Segment 3	631355.2	4341864.5	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY031	Roadway Segment 3	631370.7	4341873.7	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY032	Roadway Segment 3	631386.2	4341882.8	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY033	Roadway Segment 3	631401.7	4341892.0	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY034	Roadway Segment 3	631417.2	4341901.1	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY035	Roadway Segment 3	631432.7	4341910.3	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY036	Roadway Segment 3	631448.2	4341919.4	0	2.050472E-06	2.3	8.372093	2.139535
DLJZY037	Roadway Segment 3	631463.7	4341928.6	0	2.050472E-06	2.3	8.372093	2.139535

HARP2 - HRACalc (dated 19044) 7/27/2021 4:04:38 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 30

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 14
16<30 Years Bin: 14
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors

```
Worker adjustment factors enabled: NO

**Fraction at time at home**
3rd Trimester to 16 years: OFF
16 years to 70 years: ON

**********************************
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment.  Please see the input file for
details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk saved to: C:\Users\bshea\Desktop\HARP\Kibbe_CancerRisk.csv
Calculating chronic risk
Chronic risk saved to: C:\Users\bshea\Desktop\HARP\Kibbe_NCChronicRisk.csv
Calculating acute risk
Acute risk saved to: C:\Users\bshea\Desktop\HARP\Kibbe_NCAcuteRisk.csv
HRA ran successfully
```

*HARP - HRACalc v19044 7/27/2021 4:04:38 PM - Cancer Risk - Input File: C:\Users\bshea\Desktop\HARP\Kibbe_HRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBREV	CONC	RISK_SUM	SCENARIO	DETAILS	INH_RISK	SOIL_RISK
1			9901	DieselExhPM	0.00574	4.97E-06	30YrCancerHighEnd_Inh_FAH16to70	*	4.97E-06	0.00E+00

DERMAL_RISK	MMILK_RISK	WATER_RISK	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_RISK	EGG_RISK	1ST_DRIVER
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA

2ND_DRIVER	PASTURE_CONC	FISH_CONC	WATER_CONC
NA	0.00E+00	0.00E+00	0.00E+00

*HARP - HRACalc v19044 7/27/2021 4:04:38 PM - Chronic Risk - Input File: C:\Users\bshea\Desktop\HARP\Kibbe_HRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBREV	CONC	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV
1			9901	DieselExhPM	0.00574	NonCancerChronicHighEnd_Inh	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	DETAILS	INH_CONC	SOIL_DOSE
0.00E+00	1.15E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	*	5.74E-03	0.00E+00

DERMAL_DOSE	MMILK_DOSE	WATER_DOSE	FISH_DOSE	CROP_DOSE	BEEF_DOSE	DAIRY_DOSE	PIG_DOSE	CHICKEN_DOSE	EGG_DOSE
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

1ST_DRIVER	2ND_DRIVER	3RD_DRIVER	PASTURE_CONC	FISH_CONC	WATER_CONC
INHALATION	NA	NA	0.00E+00	0.00E+00	0.00E+00

*HARP - HRACalc v19044 7/27/2021 4:04:38 PM - Acute Risk - Input File: C:\Users\bshea\Desktop\HARP\Kibbe_HRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBREV	CONC	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
1			9901	DieselExhPM	0.48041	NonCancerAcute	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

APPENDIX D

KIBBE ROAD/STATE ROUTE 20 INTERSECTION IMPROVEMENTS PROJECT

BIOLOGICAL RESOURCES ASSESSMENT REPORT

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July 2021

ICF. 2021. *Kibbe Road/State Route 20 Intersection Improvements Project*. July (ICF 00085.21.) Sacramento, CA. Prepared for Teichert Materials, Sacramento, CA.

Contents

Tables and Figures

Acronyms and Abbreviations

BMPs	best management practices
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CNPS	California Native Plant Society's
CNDDB	California Natural Diversity Database
CRPR	California Rare Plant Rank
C.F.R.	Code of Federal Regulations
dbh	diameter at breast height
EIR	Environmental Impact Report
ESAs	Environmentally Sensitive Areas
ESA	federal Endangered Species Act
FR	Federal Register
NWPR	Navigable Waters Protection Rule
OHWM	Ordinary High Water Mark
RWQCBs	Regional Water Quality Control Boards
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
U.S.C.	United States Code

Introduction

ICF Jones & Stokes, Inc. (ICF) was retained by Teichert Materials (Teichert) to prepare a Biological Resources Assessment Report for their proposed Kibbe Road/State Route 20 (SR 20) Intersection Improvements Project (project) in Yuba County, California (Figure 1). This project was previously analyzed in an Environmental Impact Report (EIR) and certified in 2006. The project was subject to litigation that resulted in the invalidation of the EIR and Teichert delayed the project. A new grading permit application has been submitted to Yuba County to restart the process and a new EIR will be prepared. Yuba County will be the lead agency under the California Environmental Quality Act (CEQA).

This Biological Resources Assessment Report updates the biological resource information previously described in the project's Biological Resources Assessment (Foothill Associates 2004) and contained in the 2006 EIR. The current existing conditions described in this report are based on a review of existing information and a variety of field surveys conducted in spring and summer 2021. The purpose of this report is to support the new EIR by providing current baseline biological conditions for the three alternatives being considered in the EIR and to provide documentation for future agency coordination and permit applications.

Project Background and Overview

Teichert has an existing aggregate mining and processing facility at its Hallwood property. The Hallwood property comprises 720 acres located in rural Yuba County, north of the Yuba River, approximately three miles northeast of the City of Marysville. Another aggregate mining facility, owned and operated by Knife River Aggregates, is located immediately west of the Hallwood property. The Yuba River forms the property's southern boundary. Aggregate mining and processing have occurred at the Hallwood property since 1953. From 1953 to 1963, the property was mined by Lester Rice, Inc. Teichert purchased the Hallwood property in 1963 and has owned it since then.

Current aggregate mining operations consist of extraction and transport of onsite alluvial deposits from dredge tailings associated with historical gold mining operations from the early 1900s. Existing aggregate processing operations include a rock crushing plant, where aggregate is washed, screened, and crushed, an asphalt batch plant, which produces asphaltic concrete products, and a portable recycle plant, which crushes asphalt and concrete to be reused back in aggregate products.

Ingress to and egress from the Hallwood Plant occur via Walnut Avenue and/or Hallwood Boulevard. The neighborhood surrounding the existing haul routes has been slowly transitioning from agricultural uses to rural residential uses, resulting more recently in concerns from neighbors regarding truck traffic along Walnut Avenue and Hallwood Boulevard.

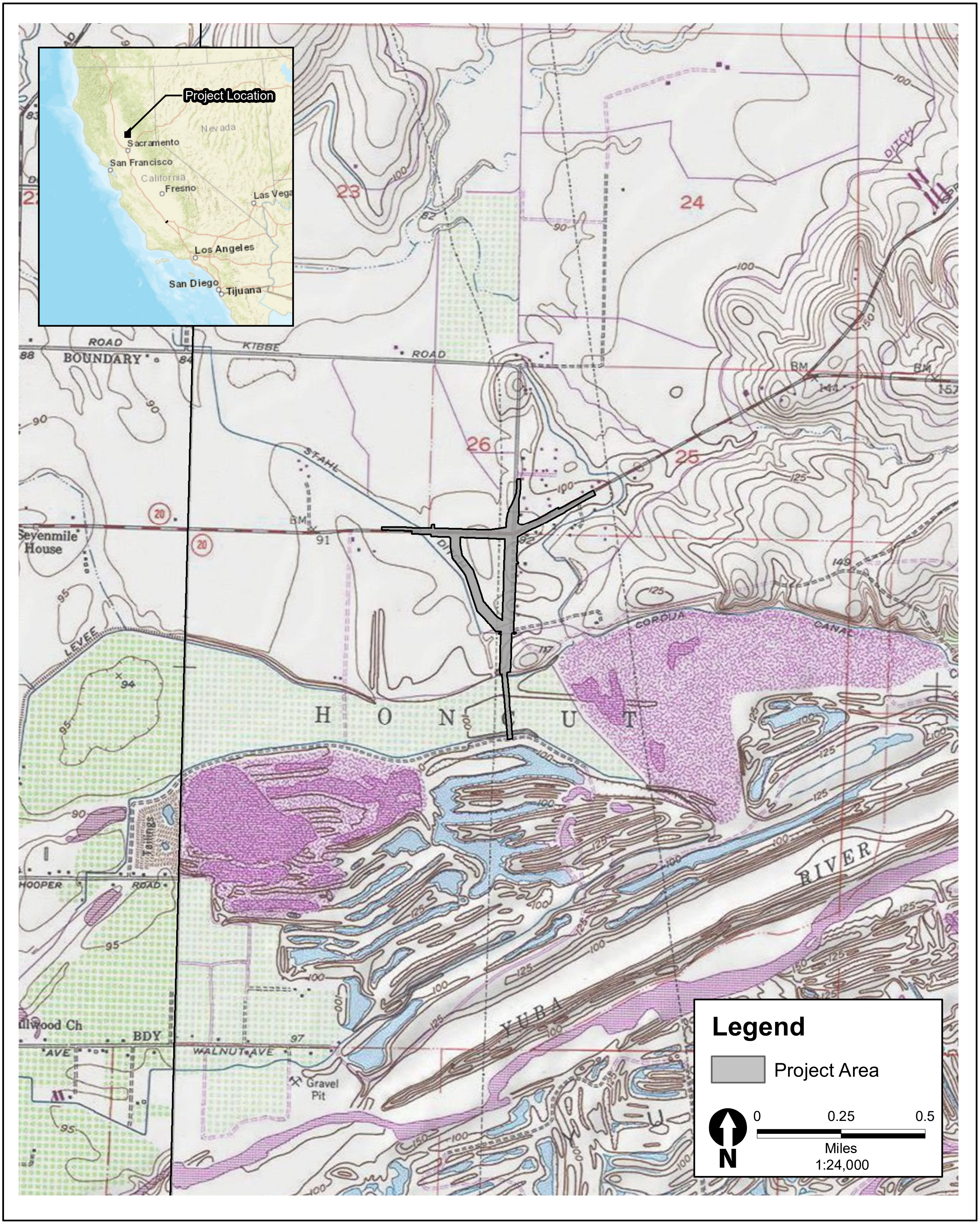


Figure 1
Project Location and Vicinity Map

Teichert is proposing to construct a private haul road to connect its Hallwood property directly to SR 20 at or near its existing intersection with Kibbe Road and has identified three alternatives (Figure 2) (engineering drawings for the alternatives are provided in Appendix A). The project would include a left-turn pocket for westbound SR 20 traffic, and the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection. After completion of the proposed roadway improvements, existing truck traffic to and from the Hallwood Plant would be relocated to the new haul road and would access SR 20 via the realigned Kibbe Road intersection. The existing access on Walnut Avenue would then be used for employee and vendor access only. It is anticipated that the project will require a grading permit and an encroachment permit from the County of Yuba and an encroachment permit from Caltrans.

Project Location

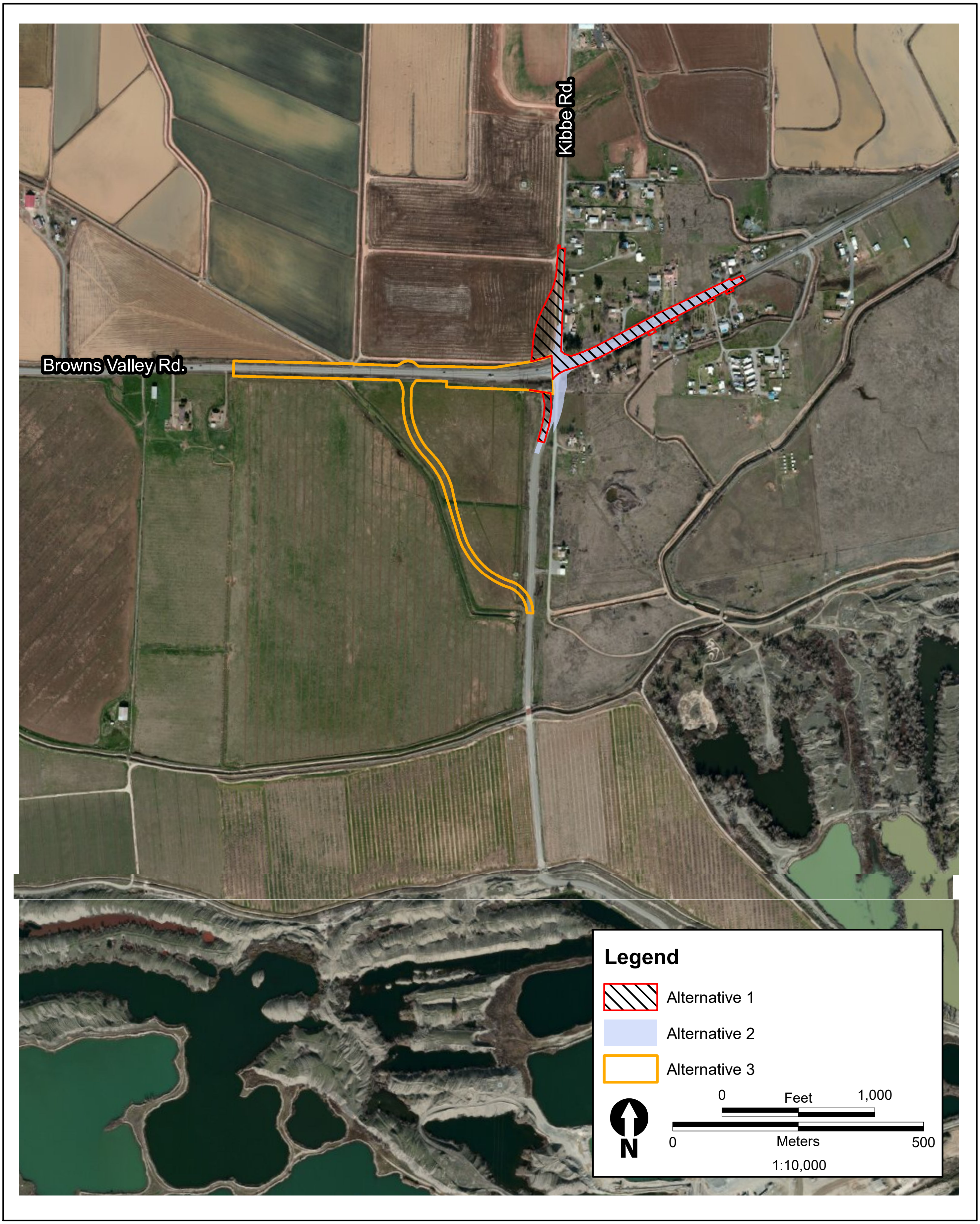
The proposed project would be constructed on approximately 23 acres of primarily private property approximately halfway between the City of Marysville and Browns Valley along SR 20, in central Yuba County, California (Figure 1). The project is located within 0.65 mile of the SR 20 right-of-way, approximately 0.14 mile of the Kibbe Road right-of-way (north of SR 20), and approximately 0.63 mile of an unnamed partially-built access road heading south from SR 20 down to the northern end of the Teichert Aggregates Hallwood facility.

The portions of the project area south of SR 20 are currently dominated by walnut orchards at the southern end with the portion leading up to SR 20 consisting of disturbed annual grasslands and fallow agricultural land east and west of the existing road. The portions of the project along the SR 20 and Kibbe Road consists of roadside ditches, active agricultural land, and disturbed annual grasslands.

Existing Conditions

Regulatory Setting

This section summarizes the federal and state regulations that may be applicable to the proposed project and protect special-status species; waters of the United States, including wetlands; waters of the State; and sensitive habitats within the project area. This section also discusses pertinent local general plan policies and ordinances related to the protection and preservation of biological resources.



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ICF

Figure 2
Project Alternatives

Federal Laws and Regulations

Federal Endangered Species Act

Under the federal Endangered Species Act (ESA), the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 United States Code [U.S.C.] § 1533(c)). Pursuant to the requirements of the ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the project region and whether the proposed project would result in a *take* of such species.[1] The *take* provision of the ESA applies to actions that would result in injury, death, or harassment of a single member of a species protected under the act. In addition, a federal agency is required to determine whether a proposed federal action is likely to jeopardize the continued existence of any species listed under the ESA or result in the destruction or adverse modification of critical habitat for such species (16 U.S.C. § 1536[3][4]). If it is determined that a project may result in the *take* of a federally listed species, a permit from the U.S. Fish and Wildlife Service (USFWS) would be required under Section 7 or Section 10 of the ESA. Section 7 applies if there is a federal nexus (e.g., the project is on federal land, the lead agency is a federal entity, a permit is required from a federal agency, or federal funds are being used). Section 10 applies if there is no federal nexus.

Substantial, adverse project-related impacts on ESA-listed species or their habitats would be considered significant in this EIR. Proposed species are granted limited protection under the ESA and must be addressed in biological assessments (under Section 7 of the act, which only applies to federal agencies); proposed species otherwise have no protection from take under federal law, unless they are emergency-listed species. Candidate species are afforded no protection under the ESA. However, USFWS recommends that candidate species and species proposed for listing also be considered in informal consultation during a project's environmental review. The project study area has the potential to support three federally threatened species (vernal pool fairy shrimp, valley elderberry longhorn beetle, and giant garter snake). These species and their potential to be affected by the proposed project are evaluated in this report.

Clean Water Act

The federal Water Pollution Control Act of 1972, often referred to as the Clean Water Act (CWA), is the nation's primary law for regulating discharges of pollutants into waters of the United States. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The regulations adopted pursuant to the act deal extensively with the permitting of actions in waters of the United States, including wetlands. The act's statutory sections and implementing regulations provide more specific protection for riparian and wetland habitats than any other federal law. The U.S. Environmental Protection Agency has primary authority under the CWA to set standards for water quality and for effluents, but the U.S. Army Corps of Engineers (USACE) has primary responsibility for permitting the discharge of dredged or fill materials into streams, rivers, and wetlands pursuant to CWA Section 404.

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[1] *Take*, as applied in Section 9 of the ESA, means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or to attempt to engage in any such conduct." *Harass* is further defined by USFWS as "an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, and sheltering" (50 Code of Federal Regulations § 17.3). *Harm* is defined as "an act which actually kills or injures wildlife." This may include significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

In 2015, U.S. EPA and USACE signed an agreement on broadly defining waters of the United States to include isolated wetlands without surface water connections to navigable waters. This ruling was legally challenged in 27 states, California not included. In 2018, an executive order directed the U.S. EPA to rescind the 2015 rule and replace it with a new definition that was somewhat consistent with the Scalia definition in the case of *Rapanos v. United States*, a rule that only claims jurisdiction of wetlands with a significant nexus (i.e., chemical, biological, or physical connection) to nearby navigable waters. On October 22, 2019, a notice was published in the Federal Register that rescinded the 2015 rule, and this became effective on December 23, 2019 (84 Federal Register [FR] 56626), at which point the pre-2015 "Rapanos" definitions of *waters of the United States* went into effect until publication of a new rule.

In December 2019, a coalition of 14 states sued the U.S. EPA over its recension of the 2015 rule. *New York et al. v. Wheeler*, S.D.N.Y., No. 1:19-cv-11673 (filed Dec. 20, 2019). The suit alleges that the repeal of the 2015 Clean Water Rule—and reinstatement of the 1986 rule in the interim—is inconsistent with U.S. Supreme Court case law.

In January 2020, U.S. EPA and USACE signed an agreement on a new definition of *waters of the United States*; this agreement is known as the new Navigable Waters Protection Rule (NWPR). The NWPR revised the definition of waters that are federally regulated under the CWA and replaced the October 2019 rule. The new NWPR narrows the definition of *waters of the United States*, focusing on traditional navigable waters and whether there is a surface water connection between them. The NWPR was published in the Federal Register on April 21, 2020 (85 FR 22250) and became effective June 22, 2020.

The revised definition identifies four clear categories of federally regulated waters.

- Territorial seas and traditional navigable waters.
- Perennial and intermittent tributaries to those waters.
- Certain lakes, ponds, and impoundments.
- Wetlands that are adjacent to jurisdictional waters.

This final action lists 12 categories of exclusions, including the following.

- Features that only contain water in direct response to rainfall (e.g., ephemeral streams)
- Groundwater
- Many ditches, including most farm and roadside ditches
- Prior converted cropland
- Farm and stock watering ponds
- Waste treatment systems

There must be surface water connection that is at least intermittent or perennial: "wetlands that are meaningfully connected to other jurisdictional waters, for example, by directly abutting or having regular surface water communication with jurisdictional waters." However, there can be non-jurisdictional connectors (e.g., ditches, sheet flow) between two jurisdictional waters.

The revised definition leaves unchanged the parameters used to identify and delineate wetlands and the Ordinary High Water Mark (OHWM) characteristics used to define the upper boundary of USACE jurisdiction over non-wetland waters such as streams, ponds, and lakes. The boundaries of nontidal, non-wetland waters (streams) were delineated at the OHWM (33 Code of Federal Regulations [C.F.R.] § 328.3). The OHWM represents the limit of potential USACE jurisdiction over non-tidal waters (e.g., streams, ponds) in the absence of adjacent wetlands (33 C.F.R. 328.04).

USACE defines *jurisdictional wetlands* under CWA Section 404 as areas that exhibit positive field indicators for all three wetland parameters (discussed below in Section 3.3.1, Delineation of Wetlands). The three parameters used to determine the presence of CWA Section 404 wetlands are (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. According to the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (1987 Manual; Environmental Laboratory 1987:12), "evidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation."

To support the EIR analysis of waters of the United States and waters of the State, ICF conducted field studies and prepared an Aquatic Resources Delineation Report (ARDR) (the delineation map is contained in Appendix B). The ARDR should be considered preliminary until verified by the USACE.

Section 401: Water Quality Certification

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must apply for water quality certification from the state. Therefore, all projects with a federal component that may affect the quality of waters of the State (including projects that require federal approval, such as a CWA Section 404 permit) must comply with CWA Section 401.

In California, CWA Section 401 is administered by the State Water Resources Control Board (SWRCB) through the Regional Water Quality Control Boards (RWQCBs). All areas qualifying as waters of the United States under CWA Section 404 also qualify as waters of the State of California (waters of the State) under the jurisdiction of CWA Section 401 and the SWRCB and RWQCBs; however, some areas considered as waters of the State do not qualify as waters of the United States. Isolated wetlands, non-navigable waters, and intrastate waters may also qualify as waters of the state subject to SWRCB jurisdiction under CWA Section 401.

If the wetlands and non-wetland waters delineated on the project site are determined to be jurisdictional and a permit is required from the USACE, a water quality certification would also be required.

Section 402: Permits for Stormwater Discharge

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by EPA. In California, the SWRCB is authorized by EPA to oversee the NPDES program through the RWQCBs.

NPDES permits are required for projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public notice of intent to discharge stormwater and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP must include a site map, a description of proposed construction activities, and the best management practices (BMPs) that will be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

Because the project would disturb more than 1 acre of land, Teichert would prepare a SWPPP and apply for an NPDES permit.

Section 404: Permits for Placement of Fill in Waters of the United States (Including Wetlands)

Waters of the United States (including wetlands) are protected under Section 404 of the CWA. Any activity that involves a discharge of dredged or fill material into waters of the United States, including wetlands, is subject to regulation by USACE. If the USACE determines that the wetlands and non-wetland waters are considered waters of the United States, Teichert would apply for a permit from the USACE (likely a Nationwide Permit No. 14 authorization given the amount of permanent fill that would be associated with the project activities).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act protects migratory bird species from take. *Take*, under the act, is defined as the action of, or an attempt to, pursue, hunt, shoot, capture, collect, or kill (50 C.F.R. § 10.12). The definition differentiates between *intentional* take (take that is the purpose of the activity in question) and *unintentional* take (take that results from, but is not the purpose of, the activity in question).

State Laws and Regulations

California Endangered Species Act

The California Endangered Species Act (CESA), established under California Fish and Game Code Section 2050 et seq., identifies measures to ensure that endangered species and their habitats are conserved, protected, restored, and enhanced. The CESA restricts the take of plant and wildlife species listed by the state as endangered or threatened, as well as candidates for listing. Section 86 of the Fish and Game Code defines *take* as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Under Section 2081(b) of the Fish and Game Code, CDFW has the authority to issue permits for incidental take for otherwise lawful activities. Under this section, CDFW may authorize incidental take, but the impacts of the take must be minimized and fully mitigated. CDFW cannot issue permits for projects that would jeopardize the continued existence of state-listed species. CDFW maintains lists for candidate-endangered species and candidate-threatened species. Candidate species and listed species receive equal protection under the law.

An agency reviewing a proposed project within its jurisdiction should determine whether any state-listed endangered or threatened species could be present on the project site and determine whether the proposed project could have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may affect a candidate species. Project-related impacts on species on the CESA endangered or threatened lists would be considered a significant impact in this EIR. Impacts on species of concern would be considered a significant impact if the species met the criteria set forth under CEQA Guidelines Section 15380 or if the species were also protected under any of the other statutes or policies discussed in this section. The project study area supports suitable habitat for three state threatened species: giant garter snake (low potential for occurrence), Swainson's hawk, and tricolored blackbird (foraging only).

California Fish and Game Code

The California Fish and Game Code provides a variety of protections for species that may not be federal or state listed as threatened or endangered, or of special concern.

- Section 3503 protects all breeding native bird species in California by prohibiting the take, possession, or needless destruction of nests and eggs of any bird, with the exception of nonnative English sparrows and European starlings (Section 3801).
- Section 3503.5 protects all birds of prey (in the orders Falconiformes and Strigiformes) by prohibiting the take, possession, or killing of raptors and owls, their nests, and their eggs.
- Section 3513 prohibits the take or possession of migratory nongame birds as designated in the Migratory Bird Treaty Act or any parts of such birds except in accordance with regulations prescribed by the Secretary of the Interior.
- Section 3800 prohibits the take of nongame birds, which are defined as birds occurring naturally in California that are not game birds or fully protected species.
- Sections 3511 (birds), 5050 (reptiles and amphibians), and 4700 (mammals) designate certain wildlife species as fully protected in California.

Fully protected species, or parts thereof, may not be taken or possessed at any time, except as part of an approved Natural Community Conservation Plan that treats such species as *covered species* (Fish and Game Code § 2800 et seq.).

Under Fish and Game Code Section 1602, public agencies are required to notify CDFW before undertaking any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resources. These modifications are formalized in a Lake or Streambed Alteration Agreement (LSAA) that becomes part of the plans, specifications, and bid documents for the project. Although a LSAA is not likely required for impacting ditches, Teichert will coordinate with CDFW and confirm that a LSAA is not necessary.

Porter-Cologne Water Quality Control Act

State law affords protection of wetlands that are beyond the regulatory reach of federal law under the CWA. Under the Porter-Cologne Act definition, waters of the State are “any surface water or groundwater, including saline waters, within the boundaries of the state.” Although all waters of the United States that are within the borders of California are also waters of the State, the reverse is not true. Therefore, California retains authority to regulate discharges of waste into any waters of the State, regardless of whether USACE has concurrent jurisdiction under CWA Section 404 and defines discharges to receiving waters more broadly than the CWA does.

Waters of the State fall under the jurisdiction of the nine RWQCBs. Under the Porter-Cologne Act, each RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution. California Water Code Section 13260 requires any person discharging waste, or proposing to discharge waste in any region that could affect the waters of the State, to file a report of discharge (an application for waste discharge requirements) with the applicable RWQCB. California Water Code Section 13050 authorizes the SWRCB and the affiliated RWQCB to regulate biological pollutants. It is currently unknown whether a waste discharge permit would be required by SWRCB. This will be determined as part of the future permitting process.

On April 2, 2019, the SWRCB adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Procedures; State Water Resources Control Board 2021). The Procedures were revised on April 6, 2021, and define wetland waters of the State as follows:

> An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The Procedures provide that RWQCBs shall rely on a wetland delineation from a final ARDR verified by USACE to determine the extent of waters of the State. If any potential wetland areas have not been delineated in a final ARDR verified by USACE, the limits of such potential wetland waters of the State shall be identified using the same wetland delineation methods per USACE as described in Section 2.2.1, except that a lack of vegetation (i.e., less than 5 percent areal coverage of plants during the peak of the growing season) does not preclude an area from meeting the definition of a wetland when hydric soils and wetland hydrology are present (State Water Resources Control Board 2021).

Local Laws and Regulations

Yuba County 2030 General Plan

Yuba County has identified the following goals and policies in the Natural Resource Element of the General Plan (2011) that are relevant to the biological resources located within the study area:

Goal One: Protect and restore habitat for special-status species that have the potential to occur in Yuba County.

- Policy NR5.1: New developments that could adversely affect special-status species habitat shall conduct a biological resources assessment and identify design solutions that avoid such adverse effects. If, after examining all feasible means to avoid impacts to special-status species habitat through project design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species, including pre-construction surveys conducted according to applicable standards and protocols, where necessary.

- Policy NR5.4: New developments shall be located and designed to preserve and incorporate existing native vegetation to the maximum extent feasible. Fire safety standards may override consideration of retaining existing vegetation in certain circumstances.

- Policy NR5.7: New developments and public investments near Yuba County's streams and rivers shall be designed to avoid tree removal, erosion, or other modifications that would adversely affect salmonid habitat.

- Policy NR5.8: New private developments adjacent to riparian areas shall provide a buffer designed and maintained to preserve existing wildlife habitat; provide habitat conditions favorable to native local wildlife; restrict activities that may adversely affect wildlife habitat quality; and restore degraded habitat, where feasible.

- Policy NR5.9: New developments shall be designed to avoid the loss of jurisdictional wetlands. If loss is unavoidable, the County will require applicants to mitigate the loss on a “no net loss” basis through a combination of avoidance, minimization, restoration, and/or constructed wetlands, in accordance with federal and state law.
- Policy NR5.13: New developments that could adversely affect wildlife movement corridors shall conduct a biological assessment and avoid placing any temporary or permanent barriers within such corridors, if they are determined to exist on-site. Avoiding barriers to wildlife movement may be accomplished at the project or community plan level.
- Policy NR15.15: Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve unincorporated County development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest extent feasible.

Goal NR10: Preserve the County’s trees and other vegetation that provide aesthetic and habitat benefits.

- Policy NR10.1: Building placement, grading, and circulation should be planned to retain as much existing native vegetation as feasible, with a priority on preserving existing oak trees that have a diameter at breast height (dbh) of 6 inches or greater and all other trees that have a dbh of 30 inches or greater. The County’s policies and standards for fire safety may override consideration of retaining existing vegetation in certain circumstances.

Yuba County Ordinance Code

The Yuba County Ordinance Code Chapter 11.44.060 provides protection for natural and cultural resources:

- *Resource protection*. Sensitive habitat areas, archeological resources, and designated and potential historic resources shall be shown and identified on all tentative maps, and on any improvement and landscape plans. Such features shall be preserved as required by the Development Review Committee or Planning Commission as part of tentative map approval.
- *Existing trees.*

  (1) All existing oak trees that have a diameter at breast height (DBH) of six inches or greater and all other trees that have a DBH of 30 inches or greater shall be shown on the tentative map or tentative parcel map with a notation as to the size, species and dripline. All trees proposed for removal shall be clearly designated.

  (2) Existing trees may be required to be preserved. In cases in which tree preservation is required, all grading and necessary tree trimming shall be conducted under the supervision of a certified arborist or registered forester reviewed and approved by the Community Development and Services Agency.

  (3) Trees within a proposed public right-of-way shall be removed only for good cause to protect the public safety or to allow the installation of adequate public facilities as may be approved by the Public Works Director.

Methods

The "biological resources study area" evaluated as part of this report included the project alternatives (as shown in Figure 2). Figure 3 shows the biological study area. The study area shown in Figure 3 included the new road construction as depicted on Figure 2 and roadway improvements (e.g., stripping) to the existing haul road connecting to the Hallwood Plant.

In addition to reviewing the original project EIR (2006), ICF biologists reviewed the following sources of information prior to conducting field surveys.

- California Natural Diversity Database (CNDDB) plant records query of the Browns Valley and eight surrounding U.S. Geological Survey (USGS) 7.5-minute quadrangles (i.e., the project region) (California Department of Fish and Wildlife 2021).
- California Natural Diversity Database (CNDDB) animal species records within 5 miles of the study area (California Department of Fish and Wildlife 2021).

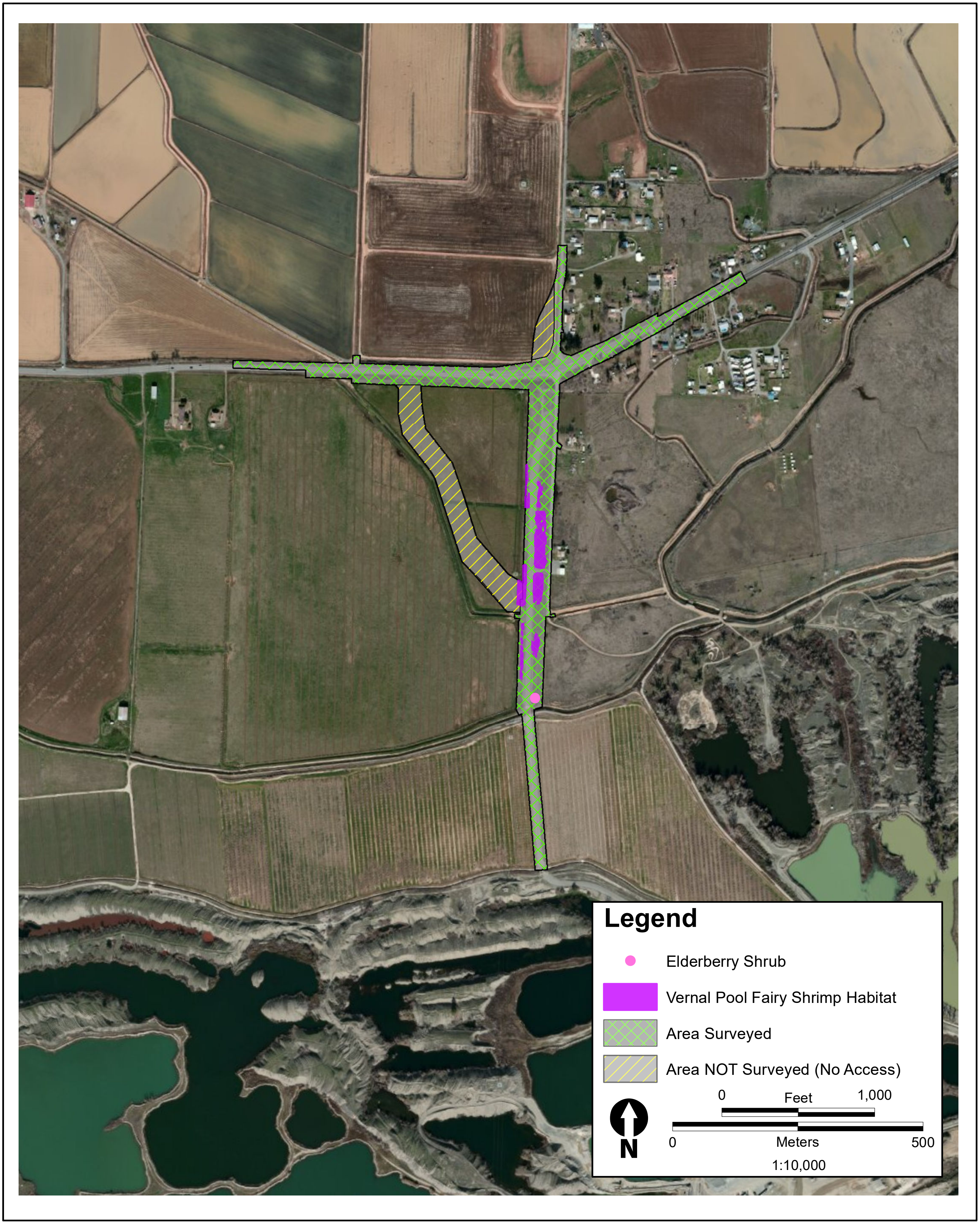

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Figure 3
Biological Resources Study Area

- California Native Plant Society's (CNPS) 8th Edition *Inventory of Rare and Endangered Plants of California* query of the Browns Valley and eight surrounding USGS 7.5-minute quadrangles (2021) and electronic updates available at: http://www.rareplants.cnps.org/.
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation online system list of federally threatened or endangered species for the project area (2021) and electronic updates available at: https://ecos.fws.gov/ipac/location/index.
- Caltrans' Initial Study with Proposed Mitigated Negative Declaration prepared for the Loma Rica Road to Spring Valley Road Widening and Rehabilitation Project (2016).
- Foothill Associates' State Route 20/Kibbe Road Intersection and Haul Road Project Biological Resources Assessment prepared for Teichert Aggregates (2004).
- Aerial photographs of the project area (Google Earth 2021).

These resources were used to develop lists of special-status plant and wildlife species and other sensitive biological resources that could be present or are known to occur in the region (Tables C-1 and C-2 in Appendix C). Species were included in these lists if they were known to occur in the project region or if their habitats are present in the vicinity of the project study area. For the purpose of this document, special-status species are defined as follows.

- Species that are candidates for possible future listing as threatened or endangered under ESA (84 FR 54732 (October 10, 2019)).
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 Cal. Code Regs. § 670.5).
- Species that meet the definitions of rare or endangered under CEQA (CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code §§ 1900 et seq.).
- Plants that meet the definitions of rare or endangered under CEQA (CEQA Guidelines Section 15380(b), (c), and (d)). Plants that may meet this definition consist of the following:

  Plants considered by the CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes five rarity and endangerment ranks for categorizing plant species of concern.

  - CRPR 1A—Plants presumed to be extinct in California.
  - CRPR 1B—Plants that are rare, threatened, or endangered in California and elsewhere.
  - CRPR 2A—Plants presumed to be extinct in California, but more common elsewhere.
  - CRPR 2B—Plants that are rare, threatened, or endangered in California but more common elsewhere.
- Plants that may warrant consideration on the basis of local significance or recent biological information (CEQA Guidelines Section 15380[d]), which may include plants rated CRPR 3 (*Review List*: plants about which more information is needed to determine their status) and CRPR 4 (*Watch List*: plants of limited distribution).
- Animal species that may warrant consideration on the basis of local significance or recent biological information (CEQA Guidelines Section 15380(d)).

- Species that are considered locally significant, that is, a species that is not rare from a statewide perspective but is rare or unique in a local context such as within a county or region (CEQA Guidelines Section 15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G).
- Animal species of special concern to CDFW, as identified and defined in the CNDDB.
- Animals fully protected in California (California Fish and Game Code Sections 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]).

Field Surveys

Field surveys were conducted by ICF botanists and wildlife biologists on March 24, 2021, March 30, 2021, April 14, 2021, and July 8, 2021. During the surveys, biologists walked the study area to document existing conditions. The purpose of the surveys was to:

- Characterize land cover types and their associated wildlife habitat uses.
- Assess the study area for its potential to contain sensitive biological resources (i.e., sensitive natural communities and aquatic resources).
- Conduct spring and summer floristic surveys to document presence or absence of special-status plants.
- Conduct an aquatic resource delineation to document wetlands and non-wetland waters that may be subject to federal and state regulation.
- Provide biological resource information to Teichert for their consideration in project design and planning and assist in developing a regulatory strategy.

Floristic Survey

During the April and July 2021 field surveys, ICF botanists (Dr. Rob Preston and Devin Jokerst) conducted a floristic survey for special-status plants to determine if special-status plants were present at the study area. Surveys were based on CDFW's *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018e). The surveys were floristic, with every species encountered identified to the lowest taxonomic level necessary to determine whether it is a special-status species. Botanists traversed the study area on foot, using meandering parallel transects spaced at a distance that enabled visibility of all plant species present. The botanical surveys corresponded to the identification periods for special-status plants that could occur in the project region (Table C-1 in Appendix C). A list of all plants observed in the study area was compiled and included in Appendix D.

Wildlife Survey

During the March 24 survey, ICF wildlife biologists (John Howe and Arin Phillips) who are familiar with the area and species that could occur in the region, conducted reconnaissance-level field surveys of the study area to assess whether suitable habitat exists for special-status wildlife species (Table C-2 in Appendix C). No protocol-level surveys were conducted to support this analysis. A list of all wildlife observed in the study area during the March field survey was compiled and is contained in Appendix D.

Aquatic Resource Delineation

During the March survey, ICF botanists conducted an aquatic resource delineation to identify the location and extent of potential aquatic resources (wetlands and non-wetland waters) in the study area. The delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008), and *A Field Guide to the Identification of the Ordinary High-Water Mark in the Arid West Region of the Western United States: A Determination Manual (Lichvar and McColley 2008).* Detailed delineation methods are described in the separate Aquatic Resources Delineation Report (ICF July 2021).

Environmental Setting

Land Cover Types

The project study area is located in a rural agricultural area dominated by rice and grain hay fields. Rural residential area occurs east of Kibbe Road. Land cover types (habitats) in the study area were previously described in the project's Biological Resources Assessment (Foothill Associates 2004). These habitats included irrigated pasture, orchard, roadside ditches, and agricultural ditches/canals. The irrigated pasture is no longer present; currently, those areas adjacent to the haul road are vegetated by non-native annual grasslands and seasonal wetlands.

The study area occurs in a region that once supported a vast mosaic of vernal pools and grassland. Most of the study area is comprised of the soil map units are regarded as hydric soils or contain inclusions of hydric soils (Natural Resources Conservation Service 2021). While Foothill Associates reported irrigated pasture in the study area in 2004, their August 2003 surveys were conducted months after the south haul road was constructed in the spring of 2003. Left relatively undisturbed for eighteen years, the study area appears to have reverted back to into a wetland mosaic given its historic vernal pool distribution and presumed decades of irrigation.

During the surveys, 139 plant species were observed at the study area, 66% of which were non-native species. The high proportion of non-native species reflects the high degree to which the landscape has been disturbed by agriculture and rural development.

The primary land cover types identified in the study area are described below.

Non-Native Annual Grassland

Non-native annual grassland vegetation is the dominant land cover type in the study area and occurs along both sides of the haul road. The grassland is dominated by Italian ryegrass (*Festuca perennis*) and Mediterranean barley (*Hordeum marinum* subsp. *gussoneanum*). Associated species include prickly lettuce (*Lactuca serriola*), curly dock (*Rumex crispus*), and panicled willow-herb (*Epilobium brachycarpum*), with scattered clumps of soft rush (*Juncus effusus*).

Seasonal Wetland

Approximately 2.177 acres of seasonal wetlands were delineated in the study area (Appendix B). These seasonal wetlands occur along both sides of the unpaved Kibbe Road (south haul road) in areas that were formerly irrigated for agriculture. Seasonal wetlands in the study area are vegetated by mix of native wetland species that are often found in vernal pools and non-native wetland species that colonized disturbed wetlands, including Carter's buttercup (*Ranunculus bonariensis*), water pygmyweed (*Crassula aquatica*), purslane speedwell (*Veronica peregrina*), bracted popcornflower (*Plagiobothrys bracteatus*), and non-native grasses Italian rye grass and Mediterranean barley; the native hydrophytes occur in the topographic lows of the seasonal wetlands, whereas a majority of the wetlands are dominated by Italian rye grass and Mediterranean barley.

Roadside Ditch

Approximately 0.509 acre of roadside ditches were mapped in the study area. Of this acreage, 0.093 acre is primarily unvegetated roadside ditch (roadside ditch in Appendix B) and 0.416 acre is dominated by wetland vegetation (roadside wetland ditch in Appendix B). Roadside ditches are present along both sides of SR 20 and convey rainfall runoff from surrounding watershed and paved highway. Vegetation along the ditches is composed of a mix of ruderal and wetland species, with wetland species including umbrella sedge (*Cyperus eragrostis*), toad rush (*Juncus bufonius*), rabbits foot grass (*Polypogon monspeliensis*), little rattle snake grass (*Briza minor*), Italian ryegrass, soft chess (*Bromus hordeaceus*), brome fescue (*Festuca bromoides),* and scattered patches of broad-leaved cattail (*Typha latifolia*). Roadside ditches appear to be excavated in uplands for the purpose of conveying surface runoff from rainfall and landscaping irrigation. The roadside ditches do not replace existing natural drainages, connect a natural drainage to a downstream tributary, intersect groundwater, or support wetland vegetation, therefore, the roadside ditches may not be considered waters of the United States or waters of the State. As described above under "*Regulatory Setting*", the NWPR lists ditches in their category of excluded features. These roadside ditches are artificial and were constructed in uplands and area less than an acre in size. For these reasons, they may not qualify as waters of the State (State Water Resources Control Board 2021). However, this preliminary determination will be confirmed by the USACE and RWQCB.

Agricultural Ditch/Canal

As shown in Appendix B, 0.086 acre of agricultural ditches/canals were documented in the study area, consisting of Cordua Canal (Stahl Ditch) and two other features. A fourth canal occurs to the south and adjacent to the delineation area. This canal parallels the delineation area's southern boundary. Agricultural ditches/canals receive water from the Yuba River at Daguerre Point Dam. Turn screws on Daguerre Point Dam are physically opened for water to be gravity-fed into 6-foot-diameter pipes that drain into diversion ditches. Due to the manual control on the turn screws, water does not readily flow to and from the Yuba River. Agricultural ditches/canals appear to be excavated in uplands for the purpose of conveying irrigation water. Agricultural ditches do not replace existing natural drainages, connect a natural drainage to a downstream tributary, intersect groundwater, or support wetland vegetation, and therefore, agricultural ditches would not likely be considered waters of the United States or waters of the State. Similar to roadside ditches, agricultural ditches would also likely be excluded based on the NWPR guidance and may not meet the State's wetland definition (State Water Resources Control Board 2021). However, this preliminary determination will be confirmed by the USACE and RWQCB.

Orchard

A walnut orchard is present at the south end of the study area. The understory vegetation is managed (mowed or sprayed) and consists of annual grassland species.

Special-Status Species

Special-Status Plant Species

Based on a review of the CNDDB and CNPS search results, 20 special-status plant species were identified with potential to occur near the study area (Table C-1 in Appendix C). None of these species have been previously recorded at the study area but occur within 10–15 miles. Suitable habitat for most the species is not present in the study area. Table 1 contains the common and scientific name for each special-status plant species, legal status, distribution, habitat association, identification period, and potential to occur at the study area.

Special-status plants have not been previously documented in the study area (CNDDB 2021; Foothill Associates 2004) and none were observed during the 2021 spring and summer floristic surveys. Although habitat for special-status plants occurring in grasslands and vernal pools was probably present prior to the arrival of European and American settlers, subsequent land conversion activities have removed all suitable habitat. Special-status plants are not discussed further in this report because none occur in the study area.

Special-Status Wildlife and Fish Species

Based on a review of the CNDDB search results; the USFWS list of endangered, threatened, and proposed species within the project region; and species' distribution and habitat data, 19 special-status wildlife species and three special-status fish were determined to have the potential to occur in the project region (Table C-2 in Appendix C). After completion of the field surveys, the biologists determined that 11 of the 19 wildlife species and all of the fish species would not occur in the study area because the area lacks suitable habitat or is outside the species' known range. An explanation for the absence of each of these species from the study area is provided in Table C-2. Potential habitat is present in the study area for eight special-status wildlife species and the likelihood of these species occurring within the study area is discussed below.

Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp is a federally listed threatened species. The species is found from Shasta County in the north throughout the Central Valley, and west to the central Coast Ranges, at elevations of 30 to 4,000 feet. Additional populations have been reported from the Agate Desert region near Medford, Oregon, and disjunct populations occur in San Luis Obispo, Santa Barbara, and Riverside Counties. However, most known locations are in the Sacramento and San Joaquin Valleys and along the eastern margin of the central Coast Ranges (Eng et al. 1990:255– 258).

Vernal pool fairy shrimp inhabit vernal pools that form in depressions, usually in grassland habitats (Eng et al. 1990:255–258). Pools must remain inundated long enough for the species to complete its life cycle. Vernal pool fairy shrimp has the shortest time to reach sexual maturity, with a minimum of 18 days (Helm 1998:132). Vernal pool fairy shrimp also occur in other wetlands that provide habitat similar to vernal pools, such as alkaline rain pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stock ponds, vernal swales, and some seasonal wetlands (Helm 1998:137). Occupied wetlands range in size from as small as several square feet to more than 10 acres. Vernal pool fairy shrimp and other fairy shrimp have been observed in artificial depressions and drainages where water ponds for a sufficient duration (Helm 1998:134–138). Examples of such areas include roadside ditches and ruts left behind by off-road vehicles or heavy equipment. Soil compaction from construction activity can sometimes create an artificial hardpan, or restrictive layer, which allows water to pond and form suitable habitat for vernal pool fairy shrimp.

The proposed project is within the current range of vernal pool fairy shrimp. Based on the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (U.S. Fish and Wildlife Service 2005), the study area does not lie within a core area and does not overlap with designated critical habitat for vernal pool fairy shrimp (70 Federal Register [FR] 46924 and 71 FR 7117).

No protocol surveys for vernal pool fairy shrimp were conducted for the proposed project; however, ICF biologists completed a habitat assessment of the study area on March 24, 2021. Standing water was observed in portions of the seasonal wetlands delineated along the sides of the haul road in the southern half of the study area during the field survey. Several other features were observed with inundation during the field survey; however, most of these features serve as agricultural irrigation and stormwater conveyance (e.g., ditches) and were deemed unsuitable because of high flows and scour during rain events and agricultural production.

The seasonal wetlands in the study area occupy low points in the landscape, and their principal water sources are direct precipitation and stormwater runoff from the surrounding uplands or developed areas. Prior to 2003, the area supporting these wetlands was actively cultivated but was subsequently altered during construction of the current roadbed which created low-lying depressions on either side of the road. These depressional wetlands appear to hold water for sufficient duration (i.e., at least 3 weeks) to allow vernal pool fairy shrimp to reproduce. The closest CNDDB occurrence for vernal pool fairy shrimp is approximately 1.6 miles southeast of the study area (California Department of Fish and Wildlife 2021).

In the southern portion of the study area, some of the seasonal wetlands (SW-3 through SW-17 in Appendix B and Figure 3) included small, pooled sections that could provide suitable habitat for vernal pool fairy shrimp based on the depth of ponding (up to 5 inches) observed during the March 24, 2021 habitat assessment.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle is federally listed as threatened. It occurs throughout the Central Valley, from approximately Shasta County to Fresno County, mostly below 500 feet (U.S. Fish and Wildlife Service 2017). Habitat includes both riparian and non-riparian areas where elderberry shrubs (the host plant) are present. In riparian settings, elderberry shrubs are most common where roots can reach the water table and the shrubs are not inundated for long periods. In non-riparian areas, elderberry occurs in oak woodland and annual grasslands (U.S. Fish and Wildlife Service 2017b). Valley elderberry longhorn beetle emergence, mating, and egg-laying occurs from March to July, in conjunction with the elderberry flowering season (U.S. Fish and Wildlife Service 2017b). Adult beetles lay eggs on leaves or stem junctions; after hatching, larvae bore into the elderberry stem to pupate and emerge as adults through an exit hole approximately one month later. Presence of an exit hole is the only exterior evidence of the beetle's use of an elderberry shrub (U.S. Fish and Wildlife Service 2017b).

One isolated blue elderberry (*Sambucus mexicana*) shrub is present approximately 25 feet east of the existing haul road at the south end of the study area just north of Cordua Canal (see Figure 3). The shrub is located within ruderal grassland that was formerly agricultural lands (pre-2003) and does not support riparian vegetation. Based on the USFW's 2017 Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle, occupancy of valley elderberry longhorn beetle within non-riparian habitats is assessed based on a several factors including, presence of exit holes, proximity to known occupied sites and riparian areas, and site locality in relation to historic riparian corridors. The presence of exit holes in a shrub increases the likelihood that the shrub is occupied by valley elderberry longhorn beetles; however, a lack of exit holes does not preclude occupancy (U.S. Fish and Wildlife Service 2017).

The elderberry shrub within the study area was surveyed for exit holes on March 24, 2021, by ICF wildlife biologist John Howe. No exit holes were identified during this survey. Based on the lack of exit holes, additional information was assessed to determine likelihood of occupancy by valley elderberry longhorn beetle. The closest known occupied habitat is along the Yuba River 0.3 mile east of the study area (CNDDB occurrences 194 and 200) (California Department of Fish and Wildlife 2021). The closest riparian habitat is 750 feet to the east within mine tailings. Land uses between the shrub and the closest riparian habitat consists of orchard and fallow agricultural lands. The elderberry shrub present within the study area is not a remnant from an historic riparian corridor but is a recent sprout within fallowed agricultural lands likely a result of birds dispersing elderberry seeds.

Studies indicate that the valley elderberry longhorn beetles are poor dispersers and require contiguous or nearly contiguous vegetated habitat to successfully disperse (Collinge et al. 2001). Because its physical dispersal capability is limited, the lack of a nearby riparian dispersal corridor decreases the likelihood of successful colonization of unoccupied habitat. This lack of dispersing capability and the distance between the elderberry shrub in the study area and the closest suitable riparian habitat (750 feet) make the potential of the species to colonize the onsite elderberry shrub very low. Therefore, valley elderberry longhorn beetles are not expected to occur in the study area.

Giant Garter Snake

Giant garter snake is federally and state listed as threatened. Suitable aquatic habitat consists of marshes, sloughs, rice fields, and other water bodies that are slow moving or still, with mud substrate and which continue to have water from March through November, including lacustrine and riverine habitats, with emergent vegetation for basking and camouflage and a suitable prey base of fish and amphibians. Giant garter snakes generally are not present in larger rivers and wetlands with sand, gravel, or rock substrates. Riparian woodlands do not generally provide suitable habitat because most have excessive shade, lack of basking sites, and absence of prey populations. Giant garter snakes are also absent from most permanent waters that support established populations of predatory game fishes and from most sites that undergo routine dredging, mechanical or chemical weed control, or compaction of bank soils (Brode 1988; U.S. Fish and Wildlife Service 2017:I-3).

Terrestrial habitat adjacent to suitable aquatic habitat is also an important resource for giant garter snake (Halstead et al. 2015:633). Terrestrial habitat serves two purposes for giant garter snake; near aquatic habitat, upland can be used for thermoregulation and summer shelter in nearby burrows, further away from aquatic habitat, and above the high winter waters, the upland can provide refugia for brumation (U.S. Fish and Wildlife Service 2017:I-2). During brumation, giant garter snakes make use of mammal burrows along canal banks and marsh locations, or riprap along a railroad grade near a marsh or roads. Giant garter snakes typically do not over-winter where flooding occurs in channels with rapidly moving water, such as the Sutter Bypass. Over-wintering snakes can use burrows as far as 200 to 250 meters (656 to 820 feet) from the edge of summer aquatic habitat (U.S. Fish and Wildlife Service 2017:I-3) but are typically found within 200 feet of aquatic habitat, therefore USFWS typically considers uplands within 200 feet of aquatic habitat to be habitat for giant garter snake.

During the colder winter months, giant garter snakes spend their time in a state of brumation. Giant garter snakes emerge from winter brumation in early March or April, depending upon weather, and remain active through late September or early October. Breeding occurs from shortly after emergence until as late as May, with females giving birth from July through September (U.S. Fish and Wildlife Service 2017:I-5-I-6).

In the study area, roadside and agricultural ditches provide conditions conducive to giant garter snake; however, water flow in these ditches fluctuates seasonally with rainfall and agricultural production.

The study area is located in the District 10 Management Unit of the American Basin Recovery Area for giant garter snake and is along the eastern edge of the species range (USFWS 2020). There are no verified observations of giant garter snake in this management unit. The CNDDB includes a 2010 observation of an adult snake (occurrence #346) located 4.2 miles north of the study area; however, the associated information for this record was determined not adequate to confirm a positive identification (USFWS 2020: 11). Giant garter snake surveys were conducted within the District 10 Management Unit in 2012 by USGS and no snakes were captured (Halstead et. al 2015). Although no systematic surveys have been conducted within this management unit, the area was determined to have a low likelihood of supporting giant garter snakes (Figure 2 in Halstead et al. 2014). According to the studies conducted by Halstead et al. (2014), distance to historic marsh habitat is most important in determining the probability of giant garter snakes occurring in modified habitats (e.g., rice fields). The management area that includes the study area was historically California prairie habitat, which is not considered suitable habitat for the giant garter snake and was separated from historic tule marsh by riparian forest along the Feather River, Yuba River and Bear River. Although much of the area is now planted in rice, these historic habitat conditions, coupled with dispersal barriers make it unlikely that giant garter snakes occupy the study area.

Swainson's Hawk, Northern Harrier, and White-Tailed kite

Swainson's hawk is a state listed threatened species. In the Central Valley, nests are constructed in riparian woodlands, isolated trees, trees along roadsides, bordering fields, along the edges of remnant oak woodlands, and in small groves. Nests are usually constructed as high as possible in the tree, which provides good visibility and nest protection (Estep 2008:4-5). Swainson's hawks most commonly nest in large native trees such as valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii*), Hinds' walnut (*Juglans hindsii*), and willows (*Salix* spp.), and in nonnative trees, such as eucalyptus (*Eucalyptus* spp.) (Estep 2007:33, 2008:6-15). Swainson's hawks are highly responsive to farming and management activities that expose and concentrate prey, such as cultivating, harvesting, and disking (Estep 1989:23). During these activities, particularly late in the season, Swainson's hawks will hunt behind tractors searching for exposed prey (California Department of Fish and Game 1994:6; Estep 1989:23). Other activities, such as flood irrigation, also expose prey and attract foraging Swainson's hawks (Estep 1989:23). Swainson's hawks arrive on their breeding grounds in the Central Valley between March and April, and begin nest-building and egg-laying shortly after arrival (California Department of Fish and Wildlife 2016:5-6). Post-breeding foraging flocks of up to 100 birds, often congregate on recently mowed or disked fields such as alfalfa or other row crops (California Department of Fish and Wildlife 2016:9). Migration back to the wintering grounds begins mid-August and most individuals leave California by October (California Department of Fish and Wildlife 2016:5-6).

Northern harrier is a state species of special concern. Breeding and foraging habitat for northern harrier includes treeless habitats with adequate prey, cover, and perches (such as fence posts). Suitable habitat includes freshwater marshes, brackish and saltwater marshes, wet meadows, margins of lakes, rivers, and streams, grasslands, weed fields, croplands, sagebrush flats, and desert sinks (Davis and Niemela 2008:152). Nests are built of sticks or grasses and typically placed on the ground in wet areas of tall, dense vegetation. The species tends to forage over vegetated, often wet fields more than in grazed or harvested fields, for rodents, passerines, reptiles, and frogs (Smith et al. 2020). Northern harrier is a year-round resident in California. Breeding occurs from April to September, with peak in June through July (Zeiner et al. 1990).

White-tailed kite is a state species of special concern and is designated as fully protected under California Fish and Game Code Section 3511. White-tailed kites generally inhabit low-elevation grassland, savannah, oak woodland, wetlands, agricultural, and riparian habitats. Some large shrubs or trees are required for nesting and for communal roosting sites. Nest trees range from small, isolated shrubs and trees to trees in relatively large stands (Dunk 1995). White-tailed kites make nests of loosely piled sticks and twigs, lined with grass and straw, near the top of dense oaks, willows, and other tree stands. The breeding season lasts from February through October and peaks between May and August. They forage in undisturbed, open grassland; meadows; farmland; and emergent wetlands. Focused nest surveys for Swainson's hawk, northern harrier, white-tailed kite, and other raptors were not conducted. Trees within and in the vicinity of the study area provide potential nesting habitat for Swainson's hawk and white-tailed kite. Grassland in the vicinity of the study area provides nesting habitat for northern harrier. There are no CNDDB records for northern harrier or white-tailed kite within five miles of the project area. The closest CNDDB occurrence for Swainson's hawk is 2.5 miles southeast of the study area (California Department of Fish and Wildlife 2021). No Swainson's hawks, northern harriers, or white-tailed kites were observed in the project area during the March 2021 wildlife surveys.

Tricolored Blackbird and Modesto Song Sparrow

Tricolored blackbird is state listed as threatened. Tricolored blackbird nests in dense colonies in emergent marsh vegetation (such as cattails and tules) or upland sites with blackberries, nettles, thistles, and grain fields. Nest sites must be able to support a colony of at least 50 pairs (Zeiner et al. 1990). Most breeding tricolored blackbirds forage within 5 miles of their colony sites (California Department of Fish and Wildlife 2018:28; U.S. Fish and Wildlife Service 2019:24). Foraging is typically concentrated in areas that support abundant insect populations, a vital food resource for provisioning nestlings (Beedy 2008:440). Foraging habitat includes grasslands, alkali seasonal wetlands, vernal pools, pastures and agricultural crops such as alfalfa and rice, which produce a high abundance of insects, in addition to cattle feedlots and dairies, which supply grains for foraging individuals (California Department of Fish and Wildlife 2018:28). The breeding season for tricolored blackbird typically lasts from mid-April through July (Zeiner et al. 1990).

Modesto song sparrow is a state species of special concern. Little is known about the specific habitat requirements for the Modesto song sparrow (Gardali 2008:402). However, emergent marsh and riparian scrub provide breeding habitat (Grinnell and Miller 1944:551). The species has also been observed to nest in valley oak riparian forests with a dense blackberry understory, vegetated irrigation canals and levees, and recently planted Valley Oak restoration sites (Dybala 2017:7;

Gardali 2008:402). Nests are commonly concealed by overhead vegetation and placed on the ground or low in vegetation (Arcese et al. 2020). Song sparrows forage on bare ground and leaf litter under and around bushes for seeds and insects (Marshall 1948:213, Gardali 2008:402). Modesto song sparrow occurs year-round in California, and breeding occurs from mid-March to early August (Gardali 2008:402).

Focused nest surveys for tricolored blackbird, Modesto song sparrow, and other migratory birds were not conducted. The closest CNDDB occurrence for tricolored blackbird is a 2014 record for a colony approximately 1.7 miles southwest of the study adjacent to SR 20 (California Department of Fish and Wildlife 2021). Suitable foraging habitat is present within the study area but not nesting habitat. The closest CNDDB occurrence for Modesto song sparrow is approximately 6.5 miles southwest of the study area in Marysville; however, the record is from 1915 and notes the amount of suitable habitat has been reduced due to development. Potential nesting habitat for Modesto song sparrow occurs along vegetated irrigation ditches within the study area; however, nesting is unlikely. No tricolored blackbirds or Modesto song sparrows were observed in the project area during the March 2021 wildlife surveys.

Other Protected and Managed Biological Resources

Cliff swallows (*Petrochelidon pyrrhonota*) and barn swallows (*Hirundo rustica*) are species that frequently build mud nests on the undersides of artificial structures such as bridges. Swallows winter in South America and return to California to breed during February. Swallows nest from April to August and migrate south during September and October (Zeiner et al. 1990). Black phoebes also build mud nests on, near, or over water on cliff faces, on walls of old buildings, under bridges, under eaves, and on other natural and artificial sheltered locations near water. Black phoebes breed from March to August (Zeiner et al. 1990). The occupied nests and eggs of migratory birds are protected by federal and state laws, including the Migratory Bird Treaty Act and California Fish and Game Code Sections 3503 and 3503.5. USFWS is responsible for overseeing compliance with the Migratory Bird Treaty Act, and CDFW is responsible for overseeing compliance with the California Fish and Game Code and making recommendations on nesting bird protection.

Based on the March 2021 wildlife survey, the bridge over the Cordua Canal provides nesting habitat (i.e., ledges and 90-degree angles) for non-special-status birds including cliff swallows and black phoebe. Remnant cliff swallow nests were observed on the underside of the bridge.

Environmental Impacts

This section describes the CEQA impact analysis relating to biological resources for the three alternatives. This section contains the methods used to determine the project's potential impacts and lists the criteria thresholds used to conclude whether an impact would be significant. Measures to mitigate (avoid, minimize, or compensate for) significant impacts accompany each impact discussion where applicable.

Methods for Analysis

The impact analysis for biological resources was conducted by evaluating the potential changes to existing biological communities based on the anticipated project construction activities listed below that could cause direct and indirect impacts of varying degrees on sensitive biological resources present in the project area:

- Vegetation removal.
- Grading, excavating, compacting, and fill placement during construction.
- Temporary stockpiling and side-casting of soil, construction materials, or other construction wastes.
- Runoff into sensitive biological resource areas (e.g., wetlands and streams) of herbicides, fertilizers, diesel fuel, gasoline, oil, raw concrete, or other toxic materials used for project construction and maintenance.

The following assumptions were used in assessing the magnitude of possible impacts on biological resources:

- No protected trees would be removed as part of the project alternatives.
- Impacts on land cover types and associated wildlife habitat were determined by overlaying preliminary footprints for permanent project features and temporary work areas (e.g., access roads, equipment staging) onto an aerial photograph base map with mapped habitats.
- Loss of annual grassland vegetation in the project area is not considered a significant impact from a botanical standpoint because this habitat is common and is not considered a sensitive natural community.
- Loss of foraging habitat (annual grassland and agricultural lands) in the study area is not considered a significant impact on special-status bird species because the habitat loss would be small (less than 2.0 acres) and would not decrease the available foraging habitat for locally nesting birds and raptors, including Swainson's hawks. The minimum patch sizes for Swainson's hawk foraging are generally considered to be between 5 and 25 acres (Estep and Teresa 1992:775–789; California Department of Fish and Game 1994:13).
- Direct impacts on seasonal wetlands that provide potential habitat for vernal pool fairy shrimp (SW-3 through SW-17) would be avoided for Alternatives 1 and 2 because ground disturbance would be more than 230 feet from the nearest wetland (SW-3).
- The project would not impact giant garter snake because that species is not expected to be present within the study area based on the lack of verified occurrences in the project vicinity, lack of historic marsh habitat within the surrounding area, and presence of significant dispersal barriers (Feather River, Yuba River, Bear River) between the study area and known populations.
- The project will not directly or indirectly affect valley elderberry longhorn beetle because the one elderberry shrub that is present in the study area does not contain exit holes (an indicator of species presence) and will not be removed by the project. The nearest ground disturbing activities would be approximately 0.33 mile to the north under Alternatives 1 and 2 and approximately 0.12 mile to the northwest under Alternative 3.
- The project will not directly or indirectly affect the Yuba River. Therefore, fish and wildlife species associated with this river corridor will not be affected and are not addressed in this analysis.

- The proposed project would not result in impacts on special-status plants because none occur in the project area. Therefore, a discussion of potential impacts on special-status plants is not included in this analysis.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would have a significant effect if it would result in any of the following.

- 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?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

Impacts and Mitigation Measures

This section describes impacts expected to result from the three project alternatives and identifies mitigation measures, where applicable. Each of the alternatives include new road construction as depicted on Figure 2 and in Appendix A, and minor roadway improvements (e.g., stripping) to the existing haul road connecting to the Hallwood Plant.

Alternative 1

Impact BIO-1: Potential Disturbance of Habitat for Swainson's Hawk, White-tailed Kite, Northern Harrier, Loggerhead Shrike, Tricolored Blackbird, and Other Migratory Birds and Raptors

The project has the potential to affect nesting Swainson's hawk, white-tailed kite, northern harrier, loggerhead shrike, tricolored blackbird, and other migratory birds and raptors either through direct injury or mortality during ground disturbing activities (i.e., vegetation removal) or by disrupting normal behaviors, including nesting. Construction noise and activities during the nesting season (February 1 to September 30) could result in the loss or disturbance of fertile eggs or nestlings or otherwise lead to nest abandonment of these special-status birds, which would violate the CFGC and MBTA.

Impacts on these special-status birds would be considered potentially significant. Implementation of Mitigation Measures BIO-1 would reduce impacts to a less-than-significant level.

Mitigation Measure BIO-1: Conduct Vegetation Removal during the Non-breeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds and Raptors

Where vegetation removal is required to construct project features, Teichert will conduct this activity during the nonbreeding season for migratory birds and raptors (generally between September 1 and February 28), to the extent feasible.

If construction activities (including vegetation removal) cannot be confined to the nonbreeding season, the project proponent will retain a qualified wildlife biologist with knowledge of the relevant species specific to the area to conduct nesting surveys before the start of construction. The migratory bird and raptor nesting surveys will include a minimum of two separate surveys to look for active migratory bird and raptor nests. Surveys will include a search of all trees and shrubs that provide suitable nesting habitat in the construction area. In addition, a 0.5-mile area around the construction area will be surveyed for Swainson's hawk, a 500-foot area around the construction area will be surveyed for nesting raptors, and a 50-foot area around the construction area will be surveyed for songbirds. One survey should occur within 14 days prior to construction and the second survey within 48 hours prior to the start of construction or vegetation removal. If no active nests are detected during these surveys, no additional measures are required.

If an active nest is found in the survey area, a no-disturbance buffer will be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this date varies by species). The extent of these buffers will be determined by the biologist in coordination with USFWS and/or CDFW as applicable, and will depend on the level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.

Impact BIO-2: Loss and/or Disturbance of Aquatic Resources

Alternative 1 could result in the direct removal, filling, or hydrological interruption of approximately 0.257 acre of aquatic resources (including permanent loss of 0.126 acre and temporary disturbance of 0.131 acre [see Table 1]) that may be regulated by the USACE and/or the SWRCB under the Porter-Cologne Water Quality Control Act. However, as described previously, these aquatic resources would not likely be considered federally protected and regulated by the USACE under Section 404 of the Clean Water Act and/or the Regional Water Quality Control Board under Section 401 of the Clean Water Act or the Porter-Cologne Water Quality Control Act.

Table 1. Alternative 1 – Temporary and Permanent Impacts on Aquatic Resources

Aquatic Resource Type/Number	Permanent Impact (acres)	Temporary Impact (acres)	Total Impact
Wetlands			
WD-3	0.001	0.002	0.003
Non-Wetland Waters			
RD-5	0.003	0.003	0.006
RD-7	0.008	0.008	0.015
RD-9	0.031	0.031	0.063
RD-11	0.024	0.024	0.048
RD-12	0.001	0.002	0.003
RD-13	0.009	0.009	0.018
RD-14	0.000	0.001	0.001
RD-15	0.042	0.042	0.084
RD-16	0.002	0.004	0.006
RD-17	0.002	0.002	0.004
RD-18	0.001	0.001	0.002
RD-19	0.002	0.003	0.005
Total	**0.126**	**0.131**	**0.257**

Loss or filling of these aquatic resources, if regulated by the Regional Water Quality Control Board or the USACE, would be considered a substantial adverse effect. Implementation of Mitigation Measures BIO-2.1 and BIO-2.2 would reduce project impacts to a less-than-significant level.

Mitigation Measure BIO-2.1: Submit an Aquatic Resource Delineation to the USACE and Regional Water Board and Compensate for Potential Substantial Adverse Effects on Protected Wetlands and Non-Wetland Waters

Prior to construction, Teichert will submit the Aquatic Resources Delineation Report to the USACE and Regional Water Quality Control Board to determine if the seasonal wetlands, roadside ditches, and agricultural ditches would be regulated by the USACE under Section 404 of the Clean Water Act and/or by the Regional Water Board under Section 401 of the Clean Water Act or the Porter-Cologne Water Quality Control Act.

If the Regional Water Quality Control Board and/or the USACE determines that the wetlands and non-wetland waters are regulated under state and federal laws, Teichert will obtain the required permits and implement any required compensation for the loss of waters of the United States and/or waters of the State. The actual mitigation ratio and associated credit acreage will be based on USACE and Regional Water Quality Control Board permitting, which will dictate the ultimate compensation for permanent or temporary impacts to waters of the United States/waters of the State.

Mitigation Measure BIO-2.2: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Non-Wetland Waters

Teichert will comply with all construction site BMPs specified in the Storm Water Pollution Prevention Plan and any other permit conditions to minimize the introduction of construction-related contaminants and mobilization of sediment in wetlands and non-wetland waters in and adjacent to the project area. These BMPs will address soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-stormwater management, and waste management practices. The BMPs will be based on the best conventional and best available technology.

Impact BIO-3: Potential Conflict with Yuba County Local Policies and Ordinances Protecting Biological Resources

The Yuba County 2030 General Plan describes a variety of policies to protect and restore habitat for special-status species and their habitats in the county. As described above under "Local Laws and Regulations", these policies require applicants for new developments to conduct biological resource studies, avoid and minimize potential impacts, and compensate for impacts (e.g., under Policy NR5.9, "the County will require applicants to mitigate the loss on a "no net loss" basis through a combination of avoidance, minimization, restoration, and/or constructed wetlands, in accordance with federal and state law"). The proposed project could conflict with the County policies related to special-status species and their habitats (see impacts described previously under Impacts BIO-1 and BIO-2).

In addition, Alternative 1 could require the removal of native oak trees (greater than 6-inch diameter at breast height [dbh]) that are protected under Yuba County Ordinance Code Chapter 11.44.060. The loss or disturbance of native oak trees could be a significant impact because impacts could conflict with the County ordinance. However, the project would be implemented and conditioned consistent with provisions of the County's tree preservation ordinance. Therefore, potential conflict with local policies or ordinances protecting biological resources is considered less than significant. In addition, Teichert will identify all existing oak trees that have a diameter at breast height (DBH) of six inches or greater and all other trees that have a DBH of 30 inches or greater shall be shown on the engineering drawings with a notation as to the size, species and dripline. All trees proposed for removal shall be clearly designated.

Potential conflicts with the County's policies and ordinance would be considered a significant impact. Implementation of Mitigation Measures BIO-1, BIO-2.1, and BIO-2.2 would reduce impacts to a less than significant level.

Impact BIO-4: Potential Indirect Impacts on Vernal Pool Fairy Shrimp Habitat

Alternative 1 could result in indirect effects on several seasonal wetlands considered habitat for vernal pool fairy shrimp (SW-3 through SW-17 in Appendix B and Figure 3). For the purpose of this impact analysis, habitat in the study area that supports suitable habitat characteristics is presumed to be occupied by vernal pool fairy shrimp (no protocol-level surveys have been conducted). Potential indirect effects would be documented and provided to the USACE (assuming they are the federal lead agency) for consultation with the USFWS.

Vernal pool fairy shrimp habitat was considered indirectly impacted if activities occurred within 250 feet of suitable habitat. A description of potential indirect impacts on vernal pool fairy shrimp resulting from project construction is provided below.

Indirect Impacts

Potential indirect effects on vernal pool fairy shrimps include changes in hydrology and degradation of seasonal wetlands due to water quality resulting from construction (within 250 feet) to suitable vernal pool fairy shrimp habitat. Under Alternative 1 the nearest ground disturbance is approximately 230 feet north of SW-3 and is more than 250 feet from the suitable wetland habitats associated with SW-4 through SW-17. This ground disturbance would be minor surface disturbance to the existing roadbed (compacted gravel with some dirt on top) just north of the end of the existing pavement. These activities would not substantially change the topography and would not require excavation that has a potential to disrupt any restrictive soli layers (i.e., duripans) that support local hydrology. Therefore, the hydrology supporting SW-3 would not likely change such that it no longer has a potential to support vernal pool fairy shrimp, if present.

Although ground disturbance in the vicinity of potential vernal pool fairy shrimp habitat (SW-3 through SW-17) along the existing haul road is minimal, these areas could potentially be impacted by spills of construction related materials that could reach these wetlands, particularly during rain events, and result in the injury and mortality of vernal pool fairy shrimp, if present. This would be considered a significant impact.

Implementation of Mitigation Measure BIO-2.2 (described above) would avoid these potential impacts during construction and would reduce project impacts to a less-than-significant level.

Alternative 2

Impact BIO-1: Potential Disturbance of Habitat for Swainson's Hawk, White-tailed Kite, Northern Harrier, Loggerhead Shrike, Tricolored Blackbird, and Other Migratory Birds and Raptors

Construction noise and activities during the nesting season (March 1 to August 31) could result in the same types of impacts on Swainson's hawk, white-tailed kite, northern harrier, loggerhead shrike, tricolored blackbird, and other migratory birds and raptors as described for Alternative 1. These impacts would be considered potentially significant. Implementation of Mitigation Measure BIO-1 would reduce potential impacts on migratory birds and raptors associated with Alternative 2 to a less-than-significant level.

Impact BIO-2: Loss and/or Disturbance of Aquatic Resources

Alternative 2 could result in the direct removal, filling, or hydrological interruption of 0.264 acre of aquatic resources (including permanent loss of 0.129 acre and temporary disturbance of 0.135 acre [Table 2]) that may be regulated by the USACE and/or the Regional Water Board under the Porter-Cologne Water Quality Control Act. However, as described previously, these aquatic resources would not likely be considered federally protected and regulated by the USACE under Section 404 of the Clean Water Act and/or the Regional Water Quality Control Board under Section 401 of the Clean Water Act or the Porter-Cologne Water Quality Control Act.

Table 2. Alternative 2 – Temporary and Permanent Impacts on Aquatic Resources

Aquatic Resource Type/Number	Permanent Impact (acres)	Temporary Impact (acres)	Total Impact
Wetlands			
WD-3	0.001	0.002	0.003
WD-4	0.001	0.003	0.005
WD-2	0.005	0.006	0.011
SW-2	0.00	0.001	0.001
Non-Wetland Waters			
RD-11	0.024	0.024	0.048
RD-13	0.009	0.009	0.018
RD-15	0.042	0.042	0.084
RD-5	0.003	0.003	0.006
RD-6	0.005	0.006	0.011
RD-7	0.008	0.008	0.015
RD-9	0.031	0.031	0.063
Total	**0.129**	**0.135**	**0.264**

Loss or filling of these aquatic resources, if regulated by the Regional Water Quality Control Board or the USACE, would be considered a substantial adverse effect. Implementation of Mitigation Measures BIO-2.1 and BIO-2.2 would reduce project impacts to a less-than-significant level.

Impact BIO-3: Potential Conflict with Yuba County Local Policies and Ordinances Protecting Biological Resources

As described previously for Alternative 1, Alternative 2 of the proposed project could also conflict with the County policies related to special-status species and their habitats and native oak trees. Potential conflicts with the County's policies and ordinance would be considered a significant impact. Implementation of Mitigation Measures BIO-1, BIO-2.1, and BIO-2.2 would reduce impacts to a less than significant level.

Impact BIO-4: Potential Indirect Impacts on Vernal Pool Fairy Shrimp Habitat

Alternative 2 could result in indirect effects on several seasonal wetlands considered habitat for vernal pool fairy shrimp (SW-3 through SW-17 in Appendix B and Figure 3). For the purpose of this impact analysis, habitat in the study area that supports suitable habitat characteristics is presumed to be occupied by vernal pool fairy shrimp (no protocol-level surveys have been conducted). Potential indirect effects would be documented and provided to the USACE (assuming they are the federal lead agency) for consultation with the USFWS.

Vernal pool fairy shrimp habitat was considered indirectly impacted if activities occurred within 250 feet of suitable habitat. A description of potential indirect impacts on vernal pool fairy shrimp resulting from project construction is provided below.

Indirect Impacts

Potential indirect effects on vernal pool fairy shrimps include changes in hydrology and degradation of seasonal wetlands due to water quality resulting from construction (within 250 feet) to suitable vernal pool fairy shrimp habitat. Under Alternative 2 the nearest ground disturbance is approximately 230 feet north of SW-3 and is more than 250 feet from the suitable habitat associated with SW-4 through SW-17. This ground disturbance would be minor surface disturbance to the existing roadbed (compacted gravel with some dirt on top) just north of the end of the existing pavement. These activities would not substantially change the topography and would not require excavation that has a potential to disrupt any restrictive soli layers (i.e., duripans) that support local hydrology. Therefore, the hydrology supporting SW-3 would not likely change such that it no longer has a potential to support vernal pool fairy shrimp, if present.

The potential vernal pool fairy shrimp habitat (SW-3 through SW-17) along the existing haul road could potentially be impacted by spills of construction related materials that could reach these wetlands, particularly during rain events, and result in the injury and mortality of vernal pool fairy shrimp, if present. This would be considered a significant impact.

Implementation of Mitigation Measure BIO-2.2 (described above) would avoid these potential impacts during construction and would reduce project impacts to a less-than-significant level.

Alternative 3

Impact BIO-1: Potential Disturbance of Habitat for Swainson's Hawk, White-tailed Kite, Northern Harrier, Loggerhead Shrike, Tricolored Blackbird, and Other Migratory Birds and Raptors

Construction noise and activities during the nesting season (February 1 to September 30) could result in the same types of impacts on Swainson's hawk, white-tailed kite, northern harrier, loggerhead shrike, tricolored blackbird, and other migratory birds and raptors as described for Alternative 1. These impacts would be considered potentially significant. Implementation of Mitigation Measure BIO-1 would reduce potential impacts on migratory birds and raptors associated with Alternative 3 to a less-than-significant level.

Impact BIO-2: Loss and/or Disturbance of Aquatic Resources

Alternative 3 could result in the direct removal, filling, or hydrological interruption of 0.627 acre of aquatic resources (including permanent loss of 0.545 acre and temporary disturbance of 0.082 acre [Table 3]) that may be regulated by the USACE and/or the Regional Water Board under the Porter-Cologne Water Quality Control Act. However, as described previously, these aquatic resources would not likely be considered federally protected and regulated by the USACE under Section 404 of the Clean Water Act and/or the RWQCB under Section 401 of the Clean Water Act or the Porter-Cologne Water Quality Control Act.

Table 3. Alternative 3 – Temporary and Permanent Impacts on Aquatic Resources

Aquatic Resource Type/Number	Permanent Impact (acres)	Temporary Impact (acres)	Total Impact (acres
Wetlands			
WD-1a	0.016	0.002	0.017
WD-1	0.180	0.029	0.209
WD-3	0.046	0.002	0.048
WD-4	0.055	0.002	0.057
SW-7	0.069	0.018	0.086
Non-Wetland Waters			
RD-2	0.180	0.029	0.209
Total	**0.545**	**0.082**	**0.627**

Loss or filling of these aquatic resources, if regulated by the Regional Water Quality Control Board or the USACE, would be considered a substantial adverse effect. Implementation of Mitigation Measures BIO-2.1 and BIO-2.2 would reduce project impacts to a less-than-significant level.

Impact BIO-3: Potential Conflict with Yuba County Local Policies and Ordinances Protecting Biological Resources

As described for Alternative 1, Alternative 3 of the proposed project could also conflict with the County policies related to special-status species and their habitats and native oak trees. Potential conflicts with the County's policies and ordinance would be considered a significant impact. Implementation of Mitigation Measures BIO-1, BIO-2.1, and BIO-2.2 (described above), and BIO-4.1 through BIO-4.4 (described below) would reduce project impacts to a less than significant level.

Impact BIO-4: Direct and Indirect Impacts on Vernal Pool Fairy Shrimp Habitat

Alternative 3 would result in the direct loss (filling) of one seasonal wetland (0.23 acre) that is considered suitable habitat for the federally listed vernal pool fairy shrimp (SW-7 in Appendix B). Based on the proximity of proposed construction activities, Alternative 3 may also result in indirect effects on two seasonal wetlands (totaling 0.013 acre) that is considered habitat for vernal pool fairy shrimp (SW-9 and SW-10 in Appendix B). For the purpose of this impact analysis, habitat in the study area that supports suitable habitat characteristics is presumed to be occupied by vernal pool fairy shrimp (no protocol-level surveys have been conducted). Potential direct and indirect effects would be documented in a Biological Assessment and provided to the USACE (assuming they are the federal lead agency) for initiation of consultation with the USFWS.

For purposes of calculating direct impacts on vernal pool fairy shrimp habitat and based on the sensitive nature of the seasonal wetland hydrology, the entire seasonal wetland identified as suitable habitat was considered affected even if only a portion of the wetland would be permanently or temporarily affected. Vernal pool fairy shrimp habitat was considered indirectly impacted if ground disturbing activities occurred within 250 feet of suitable habitat. A description of potential direct and indirect impacts on vernal pool fairy shrimp resulting from project construction is provided below.

Direct Impacts

The seasonal wetland (SW-7) that is located where the proposed new haul road would tie into the existing haul road would be graded and filled during roadway construction activities. Permanent impacts would result from placement of fill in this wetland. Other direct impacts that have the potential to occur are fuel or oil leaks or spills that result in discharge to nearby seasonal wetlands that could result in injury to or mortality of vernal pool fairy shrimp and degradation of habitat. Direct impacts to nearby habitats would be prevented by implementation of water quality protections in the project SWPPP.

Indirect Impacts

Potential indirect effects on vernal pool fairy shrimps that were considered were changes in hydrology and degradation of seasonal wetlands resulting from construction of a new roadway in proximity (within 250 feet) to suitable vernal pool fairy shrimp habitat. Wetlands SW-9 and SW-10 could have their supporting hydrology altered due to the degree the topography will change and due to the potential excavation that may be required to construct Alternative 3, which could disrupt restrictive soil layers supporting the subsurface hydrology. These potential changes could alter the hydrology such that it no longer has a potential to support vernal pool fairy shrimp, if present.

The potential vernal pool fairy shrimp habitat (SW-3 – SW-17) along the existing haul road could potentially be impacted by spills of construction related materials that could reach these wetlands, particularly during rain events, and result in the injury and mortality of vernal pool fairy shrimp, if present. Implementation of Mitigation Measure BIO-2.2 (described above) would avoid these potential impacts during construction.

The loss of suitable habitat and habitat modifications for the federally listed vernal pool fairy shrimp species would be considered a significant impact. Implementation of Mitigation Measure BIO-2.2 (described above) and Mitigation Measures BIO-4.1, BIO-4.2, BIO-4.3, and BIO-4.4 (described below) would reduce project impacts to a less-than-significant level.

Mitigation Measure BIO-4.1: Install Fencing and/or Flagging to Protect Adjacent Seasonal Wetlands

Prior to construction, the contractor will install high-visibility orange construction fencing and/or flagging, as appropriate, along the perimeter of the work area adjacent to seasonal wetlands. Teichert will ensure that the final construction plans show the locations where fencing will be installed. The plans also will define the fencing installation procedure. The contractor will ensure that the fencing is maintained throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease until the fencing is repaired or replaced. The project's special provisions package will provide clear language regarding acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within sensitive areas. All temporary fencing will be removed upon completion of construction.

Mitigation Measure BIO-4.2: Conduct Environmental Awareness Training for Construction Personnel

Before any work occurs within the project limits, including equipment staging, grading, and vegetation removal, Teichert will retain a qualified biologist (familiar with the resources in the area) to conduct a mandatory contractor/worker environmental awareness training for construction personnel. The awareness training will be provided to all construction personnel (contractors and subcontractors) prior to beginning construction to brief them on the need to avoid effects on sensitive biological resources adjacent to construction areas and the penalties for not complying with applicable state and federal laws and permit requirements. The biologist will inform all construction personnel about the life history and habitat requirements of special-status species with potential for occurrence onsite, the importance of maintaining habitat, and the terms and conditions of applicable project permits or authorizations. The environmental training will also cover general restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive biological resources during project construction.

Mitigation Measure BIO-4.3: Retain a Qualified Biologist to Conduct Preconstruction Surveys and Periodic Monitoring during Construction in and near Vernal Pool Fairy Shrimp Habitat

Teichert will retain a qualified biologist to conduct periodic site visits during construction activities that involve ground disturbance in or adjacent to vernal pool fairy shrimp habitat. The timing and frequency of this monitoring will be determined through coordination with Teichert or as determined by the project permits but will be a minimum of once per week. The purpose of the monitoring is to ensure that measures identified in this report are properly implemented to avoid and minimize effects on vernal pool fairy shrimp habitat and to ensure that the project complies with all applicable permit requirements and agency conditions of approval. The biologist will ensure that fencing around sensitive areas remains in place during construction and that no construction personnel, equipment, or runoff/sediment from the construction area enters sensitive areas.

Mitigation Measure BIO-4.4: Compensate for the Loss of Vernal Pool Fairy Shrimp Habitat

Teichert will compensate for direct and indirect impacts on vernal pool fairy shrimp habitat. Compensatory mitigation for direct and indirect effects on habitat for vernal pool fairy shrimps will include the purchase of mitigation credits at a USFWS-approved conservation bank. Habitat that is directly or indirectly impacted will be mitigated by preserving habitat at a 2:1 ratio (habitat preserved to habitat directly or indirectly impacted) and creating additional habitat at a 1:1 ratio (habitat created to habitat directly impacted) at the USFWS-approved mitigation bank. Created habitat mitigation would be consistent with mitigation requirements for USACE-regulated habitats (Mitigation Measure BIO-2.1) and would not be additive. The mitigation ratio and associated acreage for vernal pool fairy shrimp impacts may be modified based on project permits, which will dictate the ultimate compensation requirements for this federally listed species.

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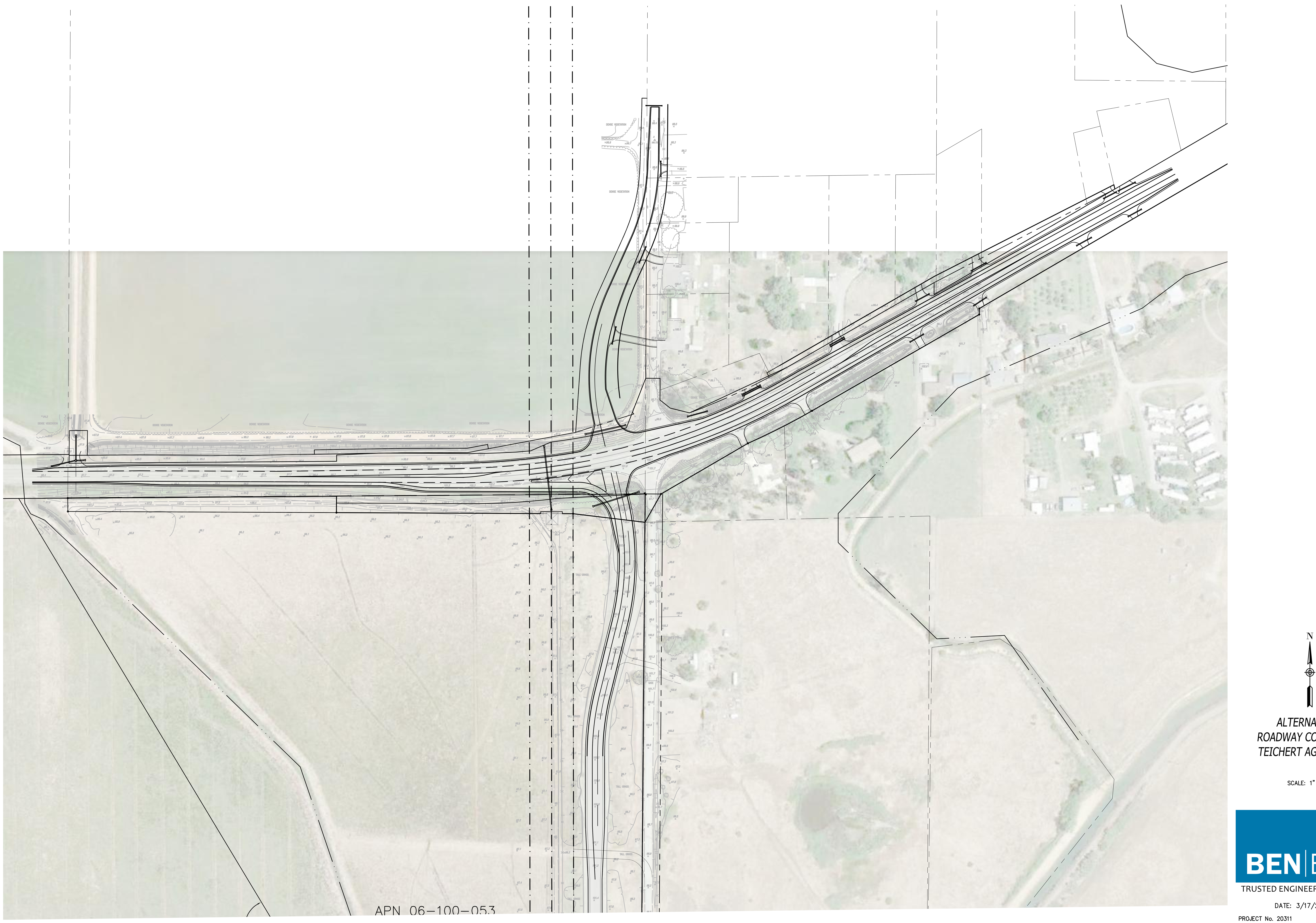
Appendix A

Project Alternatives – Engineering Drawings



ALTERNATIVE 1
ROADWAY CONNECTION
TEICHERT AGGREGATES

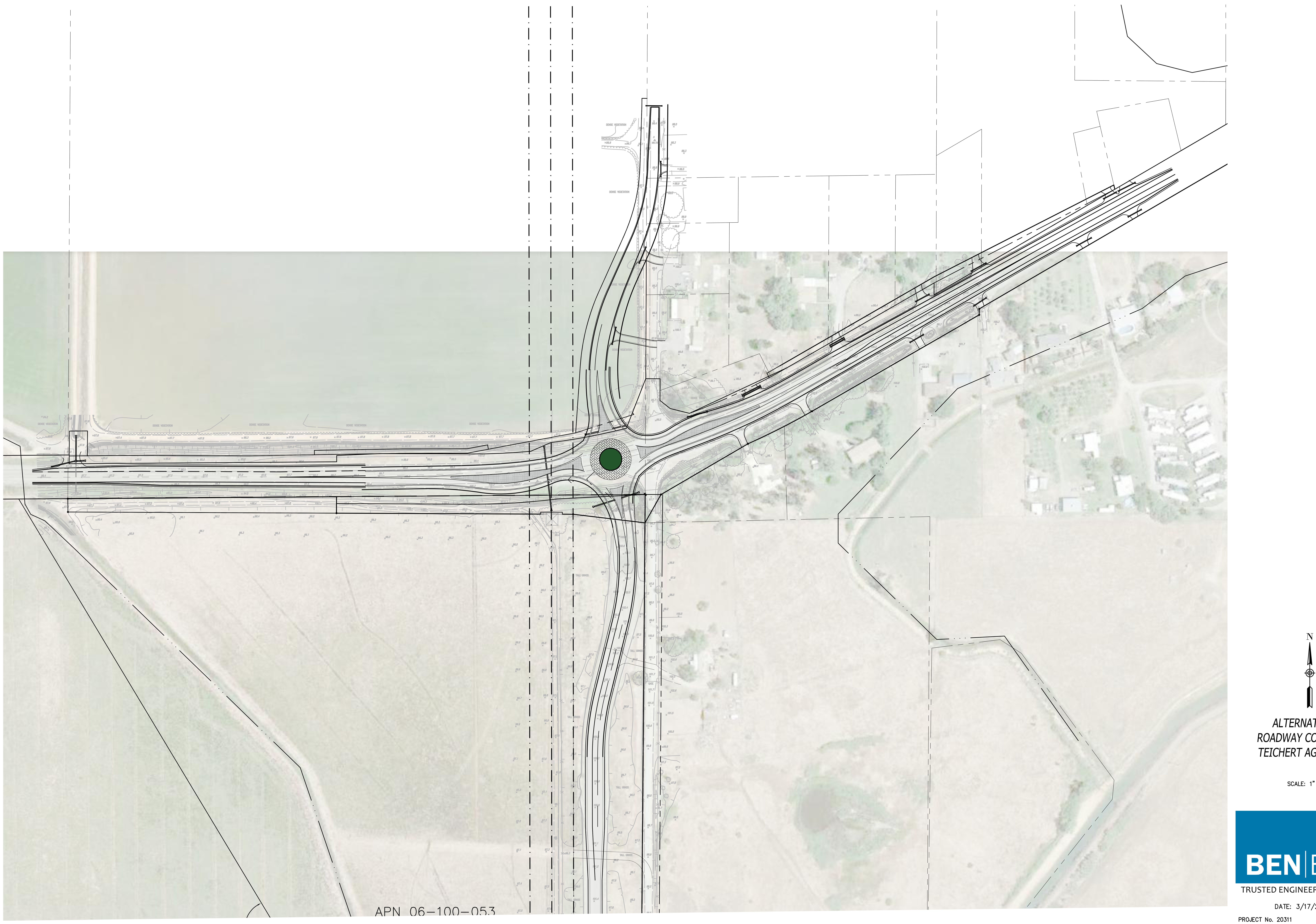
SCALE: 1" = 100'

BEN|EN
TRUSTED ENGINEERING ADVISORS

DATE: 3/17/21 BY: CA

PROJECT No. 20311

SHEET 1 OF 6



ALTERNATIVE 1.1
ROADWAY CONNECTION
TEICHERT AGGREGATES

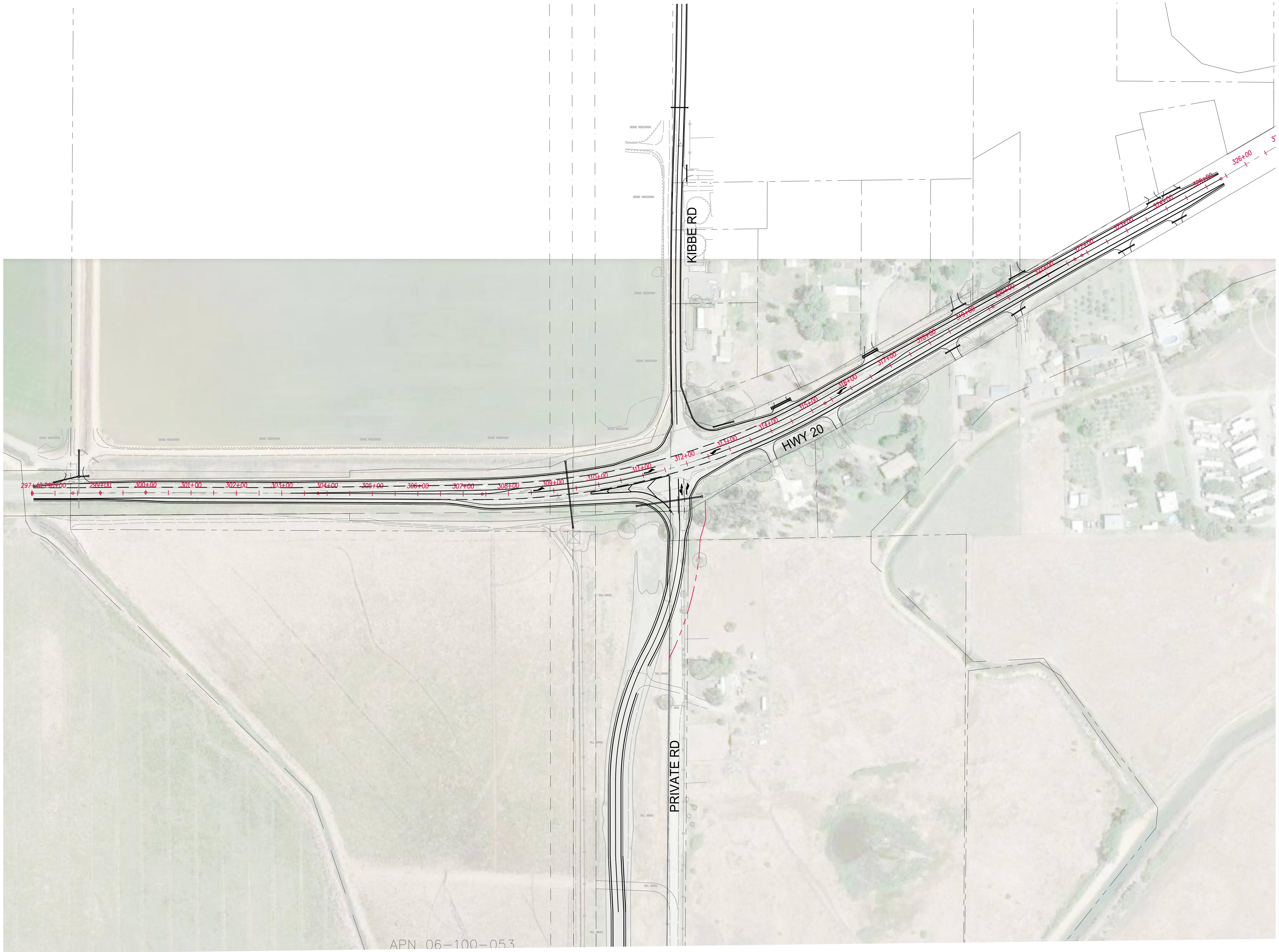
SCALE: 1" = 100'

BEN|EN
TRUSTED ENGINEERING ADVISORS

DATE: 3/17/21 BY: CA

PROJECT No. 20311

SHEET 2 OF 6



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ALTERNATIVE 2
ROADWAY CONNECTION
TEICHERT AGGREGATES

SCALE: 1" = 100'

BEN|EN
TRUSTED ENGINEERING ADVISORS

DATE: 3/17/21 BY:CA

PROJECT No. 20311

SHEET 3 OF 6

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ALTERNATIVE 2.1
ROADWAY CONNECTION
TEICHERT AGGREGATES

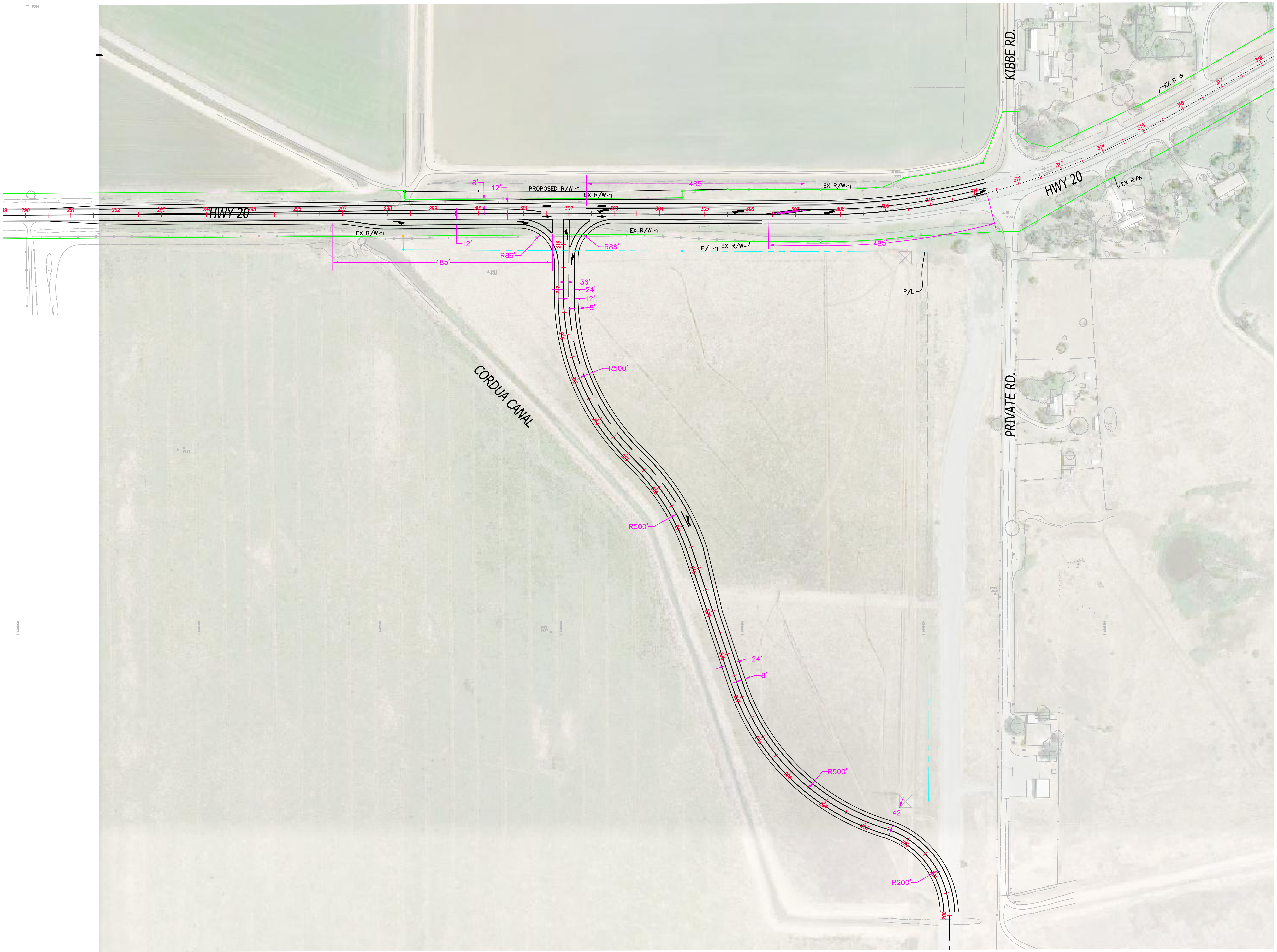
SCALE: 1" = 100'

BEN|EN
TRUSTED ENGINEERING ADVISORS

DATE: 3/17/21 BY:CA

PROJECT No. 20311

SHEET 4 OF 6



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ALTERNATIVE 3
ROADWAY CONNECTION
TEICHERT AGGREGATES

SCALE: 1" = 100'

BEN|EN
TRUSTED ENGINEERING ADVISORS

DATE: 3/17/21 BY:CA

PROJECT No. 20311 SHEET 5 OF 6

ALTERNATIVE 3.1
ROADWAY CONNECTION
TEICHERT AGGREGATES

SCALE: 1" = 100'

BEN|EN
TRUSTED ENGINEERING ADVISORS

DATE: 3/17/21 BY:CA

PROJECT No. 20311

SHEET 6 OF 6

Appendix B

Aquatic Resource Delineation Map

Kibbe Road/State Route 20 Intersection Improvements Project
June 2021

Legend

Delineation Area (27.93 acres)

Data Points

- Ordinary High Water Mark Data Point
- Upland Data Point
- Wetland Data Point
- Culvert
- Photo Point

Aquatic Resources

Wetlands (2.593 acres)

- Roadside Wetland Ditch (0.416 acre)
- Seasonal Wetland (2.177 acres)

Non-Wetland Waters (0.178 acre)

- Agricultural Ditch/Canal (0.086 acre)
- Roadside Ditch (0.093 acre)

W = Average Width

0 50 100 200
Feet
1 inch = 200 feet

Notes:
Base Map Source: ICF, 2021
Imagery Source: Maxar, 2020
USGS Topo Quad: Browns Valley
PLSS: S25 T16N R4E, S26 T16N R4E

Prepared By: ICF 916.737.3000
Delineated By: Robert Preston and Devin Jokerst
Delineation Date: May 6, 2021
Drawn By: Becky Crosswhite

Path: \\PDCC\TRDSGIS1\Projects_1\Teichert\00020_21_KibbeRoad-SR 20\Figures\Delin\Append_A_Delin.mxd; Author: ; Date: 6/29/2021

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Path: \\PDCCITRDSGIS1\Projects_1\Teichert\00020_21_KibbeRoad-SR 20\Figures\Delin\Append_A_Delin.mxd; Author: ; Date: 6/29/2021

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Prepared By: ICF 916.737.3000
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Appendix B
Aquatic Resources Delineation Map

Appendix C
Special-Status Species Tables

Table C-1. Special-Status Plants Species Identified as Having the Potential to Occur in the Project Region

Common Name Scientific Name	Status* Federal/State/ CRPR	Distribution	Habitat Description	Likelihood for Occurrence in Study Area
Depauperate milk-vetch *Astragalus pauperculus*	–/–/4.3	Cascade Range, northern Sierra Nevada foothills, northern Sacramento Valley	On stony flats and in shallow depressions, in vernally mesic areas of grasslands, chaparral, and oak woodlands; at 200–3,985 feet; blooms March–May	None – Habitat not present; species not expected to occur
Ferris' milk-vetch *Astragalus tener* var. *ferrisiae*	–/–/1B.1	Sacramento Valley	Subalkaline flats and flood lands, usually on adobe soil; blooms March–June.	None – Habitat not present; species not expected to occur
Mexican mosquito fern *Azolla microphylla*	–/–/4.2	Scattered locations in non-desert areas of California	Ponds, still water of streams and canals; between 100–325 feet	None – Habitat not present; species not expected to occur
Valley brodiaea *Brodiaea rosea* subsp. *vallicola*	–/–/4.2	North Sierra Nevada Foothills, eastern Sacramento Valley, northeastern San Joaquin Valley	Grasslands, below 1,100 ft; blooms April–May	None – Habitat not present; species not expected to occur
Sierra Foothills brodiaea *Brodiaea sierrae*	–/–/4.3	Northern Sierra Nevada	Open areas in chaparral, foothill woodland, generally on serpentine or gabbro; 590–3,100 ft; blooms May–August	None – Habitat not present; species not expected to occur
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	–/–/4.2	Northern Sierra Nevada foothills from Butte County to El Dorado County	Chaparral, oak woodland, from 970–2,900 feet; blooms May–July	None – Habitat not present; species not expected to occur
Red-stemmed cryptantha *Cryptantha rostellata*	–/–/4.2	Inner North Coast Ranges, Sacramento Valley, northern Sierra Nevada Foothills, northwestern Modoc Plateau	Dry, rocky sites, grassland, oak woodland, chaparral, at 130–2,6,25 ft; blooms April–June	None – Habitat not present; species not expected to occur
Recurved larkspur *Delphinium recurvatum*	–/–/1B.2	San Joaquin Valley and interior valleys of the South Coast Ranges, from Contra Costa County to Kern County	Subalkaline soils in annual grassland, saltbush scrub, at 100–1,970 ft; blooms March–June	None – Habitat not present; species not expected to occur

Common Name Scientific Name	Status* Federal/State/ CRPR	Distribution	Habitat Description	Likelihood for Occurrence in Study Area
Dwarf downingia *Downingia pusilla*	–/–/2B.2	Central Valley from Tehama to Fresno Counties, northern San Francisco Bay Area, southern South Coast Ranges	Vernal pools, below 490 ft; blooms March–May	None – Potential habitat present; species not observed during 2021 surveys
Shield-bracted monkeyflower *Erythranthe glaucescens*	–/–/4.3	Southern Cascade Range foothills, northern Sierra Nevada foothills	Serpentine seeps in valley and foothill grassland, chaparral, cismontane woodland, lower montane coniferous forest; 195–4,070 ft; blooms February–August	None – Habitat not present; species not expected to occur
Stinkbells *Fritillaria agrestis*	–/–/4.2	Outer North Coast Ranges, Sierra Nevada Foothills, Central Valley, central western California	Grasslands, foothill woodlands, and open grassy areas in chaparral, between 30–5,100 ft; blooms March–June	None – Potential habitat present; species not observed during 2021 surveys
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	–/–/1B.2	East edge of Sacramento Valley from Butte County to Sacramento County	Vernal pools, from 100–330 ft; blooms March–May	None – Potential habitat present; species not observed during 2021 surveys
Red Bluff dwarf rush *Juncus leiospermus* var. *leiospermus*	–/–/1B.1	Interior North Coast Ranges, Cascade Range foothills, Modoc Plateau, Sacramento Valley, northern Sierra Nevada foothills	Vernally mesic sites in chaparral, valley and foothill grassland, cismontane woodlands; 110–3,315 feet; blooms April–June	None – Potential habitat present; species not observed during 2021 surveys
Legenere *Legenere limosa*	–/–/1B.1	Southern North Coast Ranges, southern Sacramento Valley, northern San Joaquin Valley, San Francisco Bay Area	Vernal pools, below 2,885 ft; blooms May–June	None – Potential habitat present; species not observed during 2021 surveys
Veiny monardella *Monardella venosa*	–/–/1B.1	Butte County	Annual grasslands, on heavy clay soils, 165–1,310 ft; blooms June–July	None – Habitat not present; species not expected to occur
Ahart's paronychia *Paronychia ahartii*	–/–/1B.1	Northern Central Valley	Vernal swales and margins of vernal pools, in clay soils, below 1,640 ft; blooms April–June	None – Habitat not present; species not expected to occur

Common Name Scientific Name	Status* Federal/State/ CRPR	Distribution	Habitat Description	Likelihood for Occurrence in Study Area
Cedar Crest popcornflower *Plagiobothrys glyptocarpus* var. *modestus*	–/–/3	Interior North Coast Ranges (Lake Co.), northern Sierra Nevada foothills (Butte, Nevada Counties)	Vernal pools, moist places in grassland, woodland, forest, at 165–2,855 ft; blooms April–May	None – Habitat not present; species not expected to occur
Hartweg's sunburst *Pseudobahia bahiifolia*	E/E/1B.1	Eastern San Joaquin Valley and adjacent foothills, formerly as far north as Yuba County	Clay soils in grasslands, adjacent to vernal pools and streams, at 325–655 ft; blooms March–May	None – Habitat not present; species not expected to occur
Sanford's arrowhead *Sagittaria sanfordii*	–/–/1B.2	Scattered locations in Central Valley and Coast Ranges	Freshwater marsh, sloughs, canals, and other slow-moving water habitats, below 2,130 ft; blooms May–October	None – Habitat not present; species not expected to occur
Brazilian watermeal *Wolffia brasiliensis*	–/–/2B.2.3	Northern Sacramento Valley	Ponds, sloughs, ditches, below 330 ft	None – Potential habitat present; species not observed during 2021 surveys

*Status explanations:

Federal

–	=	No status
E	=	Listed as "endangered" under the federal Endangered Species Act.

State

–	=	No status
E	=	Listed as "endangered" under the California Endangered Species Act.

California Rare Plant Rank

1B	=	Rare, threatened, or endangered in California and elsewhere.
2B	=	Rare, threatened, or endangered in California, but more common elsewhere.
4	=	Plants of limited distribution.
.1	=	Seriously endangered in California
.2	=	Fairly endangered in California
.3	=	Not very endangered in California

Table C-2. Special-Status Wildlife Species Identified as Having the Potential to Occur in the Project Region

Common Name Scientific Name	Legal Status (Federal/State)	General Habitat Description	Likelihood for Occurrence in Study Area
Conservancy fairy shrimp' *Branchinecta conservation*	FE/–	Found in large turbid playa pools. Occurs from Butte and Tehama Counties to Ventura County.	None – Species known range does not overlap with the study area and seasonal wetlands in the study area do not represent typical habitat the species is found in.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/–	Found in Central Valley, central and south Coast Ranges from Tehama to Santa Barbara County; isolated populations also in Riverside County; common in vernal pools; also found in sandstone rock outcrop pools. The species has been observed reproducing as soon as 18 days and with an average of 40 days with continuous habitat ponding.	Moderate - Portions of the seasonal wetlands mapped in the study area may support sufficient hydrology (minimum ponding of 3 weeks) to support the species.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/–	Found from Shasta County south to Merced County; occurs in vernal pools and ephemeral stock ponds. The species has been observed reproducing as soon as 41 days and with an average of 54 days with continuous habitat ponding.	None – Based on the observed size, shape, and depths, the seasonal wetlands in the study area are shallow-ponding features and do not appear to have sufficient duration of ponding to support this species.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT/–	Streamside habitats below 500 feet throughout the Central Valley; occurs in riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant.	Low – There is an isolated elderberry shrub within the study area; however, no exit holes were observed on the shrub and it is located in ruderal grassland (non-riparian). The closest CNDDB record for the species is 0.35 mile to east and there is no riparian or woodland vegetation linking these two locations.

Common Name Scientific Name	Legal Status (Federal/State)	General Habitat Description	Likelihood for Occurrence in Study Area
Western spadefoot toad *Spea hammondii*	-/SSC	In winter, breeds in vernal pools and seasonal wetlands. Eggs are laid in clusters and usually hatch in 3 to 4 days, with the average larval period reported to last 58 days. Juveniles leave natal ponds shortly after metamorphosis from April to June. In summer, aestivates in grassland habitat, in soil crevices, and rodent burrows. Species is found throughout the Central Valley and coastal lowlands from Shasta County in Northern California to Baja California in Mexico, at elevations ranging from sea level to 4,500 feet.	None – Based on the observed size, shape, and depths, the seasonal wetlands in the study area do not appear to have sufficient duration of ponding to support egg development and larval rearing.
California red-legged frog *Rana draytonii*	FT/SSC	Found along the coast and coastal mountain ranges of California from Mendocino to San Diego County and in the Sierra Nevada from Butte to Tuolumne County; occurs in permanent and semipermanent aquatic habitats, such as creeks and ponds, with emergent and submergent vegetation; uses upland areas for cover (burrows, logs, rocks, and crevices) and dispersal.	None – The study area lacks deep pools required for breeding. The study area is on the edge of the species' known range and there are no CNDDB occurrences within five miles.
Western pond turtle *Emys marmorata*	–/SSC	Occurs throughout California west of the Sierra-Cascade crest; found from sea level to 6,000 feet; does not occur in desert regions except along the Mojave River and its tributaries; occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms.	None – Water levels in the agricultural and roadside ditches in the study area fluctuate seasonally; the study area lacks perennial aquatic habitat needed to support the species.
Giant garter snake *Thamnophis gigas*	FT/ST	Sloughs, canals, low-gradient streams, and freshwater marsh habitats with a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.	None – Agricultural and roadside ditches within the study area are intermittent during the summer months when the species is active. Although nearby perennial canals are present, there are no confirmed populations of the species in the project vicinity and the study area is located within an area that was determined to have a low likelihood of species occurrence (Halstead et al. 2014).

Common Name Scientific Name	Legal Status (Federal/State)	General Habitat Description	Likelihood for Occurrence in Study Area
Swainson's hawk *Buteo swainsoni*	–/ST	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley; highest nesting densities occur near Davis and Woodland, Yolo County; nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields.	High – Suitable nest trees, grassland, and agricultural fields (foraging habitat) are present in the study area and vicinity.
Northern harrier *Circus cyaneus*	–/SSC	Nests on the ground among herbaceous vegetation, such as grasses or cattails; forages in grasslands, agricultural fields, and marshes. Breeding range encompasses much of lowland California; winter range expands to include the remaining lowland areas.	Moderate – Potential nesting habitat is present in the vicinity of the study area within adjacent grassland and species could forage in the study area; however, the species is not expected to nest within roadside habitats.
White-tailed kite *Elanus leucurus*	–/FP	Inhabits low-elevation, open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Forages in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches and nests in nearby uplands in valley/foothill riparian or other trees associated with compatible foraging habitat. Year-round range spans the Central Valley, Coast Ranges and coast, Sierra Nevada foothills, and Colorado River.	Moderate – Suitable nest trees, grassland, drainage ditches, and agricultural fields (foraging habitat) are present in the study area and vicinity.
California black rail *Laterallus jamaicensis coturniculus*	–/ST (FP)	Nests and forages in saline, freshwater, or brackish emergent marshes with gently grading slopes and upland refugia with vegetative cover beyond the high-water line. Year-round range includes Suisun Marsh, San Pablo Bay, Morro Bay, a few patches in the Sierra Nevada foothills, and portions of southern California; winter range expands to include San Francisco Bay and the Marin County coast.	None – The study area lacks emergent marshes that provide suitable habitat for the species.
Burrowing owl *Athene cunicularia*	–/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast; level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows.	Low – Potential nesting and foraging habitat is present in the study area; however, no burrowing owls or burrows suitable for nesting or refuge were observed in the study area during the 2021 field survey

Common Name Scientific Name	Legal Status (Federal/State)	General Habitat Description	Likelihood for Occurrence in Study Area
Western yellow-billed cuckoo *Coccyzus americanus occidetalis*	FT/SE	Nests in valley, foothill, and desert riparian forest with densely foliaged deciduous trees and shrubs, especially willows; other associated vegetation includes cottonwood trees, blackberry, nettle, and wild grape. Potential habitat also occurs in valley marshland with willow riparian corridors, such as that found in the Llano Seco area of Butte County. Historically common throughout the Central Valley, the current known breeding populations of breeding western yellow-billed cuckoo in California include the Colorado River system in Southern California, the South Fork Kern River east of Bakersfield, and several disjunct locations in isolated sites along the Sacramento River in Northern California, including Sutter Basin and Butte County.	None –There is no suitable riparian habitat in the study area or vicinity.
Bank swallow *Riparia riparia*	–/ST	Occurs along the Sacramento River from Tehama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley, and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County. Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam, along streams, coastal bluffs, and sand/gravel pits.	None – No suitable nesting habitat for this species is present in the study area.
Least Bell's vireo *Vireo bellii pusillus*	FE/SE	Nests and roosts in low riparian thickets of willows and shrubs, usually near water but sometimes along dry, intermittent streams; other associated vegetation includes cottonwood trees, blackberry, mulefat, and mesquite (in desert). Formerly a common and widespread summer resident throughout Sacramento and San Joaquin valleys and in the coastal valleys and foothills from Santa Clara County south, but its numbers have drastically declined, and the species has vanished from much of its California range.	None – The study area is located outside the species' current range and the study area does not provide suitable riparian habitat for the species.

Common Name Scientific Name	Legal Status (Federal/State)	General Habitat Description	Likelihood for Occurrence in Study Area
Grasshopper sparrow *Ammodramus savannarum*	-/SSC	Occurs in dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches. The species is more likely to be found in large tracts of habitat. Nests in slight depressions in dense grasslands.	Low – Grasslands in the study area lack preferred habitat conditions for the species; however, the study area provides marginal nesting and foraging habitat for the species.
Song sparrow ("Modesto" population)	-/SSC	Nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats, and infrequently in mature riparian forest and sparsely vegetated ditches and levees. Year-round range includes the Delta east of Suisun Marsh, the Sacramento Valley, and the northern San Joaquin Valley.	Moderate – Emergent vegetation within irrigation and roadside ditches in the study area represent suitable nesting habitat for the species.
Tricolored blackbird *Agelaius tricolor*	–/SP	Permanent resident in the Central Valley from Butte to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County; known to breed in low elevation grasslands in the foothills of Stanislaus, Calaveras, Amador, San Joaquin, Sacramento, El Dorado, and Placer counties; and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties. Species nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony.	None – The study area lacks suitable nesting habitat conditions (i.e., large areas of nesting substrate) for the species; however, species may forage within the study area if nesting nearby.
Central Valley steelhead *Oncorhynchus mykiss*	FT/–	Sacramento and San Joaquin Rivers and tributary Central Valley streams and rivers below impassable barriers; occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18 °C; habitat types are riffles, runs, and pools; adults spawn at head of riffles/tails of pools; young rear year-round for 1–4 years before emigrating to the ocean (Moyle 2002).	None – Suitable habitat is not present in the study area; Yuba River in the vicinity of the study area provides migration, spawning, and rearing habitat, and is designated as critical habitat for the species.

Common Name Scientific Name	Legal Status (Federal/State)	General Habitat Description	Likelihood for Occurrence in Study Area
Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	FT/ST	Upper Sacramento River, Feather River, and Yuba River and several perennial tributaries of the Sacramento River (Battle, Butte, Clear, Deer, and Mill Creeks); has the same general habitat requirements as winter-run Chinook salmon; coldwater pools are needed for holding adults (Moyle 2002); adults and juveniles migrate in the lower Sacramento River and through the Delta.	None – Suitable habitat is not present in the study area; Yuba River in the vicinity of the study area provides migration, spawning, and rearing habitat, is designated as critical habitat for the species, and is considered EFH for Chinook salmon.
Delta smelt *Hypomesus transpacificus*	FT/SE	Found primarily in the Sacramento–San Joaquin Estuary but has been found as far upstream as Knight's Landing on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay; occur in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand (Moyle 2002).	None – Suitable habitat is not present in the study area; Yuba River in the vicinity of the study area is outside the known range of the species. Designated critical habitat for this species does not include the Yuba River.

BEGEPA = Bald and Golden Eagle Protection Act.
– = No listing.
State
SE = Listed as endangered under the California Endangered Species Act.
ST = Listed as threatened under the California Endangered Species Act.
SP = Proposed for listing as threatened or endangered under the California Endangered Species Act.
FP = Fully protected under the California Fish and Game Code.
SSC = Species of special concern in California.
– = No listing.

Appendix D
Lists of Plant and Wildlife Species Observed

List of Plant Species Observed in the Study Area During Spring and Summer 2021 Floristic Surveys

Species Name	Common Name	Native/ Introduced (N/I)
Acmispon americanus	Spanish lotus	N
Agave sp.	Agave	I
Aira caryophyllea	European hairgrass	I
Alisma lanceolatum	Water plantain	I
Amaranthus albus	Tumbleweed	I
Ambrosia sp.	Bursage	N
Amsinckia intermedia	Common fiddleneck	N
Avena barbata	Slender wild oats	I
Avena fatua	Wild oats	I
Avena sativa	Cultivated oats	I
Baccharis pilularis	Coyote brush	N
Briza minor	Little quaking grass	I
Bromus arizonicus	Arizona brome	N
Bromus diandrus	Ripgut brome	I
Bromus hordeaceus	Soft chess	I
Bromus madritensis	Spanish brome	I
Bromus rubens	Red brome	I
Calandrinia menziesii	Red maids	N
Cardamine hirsuta	Hairy bittercress	I
Carduus pycnocephalus	Italian thistle	I
Castilleja attenuata	Valley tassels	N
Centaurea solstitialis	Yellow starthistle	I
Centromadia fitchii	Fitch's spikeweed	N
Cerastium glomeratum	Sticky mouse-ear chickweed	I
Cichorium intybus	Chicory	I
Cirsium vulgare	Bull thistle	I
Claytonia perfoliata	Miner's lettuce	N
Convolvulus arvensis	Field bindweed	I
Crassula aquatica	Water pygmyweed	N
Crassula tillaea	Pygmyweed	I
Croton setiger	Doveweed	N
Cynodon dactylon	Bermudagrass	I
Cyperus eragrostis	Umbrella sedge	N

Species Name	Common Name	Native/ Introduced (N/I)
Dichelostemma multiflorum	Wild hyacinth	N
Dittrichia graveolens	Stinkweed	I
Eleocharis macrostachya	Creeping spikerush	N
Elymus caput-medusae	Medusahead	I
Epilobium brachycarpum	Panicled willowherb	N
Equisetum laevigatum	Scouring rush	N
Erigeron sp.	Horseweed	I
Erodium botrys	Big heronbill	I
Erodium cicutarium	Red-stemmed filaree	I
Erodium moschatum	White-stemmed filaree	I
Eryngium castrense	Coyote-thistle	N
Eschscholzia californica	California poppy	N
Eucalyptus camaldulensis	Red gum	I
Festuca microstachys	Small fescue	N
Festuca myuros	Rattail fescue	I
Festuca perennis	Italian ryegrass	I
Frangula californica subsp. californica	California coffeeberry	N
Fraxinus latifolia	Oregon ash	N
Galium aparine	Cleavers	I
Galium parisiense	Wall bedstraw	I
Gamochaeta calviceps	Narrowleaf purple everlasting	I
Geranium dissectum	Cut-leaved geranium	I
Glyceria declinata	Low manna grass	I
Helianthus annuus	Common sunflower	N
Herniaria hirsuta var. hirsuta	Rupturewort	I
Heterotheca grandiflora	Telegraph weed	N
Hirschfeldia incana	Mediterranean mustard	I
Hordeum marinum subsp. gussoneanum	Mediterranean barley	I
Hordeum vulgare	Beardless Barley	I
Hypericum perfoliatum	Klamath weed	I
Hypochaeris glabra	Smooth cat's-ear	I
Juglans hindsii	Northern California black walnut	N
Juncus acuminatus	Tapered rush	N
Juncus bufonius	Toad rush	N
Juncus effusus	Soft rush	N
Kickxia spuria	Roundleaf fluellin	I
Leontodon saxatilis	Hairy hawkbit	I
Lepidium strictum	Wayside peppergrass	I
Logfia gallica	Daggerleaf cottonrose	I

Species Name	Common Name	Native/ Introduced (N/I)
Lotus corniculatus	Bird's foot trefoil	I
Ludwigia peploides	Marsh purslane	I
Lupinus bicolor	Miniature lupine	N
Lupinus nanus	Sky lupine	N
Lysimachia arvensis	Scarlet pimpernel	I
Lythrum hyssopifolia	Hyssop loosestrife	I
Malva nicaensis	Bull mallow	I
Matricaria discoidea	Pineapple weed	I
Medicago polymorpha	Bur-clover	I
Melilotus albus	White sweetclover	I
Melilotus indicus	Indian sweetclover	I
Mentha pulegium	Pennyroyal	I
Morus sp.	Mulberry	I
Nerium oleander	Oleander	I
Oenothera laciniata	Cut-leaved evening-primrose	N
Opuntia sp.	Prickly pear	I
Persicaria punctata	Dotted smartweed	N
Petrorhagia dubia	Grass pink	I
Phalaris aquatica	Harding grass	I
Plagiobothrys bracteatus	Bracted popcornflower	N
Plantago lanceolata	English plantain	I
Poa annua	Annual bluegrass	I
Polypogon australis	Chilean beardgrass	I
Populus fremontii	Fremont cottonwood	N
Pseudognaphalium luteoalbum	Jersey cudweed	I
Punica granatum	Pomegranate	I
Pyracantha coccinea	Firethorn	I
Quercus lobata	Valley oak	N
Ranunculus bonariensis	Carter's buttercup	N
Raphanus raphanistrum	Jointed charlock	I
Raphanus sativus	Wild radish	I
Rorippa palustris subsp. palustris	Bog yellowcress	N
Rosa californica	California wild rose	N
Rosa sp.	Garden Rose	I
Rubus armeniacus	Himalayan blackberry	I
Rumex conglomeratus	Whorled dock	I
Rumex crispus	Curly dock	I
Salix exigua	Sandbar willow	N
Salix gooddingii	Black willow	N

Species Name	Common Name	Native/ Introduced (N/I)
Salix lasiolepis	Arroyo willow	N
Salsola tragus	Russian thistle	I
Sambucus mexicana	Blue elderberry	N
Scleranthus annuus subsp. annuus	Knawel	I
Senecio vulgaris	Common groundsel	I
Silybum marianum	Milkthistle	I
Sonchus asper	Prickly sowthistle	I
Sorghum halepense	Johnsongrass	I
Spergularia rubra	Ruby sandspurry	I
Torilis arvensis	Field hedge-parsely	I
Toxicodendron diversilobum	Poison-oak	N
Tragopogon porrifolius	Salsify	I
Trifolium dubium	Shamrock	I
Trifolium hirtum	Rose clover	I
Trifolium repens	White clover	I
Triphysaria versicolor subsp. faucibarbata	Yellow owl's-clover	N
Triticum aestivum	Cultivated wheat	I
Typha angustifolia	Narrow-leaved cattail	I
Typha latifolia	Broad-leaved cattail	N
Verbena littoralis	Seashore verbena	I
Vernia peregrina subsp. xalapensis	Purslane speedwell	N
Vicia benghalensis	Purple vetch	I
Vicia sativa	Spring vetch	I
Vicia villosa subsp. varia	Winter vetch	I
Vitis californica	California grape	N
Xanthium strumarium	Common cocklebur	I
Zeltnera venusta	California centaury	N

List of Wildlife Species Observed in the Study Area During March 24, 2021 Reconnaissance Survey

Species Name	Common Name	Notes
Branta canadensis	Canada goose	In flight
Cathartes aura	Turkey vulture	In flight
Agelaius phoeniceus	Red-winged blackbird	In flight
Sayornis nigricans	Black phoebe	In flight
Petrochelidon pyrrhonota	Cliff swallow	Old nests on bridge over Cordua Canal
Zonotrichia leucophrys	White-crowned sparrow	In flight
Procambarus clarkii	Swamp crayfish	Roadside ditch

KIBBE ROAD/STATE ROUTE 20 INTERSECTION IMPROVEMENTS PROJECT

AQUATIC RESOURCES DELINEATION REPORT

PREPARED FOR:

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August 2021

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ICF. 2021. *Kibbe Road/State Route 20 Intersection Improvements Project – Aquatic Resources Delineation Report*. August (ICF 00085.21) Sacramento, CA. Prepared for Teichert Materials, Sacramento, CA.

Contents

Tables and Figures

Acronyms and Abbreviations

°F	degrees Fahrenheit
EIR	environmental impact report
FR	Federal Register
NWI	National Wetlands Inventory
NWPR	Navigable Waters Protection Rule
OHWM	ordinary high-water mark
project	Kibbe Road/State Route (SR) 20 Intersection Improvements Project
SR	State Route
Teichert	Teichert Materials
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WETS table	Wetlands Climate Tables

Summary

This report presents the results of an aquatic resources delineation conducted on behalf of Teichert Materials (Teichert) for the proposed Kibbe Road/State Route (SR) 20 Intersection Improvements Project (project) in Yuba County, California (Figure 1). Project Location and Vicinity Map). This project was previously analyzed in an environmental impact report (EIR), certified in 2006, but litigation delayed the project. This delineation describes the methods and results of the delineation area for the presence of potentially jurisdictional waters. The delineation area totals 27.930 acres and includes the work areas, access routes, and staging areas.

ICF delineators used the routine onsite determination methods described in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the supplemental procedures and wetland indicators provided in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008).

This report was prepared to support the request for a preliminary jurisdictional determination from the United States Army Corps of Engineers (USACE), Sacramento District.

ICF delineators mapped a total of 2.771 acres of aquatic resources, comprising 2.593 acres of wetlands and 0.178 acre of non-wetland waters, in the delineation area (Table 1). Aquatic resources in the delineation area are artificial and do not direct flows into jurisdictional waters.

Table 1. Summary of Aquatic Resources Identified in the Delineation Area

Aquatic Resources	Area (acres)
Wetlands	
Seasonal Wetland	2.177
Roadside Wetland Ditch	0.416
Sub-Total	2.593
Non-Wetland Waters	
Roadside Ditch	0.093
Agricultural Ditch/Canal	0.086
Sub-Total	*0.178*
Total	2.771

Introduction

This report presents the results of an aquatic resources delineation conducted for the proposed Kibbe Road/SR 20 Intersection Improvements Project (project), in Yuba County, California (Figure 1). This project was previously analyzed in an EIR, certified in 2006, but litigation delayed the project. Yuba County submitted a new grading permit application, and a new EIR will be prepared. This report describes the methods and results of the aquatic resources delineation of the potentially jurisdictional waters.

This aquatic resources delineation report's methods and standards conform to the USACE Sacramento District's *Minimum Standards For Acceptance Of Aquatic Resources Delineation Reports* (USACE, Sacramento District 2016) and *Revised Map and Drawing Standards for the Pacific Division Regulatory Program Delineations* (USACE, South Pacific Division 2016).

The report was prepared to support a preliminary jurisdictional determination, which means that the applicant waives or sets aside questions regarding the jurisdictional status of wetlands and other waters on a particular site, as described in the USACE's Regulatory Guidance Letter No. 16-01 (USACE 2016a).

This report describes site characteristics, the methods used to delineate potential jurisdictional areas, and the characteristics of the potential jurisdictional features. Appendices to this report are as follows:

- Appendix A: *Aquatic Resources Delineation Map*
- Appendix B: *Plant Species Observed in the Delineation Area*
- Appendix C: *Routine Wetland Determination Data Forms*
- Appendix D: *Representative Photographs*
- Appendix E: *Soil Survey, Hydric Soil Information, and NWI Map*
- Appendix F: *WETS Table*

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Site Description and Location

The proposed project is in Yuba County, approximately 6 miles east of Marysville, California. The project is on the Browns Valley topographic quadrangle (USGS 1973) in Township 16 North, Range

4 East, in the northwestern quarter of Section 25 and the northeastern quarter of Section 26 (Figure 1).

Driving Directions

To access the project site from downtown Sacramento, drive north on Interstate 5 to the Highway 99 split, and continue north on Highway 99. Proceed north on Highway 99 to the Highway 99/SR 70 split, then continue north on SR 70 to Marysville. Proceed through Marysville to 12th Street/SR 20, and turn right. Proceed on SR 20 for 7.9 miles to Kibbe Road.

Project Description

Teichert is proposing to construct a private haul road to connect its Hallwood property directly to SR 20 to the west of its existing intersection with Kibbe Road. The project will include a westerly realignment of the SR 20/Kibbe Road intersection, a left-turn pocket for westbound SR 20 traffic, and the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection.

The proposed haul road alignment will require the crossing of three existing irrigation canals (agricultural ditches/canals). The northernmost ditch, the Stahl Ditch, is owned and operated by the Cordua Irrigation District. The other two ditches are owned and operated by the Hallwood Irrigation District. Culverts have already been installed at each of these canal crossings with the permission of the Cordua and Hallwood irrigation districts.

After completion of the proposed roadway improvements, existing truck traffic to and from the Hallwood Plant would use the new haul road and would access SR 20 via the realigned Kibbe Road intersection.

The project would include creating a left-turn pocket for westbound SR 20 traffic and installing 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection. After completion of the proposed roadway improvements, existing truck traffic to and from the Hallwood Plant would be relocated to the new haul road and access SR 20 via the realigned Kibbe Road intersection. The existing access on Walnut Avenue would then be used for employee and vendor access only. It is anticipated that the project will require a grading permit and encroachment permits from the County of Yuba and the California Department of Transportation.

Environmental Setting

This section describes existing topography, land uses, soils, and hydrology associated with the delineation area.

Topography and Land Use

The project is located in a rural area on the eastern edge of the Sacramento Valley. West of Kibbe Road, the fields are currently in agricultural usage, producing rice and grain. East of Kibbe Road, rural residences are present along both sides of SR 20. The topography is nearly level, gently sloping from about 100 feet above mean sea level at the west end to about 95 feet above mean sea level at the east end.

Soils

Soils in the walnut orchard south of the Hallwood Main Canal are mapped as Holillipah loam sand (Natural Resources Conservation Service 2021a, Appendix E); this soil map unit is classified as hydric. Soils north of the southern agricultural ditch/canals are mostly Redding gravelly loam and San Joaquin loam, with a small area of Bruella loam. Redding gravelly loam and San Joaquin loam have duripan at or below 20 inches, and although neither soil is classified as hydric, both contain inclusions of hydric soils in depressions where vernal pools occur. Bruella loam is not classified as hydric and has neither a duripan nor hydric inclusions.

Hydrology

The primary source of wetland hydrology in the delineation area's seasonal wetlands are direct precipitation and runoff. Roadside ditches along SR 20 receive runoff from precipitation and landscaping irrigation. Cordua Canal (Stahl Ditch) and the two southern agricultural ditches/canals all receive water from diversions at points along the Cordua/Hallwood Diversion Canal, which receives water from the Yuba River at Daguerre Point Dam. Turn screws on Daguerre Point Dam are physically opened for water to be gravity-fed into 6-foot-diameter pipes. Due to the manual control on the turn screws, water does not readily flow to and from the Yuba River.

The National Wetlands Inventory (NWI) provides maps and information on the status, extent, characteristics, and functions of wetland, riparian, deepwater, and related aquatic habitats in priority areas to promote the understanding and conservation of these resources. The mapping is provided at a scale of 1:24,000 and uses the United States Fish and Wildlife Service (USFWS) wetland definition, which differs from the USACE definition: USFWS requires a minimum of one wetland parameter instead of the three wetland parameters required by USACE. NWI mapping shows the extent of wetlands and deepwater habitats that can be determined with the use of remotely sensed data dating from 1977 to present. NWI mapping, therefore, cannot be used to delineate wetlands and other waters of the United States, but can provide useful background information about the broad types of wetland and riparian vegetation communities in the delineation area.

The following wetlands are mapped by NWI in the vicinity of the delineation survey area (USFWS 2021):

- Stahl Ditch is mapped as a riverine feature that was excavated, has an unconsolidated bottom, and is semi-permanently flooded (R5UBFx).
- Wetlands in the property east of the delineation area are mapped as palustrine emergent wetlands with persistent vegetation that are seasonally flooded (PEM1C).
- A pond in the property east of the delineation area is mapped as a palustrine feature with an unconsolidated bottom that is semi-permanently flooded (PUBF).
- A pond in the property southeast of the delineation is mapped as a palustrine feature with an unconsolidated bottom that is artificially flooded (PUBK).
- Wetlands in the property south east of the delineation area are mapped as palustrine forested wetlands, with broad-leaved deciduous trees, that are seasonally flooded (PFO1C).
- Wetlands in the property south of the delineation area are mapped as lacustrine deepwater features that are artificially flooded and have an unconsolidated bottom (L1UBK).

Precipitation and Growing Season

Precipitation for the delineation area during the 2020–2021 rainfall year was only about 40 percent of normal, and mean high monthly temperatures were about 3 degrees Fahrenheit (°F) higher than normal (Natural Resources Conservation Service 2021b). The rainfall total during the 3 months preceding the delineation survey was 2.82 inches, 4.64 inches below average for that period. For the week preceding the field work (April 24–30, 2021), high temperatures ranged from 77° to 90°, and 0.03 inches of rain were recorded.

Wetlands Climate Tables (WETS table) based on long-term data are not currently available for Yuba County. Data obtained from the Natural Resources Conservation Service (2021b) for the Marysville Airport station, approximately 18 miles southwest of the delineation area, has data for the last 20 years. The climate in the delineation area is characterized by hot, dry summers and cool, wet winters. The average high temperatures ranged from 96.2°F in July to 55.4°F in December, and the average low temperatures range from 37.7°F in December to 60.7°F in July. The average annual precipitation is 19.13 inches, with precipitation falling entirely as rain, mostly between October and April. The WETS table does not contain enough information from which to estimate the length of the growing season. However, the emergence and growth of annual plant species observed in the Sacramento Valley throughout the winter months indicates that the growing season is essentially year-round.

Land Cover Types

In the following discussion, scientific names are based on taxonomy in the *Jepson Manual,* second edition (Baldwin et al. 2012) and updates published online by the *Jepson Flora Project* (Jepson Flora

Project 2021). Wetland indicator statuses were obtained from *The National Wetland Plant List* (USACE 2018).

Nonnative Annual Grassland

Nonnative annual grassland occurs along both sides of the unpaved south haul road in areas that were formerly irrigated for agriculture. Nonnative annual grassland is the dominant land cover type in the delineation area. Dominant species in the nonnative annual grassland consist of Italian ryegrass (*Festuca perennis*; FAC) and Mediterranean barley (*Hordeum marinum* subsp. *gussoneanum;* FAC) in the mesic areas and wild oats (*Avena barbata* and *A. fatua*; both UPL) and ripgut brome (*Bromus diandrus*; UPL) in the drier areas. Associated species include prickly lettuce (*Lactuca serriola*; FACU), curly dock (*Rumex crispus;* FAC), and panicled willow-herb (*Epilobium brachycarpum;* UPL), with scattered clumps of soft rush (*Juncus effusus*; FAC).

Seasonal Wetland

These seasonal wetlands formed in the topographic lows of the nonnative annual grassland. Seasonal wetlands in the delineation area are vegetated by a mix of native wetland species often found in vernal pools, including Carter's buttercup (*Ranunculus bonariensis*), water pygmyweed (*Crassula aquatica*), purslane speedwell (*Veronica peregrina*), bracted popcornflower (*Plagiobothrys bracteatus*), and nonnative wetland species that colonize disturbed wetlands, such as Italian rye grass and Mediterranean barley. Native hydrophytes occur in small patches in the topographic lows of the seasonal wetlands, whereas a majority of the wetlands are dominated by Italian rye grass and Mediterranean barley.

Roadside Ditch

Roadside ditches are present along both sides of SR 20 and convey rainfall runoff from the surrounding watershed and the paved highway. The ditches are either unvegetated (i.e., non-wetland waters) or are composed of a mix of ruderal and wetland species, including umbrella sedge (*Cyperus eragrostis*; FACW), toad rush (*Juncus bufonius*; FACW), rabbits foot grass (*Polypogon monspeliensis*; FACW), little rattle snake grass (*Briza minor*; FACW), Italian ryegrass, soft chess (*Bromus hordeaceus;* FACU), brome fescue (*Festuca myuros;* FACU*),* and scattered patches of broad-leaved cattail (*Typha latifolia*; OBL). These roadside ditches appear to be excavated in uplands for the purpose of conveying surface runoff from rainfall and landscaping irrigation.

Agricultural Ditch/Canal

Three agricultural ditches/canals occur in the delineation area, comprising Stahl Ditch and two other canals. A fourth canal is south adjacent to the delineation area and parallels the delineation area's southern boundary. Agricultural ditches/canals appear to be excavated in uplands for the purpose of conveying irrigation water. Agricultural ditches/canals receive water from the Yuba River at Daguerre Point Dam. Turn screws on Daguerre Point Dam are physically opened for water to be gravity-fed into 6-foot-diameter pipes that drain into diversion ditches. Due to the manual control on the turn screws, water does not readily flow to and from the Yuba River.

Orchard

A walnut orchard is present at the southern end of the delineation area. The understory vegetation is managed (mowed or sprayed) and consists of annual grassland species.

Methods

Field work was conducted on May 6, 2021, by ICF botanists/wetland ecologists Robert Preston and Devin Jokerst. An iPad using the Environmental Systems Research Institute's Collector application and an external Bluetooth global navigation satellite system antenna (Trimble R1) were used to record the location of resource boundaries, sampling points, and culvert locations. With the Bluetooth antenna, location accuracy is typically less than 1 horizontal meter. During fieldwork, base maps of the delineation area boundary were overlaid onto 2020 aerial imagery obtained from the Environmental Systems Research Institute (ESRI) Maxar at a scale of 1 inch = 200 feet.

Representative photographs were taken of each feature type (Appendix D), and their locations are shown in Appendix A. A list of plant species observed in the delineation area is provided in Appendix B.

Within the delineation area, in areas that exhibited evidence of wetland hydrology and/or hydrophytic vegetation, wetland sample soil pits were dug to examine soil color and texture and determine the wetland boundary. A paired-pit technique (i.e., one sample point with wetland results paired with one sample point with non-wetland results) was used to identify the wetland boundary. Representative sampling points were examined in the wetlands in the delineation area and in adjacent uplands to characterize these areas, and additional sampling points were examined to investigate sites that appeared to meet one or more of the wetland criteria. In total, 11 sample points were examined and documented in the Arid West Region Wetland Determination Data Forms (Appendix C). The wetland boundary was determined at the location where the vegetation transitioned from dominance by hydrophytic vegetation to dominance by upland vegetation because the uplands shared soil profiles and wetland hydrology similar to the wetlands.

The project was surveyed for potential wetlands using the methodology in the 1987 *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b). Vascular plants were identified using *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012) and *The National Wetland Plant List* (USACE 2018). The methods were in conformance with the USACE Sacramento District's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2016b) and Updated Map and Drawing Standards for the Pacific Division Regulatory Program Delineations (USACE, South Pacific Division 2016).

Potential non-wetland waters were evaluated for the presence of ordinary high-water mark (OHWM) indicators and/or wetland vegetation, soils, and hydrology. Delineation of the lateral limits of potential non-wetland waters of the United States was based on the presence of OHWM indicators, using field indicators described in *A Field Guide to the Identification of the Ordinary High-Water Mark in the Arid West Region of the Western United States: A Determination Manual* (Lichvar and McColley 2008)

Results

In total, 2.771 acres of aquatic resources were delineated in the delineation area (Table 2). The delineation area's aquatic resources comprise 2.593 acres of wetlands and 0.178 acre of non-wetland waters. *Wetlands* consist of seasonal wetlands and roadside wetland ditches. *Non-wetland waters* consist of roadside ditches and agricultural ditches/canals.

Table 2. Aquatic Resources Identified in the Delineation Area

Feature Number [a]	Feature Type	Acreage	Data Form [b]	Photograph Number [c]
SW-1	Seasonal wetland	0.628	SP–1W	1, 2
SW-2	Seasonal wetland	0.380	–	–
SW-3	Seasonal wetland	0.025	–	–
SW-4	Seasonal wetland	0.047	–	–
SW-5	Seasonal wetland	0.037	–	–
SW-6	Seasonal wetland	0.463	–	6
SW-7	Seasonal wetland	0.230	–	–
SW-8	Seasonal wetland	0.229	–	–
SW-9	Seasonal wetland	0.011	–	–
SW-10	Seasonal wetland	0.002	–	–
SW-11	Seasonal wetland	0.005	–	–
SW-12	Seasonal wetland	0.004	–	–
SW-13	Seasonal wetland	0.040	–	5
SW-14	Seasonal wetland	0.000	–	–
SW-15	Seasonal wetland	0.000	–	–
SW-16	Seasonal wetland	0.020	–	–
SW-17	Seasonal wetland	0.054	SP–3W	3
WD-1	Roadside wetland ditch	0.017	SP–10W, SP–12W	14
WD-2	Roadside wetland ditch	0.046	SP–6W, SP–9W	–
WD-3	Roadside wetland ditch	0.266	–	8, 9
WD-4	Roadside wetland ditch	0.022	SP–5W	7
WD-5	Roadside wetland ditch	0.014	–	
WD-6	Roadside wetland ditch	0.033	–	11
WD-7	Roadside wetland ditch	0.006	–	4
WD-8	Roadside wetland ditch	0.001	–	
WD-9	Roadside wetland ditch	0.011	–	10
RD-1	Roadside ditch	0.002	–	–
RD-2	Roadside ditch	0.004	–	–
RD-3	Roadside ditch	0.016	OHWM–1	–
RD-4	Roadside ditch	0.012	–	13
RD-5	Roadside ditch	0.004	–	–
RD-6	Roadside ditch	0.021	–	–
RD-7	Roadside ditch	0.023	–	12
RD-8	Roadside ditch	0.002	–	–
RD-9	Roadside ditch	0.010	–	–
C-1	Stahl ditch	0.006	–	–
C-2	Agricultural ditch/canal	0.010	–	–
C-3	Canal	0.070	–	–

[a] As shown in Appendix A.
[b] Data forms are in Appendix C.
[c] Photographs are in Appendix D.

Wetlands

Wetlands in the delineation area cover 2.593 acres and consist of 2.177 acres of seasonal wetlands and 0.416 acre of roadside wetland ditches.

Seasonal Wetland

A total of 17 seasonal wetlands were mapped in the delineation area, which totaled 2.177 acres. Seasonal wetlands occur in the topographic lows of the nonnative annual grassland on either side of the private haul road (Photographs 1–6, Appendix D). Sample points SP-1W and SP-3W, which documented the wetland conditions, were paired with upland sample points SP-2U and SP-4U. The boundary between the grassland and seasonal wetlands occurred at the shift in dominance from upland grasses and herbs, foxtail barley, ripgut brome, wild oats, and prickly lettuce, to a dominance of hydrophytes, Italian rye grass, and Mediterranean barley. The wetland and upland soil pits both contained hydric soils and wetland hydrology indicator oxidized rhizospheres. The swales and topographic lows of the seasonal wetlands contained typical vernal pool species, such as Carter's buttercup, water pygmyweed, purslane speedwell, and bracted popcorn flower.

The soil pit excavations revealed a restrictive layer at 8 inches, a matrix of 2.5 YR 3/3, 5 YR 3/2, 7.5 YR 3/2, 7.5 YR 3/3, and redox features of 2.5 YR 3/6, 2.5 YR 4/8, and 2.5 YR 2.5/4. These soils satisfy the hydric soil indicator F8 Redox Depression (Natural Resources Conservation Service 2018). Wetland hydrology indicator C3 Oxidized Rhizospheres were observed in the seasonal wetlands. Manganese concretions were also observed in the soil pits. The seasonal wetlands and surrounding nonnative annual grassland occur in problematic red soils that are loamy and clayey with too high of a chroma for the hydric soil indicators; these soils are assumed present in the roadside wetland ditches. However, the dominance of hydrophytes, their presence of wetland hydrology, and their occurrence in a concave surface, indicates the seasonal wetlands and roadside ditch wetlands have problematic hydric soils with problematic hydric soil indicator TF2 Red Parent Material (USACE 2008).

Although the areas containing the seasonal wetlands were reported as irrigated pasture by Foothill Associates in 2004, their August 2003 surveys were conducted months after the south haul road was constructed in the spring of 2003. Left relatively undisturbed for 18 years, the delineation area appears to have reverted into a wetland mosaic, given its historic vernal pool distribution and presumed decades of irrigation. These seasonal wetlands do not directly flow into jurisdictional waters.

Roadside Wetland Ditch

Nine roadside wetland ditches, totaling 0.461 acre, occur on the north and south side of SR 20 (Photographs 7–11, and 14, Appendix D). These ditches were dominated by hydrophytes and supported wetland hydrology. The roadside wetland ditches on the southern side of SR 20 contained standing water and were dominated by cattails, umbrella sedge, and soft rush. Roadside wetland ditches WD-3 and WD-4 supported arroyo willows (*Salix lasiolepis;* FACW), and Oregon ash (*Fraxinus latifolia*; FACW). Roadside wetland ditches on the northside of SR 20 had soil cracks, saturated soils, and similar species, excluding the trees and cattails.

The roadside wetland ditches are assumed to contain the problematic hydric soil indicator, TF2 Red Parent Material, described above in *seasonal Wetlands*. In addition, the roadside wetland ditches are also assumed to satisfy hydric soil indicator F8 Redox Depression because the inundation required to sustain a dominance of hydrophytes (including a localized dominance of perennial hydrophytes) and develop wetland hydrology would be of sufficient duration to create anaerobic conditions.

These roadside ditches appear to be excavated in uplands for the purpose of conveying surface runoff from rainfall and landscaping irrigation and do not direct water into jurisdictional waters. It is assumed wetland hydrology in the roadside wetland ditches is sustained by neighboring agricultural operations, residential irrigation, and surface-water runoff.

Non-Wetland Waters

In total, 0.178 acre of non-wetland waters delineated in the delineation survey area comprising 0.093 acre of roadside ditches and 0.086 acre of canals.

Roadside Ditches

Nine roadside ditches, totaling 0.093 acre, occur on both sides of SR-20 in the delineation area (Photographs 12–13, Appendix D). The OHWM of the roadside ditches was delineated at the break in slope where OHWM indicators were observed: drift deposits, soil cracks, and sediment sorting.

These roadside ditches appear to be excavated in uplands for the purpose of conveying surface runoff from rainfall and landscaping irrigation. The roadside ditches do not replace existing natural drainages, connect a natural drainage to a downstream tributary, intersect groundwater, or support wetland vegetation..

Agricultural Ditches/Canals

In total, 0.086 acre of agricultural ditches/canals was documented in the delineation area, consisting of Stahl Ditch and two unnamed features (Appendix A). The OHWM was delineated with the indicators scour and water-lines, observed on the bridges crossing the agricultural ditches/canals. The canals receive water from the Yuba River at Daguerre Point Dam. Turn screws on Daguerre Point Dam are physically opened for water to be gravity-fed into 6-foot-diameter pipes. Due to the manual control on the turn screws, water does not readily flow to and from the Yuba River.

The agricultural ditches/canals appear to be excavated in uplands for the purpose of conveying irrigation water. Agricultural ditches/canals do not replace existing natural drainages, connect a natural drainage to a downstream tributary, intersect groundwater, or support wetland vegetation.

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Appendix A
Aquatic Resources Delineation Map

Kibbe Road/State Route 20 Intersection Improvements Project
June 2021

Legend

Delineation Area (27.93 acres)

Data Points

- Ordinary High Water Mark Data Point
- Upland Data Point
- Wetland Data Point
- Culvert
- Photo Point

Aquatic Resources

Wetlands (2.593 acres)

- Roadside Wetland Ditch (0.416 acre)
- Seasonal Wetland (2.177 acres)

Non-Wetland Waters (0.178 acre)

- Agricultural Ditch/Canal (0.086 acre)
- Roadside Ditch (0.093 acre)

W = Average Width

0 50 100 200
Feet
1 inch = 200 feet

Notes:
Base Map Source: ICF, 2021
Imagery Source: Maxar, 2020
USGS Topo Quad: Browns Valley
PLSS: S25 T16N R4E, S26 T16N R4E

Prepared By: ICF 916.737.3000
Delineated By: Robert Preston and Devin Jokerst
Delineation Date: May 6, 2021
Drawn By: Becky Crosswhite

Path: \\PDCCITRDSGIS1\Projects_1\Teichert\00020_21_KibbeRoad-SR 20\Figures\Delin\Append_A_Delin.mxd; Author: ; Date: 6/29/2021

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Appendix A
Aquatic Resources Delineation Map

Kibbe Road/State Route 20 Intersection Improvements Project
June 2021

Legend

Delineation Area (27.93 acres)

Data Points

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Upland Data Point

Wetland Data Point

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Non-Wetland Waters (0.178 acre)

Agricultural Ditch/Canal (0.086 acre)

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0 50 100 200
Feet
1 inch = 200 feet

N

Notes:

Base Map Source: ICF, 2021
Imagery Source: Maxar, 2020
USGS Topo Quad: Browns Valley
PLSS: S25 T16N R4E, S26 T16N R4E

Prepared By: ICF 916.737.3000
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Path: \\PDCCITRDSGIS1\Projects_1\Teichert\00020_21_KibbeRoad-SR 20\Figures\Delin\Append_A_Delin.mxd; Author: ; Date: 6/29/2021

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June 2021

Legend

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Upland Data Point

Wetland Data Point

Culvert

Photo Point

Aquatic Resources

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Roadside Wetland Ditch (0.416 acre)

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Non-Wetland Waters (0.178 acre)

Agricultural Ditch/Canal (0.086 acre)

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0 50 100 200
Feet
1 inch = 200 feet

N

Notes:
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Imagery Source: Maxar, 2020
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Path: \\PDCCITRDSGIS1\Projects_1\Teichert\00020_21_KibbeRoad-SR 20\Figures\Delin\Append_A_Delin.mxd; Author: ; Date: 6/29/2021

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Appendix A
Aquatic Resources Delineation Map

Appendix B
Plant Species Observed in Delineation Area

Table 1. Plant Species Observed in the Delineation Area

Species Name	Common Name	Native/ Introduced (N/I)	Wetland Indicator Status[a]
Acmispon americanus	Spanish lotus	N	UPL
Agave sp.	Agave	I	(UPL)
Aira caryophyllea	European hairgrass	I	FACU
Alisma lanceolatum.	Water plantain	I	(OBL)[b]
Amaranthus albus	Tumbleweed	I	FACU
Ambrosia sp.	Bursage	N	(FACU)
Amsinckia intermedia	Common fiddleneck	N	UPL
Avena barbata	Slender wild oats	I	UPL
Avena fatua	Wild oats	I	UPL
Avena sativa	Cultivated oats	I	UPL
Baccharis pilularis	Coyote brush	N	UPL
Briza minor	Little quaking grass	I	FAC
Bromus arizonicus	Arizona brome	N	UPL
Bromus diandrus	Ripgut brome	I	UPL
Bromus hordeaceus	Soft chess	I	FACU
Bromus madritensis	Spanish brome	I	UPL
Bromus rubens	Red brome	I	UPL
Calandrinia menziesii	Red maids	N	FACU
Cardamine hirsuta	Hairy bittercress	I	FACU
Carduus pycnocephalus	Italian thistle	I	UPL
Castilleja attenuata	Valley tassels	N	UPL
Centaurea solstitialis	Yellow starthistle	I	UPL
Centromadia fitchii	Fitch's spikeweed	N	FACU
Cerastium glomeratum	Sticky mouse-ear chickweed	I	UPL
Cichorium intybus	Chicory	I	FACU
Cirsium vulgare	Bull thistle	I	FACU
Claytonia perfoliata	Miner's lettuce	N	FAC
Convolvulus arvensis	Field bindweed	I	UPL
Crassula aquatica	Water pygmyweed	N	OBL
Crassula tillaea	Pygmyweed	I	FACU
Croton setiger	Doveweed	N	UPL
Cynodon dactylon	Bermudagrass	I	FACU
Cyperus eragrostis	Umbrella sedge	N	FACW
Dichelostemma multiflorum	Wild hyacinth	N	UPL
Dittrichia graveolens	Stinkweed	I	UPL
Eleocharis macrostachya	Creeping spikerush	N	OBL
Elymus caput-medusae	Medusahead	I	UPL

Species Name	Common Name	Native/ Introduced (N/I)	Wetland Indicator Status[a]
Epilobium brachycarpum	Panicled willowherb	N	UPL
Equisetum laevigatum	Scouring rush	N	FACW
Erigeron sp.	Horseweed	I	(FACU)
Erodium botrys	Big heronbill	I	FACU
Erodium cicutarium	Red-stemmed filaree	I	UPL
Erodium moschatum	White-stemmed filaree	I	UPL
Eryngium castrense	Coyote-thistle	N	OBL
Eschscholzia californica	California poppy	N	UPL
Eucalyptus camaldulensis	Red gum	I	FAC
Festuca microstachys	Small fescue	N	UPL
Festuca myuros	Rattail fescue	I	FACU
Festuca perennis	Italian ryegrass	I	FAC
Festuca rubens	Red brome	I	UPL
Frangula californica subsp. *californica*	California coffeeberry	N	UPL
Fraxinus latifolia	Oregon ash	N	FACW
Galium aparine	Cleavers	I	FACU
Galium parisiense	Wall bedstraw	I	UPL
Gamochaeta calviceps	Narrowleaf purple everlasting	I	UPL
Geranium dissectum	Cut-leaved geranium	I	UPL
Glyceria declinata	Low manna grass	I	FACW
Herniaria hirsuta var. *hirsuta*	Rupturewort	I	UPL
Heterotheca grandiflora	Telegraph weed	N	UPL
Hirschfeldia incana	Mediterranean mustard	I	UPL
Helianthus annuus	Common sunflower	N	FACU
Hordeum marinum subsp. *gussoneanum*	Mediterranean barley	I	FAC
Hordeum vulgare	Beardless Barley	I	UPL
Hypericum perfoliatum	Klamath weed	I	FACU
Hypochaeris glabra	Smooth cat's-ear	I	UPL
Juglans hindsii	Northern California black walnut	N	FAC
Juncus acuminatus	Tapered rush	N	OBL
Juncus bufonius	Toad rush	N	FACW
Juncus effusus	Soft rush	N	FACW
Kickxia spuria	Roundleaf fluellin	I	UPL
Lactuca serriola	Prickly lettuce	I	FACU
Lotus corniculatus	Bird’s foot trefoil	I	FAC
Leontodon saxatilis	Hairy hawkbit	I	FACU
Lepidium strictum	Wayside peppergrass	I	UPL
Logfia gallica	Daggerleaf cottonrose	I	UPL
Ludwigia peploides	Floating primrose-willow	I	OBL
Lupinus bicolor	Miniature lupine	N	UPL

Species Name	Common Name	Native/ Introduced (N/I)	Wetland Indicator Status[a]
Lupinus nanus	Sky lupine	N	UPL
Lysimachia arvensis	Scarlet pimpernel	I	FAC
Lythrum hyssopifolia	Hyssop loosestrife	I	OBL
Malva nicaensis	Bull mallow	I	UPL
Matricaria discoidea	Pineapple weed	I	FACU
Medicago polymorpha	Bur-clover	I	FACU
Melilotus albus	White sweetclover	I	UPL
Melilotus indicus	Indian sweetclover	I	FACU
Mentha pulegium	Pennyroyal	I	OBL
Morus sp.	Mulberry	I	(FACU)
Nerium oleander	Oleander	I	UPL
Oenothera laciniata	Cut-leaved evening-primrose	N	FAC
Opuntia sp.	Prickly pear	I	UPL
Persicaria punctata	Dotted smartweed	N	OBL
Petrorhagia dubia	Grass pink	I	UPL
Phalaris aquatica	Harding grass	I	FACU
Plagiobothrys bracteatus	Bracted popcornflower	N	FACW
Plantago lanceolata	English plantain	I	FAC
Poa annua	Annual bluegrass	I	FAC
Polypogon australis	Chilean beardgrass	I	FACW
Populus fremontii	Fremont cottonwood	N	FAC
Pseudognaphalium luteoalbum	Jersey cudweed	I	FAC
Punica granatum	Pomegranate	I	UPL
Pyracantha coccinea	Firethorn	I	UPL
Quercus lobata	Valley oak	N	FACU
Ranunculus bonariensis	Carter's buttercup	N	OBL
Raphanus raphanistrum	Jointed charlock	I	UPL
Raphanus sativus	Wild radish	I	UPL
Rorippa palustris subsp. *palustris*	Bog yellowcress	N	OBL
Rosa californica	California wild rose	N	FAC
Rosa sp.	Garden Rose	I	UPL
Rubus armeniacus	Himalayan blackberry	I	FAC
Rumex conglomeratus	Whorled dock	I	FACW
Rumex crispus	Curly dock	I	FAC
Salix exigua	Sandbar willow	N	FACW
Salix gooddingii	Black willow	N	FACW
Salix lasiolepis	Arroyo willow	N	FACW
Salsola tragus	Russian thistle	I	FACU
Sambucus mexicana	Blue elderberry	N	FACU
Scleranthus annuus subsp. *annuus*	Knawel	I	FACU

Species Name	Common Name	Native/ Introduced (N/I)	Wetland Indicator Status[a]
Senecio vulgaris	Common groundsel	I	FACU
Sonchus asper	Prickly sowthistle	I	FAC
Sorghum halepense	Johnsongrass	I	FACU
Silybum marianum	Milk thistle	I	UPL
Spergularia rubra	Ruby sandspurry	I	FAC
Torilis arvensis	Field hedge-parsely	I	UPL
Toxicodendron diversilobum	Poison-oak	N	FACU
Tragopogon porrifolius	Salsify	I	UPL
Trifolium dubium	Shamrock	I	UPL
Trifolium hirtum	Rose clover	I	UPL
Trifolium repens	White clover	I	FACU
Triphysaria versicolor subsp. *faucibarbata*	Yellow owl's-clover	N	UPL
Triticum aestivum	Cultivated wheat	I	UPL
Typha angustifolia	Narrow-leaved cattail	I	OBL
Typha latifolia	Broad-leaved cattail	N	OBL
Verbena littoralis	Seashore verbena	I	UPL
Vernia peregrina subsp. *xalapensis*	Purslane speedwell	N	FAC
Vitis californica	Wild grape	N	FACU
Vicia benghalensis	Purple vetch	I	UPL
Vicia sativa	Spring vetch	I	FACU
Vicia villosa subsp. *varia*	Winter vetch	I	UPL
Xanthium strumarium	Common cocklebur	I	FAC
Zeltnera venusta	California centaury	N	UPL

a U.S. Army Corps of Engineers. 2018. *National Wetland Plant List*. V3.4. Accessed August 2020. Available: http://wetlad plants.usace.army.mil/nwpl_static/v34/mapper/mapper.html#

b Parentheses are the presumed wetland indicator status for the plants that were not indefinable to species.

Appendix C
Routine Wetland Data Forms

Field work conducted on
5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: ~~4/13/2021~~

Applicant/Owner: Teichert State: CA Sampling Point: SP-1W

Investigator(s): R, Preston; D, Jokerst Section, Township, Range: ____

Landform (hillslope, terrace, etc.): former agricultural field Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): C Lat: 39.213360 Long: -121.483475 Datum: ____

Soil Map Unit Name: 214: San Joaquin loam, 0 to 1 percent slopes (460521) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Wetland sample point; Problemmatic Red soils onsite

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ~~Festuca perennis~~	~~90%~~	~~Y~~	~~FAC~~
2. ~~Lactuca serriola~~	~~<5%~~	~~N~~	~~FACU~~
3. ~~Rumex crispus~~	~~<5%~~	~~N~~	~~FAC~~
4. ~~Epilobium brachycarpum~~		~~N~~	
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1 m²)			
1. Festuca perennis	90%	Y	FAC
2. Lactuca serriola	2	N	FACU
3. Rumex crispus	3	N	FAC
4. Epilobium brachycarpum	5	N	UPL
5.			
6.			
7.			
8.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: SP-1 W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/3	90	2.5YR 3/6	10	C	PL	SL	ox. rhizosphere
2-6	2.5YR 3/3	85%	2.5YR 4/8	15	C	PL	SL	ox rhiz.
6-8	2.5YR 3/3	100%					SL	Mn conc, ox rh.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ✓ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ✓ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: gravel & clay
Depth (inches): 8"

Hydric Soil Present? Yes ✓ No ___

Remarks: Gravel / shovel refusal at 8"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): none
Water Table Present? Yes ___ No ✓ Depth (inches): none to 8"
Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): none to 8"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field work conducted on 5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: ~~4/13/2021~~

Applicant/Owner: Teichert State: CA Sampling Point: SP-2 U

Investigator(s): R, Preston; D, Jokerst Section, Township, Range: ____

Landform (hillslope, terrace, etc.): former ag field Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): C Lat: 39.2139 Long: -121.483 Datum: ____

Soil Map Unit Name: 208: Redding gravelly loam, 0 to 8 percent slopes, MLRA 17 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓
Hydric Soil Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____

Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: Swath of prickly lettuce in rye grass field
Upland island in Rye grass wetland; Red soils

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1m²)			
1. Lactuca serriola	40	✓	FACU
2. Festuca perennis	25	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	65		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 35% % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: thatch

SOIL

Sampling Point: SP-2-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/3	100					SL	high organic matter
2-6	5YR 3/3	90	5YR 4/6	10	PL	M	SL	
6-8	7.5YR 3/3	85	7.5YR 5/8	15	PL	M	SL	redox faint
8-10	7.5YR 4/3	80	5YR 4/6	20	PL	M	SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5) (**LRR C**)
- __ 1 cm Muck (A9) (**LRR D**)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- ✓ Redox Depressions (F8)
- __ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) (**LRR C**)
- __ 2 cm Muck (A10) (**LRR B**)
- __ Reduced Vertic (F18)
- ✓ Red Parent Material (TF2)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: clay
Depth (inches): 10"

Hydric Soil Present? Yes ✓ No ___

Remarks: Shovel refusal at 10"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- __ Saturation (A3)
- __ Water Marks (B1) (**Nonriverine**)
- __ Sediment Deposits (B2) (**Nonriverine**)
- __ Drift Deposits (B3) (**Nonriverine**)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Water-Stained Leaves (B9)
- __ Salt Crust (B11)
- __ Biotic Crust (B12)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water Marks (B1) (**Riverine**)
- __ Sediment Deposits (B2) (**Riverine**)
- __ Drift Deposits (B3) (**Riverine**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): None
Water Table Present? Yes ___ No ✓ Depth (inches): None to 10"
Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): None to 10"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field work conducted on 5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: ~~4/13/2021~~

Applicant/Owner: Teichert State: CA Sampling Point: SP-3W

Investigator(s): R, Preston; D, Jokerst Section, Township, Range: ______

Landform (hillslope, terrace, etc.): former ag field Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): C Lat: 39.20927 Long: -121.48316 Datum: ______

Soil Map Unit Name: 208: Redding gravelly loam, 0 to 8 percent slopes, MLRA 17 NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ______

Are Vegetation ______, Soil ✓, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ______
Hydric Soil Present?	Yes ✓	No ______
Wetland Hydrology Present?	Yes ✓	No ______

Is the Sampled Area within a Wetland? Yes ✓ No ______

Remarks: Wetland sample point; Red soils

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1 M2)			
1. FESTUCA PERENNIS	30	✓	FAC
2. HORDEUM MARINUM	25	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust ______

Remarks: Thatch: 45%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ______

SOIL

Sampling Point: SP-3 W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/3	100					L	high organic matter
2-4	5YR 3/3	100					L	manganese accumulation
4-8	7.5YR 3/2	65	2.5YR 2.5/4	35	C	M	L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ✓ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ✓ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ______

Remarks: Shovel refusal at 8"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): None

Water Table Present? Yes ____ No ✓ Depth (inches): None to 8"

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): None to 8"

Wetland Hydrology Present? Yes ✓ No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field work conducted on 5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: ~~4/13/2021~~

Applicant/Owner: Teichert State: CA Sampling Point: SP-4 V

Investigator(s): R, Preston; D, Jokerst Section, Township, Range: ______

Landform (hillslope, terrace, etc.): former ag field Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): c Lat: 39.209267° Long: -121.483135° Datum: ______

Soil Map Unit Name: 208: Redding gravelly loam, 0 to 8 percent slopes, MLRA 17 NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ~~✓~~	No ✓
Hydric Soil Present?	Yes ~~✓~~	No ✓
Wetland Hydrology Present?	Yes ______	No ✓

Is the Sampled Area within a Wetland? Yes ______ No ✓

Remarks: Upland sample point paired w/ SP-3 W

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1M2)			
1. GERANIUM DISSECTUM	7	✓	
2. SILYBUM MARINUM	1		
3. BROMUS HORDEACEUS	1		
4. CARDUUS PYCNOCEPHALUS	3		
5. FESTUCA PERENNIS	7	✓	FAC
6.			
7.			
8.			
= Total Cover	19		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 81 % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- __ Dominance Test is >50%
- __ Prevalence Index is ≤3.0[1]
- __ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- __ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ______ No ✓

Remarks: THATCH: 81% COVER

SOIL

Sampling Point: SP-4U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/3	100					L	
2-8.5	7.5YR 3/3	85	2.5YR 4/8	15	C	PL	SL	
8.5-	5YR 3/3	75	2.5YR 3/4	25	C	M	SL	mn conc

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ✓ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: gravel

Depth (inches): 8.5

Hydric Soil Present? Yes ✓ No ___

Remarks:

gravelly

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): none

Water Table Present? Yes ___ No ✓ Depth (inches): none to 8.5"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): none to 8.5"

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field work conducted on 5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: ~~4/13/2021~~

Applicant/Owner: Teichert State: CA Sampling Point: SP-5W

Investigator(s): R, Preston; D, Jokerst Section, Township, Range: ______

Landform (hillslope, terrace, etc.): roadside ditch Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): c Lat: 39.214221° Long: -121.482776° Datum: ______

Soil Map Unit Name: 208: Redding gravelly loam, 0 to 8 percent slopes, MLRA 17 NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ______
Hydric Soil Present?	Yes ✓	No ______
Wetland Hydrology Present?	Yes ✓	No ______

Is the Sampled Area within a Wetland? Yes ✓ No ______

Remarks: Wetland ditch on south side of SR-20 & east of Kibbe Rd

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1m²)			
1. Typha latifolia	100	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ______ % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ______

Remarks:

SOIL

Sampling Point: SP. 5W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___________

Depth (inches): ___________

Hydric Soil Present? Yes ✓ No ______

Remarks:

Assumed hydric given surface water

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 73

Water Table Present? Yes ✓ No ___ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): surface

Wetland Hydrology Present? Yes ✓ No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field work conducted on 5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: ~~4/13/2021~~

Applicant/Owner: Teichert State: CA Sampling Point: SP-6W

Investigator(s): R, Preston; D, Jokerst Section, Township, Range: ______

Landform (hillslope, terrace, etc.): roadside ditch Local relief (concave, convex, none): concave Slope (%): <1%

Subregion (LRR): C Lat: 39.21444 Long: -121.48397 Datum: ______

Soil Map Unit Name: 208: Redding gravelly loam, 0 to 8 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___
Hydric Soil Present?	Yes ✓	No ___
Wetland Hydrology Present?	Yes ✓	No ___

Is the Sampled Area within a Wetland? Yes ✓ No ___

Remarks: Wetland ditch, soils assumed hydric given dominance of hydrophytes & saturation of soil at surface

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 2m²)			
1. Salix exigua	5	✓	FACW
2.			
3.			
4.			
5.			
= Total Cover	5		
Herb Stratum (Plot size: 2m²)			
1. Juncus effusus	80	✓	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	80		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 6W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Soils assumed hydric given dominance of hydrophytes and soil saturation at surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field work conducted on 5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: ~~4/13/2021~~

Applicant/Owner: Teichert State: CA Sampling Point: SP-8U

Investigator(s): R, Preston; D, Jokerst Section, Township, Range: ______

Landform (hillslope, terrace, etc.): road bank Local relief (concave, convex, none): ∅ Slope (%): 3

Subregion (LRR): C Lat: 39.214388° Long: -121.483845° Datum: ______

Soil Map Unit Name: 208: Redding gravelly loam, 0 to 8 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ______ No ✓	Is the Sampled Area within a Wetland?	Yes ______ No ✓
Hydric Soil Present?	Yes ______ No ______		
Wetland Hydrology Present?	Yes ______ No ✓		

Remarks: Paired upland point on road bank (w/ SP-6W); Fill soils assumed non-hydric

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	______ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	______ = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. MALVA PARVIFLORA	5		UPL
2. AVENA FATUA	5		UPL
3. FESTUCA PERENNIS	70	✓	FAC
4. ELYMUS CAPUT-MEDUSAE	2		UPL
5.			
6.			
7.			
8.			
	82 = Total Cover		
Woody Vine Stratum (Plot size: 1m²)			
1. RUBUS ARMENIACUS	5	✓	FAC
2.			
	5 = Total Cover		

% Bare Ground in Herb Stratum 13 % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- __ Dominance Test is >50%
- __ Prevalence Index is ≤3.0[1]
- __ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- __ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ______ No ✓

Remarks:

SOIL

Sampling Point: SP-8U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______
Depth (inches): ______

Hydric Soil Present? Yes ___ No ✓

Remarks:

Road bank Fill soils assumed not hydric

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No 0 Depth (inches): ✓
Water Table Present? Yes ___ No ___ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field work conducted on 5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: 4/13/2021

Applicant/Owner: Teichert State: CA Sampling Point: SP-9W

Investigator(s): R, Preston; D, Jokerst Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Roadside ditch Local relief (concave, convex, none): C Slope (%): ≤1%

Subregion (LRR): C Lat: 39.214470° Long: -121.483384° Datum: ____

Soil Map Unit Name: 208: Redding gravelly loam, 0 to 8 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____
Hydric Soil Present?	Yes ____	No ____
Wetland Hydrology Present?	Yes ✓	No ____

Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: Roadside ditch → unvegetated on bed (soil cracks) w/ Italian Rye grass dominate on bank
↳ soils assumed hydric

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1 M²)			
1. FESTUCA PERENNIS	20	✓	FAC
2. CYPERUS ERAGROSTIS	15	✓	FACW
3. PHALARIS AQUATICA	5	N	FACU
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 60% % Cover of Biotic Crust ____

Remarks:

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

SOIL

Sampling Point: SP-9W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___________

Depth (inches): ___________

Hydric Soil Present? Yes ✓ No ___

Remarks:

Soils assumed hydric due to dominance of hydrophytes, topographic position & presence of wetland hydrology

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field work conducted on 5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: ~~4/13/2021~~

Applicant/Owner: Teichert State: CA Sampling Point: SP-10W

Investigator(s): R, Preston; D, Jokerst Section, Township, Range: ______

Landform (hillslope, terrace, etc.): roadside ditch Local relief (concave, convex, none): concave Slope (%): <1%

Subregion (LRR): C Lat: 39.214402° Long: -121.489491° Datum: ______

Soil Map Unit Name: 185: Kimball loam, 0 to 1 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ✓, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____
Hydric Soil Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____
Is the Sampled Area within a Wetland?	Yes ✓	No ____

Remarks: Roadside ditch lacking bed & bank; hydrophytes on bank & soil cracks on bed. Soils Red (problemmatic) & assumed hydric

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1m2)			
1. Cyperus eragrostis	15	✓	FACW
2. Festuca perennis	2	N	FAC
3. Polypogon monspeliensis	3	N	FACW
4. Briza minor	1	N	FACW
5. Bromus hordeaceus	1	N	FACU
6.			
7.			
8.			
= Total Cover	22		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 78 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: SP-10W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? Yes ✓ No ______

Remarks:

Soils assumed hydric

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ______	No ✓	Depth (inches): ______
Water Table Present?	Yes ______	No ______	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ______	No ______	Depth (inches): ______

Wetland Hydrology Present? Yes ✓ No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field work conducted on 5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: ~~4/13/2021~~

Applicant/Owner: Teichert State: CA Sampling Point: SP-11U

Investigator(s): R. Preston; D. Jokerst Section, Township, Range: ____

Landform (hillslope, terrace, etc.): road bank Local relief (concave, convex, none): 0 Slope (%): 30

Subregion (LRR): C Lat: 39.214351° Long: -121.489471° Datum: ____

Soil Map Unit Name: 185: Kimball loam, 0 to 1 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ✓, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ___ No ✓	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present? Yes ___ No ✓	
Wetland Hydrology Present? Yes ___ No ✓	

Remarks: Road bank upland paired w/ SP-10W

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1m²)			
1. Raphanus sativus	65	✓	UPL
2. Brassica nigra	20	✓	UPL
3. Phalaris paradoxa	2		FAC
4. Festuca perennis	10		FAC
5. Festuca bromoides	3		FACU
6.			
7.			
8.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ___ % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- __ Dominance Test is >50%
- __ Prevalence Index is ≤3.0[1]
- __ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- __ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

SOIL

Sampling Point: SP-11U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No ✓

Remarks:

Soils assumed not hydric due to dominance of upland plants & absence of wetland hydrology

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ______

Water Table Present? Yes ___ No ___ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ______

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field work conducted on 5/6/2021

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kibbe Road/SR20 Access Road City/County: Yuba Sampling Date: ~~4/13/2021~~

Applicant/Owner: Teichert State: CA Sampling Point: SP-12W

Investigator(s): R. Preston; D. Jokerst Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Roadside ditch Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): C Lat: 39.214377° Long: -121.488179° Datum: ______

Soil Map Unit Name: 185: Kimball loam, 0 to 1 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ✓, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____
Hydric Soil Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____

Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: Roadside ditch w/ vegetated margin, soil cracks & moist soils

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Juncus bufonius	15	Y	FACW
2. Briza minor	2	N	FACW
3. Festuca perennis	3	N	FAC
4. Polypogon monspeliensis	5	N	FACW
5. Cyperus eragrostis	3	N	FACW
6.			
7.			
8.			
	28 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 72 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: SP-12W.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5) (**LRR C**)
- __ 1 cm Muck (A9) (**LRR D**)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) (**LRR C**)
- __ 2 cm Muck (A10) (**LRR B**)
- __ Reduced Vertic (F18)
- __ Red Parent Material (TF2)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: ______
Depth (inches): ______

Hydric Soil Present? Yes ✓ No ___

Remarks:
Soils assumed hydric: dominance of hydrophytes, topographic position, & wetland hydrology

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- __ Saturation (A3)
- __ Water Marks (B1) (**Nonriverine**)
- __ Sediment Deposits (B2) (**Nonriverine**)
- __ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Water-Stained Leaves (B9)
- __ Salt Crust (B11)
- __ Biotic Crust (B12)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water Marks (B1) (**Riverine**)
- __ Sediment Deposits (B2) (**Riverine**)
- __ Drift Deposits (B3) (**Riverine**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ______
Water Table Present? Yes ___ No ___ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ______

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Moist soils at surface

OHWM Delineation Cover Sheet

Project: Kibbe Road/SR 20 Intersection Improvements Project **Date:** 5/6/2021

Location: Yuba County near Marysville **Investigator(s):** R, Preston; D, Jokerst

Project Description:
Teichert is proposing to construct a private haul road to connect its Hallwood property directly to State Route 20 to the west of its existing intersection with Kibbe Road. The project will include a westerly realignment of the SR 20/ Kibbe Road intersection, a left-turn pocket for westbound SR 20 traffic, and the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Roadside ditch

Off-site Information

Remotely sensed image(s) acquired? ☐ **Yes** ☒ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

Google earth

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet # 1 **OHWM Delineation Datasheet** Page 1 of 2

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☒ Gentle (< 30°) | ☐ None
Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	40	40	10	10		
Below OHWM	45	45	10			

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM			98	2
Below OHWM				100

Notes/Description:

↳ drift deposits present

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

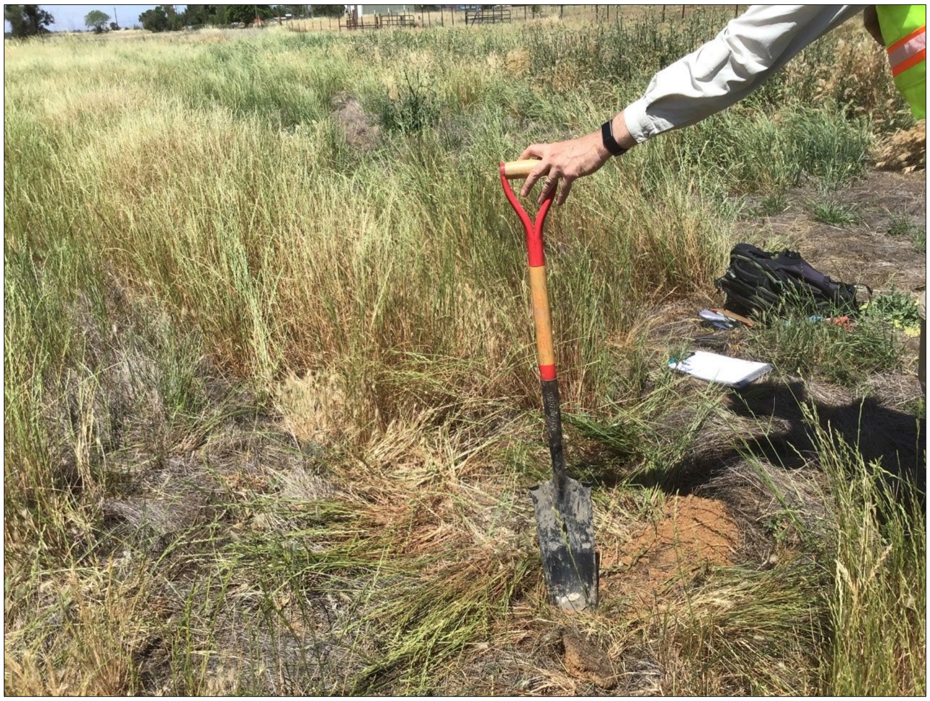
- break in slope
- presence of living vegetation above OHWM

Appendix D
Representative Photographs

Attachment D
Representative Photographs

Photograph 1: View looking north from wetland Sample Point (SP-) 1W, documenting a dominance of Italian rye grass in Seasonal Wetland (SW)-1.

Photograph 2: View looking south from an upland swath towards SP-2U (shovel in background), documenting a dominance of prickly lettuce, Italian rye grass, and thatch. SW-1 occurs in the background.



Photograph 3: View looking north from within SW-17 at SP-3W, documenting a dominance of Italian rye grass and Mediterranean barley.

Photograph 4: View looking north towards SW-7 and the private haul road from the approximate location where the Cordua Canal passes under the delineation area.

Photograph 5: Facing south from SW-13; note the contrast between the green hydrophytic grasses and brown upland grasses.

Photograph 6: From within SW-6 is a representative view of the topographic lows containing senesced remains of species commonly observed in vernal pools, including Carter's buttercup, water pygmyweed, purslane speedwell, and bracted popcornflower.

Photograph 7: From the east side of the private haul road and the south side of SR-20, view looking east at roadside wetland ditch WD-4, which contained standing water, cattails, and willows.

Photograph 8: From the west side of the private haul road and the south side of SR-20, view of roadside wetland ditch WD-3, which contained a dominance of Himalayan blackberry and a few ash saplings.

Photograph 9: View of standing water in roadside wetland ditch WD-3 and the culvert that connects the feature to roadside wetland ditch WD-4.

Photograph 10: Facing west from the south side of SR-20 in the eastern portion of the delineation area, view of roadside wetland ditch WD-9 dominated by perennial soft rush.

Photograph 11: West of Photograph 10, view facing east of roadside wetland ditch WD-6, dominated by cattails in standing water.

Photograph 12: West of Photograph 11, view of roadside ditch RD-7, which contained flow lines and sediment sorting.

Photograph 13: Facing east from the north side of SR-20, representative view of a roadside ditch in RD-4.

Photograph 14: Facing east from the north side of SR-20, view of roadside wetland ditch WD-1, which was dominated by toad rush and Italian rye grass.

Appendix E
Soil Survey, Hydric Soil Information, and NWI Map

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Yuba County, California

State Route 20/Kibbe Road Intersection

May 18, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

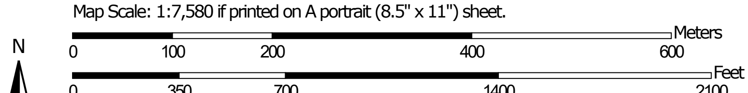
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map

Map Scale: 1:7,580 if printed on A portrait (8.5" x 11") sheet.



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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Yuba County, California
Survey Area Data: Version 14, Jun 4, 2020

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
129	Bruella loam, 0 to 1 percent slopes	1.9	5.0%
146	DUMPS, MINE TAILINGS	0.4	1.0%
161	Holillipah loamy sand, 0 to 1 percent slopes	6.7	17.6%
208	Redding gravelly loam, 0 to 8 percent slopes, MLRA 17	20.2	53.1%
214	San Joaquin loam, 0 to 1 percent slopes	8.9	23.3%
Totals for Area of Interest		**38.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Yuba County, California

129—Bruella loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hg3b
Elevation: 30 to 150 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 270 to 290 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Bruella, loam, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bruella, Loam

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 13 inches: loam
H2 - 13 to 70 inches: sandy clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water capacity: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

Kimball

Percent of map unit: 5 percent

San joaquin

Percent of map unit: 5 percent

146—DUMPS, MINE TAILINGS

Map Unit Composition

Dumps, mine tailings: 85 percent
Water, perennial: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dumps, Mine Tailings

Setting

Landform: Flood plains, channels
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Water, Perennial

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope

161—Holillipah loamy sand, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hg4t
Elevation: 30 to 150 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 270 to 290 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Holillipah, loamy sand, and similar soils: 85 percent

Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Holillipah, Loamy Sand

Setting
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile
H1 - 0 to 6 inches: loamy sand
H2 - 6 to 66 inches: stratified sand to silt loam

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water capacity: Low (about 4.7 inches)

Interpretive groups
Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: Yes

Minor Components

Columbia
Percent of map unit: 8 percent
Landform: Flood plains
Hydric soil rating: Yes

Shanghai
Percent of map unit: 7 percent
Hydric soil rating: No

208—Redding gravelly loam, 0 to 8 percent slopes, MLRA 17

Map Unit Setting
National map unit symbol: 2w8bl
Elevation: 20 to 420 feet
Mean annual precipitation: 19 to 28 inches

Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 230 to 320 days
Farmland classification: Not prime farmland

Map Unit Composition

Redding and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Redding

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium derived from igneous, metamorphic and sedimentary rock over clayey alluvium derived from igneous, metamorphic and sedimentary rock over cemented alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

A1 - 0 to 8 inches: gravelly loam
A2 - 8 to 15 inches: gravelly loam
A3 - 15 to 19 inches: gravelly loam
Bt - 19 to 22 inches: clay
2Bqm1 - 22 to 24 inches: cemented gravelly material
2Bqm2 - 24 to 35 inches: cemented gravelly material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches; 20 to 39 inches to duripan
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 15 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.2 to 0.5 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R015XD090CA - GRAVELLY LOAM
Hydric soil rating: No

Minor Components

Keyes

Percent of map unit: 10 percent
Landform: Depressions
Hydric soil rating: No

Corning

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 2 percent
Landform: Fan remnants
Microfeatures of landform position: Vernal pools
Hydric soil rating: Yes

214—San Joaquin loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hg6j
Elevation: 60 to 130 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 270 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

San joaquin, loam, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of San Joaquin, Loam

Setting

Landform: Fan terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 16 inches: loam
H2 - 16 to 25 inches: clay
H4 - 25 to 35 inches: duripan

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches; 20 to 40 inches to duripan
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None

Calcium carbonate, maximum content: 1 percent
Available water capacity: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: R017XD079CA - CLAYPAN TERRACE
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Perkins

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

Redding

Percent of map unit: 5 percent
Hydric soil rating: No

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SR 20/Kibbe Road Intersection

U.S. Fish and Wildlife Service
National Wetlands Inventory

May 18, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Appendix F
WETS Table

WETS Station: MARYSVILLE AIRPORT (ASOS), CA

Requested years: 1971 - 2000

Month	Temperature (°F)			Precipitation (inches)				
	Avg daily max	Avg daily min	Avg daily mean	Avg	30% chance will have less than	30% chance will have more than	Avg number of days with 0.10 inch or more	Average total snowfall
Jan	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-
Jul	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-
Sep	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-
Annual:					-	-		
Average	-	-	-	-	-	-	-	-
Total	-	-	-	-			-	-

GROWING SEASON DATES

Requested years of data:	1971 - 2000		
Years with missing data:	24 deg = 30	28 deg = 30	32 deg = 30
Years with no occurrence:	24 deg = 0	28 deg = 0	32 deg = 0

Data years used: 24 deg = 0 28 deg = 0 32 deg = 0

Probability	Temperature		
	24 F or higher	28 F or higher	32 F or higher

Monthly Total Precipitation for MARYSVILLE AIRPORT (ASOS), CA

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2000	M	M	M	M	M	M	M	M	0.22	2.21	0.81	0.32	M
2001	2.94	4.22	1.58	1.40	0.00	0.11	0.00	0.00	0.36	1.76	3.76	6.08	22.21
2002	3.17	0.72	3.16	0.20	1.43	0.00	T	0.00	0.00	0.00	2.43	7.77	18.88
2003	2.65	1.79	2.11	3.70	1.18	T	0.00	0.54	T	T	1.94	5.39	19.30
2004	2.77	5.68	1.43	0.33	0.05	0.00	T	0.00	0.01	3.08	2.54	3.18	19.07
2005	4.11	2.39	2.59	0.98	2.03	0.84	0.00	0.00	0.03	0.82	2.67	9.43	25.89
2006	2.16	2.27	5.74	3.93	0.34	0.00	0.00	0.00	0.01	0.19	1.99	3.31	19.94
2007	0.02	4.62	0.29	1.72	0.41	0.00	0.04	0.00	M	M	0.39	3.23	M
2008	7.00	2.26	0.12	0.14	0.08	0.00	0.00	0.00	0.00	1.30	2.19	2.23	15.32
2009	1.34	5.01	1.96	0.31	1.52	0.51	T	T	0.26	1.89	1.30	2.30	16.40
2010	5.91	1.84	1.76	3.43	1.46	T	0.00	T	T	1.43	2.89	6.15	24.87
2011	1.24	3.93	6.88	0.34	2.43	1.98	0.00	0.00	0.03	1.46	1.21	0.14	19.64
2012	3.86	0.95	4.29	2.82	T	0.08	T	T	0.00	2.08	4.70	5.94	24.72
2013	0.67	0.40	2.18	0.63	0.38	0.62	0.00	T	0.74	0.07	1.22	0.27	7.18
2014	0.38	4.95	2.01	0.80	0.11	0.00	T	0.01	0.42	0.72	2.12	9.24	20.76
2015	0.03	2.50	0.13	1.77	0.01	T	T	T	0.06	0.17	2.69	2.62	9.98
2016	5.89	0.59	7.54	0.49	0.40	0.01	0.00	0.00	0.00	2.78	M	3.09	M
2017	8.33	7.57	2.74	2.71	0.11	0.16	0.00	T	T	0.36	3.08	0.08	25.14
2018	4.20	1.83	5.17	2.38	0.01	0.00	T	T	T	0.14	3.30	2.52	19.55
2019	5.54	9.29	3.93	0.98	3.27	0.00	0.00	0.00	0.28	T	0.75	4.94	28.98
2020	1.29	0.01	1.18	0.86	0.86	0.02	0.00	0.11	0.00	0.00	0.70	1.52	6.55
Mean	**3.12**	**3.04**	**2.79**	**1.43**	**0.80**	**0.22**	**0.00**	**0.03**	**0.12**	**1.02**	**2.13**	**3.80**	**19.13**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2021	2.09	1.07	1.72	0.03	M	M	M	M	M	M	M	M	M
Mean	**3.12**	**3.04**	**2.79**	**1.43**	**0.80**	**0.22**	**0.00**	**0.03**	**0.12**	**1.02**	**2.13**	**3.80**	**19.13**

Monthly Mean Max Temperature for MARYSVILLE AIRPORT (ASOS), CA

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2020	55.8	67.3	65.0	75.1	84.3	92.4	96.9	97.3	92.4	85.5	65.3	58.3	78.0
2021	58.9	62.9	66.2	79.1	M	M	M	M	M	M	M	M	M
Mean	**57.4**	**65.1**	**65.6**	**77.1**	**84.3**	**92.4**	**96.9**	**97.3**	**92.4**	**85.5**	**65.3**	**58.3**	**78.0**

Monthly Mean Min Temperature for MARYSVILLE AIRPORT (ASOS), CA

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2020	39.4	39.2	41.8	47.9	54.8	59.4	60.4	63.9	58.8	50.2	37.9	35.7	49.2
2021	39.0	40.6	40.5	45.2	M	M	M	M	M	M	M	M	M
Mean	**39.2**	**39.9**	**41.2**	**46.6**	**54.8**	**59.4**	**60.4**	**63.9**	**58.8**	**50.2**	**37.9**	**35.7**	**49.2**

AgACISChart context menu

Month	Mean Max Temperature Normal (°F)
January	55.5
February	60.4
March	66.2
April	72.6
May	81.9
June	90.1
July	96.2
August	94.5
September	89.6
October	79.0
November	64.2
December	55.4
Annual	75.5

AgACISChart context menu

Month	Mean Min Temperature Normal (°F)
January	38.2
February	41.1
March	43.4
April	46.4
May	52.4
June	57.9
July	60.7
August	59.5
September	55.7
October	49.4
November	41.3
December	37.7
Annual	48.6

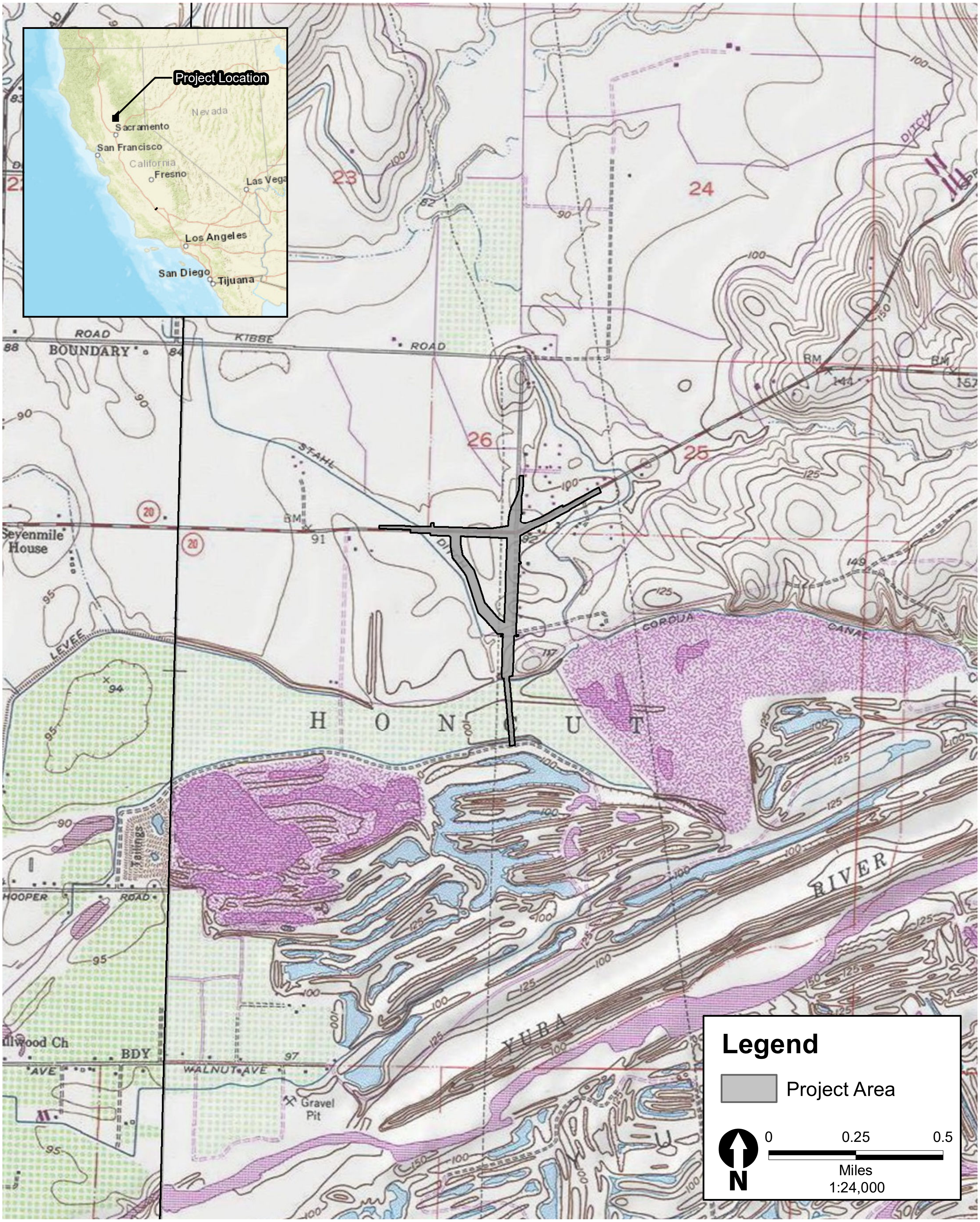


Figure 1
Project Location and Vicinity Map
Teichert: Kibbe Road/SR-20 Project

APPENDIX E

Technical Memorandum

To:	Michael Smith, Teichert Materials
From:	Steve Pappas, Senior Archaeologist
Date:	April 7, 2021
Re:	**Teichert Materials: Kibbe Road/SR 20 Intersection Improvements Project – Cultural Resources Survey Memorandum**

ICF was retained to conduct a cultural resources inventory for the Kibbe Road/SR 20 Intersection Improvements project (the Project) in Yuba County, California, as depicted on Attachment A; Figure 1. The purpose of this cultural resources study is to conduct inventory efforts to update the previous cultural investigations carried out for the Project in 2003 by Peak and Associates due to the amount of time that has passed since the previous investigation. This investigation also analyzes all three possible alignments and alternatives.

The updated inventory efforts for this study included an updated records search at the California Historical Resources Information System's (CHRIS) North Central Information Center (NCIC) and pedestrian survey of the current project area. This technical memorandum describes the methods used to identify cultural resources to complete the necessary studies for use in the CEQA compliance environmental document for the Project. As a result of this inventory, no new cultural resources were identified in the surveyed area, and the three built environment resources identified in 2003 were revisited and updated. Background information such as prehistoric, ethnographic, and historic context is provided in the *Peak and Associates 2003* report (Attachment D) and is still applicable to the current project area.

Project Purpose

Teichert is proposing to construct a private haul road to connect its Hallwood property directly to State Route 20 (SR 20) at or near its existing intersection with Kibbe Road (See Attachment A for potential alternative alignments considered in this study). The project will include a left-turn pocket for westbound SR 20 traffic, and the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection.

After completion of the proposed roadway improvements, existing truck traffic to and from the Hallwood Plant would be relocated to the new haul road and would access SR 20 via the realigned Kibbe Road intersection. The existing access on Walnut Avenue would then be used for employee and vendor access only. It is anticipated that the project will require a grading permit and an encroachment permit from the County of Yuba and an encroachment permit from Caltrans.

Project Location

The proposed project (the Project) would be constructed on approximately 23 acres of primarily private property approximately halfway between Marysville and Browns Valley along SR 20, in central Yuba County, California (Attachment A, Figures 1 and 2). The Project is located within 0.65 mile of the ROW of SR 20, approximately 0.14 mile of the Kibbe Road ROW north of SR 20, and approximately 0.63 mile of an unnamed partially-built access road heading south from SR 20 down to the northern end of the Teichert Aggregates Hallwood facility.

The portions of the project area south of SR 20 are currently dominated by walnut orchards at the southern end with the portion leading up to SR 20 consisting of disturbed annual grasslands and fallow agricultural land east and west of the existing road. The portions of the project along the SR 20 and Kibbe Road ROWs consists of roadside ditches, active agricultural land, and disturbed densely vegetated areas of road ROW.

Methods and Results

Record Search

A cultural resources records search was conducted by staff at the California Historical Resources Information System's (CHRIS) North Central Information Center (NCIC) located on the campus of California State University, Sacramento on February 9, 2021 (Record Search #YUB-21-9; Attachment B). The records search covered the entire project area, as shown on Figure 1, and all areas within a 0.25-mile radius of the project area. The purpose was to identify any previously recorded cultural resources in the project area and vicinity, and to assess the potential for cultural resources in the project area. Also included in the search were previous cultural resources studies that have included portions of the project area or areas within 0.25 mile of the project area.

In addition to the cultural resources sites and studies identified within the records search radius, the following historical references were also reviewed:

- National Register Information System website (National Park Service [NPS] 2021)
- Office of Historic Preservation (OHP), California Historical Landmarks website (OHP 2021)
- Historic Property Data File for Yuba County (OHP 2012a)
- Archaeological Determinations of Eligibility for Yuba County (OHP 2012b)
- General Land Office (GLO) land patent records (BLM 2021)

- Caltrans Local and State Highway Bridge results - California State Geoportal website (California Department of Technology 2020a and 2020b)

As a result of the review, no resources listed on any of the above historical references were identified within 0.25 mile of the project area.

The following historical maps and aerial photographs were reviewed to identify buildings, features, and landforms that may aid in the identification of cultural resources within the project area:

- 1888 U.S. Geological Survey (USGS) California, Smartsville Sheet (1:125,000)
- 1911 USGS Browns Valley, California (1:31,680)
- Aerial photograph taken in 1947
- 1947 USGS Browns Valley, California (7.5-minute scale)

The aerial photo and map review revealed the land within the project area has remained undeveloped with the exception of ditches and access roads intersecting the project area. Historically, land uses to the east and west of the project appear to consist of agricultural production (row crops and orchards), with gold dredging to the south of the project in the late 1800s and early 1900s, followed by materials extraction by Teichert. The aerial photograph and map review also confirms the presence of the Stahl Ditch and Cordua Canal as early as 1947. These features are discussed in depth below.

The record search revealed that eight cultural resources studies have been conducted within a portion of the project and in the record search radius (Table 1). As mentioned in the introduction of this memo, one study was prepared for this project in 2003 (Peak and Associates).

Table 1. Previous Cultural Resources Studies Conducted within a portion of the Project Area

Study #	Year	Author(s)	Title
00994	1989	Offerman, Janis	*Negative Archaeological Survey Report for a Project Study Report for Highway Project near Spring Valley Road along State Route 20, 03-YUB-20, PM 8.2/10.1.*
07923	1999	Offermann, Janis and Daryl Noble (Caltrans)	*Negative Archaeological Survey Report 03-YUB-20 P.M. 8.2/10.1 03223-44630K*
08276	2004	Scott, Barry (ESA)	*Baldwin Hallwood Mine Expansion, Yuba County, California*
08278	1985	Wiant, Wayne (Caltrans)	*Minor Curve Realignment on Route 20, near Kibbe Road in Yuba County*
08279	1998	Hupp, Jill	*Historic Property Survey Report for Yub-20 Widening Project, 03-Yub-20, P.M. 8.2/10.1*
09326	2008	Leach-Palm, Laura, et al. (Far Western/JRP)	*Cultural Resources Inventory of Caltrans District 3 Rural Conventional Highways in Butte, Colusa, El Dorado, Glenn, Nevada, Placer, Sacramento, Sierra, Sutter, Yolo, and Yuba Counties*

Study #	Year	Author(s)	Title
11351	2013	Grant, Joanne	*Smartville-Marysville 60 kV PM Number: 30886120*
13100	2003	Neuenschwander, Neal (Peak and Associates)	*Cultural Resource Assessment of the Proposed Hallwood Service Road, Yuba County, California*

Overall, one study (Study # 13100; Peak and Associates 2003) encompassed the majority of the project. Eighteen years ago, Neal Neuenschwander conducted a survey for the proposed Hallwood service road which followed the similar footprint of current project area.

As a result of the studies listed above, and as revealed during the record search, three resources have been recorded within the project:

Site P-58-1754 consists of a segment of the Stahl Ditch, originally recorded in 1998 by Jill Hupp (Caltrans). Hupp recorded a small portion of this ditch along the south side of SR 20 heading southeast. In 2003 additional segments of this ditch were recorded by Neal Neuenschwander as part of the Hallwood service road project. These additional segments of the ditch were located along the west side of the current service road alignment. The ditch segment was evaluated as not be eligible under CEQA (Peak and Associates 2003).

Site P-58-1755 consists of a segment of the Cordua Canal recorded by Neal Neuenschwander in 2003 as part of the Hallwood service road project. According to USGS historic maps, the Cordua Canal was constructed sometime between 1911 and 1947 and was observed as a concrete-lined irrigation ditch measuring 22 feet wide and 6 feet deep. As with the Stahl Ditch, This ditch segment was evaluated as not eligible under CEQA (Peak and Associates 2003).

Site P-58-3332 (CA-YUB-2067H) consists of a segment of an unnamed irrigation ditch recorded by Neal Neuenschwander in 2003 as part of the Hallwood service road project. This irrigation ditch was constructed prior to 1947 and was observed as a concrete-lined ditch measuring 14 feet wide and 2 to 3 feet deep. As with the other ditches identified above, This ditch segment was evaluated as not eligible under CEQA (Peak and Associates 2003).

Overall, the majority of the project area was adequately surveyed (15-meter intervals) in 2003 during the Peak and Associates study. However, it has been 18 years since the project was surveyed and due to the changing landscape and revised project area, an updated survey and verification of the previously recorded sites was warranted.

Consultation with Interested Parties

As part of the background search, on February 11, 2021, ICF E-mailed the Native American Heritage Commission (NAHC) and requested that they perform a Sacred Lands File search for the project. On March 2, 2021, the NAHC E-mailed ICF a letter stating that the Sacred Lands File search did not identify any sacred lands within the project. The NAHC also provided a list of two Native American contacts that may have information regarding the project. Tribal consultation for the project under

CEQA will be conducted by the county of Yuba and will be presented in the EIR that will be prepared for the project.

In addition to the Sacred Lands File Search, information gathering letters were sent to the Yuba Historical Society and the Mary Aaron Museum, both located in Marysville, on March 22, 2021. The letters requested any information related to significant historic or built-environment resources that may be affected by the project. No response has been received from the museum or historical society. All outreach documentation is provided in Attachment C.

Cultural Resources Survey

On February 26, 2021, ICF archaeologist Stephen Pappas, MA, RPA conducted an archaeological survey of the project area as depicted on Attachment A; Figure 2 (Survey Coverage). The survey was conducted by walking systematic transects across the project area at 15-meter intervals.

Visibility throughout the project area to the east and west of the access road was generally fair to poor, averaging 20 percent surface visibility due to thick grasses covering most of the areas that had not already been developed by the road construction. Areas of exposed ground surface such as rodent backdirt piles, access road exposures, and graded and disturbed soils were intensively inspected. Areas within the Project Area along State Route 20 consisted of roadside ditches or raised and graded road shoulders. These areas were covered in non-native grasses with a fair amount of roadside refuse.

Two areas in the Project Area could not be intensively surveyed due to property access: a segment of the Alternative 3 that followed the Stahl Ditch south of State Route 20 and west of the access road, and a small portion of Alternative 1 northwest of the intersection of Kibbe road and State Route 20 that was private property (See Figure 2 for locations). Both areas were observed from the roadways or accessible areas and both were currently under agricultural production with row crops.

As a result of the survey, no archaeological sites were identified within the surveyed areas and overall, the project had been heavily modified due to agricultural use, road construction, and features associated with irrigation and water delivery. All three previously recorded built environment resources: P-58-1754, P-58-1755, and P-58-3332 appeared to be in good functioning condition and no changes were observed since their initial recordation.

Conclusion

As a result of the inventory and updated pedestrian survey by ICF, no archaeological sites were identified within the project area. All three previously recorded built environment resources were revisited and found to be in good condition. ICF concurs with the previous evaluations of these resources.

References Cited

Bureau of Land Management (BLM)

2021 Bureau of Land Management, General Land Office Records. Electronic document, https://glorecords.blm.gov/default.aspx, viewed March 23, 2021.

California Department of Technology
2020a California State Geoportal Local Bridges. Electronic document, https://gis.data.ca.gov/datasets/b57bbb540b7e4de7a33b71e276cf4a28_0?geometry=-121.548%2C38.579%2C-121.467%2C38.591, viewed March 16, 2021.
2020b California State Geoportal State Highway Bridges. Electronic document, https://gis.data.ca.gov/datasets/f0f31a540f17414ba384127182f4e088_0?geometry=-161.089%2C31.071%2C-77.461%2C43.277, viewed March 16, 2021.

National Park Service (NPS)
2021 *National Register of Historic Places, Data Downloads.* Electronic document. Available: https://www.nps.gov/subjects/nationalregister/data-downloads.htm, viewed March 16, 2021.

Office of Historic Preservation (OHP)
2012a Archaeological Determinations of Eligibility for Yuba County. Report on file at North Central Information Center, Sacramento.
2012b Historic Properties Data File for Yuba County. Report on file at North Central Information Center, Sacramento.
2020 *Office of Historic Preservation, California Historical Landmarks By County website*, *Yuba County*. Available: https://ohp.parks.ca.gov/?page_id=21537, viewed March 23, 2021.

Peak and Associates
2003 *Cultural Resource Assessment of the Proposed Hallwood Service Road, Yuba County, California*. Report on file at ICF, Sacramento, California.

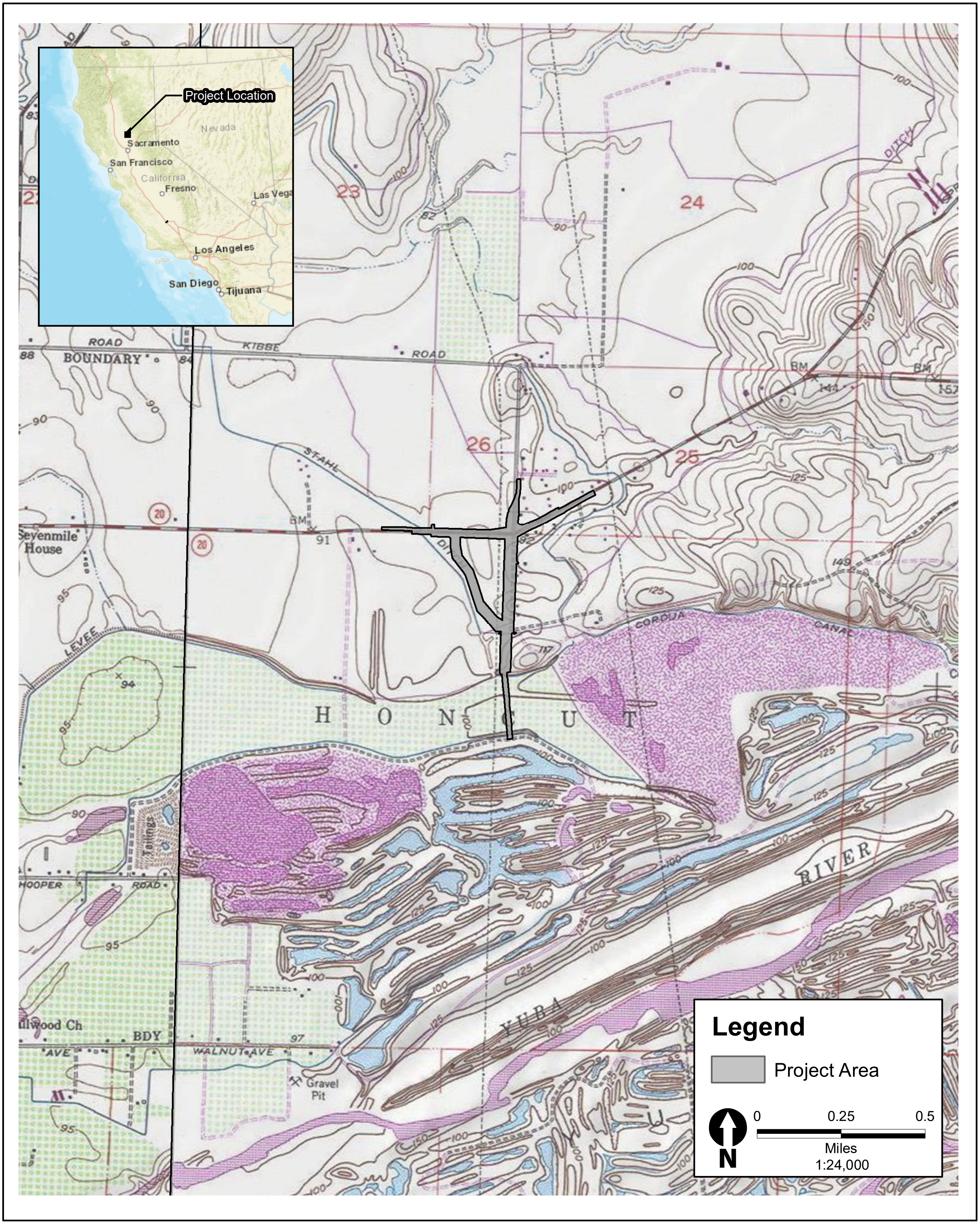
Information Attached to Memorandum

Attachment A: Project Location and Vicinity Map, Survey Coverage and Survey Results Map

Attachment B: Records Search Results

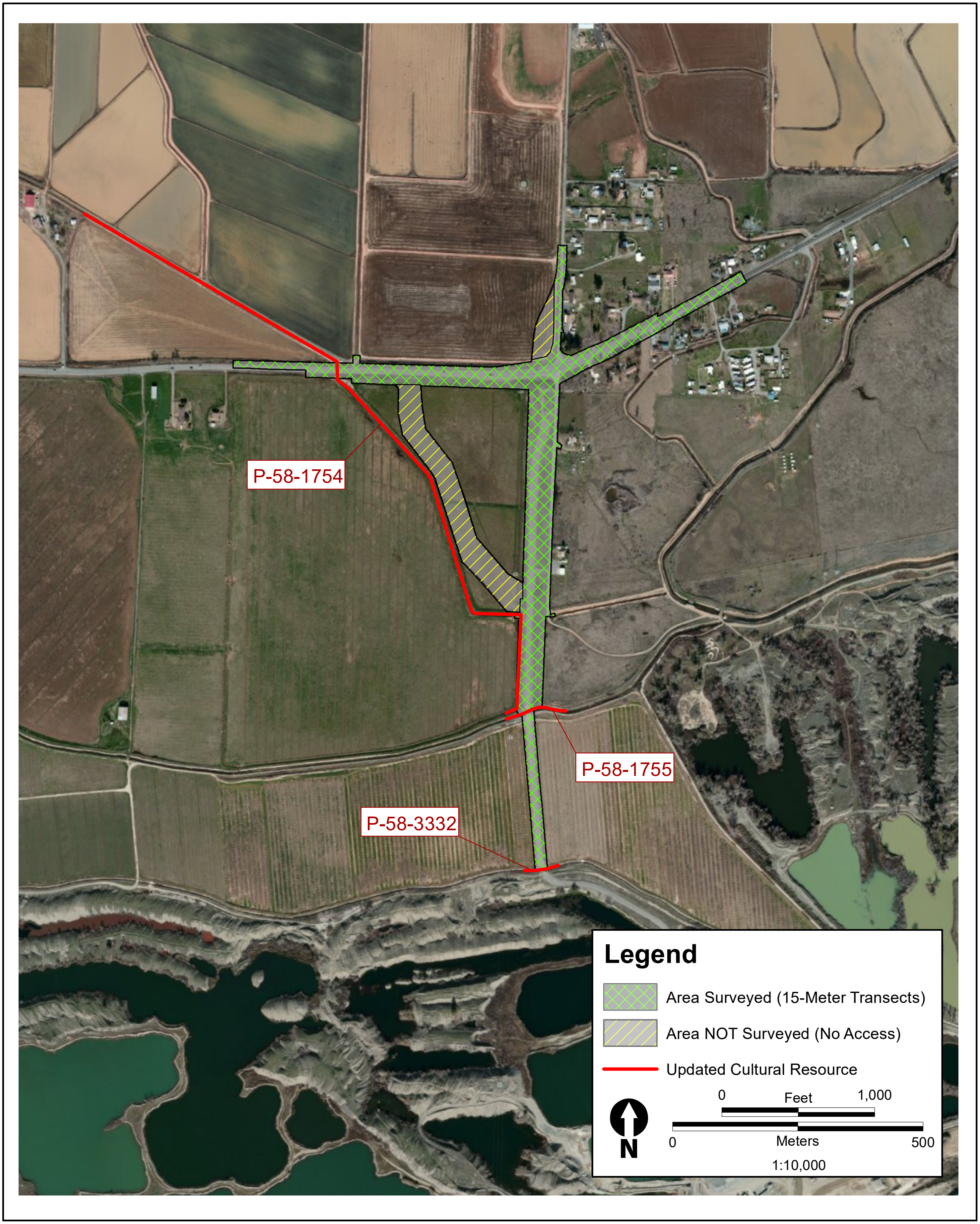
Attachment C: Native American Heritage Commission and Historical Society Outreach

Attachment D: Peak and Associates 2003 Inventory Report



\\PDCCITRDSGIS1\Projects_1\Teichert\00020_21_KibbeRoad-SR 20\Figures\Cultural\Figure_1_ProjectVicinityLocation_20191216.mxd; User: 39896; Date: 3/12/2021

Figure 1
Project Location and Vicinity Map
Teichert: Kibbe Road/SR-20 Project



\\PDCCITRDSGIS1\Projects_1\Teichert\00020_21_KibbeRoad-SR 20\Figures\Cultural\Figure_2_SurveyCoverageMap_20191216.mxd; User: 39896; Date: 3/12/2021

Figure 2
Survey Coverage and Survey Results Map
Teichert: Kibbe Road/SR-20 Project

California Historical Resources Information System

NORTH CENTRAL INFORMATION CENTER

AMADOR
EL DORADO
NEVADA
PLACER
SACRAMENTO
YUBA

California State University, Sacramento
6000 J Street, Folsom Hall, Suite 2042
Sacramento, California 95819-6100
phone: (916) 278-6217
fax: (916) 278-5162
email: ncic@csus.edu

2/9/2021 NCIC File No.: YUB-21-9

Stephen Pappas
ICF
980 9th Street, Suite 1200
Sacramento, CA 95814

Re: Teichert Kibbe Road

The North Central Information Center received your records search request for the project area referenced above, located on the Browns Valley USGS 7.5' quad. The following reflects the results of the records search for the project area and a ¼-mi radius.

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☐custom GIS maps ☒ shapefiles

Resources within project area:	P-58-1754 P-58-1755 P-58-3332
Resources outside project area, within radius:	P-58-1752 P-58-1753
Reports within project area:	994 7923 8276 8278 8279 9326 11351 13100
Reports outside project area, within radius:	None

Resource Database Printout (list):	☐ enclosed	☒ not requested	☐ nothing listed/NA
Resource Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed/NA
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Report Database Printout (list):	☐ enclosed	☒ not requested	☐ nothing listed/NA
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed/NA
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed/NA
Report Copies:	☒ enclosed	☐ not requested	☐ nothing listed/NA

Built Environment Resources Directory:	☒ enclosed	☐ not requested	☐ nothing listed/NA
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed/NA
CA Inventory of Historic Resources (1976):	☐ enclosed	☒ not requested	☐ nothing listed/NA
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Historical Maps:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Local Inventories:	☐ enclosed	☒ not requested	☐ nothing listed/NA
GLO and/or Rancho Plat Maps:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Shipwreck Inventory:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Soil Survey Maps:	☐ enclosed	☒ not requested	☐ nothing listed/NA

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 California Historical Resources Information System (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.

Sincerely,

Paul Rendes, Coordinator
North Central Information Center

From:	Pappas, Steve
To:	NAHC@NAHC
Cc:	Pappas, Steve
Subject:	FW: Teichert Kibbe Road SLF request
Date:	Monday, March 1, 2021 3:12:29 PM
Attachments:	TeichertKibbe_NAHC_request.pdf image001.png
Importance:	High

Dear NAHC,

I still have not heard back regarding the request for this SLF search. It's been over three weeks. Could you please provide a response at your earliest convenience?

Thank you,

STEPHEN PAPPAS | Senior Archaeologist | 916.231.7649 (o) | stephen.pappas@icf.com | icf.com
ICF | 980 9th Street, Suite 1200, Sacramento, CA 95814 | 530.218.8485 (m)

From: Pappas, Steve
Sent: Friday, February 5, 2021 11:18 AM
To: NAHC@NAHC <NAHC@nahc.ca.gov>
Subject: Teichert Kibbe Road SLF request

Dear NAHC,

Could you please conduct a Sacred Lands File Search and provide a list of Native American contacts for the attached project?

Thank you,

STEPHEN PAPPAS | Senior Archaeologist | 916.231.7649 (o) | stephen.pappas@icf.com | icf.com
ICF | 980 9th Street, Suite 1200, Sacramento, CA 95814 | 530.218.8485 (m)

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: _Teichert Kibbe Road____

County:Yuba

USGS Quadrangle Name: Browns Valley, CA

Township:16 North   Range: 4 East Section(s):25, 26

Company/Firm/Agency:_ICF

Street Address:_980 9th Street

City:_Sacramento_   Zip:_95814

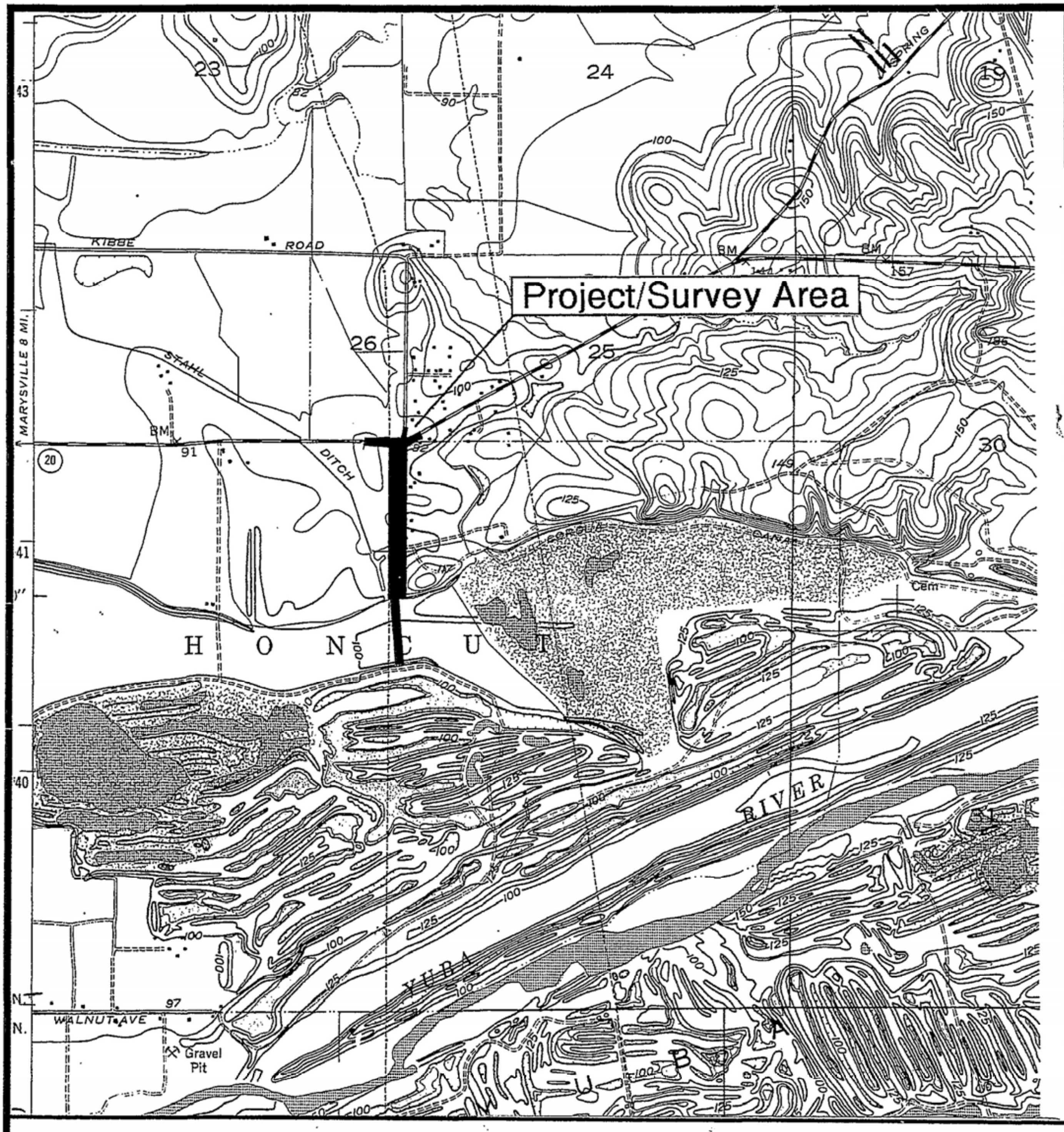
Phone:_916-231-7649________________________________

Fax:____

Email:_steve.pappas@icf.com

Project Description:

Teichert proposes to construct an access road to their Halwood materials plant.



SCALE 1:24,000

BROWNS VALLEY, CALIF 1973 (1947)

CONTOUR INTERVAL 5 Feet

Magnetic Declination 16.5 degrees

BASE MAP IS MAPPED, EDITED, AND PUBLISHED BY THE U.S. GEOLOGICAL SURVEY

Map 1

From:	Gonzalez-Lopez, Nancy@NAHC
To:	Pappas, Steve
Subject:	Teichert Kibbe Road, Yuba County
Date:	Tuesday, March 2, 2021 3:07:13 PM
Attachments:	SLF No TeichertKibbeRoad PappasYuba 3-2-2021 Signed.pdf TeichertKibbeRoad PappasYuba 3-2-2021.pdf

Regards,

Nancy Gonzalez-Lopez
Cultural Resources Analyst
Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 573-0168

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

March 2, 2021

Steve Pappas

ICF

Via Email to: steve.pappas@icf.com

Re: Teichert Kibbe Road, Yuba County

Dear Mr. Pappas:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

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

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

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

Sincerely,

Nancy Gonzalez-Lopez

Nancy Gonzalez-Lopez
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Yuba County
3/2/2021

Tsi Akim Maidu
Grayson Coney, Cultural Director
P.O. Box 510 — Maidu
Browns Valley, CA, 95918
Phone: (530) 383 - 7234
tsi-akim-maidu@att.net

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road — Maidu
Auburn, CA, 95603 — Miwok
Phone: (530) 883 - 2390
Fax: (530) 883-2380
bguth@auburnrancheria.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Teichert Kibbe Road, Yuba County.

March 22, 2021

Mary Aaron Museum
704 D Street
Marysville, CA 95901

Subject: Teichert Materials: Kibbe Road/SR 20 Intersection Improvements Project

Dear Mary Aaron Museum:

Teichert is proposing to construct a private haul road to connect its Hallwood property directly to State Route 20 (SR 20) to the west of its existing intersection with Kibbe Road. The project will include a westerly realignment of the SR 20/Kibbe Road intersection, a left-turn pocket for westbound SR 20 traffic, and the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection.

After completion of the proposed roadway improvements, existing truck traffic to and from the Hallwood Plant would be relocated to the new haul road and would access SR 20 via the realigned Kibbe Road intersection. The attached map depicts the current proposed project area.

As part of our effort to identify cultural resources within the project area, all interested parties are being consulted to determine if any significant historic, built-environment resources (buildings/structures) may be affected by the proposed project. Your effort in this process provides invaluable information for the proper identification and treatment of cultural resources.

Please do not hesitate to contact me with any questions. Thank you for your assistance.

Sincerely,

Stephen Pappas
Senior Archaeologist
Steve.pappas@icf.com

March 22, 2021

Yuba Historical Society
330 9th Street
Marysville, CA 95901

Subject: Teichert Materials: Kibbe Road/SR 20 Intersection Improvements Project

Dear Yuba Historical Society:

Teichert is proposing to construct a private haul road to connect its Hallwood property directly to State Route 20 (SR 20) to the west of its existing intersection with Kibbe Road. The project will include a westerly realignment of the SR 20/Kibbe Road intersection, a left-turn pocket for westbound SR 20 traffic, and the installation of 12-foot shoulders on both sides of SR 20 to the west of the proposed intersection.

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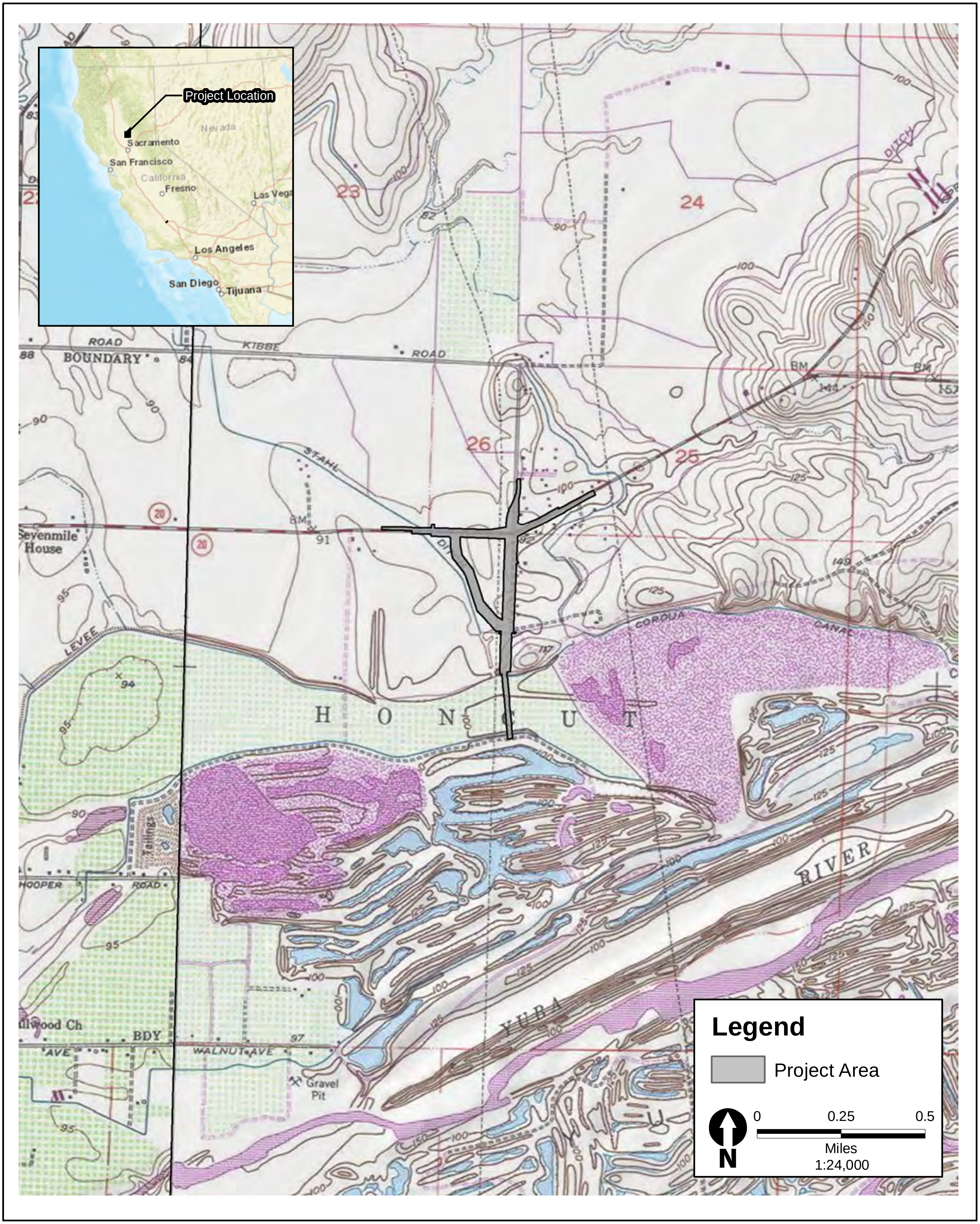
As part of our effort to identify cultural resources within the project area, all interested parties are being consulted to determine if any significant historic, built-environment resources (buildings/structures) may be affected by the proposed project. Your effort in this process provides invaluable information for the proper identification and treatment of cultural resources.

Please do not hesitate to contact me with any questions. Thank you for your assistance.

Sincerely,

Stephen Pappas
Senior Archaeologist
Steve.pappas@icf.com



ICF

Figure 1
Project Location and Vicinity Map
Teichert: Kibbe Road/SR-20 Project

CULTURAL RESOURCE ASSESSMENT

OF THE PROPOSED HALLWOOD SERVICE

ROAD, YUBA COUNTY, CALIFORNIA

Prepared for

Teichert Aggregates
3500 American River Drive
Sacramento, California 95851-5805

Prepared by

Peak & Associates, Inc.
3161 Godman Avenue, Suite A
Chico, California 95973

March 20, 2003
(Job #02-151)

INTRODUCTION

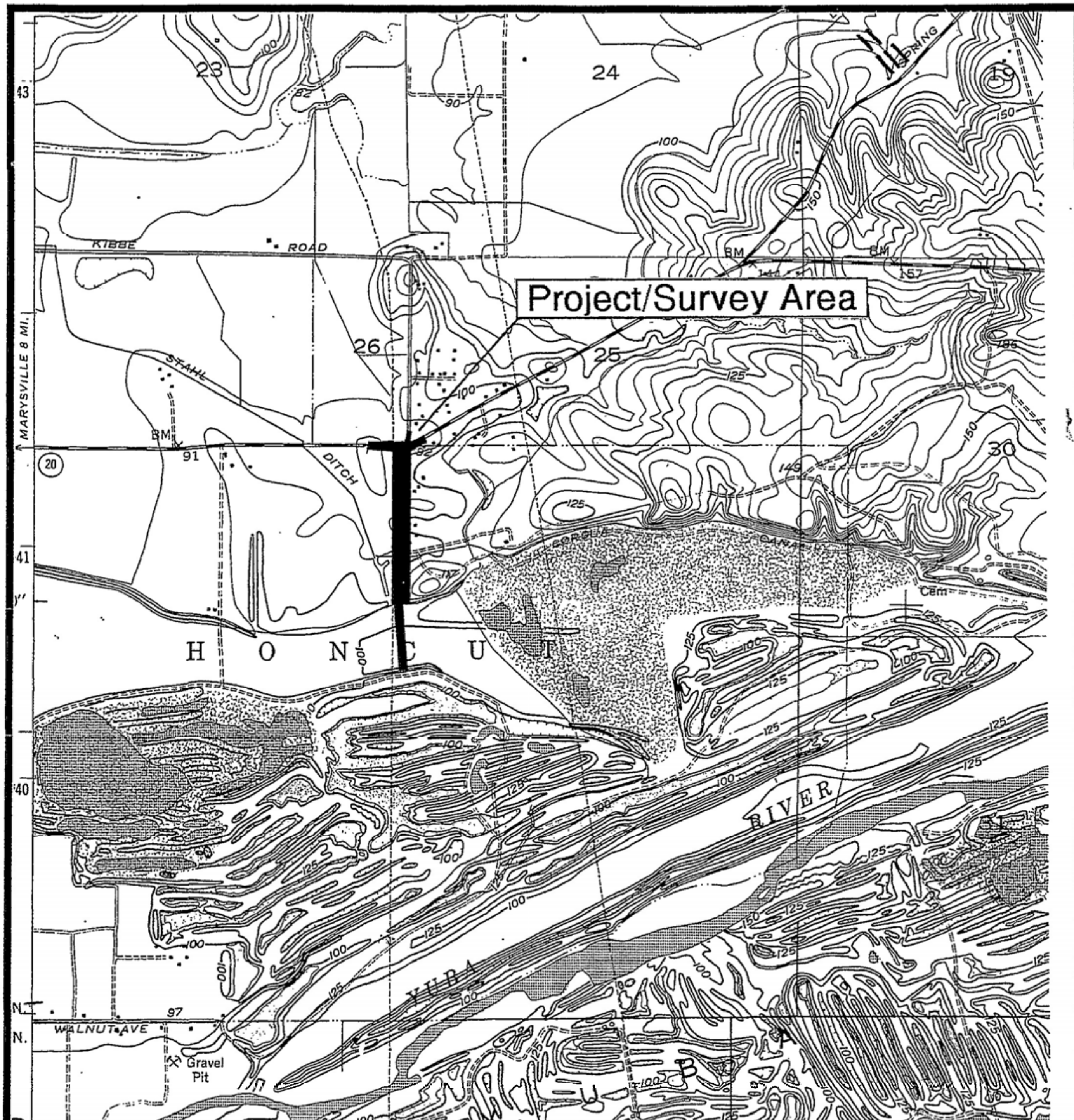
Teichert Aggregates is proposing to construct a private access road from their property located adjacent to the Yuba River north to State Highway 20, approximately eight miles east of the community of Marysville, Yuba County, California. The proposed project area is located in sections 25 and 26, Township 16 North, Range 4 East. The proposed project area is delineated on a copy of the United States Geological Survey (USGS) Browns Valley 7.5 minute series topographic quadrangle (Map 1).

The proposed private access road is known as the Hallwood Service Road and will be located in an easement that varies between 80 to 156.9 feet in width. The proposed Hallwood Service Road will enter the Highway 20 right-of-way south and west of the existing intersection of Highway 20 and Kibbe Road. Areas adjacent to the north and south sides of the Highway 20 right-of-way, east and west of the intersection with Kibbe Road will be acquired by Teichert Aggregates (Map 2).

A review of records maintained by the Northeast Information Center of the California Historical Resources Information System was conducted on October 21, 2002 (Appendix A). According to this review, there are no known prehistoric or historic period cultural resources located within, or within a 1,000 foot radius of the proposed project area as delineated on maps 1 and 2. Caltrans archeologists have inspected the areas adjacent to the north and south sides of the Highway 20 right-of-way on two previous occasions (Wiant 1984; Offermann 1989).

Contact was initiated with the Native American Heritage Commission (NAHC), Sacramento for a review of the Sacred Lands File, maintained by the NAHC, and to obtain a list of groups and/or individuals who may have knowledge of traditional uses, or cultural resources, located within, or within a 1,000 foot radius of the proposed project area (Appendix B). Letters with an accompanying map delineating the proposed project area, were sent to the Maidu Elders Organization, the Maidu Nation, and the Butte Tribal Council. Ren Reynolds, EPA Coordinator for the Enterprise Rancheria and Chairman of the Butte Tribal Council called Peak & Associates and requested more detailed information concerning the scope and location of the proposed project. A copy of Map 2 showing the limits of the study area was sent to Mr. Reynolds along with additional mapping data. Mr. Reynolds mentioned that he was assisting Caltrans with another project approximately one mile west of the proposed project area and that he would probably detour and inspect the project area as best as possible from Highway 20. Peak & Associates offered to accompany Mr. Reynolds during an inspection of the entire project area, but he declined at this time. No response concerning his field visit to the area has been received as of March 20, 2003.

An intensive inspection of the proposed project area as delineated on maps 1 and 2 was conducted by Peak & Associates Staff Archeologist Neal Neuenschwander during



SCALE 1:24,000

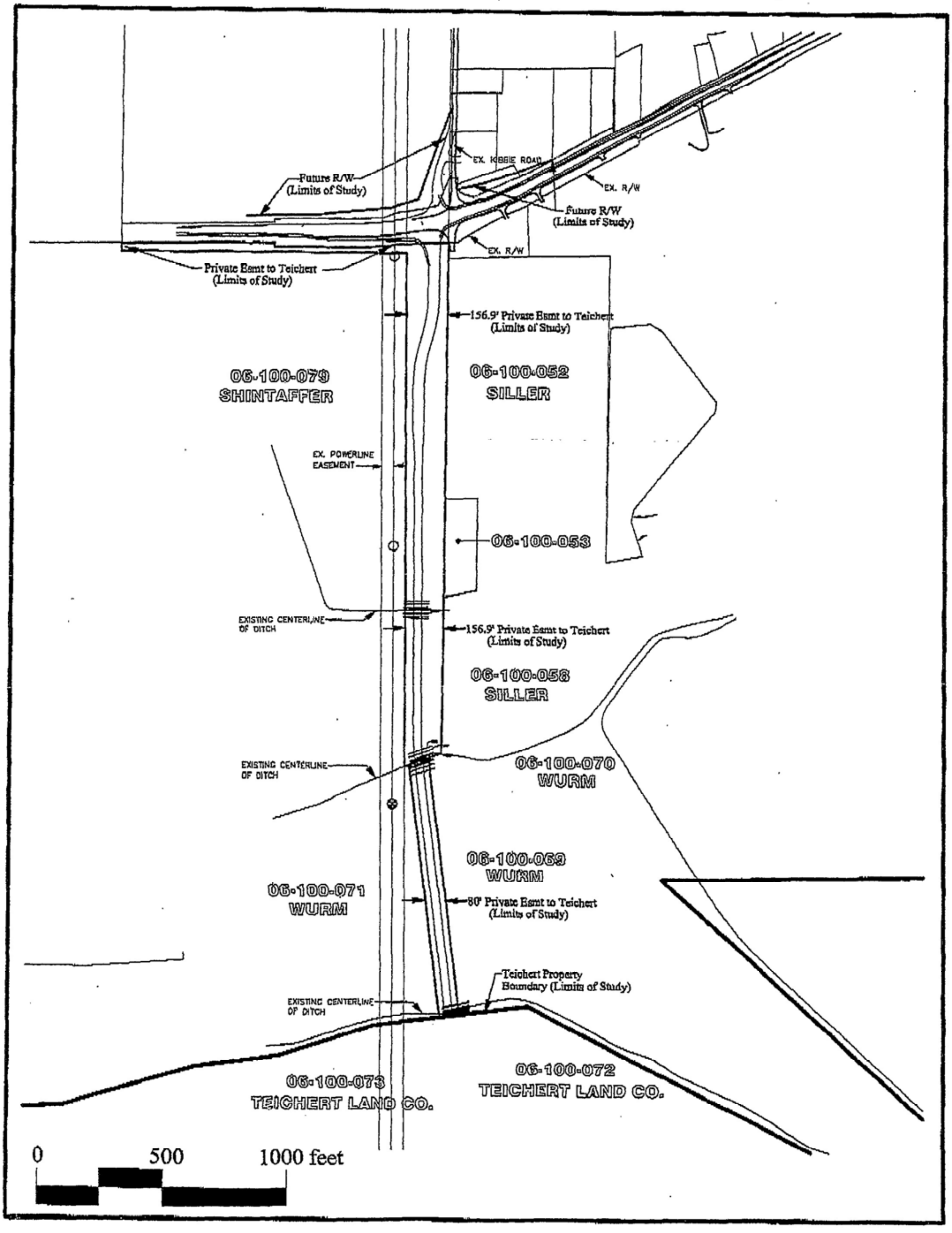
BROWNS VALLEY, CALIF 1973 (1947)

CONTOUR INTERVAL 5 Feet

Magnetic Declination 16.5 degrees

BASE MAP IS MAPPED, EDITED, AND PUBLISHED BY THE U.S. GEOLOGICAL SURVEY

Map 1



Future R/W
(Limits of Study)
EX. KIBBIE ROAD
EX. R/W
Future R/W
(Limits of Study)
EX. R/W
Private Esmt to Teichert
(Limits of Study)
156.9' Private Esmt to Teichert
(Limits of Study)
06-100-079
SHINTAFFER
06-100-052
SILLER
EX. POWERLINE
EASEMENT
06-100-053
EXISTING CENTERLINE
OF DITCH
156.9' Private Esmt to Teichert
(Limits of Study)
06-100-058
SILLER
EXISTING CENTERLINE
OF DITCH
06-100-070
WURM
06-100-069
WURM
06-100-071
WURM
80' Private Esmt to Teichert
(Limits of Study)
Teichert Property
Boundary (Limits of Study)
EXISTING CENTERLINE
OF DITCH
06-100-073
TEICHERT LAND CO.
06-100-072
TEICHERT LAND CO.
0
500
1000 feet

Map 2

January 2003. Three historic period irrigation ditches were discovered within the proposed project area. The northern-most ditch is earthen and is identified on the USGS topographic quadrangle as the Stahl Ditch. The central irrigation ditch is lined with concrete and is identified on the USGS topographic quadrangle as the Cordua Canal. The southern-most irrigation ditch is also lined with concrete, but is not assigned a name on the USGS quadrangle. All three ditches are located within the Cordua Irrigation District and have a common origin at the Daguerre Point Dam, approximately two miles east of the project area. The northern-most Stahl Ditch was constructed sometime between 1947 and 1973, according to the USGS topographic quadrangle. The Cordua Canal and southern-most ditch were constructed sometime after 1911, probably after World War I, in response to the..."high price being paid for rice..(Adams 1929:121).

An evaluation of the three ditch segments determined that none of the resources qualify for listing under the California Register, or as "important archeological resources" under the California Environmental Quality Act (CEQA). As such, measures to mitigate any adverse impacts caused by the proposed construction of the Hallwood Service Road are not necessary.

CULTURAL HISTORY

Ethnology

At the time of the gold rush, the project vicinity was occupied by the Nisenan Indians, identified by the language they spoke. There have been several general treatments of the Nisenan culture by Beals 1933; Kroeber 1929, 1953; Littlejohn 1928; Wilson and Towne 1978 and Wilson 1982. There are also several more specific articles on various aspects of their culture as reported in the bibliography and elsewhere. The following text by Norman Wilson, where not cited, is derived from Wilson and Towne 1978 and Wilson 1982.

The Nisenan peoples occupied the drainages of the Yuba, Bear, and the American Rivers from the Sacramento River on the west to the summit of the Sierra in the east. The Foothill and Hill Nisenan peoples were distinctive from the Valley Nisenan and were loosely organized into tribelets or districts with large central villages, surrounded by smaller villages. These are often referred to as winter villages by older Indians. These central villages and their leaders seemed to have had power or control over the surrounding smaller villages and camps and specific surrounding territory (Beals 1933; Littlejohn 1928; Wilson and Towne 1978). These districts were oriented to the natural resources and the land forms. In the foothills and mountains the major drainages became formal or informal boundaries with the land in between forming the district. Thus, the Placerville District is between the Cosumnes River and the Middle Fork of the American River, the Auburn District between the Middle Fork of the American River and the Bear River and the Nevada City District between the Bear River and the Yuba River.

All the Nisenan depended on activities attuned to the seasonal ripening of plant foods and the seasonal movements and migration of the animals and the runs of fish. With the flooding of the valley in the winter and spring a great number of animals such as elk, antelope and bears moved to the natural levees along the rivers and up into the lower foothills. Along the foothill margins they joined the resident and migratory deer herds. Huge flocks of waterfowl visited the flooded areas between the rivers and the foothills, coveys of quail gathered in the fall, and pigeons were common in the fall and spring. Steelhead and salmon ran up most of the major streams including the Yuba River in the fall, winter and spring. The hunting of these plentiful resources was part of the foothill lifeway. This same bounty was available to the river-oriented valley peoples out on the valley floor and along the natural levees of the rivers. There were major north-south Indian trails along the margin of the foothills that were usable year around as well as other trails east and west along the natural levees of the stream courses. There was probably not a great deal of competition for resources at this time except in lean years. Both the valley and foothill peoples lived at the edges of rich ecotones: the rivers and the valley floor; and the valley floor and the foothills.

While the Hill Nisenan to the east in the foothills carried on trade with the valley peoples and shared some of the cultural traits, they lacked the complexity or richness of the Valley Nisenan. The Hill Nisenan had a different resource base to work with which required greater mobility and a more intense use of the available resources (Matson 1972). They developed a local culture that was more oriented to the gathering, storage and year round use of the acorn, continual foraging of resources by everyone in the village group, specialized hunting strategies and availability of different plants to gather and process (Erskian and Ritter 1972). They depended on activities attuned to the seasonal ripening of plant foods and the seasonal migrations and increased populations of animals and insects. The foothill people relied more on foraging for food, for immediate use or short term storage, rather than gathering for future needs. This meant they had to be much more mobile in their use of the land and its resources. The lower population densities and the large number of campsites of the Hill Nisenan reflect the more limited ability to acquire and utilize the fewer available resources: they had to work harder for less.

This continual movement meant the foothill people did not have large year-round villages. There are no known major villages in the foothills or mountains that can compare with the valley permanent village sites or population densities. However, there are hundreds of small campsites and villages scattered across the foothills and mountains with certain localities as the centers for these hill peoples.

It appears that the hill people were more socially organized around the extended family than to the village and would often camp in informal family groups around the central village. Since they did some foraging and extensive fishing and hunting in the winter they needed to have some access to a resource base at all times. However, due to the ability to store acorns and other dried foods and take advantage of the winter concentrations of game, birds and fish, they could congregate in larger villages in the wintertime. There is some evidence that these winter villages were moved at times if the local resources were too badly depleted. Over a long period of time, a center village may have been abandoned and moved and then reoccupied at a later time. Many place names refer to these old or unoccupied sites.

At the central villages there was the need to build and maintain more substantial houses for winter living. Larger family houses, a dance house and acorn granaries were part of these winter quarters. The availability of firewood may also have been a factor in the preference for living up in the oak woodlands of the foothills. Winter was the time of ceremonies, social gatherings and marriages. Shamans had contests, children were trained, and trade items, tools, baskets and equipment were made and repaired.

The ethnographic period Nisenan villages of *Kulu* and *Chiemwie* are shown to be located near the project vicinity (Wilson and Towne 1978: Figure 1).

History

John C. Fremont was one of the first European visitors to Yuba County, and described the people he met there in 1846. "We traveled across a valley plain, and in about sixteen miles reached the Feather River, at twenty miles from its junction with the Sacramento, near the mouth of the Yuba, so called from a village of Indians who live on it. The Indians aided us across the river with canoes and small rafts. Extending across the bank in front of the village was a range of wicker cribs, about twelve feet high, partly filled with what is there the Indians' staff of life, acorns. A collection of huts, shaped like bee-hives, with naked Indians sunning themselves on the tops, and these acorn cribs, are the prominent objects in an Indian village (Fremont 1887)."

Fremont didn't stay in Yuba County for long. The first permanent non-Maidu resident was Theodore Cordua, who in 1842 had leased a portion of Sutter's former holdings, and erected an adobe building at what is now the foot of D Street in Marysville (Hoover, Rensch and Rensch 1990:538). Cordua called his settlement New Mecklenburg, but others called it Cordua's Ranch. In 1844, Cordua obtained a Mexican Land Grant that included most of present day Yuba County. The California-Oregon Trail passed by Cordua's Ranch, and by 1846, his adobe became an important way station and trading post for the emigrants and others in the region.

The period between 1848 and 1850 saw Cordua sell off his holdings, and by 1850, with the advent of the Gold Rush and influx of new temporary and permanent residents, the town of Marysville was laid out. Marysville was named in honor of the wife of one of the new owners, Mary Murphy Covillaud, who was also a surviving member of the Donner Party (Hoover, Rensch and Rensch 1990:539).

Marysville was the principal settlement in the newly formed Yuba County, and has always been the county seat. It was located at the head of navigation on the Feather River and was an important center for trade with the northern mines. Originally, the city looked out on the Feather and Yuba rivers, and boats could dock at the downtown plaza. Hydraulic mining upstream deposited so much silt and debris, that the level of the rivers rose approximately 70 feet above their former level, necessitating the construction of a series of levees that still surround the town today.

Upstream from Marysville along the Yuba River, a series of temporary mining camps were established to work the rich stream bed. Names such as Swiss Bar, Long Bar, and Parks Bar note these former settlements who were also buried under the sediment produced during the hydraulic mining period. In response to the problems created by upstream silt and sediment, the California Debris Commission was established in 1893 by Grover Cleveland to regulate hydraulic mining and to restore the Sacramento and San Joaquin River systems. Funding was not immediate, but by 1903, attempts to control the flow of unwanted silt and sediment began along the Yuba River. Three attempts to construct sediment controlling barriers failed, due to high water, between 1903 and 1907. By 1910, the Daguerre Point Dam, located approximately two miles east of the proposed project area, had been constructed. The high water of December 1964 washed away two-thirds of the original Daguerre Point Dam, and it was rebuilt after this period (Johnson n.d.).

The Hallwood-Cordua Canal, and Stahl Ditch were constructed sometime after World War I in response to high prices paid for rice. Both systems used the diversion at the Daguerre Point Dam for their source of water. By 1929, the Hallwood-Cordua Canal extended approximately eight miles west of the dam

LITERATURE REVIEW

A review of records maintained by the Northeast Information Center of the California Historical Resources Information System was conducted on October 21, 2002 (Appendix A). According to this review, there are no known prehistoric or historic period cultural resources located within, or within a 1,000 foot radius of the proposed project area as delineated on maps 1 and 2. Caltrans archeologists have inspected the areas adjacent to the north and south sides of the Highway 20 right-of-way on two previous occasions (Wiant 1984; Offermann 1989).

CONSULTATION

Contact was initiated with the Native American Heritage Commission (NAHC), Sacramento for a review of the Sacred Lands File, maintained by the NAHC, and to obtain a list of groups and/or individuals who may have knowledge of traditional uses, or cultural resources, located within, or within a 1,000 foot radius of the proposed project area (Appendix B). Letters with an accompanying map delineating the proposed project area, were sent to the Maidu Elders Organization, the Maidu Nation, and the Butte Tribal Council. Ren Reynolds, EPA Coordinator for the Enterprise Rancheria and Chairman of the Butte Tribal Council called Peak & Associates and requested more detailed information concerning the scope and location of the proposed project. A copy of Map 2 showing the limits of the study area was sent to Mr. Reynolds along with additional mapping data. Mr. Reynolds mentioned that he was assisting Caltrans with another project approximately one mile west of the proposed project area and that he would probably detour and inspect the project area as best as possible from Highway 20. Peak & Associates offered to accompany Mr. Reynolds during an inspection of the entire project area, but he declined at this time. No response concerning his field visit to the area has been received as of March 20, 2003.

FIELD INSPECTION

An intensive inspection of the proposed project area as delineated on maps 1 and 2 was conducted by Peak & Associates Staff Archeologist Neal Neuenschwander during January 2003. The inspection was conducted by means of parallel transects that did not exceed 10 meters in width. Surface visibility was excellent throughout the proposed project area as the area is used for both cattle grazing and orchards.

FIELD RESULTS

Three historic period irrigation ditches were discovered within the proposed project area. The northern-most ditch is earthen and is identified on the USGS topographic quadrangle as the Stahl Ditch. The central irrigation ditch is lined with concrete and is identified on the USGS topographic quadrangle as the Cordua Canal. The southern-most irrigation ditch is also lined with concrete, but is not assigned a name on the USGS quadrangle. All three ditches are located within the Cordua Irrigation District and have a common origin at the Daguerre Point Dam, approximately two miles east of the project area. The northern-most Stahl Ditch was constructed sometime between 1947 and 1973, according to the USGS topographic quadrangle. The Cordua Canal and southern-most ditch were constructed sometime after 1911, probably after World War I, in response to the..."high price being paid for rice..(Adams 1929:121).

Temporary field numbers were assigned to each ditch segment. The northern-most ditch (Stahl Ditch) was assigned the PA-03-06 designation. The central ditch

(Cordua Canal) was given PA-03-07 as a temporary number, and the southern-most (unnamed) ditch was assigned the PA-03-08 designation.

PA-03-06

This northern-most irrigation ditch (Stahl Ditch) is unlined and varies in width from 6 to 16 feet, and is 2 to 4 foot deep. According to the USGS topographic map quadrangle, it was constructed sometime between 1947 and 1973. A northern segment may have been constructed after 1973 as it does not appear on that map.

PA-03-07

This central ditch (Cordua Canal) is also unlined in the inspected segment, but appears to be lined with concrete to the west of the proposed inspected corridor. It is approximately 22 feet wide and 6 feet deep. It was constructed sometime between 1911 and 1947. A modern diversion feature (metal gate) diverts water from this ditch into the Stahl Ditch (PA-03-06).

PA-03-08

This southern-most unnamed irrigation ditch is lined with concrete. It is approximately 14 feet wide, and 2 to 3 feet deep. A modern diversion feature (metal gate) diverts water into the adjacent orchard located to the north of this feature. This ditch is probably associated with the Cordua Canal (water source) and was constructed prior to 1947.

EVALUATION

Standards of Significance

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. Historical resources may include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archeologically significant or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California. When a project will impact an archeological site, it needs to be determined whether the site is an historical resource, which is defined as any site which:

(A.) Is historically or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and

(B) Meets any of the following criteria:

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

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

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

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

PA-03-06, -07, and -08

These irrigation features do not appear to be associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. Irrigation ditches are widespread in the Central Valley, and are continuingly being constructed and reconstructed to meet the needs of agriculture. They do not appear to be associated with the lives of persons important in our past. An eligibility determination conducted for the Hallwood-Cordua Canal queried a long time local resident, Mr. Charles Matthews, whose family has a long history in the Cordua Irrigation District, who was unaware of any important person or event associated with the Hallwood-Cordua Canal or related Stahl Ditch (Johnson, n.d.).

The irrigation canals in the inspected segment do not possess any distinctive features such as control gates or bridges. With the exception of the southern-most ditch, they are not even lined with concrete. They do not embody any distinctive characteristics of type, region, or method of construction; or possess high artistic values. They are not likely to yield any important historical information, beyond what has been obtained during their recordation.

RECOMMENDATIONS

PA-03-06, -07, and -08

An evaluation of the three ditch segments determined that none of the resources qualify for listing under the California Register, or as "important archeological resources" under the California Environmental Quality Act (CEQA). As such, measures to mitigate any adverse impacts caused by the proposed construction of the Hallwood Service Road are not necessary.

General

It is possible that buried prehistoric resources exist on this property, but have been obscured by the vegetation or by historic use of the project area. Special care should be taken during vegetation removal. If vegetation clearance or other construction activities uncover artifacts, bone or exotic rock (particularly obsidian), then a qualified archeologist should be contacted to examine the deposit and determine its nature and significance. State law requires that if bone is discovered which might be human, the County Coroner must be contacted. If the Coroner determines that the bone is Native American in origin, he will contact the Native American Heritage Commission in Sacramento to identify most likely descendants.

REFERENCES CITED

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Offermann, Janis K.
1989 Negative Archaeological Survey Report for a Project Study Report for Highway Project near Spring Valley Road along State Route 20, 03-YUB-20, PM 8.2/10.1. Ms. on file, North Central Information Center of the California Historical Resources Information System, California State University, Sacramento.

Thompson and West
1879 History of Sutter County, California. Thompson and West, Oakland.

Wilson, Norman L.
n.d. Miscellaneous Unpublished Field Notes, Maps and Files. Ms. in Norman Wilson's possession, Auburn.

1982 The Nisenan. Phantom Press, Sacramento.

Wilson, Norman L., and Arlean Towne
1978 Nisenan. In Handbook of North American Indians (vol. 8), edited by Robert F. Heizer. Smithsonian Institution, Washington, D.C.

Wiant, Wayne
1984 Negative Archaeological Survey Report for a Minor Curve Realignment on Route 20, near Kibbe Road in Yuba County (PM 9.25/9.53). Ms. on file, North Central Information Center of the California Historical Resources Information System, California State University, Sacramento

APPENDIX A

Information Center Correspondence

Information Center correspondence here

NORTH CENTRAL INFORMATION CENTER

CSU-SACRAMENTO - 6000 J STREET, FOLEY HALL #213 - SACRAMENTO, CA 95819-6100
916-278-6217 **FAX 916-278-5162**

Summary of Results for Records Search

October 21, 2002 NCIC File No.: YUB-02-32

To: Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Ave., Suite A
Chico, CA 95973

From: Kristean Berry, Researcher

Project: **HALLWOOD DIRECT ACCESS ROAD, YUBA COUNTY**

- Sites Within Radius: Nothing Found

- Studies Within Radius: Wiant 1984 and NCIC file no. 994 (locations mapped, bibliographic references enclosed)

- OHP Historic Property Directory (HPD): Nothing Found
- NCIC Historic Resources Map: Nothing Found
- California Inventory (1976): Nothing Found
- California Place Names (Gudde 1969): Nothing Found
- Gold Districts of CA (Clark 1979): Nothing Found
- California Dept. of Transportation Bridge Inventory: Nothing Found
- California Historical Landmark (1996): Nothing Found
- Point of Historical Interest (1992): Nothing Found
- Historic Spots in California (1990): Nothing Found
- 1860 GLO Plat Map (T16N, R4E): Fence within project area (copy sent)

As indicated on the attached agreement form, the charge for this record search is **$120.45**. Payment instructions are included at the bottom of the form. Please sign where indicated and return the **YELLOW** copy with your payment.

Thank you for using our services. If you have any questions please do not hesitate to call 916/278-6217.

APPENDIX B

Native American Heritage Commission Correspondence

STATE OF CALIFORNIA Gray Davis, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

October 31, 2002

Peak & Associates INC
3161 Goodman Avenue, Suite A
Chico, CA 95973

Sent by Fax: 530-342-0273
No. of Pages:2

RE: Proposed road improvements project, Yuba County.

To Whom It May Concern::

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend other with specific knowledge. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

APPENDIX C

PA-03-06
PA-03-07
PA-03-08

DPR 523 Series forms, sketch maps, location maps

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI#
Trinomial

Other Listings:
Review Code: Reviewer: Date:

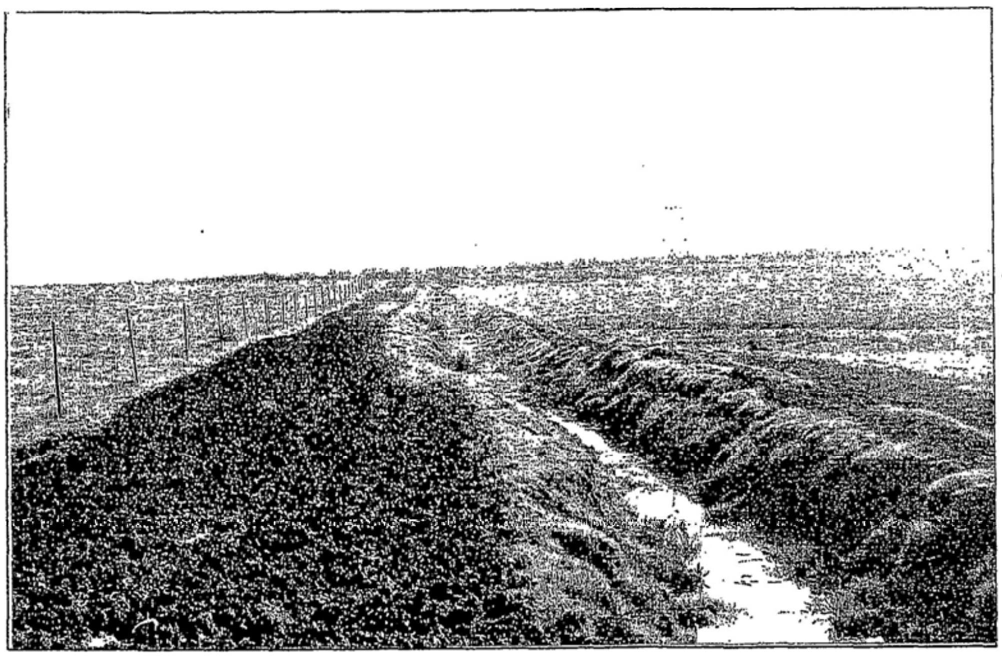
 Resource Name or #: (assigned by recorder) PA-03-06

P1. Other Identifier: Stahl Ditch
P2. Location: ☐ **Not for Publication** ■ **Unrestricted** (P2b and P2c or P2d. Attach a Location Map as necessary)
a. County: Yuba
b. USGS 7.5' Quad: Browns Valley Date: 1973 (1947) T. 16N ;R. 4E ; ¼ of ¼ of Sec. ; B.M.
c. Address: City: Zip:
d. UTM: (Give more than one for large and/or linear resources) Zone: 10 ; 631020 mE/ ; 4340900 mN
e. Other Locational Data: (e.g.parcel #, directions to resource, elevation, etc., as appropriate) From the intersection of Highway 20 and Kibbe Road, approximately eight miles east of Marysville, go 188 degrees, 400 meters until reaching the ditch.

P3a. Description: (Describe resource and it major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The Stahl Ditch is unlined and consists of an 'L' shaped segment that appears to originate from a control gate located along the Cordua Canal.

P3b. Resource Attributes: (List attributes and codes) AH6 – Water conveyance system

P4. Resources Present: ☐ Building ☐ Structure ☐ Object ■ Site ☐ District ☐ Element of a District ☐ Other (Isolates etc.)



P5b. Description of Photo:(View, date, accession #) Overview of the Stahl ditch looking south. 1/29/03

P6. Date Construction/Age and Sources: Historic ■ Prehistoric ☐ Both ☐

P7. Owner and Address:
Unknown

P8. Recorded By:(Name, affiliation, and address) Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Avenue, Suite A
Chico, CA 95973

P9. Date Recorded: 1/29/03

P10. Survey Type:(Describe)
Intensive

P11. Report Citation: (Cite Survey report and other resources, or enter "none") *Cultural Resource Assessment of the Proposed Hallwood Service Road, Yuba County, California*, . Peak & Associates, Inc. 2003

ATTACHMENTS: None ■ Location Map ■ Sketch Map ■ Continuation Sheet ☐ Building, Structure, and Object Record ■ Archaeological Record ☐ District Record ■ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other:

Primary #:
HRI #:
Trinomial:

 Resource Name or #: (assigned by recorder) PA-03-06

A1. Dimensions: a. Length ( )X b. Width ( )
Method of Determination: ☐ Paced ■ Taped ☐ Visual estimate ☐ Other:
Method of Determination: (Check any that apply) ☐ Artifacts ■ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut Bank ☐ Animal Burrow ☐ Excavation ☐ Property Boundary ☐ Other (Explain):

Reliability of Determination: ■ High ☐ Medium ☐ Low ☐ Explain:

Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ■ Site limits incompletely defined ☐ Disturbances ☐ Vegetation ☐ Other (Explain):

A2. Depth: ☐ None ☐Unknown Method of Determination:

A3. Human Remains: ☐ Present ■ Absent ☐ Possible ☐ Unknown (Explain):

A4. Features: (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map):

A5. Cultural Constituents (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features):

A6. Were Specimens Collected? ■ NO ☐ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated):

A7. Site Condition ☐ Good ■ Fair ☐ Poor (Describe disturbances):

A8. Nearest Water (Type, distance, and direction): Yuba River, southeast 1700 meters

A9. Elevation: Approximately 90 feet

A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.):

A11. Historical Information:

A12. Age: ☐ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☐ 1914-1945 ☐ Post 1945 ■ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**

A13. Interpretations (Discuss data potential, functions, ethnic affiliation, and other interpretations):

A14. Remarks:

A15. References (Documents, informants, maps, and other references):

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record) See photo record.
Original Media/Negative Kept at: Peak & Associates, Inc., Chico, CA

A17. Form Prepared by: Neal Neuenschwander Date: 1/29/03
Affiliation and Address: Peak & Associates, Inc., 3161 Godman Avenue, Suite A, Chico, CA 95973

L1. Historic and/or Common Name: Stahl Ditch

L2a. Portion Described: ☐ Entire Resource ■ Segment ☐ Point Observation **Designation:**

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

L3. Description: (Describe construction details, materials, and artifacts found at the segment/point. Provide plans/sections as appropriate.) The Stahl ditch is earthen and measures approximately 6 to 16 feet across with a depth of 2 to 4 feet. It appears to originate at a control gate (south end) off of the Cordua Canal.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

a. **Top Width** 6 – 16 feet
b. **Bottom Width** 3 – 6 feet
c. **Height or Depth** 2 – 4 feet
d. **Length of Segment** 500 feet

L5. Associated Resources: None

L6. Setting: (Describe natural features, landscape of characteristics, slope, etc., as appropriate) The ditch is located near the eastern edge of the northern Sacramento Valley, north of the Yuba River.

L7. Integrity Considerations: The alignment shown on the 1973 USGS topographic map differs from that observed in 2003.

L8b. Description of Photo, Map, or Drawing (View, scale, etc.)
See continuation sheet

L9.

L10.

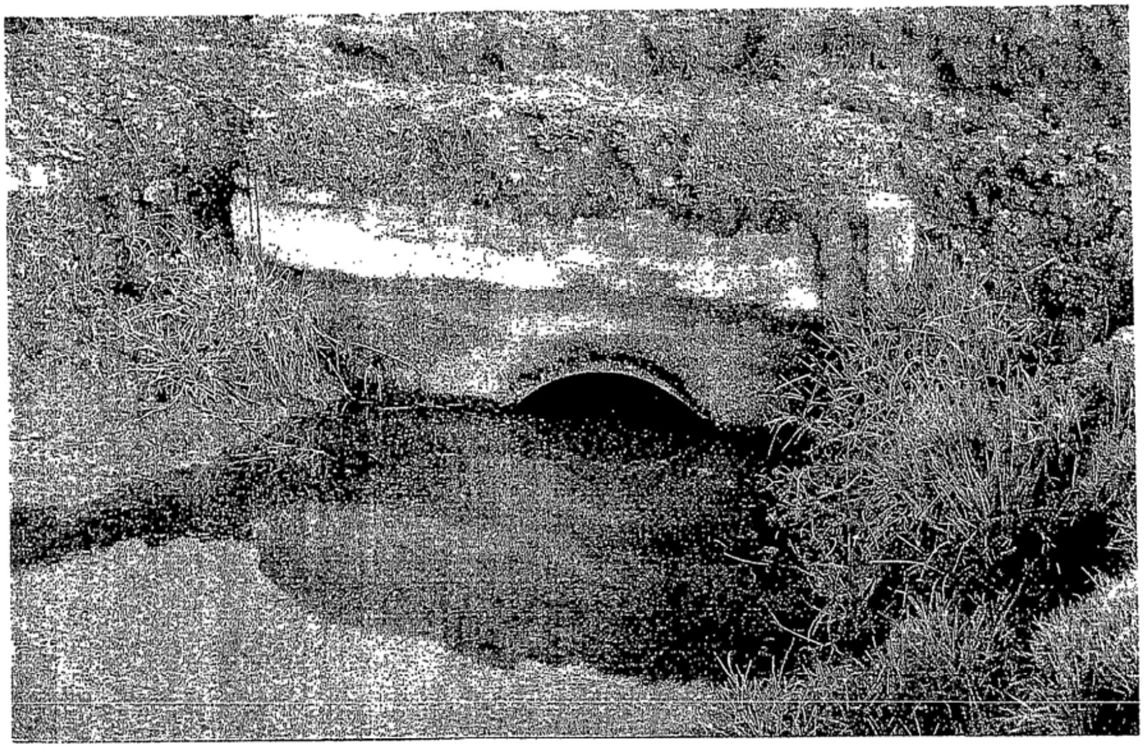
Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Avenue, Suite A
Chico, CA 95973

CONTINUATION SHEET

A) PA-03-06. View of the diversion pipe from the Cordua Canal, looking south.

B) PA-03-06. View of the Stahl Ditch, looking north.

CONTINUATION SHEET



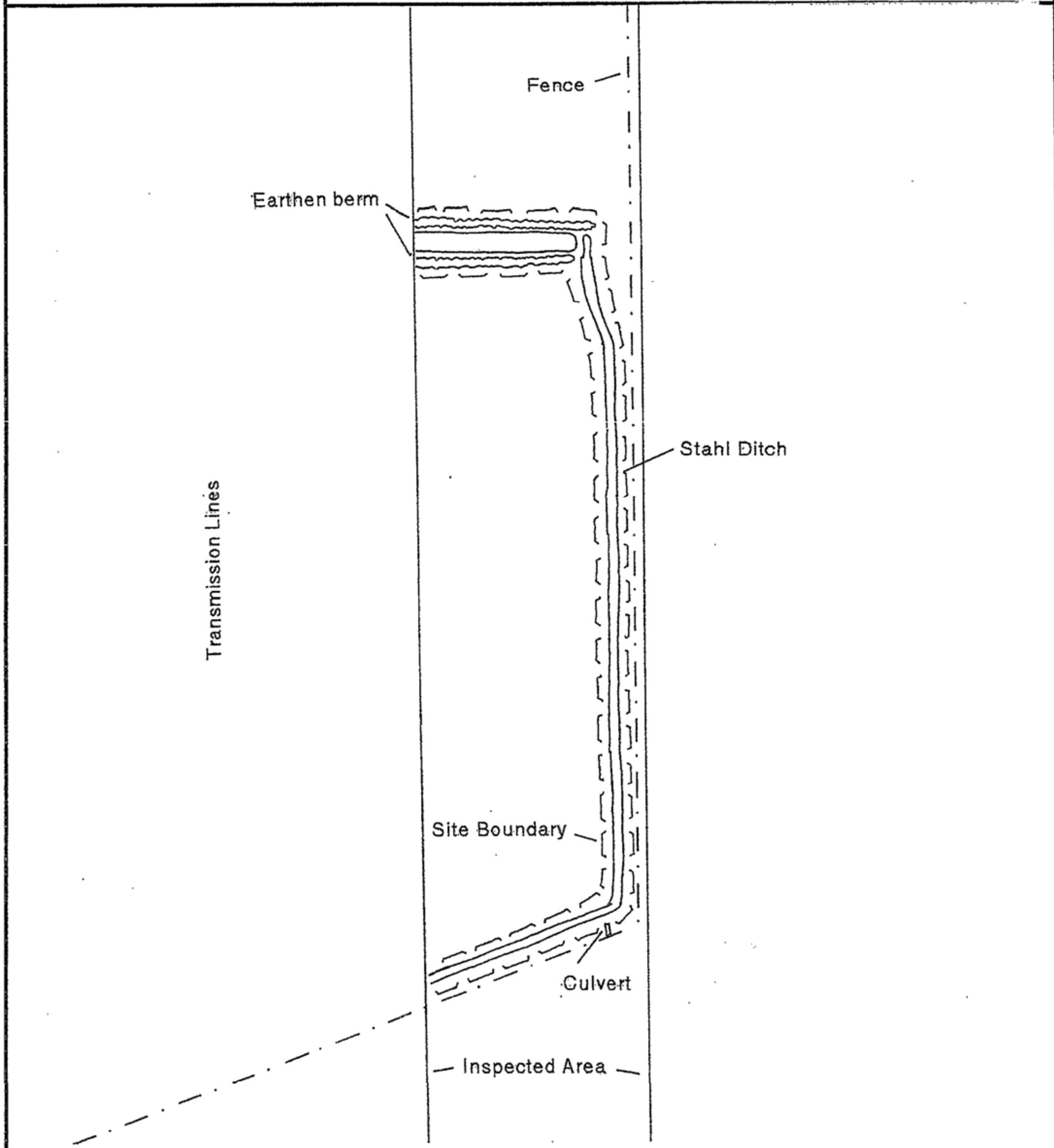
C) PA-03-06. View of the culvert near northern end, looking east.

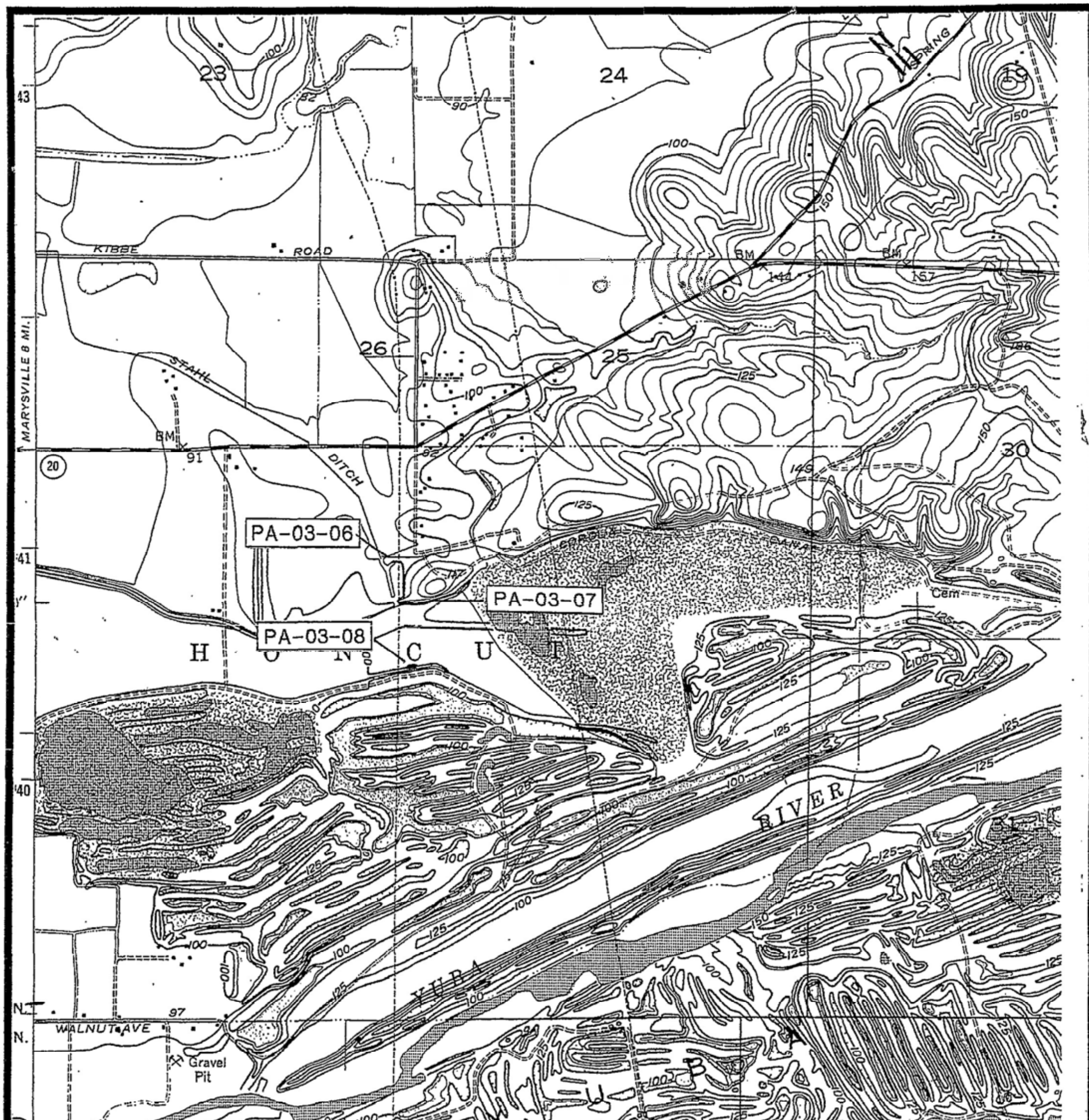
D) PA-03-06. View of the east/west segment, north end, looking east.

Peak & Associates, Inc
Archeological Site Map
1 cm = 15 meters
1 inch = 50 feet

TN
MN 16.5°

Site Number
Field Number PA-03-06
Date Drawn 1/29/03
Drawn By Neuenschwander
Page 4 of 7





SCALE 1:24,000

BROWNS VALLEY, CALIF 1973 (1947)

CONTOUR INTERVAL 5 Feet

Magnetic Declination 16.5 degrees

BASE MAP IS MAPPED, EDITED, AND PUBLISHED BY THE U.S. GEOLOGICAL SURVEY

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI#
Trinomial

Other Listings:
Review Code: Reviewer: Date:

 Resource Name or #: (assigned by recorder) PA-03-07

P1. Other Identifier: Cordua Canal

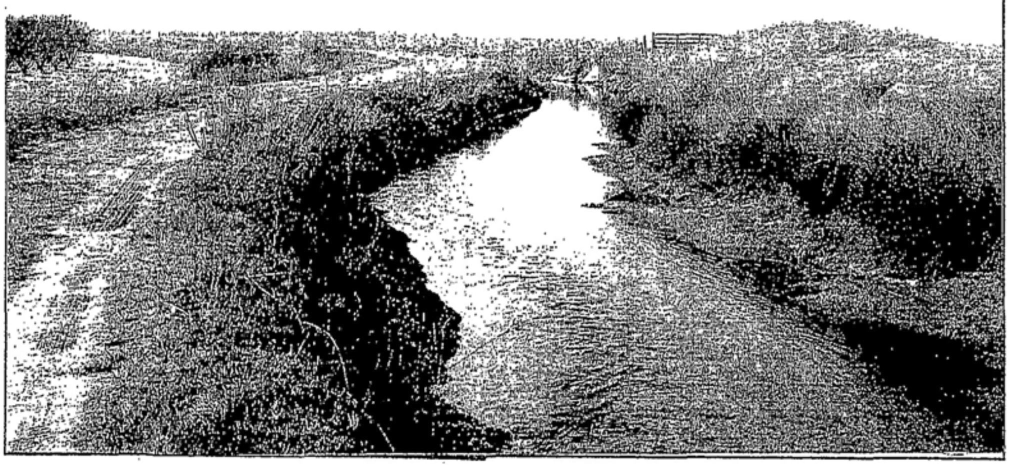
P2. Location: ☐ **Not for Publication** ■ **Unrestricted** (P2b and P2c or P2d. Attach a Location Map as necessary)

a. County: Yuba
b. USGS 7.5' Quad: Browns Valley Date: 1973 (1947) T. 16N ;R. 4E ; ¼ of ¼ of Sec. ; B.M.
c. Address: City: Zip:
d. UTM: (Give more than one for large and/or linear resources) Zone: 10 ; 631060 mE/ ; 4340790 mN
e. Other Locational Data: (e.g.parcel #, directions to resource, elevation, etc., as appropriate) From the intersection of Highway 20 and Kibbe Road, approximately eight miles east of Marysville, go 180 degrees, 600 meters until reaching the ditch.

P3a. Description: (Describe resource and it major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The Cordua Canal is unlined (in the inspected segment) and measures approximately 22 feet wide and 6 feet deep.

P3b. Resource Attributes: (List attributes and codes) AH6 – Water conveyance system

P4. Resources Present: ☐ Building ☐ Structure ☐ Object ■ Site ☐ District ☐ Element of a District ☐ Other (Isolates etc.)



P5b. Description of Photo:(View, date, accession #) Overview of the Cordua Canal looking west. 1/29/03

P6. Date Construction/Age and Sources: Historic ■ Prehistoric ☐ Both ☐

P7. Owner and Address: Unknown

P8. Recorded By:(Name, affiliation, and address) Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Avenue, Suite A
Chico, CA 95973

P9. Date Recorded: 1/29/03

P10. Survey Type:(Describe) Intensive

P11. Report Citation: (Cite Survey report and other resources, or enter "none") *Cultural Resource Assessment of the Proposed Hallwood Service Road, Yuba County, California*, . Peak & Associates, Inc. 2003

ATTACHMENTS: None ■ Location Map ■ Sketch Map ■ Continuation Sheet ☐ Building, Structure, and Object Record
■ Archaeological Record ☐ District Record ■ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other:

Resource Name or #: (assigned by recorder) PA-03-07

A1. Dimensions: a. Length ( )X b. Width ( )
Method of Determination: ☐ Paced ■ Taped ☐ Visual estimate ☐ Other:
Method of Determination: (Check any that apply) ☐ Artifacts ■ Features ☐ Soil ☐ Vegetation ☐ Topography
☐ Cut Bank ☐ Animal Burrow ☐ Excavation ☐ Property Boundary ☐ Other (Explain):

Reliability of Determination: ■ High ☐ Medium ☐ Low ☐ Explain:

Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ■ Site limits incompletely defined
☐ Disturbances ☐ Vegetation ☐ Other (Explain):

A2. Depth: ☐ None ☐Unknown Method of Determination:

A3. Human Remains: ☐ Present ■ Absent ☐ Possible ☐ Unknown (Explain):

A4. Features: (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map):

A5. Cultural Constituents (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features):

A6. Were Specimens Collected? ■ NO ☐ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated):

A7. Site Condition ☐ Good ■ Fair ☐ Poor (Describe disturbances):

A8. Nearest Water (Type, distance, and direction): Yuba River, southeast 1300 meters

A9. Elevation: Approximately 90 feet

A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.):

A11. Historical Information:

A12. Age: ☐ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☐ 1914-1945
☐ Post 1945 ■ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**

A13. Interpretations (Discuss data potential, functions, ethnic affiliation, and other interpretations):

A14. Remarks:

A15. References (Documents, informants, maps, and other references):

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record) See photo record.
Original Media/Negative Kept at: Peak & Associates, Inc., Chico, CA

A17. Form Prepared by: Neal Neuenschwander Date: 1/29/03
Affiliation and Address: Peak & Associates, Inc., 3161 Godman Avenue, Suite A, Chico, CA 95973

 Resource Name or #: (assigned by recorder) PA-03-07

L1. Historic and/or Common Name: Cordua Canal

L2a. Portion Described: ☐ Entire Resource ■ Segment ☐ Point Observation **Designation:**

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

L3. Description: (Describe construction details, materials, and artifacts found at the segment/point. Provide plans/sections as appropriate.) The Cordua Canal ditch is earthen and measures approximately 22 feet across with a depth of 6 feet.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

a. **Top Width** 22 feet
b. **Bottom Width** 12 feet
c. **Height or Depth** 6 feet
d. **Length of Segment** 80 feet

L5. Associated Resources: None

L6. Setting: (Describe natural features, landscape of characteristics, slope, etc., as appropriate) The ditch is located near the eastern edge of the northern Sacramento Valley, north of the Yuba River.

L7. Integrity Considerations:

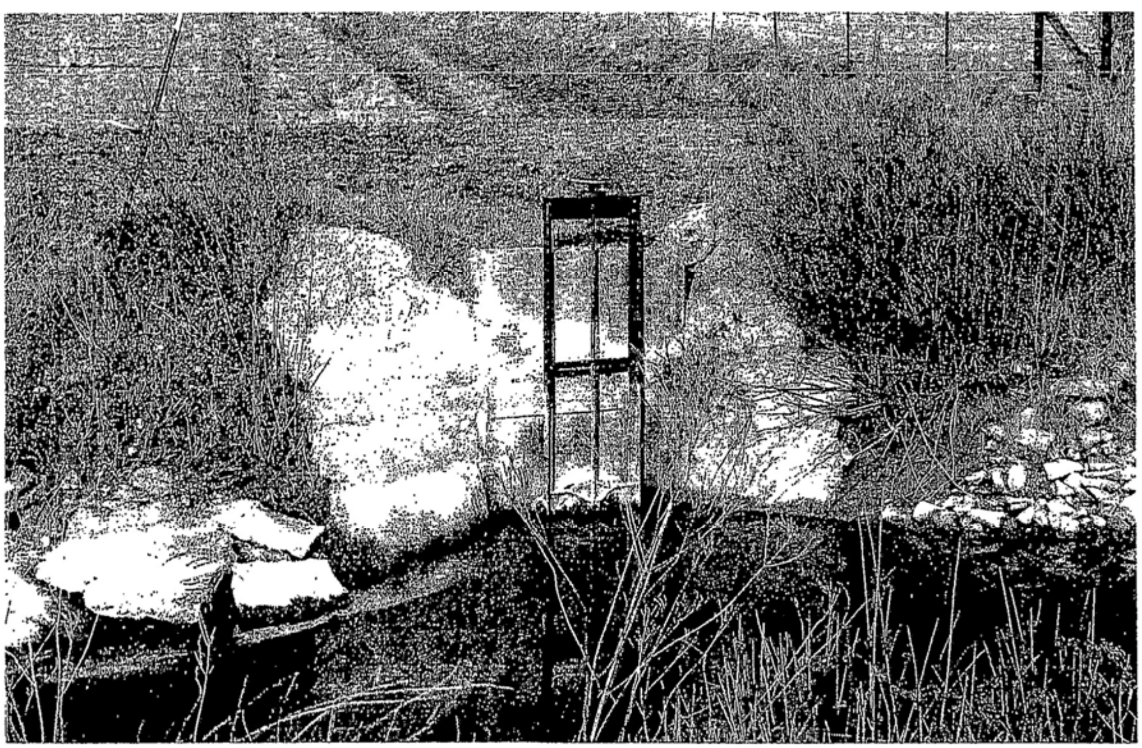
L8b. Description of Photo, Map, or Drawing (View, scale, etc.)
See continuation sheet

L9.

L10.
Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Avenue, Suite A
Chico, CA 95973

CONTINUATION SHEET

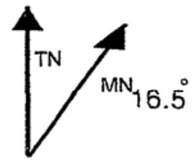
A) PA-03-07. View of the Cordua Canal looking east.

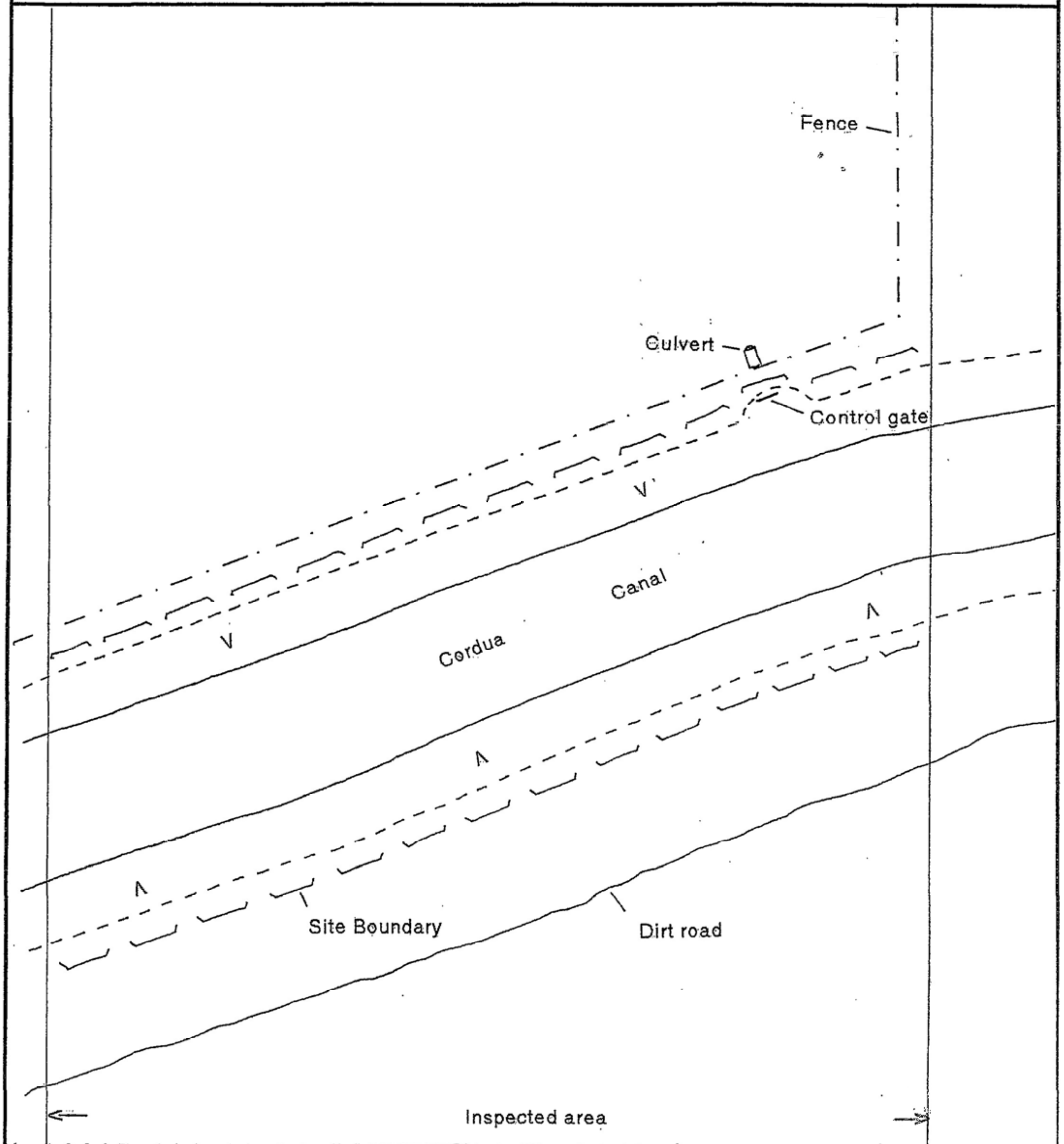


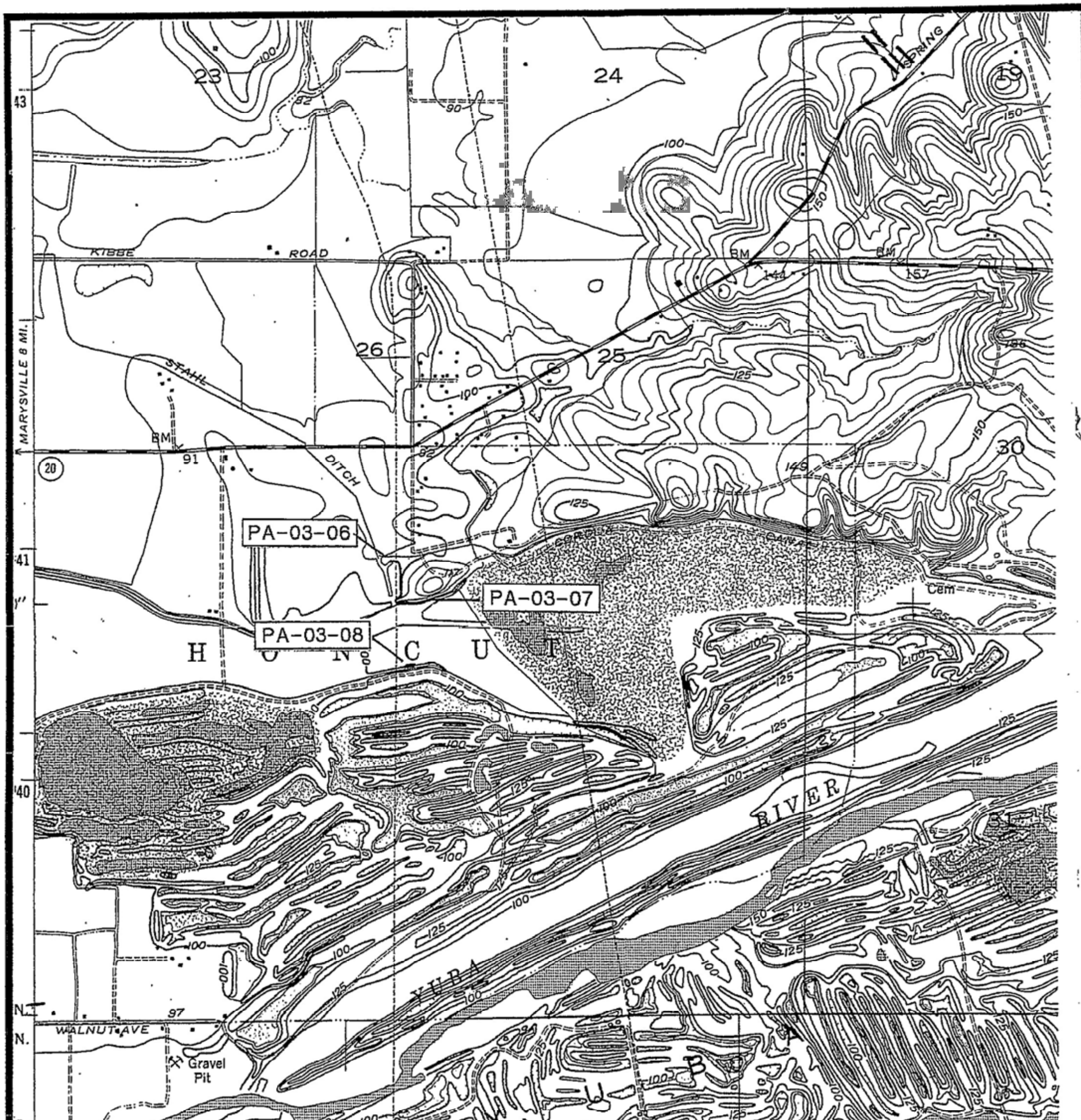
B) PA-03-07. View of the control gate (Stahl Ditch) off of the Cordua Canal, looking north.

Peak & Associates, Inc
Archeological Site Map
1 cm = 1.5 meters
1 inch = 5 feet

Site Number
Field Number PA-03-07
Date Drawn 1/29/03
Drawn By Neuenschwander
Page 4 of 6







SCALE 1:24,000

BROWNS VALLEY, CALIF 1973 (1947)

CONTOUR INTERVAL 5 Feet

Magnetic Declination 16.5 degrees

BASE MAP IS MAPPED, EDITED, AND PUBLISHED BY THE U.S. GEOLOGICAL SURVEY

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI#
Trinomial

Other Listings:
Review Code: Reviewer: Date:

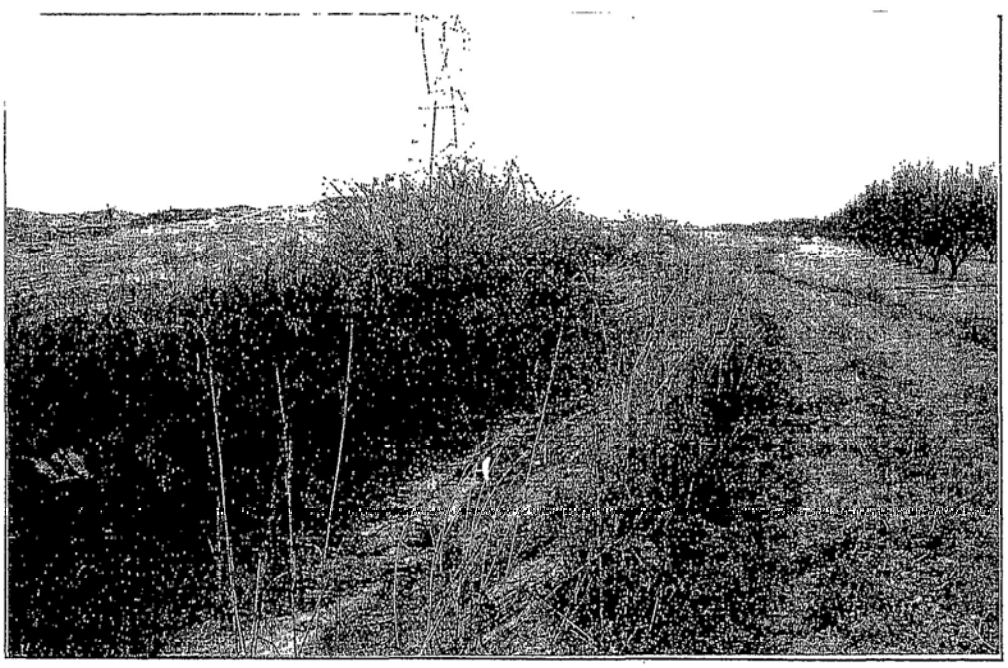
 Resource Name or #: (assigned by recorder) PA-03-08

P1. Other Identifier:
P2. Location: ☐ **Not for Publication** ■ **Unrestricted** (P2b and P2c or P2d. Attach a Location Map as necessary)
a. County: Yuba
b. USGS 7.5' Quad: Browns Valley Date: 1973 (1947) T. 16N ;R. 4E ; ¼ of _¼ of Sec. _; B.M.
c. Address: City: Zip:
d. UTM: (Give more than one for large and/or linear resources) Zone: 10 ; 631080 mE/ ; 4340550 mN
e. Other Locational Data: (e.g.parcel #, directions to resource, elevation, etc., as appropriate) From the intersection of Highway 20 and Kibbe Road, approximately eight miles east of Marysville, go 180 degrees, 900 meters until reaching the ditch.

P3a. Description: (Describe resource and it major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The unnaned ditch is unlined with concrete (in the inspected segment) and measures approximately 16 feet wide and 2.5 feet deep. It appears to originate from the Cordua Canal.

P3b. Resource Attributes: (List attributes and codes) AH6 – Water conveyance system

P4. Resources Present: ☐ Building ☐ Structure ☐ Object ■ Site ☐ District ☐ Element of a District ☐ Other (Isolates etc.)



P5b. Description of Photo:(View, date, accession #) Overview of the ditch looking west. 1/29/03

P6. Date Construction/Age and Sources: Historic ■ Prehistoric ☐ Both ☐

P7. Owner and Address:
Unknown

P8. Recorded By:(Name, affiliation, and address) Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Avenue, Suite A
Chico, CA 95973

P9. Date Recorded: 1/29/03

P10. Survey Type:(Describe)
Intensive

P11. Report Citation: (Cite Survey report and other resources, or enter "none") *Cultural Resource Assessment of the Proposed Hallwood Service Road, Yuba County, California*, . Peak & Associates, Inc. 2003

ATTACHMENTS: None ■ Location Map ■ Sketch Map ■ Continuation Sheet ☐ Building, Structure, and Object Record ■ Archaeological Record ☐ District Record ■ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other:

 Resource Name or #: (assigned by recorder) PA-03-08

A1. Dimensions: a. Length ( )X b. Width ( )
Method of Determination: ☐ Paced ■ Taped ☐ Visual estimate ☐ Other:
Method of Determination: (Check any that apply) ☐ Artifacts ■ Features ☐ Soil ☐ Vegetation ☐ Topography
☐ Cut Bank ☐ Animal Burrow ☐ Excavation ☐ Property Boundary ☐ Other (Explain):

Reliability of Determination: ■ High ☐ Medium ☐ Low ☐ Explain:

Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ■ Site limits incompletely defined
☐ Disturbances ☐ Vegetation ☐ Other (Explain):

A2. Depth: ☐ None ☐Unknown Method of Determination:

A3. Human Remains: ☐ Present ■ Absent ☐ Possible ☐ Unknown (Explain):

A4. Features: (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map):

A5. Cultural Constituents (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features):

A6. Were Specimens Collected? ■ NO ☐ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated):

A7. Site Condition ☐ Good ■ Fair ☐ Poor (Describe disturbances):

A8. Nearest Water (Type, distance, and direction): Yuba River, southeast 1050 meters

A9. Elevation: Approximately 90 feet

A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.):

A11. Historical Information:

A12. Age: ☐ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☐ 1914-1945
☐ Post 1945 ■ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**

A13. Interpretations (Discuss data potential, functions, ethnic affiliation, and other interpretations):

A14. Remarks:

A15. References (Documents, informants, maps, and other references):

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record) See photo record.
Original Media/Negative Kept at: Peak & Associates, Inc., Chico, CA

A17. Form Prepared by: Neal Neuenschwander Date: 1/29/03
Affiliation and Address: Peak & Associates, Inc., 3161 Godman Avenue, Suite A, Chico, CA 95973

Resource Name or #: (assigned by recorder) PA-03-08

L1. Historic and/or Common Name: None

L2a. Portion Described: ☐ Entire Resource ■ Segment ☐ Point Observation **Designation:**

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map.)

L3. Description: (Describe construction details, materials, and artifacts found at the segment/point. Provide plans/sections as appropriate.) The unnamed ditch is lined with concrete and appears to originate from the Cordua Canal. It measures approximately 16 feet across with a depth of 2 to 3 feet.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)

- **a. Top Width** 16 feet
- **b. Bottom Width** 6 feet
- **c. Height or Depth** 2 – 3 feet
- **d. Length of Segment** 80 feet

L5. Associated Resources: None

L6. Setting: (Describe natural features, landscape of characteristics, slope, etc., as appropriate) The ditch is located near the eastern edge of the northern Sacramento Valley, north of the Yuba River.

L7. Integrity Considerations:

L8b. Description of Photo, Map, or Drawing (View, scale, etc.)
See continuation sheet

L9.

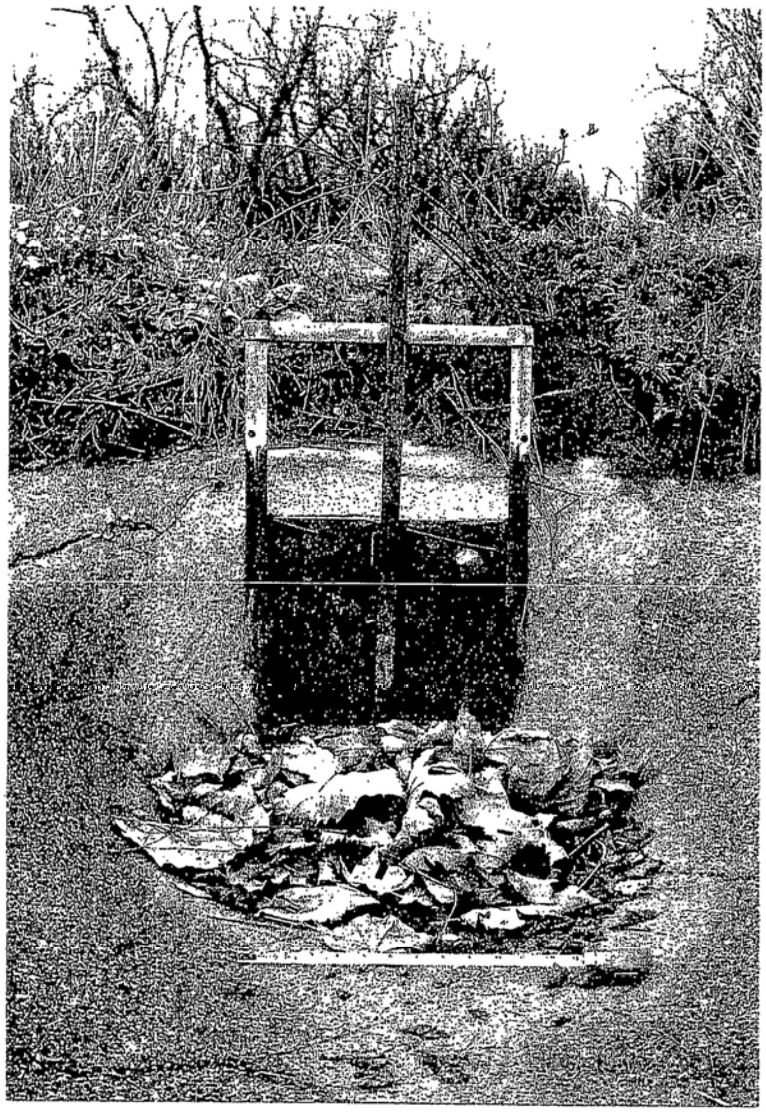
L10.
Neal Neuenschwander
Peak & Associates, Inc.
3161 Godman Avenue, Suite A
Chico, CA 95973

CONTINUATION SHEET

A) PA-03-08. View of the unnamed canal looking east.

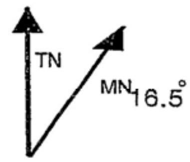
B) PA-03-08. Ditch-lvel view of the unnamed ditch, looking west.

CONTINUATION SHEET

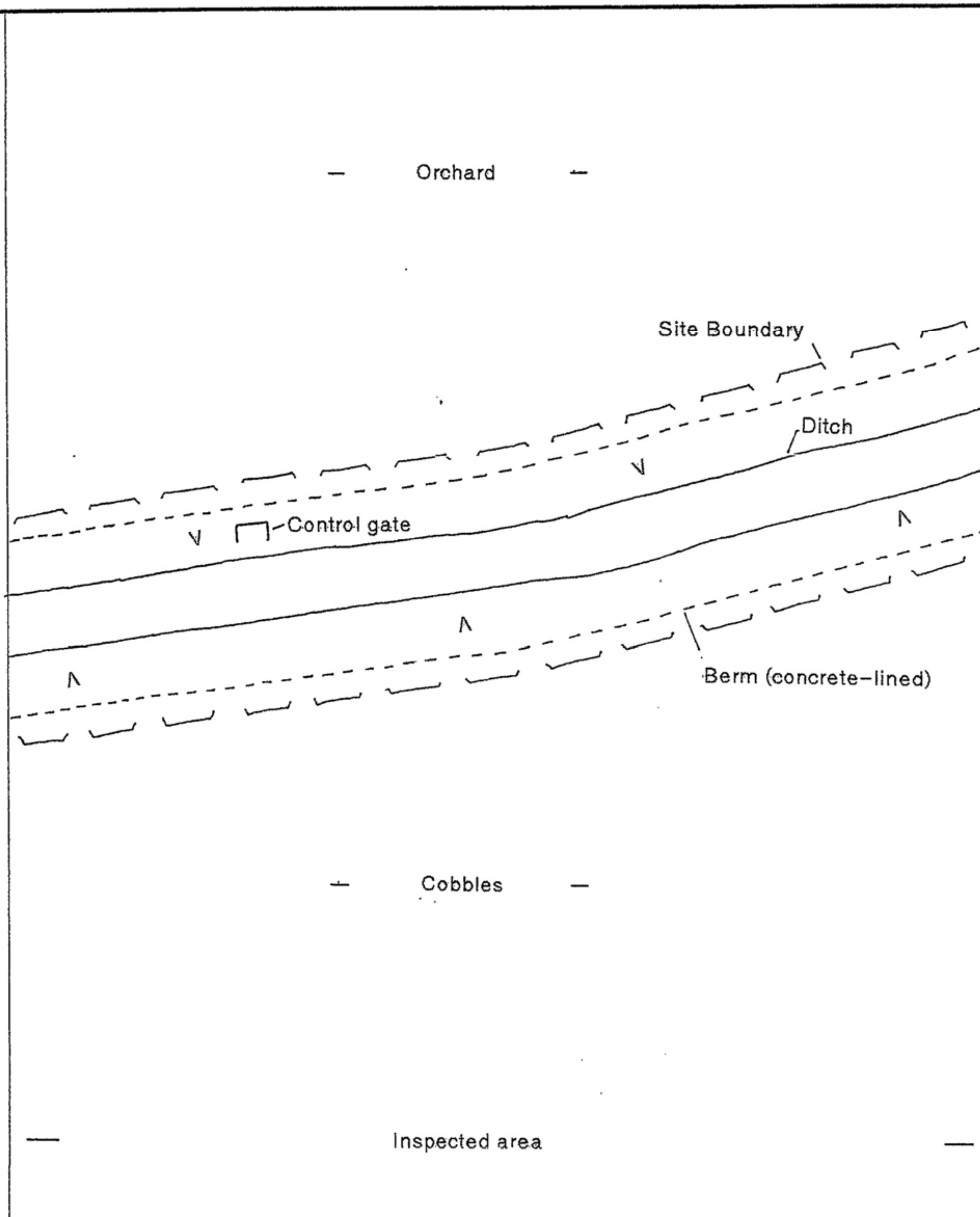


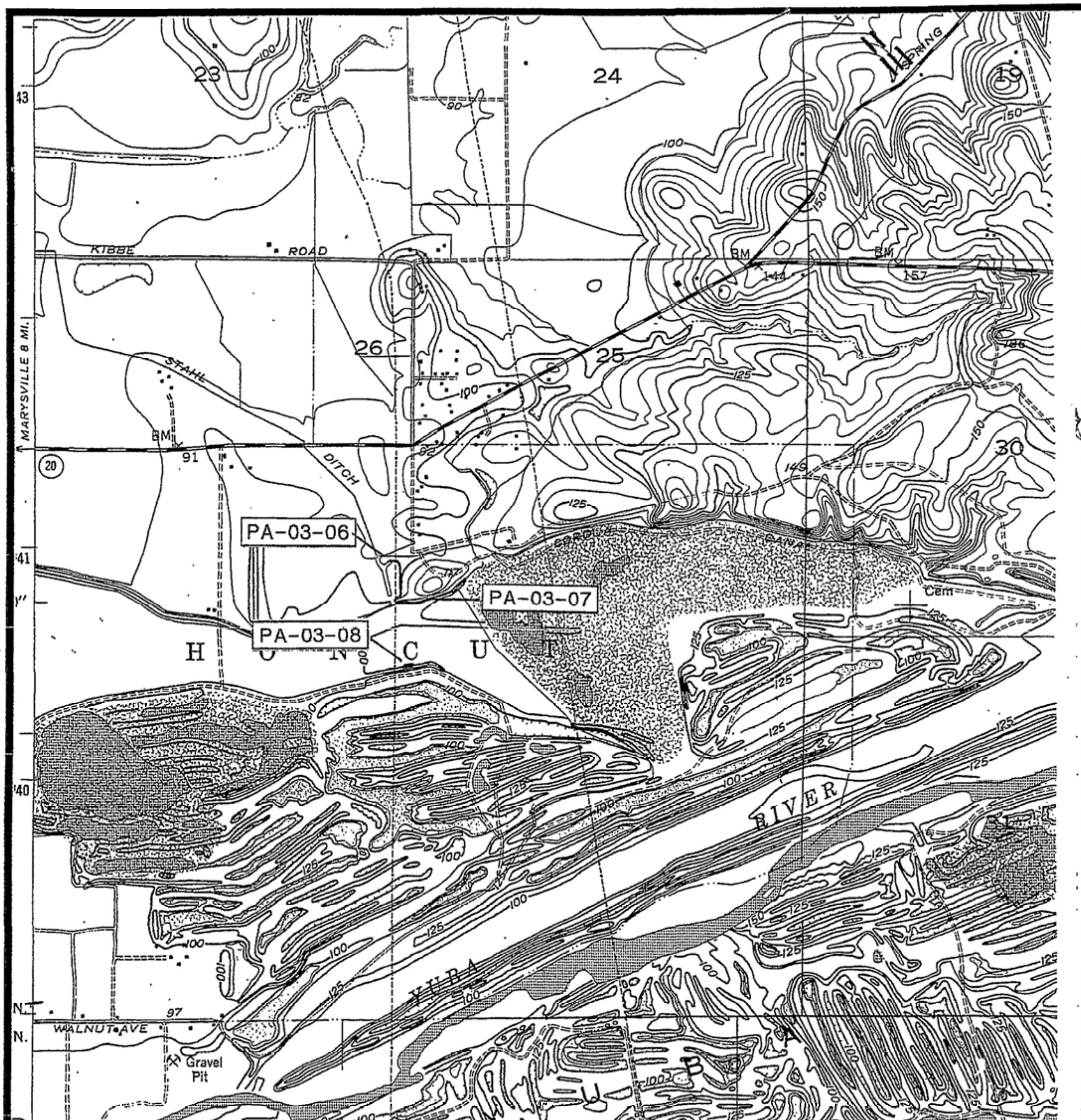
C) PA-03-08. View of the control gate with scale, looking north.

Peak & Associates, Inc
Archeological Site Map
1 cm = 1.5 meters
1 inch = 5 feet



Site Number
Field Number PA-03-08
Date Drawn 1/29/03
Drawn By Neuenschwander
Page 4 of 7





SCALE 1:24,000

BROWNS VALLEY, CALIF 1973 (1947)

CONTOUR INTERVAL 5 Feet

Magnetic Declination 16.5 degrees

BASE MAP IS MAPPED, EDITED, AND PUBLISHED BY THE U.S. GEOLOGICAL SURVEY

Appendix F

Environmental Noise & Vibration Assessment

Teichert Kibbe Road Project

Yuba County, California

BAC Job # 2020-155

Prepared For:

Teichert

Mr. Michael Smith
P.O. Box 15002
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Prepared By:

Bollard Acoustical Consultants, Inc.

Paul Bollard, President

May 4, 2021

BOLLARD
Acoustical Consultants

Table of Contents

Executive Summary

Bollard Acoustical Consultants, Inc. (BAC) was retained by Teichert to evaluate potential noise and vibration impacts related to the proposed Teichert Kibbe Road project (project) in Yuba County, California.

Ambient noise measurements were conducted at 6 locations representing sensitive receptor locations in the immediate project vicinity. Measurement of over 4,000 heavy truck passby single events and over 80 individual heavy truck accelerations and decelerations were also conducted during the ambient noise survey period. Measured ambient noise levels were used to develop the project standards of significance in conjunction with adopted Yuba County and California Environmental Quality Act (CEQA) noise guidelines. The measurement results were also used to establish reference sound levels for project heavy truck passbys and turning movements on the proposed haul route.

This evaluation concludes that the proposed project would result in significant decreases in traffic noise levels along the existing project haul routes (Hallwood Boulevard and Walnut Avenue) while not resulting in a significant increase in traffic noise levels at residences or other sensitive receptors located along SR 20, the proposed haul route, or the haul route alternatives. In addition, project noise generation is predicted to be satisfactory relative to the applicable Yuba County noise policies and California Environmental Quality Act guidelines. Therefore, no noise impacts are identified for the project or project alternatives and no noise mitigation measures are warranted for the project.

No adverse vibration impacts were identified for the proposed project. As a result, no vibration mitigation measures are warranted for the project.

Introduction

Teichert Aggregates proposes connecting Teichert's existing Hallwood mining facility directly to SR 20 via a private haul route (Project). The purpose of the improvements is to provide a new, and more direct, haul route from Teichert's Hallwood mining facility to SR 20 that would replace the current haul route on Hallwood Boulevard and Walnut Avenue. In addition to the proposed project (Alternative 1), two additional alignment alternatives are being considered for this project. The three project alternatives are as follows:

1) Private haul road connecting to SR 20 approximately 100 feet west of its existing intersection with Kibbe Road.
2) Private haul road connecting to SR 20 at its existing intersection with Kibbe Road.
3) Private haul road connecting to SR 20 east of its existing intersection with the Cordua Irrigation District's Stahl Ditch.

All three project alignment alternatives are illustrated in Figures 1-A through 1-C. The overall project area, locations of existing Highway 20 access routes, and general representation of the proposed alignment (Alternative 1) are shown on Figure 2.

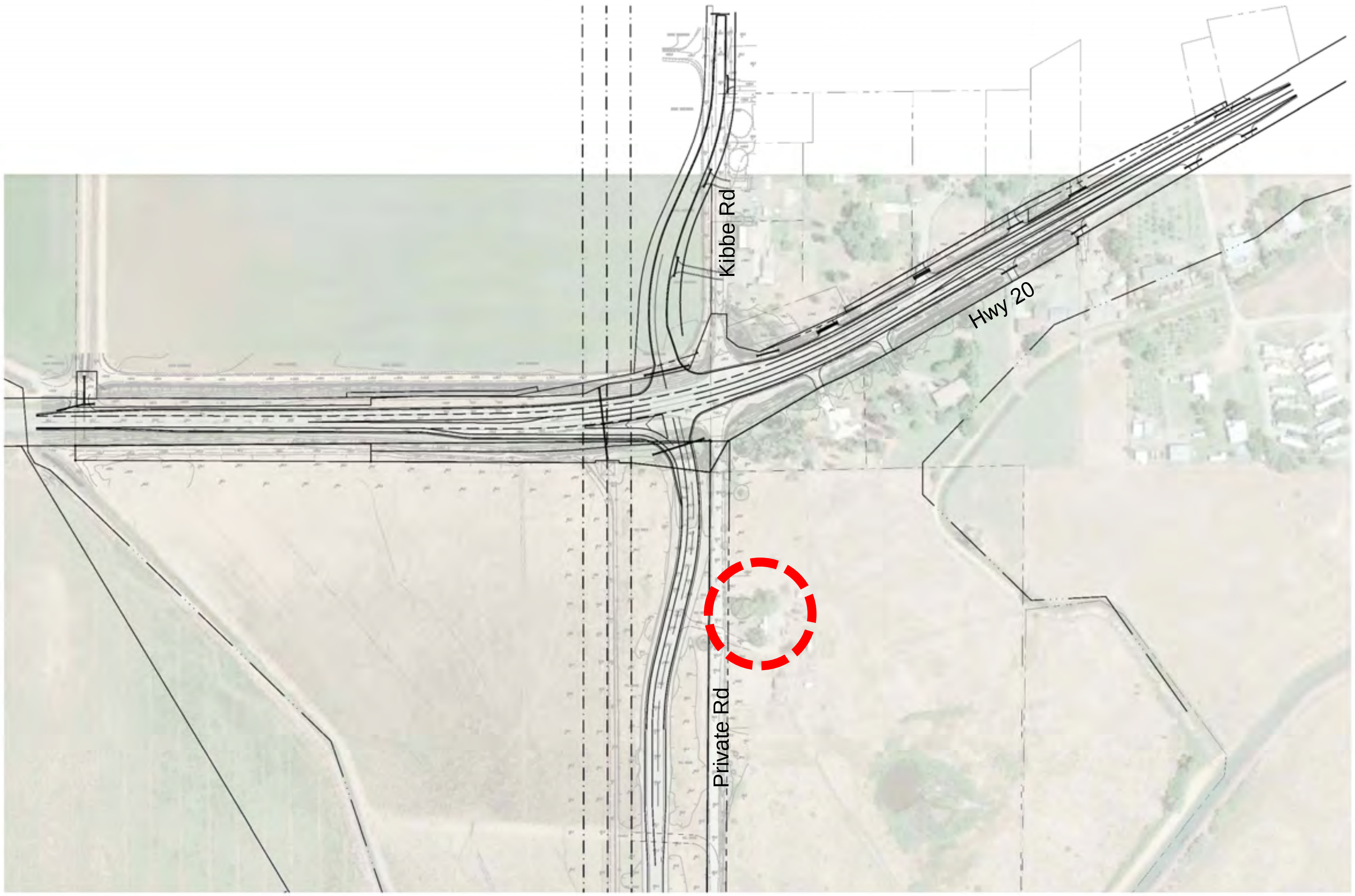
This report describes fundamentals of noise, quantifies the general ambient noise environment in the immediate vicinity of the proposed Project, describes the noise standards which would be applied to the Project by Yuba County in addition to applicable California Environmental Quality Act (CEQA) requirements, and provides an assessment of potential noise impacts and mitigation measures associated with the proposed improvements.

Background on Noise and Vibration

Noise/Sound

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that human hearing can detect. If the pressure variations occur frequently enough (i.e., at least 20 times per second) they can be identified as sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz). Please see Appendix A for definitions of terminology used in this report.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale utilizes the hearing threshold (20 micropascals of pressure) as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers within a practical range. Another useful aspect of the decibel scale is that changes in decibel levels correspond closely to human perception of relative loudness. Figure 3 illustrates common noise levels associated with various sources.



Legend

Receptor #1 Location

N

Scale (Feet)

0 250 500

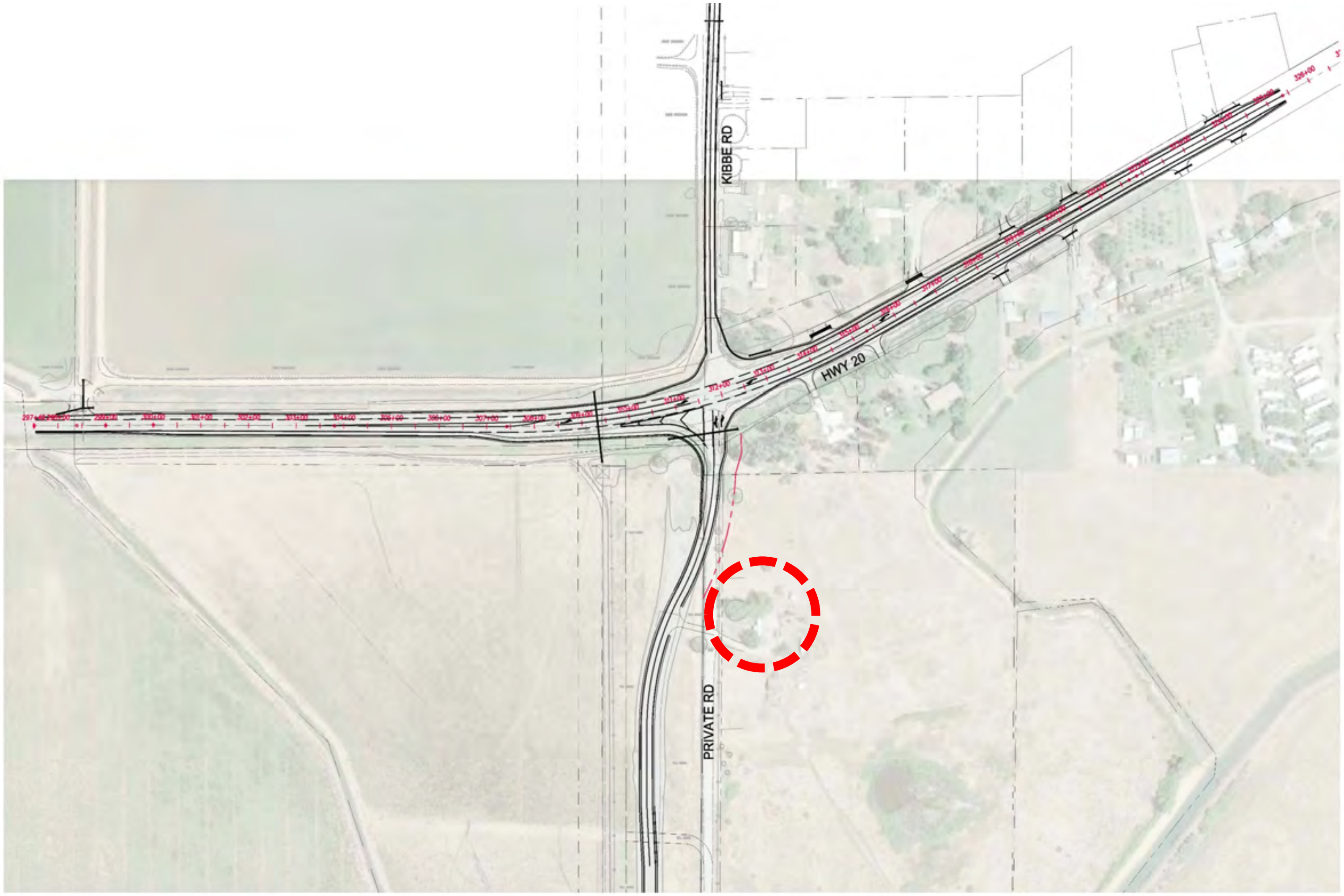
Teichert Kibbe Road Project

Alternative Route #1

Yuba County, California

Figure 1-A

BOLLARD Acoustical Consultants



Legend

Receptor #1 Location

N

Scale (Feet)

0 250 500

Teichert Kibbe Road Project

Alternative Route #2

Yuba County, California

Figure 1-B

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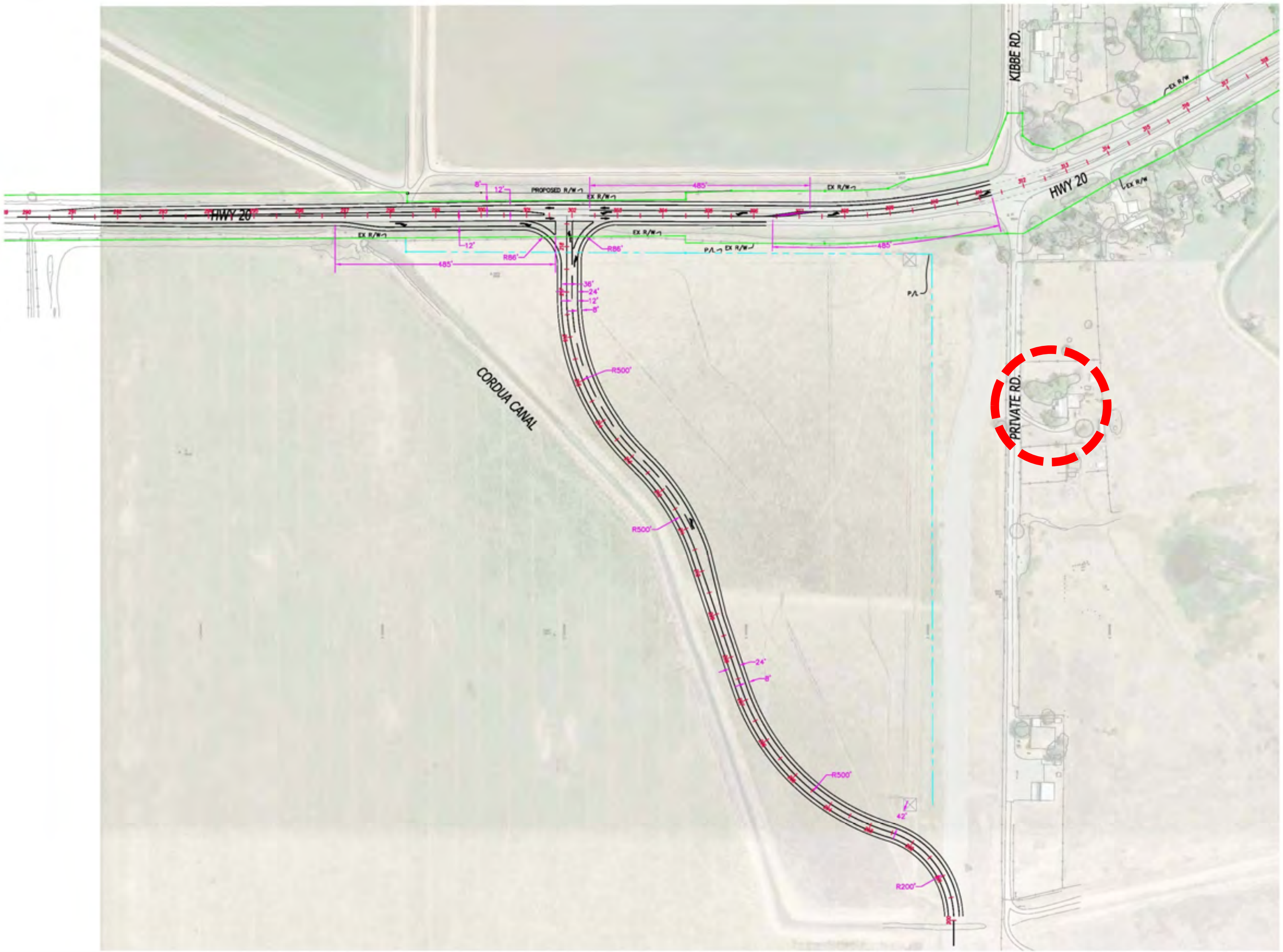


Legend

Receptor #1 Location

N

Scale (Feet)

0 250 500

Teichert Kibbe Road Project

Alternative Route #3

Yuba County, California

Figure 1-C

BOLLARD Acoustical Consultants

Legend

- Proposed Kibbe Road Haul Route (Project)
- Current Haul Routes
- Long-Term Noise Measurement Locations
- Short-Term Noise Measurement Locations
- Teichert Hallwood Plant Location

N

Scale (Feet)

0 2,000 4,000

Teichert Kibbe Road Project

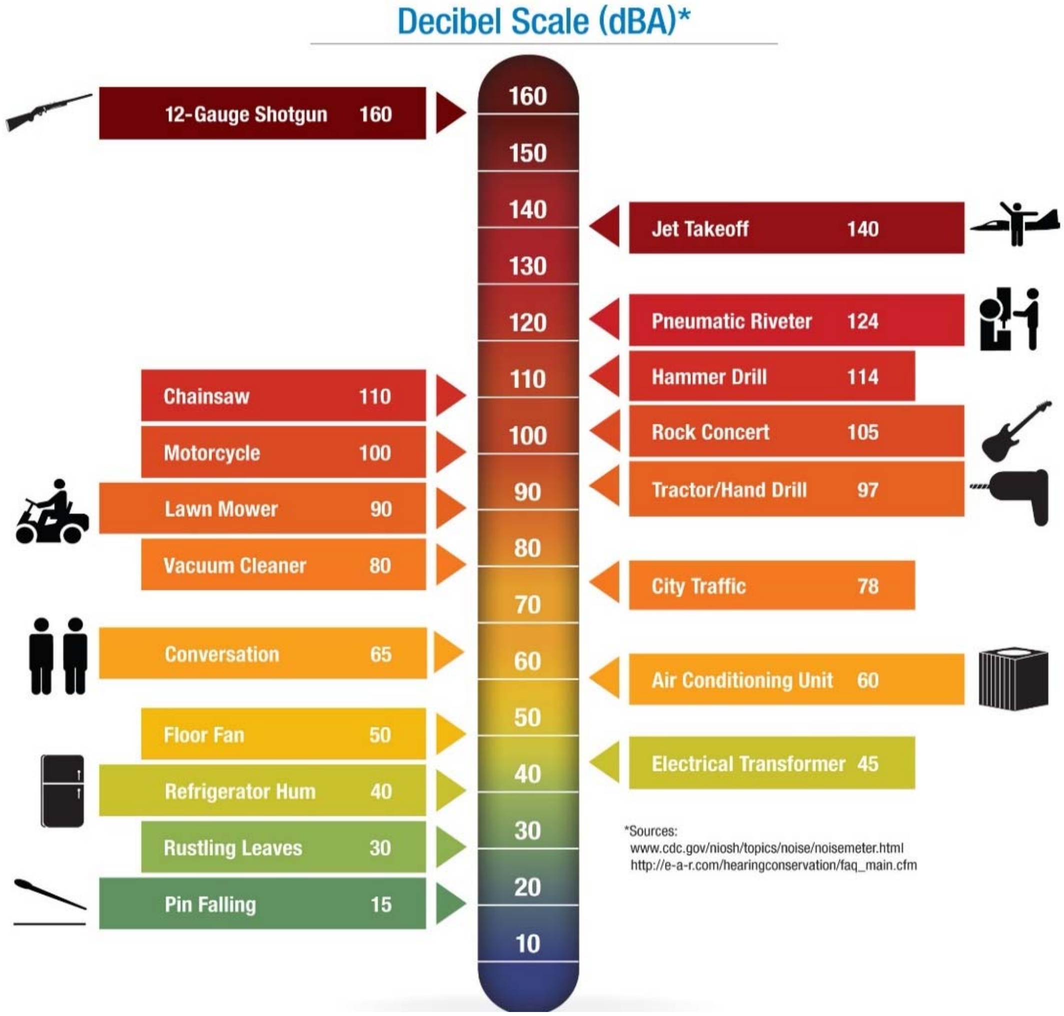
Project Location & Noise Measurement Sites

Yuba County, California

Figure 2

BOLLARD Acoustical Consultants

Figure 3
Typical A-Weighted Sound Levels of Common Noise Sources



The perceived loudness of sound is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighting the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. All noise levels reported in this evaluation are A-weighted.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}) over a given time period (usually one hour). The L_{eq} is the foundation of the Day-Night Average Level noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The Day-Night Average Level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. L_{dn} based noise standards are commonly used to assess noise impacts associated with traffic, railroad and aircraft noise sources.

Noise Attenuation with Distance

Stationary "point" sources of noise, attenuate (lessen) at a rate of approximately 6 dBA per doubling of distance from the source, not accounting for environmental conditions (i.e., atmospheric conditions, noise barriers, ground type, vegetation, topography, etc.). Surface traffic (a "moving point" source), would typically attenuate at a lower rate, approximately 4.5 dBA per doubling distance from the source (also dependent upon environmental conditions).

Atmospheric (Molecular) Absorption and Anomalous Excess Attenuation

Air absorbs sound energy. The amount of absorption is dependent on the temperature and humidity of the air, as well as the frequency of the sound. Families of curves have been developed which relate these variables to molecular absorption coefficients, frequently expressed in terms of dB per thousand feet. For standard day atmospheric conditions, defined as 59 degrees Fahrenheit and 70% relative humidity, the molecular absorption coefficient at 1000 hertz is 1.5 dB per thousand feet. Molecular absorption is greater at higher frequencies, and reduced at lower frequencies. In addition, for drier conditions, the molecular absorption coefficients generally increase. Similarly, as temperature increases, molecular absorption coefficients typically increase as well.

Anomalous excess attenuation caused by variations in wind speed, wind direction, and thermal gradients in the air can typically be estimated using an attenuation rate of 1.5 dB per thousand feet for a noise source generating a 1000 hertz signal. As with molecular absorption, anomalous excess attenuation typically decrease with lower frequencies and increases with higher frequencies.

For this analysis the effects of atmospheric absorption and anomalous excess attenuation are not expected to be appreciable given the relatively small distances between the project area roadways and nearby sensitive receptors.

Effects of Topographic Shielding

A noise barrier is any impediment which intercepts the path of sound as it travels from source to receiver. Such impediments can be natural, such as a hill or other naturally occurring topographic feature which blocks the receiver's view of the source. Impediments can also be vegetative, such as heavy tree cover which similarly blocks the source from view of the receiver. In addition, impediments can be man-made, such as a solid wall, earthen berm, or structure constructed between the noise source and receiver. Regardless of the type of impediment, the physical properties of sound are such that, at the point where the line-of-sight between the source and receiver is interrupted by a barrier, a 5 dB reduction in sound occurs.

The effectiveness of a barrier is a function of the difference in distance sound travels on a straight-line path from source to receiver versus the distance it must travel from source to barrier, then barrier to receiver. This difference is referred to as the "path length difference", and is used to calculate the Fresnel Number. A barrier's effectiveness is a function of the Fresnel number and frequency content of the source. In general, the more acute the angle of the sound path created by the introduction of a barrier, the greater the noise reduction provided by the barrier.

For this project, receptors located nearest to the proposed Kibbe Road extension and other roadways utilized by project traffic are not appreciably screened from roadway noise by barriers or intervening topography.

Effects of Ground Cover

Ground cover also affects sound propagation. For example, soft ground is more acoustically absorptive than paved surfaces and vegetated ground is more absorptive still. For this analysis, the space between sensitive receptors and the project roadway network were assumed to be acoustically "soft" sites with a sound level decay rate of 4.5 dB per doubling of distance between the roadway and receptor.

Effects of Noise on People

The effects of noise on people can be divided into three categories:

- Subjective effects of annoyance, nuisance, dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the third category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

An important way of predicting a human reaction to changes in their noise environment is by comparing pre-project to post-project noise levels. This way the project's noise exposure can be compared to the existing environment (or ambient noise) to which one has adapted. In general, the more a project increases the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans, 2013):

- It is widely accepted that the average healthy ear can barely perceive noise level changes of 3 dBA for similar sources;
- A change in level of 5 dBA is a readily perceptible increase in noise level; and
- A 10-dBA change is recognized as twice as loud as the original source.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. Noise levels are measured on a logarithmic scale, instead of a linear scale. On a logarithmic scale, the sum of two noise sources of equal loudness is 3 dBA greater than the noise generated by only one of the noise sources (e.g., a noise source of 60 dBA plus another noise source of 60 dBA generate a composite noise level of 63 dBA). To apply this formula to a specific noise source, in areas where existing levels are dominated by traffic, a doubling in traffic volume will increase ambient noise levels by only 3 dBA.

Audibility

It should be noted that audibility is not a test of significance according to CEQA. If this were the case, any project which added any audible amount of noise to the environment would be considered significant according to CEQA. Because every physical process creates noise, the use of audibility alone as significance criteria would be unworkable. CEQA requires a substantial increase in noise levels before noise impacts are identified, not simply an audible change. A discussion of what constitutes a substantial change in noise environments is provided in the Criteria section of this report.

Single-Event Noise & Sleep Disturbance

A single event is an individual distinct loud activity, such as an aircraft overflight, a train or truck passage, or any other brief and discrete noise-generating activity. Noise exposure quantified in terms of 24-hour-averaged descriptors, such as L_{dn} or CNEL, can mask the potential for annoyance or sleep disturbance associated with individual loud events due to the averaging process.

Extensive studies have been conducted regarding the effects of single-event noise on sleep disturbance, with the Sound Exposure Level (SEL) metric being a common metric used for such assessments. SEL represents the entire sound energy of a given single-event normalized into a one-second period regardless of event duration. As a result, the single-number SEL metric contains information pertaining to both the duration and intensity of the single event. Another descriptor utilized to assess single-event noise is the maximum, or L_{max}, noise level associated with the event. A problem with utilizing L_{max} to assess single events is that the duration of the event is not considered.

Due to the wide variation in test subjects' reactions to noises of various levels (some test subjects were awakened by indoor SEL values of 50 dB, whereas others slept through indoor SEL values exceeding 80 dB), no definitive consensus has been reached with respect to a universal criterion to apply to environmental noise assessments. The Federal Interagency Committee on Aviation Noise (FICAN) has provided estimates of the percentage of people expected to be awakened when exposed to specific SEL inside a home (FICAN 1997). According to the FICAN study, an estimated 5 to 10% of the population is affected when interior SEL noise levels are between 65 and 81 dB, and few sleep awakenings (less than 5%) are predicted if the interior SEL is less than 65 dB within a sleeping room.

Vibration

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. Sources of groundborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or intermittent, such as explosions.

As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS, as in root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as VdB, which serves to compress the range of numbers required to describe vibration.

The background vibration-velocity level in typical residential areas is approximately 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels.

Criteria for Acceptable Noise & Vibration Exposure

The California Environmental Quality Act (CEQA) contains noise impact assessment guidelines. In addition, California cities and counties are required to adopt a Noise Element as part of the General Plan. Cities and counties typically also adopt a noise ordinance. The Project site is located in Yuba County, which has both a General Plan Noise Element, a County Code Noise Ordinance, and a Development Code which contains noise criteria. Applicable CEQA Guidelines, Yuba County noise-level criteria, and appropriate criteria of other jurisdictions are discussed below.

California Environmental Quality Act (CEQA) Guidelines

The State of California has established regulatory criteria that are applicable to this assessment. Specifically, Appendix G of the CEQA Guidelines are used to assess the potential significance of impacts pursuant to local General Plan policies, Code standards, or the applicable standards of other agencies. According to the CEQA guidelines, a project would result in a significant noise or vibration impact if the following occur:

A. Generation of 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 in other applicable standards of other agencies?

B. Generation of excessive groundborne vibration or groundborne noise levels?

C. For a project located within the vicinity of a private 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?

As noted in CEQA Criteria “A” above, a project’s noise impacts must be evaluated relative to both the ***increase*** in noise levels which would result from the project as well as compliance with standards established in the local general plan or noise ordinance.

Yuba County Health and Safety Element Noise Policies

The Yuba County 2030 General Plan Health and Safety Element contains the following policies with respect to acceptable noise exposure:

Policy HS10.1 New developments that generate traffic or are affected by traffic noise shall provide design and mitigation, if necessary, to ensure acceptable daytime and nighttime land use/noise environment at outdoor activity areas of affected properties, as defined in Table Public Health & Safety-1. *Table Public Health & Safety-1 is reproduced in this report as Table 1 and is hereafter referred to as Table 1.*

Policy HS10.2 If existing noise levels exceed the acceptable levels listed in Table 1, new developments are required to incorporate mitigation to reduce noise exposure in outdoor activity areas to the maximum extent feasible and include mitigation designed to achieve acceptable interior noise levels, as defined in Table 1.

Policy HS10.3 New developments that would generate or be affected by non-transportation noise shall be located, designed, and, if necessary, mitigated below maximum levels specified in Table Public Health & Safety-2, as measured at outdoor activity areas of affected noise-sensitive land uses. *Table Public Health & Safety-2 is reproduced in this report as Table 2 and is hereafter referred to as Table 2.*

Policy HS10.4 If existing noise levels exceed the maximum allowable levels listed in Table 2, projects are required to incorporate mitigation to reduce noise exposure in outdoor activity areas to the maximum extent feasible and include mitigation to achieve acceptable interior noise levels, as defined in Table 1.

Policy HS10.5 The maximum noise level shall not exceed the performance standards shown in Table Public Health & Safety-3, as measured at outdoor activity areas of any affected noise-sensitive land use except:

- If the ambient noise level exceeds the standard in Table Public Health & Safety-3, the standard becomes the ambient level plus 5 dBA.

- Reduce the applicable standards in Table Public Health & Safety-3 by 5 decibels if they exceed the existing ambient level by 10 or more dBA.

Table Public Health & Safety-3 is reproduced in this report as Table 3 and is hereafter referred to as Table 3.

Policy HS10.6 New developments shall provide all feasible noise mitigation to reduce construction and other short-term noise and vibration impacts as a condition of approval.

Policy HS10.7 New developments shall ensure that construction equipment is properly maintained and equipped with noise control components, such as mufflers, in accordance with manufacturers' specifications.

Policy HS10.8 Noise attenuation barriers are strongly discouraged, except to attenuate noise for existing developed uses, and may be used in the context of new developments only when no other approach to noise mitigation is feasible.

Policy HS10.9 New developments shall disperse vehicular traffic onto a network of fully connected smaller roadways and minimize funneling of local traffic onto large-volume, high speed roadways near existing or planned noise-sensitive land uses to the maximum extent feasible.

Policy HS10.10 Proposed noise-generating industrial and other land uses shall be located away from noise-sensitive land uses, shall enclose noise sources, or shall use other site planning or mitigation techniques to ensure acceptable noise levels, to the greatest extent feasible.

Policy HS10.11 Lands within the 65 CNEL noise contour of Beale Air Force Base, Yuba County Airport, and Brownsville Airport shall be maintained in agricultural, open space, commercial, industrial, or other uses permitted by the subject airport's adopted Comprehensive Land Use Plan (CLUP) and consistent with the recommendations of the Beale Joint Land Use Study, including noise contours associated with future hypothetical missions, as appropriate.

Policy HS10.12 The County supports the construction of rail crossings designed to reduce or eliminate the use of rail horn blasts in areas with existing and planned noise-sensitive land uses.

Policy HS10.13 New developments that propose vibration-sensitive uses within 100 feet of a railroad or heavy industrial facility shall analyze and mitigate potential vibration impacts, to the greatest extent feasible.

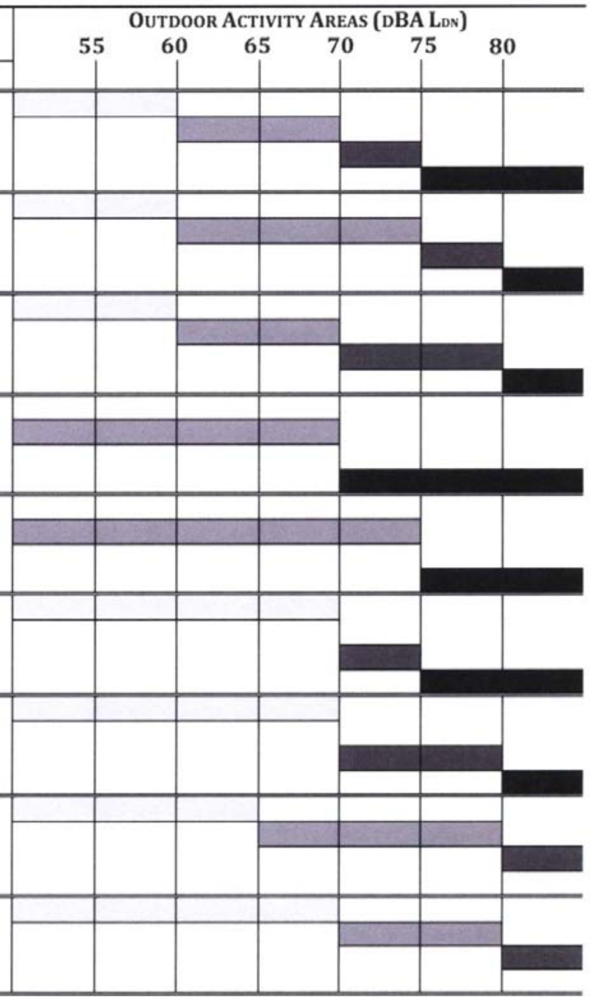
Policy HS10.14 Public events, such as school sporting events, festivals, and other similar community and temporary events are exempt from the noise standards outlined in this Element.

Policy HS10.15 New developments that would generate substantial long-term vibration shall provide analysis and mitigation, as feasible, to achieve velocity levels, as experienced at habitable structures of vibration-sensitive land uses, of less than 78 vibration decibels.

Policy HS10.16 Mining, forestry, and agricultural noise will not be considered a nuisance when generated in areas designated by the General Plan for these uses.

Table 1
Maximum Allowable Noise Exposure from
Transportation Noise Sources at Noise-Sensitive Land Uses

Land Use	Interior Spaces	
	dBA L_{DN}	dBA L_{EQ}
Residences	45	-
Hotels, Motels	45	-
Schools, Libraries, Museums, Places of Worship, Hospitals, Nursing Homes	45	45
Theaters, Auditoriums, Concert Halls, Amphitheaters	35	-
Outdoor Spectator Sports	-	-
Playgrounds, Parks	-	-
Golf Courses Riding Stables, Water Recreation, Cemeteries	-	-
Office Buildings, Retail, and Commercial Services	45	-
Industrial, Manufacturing, Utilities, Agriculture	-	-



Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise requirements.

Conditionally Acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.

Clearly Unacceptable – New construction or development clearly should not be undertaken.

Notes: dBA = A-weighted decibels; L_{dn} = day-night average noise level; L_{eq} = energy-equivalent noise level. This table does not apply to existing transportation noise sources affecting existing land uses. Outdoor activity areas are the portion of a property where activities are normally expected. This would include portions of backyards, decks, balconies, pools, sports or game courts, and patios, but would not include front yards, spaces next to parking, roads, driveways, or vehicular loading areas. Hospitals and nursing homes use the L_{dn} interior standard, whereas schools, libraries, museums, and places of worship use a L_{eq} interior standard. Office buildings have an interior standard, but retail and commercial service uses do not have an interior standard.

Source: Governor's Office of Planning and Research 2003 General Plan Guidelines.

Table 2
Maximum Allowable Noise Exposure from Non-Transportation Noise Sources at Noise-Sensitive Land Uses

Noise Level Descriptor	Daytime (7:00 AM - 10:00 PM)	Nighttime (10:00 PM - 7:00 AM)
Hourly L_{eq}	60 dBA	45 dBA
L_{max}	75 dBA	65 dBA

Notes: dBA = A-weighted decibel; Leq = energy-equivalent noise level; Lmax = maximum noise level.
Each of the noise levels specified shall be lowered by 5 dBA for simple tone noises, noises consisting primarily of speech, music, or for recurring impulsive noises. These noise-level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). Noise-sensitive land uses include schools, hospitals, rest homes, long-term care facilities, mental care facilities, residences, and other similar land uses.

Table 3
Performance Standards for Non-Transportation Noise Sources

Cumulative Duration of a Noise Event[1] (Minutes)	Maximum Exterior Noise Level Standards [2]	
	Daytime dBA Lmax [2,4]	Nighttime dBA Lmax [3,4]
30-60	50	45
15-30	55	50
5-15	60	55
1-5	65	60
0-1	70	65

Notes: dBA = A-weighted decibel; Lmax = maximum noise level.

1 Cumulative duration refers to time within any 1-hour period.

2 Daytime = hours between 7:00 AM and 10:00 PM

3 Nighttime = hours between 10:00 PM and 7:00 AM

4 Each of the noise level standards specified may be reduced by 5 dBA for tonal noise (i.e., a signal which has a particular and unusual pitch) or for noises consisting primarily of speech or for recurring impulsive noises (i.e., sounds of short duration, usually less than one second, with an abrupt onset and rapid decay such as the discharge of firearms).

Yuba County Code Noise Policies

Chapter 8.20 of the Yuba County Code is titled “Noise Regulations”. This Chapter is incorporated into this report by reference. The provisions of this Chapter which are directly applicable to the proposed project are reproduced below:

8.20.120. - Definitions.

As used in this Chapter, unless the content otherwise clearly indicates, certain words and phrases used herein are defined as follows:

(17) *Sound level measurement*. For the purpose of enforcement of the provisions of this Chapter, sound level or noise level shall be measured in decibels on the A-weighted scale with a sound level meter satisfying at least the applicable requirements for Type 1 or Type 2 sound level meters as defined in the most recent American National Standard Specifications. The meter shall be set for slow response speed, except that for impulse noises or rapidly varying sound levels, fast response speed may be used. For outside measurements the microphone shall not be less than four feet above the ground, at least 4½ feet distant from walls and similar large reflecting surfaces, and shall be protected from the effects of wind noises and other extraneous sounds by the use of screens, shields or other appropriate devices; for inside measurements, the microphone shall be at least three feet distant from any wall, and the average measurement of at least three microphone positions throughout the room shall be determined.

8.20.130. - Sound level measurement criteria.

Any sound level measurement made pursuant to the provisions of this Chapter shall be measured with a sound level meter using the "A" weighting, as defined in Section 8.20.120(q).

8.20.140. - Ambient base noise level.

Where the ambient noise level is less than designated in this Section, the respective maximum noise level permitted in this Section shall govern.

Sound Level A - in decibels

Zone	Time	Ambient Level	Maximum Noise Level Permitted
Single family Residential	10:00 p.m. to 7:00 a.m.	45	55
	7:00 p.m. to 10:00 p.m.	50	60
	7:00 a.m. to 7:00 p.m.	55	65
Multi-family Residential	10:00 p.m. to 7:00 a.m.	50	60
	7:00 a.m. to 10:00 p.m.	55	65
Commercial -BP	10:00 p.m. to 7:00 a.m.	55	65
Commercial	7:00 a.m. to 10:00 p.m.	60	70
M-1	Anytime	65	75
M-2	Anytime	70	80

8.20.310. - Construction of buildings and projects.

It shall be unlawful for any person within a residential zone, or within a radius of 500 feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hours of 10:00 p.m. of one day and 7:00 a.m. of the following day in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless a permit has been duly obtained beforehand from the Community Development and Services Agency's Director of the Planning Department as set forth in Section 8.20.710 of this Chapter. No permit shall be required to perform emergency work as defined in Article 1 of this Chapter.

8.20.320. - Motor driven vehicles.

It shall be unlawful for any person to operate any motor driven vehicle within the County so that it produces noise in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance; provided, however, any such vehicle which is in movement upon any public highway, street, or right-of-way shall be excluded from the provisions of this Section.

8.20.610. - Peace disturbance.

Notwithstanding any other provision of this Chapter, and in addition thereto, it shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary, or unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

8.20.620. - Criteria for determining violation of Section 8.20.620.

The standards which shall be considered in determining whether a violation of the provisions of Section 8.20.610 exists shall include, but shall not be limited to, the following criteria:

(1) The frequency of the noise;
(2) The intensity of the noise;
(3) The level of the noise;
(4) Whether the nature of the noise is usual or unusual;
(5) Whether the origin of the noise is natural or unnatural;
(6) The frequency, level, and intensity of the background noise, if any;
(7) The proximity of the noise to residential sleeping facilities;
(8) The nature and zoning of the area within which the noise emanates;
(9) The density of the inhabitation of the area within which the noise emanates;
(10) The time of the day or night the noise occurs;
(11) The duration of the noise;
(12) Whether the noise is recurrent, intermittent, or constant; and
(13) Whether the noise is produced by a commercial or noncommercial activity.

8.20.730. - General exemptions.

(b) No provision contained herein shall be deemed to supersede or overrule any provision of the Yuba County General Plan, nor any noise element thereof.

(c) No provision contained herein shall be deemed to supersede or overrule any provision of Chapter 11.55 of the Yuba County Ordinance Code which relates to farming and mining operations.

Yuba County Development Code Noise & Vibration Policies

Chapter 11.26.050 of the Yuba County Development Code contains performance standards related to noise. The sections of that Chapter which are pertinent to this evaluation are reproduced below.

11.26.50 - Noise

A. Noise Limits. No use or activity shall create ambient noise levels that exceed the standards established in the Public Health and Safety Element of the Yuba County General Plan.

B. Acoustic Study. The Planning Director may require an acoustic study for any proposed project that could cause any of the following:

1. Locate new residential uses within the 55 Community Noise Equivalent (CNEL) impact area of the Yuba County Airport;

2. Locate new residential uses within the 55 CNEL impact area of Beale Air Force Base (excludes housing located on Base);

3. Cause noise levels to exceed the limits in Chapter 8.20, Noise Regulations, of the Yuba County Code and Yuba County General Plan;

4. Create a noise exposure that would require an acoustic study and noise attenuation measures listed in the Public Health and Safety Element of the General Plan; or

5. Cause the Day-night equivalent (L_{dn}) noise level at noise-sensitive uses to increase 5 dB or more.

C. Noise Attenuation Measures. Any project subject to the acoustic study requirements of subsection B may be required as a condition of approval to incorporate noise attenuation measures deemed necessary to ensure that noise standards are not exceeded.

1. New noise-sensitive uses (e.g., schools, hospitals, churches, and residences) shall incorporate noise attenuation measures to achieve and maintain an interior noise level of 45 L_{dn}.

2. Noise attenuation measures identified in an acoustic study shall be incorporated into the project to reduce noise impacts to satisfactory levels.

3. Emphasis shall be placed upon site planning and project design measures. The use of noise barriers shall be considered only after all feasible design-related noise measures have been incorporated into the project.

11.26.060 - Vibration

No vibration shall be produced that is transmitted through the ground and is discernible without the aid of instruments by a reasonable person at the property lines of the site. Vibrations from temporary construction, demolition, and vehicles that enter and leave the subject parcel (e.g., construction equipment, trains, trucks, etc.) are exempt from this standard.

A. New developments that propose vibration sensitive uses within 100 feet of a railroad or industrial facility shall analyze and mitigate potential vibration impacts to the greatest extent feasible.

B. New developments that would generate substantial long-term vibration shall provide analysis and mitigation to achieve velocity levels of less than 78 vibration decibels as experienced at habitable structures of vibration-sensitive land uses.

The Yuba County General Plan Noise Element and County Code do not have a specific policy or standard for assessing noise impacts associated with ***increases*** in off-site ambient noise levels resulting from project-generated traffic on public roadways. Because CEQA requires that the significance of noise impacts be evaluated relative to the ***increase*** in noise resulting from a project, where the local jurisdiction does not have such adopted thresholds, reasonable thresholds from other jurisdictions must be considered. As a result, the following section describes thresholds used for assessing the significance of project-related increases in off-site heavy truck traffic using federal research conducted by the Federal Interagency Commission on Noise (FICON).

Criteria for Determination of Significant Noise Increases

The Federal Interagency Commission on Noise (FICON) has developed a graduated scale for use in the assessment of project-related noise level increases. The criteria shown in Table 4 was developed by FICON as a means of developing thresholds for impact identification for project-related noise level increases. The FICON standards have been used extensively in recent years by the authors of this section in the preparation of the noise sections of Environmental Impact Reports that have been certified in many California cities and counties.

The use of the FICON standards are considered conservative relative to thresholds used by other agencies in the State of California. For example, the California Department of Transportation (Caltrans) requires a project-related traffic noise level increase of 12 dB for a finding of significance, and the California Energy Commission (CEC) considers project-related noise level increases between 5 to 10 dB significant, depending on local factors. Therefore, the use of the FICON standards, which set the threshold for finding of significant noise impacts as low as 1.5 dB, provides a very conservative approach to impact assessment for this project.

Table 4 - Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level Without Project (Ldn or CNEL)	Change in Ambient Noise Level Due to Project
<60 dB	+5.0 dB or more
60 to 65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more
Source: Federal Interagency Committee on Noise (FICON)	

Based on the FICON research, as shown in Table 4, a 5 dB increase in noise levels due to a project is required for a finding of significant noise impact where ambient noise levels without the project are less than 60 dB. Where pre-project ambient conditions are between 60 and 65 dB, a 3 dB increase is applied as the standard of significance. Finally, in areas already exposed to higher noise levels, specifically pre-project noise levels in excess of 65 dB, a 1.5 dB increase is considered by FICON as the threshold of significance. As noted previously, audibility is not a test of significance according to CEQA. If this were the case, any project which added any audible amount of noise to the environment would be considered significant according to CEQA. CEQA requires a substantial increase in ambient noise levels before noise impacts are identified, not simply an audible change.

Existing Ambient Noise Environment

Identified Sensitive Land Uses in the Immediate Project Vicinity

The Project would extend Kibbe Road between the Teichert Hallwood property and SR 20. Although the lands through which the proposed roadway extension would pass are agricultural in nature, site inspections and review of aerial photographs indicate that the roadway extension would pass in relatively close proximity to one (1) existing residence.

The residence identified near the proposed Project roadway extension is identified as Receiver 1 on Figure 3. In addition to evaluating project noise impacts specifically at Receiver 1, this analysis evaluates impacts associated with changing traffic patterns at existing residences located along SR 20 from east of Kibbe Road to south of Walnut Avenue as well as at residences located along the current haul routes (Walnut Avenue and Hallwood Boulevard).

Description of Existing Ambient Noise Environment

The existing ambient noise environment at existing land uses in the Project vicinity is defined primarily by traffic on SR 20, although intermittent aircraft operations associated with Beale Air Force Base also contribute to the project area ambient noise environment. Because those aircraft operations are sporadic, this analysis focuses on the traffic noise environment, and how that environment would be expected to change as a result of the Project.

Long-Term Noise Survey Methodology and Results

To quantify the existing ambient noise environment in the area, continuous (long-term) ambient noise level measurements were conducted at the four (4) locations identified on Figure 1. The noise measurement period extended from Friday, January 22nd through Monday, February 8th, 2021, a period of 18 consecutive days (432 consecutive hours).

Sites 1 and 2 were selected to be representative of the exposure of residences located adjacent to the existing Teichert Hallwood facility haul routes located between the facility and SR 20. Site 3 was selected to be representative of the noise exposure of Receptor 1 and was located the same distance from SR 20 as Receptor 1. Site 3 was selected to be representative of existing residences located in close proximity to SR 20, where intersection improvements are being proposed by Teichert. Appendix B shows photographs of the continuous noise measurement sites.

It should be noted that, although ambient noise monitoring was not conducted at the existing residences on the north side of SR 20, because noise radiates away from the Highway equally in both directions (north and south) the measurements conducted on the south side of SR 20 are considered to be representative of ambient conditions at the residences on the north side of Kibbe Road as well.

Larson Davis Laboratories (LDL) Model 820 and 831 precision integrating sound level meters were used for the noise level measurement surveys. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute.

Weather conditions present during the monitoring program varied, consisting primarily of cooler temperatures typical of January/February conditions. However, high winds (gusts in excess of 15 mph) and/or precipitation (rainfall) were noted during 6 days of the monitoring program. The noise level data collected during those days were closely scrutinized and compared to data collected during neighboring days when atmospheric conditions were not affected by high winds or rain. In cases where the wind or rain affected the ambient survey results, those data were omitted from the computation of average baseline ambient conditions.

Continuous SR 20 traffic counts were conducted during the long-term noise survey period just west of Kibbe Road. The purpose of the traffic counts was to determine if traffic volumes present during the ambient surveys were consistent with baseline SR 20 traffic volumes reported in the Project Transportation Impact Analysis (TIA). The project TIA reported existing SR 20 traffic volumes of 9,140 daily vehicles just west of Kibbe Road. The average daily vehicles present along this same segment during the noise survey was 7,182 daily vehicles, which indicates actual traffic volumes during the noise survey were approximately 20% below expected baseline traffic volumes. This 20% difference results in measured ambient noise levels being 1 dB lower than they would have been under typical traffic conditions. As a result, the ambient noise survey results were increased by 1 dB for Measurement Sites 3 and 4, which were affected most significantly by SR 20 traffic.

The ambient noise measurement hourly results were averaged for weekday/Saturday periods at each location. The averaged ambient noise level measurement results are shown in Appendix C. A summary of the ambient noise level measurement results is provided in Table 5.

Table 5
Averaged Long-Term Ambient Noise Monitoring Results Summary
Teichert Kibbe Project Vicinity – Weekday & Saturday Periods[1]

Monitoring Site[1]	Daytime		Nighttime		Ldn
	Leq	Lmax	Leq	Lmax	
1	57	75	51	67	59
2	56	73	52	63	59
3	49	64	44	58	53
4	71	89	66	85	74

1. Weekday and Saturday ambient conditions are presented as Teichert is not in operation on Sundays.
2. Monitoring Site locations are shown on Figure 1.

The Table 5 data indicate that the existing ambient noise environment at the receivers located along SR 20 (monitoring Site 4) were the highest, averaging 74 dB L_{dn}. This result is as expected given the higher vehicle speeds and traffic volumes on SR 20, as well as the closer proximity of Site 4 to SR 20 as compared to Site 3. It should be noted that the average (L_{eq}) values shown in Table 4 represent the overall average levels for the daytime and nighttime periods, not the measured peak hour average levels. Measured peak hour traffic noise levels were typically 2-5 dB higher during daytime periods and 5-7 dB higher during nighttime periods.

Short-Term Noise Survey Methodology and Results

In addition to the long-term noise surveys, short-term noise surveys were conducted at the two locations where Teichert Hallwood heavy trucks currently access SR 20. Photos of short-term noise measurements at Sites A and B are shown in Appendices B-5 and B-6. The short-term noise measurement locations, which are identified as Sites A and B on Figure 1, were monitored for approximately 3 hours at each site with observations by BAC staff on January 26th and February 9th, 2021. During this period, a total of 88 individual (single event), heavy truck movements were monitored. The measurements captured both trucks accelerating from a stop to turn onto SR 20 and heavy trucks decelerating to turn off of SR 20 onto Hallwood Boulevard and Walnut Avenue.

The purposes of the short-term noise surveys was to quantify the noise generation of heavy trucks accelerating as they turned onto SR 20 and decelerating as they turned off of SR 20. These movements closely mimic the acceleration and deceleration which would occur at Kibbe Road following completion of the project improvements at the intersection of Kibbe Road and SR 20.

During the short-term, single-event, noise surveys, BAC staff observed that none of the trucks decelerating to turn off of SR 20 onto either Hallwood Boulevard or Walnut Avenue utilized engine (jake) brakes.

The results of the short-term heavy truck acceleration and deceleration measurements were normalized to the same distance to Highway 20 as long-term noise measurement Site 4 (site with a direct view of SR 20). The purpose of normalizing the distances was to provide an apples-to-apples comparison of maximum noise levels which will be generated by heavy trucks turning on and off of Kibbe Road versus existing maximum noise levels currently occurring along SR 20 at Kibbe Road.

As indicated in Table 5, the average daytime maximum noise level at long-term noise measurement Site 4 was 89 dB, measured at a distance of 75 feet from the SR 20 centerline. The average of the 88 individual maximum noise levels measured at short-term noise measurement Sites A and B, after normalization to 75 feet, computes to 78 dB L_{max}. This analysis of extensive single-event data for heavy truck operations clearly indicates that heavy trucks currently passing residences on SR 20 near the Kibbe Road intersection generate maximum noise levels 11 dB higher than the maximum noise levels which will be generated at those same residences locations when trucks are turning onto and off of the Project access road. An 11 dB decrease in noise levels represents more than a halving of loudness.

Project Impacts and Mitigation Measures

The proposed Project consists of modifications to the intersection of Kibbe Road and SR 20. The intersection modifications are not expected to have an appreciable effect on the SR 20 traffic flow at Kibbe Road, as they are proposed mainly to allow safe ingress and egress from the proposed Haul Road extension to the Hallwood Property.

Because all of the Teichert truck traffic would utilize the Haul Road extension for site access, the Project would result in a decrease in truck activity on Walnut Avenue and West Hallwood Boulevard. Specifically, Teichert trucks which currently arrive at the Hallwood site via Walnut Avenue, and depart the Hallwood site via Hallwood Boulevard, would no longer utilize those roadway segments following the completion of the Project.

Traffic Noise Prediction Model

To quantitatively assess project-related traffic noise changes resulting from the proposed Kibbe Road Project, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

Traffic volumes for existing and cumulative, project and no-project conditions were provided by Fehr and Peers Transportation Associates. Vehicle speeds on the local roadway network were evaluated through review of posted speed limits and speed surveys. Truck usage percentages for SR 20 were based on published Caltrans truck classification counts, while truck usage percentages on Hallwood Boulevard and Walnut Avenue were computed from information contained in the project Traffic Impact Assessment (TIA). A complete listing of the FHWA Model input data for existing, cumulative and project conditions is provided in Appendix D.

FHWA Traffic Noise Prediction Model Results

Table 5 shows the predicted existing and existing plus Project traffic noise levels along the roadway segments of interest to this study. Table 5 also shows the increase or decrease in existing noise levels which would occur along these segments following completion of the Kibbe Road intersection and 100% utilization of the Kibbe Road extension to access the Teichert Hallwood facility.

Table 6 shows the predicted cumulative and cumulative plus Project traffic noise levels along the roadway segments of interest to this study. Table 6 also shows the increase or decrease in cumulative noise levels which would occur along these segments following completion of the Kibbe Road intersection and 100% utilization of the Kibbe Road extension to access the Teichert Hallwood facility.

Table 6
Predicted Existing and Existing Plus Project Traffic Noise Levels
Teichert Kibbe Road Project – Yuba County, California

Segment	Roadway Name	Segment Description	Existing	Project	E + P	Change
1	SR 20	Walnut to Hallwood	66.2	60.7	67.3	1.1
2	SR 20	Hallwood to Woodruff	66.1	62.0	67.5	1.4
3	SR 20	Woodruff to Loma Rica	67.4	62.4	68.5	1.2
4	SR 20	Loma Rica to Kibbe	67.1	62.7	68.4	1.4
5	SR 20	East of Kibbe	67.0	0.0	67.0	0.0
6	Walnut Avenue	SR 20 to Hallwood	64.1	-63.8	52.0	-12.1
7	Walnut Avenue	Hallwood to Teichert Entrance	68.2	-68.1	52.2	-16.0
8	Hallwood Blvd	SR 20 to Hooper Rd	66.3	-66.0	53.4	-12.9
9	Hallwood Blvd	Hooper Rd to Walnut Ave	66.2	-66.0	52.2	-14.0

Source: FHWA-RD-77-108 with inputs provided in Appendix D.

Table 7
Predicted Cumulative and Cumulative Plus Project Traffic Noise Levels
Teichert Kibbe Road Project – Yuba County, California

Segment	Roadway Name	Segment Description	Cumulative	Project	C + P	Change
1	SR 20	Walnut to Hallwood	67.5	60.7	68.4	0.8
2	SR 20	Hallwood to Woodruff	67.5	62.0	68.5	1.1
3	SR 20	Woodruff to Loma Rica	69.9	62.4	70.6	0.7
4	SR 20	Loma Rica to Kibbe	69.9	62.7	70.6	0.8
5	SR 20	East of Kibbe	69.8	0.0	69.8	0.0
6	Walnut Avenue	SR 20 to Hallwood	64.4	-63.8	55.4	-9.0
7	Walnut Avenue	Hallwood to Teichert Entrance	68.3	-68.1	54.6	-13.7
8	Hallwood Blvd	SR 20 to Hooper Rd	66.3	-66.0	54.6	-11.7
9	Hallwood Blvd	Hooper Rd to Walnut Ave	66.3	-66.0	54.2	-12.2

Source: FHWA-RD-77-108 with inputs provided in Appendix D.

Analysis of Predicted Changes in Traffic Noise Levels Resulting from the Project

Residences & Sensitive Receivers along SR 20 East of Kibbe Road

All of the Teichert Hallwood traffic which currently travels along SR 20, east of Kibbe Road will continue to do so following the completion of the proposed access improvements. The only difference is that the traffic will be accessing SR 20 at Kibbe Road rather than at Hallwood Boulevard as it does currently. Although the trucks on this segment of roadway will be accelerating and decelerating at the Kibbe Road intersection, as noted in the previous section, the noise associated with this acceleration and deceleration is predicted to be approximately 11 dB lower than the maximum noise levels currently experienced along this segment of Kibbe Road. As a result, the project would result in a net decrease in Teichert heavy truck traffic noise levels at the existing residences in the immediate vicinity of the Kibbe Road intersection.

Because the Teichert trucks only represent approximately 2% of the daily traffic volume on SR 20 east of Kibbe Road, the overall decrease in noise levels would be negligible, but a net decrease in noise levels is predicted to result from the project at those residences nonetheless. Tables 6 and 7 indicate that the net change in traffic noise levels along this segment of SR 20 would be 0.0, which is less than significant. Approximately 23 residences were identified through aerial imagery as being located adjacent to SR 20 within 1 mile east of Kibbe Road. None of these residences would be adversely impacted by the proposed project.

It should be noted that, during observations of 88 single-event heavy truck movements at the intersections of SR 20, Hallwood Boulevard and Walnut Avenue, no use of engine brakes during any of those operations was observed by BAC staff. As a result, engine brake usage is not predicted to occur with enough frequency at the Kibbe Road intersection (if at all), to appreciably affect the overall ambient noise environment at these residences.

This analysis concludes that the project will not result in any increase in traffic noise levels at existing residences located along SR 20 east of the Kibbe Road intersection. Rather, this analysis concludes that the project may result in a minor decrease in traffic noise levels at those residences located nearest to the intersection. Therefore, this analysis concludes that noise impacts to residents east of the SR 20 / Kibbe Road intersection would be ***less than significant***.

Residences & Sensitive Receivers along SR 20 between Hallwood Blvd and Kibbe Rd

Currently, Teichert Hallwood trucks depart the Hallwood facility and access SR 20 via Hallwood Boulevard, and arrive at the site via Walnut Avenue. Once the departing trucks reach Hallwood Boulevard, approximately 25% head east, with 75% heading west. As a result, approximately 25% of the Teichert trucks currently travel SR 20 between Hallwood Road and Kibbe Road (and on to points further east, but this section focuses on SR 20 between Hallwood Road and Kibbe Road).

Following the relocation of the Hallwood site access route to Kibbe Road, 75% of the Teichert truck traffic will travel on SR 20 between Hallwood Road and Kibbe Road. As a result, traffic volumes will increase on this segment of SR 20 as a result of the project. Tables 5 and 6 indicate that the net change in traffic noise levels along this segment of SR 20 would range from 1.2 to 1.4 dB L_{dn} relative to existing conditions, and 0.8 to 1.1 dB L_{dn} relative to cumulative conditions without the project.

Approximately 12 residences, a school, and a church were identified through aerial imagery as being located adjacent to SR 20 between Hallwood Boulevard and Kibbe Road. Because the projected worst-case increases in daily Teichert heavy truck trips on this segment of SR 20 following utilization of the Kibbe Road access to the Teichert Hallwood Plant would be less than 1.5 dB L_{dn} for both existing and cumulative conditions at these sensitive receptors, this increase would be considered ***less than significant*** relative to the Table 4 criteria.

Residences & Sensitive Receivers along SR 20 between Walnut Ave and Hallwood Blvd.

Currently, Teichert Hallwood trucks depart the Hallwood facility and access SR 20 via Hallwood Boulevard. The trucks arriving at the Teichert Hallwood facility from the east (approximately 25%) use Hallwood Boulevard, whereas trucks arriving from the west (approximately 75%) using Walnut Avenue. As a result, this segment of SR 20 currently carries approximately 37% of the total Teichert Hallwood heavy truck traffic.

Following the relocation of the Hallwood facility site access route to the Kibbe Road location, approximately 75% of the Teichert truck traffic will travel on SR 20 between Hallwood Road and Walnut Avenue. Tables 5 and 6 indicate that the net change in traffic noise levels along this segment of SR 20 would be 1.1 dB L_{dn} relative to existing conditions, and 0.8 dB L_{dn} relative to cumulative conditions without the project.

Approximately 22 residences were identified through aerial imagery as being located adjacent to SR 20 between Walnut Avenue and Hallwood Boulevard. Because the projected worst-case increases in daily Teichert heavy truck trips on this segment of SR 20 following utilization of the Kibbe Road access to the Teichert Hallwood Plant would be less than 1.5 dB L_{dn} at these sensitive receptors for both existing and cumulative conditions, this impact is considered ***less than significant*** for this roadway segment.

Residences and Sensitive Receivers along SR 20 West of Walnut Avenue

All of the Teichert Hallwood traffic which currently travels along SR 20 west of Walnut Avenue will continue to do so following the completion of the Project. Because there would be no change in Teichert Hallwood traffic on this segment of road following completion of the Project, there would be no anticipated change in traffic noise levels along this segment. As a result, noise impacts at the residences along this roadway segment are predicted to be ***less than significant***.

Residents and Sensitive Receptors Located Along Walnut Ave. and Hallwood Blvd.

Currently, all Teichert traffic utilizes Walnut Ave. and Hallwood Blvd. to enter and leave the Teichert Hallwood facility. Because 100% of Teichert traffic would utilize the proposed Project access at Kibbe Road to enter and depart the Teichert Hallwood facility, all current Teichert traffic on Walnut Ave. and Hallwood Blvd. would be eliminated. The result would be a substantial decrease in traffic noise levels at existing residences and other sensitive receptors located along these roadway segments.

Tables 6 and 7 indicate that the net change in traffic noise levels along Hallwood Boulevard and Walnut Avenue be *decreases* of 12 to 16 dB L_{dn} relative to existing conditions, and *decreases* of 9 to 14 dB L_{dn} relative to cumulative conditions without the project.

Residential Receptor Located along the Proposed Haul Road

Currently, the roadway extending south of the SR 20 / Kibbe Road intersection is utilized by local vehicles accessing an existing residence on an agricultural parcel, other agricultural related vehicles, and vehicles accessing adjacent irrigation delivery systems. As noted previously, there is only one residential receptor located along proposed haul route (referred to herein as Receptor 1 on Figures 1-A through 1-C, and Appendix E).

Following the relocation of the Hallwood facility access route to Kibbe Road, 100% of the Teichert traffic will travel on the new haul road where a limited amount of traffic exists currently. Residence 1 (see Figures 1-A through 1-C for specific location of Residence 1), is technically not considered to be noise-sensitive by the County due to its agricultural zoning, but for purposes of this assessment that residence is considered to be noise-sensitive.

Because project traffic is expected to be moving at slow speeds as it passes Receptor 1 (approximately 25 mph), the FHWA traffic noise prediction model was not utilized for the prediction of project noise generation at Receptor 1. Rather, BAC utilized extensive single-event heavy truck passby data collected at long-term noise measurement Site 2 to quantify project noise generation at this residence.

Receptor 1 is located approximately 450 feet from the intersection of Kibbe Road. Noise measurement Site 2 is located approximately 450 feet from the Teichert Hallwood facility entrance. As a result, the acceleration and deceleration of heavy trucks measured at Site 2 are considered representative of the acceleration and deceleration of heavy trucks which will be experienced at Receptor 1. In addition, with the exception of 2 residences located at the extreme eastern terminus of Walnut Avenue, all of the traffic which passes noise measurement Site 2 was generated by the Teichert Hallwood facility, making Site 2 an excellent location for the isolation of Teichert heavy truck traffic noise in the absence of other noise sources.

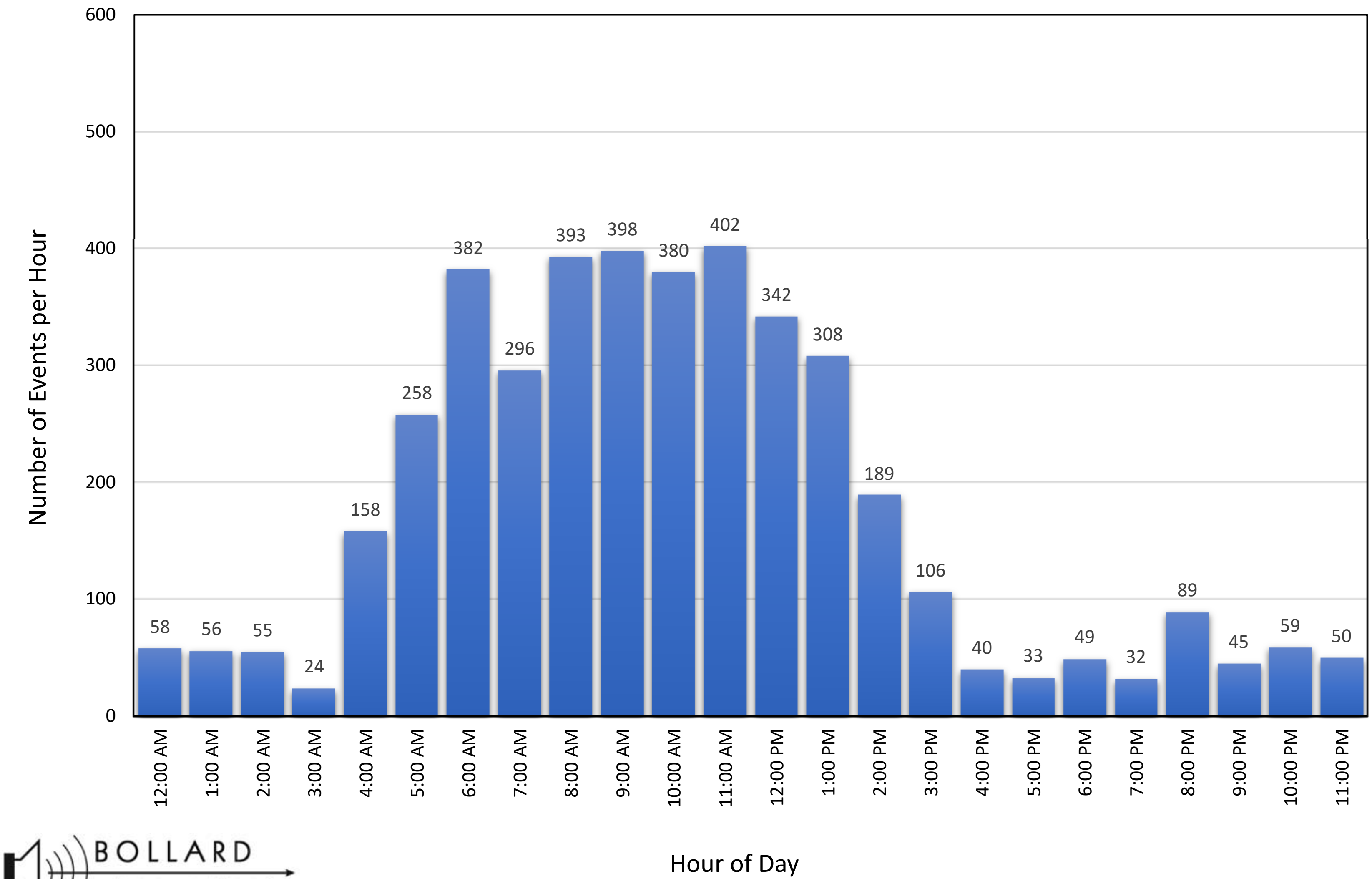
During the 18-day (432 consecutive hour) noise monitoring survey conducted at measurement Site 2, the sound level meter was programmed to log noise level data for discrete single events which exceeded 65 dBA for a duration of at least 3 seconds. The sound level meter also stored digital audio recordings of each logged single event meeting the programmed thresholds to allow subsequent evaluation of the noise source responsible for the exceedance.

During the Site 2 monitoring survey, in excess of 4,200 discrete single events exceeding the 65 dB threshold for 3 seconds were logged. BAC evaluated these events to determine if they were likely Teichert-generated heavy truck passbys or if they were caused by other sources of noise unrelated to Teichert operations. Sources of noise determined not to be attributable to Teichert operations were removed from the data set. Following removal of single-event records clearly not related to Teichert operations, a total of 4,202 discrete single-event records believed to be attributable to heavy truck passbys remained. BAC conducted extensive analysis of the single-event data collected at measurement Site 2 which was believed to have likely been attributable to Teichert Hallwood facility heavy truck passbys.

Figure 4 shows a histogram of the hourly distribution of the single event data. From the Figure 4 data, BAC computed that approximately 80% of the truck passbys occurred during daytime hours (7 am – 10 pm) while approximately 20% occurred during nighttime hours (10 pm – 7 am).

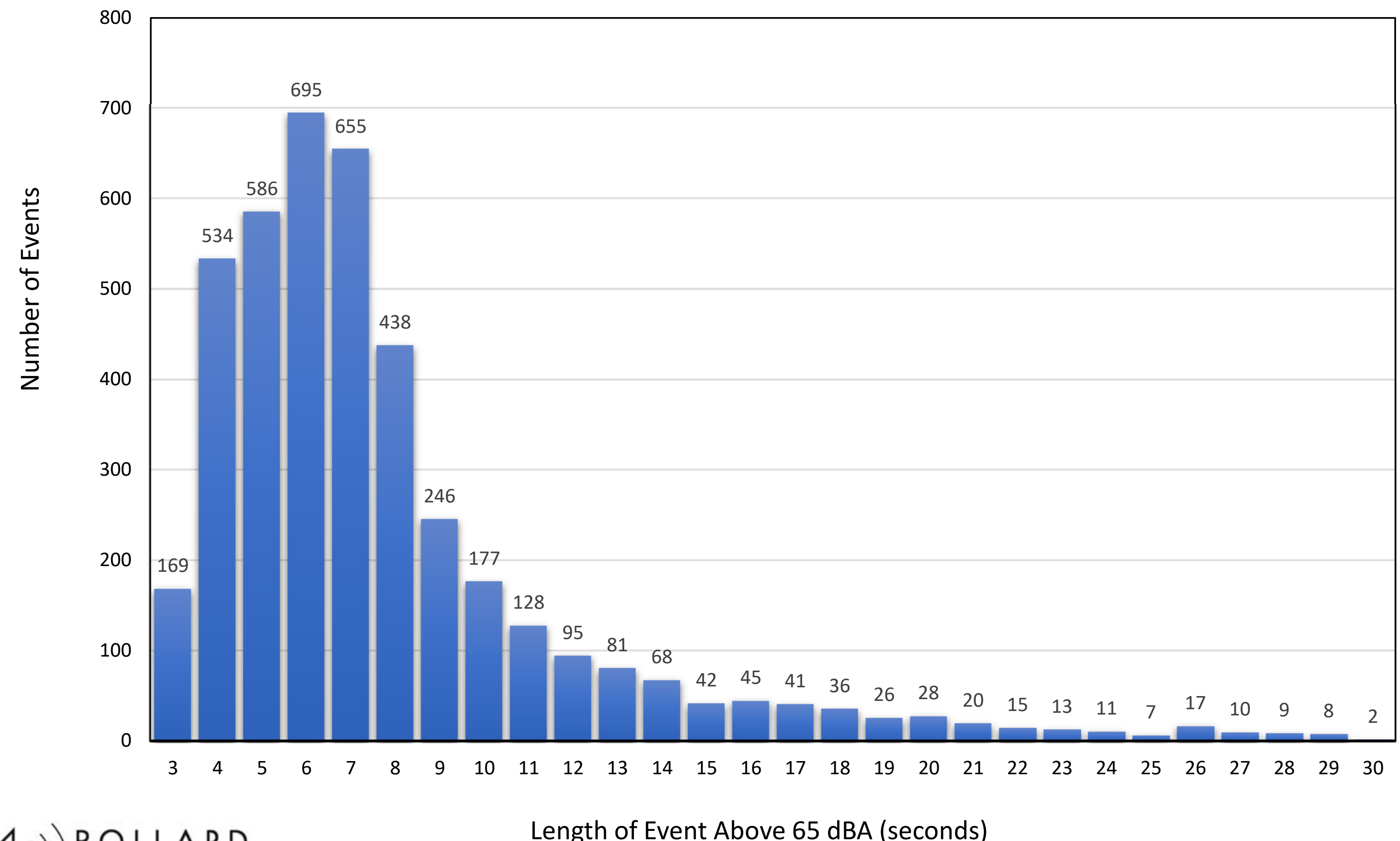
Figure 5 shows a histogram of the duration of time the single events exceeded the 65 dB threshold. As indicated in Figure 5, the most recurring durations of time the 65 dB threshold was exceeded ranged from 4 to 8 seconds per event, with this period representing approximately 70% of the over 4,000 single events logged during the noise survey.

Figure 4
Hourly Distribution of Single Events Collected at Long-Term Monitoring Site 2
Teichert Kibbe Road Project - January 23-February 7, 2021



BOLLARD Acoustical

Figure 5
Duration of Time Single Events Exceeded 65 dBA at Long-Term Monitoring Site 2
Teichert Kibbe Road Project - January 23-February 7, 2021



BOLLARD Acoustical

Figure 6 shows a histogram of the measured maximum noise levels for the single-event data. As indicated in Figure 6, the most recurring maximum noise levels associated with the logged single events ranged from 72-75 dB L_{max}, with the most frequently measured maximum level being 74 dB L_{max}.

Finally, Figure 7 shows the Sound Exposure Level (SEL) for each single event. The SEL represents the entire sound energy of the event compressed into a 1-second period. As such, SEL provides a means to accurately compute hourly average noise levels (L_{eq}) and day-night average noise levels (L_{dn}) from measured single-event data regardless of variations in durations of the single event.

BAC utilized the noise level data represented by Figures 4-7 to compute project noise exposure at the interior of the residence and outdoor activity area of Receptor 1, the nearest (and only) receptor to the proposed Project haul route. The outdoor activity area of Receptor 1 (rear yard area as defined by Yuba County noise policy), is located further from the proposed Kibbe Road extension than the front façade of the residence where interior levels were computed (approximately 250 to the backyard area versus 180 feet to the front building façade). Noise levels at the interior of the residence were conservatively evaluated by subtracting 10 dB from the levels predicted at the front building façade to represent conditions with the windows of that residence in the open position. When windows are in the closed position, interior levels are expected to be approximately 10 dB lower.

The results of the project heavy truck traffic noise computations at the building façade and outdoor activity area of Receptor 1 are presented in Table 8A for Alternative Alignments 1 and 2, and in Table 8B for Alternative Alignment 3. The Table 8A & 8B computations are based on maximum capacity operations at the Teichert Hallwood facility (882 daily and 122 peak hour heavy truck trips). As such, they represent worst-cast project noise generation conditions. Tables 8A and 8B also show the existing baseline ambient noise environment at Receptor 1 computed from the long-term ambient noise measurement data collected at Site 3 (see Figure 1 for monitoring site locations), the changes in noise levels due to the project alignments, and the significance of those changes at Receptor 1.

The Table 8A data indicate that the worst case project noise levels at Receptor 1 are predicted to be very similar to existing ambient conditions at both the interior and exterior locations of this residence (0 to 4 dB increase). The Table 8B data indicate that the worst case project noise levels at Receptor 1 are predicted to be virtually identical to existing ambient conditions at both the interior and exterior locations of this residence (0 to 1 dB increase). In addition, noise generated by the project is predicted to be satisfactory relative to the County's 45 dB L_{dn} interior and 60 dB L_{dn} exterior noise level standards for all three project alignment alternatives. As a result, no adverse noise impacts are identified for this residence as a result of the project, and this impact is considered ***less than significant***.

Table 8A
Predicted Worst-Case Teichert Kibbe Project Haul Road Noise Levels at Receptor 1 – Alignments 1 and 2

		Project Noise Generation				Baseline Ambient			Baseline + Project			Increase due to Project			Increases Significant?
Location	Distance	SEL	Lmax	Pk Hr Leq	Ldn	Lmax	Pk Hr Leq	Ldn	Lmax	Pk Hr Leq	Ldn	Lmax	Pk Hr Leq	Ldn	
Interior	180 ft	57	47	42	42	48-54	40	42	48-54	44	45	0	4	3	No
Rear Yard	250 ft	65	54	50	50	59-64	50	52	59-64	53	54	0	3	2	No

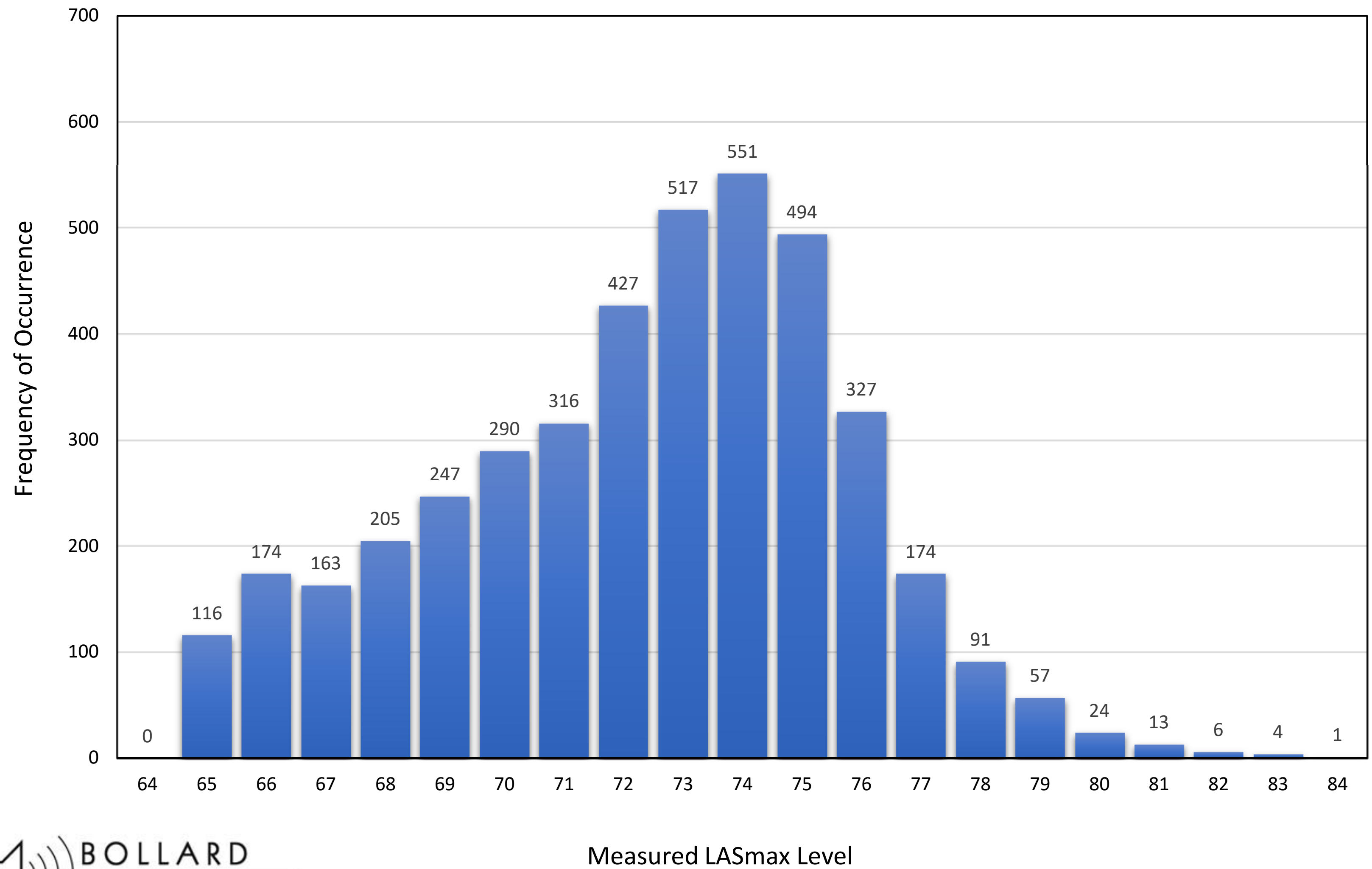
Source: Bollard Acoustical Consultants, Inc. (BAC) 2021

Table 8B
Predicted Worst-Case Teichert Kibbe Project Haul Road Noise Levels at Receptor 1 – Alignment 3

		Project Noise Generation				Baseline Ambient			Baseline + Project			Increase due to Project			Increases Significant?
Location	Distance	SEL	Lmax	Pk Hr Leq	Ldn	Lmax	Pk Hr Leq	Ldn	Lmax	Pk Hr Leq	Ldn	Lmax	Pk Hr Leq	Ldn	
Interior	800 ft	47	37	32	32	48-54	40	42	48-54	41	42	0	1	0	No
Rear Yard	870 ft	55	44	40	40	59-64	50	52	59-64	50	52	0	0	0	No

Source: Bollard Acoustical Consultants, Inc. (BAC) 2021

Figure 6
Maximum Noise Levels of Single Events Logged at Long-Term Monitoring Site 2
Teichert Kibbe Road Project - January 23-February 7, 2021



BOLLARD Acoustical

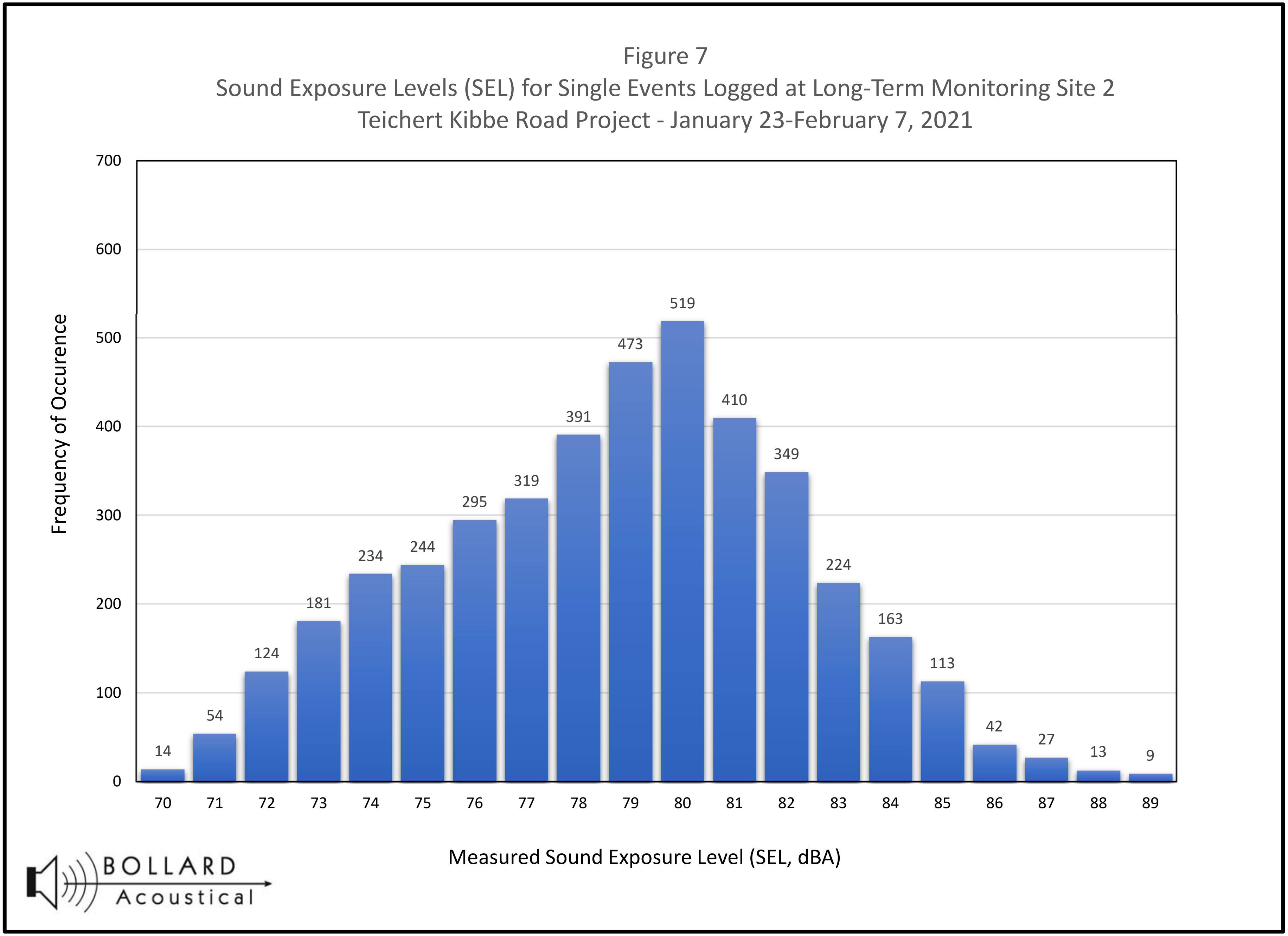


Figure 7
Sound Exposure Levels (SEL) for Single Events Logged at Long-Term Monitoring Site 2
Teichert Kibbe Road Project - January 23-February 7, 2021
Frequency of Occurence
700
600
500
400
300
200
100
0
14
54
124
181
234
244
295
319
391
473
519
410
349
224
163
113
42
27
13
9
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
Measured Sound Exposure Level (SEL, dBA)
BOLLARD
Acoustical

Sleep Disturbance Noise Impacts

Table 8-A indicates that interior Sound Exposure Levels (SEL) within Residence 1 would be approximately 57 dBA during individual truck passages on the proposed Hallwood access route under Alternatives 1 and 2. Under Alternative 3, the predicted interior SEL computes to 47 dBA within Residence 1 during single-event passbys of heavy trucks on the proposed access route. As noted in the Criteria section of this report, the threshold of significance for sleep disturbance is 65 dBA SEL within sleeping rooms. Because single-event truck passby SEL values are computed to be below 60 dB SEL under all three project alternatives, this impact is considered ***less than significant.***

Construction Noise

During the construction phases of the Project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in the roadway construction would generate maximum noise levels ranging from 85 to 90 dB at a distance of 100 feet. Construction activities would be temporary in nature and would occur during normal daytime working hours as required by the county code. In addition, daytime construction is exempt from the provisions of the county noise standards. Finally, maximum construction noise levels are not anticipated to exceed measured existing maximum noise levels generated by traffic on Highway 20 in the immediate project vicinity. As a result, construction activities are not predicted to result in significant adverse noise impacts at existing noise-sensitive land uses in the project vicinity provided that construction activities are limited to daytime hours as required by the County Code. As a result, construction noise impacts associated with this project are considered ***less than significant***.

Vibration Generated by Project Construction and Operations

Much of the construction of the proposed haul route extension has been previously completed. During the remaining project construction, heavy equipment would be used for grading, excavation, and paving, which would generate localized vibration in the immediate vicinity of the construction. The nearest identified existing sensitive structure (Receptor 1), is located approximately 180 feet from where from construction activities would occur along the project haul route.

Table 9 includes the range of vibration levels for equipment commonly used in general construction projects at a distance of 25 feet. The Table 9 data also include predicted equipment vibration levels at the nearest existing residence to the project area located approximately 180 feet away.

Table 9
Vibration Source Levels for Construction Equipment and Predicted Levels at 215 Feet

Equipment	Maximum Vibration Level at 25 Feet (PPV)[1]	Predicted Maximum Vibration Level at 180 Feet (PPV)
Large bulldozer	0.089	0.004
Hoe ram	0.089	0.004
Caisson drilling	0.089	0.004
Loaded trucks	0.076	0.003
Backhoe	0.051	0.002
Excavator	0.051	0.002
Grader	0.051	0.002
Loader	0.051	0.002
Jackhammer	0.035	0.001
Small bulldozer	0.003	<0.001

[1] PPV = Peak Particle Velocity

Source: 2018 FTA Transit Noise and Vibration Impact Assessment Manual and BAC calculations

As shown in Table 9, vibration levels generated from on-site construction activities and loaded trucks at the nearest existing structures located approximately 180 feet away (Receptor 1 to the east) are predicted to be well below the strictest Caltrans thresholds for damage to residential structures of 0.50 in/sec PPV. In addition, the predicted vibration levels in Table 9 are well below the threshold for a barely perceptible human response as defined by Caltrans. Therefore, on-site construction within the project area is not expected to result in excessive groundborne vibration levels at nearby existing residential uses.

Because vibration levels due to the proposed project are expected to satisfy the applicable Caltrans groundborne impact vibration criteria, this impact is considered to be ***less than significant***.

Project Alternatives

Alternative 2 is essentially the same alignment of the proposed haul route as Alternative 1, except that the haul route shifts to the east at the intersection of Kibbe Road to align with that current intersection geometry. This shift would not, however, result in the haul road moving closer to existing residences, including Residence 1, than Alternative 1. This is because the closest distance from the proposed haul routes to Residence 1 would remain approximately 180 feet under both Alternatives 1 and 2.

Alternative 3 would shift the proposed haul road to the west, thereby creating a larger setback from Residence 1 (see Figure 1-C). Although Alternative 3 would locate the haul road closer to the nearest residences on the south side of SR 20, those residences would still be in excess of 900 feet from the haul route and would not be adversely impacted.

Conclusions

The proposed Teichert Kibbe Road Project is not predicted to result in significant noise level increases or exceedance of Yuba County noise standards at existing residences or other noise-sensitive receptors located along SR 20 (both east and west of Kibbe Road), or at the existing residence located approximately 180 feet east of the proposed Project haul road.

Appendix A
Acoustical Terminology

Acoustics The science of sound.

Ambient Noise The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.

Attenuation The reduction of an acoustic signal.

A-Weighting A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.

Decibel or dB Fundamental unit of sound. A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.

CNEL Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.

Frequency The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.

IIC Impact Insulation Class (IIC): A single-number representation of a floor/ceiling partition's impact generated noise insulation performance. The field-measured version of this number is the FIIC.

L_{dn} Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.

L_{eq} Equivalent or energy-averaged sound level.

L_{max} The highest root-mean-square (RMS) sound level measured over a given period of time.

Loudness A subjective term for the sensation of the magnitude of sound.

Masking The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.

Noise Unwanted sound.

Peak Noise The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.

RT_{60} The time it takes reverberant sound to decay by 60 dB once the source has been removed.

STC Sound Transmission Class (STC): A single-number representation of a partition's noise insulation performance. This number is based on laboratory-measured, 16-band (1/3-octave) transmission loss (TL) data of the subject partition. The field-measured version of this number is the FSTC.

Legend

Microphone Location: 25 feet from Walnut Avenue Centerline.

Teichert Kibbe Road Project

Representative Noise Measurement Site Photos: Long-Term Site 1

Appendix B-1

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Legend

Microphone Location: 50 feet from Walnut Avenue centerline.

Teichert Kibbe Road Project

Representative Noise Measurement Site
Photos: Long-Term Site 2

Appendix B-2

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Legend

Microphone Location: 450 feet south of Highway 20 centerline.

Teichert Kibbe Road Project

Representative Noise Measurement Site Photos: Long-Term Site 3

Appendix B-3

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Legend

Microphone Location: 75 feet from Highway 20 centerline.

Note that this location was placed in an elevated position to provide the microphone an unobstructed view of Highway 20.

Teichert Kibbe Road Project

Representative Noise Measurement Site
Photos: Long-Term Site 4

Appendix B-4

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Legend

Microphone Location: 175 feet from Highway 20 centerline.

Teichert Kibbe Road Project

Representative Noise Measurement Site
Photos: Short-Term Site A

Appendix B-5

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Legend

Microphone Location: 115 feet from Highway 20 centerline.

Teichert Kibbe Road Project

Representative Noise Measurement Site
Photos: Short-Term Site B

Appendix B-6

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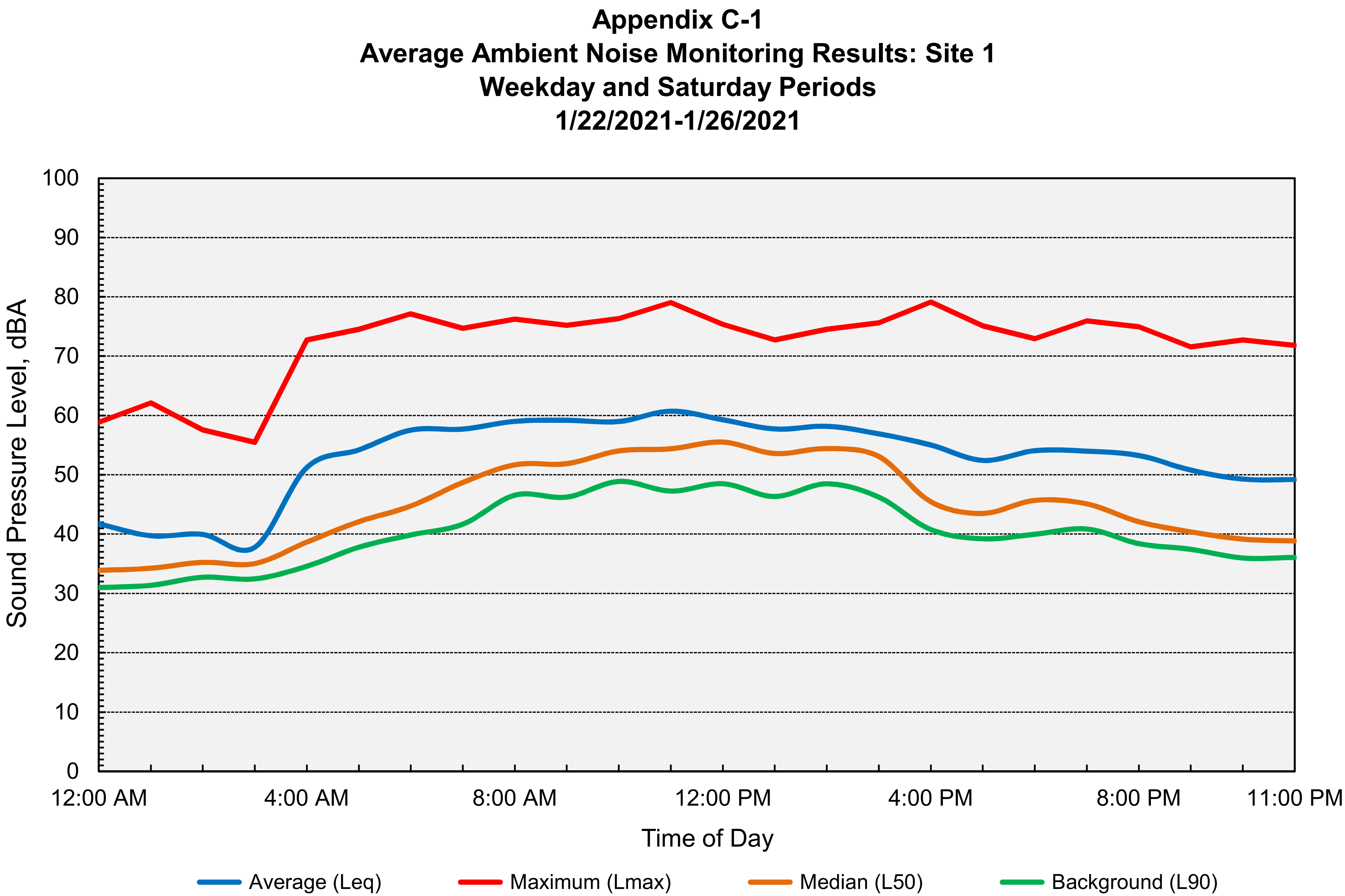

Computed Ldn = 59 dB

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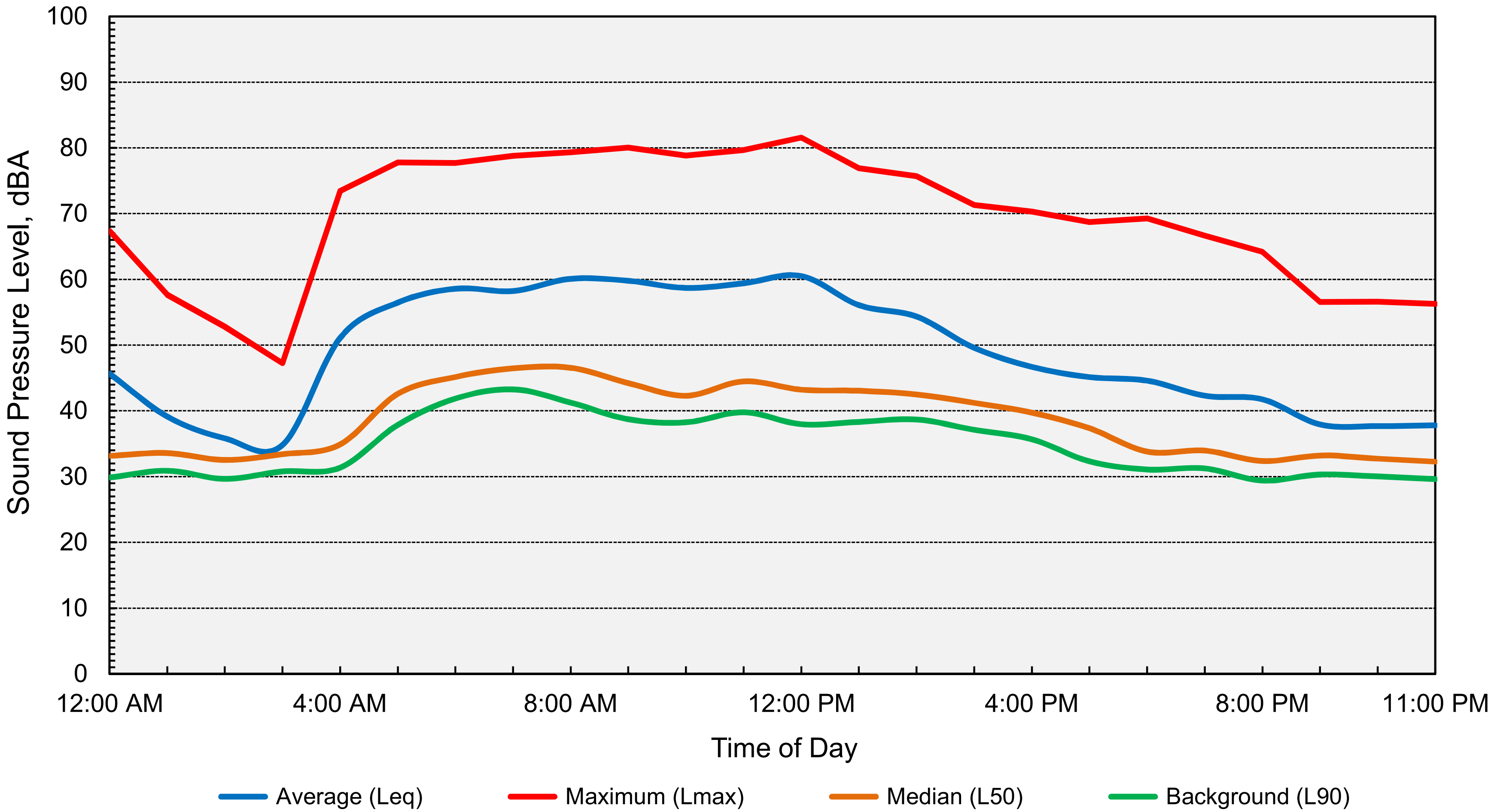
Appendix C-2
Average Ambient Noise Monitoring Results: Site 2
Weekday and Saturday Periods
1/21/2021-2/8/2021



Computed Ldn = 59 dB

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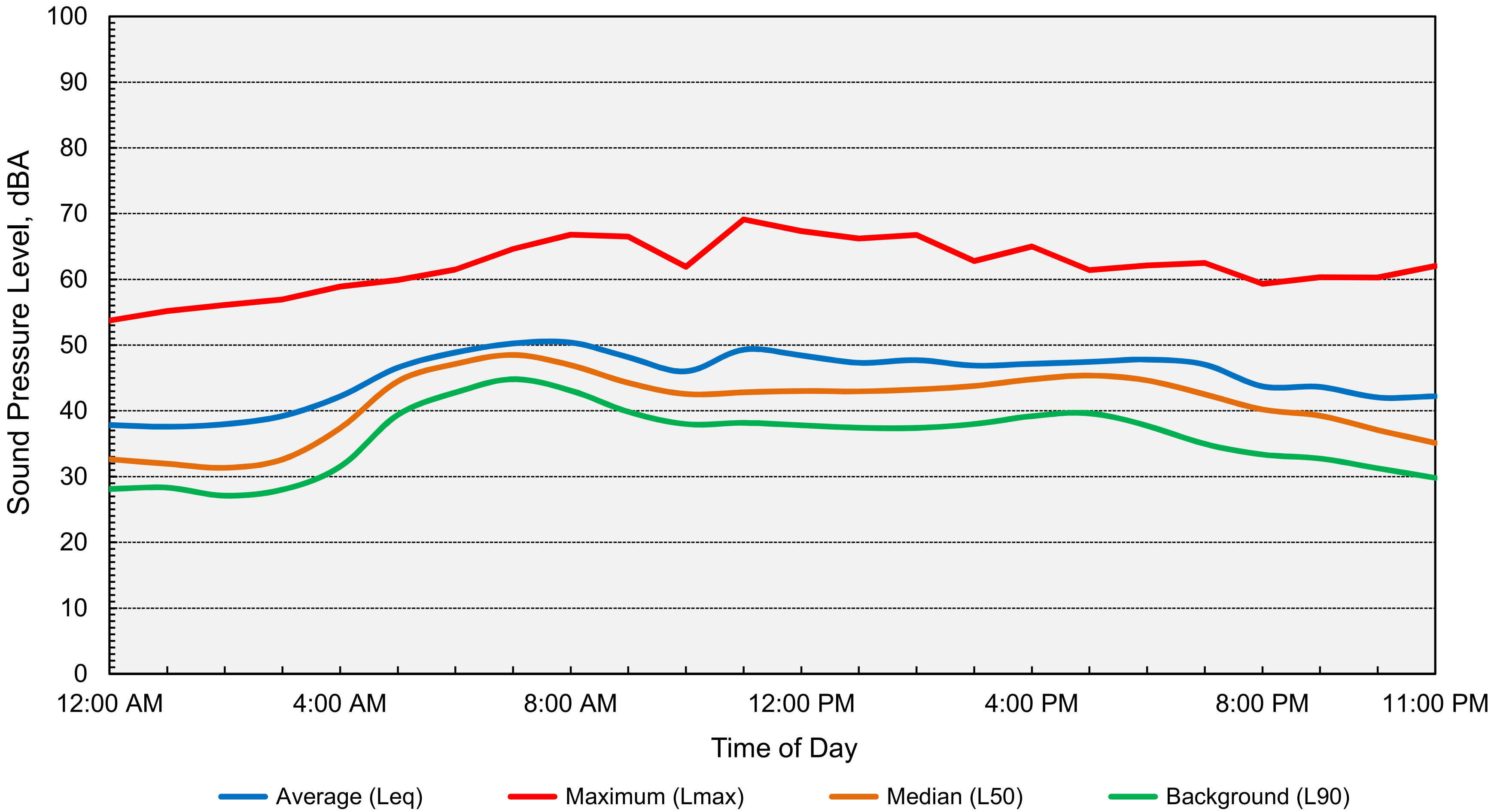
Appendix C-3
Average Ambient Noise Monitoring Results: Site 3
Weekday and Saturday Periods
1/22/2021-2/8/2021



Computed Ldn = 52 dB

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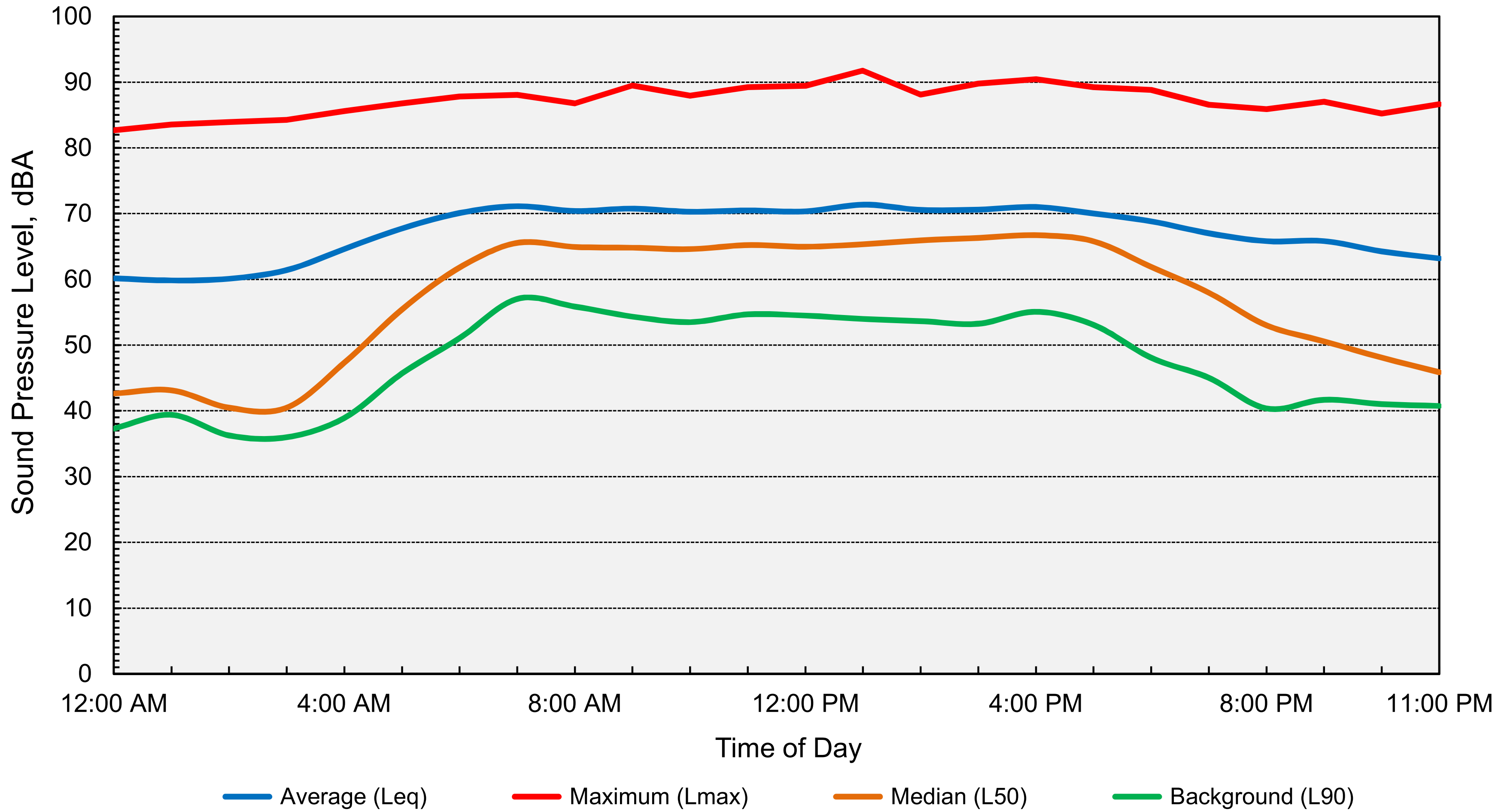
Appendix C-4
Average Ambient Noise Monitoring Results: Site 4
Weekday and Saturday Periods
1/22/2021-2/8/2021



Computed Ldn = 73 dB

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Appendix D-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2020-155 Teichert Kibbe Road Project
Description: Existing No Project
Ldn/CNEL: Ldn
Hard/Soft: soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	SR 20	Walnut to Hallwood	11,130	80		20	1.8	3.5	50	100
2	SR 20	Hallwood to Woodruff	10,860	80		20	1.8	3.5	50	100
3	SR 20	Woodruff to Loma Rica	11,900	80		20	1.8	3.5	55	100
4	SR 20	Loma Rica to Kibbe	9,140	80		20	1.8	3.5	60	100
5	SR 20	East of Kibbe	8,940	80		20	1.8	3.5	60	100
6	Walnut Avenue	SR 20 to Hallwood	890	80		20	2	37	35	50
7	Walnut Avenue	Hallwood to Teichert Entrance	1,300	80		20	2	68	35	50
8	Hallwood Blvd	SR 20 to Hooper Rd	1,180	80		20	2	47	35	50
9	Hallwood Blvd	Hooper Rd to Walnut Ave	1,100	80		20	2	50	35	50

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Appendix D-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2020-155 Teichert Kibbe Road Project
Description: Additional Project Truck Trips Only
Ldn/CNEL: Ldn
Hard/Soft: soft

Segment	Roadway Name	Segment Description	Additional ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	SR 20	Walnut to Hallwood	331	80		20	0.0	100.0	50	100
2	SR 20	Hallwood to Woodruff	441	80		20	0.0	100.0	50	100
3	SR 20	Woodruff to Loma Rica	441	80		20	0.0	100.0	55	100
4	SR 20	Loma Rica to Kibbe	441	80		20	0.0	100.0	60	100
5	SR 20	East of Kibbe	-	80			0.0	100.0	60	100
6	Walnut Avenue	SR 20 to Hallwood	331	80		20	0.0	100.0	35	50
7	Walnut Avenue	Hallwood to Teichert Entrance	882	80		20	0.0	100.0	35	50
8	Hallwood Blvd	SR 20 to Hooper Rd	551	80		20	0.0	100.0	35	50
9	Hallwood Blvd	Hooper Rd to Walnut Ave	551	80		20	0.0	100.0	35	50

NOTE: Segments 1-5 are to be added to Existing and Cumulative No Project noise levels to arrive at Existing + Project and Cumulative + Project traffic noise levels. Segments 6-9 are to be subtracted from Existing and Cumulative No Project noise levels to arrive at Existing + Project and Cumulative + Project noise levels.

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Appendix D-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2020-155 Teichert Kibbe Road Project
Description: Cumulative No Project
Ldn/CNEL: Ldn
Hard/Soft: soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	SR 20	Walnut to Hallwood	15,300	80		20	1.8	3.5	50	100
2	SR 20	Hallwood to Woodruff	15,000	80		20	1.8	3.5	50	100
3	SR 20	Woodruff to Loma Rica	21,300	80		20	1.8	3.5	55	100
4	SR 20	Loma Rica to Kibbe	17,400	80		20	1.8	3.5	60	100
5	SR 20	East of Kibbe	17,200	80		20	1.8	3.5	60	100
6	Walnut Avenue	SR 20 to Hallwood	1,400	80		20	2	24	35	50
7	Walnut Avenue	Hallwood to Teichert Entrance	1,800	80		20	2	49	35	50
8	Hallwood Blvd	SR 20 to Hooper Rd	1,700	80		20	2	32	35	50
9	Hallwood Blvd	Hooper Rd to Walnut Ave	1,600	80		20	2	34	35	50

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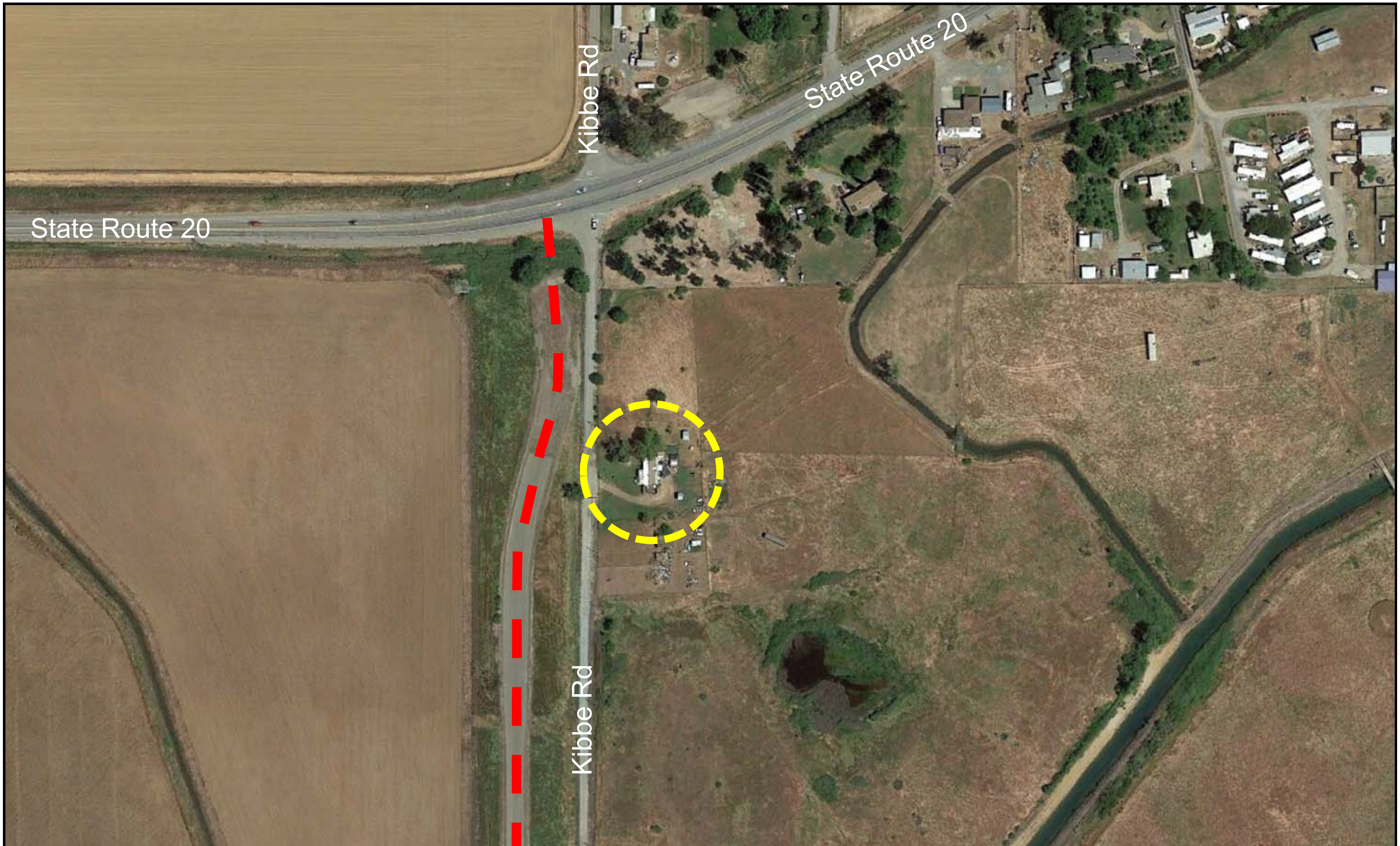

Legend

Proposed Kibbe Road Haul Route (Alternative 1)

Receptor #1 Location

N

Scale (Feet)

0 250 500

Teichert Kibbe Road Project

Receptor #1 Location

Yuba County, California

Appendix E

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APPENDIX G

State Route 20/Kibbe Road Intersection and Haul Road

Draft Transportation Impact Study

Prepared for:
Teichert Aggregates

August 2021

RS20-3973

FEHR PEERS

Table of Contents

Appendices

List of Figures

List of Tables

EXECUTIVE SUMMARY

This study analyzes the transportation impacts associated with the proposed State Route (SR) 20/Kibbe Road Intersection and Haul Road project site to be located along SR 20 in Yuba County. The analysis covers project impacts to the roadway, bicycle, pedestrian, and transit systems, as well as project impact on vehicle-miles traveled. Vehicle-miles traveled (VMT) is evaluated as a primary metric to determine CEQA transportation impacts, while Level of Service (LOS) is evaluated to identify potential improvement projects that may be included in conditions of approval for the project entitlements.

PROJECT DESCRIPTION

The proposed project would consist of a new haul road to the Teichert Aggregates Hallwood facility that would connect the northern portion of the mining site directly to SR 20 at one of three locations near Kibbe Road. The four project alternatives are:

- Build Alternative 1 – realign Kibbe Road north and south of SR 20 so that it connects to SR 20 approximately 100 feet west of the current intersection
- Build Alternative 2 – maintain the current alignment of Kibbe Road at SR 20
- Build Alternative 3 – construct a new SR 20 intersection approximately 975 feet west of the current SR 20/Kibbe Road intersection (or about 450 feet east of the Cordua Canal)
- No Build – no access road is built and maintain the haul route as is

Under the Build alternatives, the proposed access road would serve as the main haul road, and the existing access on Walnut Avenue would only permit emergency, employee, and vendor vehicles.

STUDY AREA, ANALYSIS PERIODS, AND SCENARIOS

For the LOS evaluation, eight intersections and nine roadway segments in the vicinity of the project were selected for study under weekday AM peak hour, PM peak hour, and daily conditions. These facilities were analyzed under existing, existing plus project, cumulative, and cumulative plus project conditions. Existing conditions represents conditions based on October 2019 data plus an increase in Hallwood facility site trips commensurate with expected site trip generation (see Chapter 3 for details).

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 1: Under Build alternatives 1 and 2, school bus operations on the southwest corner of the SR 20/Kibbe Road intersection would be disrupted due to the conflict between school buses loading or unloading on the eastbound approach and inbound project traffic using the eastbound right turn lane. In addition, children are typically picked up and dropped off on the side of SR 20 closest to their home, thereby not requiring recurring pedestrian highway crossings. However, school children crossing the unmarked crosswalk on the SR 20/Kibbe Road northbound approach would also conflict with inbound/outbound project traffic. These conflicts would result in a significant impact.

Mitigation Measure 1: Under Build alternatives 1 and 2, construct an eastbound bus pullout on the far side of the SR 20/Kibbe Road intersection (i.e., just east of the intersection). This would eliminate the conflict between school buses and right-turning vehicles. With this improvement, school children would be picked up and dropped off on the east side of the intersection, closer to where all residences on the south side of SR 20 within one-quarter mile are currently located. This would reduce the conflict between school children and project traffic by minimizing the number of school children required to cross the unmarked crosswalk on the northbound approach of SR 20/Kibbe Road.

Implementation of Mitigation Measure 1 would substantially reduce the proposed project's potential impacts to the local roadway network, transit system, and pedestrian system to a less-than-significant level.

Impact 2: The proposed project would consist of various construction activities, with the precise scope and location depending on the Build alternative and the ultimate design of the new haul road and SR 20/Kibbe Road intersection. Construction would generate new truck and employee trips until completion, and the construction process could cause lane closures, damage to roadways, friction between construction site vehicles and travelers on SR 20, increased conflicts with bicyclists, pedestrians, and residents on Kibbe Road, disruption of school bus operations at SR 20/Kibbe Road, and increased conflicts with school children. This would result in a significant impact.

Mitigation Measure 2: Prior to issuance of construction permits, the project applicant shall prepare a Construction Traffic Management Plan (CTMP) to the satisfaction of the Yuba County Community Development and Services Agency. The plan shall include (but not be limited to) items such as:

- Guidance on the number and size of trucks per day entering and leaving the project site;
- Identification of arrival/departure times that would minimize traffic impacts;
- Approved truck circulation patterns;

- Locations of staging areas;
- Locations of employee parking and methods to encourage carpooling;
- Methods for partial/complete street closures (e.g., timing, signage, location and duration restrictions);
- Criteria for use of flaggers and other traffic controls;
- Preservation of safe and convenient passage for bicyclists and pedestrians through/around construction areas;
- Coordination with the Marysville Joint Unified School District to address construction activity conflicts with school children and the SR 20/Kibbe Road school bus operations;
- Monitoring for roadbed damage and timing for completing repairs;
- Limitations on construction activity during peak/holiday weekends and special events;
- Preservation of emergency vehicle access;
- Coordination of construction activities with construction of other projects that occur concurrently in Yuba County to minimize potential additive construction traffic disruptions, avoid duplicative efforts (e.g., multiple occurrences of similar signage), and maximize effectiveness of traffic mitigation measures (e.g., joint employee alternative transportation programs);
- Removing traffic obstructions during emergency evacuation events; and
- Providing a point of contact for Yuba County residents and guests to obtain construction information, have questions answered, and convey complaints.

The CTMP shall be developed such that the following minimum set of performance standards is achieved throughout project construction. It is anticipated that additional performance standards will be developed once details of project construction are better known.

- Delivery trucks do not idle/stage on SR 20.
- SR 20 and Kibbe Road do not feature any construction-related lane closures on peak activity days.
- All construction employees shall park in designated lots owned by the project applicant or on private lots otherwise arranged for by the project applicant.

- Roadways, unmarked crosswalks, bus loading/unloading areas, and pedestrian and bicycle facilities (e.g., roadway shoulders that could be used by pedestrians and/or bicyclists) shall be maintained clear of debris (e.g., rocks) that could otherwise impede travel and impact public safety.

Implementation of Mitigation Measure 2 would substantially reduce the short-term impacts of project construction to a less-than-significant level.

With implementation of Mitigation Measure 1 and 2, the proposed project would cause less-than-significant impacts to the local roadway network, transit system, bicycle system, and pedestrian system. In addition, the proposed project would not cause significant impacts to emergency vehicle access or VMT.

ROADWAY SYSTEM LEVEL OF SERVICE AND IMPROVEMENT PROJECTS

Under existing conditions, SR 20 intersections at Loma Rica Road, Hallwood Boulevard, and Walnut Avenue would operate at unacceptable LOS F during one or both peak hours. Construction of the proposed project would result in increases in delay at SR 20/Loma Rica Road and SR 20/Walnut Avenue, as well as in unacceptable LOS F operations at SR 20/Kibbe Road during the AM peak hour. The proposed project would decrease delay at the SR 20/Hallwood Boulevard intersection.

The unsignalized SR 20 intersections at Loma Rica Road, Woodruff Lane, and Hallwood Boulevard would meet the peak hour signal warrant for consideration of a traffic signal under both existing and existing plus project conditions. The SR 20/Kibbe Road intersection (under Build alternatives 1 and 2) and the SR 20/New Connection intersection (under Build alternative 3) would meet the peak hour signal warrant under existing plus project conditions.

The following intersection improvements would improve traffic operations to acceptable LOS under existing plus project conditions. An Intersection Control Evaluation study (per Caltrans' TOPD 13-02) will ultimately govern the determination of appropriate control type and lane configurations at these intersections.

- State Route 20/Kibbe Road (Alternative 1 and 2 only)
    - Install a traffic signal control with left turn pockets on the major road approaches and a right turn pocket on the eastbound approach. Alternatively, install a single lane roundabout control with a shared left/through/right turn lane on all approaches. These improvements would be fully funded project costs.
- State Route 20/Loma Rica Road

- Install a traffic signal. Because intersection operations are already deficient under existing conditions, the proposed project would be required to make a fair share contribution to intersection improvements.

Under cumulative conditions, the SR 20 intersections at Loma Rica Road, Woodruff Lane, Hallwood Boulevard, and Walnut Avenue would operate at unacceptable LOS F during one or both peak hours. Construction of the proposed project would result in increases in delay at SR 20/Loma Rica Road, SR 20/Woodruff Lane, and SR 20/Walnut Avenue during one or both peak hours. The proposed project would decrease delay at the SR 20/Hallwood Boulevard intersection. Additionally, construction of the project would result in unacceptable LOS F operations at SR 20/Kibbe Road during both peak hours and at the Alternative 3 connection to SR 20 during the AM peak hour.

Under cumulative and cumulative plus project conditions, the unsignalized SR 20 intersections at Loma Rica Road, Woodruff Lane, Hallwood Boulevard, and Walnut Avenue would meet the peak hour signal warrant for consideration of a traffic signal. Under cumulative plus project conditions, SR 20/Kibbe Road and the Alternative 3 connection with SR 20 would meet the peak hour signal warrant during the AM peak hour.

Although all roadway segments would operate at acceptable LOS under all scenarios, SR 20 between Walnut Avenue and Hallwood Boulevard would operate just below the maximum peak hour LOS E/F threshold of 2,120 vehicles under cumulative plus project conditions.

The following intersection improvements would improve traffic operations to acceptable LOS, unless otherwise specified, under cumulative plus project conditions. An Intersection Control Evaluation study (per Caltrans' TOPD 13-02) will ultimately govern the determination of appropriate control type and lane configurations at these intersections.

- State Route 20/Kibbe Road (Alternative 1 and 2 only)
  - Install a traffic signal control with left turn pockets on the major road approaches and a right turn pocket on the eastbound approach. Alternatively, install a single lane roundabout control with a shared left/through/right turn lane on all approaches. These improvements would be fully funded project costs.
- State Route 20/New Connection (Alternative 3 only)
  - Install a traffic signal control with a westbound left turn pocket, an eastbound right turn pocket, and a northbound right turn pocket. Alternatively, install a single lane roundabout control with a shared left/through/right turn lane on all approaches. These improvements would be fully funded project costs.

- State Route 20/Loma Rica Road
    - Widen SR 20 to two westbound lanes from east of SR 20/Loma Rica Road to west of SR 20/Woodruff Lane and install a traffic signal at SR 20/Loma Rica Road. The proposed project would be required to make a fair share contribution to these improvements.
- State Route 20/Woodruff Lane
    - Widen SR 20 to two westbound lanes from east of SR 20/Loma Rica Road to west of SR 20/Woodruff Lane and install a traffic signal at SR 20/Woodruff Lane. The proposed project would be required to make a fair share contribution to these improvements.
- State Route 20/Walnut Avenue
    - Construct a two-way left-turn lane on the south leg of the intersection and a southbound left turn on the north leg of the intersection. This would improve operations to better than cumulative No Build conditions, but the intersection would still operate at LOS F. Installation of a traffic signal would improve operations to LOS E. The proposed project would be required to make a fair share contribution to intersection improvements.

I. INTRODUCTION

This study describes the existing transportation system near the proposed SR 20/Kibbe Road Intersection and Haul Road project site in Yuba County and evaluates the potential impacts on the system associated with construction of the project. Roadway, transit, bicycle, and pedestrian components of the overall transportation system are included in the analysis. Vehicle-Miles Traveled is evaluated as a primary metric to determine CEQA transportation impacts. Level of Service is evaluated to identify feasible improvements to meet the Yuba County 2030 General Plan vehicle LOS policy. Vehicle LOS is not used to make CEQA impact determinations, rather to identify potential improvement projects that may be included in conditions of approval for the project entitlements. The traffic analysis focuses on a specific project study area for transportation and circulation, which is defined in Chapter 3, "Existing Conditions."

PROJECT DESCRIPTION

The Teichert Aggregates Hallwood facility is an existing 720-acre aggregate mining and processing facility located in rural Yuba County. The site is located on Walnut Avenue southeast of SR 20, east of Hallwood Boulevard and east of the Marysville city limit. The site has been used for mining since 1953, and Teichert Aggregates purchased the site in 1963. The property is accessed via Hallwood Boulevard and Walnut Avenue, which have served as the haul route to the site since the commencement of operations. Teichert Aggregates proposes to construct a new haul road to the Hallwood facility that will connect the northern portion of the mining site directly to SR 20 at one of three locations near Kibbe Road. The four project alternatives are:

- Build Alternative 1 – realign Kibbe Road north and south of SR 20 so that it connects to SR 20 approximately 100 feet west of the current intersection
- Build Alternative 2 – maintain the current alignment of Kibbe Road at SR 20
- Build Alternative 3 – construct a new SR 20 intersection approximately 975 feet west of the current SR 20/Kibbe Road intersection (or about 450 feet east of the Cordua Canal)
- No Build – no access road is built and maintain the haul route as is

Under the Build alternatives, the proposed access road would serve as the main haul road for the Hallwood facility. The existing access on Walnut Avenue would be closed to aggregate truck traffic, allowing access for emergency, employee, and vendor vehicles only.

STUDY AREA AND SCENARIOS FOR LOS EVALUATION

For the LOS evaluation, the study area includes the following eight intersections and nine roadway segments in the vicinity of Teichert Aggregates' Hallwood property.

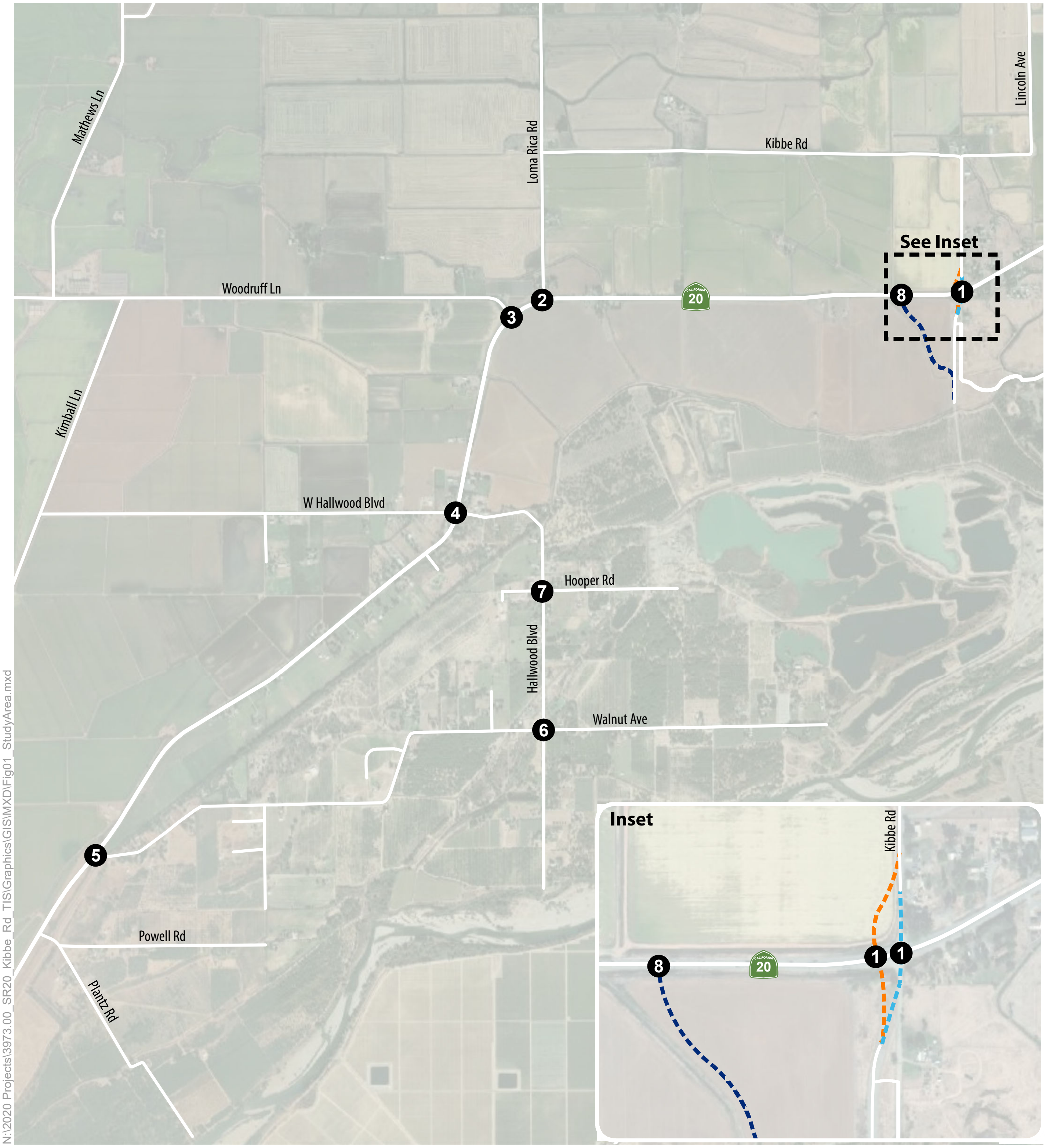
<u>Study intersections:</u>

1. State Route 20/Kibbe Road
2. State Route 20/Loma Rica Road
3. State Route 20/Woodruff Lane
4. State Route 20/Hallwood Boulevard
5. State Route 20/Walnut Avenue
6. Hallwood Boulevard/Walnut Avenue
7. Hallwood Boulevard/Hooper Road
8. State Route 20/New Haul Road (Build Alternative 3 only)

<u>Study roadway segments</u>:

1. State Route 20: Walnut Avenue to Hallwood Boulevard
2. State Route 20: Hallwood Boulevard to Woodruff Lane
3. State Route 20: Woodruff Lane to Loma Rica Road
4. State Route 20: Loma Rica Road to Kibbe Road
5. State Route 20: East of Kibbe Road
6. Walnut Avenue: State Route 20 to Hallwood Boulevard
7. Walnut Avenue: Hallwood Boulevard to Teichert Facility
8. Hallwood Boulevard: State Route 20 to Hooper Road
9. Hallwood Boulevard: Hooper Road to Walnut Avenue

Figure 1 shows the project alternatives in the context of the study area. Study intersections were analyzed for weekday AM and PM peak hour conditions, and study roadway segments were evaluated for maximum peak hour and daily conditions (consistent with the Yuba County 2030 General Plan). The study facilities were analyzed under the following scenarios.



1 Study Intersection

Alternative 1 Alignment

Alternative 2 Alignment

Alternative 3 Alignment

Figure 1

Study Area

- Existing Conditions – represents conditions based on October 2019 data plus an increase in Hallwood facility site trips commensurate with expected site trip generation. As explained in Chapter 3, datasets received from Teichert Aggregates show that Hallwood site truck traffic during October 2019 was substantially lower than current and anticipated site truck trip generation estimates presented in this study. Therefore, the existing conditions scenario includes an increase in trips to and from the Hallwood site to account for the lower October 2019 volume (see Chapter 3 for additional details).
- Existing Plus Project Conditions – represents existing conditions with proposed project implementation.
- Cumulative Conditions – represents conditions for a cumulative scenario, which includes background traffic volume growth, reasonably foreseeable land uses, and planned transportation improvement projects in Yuba County.
- Cumulative Plus Project Conditions – represents cumulative conditions with proposed project implementation.

ANALYSIS METHODOLOGIES

The impact analysis pertains to roadway, transit, bicycle, and pedestrian components of the transportation system, as well as the proposed project's effect on vehicle-miles traveled (VMT). The specific methodology for roadway system impact analysis is described below. The impact on transit, bicycle, and pedestrian systems, as well as VMT, of the proposed project was evaluated for consistency with existing and planned service and facilities as well as consistency with related policies of Yuba County and Yuba-Sutter Transit.

INTERSECTION OPERATIONS

This study analyzes traffic operating conditions using level of service (LOS). Vehicle LOS is a qualitative measure of traffic flow from the perspective of motorists and is an indication of the comfort and convenience associated with driving. The analysis uses procedures identified in the *Highway Capacity Manual 6th Edition* (HCM) published by the Transportation Research Board of the National Academies of Science. The HCM defines six levels of service ranging from LOS A (representing free-flow vehicular traffic conditions with little to no congestion) to LOS F (oversaturated conditions where traffic demand exceeds capacity resulting in long queues and delays).

The LOS at all-way stop and signal control intersections is based on the average delay experienced by all motorists traveling through the intersection. At side-street stop control intersections, the LOS is based on the movement with the greatest average delay. **Table 1** presents the delay range for each LOS category for signalized and unsignalized intersections as presented in the HCM.

TABLE 1:
LEVEL OF SERVICE DEFINITIONS – INTERSECTIONS

Level of Service	Description (at Signalized Intersections)	Average Control Delay[1]	
		Signalized	Unsignalized
A	Volume-to-capacity ratio is low and either progression is exceptionally favorable or cycle length is very short. Most vehicles arrive during the green phase and travel through the intersection without stopping.	≤ 10	≤ 10.0
B	Volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10 to 20	> 10.0 to 15.0
C	Progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 to 35	> 15.0 to 25.0
D	Volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35 to 55	> 25.0 to 35.0
E	Volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	>55 to 80	> 35.0 to 50.0
F	Volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80	> 50.0

Notes: [1]Average control delay presented in seconds per vehicle. Delay values are rounded to the nearest second and evaluated for LOS based on the above thresholds (i.e., 10 seconds per vehicle = LOS A).
Source: *Highway Capacity Manual 6th Edition* (Transportation Research Board, 2016).

This study applies HCM methodologies using the Synchro 10 capacity analysis software. The Synchro software considers vehicle volumes, lane configurations, pedestrian volumes, heavy vehicle percentages, and other pertinent parameters of intersection operations. The following describes specific inputs used in the analysis.

- Lane configurations were entered based on field observations and aerial imagery.
- A heavy vehicle percentage of 6 percent was used for through traffic on SR 20, based on Caltrans' Annual Average Daily Truck Traffic on the California State Highway System report (2019). A heavy vehicle percentage of 3 percent was used on all other roads and turning movements. For movements utilized by Teichert traffic, heavy vehicle percentages were adjusted based on expected heavy vehicle mix.

- A default value of two pedestrians per hour and one bicyclist per hour on each minor street approach to SR 20 and on all County intersection approaches was used.
- A peak hour factor (PHF) of 0.90 during the AM and PM peak hours was used based on the intersection operations and highway segment analysis in the 2004 traffic study.

TRAFFIC SIGNAL WARRANT EVALUATION

The California Manual on Uniform Traffic Control Devices (MUTCD) contains warrants to determine whether the installation of a traffic signal at a particular location is appropriate. The peak-hour signal warrant, one of nine warrants, was evaluated at unsignalized intersections for both the AM and PM peak hours under all Build and No Build scenarios. Because the surrounding community has a population of less than 10,000 people, the “rural” peak hour warrant analysis was applied. A passenger-car equivalent of 2.0 was used for heavy vehicles.

The signal warrant analysis presented in this transportation assessment is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against one of nine standard traffic signal warrants recommended in the MUTCD. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon one or two warrants, since the installation of traffic signals when not justified can lead to an increase in certain types of collisions. Prior to implementation, evaluation of the full set of warrants should be undertaken based on the latest traffic counts and collision data to make a determination that a traffic signal is warranted.

ROADWAY SEGMENT OPERATIONS

Traffic volumes at study roadway segments were compared to Yuba County’s roadway segment capacity thresholds, as shown in the Yuba County 2030 General Plan (June 2011), to determine LOS. The General Plan includes capacity thresholds for both maximum peak hour and daily traffic volumes. These are shown in **Table 2** and **Table 3**, respectively, for two-lane highways and minor collectors. These two roadway types encompass all study roadway segments.

TABLE 2:
PEAK-HOUR LEVEL OF SERVICE TRAFFIC VOLUME THRESHOLDS – ROADWAY SEGMENTS

Roadway Capacity Class	Maximum Peak Hour Volume At:				
	LOS A	LOS B	LOS C	LOS D	LOS E
Conventional Major 2-Lane Highway – Level Terrain	160	410	880	1,640	2,120
Minor Collector – Level Terrain	140	360	780	1,470	1,930

Source: *Yuba County 2030 General Plan*, Chapter 5, Page 71 (June 2011).

TABLE 3:
DAILY LEVEL OF SERVICE TRAFFIC VOLUME THRESHOLDS – ROADWAY SEGMENTS

Roadway Capacity Class	Maximum Daily Traffic Volume At:		
	LOS C	LOS D	LOS E
Conventional Highway – 2 Lanes (Level Terrain)	7,900	13,500	22,900
Minor Collector	6,700	7,800	8,900

Source: *Yuba County 2030 General Plan*, Chapter 5, Page 71 (June 2011).

II. REGULATORY FRAMEWORK

STATE

SENATE BILL 743

With the passage of SB 743 (September 27, 2013) and the subsequent adoption of revised California Environmental Quality Act (CEQA) Guidelines in 2019, level of service (LOS) can no longer be used as a criterion for identifying significant transportation impacts for most projects under CEQA. LOS measures the average vehicle delay at an intersection during the most congested time of day, while the new CEQA metric, VMT, measures the number of daily miles traveled by vehicles on the roadway network, which is directly related to the environmental impact of that travel.

In other words, SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers and passengers, to measuring the impact of driving. Land use projects with one or more of the following characteristics would have lesser VMT impacts:

- Higher land use densities
- Mix of project uses
- Support of a citywide jobs-housing balance (i.e., provide housing in a job rich area, or vice versa)
- Proximity to the core of a region
- Proximity to high quality transit service
- Located in highly walkable or bikeable areas

This shift in transportation impact criteria is expected to better align transportation impact analysis and mitigation outcomes with the State's goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation.

Although the State's Office of Planning and Research provides recommendations for adopting new VMT analysis guidelines, lead agencies have the final say in designing their methodology. Lead agencies must select their preferred method of estimating and forecasting VMT, their preferred significance thresholds for baseline and cumulative conditions, and the mitigation strategies they consider feasible.

OFFICE OF PLANNING & RESEARCH TECHNICAL ADVISORY

As lead agency, Yuba County does not currently have established VMT significance thresholds for environmental review purposes. Instead, this study relies on guidance available in the Office of Planning &

Research (OPR) Technical Advisory: On Evaluating Transportation Impacts in CEQA, which includes VMT analysis recommendations for transportation projects.

According to the Technical Advisory, the effect of a transportation project on vehicle travel should be estimated using the "change in total VMT" method described in Appendix 1 of the Technical Advisory. This means that an assessment of total VMT without the project and with the project should be made; the difference between the two is the amount of VMT attributable to the project. The assessment should cover the full area in which driving patterns are expected to change. In addition, transportation projects are required to examine induced growth impacts, where applicable.

CALTRANS

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways, including those in Yuba County. Federal highway standards are implemented in California by Caltrans.

State Route 20 Transportation Concept Report (TCR)

The Transportation Concept Report State Route 20 (2013) identifies a Concept LOS for SR 20. The Concept LOS reflects the minimum level or quality of operations acceptable for each route segment within the 20-year planning period. According to the TCR, SR 20 between 22nd Street and Marysville Road in Yuba County has a Concept LOS E. Therefore, the minimum acceptable LOS in this study for traffic operations at Caltrans facilities is LOS E.

Vehicle Miles Traveled-Focused Transportation Impact Study Guide

In May 2020, the California Department of Transportation (Caltrans) published the Vehicle Miles Traveled-Focused Transportation Impact Study Guide (TISG), which replaced its Guide for the Preparation of Traffic Impact Studies (2002). The TISG generally endorses the policies, technical approaches, and recommendations from OPR's Technical Advisory. It also indicates that Caltrans intends to "transition away from requesting LOS or other vehicle operations analyses of land use projects", instead placing the focus on VMT and safety.

As a follow-up to the TISG, Caltrans published the Interim Land Development and Intergovernmental Review (LDIGR) Safety Review Practitioners Guidance in July 2020. This document provides interim guidance for conducting safety reviews of land use projects and plans that may affect the State Highway System. Although the LDIGR Safety Review Practitioners Guidance stops short of including specific thresholds of significance or providing recommendations for how safety evaluations should be included in CEQA documents, it does clearly indicate the State's expectation that, when appropriate, CEQA studies of land use projects should include safety investigations of the State Highway System. Furthermore, that document specifies that mitigation measures for identified safety impacts should avoid increasing roadway capacity, which may induce VMT or affect conditions for vulnerable users, such as bicyclists of pedestrians.

REGIONAL

SACRAMENTO AREA COUNCIL OF GOVERNMENTS

The Sacramento Area Council of Governments (SACOG) is an association of local governments in the six-county Sacramento Region. Its members include the counties of Sacramento, El Dorado, Placer, Sutter, Yolo, and Yuba as well as 22 cities. SACOG provides transportation planning and funding for the region and serves as a forum for the study and resolution of regional issues. In addition to preparing the region's long-range transportation plan, SACOG assists in planning for transit, bicycle networks, clean air, and airport land uses.

2020 METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

The 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) (SACOG 2020) is a federally mandated long-range fiscally constrained transportation plan for the six-county area. To receive federal funding, transportation projects nominated by cities, counties, and agencies must be consistent with the MTP/SCS.

The Metropolitan Transportation Improvement Program (MTIP) is a list of transportation projects that receive federal funds, require a federal action, or are regionally significant. The 2019-2022 MTIP adopted by SACOG covers four years of programming: federal fiscal years (FFY) 2019 through 2022. The document also identifies prior year funding and estimated future funding (beyond the four program years) for projects for information. SACOG submits this document to Caltrans and amends the program on a quarterly cycle.

LOCAL

YUBA COUNTY

Yuba County 2030 General Plan

Relevant transportation goal and policy statements from the circulation element of the Yuba County 2030 General Plan are provided below.

- **Policy HS5.3**: Since transportation is the largest sector contributing to GHG emissions both locally and at the statewide level, the County will prioritize land use/transportation projects that manage travel demand by increasing housing/employment density, placing homes in closer proximity with destinations, increasing accessibility to transit, or otherwise decreasing vehicle miles traveled (per household, per capita, and/ or per employee).
- **Policy CD16.1**: The County will maintain roadway levels of service that recognize differences between urban and rural environments and consideration of other community character, economic, and environmental policies of the County.
- **Policy CD16.3**: On County roads in rural areas, Level of Service "D" shall be maintained, as feasible, during the PM Peak Hour.
- **Policy CD16.4**: On State highways, the level of service goals included in the adopted Yuba-Sutter Congestion Management Plan shall be maintained, as feasible.
- **Policy CD16.5**: Where a new development would exceed the County's Level of Service policies, applicants shall first consider feasible revisions to the proposed development that would increase connectivity, enhance bicycle/pedestrian/transit access, provide additional travel demand management measures, and/or provide other revisions that would help to meet LOS standards by reducing vehicle miles traveled on roads exceeding the target LOS, prior to consideration of adding capacity to roadways and intersections.
- **Policy CD16.6**: New developments shall analyze and provide fair-share funding of roadway improvements necessary to provide an appropriate Level of Service (LOS) and ongoing operation and maintenance of roadways. New developments abutting General Plan Roads will generally be required to construct and dedicate improved roads.

- **Policy CD16.7**: New developments will be required to reserve County and Caltrans rights-of-way necessary to serve the 2030 General Plan at buildout according to County Level of Service policies.
- **Policy CD16.10**: The County will not use traffic level of service policies to analyze and mitigate CEQA impacts of new developments, but instead will use its level of service policies to assess fair-share funding of transportation facilities necessary to serve new projects.
- **Policy CD16.11**: The County will analyze and mitigate transportation impacts in CEQA documents according to their relative increase in vehicular travel demand.
- **Policy CD17.1**: New developments shall be designed to facilitate safe and convenient travel by pedestrians, bicyclists, transit users, and drivers.
- **Policy CD18.4**: The County will work cooperatively with Nevada County, Caltrans, and SACOG to improve capacity on State Highway 20 east of Marysville.
- **Policy CD18.7**: New developments shall analyze impacts to Caltrans facilities and shall provide fair- share funding to address impacts to Caltrans facilities, as feasible.
- **Policy CD19.4**: The County will plan its investments and condition new developments to provide pedestrian, bicycle, and transit facilities designed to provide multi-modal connections within neighborhoods, within unincorporated communities, and between communities and cities in the County.
- **Policy CD19.5**: New developments shall include the construction or pro-rata funding of transportation infrastructure that may include a connected and integrated system of bicycle and pedestrian facilities, consistent with County standards
- **Policy CD20.1**: New developments shall be designed to discourage concentration of traffic at a few intersections. Multiple points of access shall be provided, wherever feasible.

With regard to Policy CD16.3, the policy has been interpreted to apply to both signalized and unsignalized intersections for both the weekday AM and PM peak hours. Therefore, for the purposes of this study, LOS D is the minimum acceptable LOS for County intersections and roadway segments.

Yuba County Bikeway Master Plan Update

The Yuba County Bikeway Master Plan was adopted by Yuba County on January 22, 2013. The Bikeway Master Plan establishes goals, policies, implementation actions, and priorities for the development of bicycle facilities in Yuba County. Key elements of the Bikeway Master Plan include maps of existing and proposed bicycle facilities and their proximity to major activity centers. The implementation plan identifies project priorities, locations, improvement descriptions, facility types, and cost estimates. The implementation plan will guide development of the proposed bicycle improvements.

Within the study area, the Bikeway Master Plan identifies a planned Class III bike route with a multi-use shoulder along SR 20 between the City of Marysville and Nevada County and on Loma Rica Road north of SR 20. The plan also identifies a planned Class III bike route with "signage only" on Woodruff Lane west of SR 20. The study area does not contain any existing bicycle facilities.

Yuba County Public Facilities Fee

Yuba County adopted a County Public Facilities Fee (CPFF) (Title 13, Chapter 13.50) and subsequently repealed and re-enacted Chapter 13.50 as the Countywide Development Impact Fees (CDIF) to mitigate impacts attributable to new development within the County. The fees fund County public facilities needed as a result of development and assure that development pays its fair share for those public facilities. The traffic impact component of the CDIF program covers various Countywide transportation improvements.

The Yuba County Impact Fee Update Report (March 2014) lists the transportation projects included in the CDIF. Planned improvements identified in the vicinity of the proposed project include SR 20 connection improvements, signal improvements, and lane improvements (including non-motorized mobility improvements).

Yuba-Sutter Transit Authority

The Yuba-Sutter Transit Authority provides public transit service in Yuba County and Sutter County, as well as commuter service to Sacramento, under a joint powers agreement between the counties and the Cities of Marysville and Yuba City. The 2015 Yuba Sutter Short Range Transit Plan assesses transit and related transportation issues and sets the stage for implementation of short-term service improvements. The SRTP does not identify any short-term transit enhancements near the project site.

III. EXISTING CONDITIONS

This chapter describes the existing environmental setting, which is the scenario upon which project-specific impacts are evaluated. The environmental setting for transportation includes descriptions for existing roadway, bicycle, pedestrian, transit, and rail facilities.

EXISTING ROADWAY SYSTEM

Figure 1 shows the transportation network near the project site. A brief description of the key facilities in the study area is provided below.

- *State Route 20* is classified as a conventional highway in the vicinity of the project site, and it has one eastbound and one westbound lane. The posted speed limit on SR 20 varies from 55 miles per hour (MPH) near Walnut Avenue, 45 MPH near Hallwood Boulevard, 25 MPH in the school zone at Cordua Elementary School, and 55 MPH near Woodruff Lane to Kibbe Road.
- *Hallwood Boulevard* east of SR 20 is classified as a minor collector (level terrain) in the Yuba County 2030 General Plan. It is approximately 24 feet wide with minimal to no paved shoulders and has double yellow centerline striping. The posted speed limit between SR 20 and Walnut Avenue is 25 MPH.
- *Kibbe Road* is a rural local road north and south of SR 20. Build alternatives 1 and 2 would reconstruct Kibbe Road south of SR 20 as a new haul road for Teichert. Build alternative 1 would realign Kibbe Road north of SR 20.
- *Loma Rica Road is a two-lane road that* connects SR 20 with Loma Rica and is classified as a major rural collector in the Yuba County 2030 General Plan. It has minimal to no paved shoulders and a posted speed limit of 55 MPH near SR 20. Loma Rica Road has a 22-ton weight limit restriction.
- *Walnut Avenue* is an east-west rural local road that extends from SR 20 to the western entrance of the Teichert Aggregates Hallwood facility. It has one westbound and one eastbound lane with minimal to no paved shoulders. Walnut Avenue has double yellow centerline striping and the posted speed limit is 25 MPH. Mining facility trucks are permitted to enter from SR 20 at the Walnut Avenue intersection, but egress is prohibited. Instead, exiting trucks must use Hallwood Boulevard to access SR 20.
- *Woodruff Lane* is classified as a major rural collector road in the Yuba County 2030 General Plan. It connects SR 20 and SR 70 north of the City of Marysville. It is approximately 24 feet wide with

minimal to no paved shoulders, double yellow centerline striping and a posted speed limit near SR 20 of 55 MPH. There are several locations on Woodruff Lane with right angle turns, narrow ditch crossings and low speed limits. Woodruff Lane has a 22-ton weight limit restriction.

- *Hooper Road* is a rural local road within the Hallwood community that provides access to Hallwood Boulevard for several homes and businesses, including another mining facility. The road has minimal to no paved shoulders and no centerline. The Yuba County Code of Ordinances prohibits speeds in excess of 35 MPH on Hooper Road east of Hallwood Boulevard.

DATA COLLECTION

Due to travel pattern changes resulting from statewide measures to curb the ongoing COVID-19 pandemic, intersection turning movement counts were not collected. Instead, traffic count data was obtained from StreetLight Data, a vendor that provides mobile-sourced traffic data. StreetLight Data captures anonymized location records from smart phones and navigation devices in connected cars and trucks at all times of the day and year. Traditional data collection efforts often occur on a single typical weekday between the AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak periods. As a result, StreetLight Data provides an opportunity for a larger data set. Since the data provided by StreetLight Data is limited to hourly intervals, the highest hourly intervals are used although actual peak hours based on 15-minute intervals could be different.

Mid-week (Tuesday through Thursday) 24-hour traffic volume estimates collected for October 2019 were used in the analysis. Traffic volume estimates were averaged to determine the "existing" AM peak hour, PM peak hour, and daily traffic volumes. StreetLight Data was compared to August 2001 and May 2003 traffic counts identified in the State Route 20/Kibbe Road Intersection and Haul Road Traffic Study (Fehr & Peers, 2004). Using engineering judgment, the StreetLight Data peak hour volumes were adjusted to be more consistent with the older field-collected data in cases where StreetLight Data volumes were lower. In addition, engineering judgment was used to adjust average peak hour and daily StreetLight Data turning movement volumes using the peak hours-to-daily volumes ratio developed from StreetLight Data turning movement volumes at the SR 20 study intersections. Roadway segment average daily traffic (ADT) estimates were compared to Caltrans 2019 AADT data to ensure accuracy, where possible.

Based on the collected hourly data from StreetLight Data, the AM peak hour is 7:00 to 8:00 AM, and the PM peak hour is 5:00 to 6:00 PM.

HALLWOOD FACILITY TRAVEL CHARACTERISTICS

TRIP GENERATION

Peak hour and daily trip generation for haul trucks and employees was estimated using detailed datasets provided by Teichert Aggregates. During the peak season (June through October), the Hallwood facility employs a maximum of 29 individuals. Employees typically arrive between 5:00 and 5:30 AM and depart work between 3:00 and 3:30 PM or 5:30 and 6:00 PM, depending on their shift. Since the AM peak hour occurs from 7:00 to 8:00 AM, employee traffic does not affect the AM peak hour. Since the PM peak hour occurs from 5:00 to 6:00 PM, it is conservatively assumed that all employees egress the site during the PM peak hour.

To determine the AM peak hour, PM peak hour, and daily truck trip generation of the project, trip generation rates were developed using one year of historical data ranging from October 1, 2019 to September 30, 2020. The annual data was evaluated to determine the 30th highest number of loads produced for mid-week days (i.e., Tuesday through Thursday) during the AM peak period (6:00 to 9:00 AM), during the PM peak period (3:00 to 6:00 PM), and on a daily basis. The 30th highest hour is used in transportation references (such as A Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials, 2001) to establish the "design hourly volume." It represents a busy, but not absolute peak, amount of travel. **Table 4** shows the 30th highest hour or day based on the data received from the Hallwood facility.

Production levels at the Hallwood facility vary depending on market conditions and other factors. Although the facility does not have a cap on output, production levels for the October 2019 to September 2020 period (about 1.84 million tons sold) were below those of a historically busy year (2.0 million tons sold). Thus, the 30th highest peak hour and daily loads shown in Table 4 are reflective of a less busy annual production level. To estimate the 30th highest peak hour and daily loads for years with larger annual production, the values in Table 4 were proportionally increased (i.e., extrapolated) to reflect a higher level of production. **Table 5** shows the AM peak hour, PM peak hour, and daily truck 30th highest hour trip generation estimates for the October 2019 to September 2020 year and for historically busy years. As shown in Table 5, the facility generates about 122 AM peak hour, 18 PM peak hour, and 904 daily truck trips during its 30th highest loads in a historically busy year.

The Hallwood facility dataset for October 2019—the month corresponding to StreetLight Data volume estimates—shows that average peak hour and daily loads were substantially lower in October than the 30th highest load trip generation estimates in Table 5. As shown in Table 5, the Hallwood site only generated about 32 AM peak hour, 0 PM peak hour, and 432 daily truck trips on midweek days in October 2019.

Therefore, adjustments were made to traffic volumes, resulting in a scenario with existing conditions background traffic volumes plus Hallwood site traffic consistent with the trip generation estimates shown in Table 5 for the 30th highest loads during a historically busy year. **Figure 2** displays the existing conditions AM and PM peak hour volumes and lane configurations, including the above adjustment.

TABLE 4:
HIGHEST PEAK HOUR AND DAILY LOADS – OCTOBER 2019 TO SEPTEMBER 2020

Highest Load Number	AM Peak Hour			PM Peak Hour			Daily	
	Date	Hour	Loads	Date	Hour	Loads	Date	Loads
1st	September 29, 2020	7-8 AM	106	September 23, 2020	3-4 PM	49	September 17, 2020	644
2nd	July 30, 2020	6-7 AM	93	September 24, 2020	3-4 PM	32	September 29, 2020	642
3rd	August13, 2020	7-8 AM	78	September 22, 2020	5-6 PM	32	August 20, 2020	619
4th	August 4, 2020	6-7 AM	77	September 22, 2020	3-4 PM	28	September 30, 2020	614
5th	August 4, 2020	8-9 AM	71	August 12, 2020	3-4 PM	26	September 23, 2020	594
6th	May 6, 2020	6-7 AM	71	September 30, 2020	3-4 PM	25	August 13, 2020	592
7th	May 14, 2020	6-7 AM	70	August 12, 2020	4-5 PM	22	August 4, 2020	565
8th	July 16, 2020	6-7 AM	69	September 17, 2020	6-7 PM	21	July 16, 2020	557
9th	August 6, 2020	8-9 AM	69	August 25, 2020	6-7 PM	21	August 12, 2020	554
10th	September 23, 2020	7-8 AM	69	September 24, 2020	4-5 PM	19	September 24, 2020	549
11th	August 5, 2020	6-7 AM	68	September 22, 2020	4-5 PM	19	August 6, 2020	542
12th	August 6, 2020	6-7 AM	68	September 16, 2020	6-7 PM	18	August 25, 2020	516
13th	September 17, 2020	6-7 AM	68	August 20, 2020	3-4 PM	17	August 5, 2020	512
14th	August 13, 2020	8-9 AM	67	September 1, 2020	3-4 PM	16	July 9, 2020	498
15th	June 3, 2020	6-7 AM	66	February 25, 2020	3-4 PM	15	September 1, 2020	489

TABLE 4:
HIGHEST PEAK HOUR AND DAILY LOADS – OCTOBER 2019 TO SEPTEMBER 2020

Highest Load Number	AM Peak Hour			PM Peak Hour			Daily	
	Date	Hour	Loads	Date	Hour	Loads	Date	Loads
16th	June 4, 2020	6-7 AM	66	September 17, 2020	3-4 PM	14	July 30, 2020	487
17th	July 14, 2020	6-7 AM	65	July 7, 2020	3-4 PM	12	July 15, 2020	486
18th	July 7, 2020	6-7 AM	65	August 12, 2020	5-6 PM	11	September 22, 2020	484
19th	July 22, 2020	6-7 AM	64	August 18, 2020	3-4 PM	11	August 11, 2020	481
20th	July 9, 2020	6-7 AM	63	August 13, 2020	3-4 PM	10	July 23, 2020	479
21st	August 20, 2020	7-8 AM	62	September 16, 2020	4-5 PM	10	September 16, 2020	469
22nd	September 30, 2020	7-8 AM	62	February 18, 2020	3-4 PM	10	August 26, 2020	460
23rd	July 15, 2020	6-7 AM	61	September 29, 2020	3-4 PM	10	July 22, 2020	455
24th	May 27, 2020	6-7 AM	61	January 16, 2020	3-4 PM	9	July 8, 2020	452
25th	September 30, 2020	8-9 AM	61	September 16, 2020	3-4 PM	9	August 19, 2020	450
26th	September 24, 2020	8-9 AM	60	August 25, 2020	4-5 PM	9	July 14, 2020	444
27th	August 20, 2020	6-7 AM	58	May 19, 2020	3-4 PM	9	September 2, 2020	425
28th	July 15, 2020	8-9 AM	58	August 25, 2020	3-4 PM	9	June 4, 2020	419
29th	May 26, 2020	6-7 AM	58	August 19, 2020	3-4 PM	8	July 29, 2020	416
30th	July 22, 2020	8-9 AM	56	November 19, 2019	3-4 PM	8	September 9, 2020	416

Source: Fehr & Peers, 2021.

TABLE 5:
TRUCK TRIP GENERATION

Source/Scenario	Tons of Material Sold Per Year	Number of Truck Loads Per Year[1]	AM Peak Hour		PM Peak Hour		Daily	
			Loads	Trips[2]	Loads	Trips[2]	Loads	Trips[2]
October 2019 to September 2020 Data Year (30th Highest Load)	1,842,844	63,778	56	112	8	16	416	832
Historically Busy Year	2,000,000	69,217[3]	61[3]	122[3]	9[3]	18[3]	452[3]	904[3]
Midweek Days in October 2019	-	-	16	32	0	0	216	432

Notes: [1] Based on October 2019 to September 2020 data.
[2] Based on 2 trips per load (1 inbound trip/1 outbound trip).
[3] 8.53% increase assumed based on ratio of historical busy year sales volume (2.0 million tons) to sales volume in October 2019 to September 2020 data year (1.842844 million tons).

Source: Fehr & Peers, 2021.

TRIP DISTRIBUTION

Currently, all traffic accessing the Teichert Aggregates Hallwood facility utilizes one of two intersections: SR 20/Hallwood Boulevard or SR 20/Walnut Avenue. Teichert Aggregates' datasets, which include employee residence locations, show that about 43 percent of employees travel on SR 20 west of Walnut Avenue, 39 percent on Woodruff Lane north and west of SR 20, 14 percent on Loma Rica Road north of SR 20, and 4 percent on SR 20 east of Kibbe Road. Assuming employees choose the shortest path to work, 43 percent of employees use SR 20/Walnut Avenue and 57 percent use SR 20/Hallwood Boulevard.

The current haul route also uses the SR 20 intersections at Hallwood Boulevard and Walnut Avenue. While inbound traffic can access the Hallwood facility via both intersections, the current outbound haul route directs all truck trips to access SR 20 via Hallwood Boulevard (i.e., outbound use of Walnut Avenue is prohibited). Based on historical information provided by Teichert Aggregates, 75 percent of truck trips are estimated to travel west on SR 20 and the remaining 25 percent travel east.

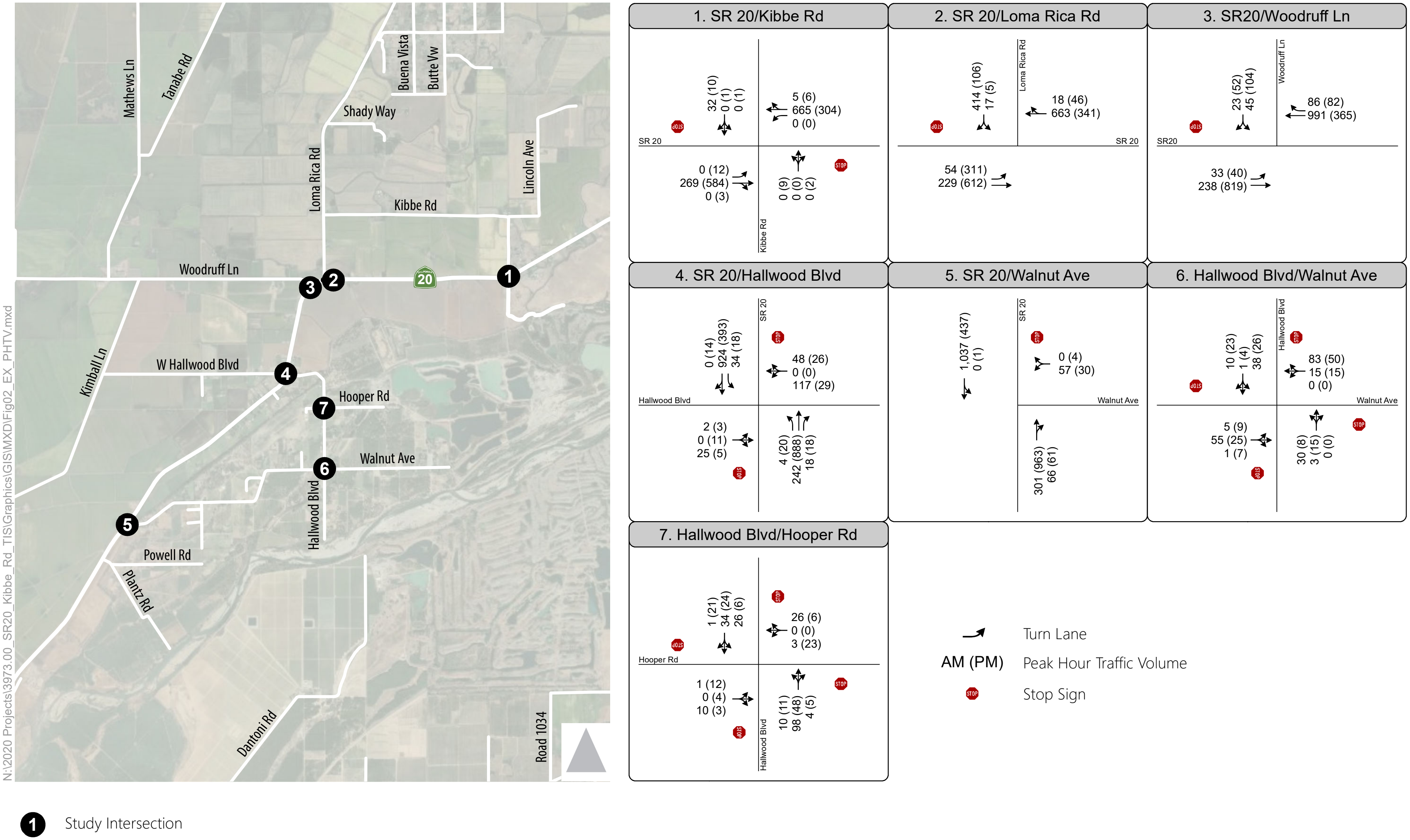


Figure 2

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

EXISTING OPERATIONS

INTERSECTION OPERATIONS

Table 6 summarizes the weekday AM and PM peak hour traffic operations analysis results under existing conditions at the study intersections (refer to Appendix A for detailed calculations). As shown, the SR 20 intersections at Loma Rica Road, Hallwood Boulevard, and Walnut Avenue currently operate at unacceptable LOS F during one or both peak hours. LOS thresholds are provided in Chapter 1.

TABLE 6:
PEAK HOUR INTERSECTION OPERATIONS – EXISTING CONDITIONS

Intersection	Traffic Control	Peak Hour	Existing Conditions	
			Delay[1]	LOS
1. State Route 20/Kibbe Road	SSSC	AM	1 (15)	A (B)
		PM	1 (22)	A (C)
2. State Route 20/Loma Rica Road	SSSC	AM	46 (148)	**E (F)**
		PM	3 (16)	A (C)
3. State Route 20/Woodruff Lane	SSSC	AM	2 (26)	A (D)
		PM	3 (27)	A (D)
4. State Route 20/Hallwood Boulevard	SSSC	AM	45 (>300)	**E (F)**
		PM	3 (68)	**A (F)**
5. State Route 20/Walnut Avenue	SSSC	AM	2 (57)	**A (F)**
		PM	1 (46)	A (E)
6. Walnut Avenue/Hallwood Boulevard	AWSC	AM	8	A
		PM	7	A
7. Hallwood Boulevard/Hooper Road	AWSC	AM	8	A
		PM	7	A

Notes: SSSC = side street stop controlled. AWSC = all-way stop controlled. **Bold** indicates unacceptable operations.
[1] Average delay (rounded to the nearest second). For all-way stop controlled intersections, average delay is the weighted average for all movements. For side street stop controlled intersections, both the intersection average delay and worst movement average delay (in parentheses) is reported.
Source: Fehr & Peers, 2021.

PEAK HOUR SIGNAL WARRANT ANALYSIS

The peak hour traffic signal warrant analysis showed that the following study intersections satisfy the peak hour warrant under existing conditions (refer to Appendix A for technical calculations).

- State Route 20/Loma Rica Road – during AM and PM peak hours
- State Route 20/Woodruff Lane – during PM peak hour only
- State Route 20/Hallwood Boulevard – during AM peak hour only

As discussed in Chapter 1, evaluation of the full set of traffic signal warrants, based on existing conditions at the time an intersection improvement is triggered, should be performed prior to requiring implementation of a traffic signal.

ROADWAY SEGMENT OPERATIONS

Table 7 and **Table 8** summarize the weekday peak hour and daily roadway segment analysis results, respectively, under existing conditions. Traffic volumes at study roadway segments were compared to Yuba County's roadway segment capacity thresholds from the Yuba County 2030 General Plan to determine LOS. As shown, all study roadway segments currently operate at acceptable LOS D or better.

TABLE 7:
MAXIMUM PEAK HOUR ROADWAY SEGMENT OPERATIONS – EXISTING CONDITIONS

Roadway Segment	Classification Code	Maximum Peak Hour Volume[1]	V-C / LOS
1. State Route 20: Walnut Avenue to Hallwood Boulevard	2H – Level[2]	1,379	0.65 / D
2. State Route 20: Hallwood Boulevard to Woodruff Lane	2H – Level[2]	1,309	0.62 / D
3. State Route 20: Woodruff Lane to Loma Rica Road	3H – Level[2,3]	1,370	0.43 / D
4. State Route 20: Loma Rica Road to Kibbe Road	2H – Level[2]	963	0.45 / D
5. State Route 20: East of Kibbe Road	2H – Level[2]	939	0.44 / D
6. Walnut Avenue: State Route to Hallwood Boulevard	MC – Level[4]	120	0.06 / A
7. Walnut Avenue: Hallwood Boulevard to Teichert Facility	MC – Level[4]	191	0.10 / B
8. Hallwood Boulevard: State Route 20 to Hooper Road	MC – Level[4]	202	0.10 / B

9. Hallwood Boulevard: Hooper Road to Walnut Avenue	MC – Level[4]	150	0.08 / B

Notes: V-C = volume-to-capacity ratio
[1] Inclusive of both AM and PM peak hours.
[2] 2H – Level refers to the "Conventional Major 2-Lane Highway – Level Terrain" roadway classification in the Yuba County 2030 General Plan
[3] Since State Route 20 between Woodruff Lane and Loma Rica Road is a three-lane segment, two-lane roadway capacity thresholds were extrapolated to account for additional capacity of the second westbound lane.
[4] MC (Level) refers to the "Minor Collector – Level Terrain" roadway classification in the Yuba County 2030 General Plan.
Source: Fehr & Peers, 2021.

TABLE 8:
AVERAGE DAILY TRAFFIC ROADWAY SEGMENT OPERATIONS – EXISTING CONDITIONS

Roadway Segment	Classification Code	ADT	V-C / LOS
1. State Route 20: Walnut Avenue to Hallwood Boulevard	2H (Level)[1]	11,140	0.49 / D
2. State Route 20: Hallwood Boulevard to Woodruff Lane	2H (Level)[1]	10,870	0.47 / D
3. State Route 20: Woodruff Lane to Loma Rica Road	3H – Level[1,2]	11,910	0.35 / D
4. State Route 20: Loma Rica Road to Kibbe Road	2H (Level)[1]	9,150	0.40 / D
5. State Route 20: East of Kibbe Road	2H (Level)[1]	8,950	0.39 / D
6. Walnut Avenue: State Route to Hallwood Boulevard	MC[3]	900	0.10 / C
7. Walnut Avenue: Hallwood Boulevard to Teichert Facility	MC[3]	1,340	0.15 / C
8. Hallwood Boulevard: State Route 20 to Hooper Road	MC[3]	1,200	0.13 / C
9. Hallwood Boulevard: Hooper Road to Walnut Avenue	MC[3]	1,120	0.13 / C

Notes: ADT = Average Daily Traffic. V-C = volume-to-capacity ratio.
[1] 2H (Level) refers to the "Conventional Highway – 2 Lanes (Level Terrain)" roadway classification in the Yuba County 2030 General Plan.
[2] Since State Route 20 between Woodruff Lane and Loma Rica Road is a three-lane segment, two-lane roadway capacity thresholds were extrapolated to account for additional capacity of the second westbound lane.
[3] MC refers to the Minor Collector roadway classification in the Yuba County 2030 General Plan.
Source: Fehr & Peers, 2021.

TRANSIT SYSTEM

The Yuba-Sutter Transit Authority provides public transit service to Yuba County and Sutter County residents under a joint powers agreement between the counties and the Cities of Marysville and Yuba City. The following is a summary of available public bus services:

- Six local bus routes operate Monday through Saturday within and between Yuba City, Marysville, Linda, and Olivehurst.
- Three rural bus routes offer limited service on weekdays between the Yuba County Government Center and Wheatland, Live Oak, and Brownsville.
- Commuter or express service buses provide service to downtown Sacramento on weekdays.
- The Yuba College Sutter Campus Shuttle provides free service on school days between the Walton Terminal in Yuba City and the Yuba College Sutter Campus.
- Dial-A-Ride services offer curb-to-curb shared rides for eligible passengers within a specified area.

The nearest public bus route to the SR 20/Kibbe Road intersection is the Foothill rural bus route, which currently runs adjacent to the community of Hallwood on SR 20. The route starts at the Yuba County Government Center in the City of Marysville and terminates in Brownsville, with stops in Marysville, Loma Rica, Oregon House, and Brownsville. This bus route only operates on Tuesdays, Wednesdays, and Thursdays, and the nearest bus stops to SR 20/Kibbe Road are located at the Yuba County Government Center (8.8 miles away) and north of the Loma Rica Road/Fruitland Road intersection in Loma Rica (10.5 miles away). Moreover, the Dial-A-Ride service area does not include the community of Hallwood, as it extends to the northeast only within the City of Marysville city limits.

Additionally, the Marysville Joint Unified School District provides school bus service within the study area. An unmarked bus loading area (i.e., no signage or striping) is provided on the southwest and northeast corners of the SR 20/Kibbe Road intersection for students attending Cordua Elementary School, Foothill Intermediate School, Marysville Charter Academy of the Arts, and Marysville High School. School buses stop on the "near side" SR 20 shoulder (i.e., prior to the SR 20/Kibbe Road intersection) without requiring highway traffic to stop. In addition, children are typically picked up and dropped off on the side of SR 20 closest to their home, thereby not requiring recurring pedestrian highway crossings.

BICYCLE, PEDESTRIAN, AND RAIL SYSTEMS

The Yuba County Bikeway Master Plan Update (2012) identifies existing and planned bikeway facilities. Although bikeway facilities are planned in and near the study area, there are currently no existing bikeways. The closest bikeways are located in the City of Marysville.

Due to the rural characteristics of the study area, pedestrian facilities are also generally non-existent. Sidewalks are not present along any of the study roadway segments and no marked crosswalks are provided at the study intersections.

There are currently no rail lines, active or inactive, within the study area.

IV. PROJECT TRAVEL CHARACTERISTICS

This chapter presents the methods used to estimate how Hallwood facility traffic will be redistributed to the roadway system under plus project conditions.

TRIP GENERATION

As discussed in Chapter 3, truck and employee peak hour traffic was estimated using detailed datasets provided by Teichert Aggregates. Because the proposed project is not expected to increase project trip generation, the site truck trip generation estimates in Table 5 apply under plus project conditions. In addition, it is assumed that employee schedules and home location will not change with the proposed project. Therefore, consistent with existing conditions, employee traffic does not affect the plus-project AM peak hour. During the PM peak hour, it is conservatively assumed that all employees egress the Hallwood site.

TRIP DISTRIBUTION

The proposed SR 20 connection at or near Kibbe Road would result in redistribution of inbound and outbound Teichert Aggregates traffic. Under all three Build alternatives, employee traffic would be permitted to use Hallwood Boulevard, Walnut Avenue, and the new haul road. The new connection would create a faster route for employees traveling to and from Woodruff Lane, Loma Rica Road, and SR 20 east of Kibbe Road. Assuming employees would choose the shortest path to work, about 43 percent of employee traffic would use SR 20/Walnut Avenue and 57 percent would use the new access intersection. A nominal amount would use SR 20/Hallwood Boulevard.

Teichert Aggregates truck traffic would also redistribute under the Build alternatives. In all three Build scenarios, the current haul route would be closed, and trucks would be directed to use the new haul road instead. As a result, 75 percent of truck trips are estimated to travel westerly to and from the new haul road and 25 percent of truck trips are estimated to travel easterly to and from the new haul road.

V. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This chapter provides a description of the thresholds of significance and assesses impacts related to VMT, the local roadway network, transit, bicycle and pedestrian facilities, and rail. This study also includes a roadway system LOS assessment in Chapter 6, not for CEQA impact determination, but to identify potential transportation improvements required to meet the Yuba County 2030 General Plan LOS policy.

STANDARDS OF SIGNIFICANCE

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. For the purposes of this analysis, an impact is considered significant if implementation of the project would have any of the effects described below.

VEHICLE-MILES TRAVELED (VMT)

CEQA Guidelines Section 15064.3 describes the applicable criteria for analyzing transportation impacts with respect to VMT. Transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant impact. In the absence of an applicable Yuba County VMT significance threshold, for the purposes of this study and in accordance with the CEQA Guidelines, a VMT-related impact is considered significant if implementation of the proposed SR 20/Kibbe Road Intersection and Haul Road project would trigger the following condition.

- The baseline plus project VMT is greater than baseline (no project) VMT.

LOCAL ROADWAY NETWORK

An impact to the roadway system would be considered significant if implementation of the proposed project would trigger any of the following conditions.

- Create inconsistencies with the road system policies or standards of plans adopted by Yuba County or Caltrans
- Create conflicts between modes (e.g., vehicles and bicycles)

A roadway system LOS assessment is provided in Chapter 6.

TRANSIT FACILITIES

An impact to the transit system would be considered significant if the proposed project would trigger any of the following conditions.

- Disrupt or interfere with existing or planned transit services or facilities

BICYCLE AND PEDESTRIAN FACILITIES

An impact to the bicycle or pedestrian system would be considered significant if the proposed project would trigger any of the following conditions.

- Disrupt or interfere with existing or planned bicycle and pedestrian facilities
- Create an inconsistency with adopted pedestrian or bicycle system plans, guidelines, policies, or standards

CONSTRUCTION IMPACTS

- Create a temporary but prolonged impact due to lane/street closures, need for temporary signals, emergency vehicle access, traffic hazards to bikes/pedestrians, damage to roadbed, or truck traffic on roadways not designated as truck routes.

EMERGENCY VEHICLE ACCESS

- Results in inadequate emergency access during construction and/or operation.

TRANSPORTATION AND TRAFFIC ISSUES NOT FURTHER ANALYZED

The following issues were analyzed and determined to result in no impact. Therefore, they did not warrant any further analysis:

- *Air Traffic* – The project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Therefore, no impact would occur.
- *Rail System* – The project would not add vehicle trips to an at-grade highway railroad crossing that has been reported to have an above-average rate of collisions involving vehicles and trains,

nor would it cause safety concerns or operational deficiencies associated with the operation of a new at-grade highway railroad crossing.

IMPACT ANALYSIS

This section addresses potential transportation impacts related to VMT, the local roadway network, transit services, bicycle facilities, pedestrian facilities, and rail.

VEHICLE-MILES TRAVELED (VMT)

The purpose of the following VMT assessment is to determine the net change in total VMT between the "no project" and "plus project" conditions. The proposed project is expected to change Teichert-related driving patterns on SR 20 between Walnut Avenue and Kibbe Road, within the Hallwood community, and within the Hallwood facility. Driving patterns are not expected to change outside of the study area because the proposed project does not increase Hallwood facility levels of production, nor does it affect the location of employees or customers.

The Technical Advisory addresses growth that may be expected from roadway expansion projects. Building new roadways, adding roadway capacity in congested areas, or adding roadway capacity to areas where congestion is expected in the future, typically induces additional vehicle travel. An accurate estimate of induced travel is needed to accurately weigh costs and benefits of a highway capacity expansion project. Although this project would add a new roadway, the additional capacity would only benefit the Teichert Aggregates Hallwood facility. Residents and businesses on Kibbe Road south of SR 20 would neither gain nor lose connectivity to SR 20 with implementation of the proposed project, and the project would not increase the roadway capacity of the existing connection (i.e., the new haul road would have the same number of travel lanes as the current configuration of Kibbe Road). Therefore, the proposed project is not expected to generate induced travel.

For the purposes of assessing mining land use projects, VMT is a two-part formula calculated by the following equation:

$$VMT\ = (Avg. trip\ length\ x\ Vehicle\ trips)_{Trucks}\ + (Avg. trip\ length\ x\ Vehicle\ trips)_{Employees}$$

Because the proposed project does not add vehicle trips, the net change in VMT will depend entirely on the weighted average trip length of trucks and employees. If the proposed project increases the average trip length of Hallwood facility trucks and employees, then the change in VMT would be positive. Conversely, if the proposed project decreases the average trip length of Hallwood facility trucks and employees, then the change in VMT would be negative.

The average trip length under baseline conditions was calculated for both trucks and employees using the travel characteristics of the existing Hallwood facility outlined in Chapter 3. The baseline plus project conditions average trip length was calculated using the plus-project travel characteristics outlined in Chapter 4. Since driving patterns are not expected to change outside of the study area, the analysis only estimated average trip lengths within the study area (i.e., on SR 20 between Walnut Avenue and Kibbe Road, as well as within the Hallwood community and the Teichert Aggregates Hallwood facility). The analysis is also based only on Build alternative 2 trip lengths, as this alternative would place the haul road furthest from the majority of Hallwood facility site trip origins and destinations, resulting in the most conservative VMT estimate. **Table 9** shows the resulting average trip lengths for both trucks and employees under both baseline and baseline plus project scenarios.

As shown in Table 9, implementation of the proposed project would result in shorter trip lengths for both Hallwood facility trucks and employees. The shorter trip lengths would, in turn, result in a negative change in VMT. This is true of all Build alternatives, as the values shown in Table 9 were developed based on Build alternative 2. Because the baseline plus project scenario would reduce VMT compared to the baseline scenario, the proposed project's impact to VMT is considered **less-than-significant** and no mitigation would be required.

TABLE 9:
AVERAGE TRIP LENGTH WITHIN THE STUDY AREA

Scenario	Average Trip Length within the Study Area[1, 2]	
	Hallwood Facility Trucks	Hallwood Facility Employees
Baseline Conditions	4.67 miles	5.06 miles
Baseline Plus Project Conditions	4.41 miles	4.52 miles
Change	-0.25 miles	-0.54 miles

Notes: [1] Based on Build alternative 2.
[2] The study area includes SR 20 between Walnut Avenue and Kibbe Road, the Hallwood community, and the Hallwood facility. Driving patterns are not expected to change outside of the study area because the proposed project does not increase Hallwood facility levels of production, nor does it affect the location of employees or customers.
Source: Fehr & Peers, 2021.

LOCAL ROADWAY NETWORK

Roadway system policies documented in the Yuba County 2030 General Plan include maintaining roadway LOS that recognizes differences between urban and rural environments (Policy CD16.1), facilitating safe and convenient travel by all road users (pedestrians, bicyclists, transit users, drivers) (Policy CD17.1), designing the County's improvement standards and street classification system to accommodate the full range of locally available travel modes (Policy CD 19.7), and providing multiple point of access where feasible (Policy CD 20.1). Other key goals include a comprehensive pedestrian and bicycle system that serves the Valley Growth Boundary and Rural Communities, and County coordination with transit providers to encourage greater use of public transit during buildout of the 2030 General Plan.

All Build alternatives would be consistent with the General Plan roadway classification diagram, and the proposed project would presumably be designed consistent with County improvement and design standards. In addition, the project would increase connectivity for employee and emergency response trips to and from the Hallwood facility.

The proposed project would also shift existing haul truck and site employee trips away from local roads in the Hallwood community to Kibbe Road (under Build alternatives 1 and 2) or to a new local road (under Build alternative 3). This shift in traffic would result in an overall decrease in conflicts between vehicles and bicycles/pedestrians within the Hallwood community. However, the shift in traffic would also result in increased conflicts between school buses loading or unloading on the SR 20/Kibbe Road eastbound approach and inbound project traffic using the eastbound right turn lane. School children crossing the unmarked crosswalk on the northbound approach would also conflict with inbound/outbound project traffic.

Implementation of Mitigation Measure 1 (see following section) would reduce the mode conflict between school children/buses and project traffic. Based on implementation of Mitigation Measure 1 and the above discussion, the proposed project's roadway system impact is considered **less-than-significant**.

TRANSIT SYSTEM

The nearest Yuba-Sutter Transit Authority public bus service is the Foothill rural bus route, which has stops over 8 miles away from the SR 20/Kibbe Road intersection. Aside from public transit services, the Marysville Joint Unified School District provides school bus service within the study area. An unmarked bus loading area is provided on the southwest and northeast corners of the SR 20/Kibbe Road intersection. School buses stop on the "near side" SR 20 shoulder (i.e., prior to the SR 20/Kibbe Road intersection) without requiring highway traffic to stop. Children are typically picked up and dropped off on the side of SR 20 closest to their home, thereby not requiring recurring pedestrian highway crossings.

Under Build alternative 3, the proposed project would not affect school bus stop operations, as project traffic would be located at a new roadway connection about 1,000 feet west of the SR 20/Kibbe Road school bus stop.

Under Build alternatives 1 and 2, the proposed project would not affect operations at the school bus stop on the northeast corner of SR 20/Kibbe Road. Inbound project traffic would use the eastbound right-turn and westbound left-turn pockets. Westbound through project traffic would not increase with implementation of the proposed project. In addition, outbound project traffic would use the northwest and southwest portions of the intersection, thereby not affecting the northwest corner.

Under Build alternatives 1 and 2, the proposed project would add an eastbound right-turn pocket at SR 20/Kibbe Road, which would be heavily utilized by Hallwood facility employees and haul trucks. School bus operations on the southwest corner of the intersection would be disrupted due to the conflict between school buses loading or unloading on the SR 20/Kibbe Road eastbound approach and inbound project traffic using the eastbound right turn lane. In addition, school children crossing the unmarked crosswalk on the northbound approach would also conflict with inbound/outbound project traffic.

This potential impact to transit operations and safety would be substantially reduced to a less-than-significant level with the implementation of the following mitigation measure.

Mitigation Measure 1

Under Build alternatives 1 and 2, construct an eastbound bus pullout on the far side of the SR 20/Kibbe Road intersection (i.e., just east of the intersection). This would eliminate the conflict between school buses and right-turning vehicles. With this improvement, school children would be picked up and dropped off on the east side of the intersection, closer to where all residences on the south side of SR 20 within one-quarter mile are currently located. This would minimize the number of school children required to cross the unmarked crosswalk on the northbound approach of SR 20/Kibbe Road.

Implementation of Mitigation Measure 1 would substantially reduce the impacts to the transit system to a **less-than-significant** level.

BICYCLE SYSTEM

The Yuba County Bikeway Master Plan Update identifies a planned Class III bike route with a 4-5 foot multi-use shoulder on both sides of SR 20 from the City of Marysville to Nevada County. While no bicycle facilities currently exist in the study area, there is a paved shoulder on the south side of SR 20 from about 600 feet west of SR 20/Kibbe Road to about 600 feet east of the intersection. There is also a paved shoulder on the north side of SR 20 from SR 20/Kibbe Road to about 600 feet east of the intersection.

In addition, the SACOG 2020 MTP/SCS contains a programmed Caltrans District 3 project (to be completed between 2020 and 2025) that will rehabilitate SR 20 and widen shoulders from 0.1 miles east of Loma Rica Road to 0.2 miles west of Spring Valley Road.

The project will result in an improved shoulder to accommodate bicycle travel in the intersection vicinity due to the modified (Build alternatives 1/2) or new intersection (Build alternative 3) on SR 20 being constructed to current Caltrans standards. Hence, the project improves the bicycling environment and does not create an inconsistency with planned improvements. Therefore, project impacts to bicycle facilities are considered **less-than-significant**. No mitigations are required.

PEDESTRIAN SYSTEM

There are no existing pedestrian facilities in the vicinity of SR 20/Kibbe Road. The Yuba County road standards shown in the General Plan (Chapter 5, page 55) state that sidewalks for local roads in rural locations are subject to direction from the Community Development Director in consideration of site-specific conditions. This would include the new haul road and Kibbe Road. It is expected that the applicant will coordinate with the Community Development Director during the design process.

Pedestrian travel demand in the project vicinity is present for school children pick-up and drop-off in the morning and afternoons. Demand would be extremely low at all other times given the remote setting, and the project would not change demand. Under Build alternatives 1 and 2, the proposed project would decrease safety for school children using the crosswalk on the northbound approach of SR 20/Kibbe Road.

Implementation of Mitigation Measure 1 would reduce the conflict between school children and project traffic by allowing children to be picked up/dropped off on the east side of the intersection, closer to where all residences south of SR 20 within one-quarter mile are currently located. This would minimize the number of school children required to cross the unmarked crosswalk on the northbound approach of SR 20/Kibbe Road. Based on implementation of Mitigation Measure 1 and the above discussion, the proposed project's impact to the pedestrian system is considered **less-than-significant.**

CONSTRUCTION IMPACTS

The proposed project would consist of various construction activities, with the precise scope and location depending on the Build alternative and the ultimate design of the new haul road and SR 20/Kibbe Road intersection. Construction would generate new truck and employee trips until completion, and the construction process could cause lane closures, damage to roadways, friction between construction site vehicles and travelers on SR 20, increased conflicts with bicyclists, pedestrians, and residents on Kibbe Road, disruption of school bus operations at SR 20/Kibbe Road, and increased conflicts with school children. However, the potential short-term impacts related to project construction on local vehicle, school bus, bicycle, and pedestrian travel would be substantially reduced to a less-than-significant level with the implementation of the following mitigation measure.

Mitigation Measure 2

Prior to issuance of construction permits, the project applicant shall prepare a Construction Traffic Management Plan (CTMP) to the satisfaction of the Yuba County Community Development and Services Agency. The plan shall include (but not be limited to) items such as:

- Guidance on the number and size of trucks per day entering and leaving the project site;
- Identification of arrival/departure times that would minimize traffic impacts;
- Approved truck circulation patterns;
- Locations of staging areas;
- Locations of employee parking and methods to encourage carpooling;
- Methods for partial/complete street closures (e.g., timing, signage, location and duration restrictions);
- Criteria for use of flaggers and other traffic controls;
- Preservation of safe and convenient passage for bicyclists and pedestrians through/around construction areas;
- Coordination with the Marysville Joint Unified School District to address construction activity conflicts with school children and the SR 20/Kibbe Road school bus operations;
- Monitoring for roadbed damage and timing for completing repairs;
- Limitations on construction activity during peak/holiday weekends and special events;
- Preservation of emergency vehicle access;
- Coordination of construction activities with construction of other projects that occur concurrently in Yuba County to minimize potential additive construction traffic disruptions, avoid duplicative

efforts (e.g., multiple occurrences of similar signage), and maximize effectiveness of traffic mitigation measures (e.g., joint employee alternative transportation programs);

- Removing traffic obstructions during emergency evacuation events; and
- Providing a point of contact for Yuba County residents and guests to obtain construction information, have questions answered, and convey complaints.

The CTMP shall be developed such that the following minimum set of performance standards is achieved throughout project construction. It is anticipated that additional performance standards will be developed once details of project construction are better known.

- Delivery trucks do not idle/stage on SR 20.
- SR 20 and Kibbe Road do not feature any construction-related lane closures on peak activity days.
- All construction employees shall park in designated lots owned by the project applicant or on private lots otherwise arranged for by the project applicant.
- Roadways, unmarked crosswalks, bus loading/unloading areas, and pedestrian and bicycle facilities (e.g., roadway shoulders that could be used by pedestrians and/or bicyclists) shall be maintained clear of debris (e.g., rocks) that could otherwise impede travel and impact public safety.

Implementation of Mitigation Measure 2 would substantially reduce the short-term impacts of project construction to a **less-than-significant** level.

EMERGENCY VEHICLE ACCESS

The proposed project would maintain employee and emergency vehicle access at the Teichert Aggregates Hallwood facility entrance on Walnut Avenue. If emergency vehicle access is provided on the proposed haul road, the project would increase emergency access after construction.

During construction of the project, emergency access to businesses and residents on Kibbe Road could be significantly impacted under Build alternatives 1 and 2. With implementation of Mitigation Measure 2, project impacts to emergency vehicle access would be considered **less-than-significant.** No further mitigations are required.

VI. ROADWAY SYSTEM LEVEL OF SERVICE

The purpose of the following section is to evaluate roadway Level of Service (LOS) for General Plan consistency and to identify feasible improvements to meet the General Plan vehicle LOS Standard. This information is not used to make CEQA impact determinations, but rather to identify potential improvement projects that may be included in conditions of approval for the project entitlements.

LOS POLICY

The roadway system LOS assessment addresses peak hour operations at study area intersections and roadway segments under existing, existing plus project, cumulative, and cumulative plus project conditions. The Yuba County 2035 General Plan includes the following vehicle LOS standards.

- **Policy CD16.3**: On County roads in rural areas, Level of Service "D" shall be maintained, as feasible, during the PM Peak Hour.
- **Policy CD16.4**: On State highways, the level of service goals included in the adopted Yuba-Sutter Congestion Management Plan shall be maintained, as feasible.

With regard to Policy CD16.3, the policy has been interpreted to apply to both signalized and unsignalized intersections for both the weekday AM and PM peak hours. Therefore, for the purposes of this study, LOS D is the minimum acceptable LOS for County intersections and roadway segments.

Regarding Policy CD16.4, Caltrans staff has directed this study to use the SR 20 TCR for establishing LOS criteria. According to the TCR, SR 20 Between 22nd Street and Marysville Road in Yuba County has a Concept LOS E. Therefore, the minimum acceptable LOS in this study for traffic operations at Caltrans facilities is LOS E.

For cases where the proposed project exacerbates current (or future) unacceptable operations, traffic studies in Yuba County have historically identified a five second increase significance criteria for LOS intersection impacts. In other words, if the proposed project exacerbates current (or future) unacceptable operations, the impact would be significant if the delay increase were five seconds or more. Similarly, traffic studies in Yuba County have identified a 0.05 increase in volume-to-capacity (v/c) ratio for roadway segment analyses. These criteria were applied in this study to determine whether LOS policies are impacted and would require identification of potential improvement projects.

EXISTING PLUS PROJECT CONDITIONS ANALYSIS

TRAFFIC FORECASTS

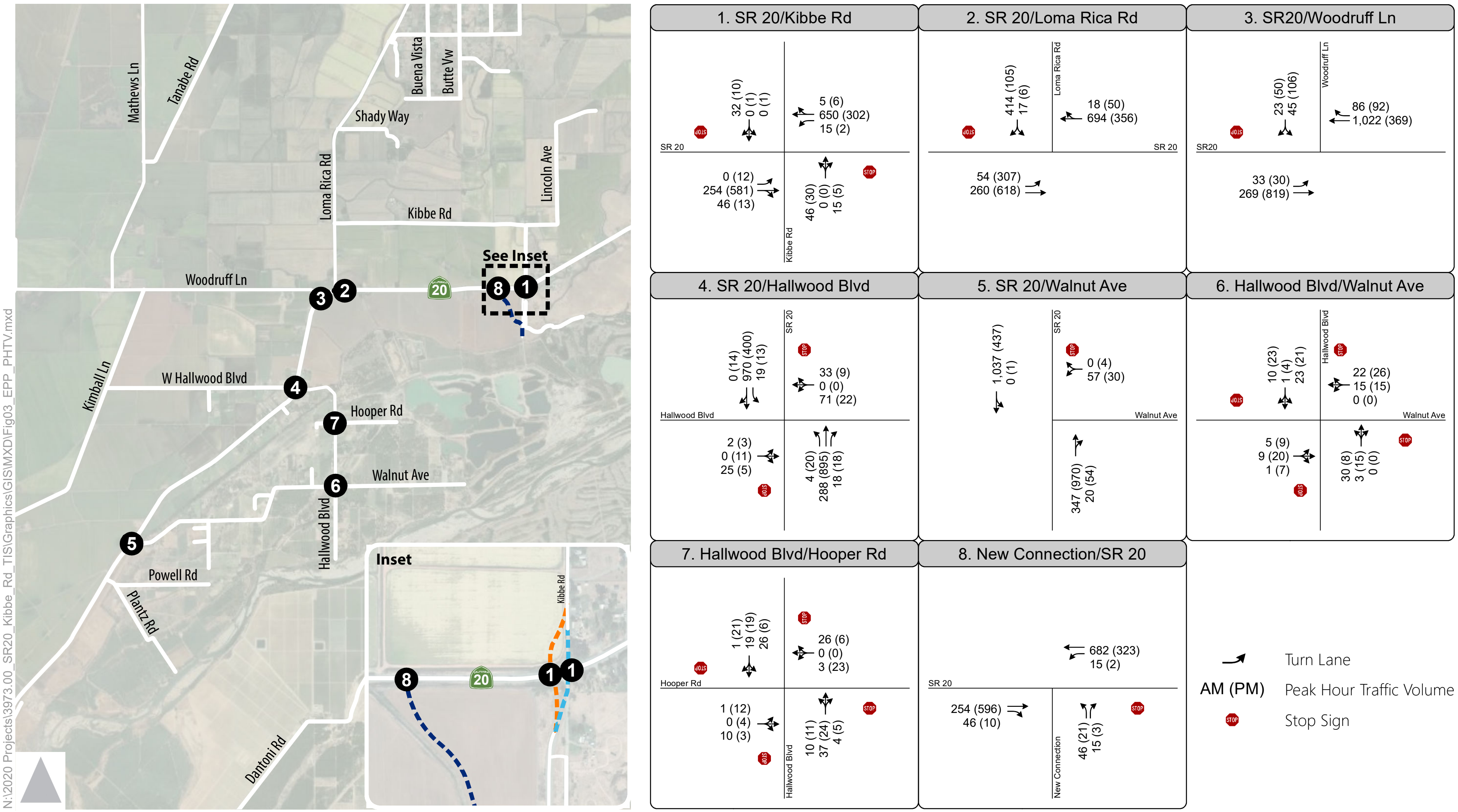
Hallwood site trips are already present in the existing conditions traffic volumes. To develop existing plus project conditions traffic volumes, the existing site trips were removed from the roadway system based on the existing conditions travel characteristics described in Chapter 3, and then reassigned to study facilities according to the trip distribution for plus-project conditions outlined in Chapter 4. **Figure 3** presents the resulting AM and PM peak hour traffic forecasts under existing plus project conditions, by alternative.

INTERSECTION OPERATIONS

Table 10 summarizes existing plus project conditions intersection LOS results (refer to Appendix B for technical calculations). As shown, the proposed project would cause the SR 20/Kibbe Road intersection to degrade to unacceptable LOS F during the AM peak hour under existing plus project Build alternatives 1 and 2. In addition, the project would exacerbate already unacceptable operations at SR 20/Loma Rica Road and SR 20/Walnut Avenue during one or both peak hours. The plus-project delay increase at SR 20/Walnut Avenue, however, would be less than 5 seconds.

Table 10 also shows that the project would improve operations (i.e., reduce average delay) at SR 20/Hallwood Boulevard during both AM and PM peak hours. However, the intersection would still operate at LOS F during both peak hours.

In summary, the proposed project would result in LOS policy impacts under existing plus project conditions at SR 20/Kibbe Road (Build alternatives 1 and 2) and at SR 20/Loma Rica Road during the AM peak hour.



1 Study Intersection

Alternative 1 Alignment

Alternative 2 Alignment

Alternative 3 Alignment

Figure 3

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

TABLE 10:
PEAK HOUR INTERSECTION OPERATIONS – EXISTING PLUS PROJECT CONDITIONS

Intersection	Traffic Control	Peak Hour	Existing Conditions		Existing Plus Project Conditions	
			Delay[1]	LOS	Delay[1]	LOS
1. State Route 20/Kibbe Road (Alternatives 1 and 2 Only)	SSSC	AM	1 (15)	A (B)	4 (51)	**A (F)**
		PM	1 (22)	A (C)	1 (27)	A (D)
2. State Route 20/Loma Rica Road	SSSC	AM	46 (148)	**E (F)**	52 (174)	**F (F)**
		PM	3 (16)	A (C)	3 (17)	A (C)
3. State Route 20/Woodruff Lane	SSSC	AM	2 (26)	A (D)	2 (28)	A (D)
		PM	3 (27)	A (D)	3 (27)	A (D)
4. State Route 20/Hallwood Boulevard	SSSC	AM	45 (>300)	**E (F)**	10 (123)	**A (F)**
		PM	3 (68)	**A (F)**	2 (55)	**A (F)**
5. State Route 20/Walnut Avenue	SSSC	AM	2 (57)	**A (F)**	2 (61)	**A (F)**
		PM	1 (46)	A (E)	1 (46)	A (E)
6. Walnut Avenue/Hallwood Boulevard	AWSC	AM	8	A	7	A
		PM	7	A	7	A
7. Hallwood Boulevard/Hooper Road	AWSC	AM	8	A	7	A
		PM	7	A	7	A
8. State Route 20/New Connection (Alternative 3 Only)	SSSC	AM	-	-	2 (38)	A (E)
		PM	-	-	1 (23)	A (C)

Notes: SSSC = side street stop controlled. AWSC = all-way stop controlled. **Bold** indicates unacceptable operations.
[1] Average delay (rounded to the nearest second). For all-way stop controlled intersections, average delay is the weighted average for all movements. For side street stop controlled intersections, both the intersection average delay and worst movement average delay (in parentheses) is reported.
Source: Fehr & Peers, 2021.

ROADWAY SEGMENT OPERATIONS

Table 11 and **Table 12** summarize the weekday peak hour and daily roadway segment analysis results, respectively, under existing plus project conditions. Traffic volumes were compared to Yuba County's roadway segment capacity thresholds from the Yuba County 2030 General Plan to determine LOS. As shown, all study roadway segments would operate at acceptable LOS D or better under existing plus project conditions.

TABLE 11:
MAX. PEAK HOUR ROADWAY SEGMENT OPERATIONS – EXISTING PLUS PROJECT CONDITIONS

Roadway Segment	Classification Code	Existing Conditions		Existing Plus Project Conditions	
		Max. Peak Hour Volume[1]	V-C / LOS	Max. Peak Hour Volume[1]	V-C / LOS
1. State Route 20: Walnut Avenue to Hallwood Boulevard	2H – Level[2]	1,379	0.65 / D	1,386	0.65 / D
2. State Route 20: Hallwood Boulevard to Woodruff Lane	2H – Level[2]	1,309	0.62 / D	1,330	0.63 / D
3. State Route 20: Woodruff Lane to Loma Rica Road	2H – Level[2,3]	1,370	0.43 / D	1,422	0.45 / D
4. State Route 20: Loma Rica Road to Kibbe Road	2H – Level[2]	963	0.45 / D	1,009	0.48 / D
5. State Route 20: East of Kibbe Road	2H – Level[2]	939	0.44 / D	939	0.44 / D
6. Walnut Avenue: State Route to Hallwood Boulevard	MC – Level[4]	120	0.06 / A	86	0.04 / A
7. Walnut Avenue: Hallwood Boulevard to Teichert Facility	MC – Level[4]	191	0.10 / B	82	0.04 / A
8. Hallwood Boulevard: State Route 20 to Hooper Road	MC – Level[4]	202	0.10 / B	126	0.07 / A
9. Hallwood Boulevard: Hooper Road to Walnut Avenue	MC – Level[4]	150	0.08 / B	92	0.05 / A

Notes: V-C = volume-to-capacity ratio
[1] Inclusive of both AM and PM peak hours.
[2] 2H – Level refers to the "Conventional Major 2-Lane Highway – Level Terrain" roadway classification in the Yuba County 2030 General Plan
[3] Since State Route 20 between Woodruff Lane and Loma Rica Road is a three-lane segment, two-lane roadway capacity thresholds were extrapolated to account for additional capacity of the second westbound lane.
[4] MC (Level) refers to the "Minor Collector – Level Terrain" roadway classification in the Yuba County 2030 General Plan.
Source: Fehr & Peers, 2021.

TABLE 12:
ADT ROADWAY SEGMENT OPERATIONS – EXISTING PLUS PROJECT CONDITIONS

Roadway Segment	Classification Code	Existing Conditions		Existing Plus Project Conditions	
		ADT	V-C / LOS	ADT	V-C / LOS
1. State Route 20: Walnut Avenue to Hallwood Boulevard	2H (Level)[1]	11,140	0.49 / D	11,480	0.50 / D
2. State Route 20: Hallwood Boulevard to Woodruff Lane	2H (Level)[1]	10,870	0.47 / D	11,280	0.49 / D
3. State Route 20: Woodruff Lane to Loma Rica Road	2H (Level)[1,2]	11,910	0.35 / D	12,380	0.36 / D
4. State Route 20: Loma Rica Road to Kibbe Road	2H (Level)[1]	9,150	0.40 / D	9,650	0.42 / D
5. State Route 20: east of Kibbe Road	2H (Level)[1]	8,950	0.39 / D	8,950	0.39 / D
6. Walnut Avenue: State Route 20 to Hallwood Boulevard	MC[3]	900	0.10 / C	570	0.06 / C
7. Walnut Avenue: Hallwood Boulevard to Teichert Facility	MC[3]	1,340	0.15 / C	390	0.04 / C
8. Hallwood Boulevard: State Route 20 to Hooper Road	MC[3]	1,200	0.13 / C	590	0.07 / C
9. Hallwood Boulevard: Hooper Road to Walnut Avenue	MC[3]	1,120	0.13 / C	510	0.06 / C

Notes: ADT = Average Daily Traffic. V-C = volume-to-capacity ratio.
[1] 2H (Level) refers to the "Conventional Highway – 2 Lanes (Level Terrain)" roadway classification in the Yuba County 2030 General Plan
[2] Since State Route 20 between Woodruff Lane and Loma Rica Road is a three-lane segment, two-lane roadway capacity thresholds were extrapolated to account for additional capacity of the second westbound lane.
[3] MC refers to the Minor Collector roadway classification in the Yuba County 2030 General Plan.
Source: Fehr & Peers, 2021.

PEAK HOUR SIGNAL WARRANTS

The peak hour traffic signal warrant analysis showed that the following study intersections satisfy the peak hour signal warrant under existing plus project conditions (refer to Appendix B for technical calculations).

- SR 20/Kibbe Road (Build alternatives 1 and 2) – during AM peak hour only
- SR 20/New Connection (Build alternative 3) – during AM peak hour only

- SR 20/Loma Rica Road – during AM and PM peak hours
- SR 20/Woodruff Lane – during PM peak hour only
- SR 20/Hallwood Boulevard – during AM peak hour only

Based on these results, the proposed project would cause the SR 20/Kibbe Road or SR 20/New Connection intersections to meet the peak hour signal warrant. All other intersections that satisfy the peak hour signal warrant under existing plus project conditions would also satisfy the warrant under existing (no project) conditions.

As discussed in Chapter 1, evaluation of the full set of traffic signal warrants, based on existing conditions at the time an intersection improvement is triggered, should be performed prior to requiring implementation of a traffic signal.

CUMULATIVE CONDITIONS ANALYSIS

TRAFFIC FORECASTS

Cumulative year No Build forecasts were developed using a modified version of the Yuba County travel demand forecasting (TDF) model that was used for the Magnolia Ranch EIR (2014). The cumulative year model assumes the Yuba County General Plan Land Use Alternative 2. In addition, the cumulative year model contains the following land use assumptions:

- Addition of “Employment Village”, which is bounded by Ostrom Road, Bradshaw Road, and SR 65
- Addition of Recology project on Ostrom Road
- Removal of the Woodbury Specific Plan
- Removal of the Magnolia Ranch development

The roadway network in the cumulative year model was revised to reflect reasonably foreseeable projects in the study area based on the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) (Sacramento Area Council of Governments, 2020) and the Yuba County Capital Improvement Program (CIP) project list, as contained in the Transportation Master Plan 2020-2024 (Yuba County, 2020). The cumulative year model contains the following roadway network assumptions:

- Passing lanes on SR 20 between Loma Rica Road and Kibbe Road

- Implementation of the SR 70 Safety Improvements project, which includes passing lanes on various segments between Laurellen Road and Butte County
- Widening of North Beale Road from two to four lanes between Linda Avenue and Griffith Road
- Widening of Erle Road/SR 70 overpass (between Chestnut Road and Edgewater Circle) to six lanes
- Two-lane extension of Goldfields Parkway from North Beale Road to Hammonton-Smartsville Road
- Widening of Goldfields Parkway from two to four lanes from Orchard subdivision to North Beale Road
- Construction of a 4-lane road between the SR 70/Plumas Lake Boulevard interchange and Plumas Arboga Road
- Other roadway widening edits consistent with 2020 MTP/SCS

The following proposed projects were removed from the original model since they are either not listed in the 2020 MTP/SCS or are identified as post-2040 projects:

- State Route 20 widening between Marysville and Loma Rica Road (not included in 2020 MTP/SCS)
- Goldfields Parkway between its current southern terminus and the SR 65/SR 70 interchange (new interchange is identified as a post-2040 project)
- Goldfields Parkway between Hammonton-Smartsville Road and State Route 20 (not included in 2020 MTP/SCS)
- Links Parkway extensions (post-2040 projects)
- Wheatland Bypass (post-2040 project)

The traffic forecasting adjustment procedure known as the "difference method" was used to develop AM and PM peak hour traffic forecasts for the No Build alternative. This forecasting procedure is calculated as follows for every movement at study intersections:

$$Forecast = Existing\ Conditions\ Volume + (Cumulative\ Year\ TDF\ Model\ Volume - Base\ Year\ TDF\ Model\ Volume)$$

The base year for the TDF model is 2007 and the future year is 2030. Caltrans SR 20 AADT data from 2007 was compared to 2019 Caltrans data (the most recent year available). The AADT data shows that daily traffic volumes on SR 20 between Loma Rica Road and Kibbe Road decreased slightly between 2007 and 2019. Therefore, the model's growth rate from 2007 to 2030 was applied to the time period between 2019 (existing) and 2042 (the cumulative year). This results in a conservative (i.e., on the high side) cumulative year volume, since buildout of the cumulative year model will likely occur beyond 2042. **Figure 4** presents the resulting AM and PM peak hour traffic forecasts for the cumulative conditions No Build alternative.

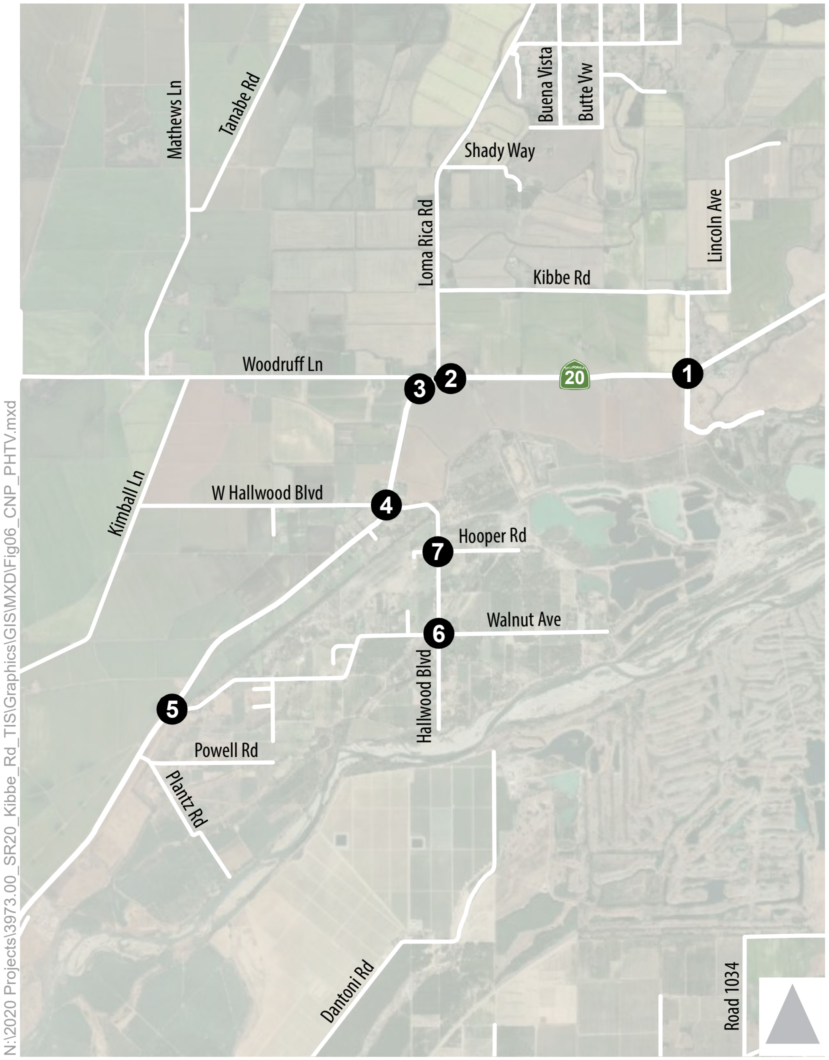
Cumulative plus project conditions volumes are developed by removing Hallwood site traffic from the cumulative conditions No Build alternative volumes and then reassigning them to the roadway network based on plus-project travel characteristics. **Figure 5** shows the resulting AM and PM peak hour traffic forecasts under cumulative plus project conditions, by alternative.

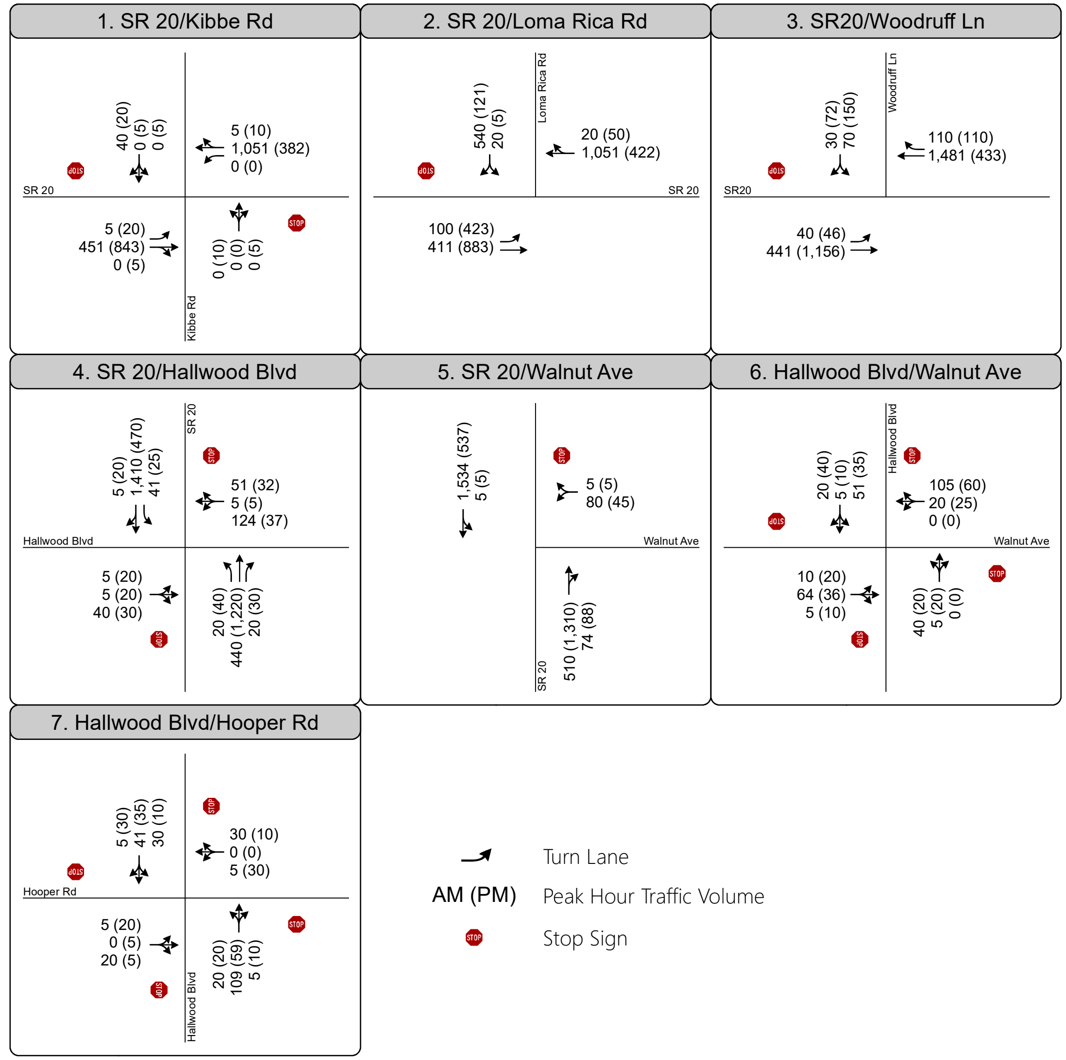
INTERSECTION OPERATIONS

Table 13 summarizes cumulative conditions intersection LOS results associated with the proposed project (refer to Appendix C for technical calculations). As shown, the proposed project would cause the SR 20/Kibbe Road intersection to degrade to unacceptable LOS F during both the AM and PM peak hours under cumulative plus project Build alternatives 1 and 2. Under the Build alternative 3 scenario, the new intersection on SR 20 would operate at LOS F during the AM peak hour. In addition, the project would exacerbate already unacceptable operations at SR 20/Loma Rica Road, SR 20/Woodruff Lane, and SR 20/Walnut Avenue during the AM peak hour. The plus-project delay increase at these three intersections would be more than 5 seconds.

Table 13 also shows that the project would improve operations (i.e., reduce average delay) at SR 20/Hallwood Boulevard during both AM and PM peak hours, and at SR 20 /Woodruff Lane during the PM peak hour. However, the intersections would still operate at LOS F.

In summary, the proposed project would result in LOS policy impacts under cumulative plus project conditions at SR 20/Kibbe Road during the AM and PM peak hours (Build alternatives 1 and 2), the new SR 20 intersection during the AM peak hour (Build alternative 3), and at SR 20 intersections with Loma Rica Road, Woodruff Lane, and Walnut Avenue during the AM peak hour.

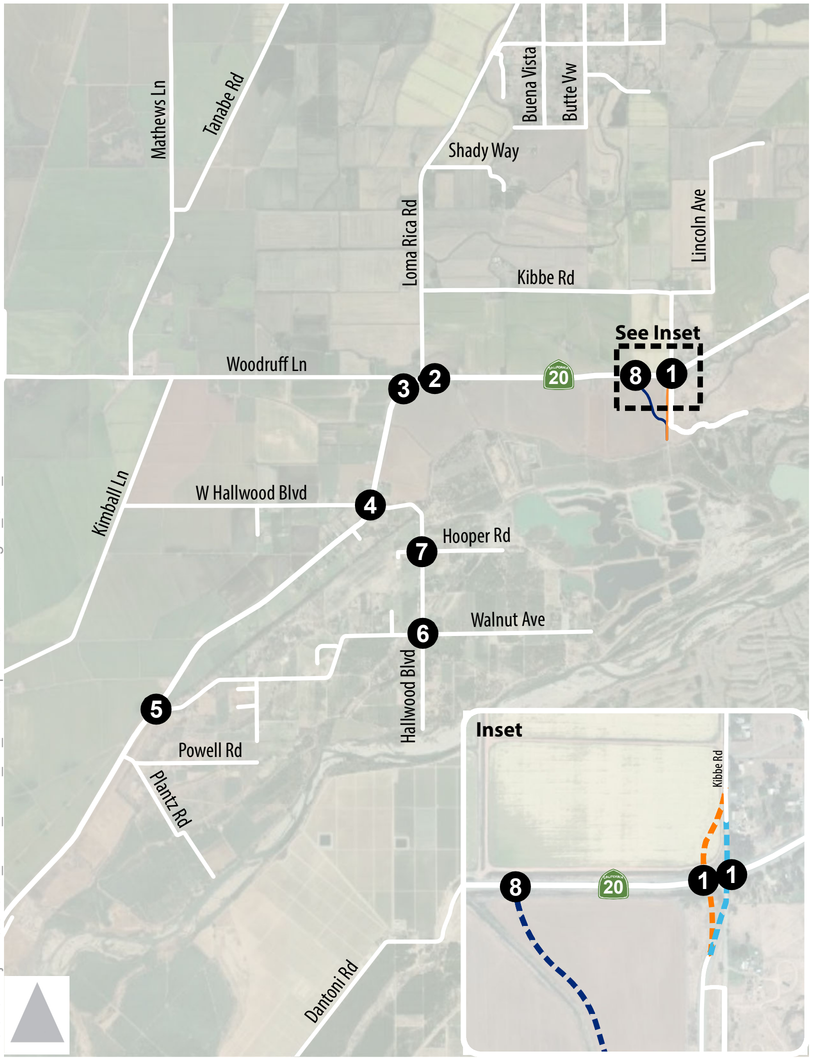




Study Intersection

Figure 4

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Conditions (No Build)



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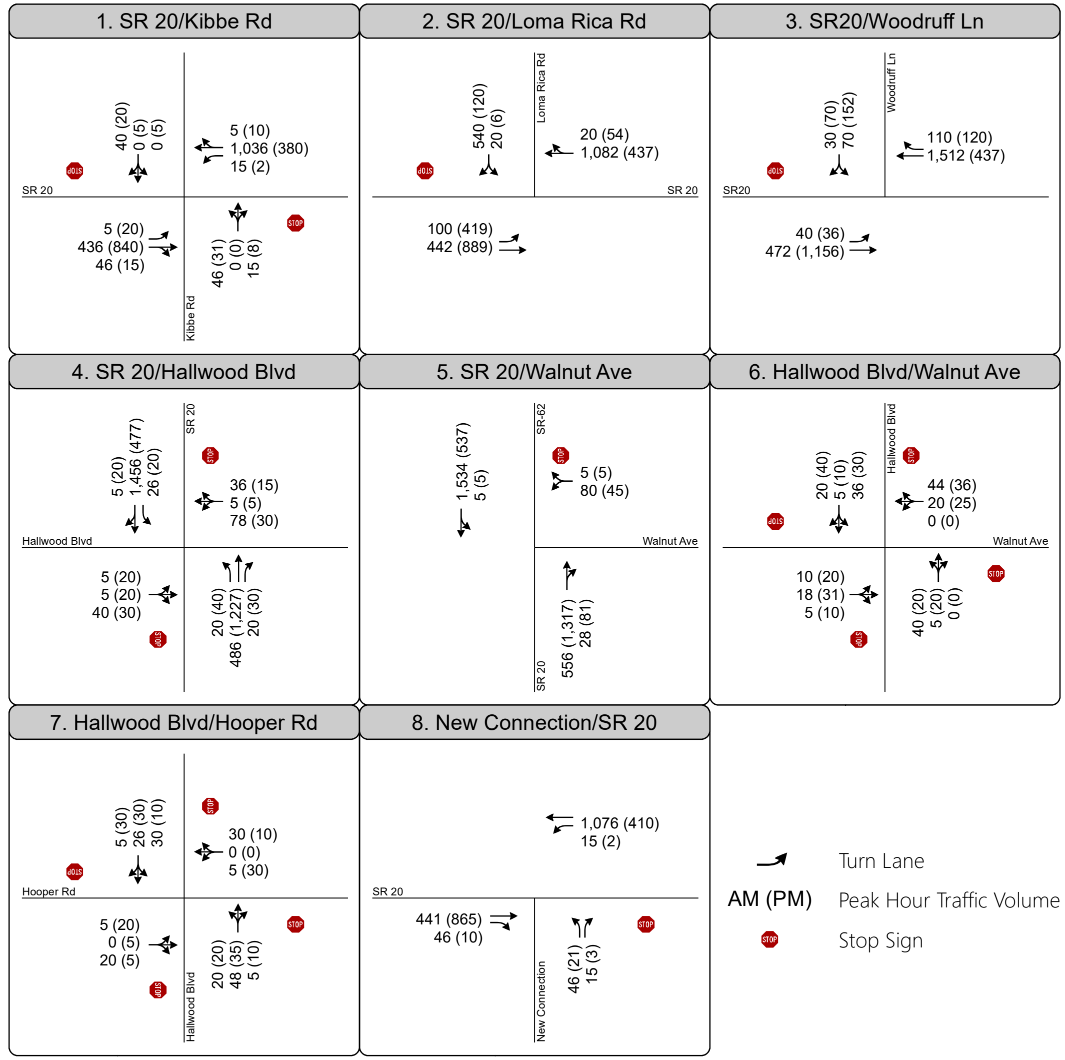

1 Study Intersection

Alternative 1 Alignment

Alternative 2 Alignment

Alternative 3 Alignment

Figure 5

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

TABLE 13:
PEAK HOUR INTERSECTION OPERATIONS – CUMULATIVE PLUS PROJECT CONDITIONS

Intersection	Traffic Control	Peak Hour	Cumulative Conditions		Cumulative Plus Project Conditions	
			Delay[1]	LOS	Delay[1]	LOS
1. State Route 20/Kibbe Road (Alternatives 1 and 2 Only)	SSSC	AM	1 (24)	A (C)	21 (>300)	**C (F)**
		PM	1 (36)	A (E)	2 (61)	**A (F)**
2. State Route 20/Loma Rica Road	SSSC	AM	242 (>300)	**F (F)**	254 (>300)	**F (F)**
		PM	5 (33)	A (D)	5 (43)	A (E)
3. State Route 20/Woodruff Lane	SSSC	AM	6 (131)	**A (F)**	7 (146)	**A (F)**
		PM	15 (127)	**B (F)**	14 (124)	**B (F)**
4. State Route 20/Hallwood Boulevard	SSSC	AM	>300 (>300)	**F (F)**	154 (>300)	**F (F)**
		PM	47 (>300)	**E (F)**	26 (>300)	**D (F)**
5. State Route 20/Walnut Avenue	SSSC	AM	35 (>300)	**D (F)**	37 (>300)	**E (F)**
		PM	6 (221)	**A (F)**	6 (221)	**A (F)**
6. Walnut Avenue/Hallwood Boulevard	AWSC	AM	8	A	7	A
		PM	8	A	8	A
7. Hallwood Boulevard/Hooper Road	AWSC	AM	8	A	7	A
		PM	8	A	8	A
8. State Route 20/New Connection (Alternative 3 Only)	SSSC	AM	-	-	6 (213)	**A (F)**
		PM	-	-	1 (40)	A (E)

Notes: SSSC = side street stop controlled. AWSC = all-way stop controlled. **Bold** indicates unacceptable operations.
[1] Average delay (rounded to the nearest second). For all-way stop controlled intersections, average delay is the weighted average for all movements. For side street stop controlled intersections, both the intersection average delay and worst movement average delay (in parentheses) is reported.
Source: Fehr & Peers, 2021.

ROADWAY SEGMENT OPERATIONS

Table 14 and **Table 15** summarize the weekday peak hour and daily roadway segment analysis results, respectively, under cumulative plus project conditions. Traffic volumes were compared to Yuba County's roadway segment capacity thresholds from the Yuba County 2030 General Plan to determine LOS. As shown, all County study roadway segments would operate at acceptable LOS D or better under cumulative plus project conditions. All Caltrans study roadway segments would operate at acceptable LOS E or better. One segment—State Route 20 between Walnut Avenue and Hallwood Boulevard—would operate just below the maximum peak hour LOS E/F threshold of 2,120 vehicles.

TABLE 14:
MAX. PEAK HOUR ROADWAY SEGMENT OPERATIONS – CUMULATIVE PLUS PROJECT CONDITIONS

Roadway Segment	Classification Code	Cumulative Conditions		Cumulative Plus Project Conditions	
		Max. Peak Hour Volume[1]	V-C / LOS	Max. Peak Hour Volume[1]	V-C / LOS
1. State Route 20: Walnut Avenue to Hallwood Boulevard	2H – Level[2]	2,060	0.97 / E	2,100	0.99 / E
2. State Route 20: Hallwood Boulevard to Woodruff Lane	2H – Level[2]	1,980	0.93 / E	2,040	0.96 / E
3. State Route 20: Woodruff Lane to Loma Rica Road	3H – Level[2,3]	2,110	0.66 / D	2,170	0.68 / D
4. State Route 20: Loma Rica Road to Kibbe Road	2H – Level[2]	1,530	0.72 / D	1,590	0.75 / D
5. State Route 20: East of Kibbe Road	2H – Level[2]	1,510	0.71 / D	1,510	0.71 / D
6. Walnut Avenue: State Route to Hallwood Boulevard	MC – Level[4]	170	0.09 / B	150	0.08 / A
7. Walnut Avenue: Hallwood Boulevard to Teichert Facility	MC – Level[4]	240	0.12 / B	130	0.07 / A
8. Hallwood Boulevard: State Route 20 to Hooper Road	MC – Level[4]	240	0.12 / B	160	0.08 / B
9. Hallwood Boulevard: Hooper Road to Walnut Avenue	MC – Level[4]	200	0.10 / B	150	0.08 / A

Notes: V-C = volume-to-capacity ratio. **Bold** indicates unacceptable operations.
[1] Inclusive of both AM and PM peak hours.
[2] 2H – Level refers to the "Conventional Major 2-Lane Highway – Level Terrain" roadway classification in the Yuba County 2030 General Plan
[3] Since State Route 20 between Woodruff Lane and Loma Rica Road is a three-lane segment, two-lane roadway capacity thresholds were extrapolated to account for additional capacity of the second westbound lane.
[4] MC (Level) refers to the "Minor Collector – Level Terrain" roadway classification in the Yuba County 2030 General Plan.
Source: Fehr & Peers, 2021.

TABLE 15:
ADT ROADWAY SEGMENT OPERATIONS – CUMULATIVE PLUS PROJECT CONDITIONS

Roadway Segment	Classification Code	Cumulative Conditions		Cumulative Plus Project Conditions	
		ADT	V-C / LOS	ADT	V-C / LOS
1. State Route 20: Walnut Avenue to Hallwood Boulevard	2H (Level)[1]	15,300	0.67 / E	15,600	0.68 / E
2. State Route 20: Hallwood Boulevard to Woodruff Lane	2H (Level)[1]	15,000	0.66 / E	15,400	0.67 / E
3. State Route 20: Woodruff Lane to Loma Rica Road	3H (Level)[1,2]	21,300	0.62 / E	21,800	0.63 / E
4. State Route 20: Loma Rica Road to Kibbe Road	2H (Level)[1]	17,400	0.76 / E	17,900	0.78 / E
5. State Route 20: east of Kibbe Road	2H (Level)[1]	17,200	0.75 / E	17,200	0.75 / E
6. Walnut Avenue: State Route to Hallwood Boulevard	MC[3]	1,400	0.16 / C	1,000	0.11 / C
7. Walnut Avenue: Hallwood Boulevard to Teichert Facility	MC[3]	1,800	0.20 / C	800	0.09 / C
8. Hallwood Boulevard: State Route 20 to Hooper Road	MC[3]	1,700	0.19 / C	1,100	0.12 / C
9. Hallwood Boulevard: Hooper Road to Walnut Avenue	MC[3]	1,600	0.18 / C	1,000	0.11 / C

Notes: ADT = Average Daily Traffic. V-C = volume-to-capacity ratio.
[1] 2H (Level) refers to the "Conventional Highway – 2 Lanes (Level Terrain)" roadway classification in the Yuba County 2030 General Plan
[2] Since State Route 20 between Woodruff Lane and Loma Rica Road is a three-lane segment, two-lane roadway capacity thresholds were extrapolated to account for additional capacity of the second westbound lane.
[3] MC refers to the Minor Collector roadway classification in the Yuba County 2030 General Plan.
Source: Fehr & Peers, 2021.

PEAK HOUR SIGNAL WARRANTS

The peak hour traffic signal warrant analysis showed that the following study intersections satisfy the peak hour warrant under the cumulative conditions No Build alternative (refer to Appendix C for technical calculations).

- State Route 20/Loma Rica Road – during AM and PM peak hours

- State Route 20/Woodruff Lane – during AM and PM peak hours
- State Route 20/Hallwood Boulevard – during AM and PM peak hours
- State Route 20/Walnut Avenue – during AM peak hour only

Under cumulative plus project conditions, the following study intersections satisfy the peak hour traffic signal warrant (refer to Appendix C for technical calculations).

- State Route 20/Kibbe Road (Build alternatives 1 and 2) – during AM peak hour only
- State Route 20/New Connection (Build alternative 3) – during AM peak hour only
- State Route 20/Loma Rica Road – during AM and PM peak hours
- State Route 20/Woodruff Lane – during AM and PM peak hours
- State Route 20/Hallwood Boulevard – during AM peak hour only
- State Route 20/Walnut Avenue – during AM peak hour only

Based on these results, the inclusion of the proposed project under cumulative conditions would cause the State Route 20/Kibbe Road or SR 20/New Connection intersections to meet the peak hour signal warrant. All other intersections that satisfy the peak hour signal warrant under cumulative plus project conditions would also satisfy the warrant under the cumulative conditions No Build scenario.

As discussed in Chapter 1, evaluation of the full set of traffic signal warrants, based on existing conditions at the time an intersection improvement is triggered, should be performed prior to requiring implementation of a traffic signal.

ROADWAY SYSTEM IMPROVEMENT PROJECTS

This section provides a description of road system improvement requirements designed to meet General Plan policies. This includes policies CD16.3, CD16.4, CD17.1, CD19.4, and 19.5. Policies CD16.3 and CD16.4 include the vehicle LOS standards. Policies CD17.1, CD19.4, and CD19.5 call for project conditions to provide pedestrian, bicycle and transit facilities that provide multi-modal connections and safe/convenient travel for all users.

SUMMARY OF LOS POLICY IMPACTS

The following summarizes the LOS policy impact findings identified in the above analysis. All LOS policy impacts occurred at study intersections. No study roadway segments were impacted.

- Existing Plus Project Conditions
  - State Route 20/Kibbe Road – degrades to unacceptable LOS during AM peak hour (Build alternatives 1 and 2)
  - State Route 20/Loma Rica Road – project exacerbates already unacceptable LOS during the AM peak hour
- Cumulative Plus Project Conditions
  - State Route 20/Kibbe Road – degrades to unacceptable LOS during the AM and PM peak hours (Build alternatives 1 and 2)
  - State Route 20/New Connection – operates at unacceptable LOS during the AM peak hour (Build alternative 3)
  - State Route 20/Loma Rica Road – project exacerbates projected unacceptable LOS during the AM peak hour
  - State Route 20/Woodruff Lane – project exacerbates projected unacceptable LOS during the AM peak hour
  - State Route 20/Walnut Avenue – project exacerbates projected unacceptable LOS during the AM peak hour

POTENTIAL IMPROVEMENT PROJECTS

The following intersection improvements would improve traffic operations to acceptable LOS, unless otherwise specified. These improvements, if built, should include appropriate pedestrian, bicycle, and/or transit improvements, consistent with General Plan policies. An Intersection Control Evaluation (ICE) study (per Caltrans' TOPD 13-02) will ultimately govern the determination of appropriate control type and lane configurations at these intersections.

Existing Plus Project Conditions

State Route 20/Kibbe Road (Alternative 1 and 2 only). The SR 20/Kibbe Road intersection meets the peak hour signal warrant under existing plus project conditions during the AM peak hour. Installation of a traffic signal control with left turn pockets on the major road approaches and a right turn pocket on the eastbound approach would result in acceptable operations. Alternatively, installation of a single lane roundabout control with a shared left/through/right turn lane on all approaches would result in acceptable operations. These improvements would be fully funded project costs.

- *State Route 20/Loma Rica Road*. The SACOG 2020 MTP/SCS identifies installation of a traffic signal at SR 20/Loma Rica Road as a project to be completed between 2031 and 2035, with Yuba County listed as the lead agency. The peak hour traffic signal warrant analysis shows that this intersection meets the warrant under existing conditions during the AM and PM peak hours. Installation of a traffic signal at SR 20/Loma Rica Road would improve operations to LOS C in the AM peak hour under existing plus project conditions. Because intersection operations are already deficient under existing conditions, the proposed project would be required to make a fair share contribution to intersection improvements. Yuba County staff should direct the applicant to an appropriate fee program, if available, for payments.

Cumulative Plus Project Conditions

- *State Route 20/Kibbe Road (Alternative 1 and 2 only)*. The SR 20/Kibbe Road intersection meets the peak hour signal warrant under cumulative plus project conditions during the AM peak hour. Installation of a traffic signal control with left turn pockets on the major road approaches and a right turn pocket on the eastbound approach would result in acceptable operations. Alternatively, installation of a single lane roundabout control with a shared left/through/right turn lane on all approaches would result in acceptable operations. These improvements would be fully funded project costs.

- *State Route 20/New Connection (Alternative 3 only)*. The SR 20/New Connection intersection meets the peak hour signal warrant under cumulative plus project conditions during the AM peak hour. Installation of a traffic signal control with a westbound left turn pocket, an eastbound right turn pocket, and a northbound right turn pocket would result in acceptable operations. Alternatively, installation of a single lane roundabout control with a shared left/through/right turn lane on all approaches would result in acceptable operations. These improvements would be fully funded project costs.

- *State Route 20/Loma Rica Road*. The SACOG 2020 MTP/SCS identifies installation of a traffic signal at SR 20/Loma Rica Road as a project to be completed between 2031 and 2035. The peak hour traffic signal warrant analysis shows that this intersection meets the warrant under existing conditions during the AM and PM peak hours. Widening of SR 20 to two westbound lanes from east of SR 20/Loma Rica Road to west of SR 20/Woodruff Lane and installation of a traffic signal at SR 20/Loma Rica Road would improve operations to LOS C in the AM peak hour under cumulative plus project conditions. The proposed project would be required to make a fair share contribution to these improvements. Yuba County staff should direct the applicant to an appropriate fee program, if available, for payments.

- *State Route 20/Woodruff Lane* – This intersection meets the PM peak hour signal warrant under existing conditions. Widening of SR 20 to two westbound lanes from east of SR 20/Loma Rica Road to west of SR 20/Woodruff Lane and installation of a traffic signal at SR 20/Woodruff Lane would improve operations to LOS B in the AM peak hour under cumulative plus project conditions. The proposed project would be required to make a fair share contribution to these improvements. Yuba County staff should direct the applicant to an appropriate fee program, if available, for payments.

- *State Route 20/Walnut Avenue* – Construction of a two-way left-turn lane on the south leg of the intersection and a southbound left turn on the north leg of the intersection would improve operations to better than cumulative No Build conditions. However, the intersection would still operate at LOS F. This intersection meets the peak hour signal warrant during the AM peak hour under existing conditions. Installation of a traffic signal would improve operations to LOS E under cumulative plus project conditions. The proposed project would be required to make a fair share contribution to intersection improvements. Yuba County staff should direct the applicant to an appropriate fee program, if available, for payments.

Table 16 shows peak hour operations analysis results with implementation of the improvement projects identified above.

TABLE 16:
PEAK HOUR INTERSECTION OPERATIONS – WITH POTENTIAL IMPROVEMENTS

Intersection	Peak Hour	No Build		Build		Build (with Improvements)	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
Existing Plus Project Conditions							
1. State Route 20/Kibbe Road (Alternative 1 and 2 Only)	AM	1 (15)	A (B)	4 (51)	**A (F)**	10	B
	PM	1 (22)	A (C)	1 (27)	A (D)	5	A
2. State Route 20/Loma Rica Road	AM	46 (148)	**E (F)**	52 (174)	**F (F)**	26	C
	PM	3 (16)	A (C)	3 (17)	A (C)	12	B
Cumulative Conditions							
1. State Route 20/Kibbe Road (Alternative 1 and 2 Only)	AM	1 (24)	A (C)	21 (>300)	**C (F)**	14	B
	PM	1 (36)	A (E)	2 (61)	**A (F)**	11	B
2. State Route 20/Loma Rica Road	AM	242 (>300)	**F (F)**	254 (>300)	**F (F)**	24	C
	PM	5 (33)	A (D)	5 (43)	A (E)	11	B
3. State Route 20/Woodruff Lane	AM	6 (131)	**A (F)**	7 (146)	**A (F)**	13	B
	PM	15 (127)	**B (F)**	14 (124)	**A (F)**	25	C
5. State Route 20/Walnut Avenue[2]	AM	35 (>300)	**D (F)**	37 (>300)	**E (F)**	60	E
	PM	6 (221)	**A (F)**	6 (221)	**A (F)**	43	D
8. State Route 20/New Connection (Alternative 3 Only)	AM	-	-	6 (213)	**A (F)**	22	C
	PM	-	-	1 (40)	A (E)	8	A

Notes: **Bold** indicates unacceptable operations.
[1] Average delay (rounded to the nearest second). For signal control intersections, average delay is the weighted average for all movements. For side street stop controlled intersections, both the intersection average delay and worst movement average delay (in parentheses) is reported.
[2] Improvement delay/LOS represents installation of a traffic signal.
Source: Fehr & Peers, 2021.

FEHR & PEERS

TECHNICAL MEMORANDUM

Date: October 1, 2021

To: Michael Smith, Teichert Aggregates

From: David Manciati, Fehr & Peers

Subject: ***SR 20/Kibbe Road Intersection and Haul Road Draft TIS – Sight Distance Analysis***

RS20-3973

This memorandum summarizes data collection, analysis, and conclusions of the sight distance analysis for the proposed State Route (SR) 20/Kibbe Road Intersection and Haul Road project in Yuba County, CA.

PURPOSE

In response to comments received on the Intersection Control Evaluation (ICE) study from Caltrans on July 28, 2021, Fehr & Peers completed a sight distance analysis to inform the safety evaluation of the proposed project.

ANALYSIS METHODOLOGY

The measured sight distance at the intersection was compared against guidelines in the Caltrans *Highway Design Manual Seventh Edition* (HDM) topics 201 (stopping sight distance) and 405.1 (corner sight distance). Per direction from Caltrans, we used a design speed of 65 miles per hour (MPH).

Table 201.1 in the HDM describes minimum stopping sight distance required at a given speed. The stopping sight distance for a vehicle traveling at 65 MPH is 660 feet. We used this information to ensure the available sight distance for vehicles approaching both the back of the queue and the intersection on the eastbound and westbound approaches of SR 20. Queue lengths were determined as part of the ongoing ICE study.

Table 405.1A in the HDM describes corner sight distance, which, considering the acceleration characteristics of combination trucks, corresponds to providing a motorist with 10.5 seconds of sight distance. We calculated the corner sight distance to be 1,005 feet for a vehicle traveling at 65 MPH. Corner sight distance does not apply to roundabouts and was therefore only evaluated for the two signal alternatives. Should one of the roundabout alternatives be chosen, analysis of circulating, entrance, and exit sight distance would be necessary.

The sight distance analysis was performed for the following cumulative year scenarios:

- Signal Control Option Under Project Alternative 1
- Signal Control Option Under Project Alternative 2
- Roundabout Option Under Project Alternative 1
- Roundabout Option Under Project Alternative 2

SIGHT DISTANCE EVALUATION

Signal Control Option Under Project Alternative 1

The following sight distance evaluations were performed for this alternative:

- Stopping Sight Distance – Back of Queue (**Figure 1)**
- Stopping Sight Distance – Intersection (**Figure 2**)
- Corner Sight Distance (**Figure 3**)

Figure 1 presents a graphical illustration of stopping sight distance approaching the back of the queue. As shown in the figure, a driver traveling at 65 MPH on SR 20 has adequate sight distance in both the eastbound and westbound directions to see the back of the queue, react, and stop safely.

Figure 2 displays the stopping sight distance for a vehicle approaching the intersection, assuming no queue has formed. Under this scenario, there is adequate stopping sight distance in the eastbound direction. However, in the westbound direction, a portion of the necessary sight distance lies inside the property line on the northeast corner of the intersection. This area is partially obstructed by signs and overhanging tree branches.

Figure 3 shows the necessary corner sight distance for eastbound and westbound approaches. As with the intersection stopping sight distance, the corner stopping sight distance is adequate in the eastbound direction. However, in the westbound direction, a portion of the corner sight distance lies inside the property on the northeast corner of the intersection. The sight line would be obstructed by signs, trees, and potentially some picnic tables. A fence exists within the sight distance triangle; however, it is made of a mesh material and, as long as it is kept clear of signs, vegetation, and/or other obstructions, it would not hinder the corner sight distance.

The following screenshots (Google Earth, February 2021) show the various obstructions discussed in this memo, including the fence, picnic tables, signs, and trees.

The above screenshot shows the fence within the corner sight distance triangle. This fence is mostly see-through and would generally not hinder sight distance if kept clear of signs, vegetation, and other obstructions. The below screenshot shows various signs for a taco shop on the northeast parcel of SR 20/Kibbe Road.

The above screenshot shows picnic tables, signs, trees, and overhanging foliage, which affect sight distance to varying degrees based on project alternative and traffic control option (i.e., signal or roundabout). The below screenshot zooms in on trees in the northeast parcel of SR 20/Kibbe Road. A picnic table can be seen on the right side of the screenshot, partially hidden within the clump of trees.

Signal Control Option Under Project Alternative 2

We performed the following sight distance evaluations for this alternative:

- Stopping Sight Distance – Back of Queue (**Figure 4)**
- Stopping Sight Distance – Intersection (**Figure 5**)
- Corner Sight Distance (**Figure 6**)

Figure 4 presents a graphical illustration of stopping sight distance approaching the back of the queue. As shown in the figure, a vehicle has adequate stopping sight distance in both the eastbound and westbound directions.

Figure 5 displays the stopping sight distance for a vehicle approaching the intersection, assuming no queue has formed. The eastbound direction has adequate stopping sight distance, but the westbound direction is partially obstructed by objects in the properties on the northeast corner of the intersection. This area has signs and overhanging tree branches that hinder sight distance.

Figure 6 shows the necessary corner sight distance for eastbound and westbound approaches. As with the intersection stopping sight distance, the corner stopping sight distance is adequate in the eastbound direction. However, in the westbound direction, a portion of the corner sight distance lies inside the properties on the northeast corner of the intersection. The sight line would be obstructed by signs, trees, potentially some picnic tables, and a fence. The fence is made of a mesh material and, as long as it is kept clear of obstructions, it would not hinder the corner sight distance.

Roundabout Option Under Project Alternative 1

We performed the following sight distance evaluations for this alternative:

- Stopping Sight Distance – Back of Queue (**Figure 7)**
- Stopping Sight Distance – Approach (**Figure 8**)

Figure 7 presents a graphical illustration of stopping sight distance approaching the back of the queue. As shown in the figure, a vehicle has adequate stopping sight distance in both the eastbound and westbound directions.

Figure 8 displays the stopping sight distance for the intersection approach. Under this scenario, there is adequate stopping sight distance in the eastbound direction. However, in the westbound direction a portion of the necessary sight distance lies inside the property line on the northeast corner of the intersection. This area is partially obstructed by signs and trees.

Roundabout Option Under Project Alternative 2

We performed the following sight distance evaluations for this alternative:

- Stopping Sight Distance – Back of Queue (**Figure 9)**
- Stopping Sight Distance – Approach (**Figure 10**)

Figure 9 presents a graphical illustration of stopping sight distance approaching the back of the queue. As shown in the figure, a vehicle has adequate stopping sight distance in both the eastbound and westbound directions.

Figure 10 displays the stopping sight distance for the intersection approach. There is adequate sight distance in the eastbound direction. However, in the westbound direction a portion of the necessary sight distance lies inside the property line on the northeast corner of the intersection. This area is partially obstructed by signs and overhanging tree branches.

CONCLUSIONS

The eastbound approach has adequate stopping sight distance and corner sight distance for each cumulative year scenario analyzed. The westbound approach is obstructed to some degree in all scenarios. The sight distance under the signal options would require removal of trees and relocation of picnic tables and signs. The roundabout options would require the relocation of signs and the maintenance/removal of trees to not hinder sight distance.

In all cases, an agreement should be made with adjacent property owners to ensure the sight distance is clear from obstructions.

LEGEND:

STOPPING SIGHT DISTANCE TRIANGLE - DESIGN OF VERTICAL ELEMENTS IN THIS AREA TO BE CONSISTENT WITH HIGHWAY DESIGN MANUAL TOPIC 201.3

DESIGN SPEED:

SR 20 = 65 MPH
(BASED ON THE PREVAILING SPEED PROVIDED BY CALTRANS)

STOPPING SIGHT DISTANCE:

STOPPING SIGHT DISTANCE = 660' PER HIGHWAY DESIGN MANUAL TABLE 201.1

80 0 80 160
1"=80' GRAPHIC SCALE

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Figure 1

Stopping Sight Distance - Back of Queue
SR 20 at Kibbe Road - Alternative 1 - Signal

LEGEND:

STOPPING SIGHT DISTANCE TRIANGLE - DESIGN OF VERTICAL ELEMENTS IN THIS AREA TO BE CONSISTENT WITH HIGHWAY DESIGN MANUAL TOPIC 201.3

DESIGN SPEED:

SR 20 = 65 MPH
(BASED ON THE PREVAILING SPEED PROVIDED BY CALTRANS)

STOPPING SIGHT DISTANCE:

STOPPING SIGHT DISTANCE = 660' PER HIGHWAY DESIGN MANUAL TABLE 201.1

80 0 80 160
1"=80' GRAPHIC SCALE

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Figure 2

Stopping Sight Distance - Intersection
SR 20 at Kibbe Road - Alternative 1 - Signal

LEGEND:

CORNER SIGHT DISTANCE TRIANGLE - DESIGN OF VERTICAL ELEMENTS IN THIS AREA TO BE CONSISTENT WITH HIGHWAY DESIGN MANUAL TOPIC 405.1(2)

DESIGN SPEED:

SR 20 = 65 MPH
(BASED ON THE PREVAILING SPEED PROVIDED BY CALTRANS)

CORNER SIGHT DISTANCE:

CORNER SIGHT DISTANCE = 1,005' CALCULATED PER HIGHWAY DESIGN MANUAL TOPIC 405.1(2)

80 0 80 160
1"=80' GRAPHIC SCALE

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Figure 3

Corner Sight Distance
SR 20 at Kibbe Road - Alternative 1 - Signal

LEGEND:

STOPPING SIGHT DISTANCE TRIANGLE - DESIGN OF VERTICAL ELEMENTS IN THIS AREA TO BE CONSISTENT WITH HIGHWAY DESIGN MANUAL TOPIC 201.3

DESIGN SPEED:

SR 20 = 65 MPH
(BASED ON THE PREVAILING SPEED PROVIDED BY CALTRANS)

STOPPING SIGHT DISTANCE:

STOPPING SIGHT DISTANCE = 660' PER HIGHWAY DESIGN MANUAL TABLE 201.1

80 0 80 160
1"=80' GRAPHIC SCALE

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Figure 4

Stopping Sight Distance - Back of Queue
SR 20 at Kibbe Road - Alternative 2 - Signal

LEGEND:

STOPPING SIGHT DISTANCE TRIANGLE - DESIGN OF VERTICAL ELEMENTS IN THIS AREA TO BE CONSISTENT WITH HIGHWAY DESIGN MANUAL TOPIC 201.3

DESIGN SPEED:

SR 20 = 65 MPH
(BASED ON THE PREVAILING SPEED PROVIDED BY CALTRANS)

STOPPING SIGHT DISTANCE:

STOPPING SIGHT DISTANCE = 660' PER HIGHWAY DESIGN MANUAL TABLE 201.1

80 0 80 160
1"=80' GRAPHIC SCALE

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Figure 5

Stopping Sight Distance - Intersection
SR 20 at Kibbe Road - Alternative 2 - Signal

LEGEND:

CORNER SIGHT DISTANCE TRIANGLE - DESIGN OF VERTICAL ELEMENTS IN THIS AREA TO BE CONSISTENT WITH HIGHWAY DESIGN MANUAL TOPIC 405.1(2)

DESIGN SPEED:

SR 20 = 65 MPH
(BASED ON THE PREVAILING SPEED PROVIDED BY CALTRANS)

CORNER SIGHT DISTANCE:

CORNER SIGHT DISTANCE = 1,005' CALCULATED PER HIGHWAY DESIGN MANUAL TOPIC 405.1(2)

80 0 80 160
1"=80' GRAPHIC SCALE

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Figure 6

Corner Sight Distance
SR 20 at Kibbe Road - Alternative 2 - Signal

LEGEND:

STOPPING SIGHT DISTANCE TRIANGLE - DESIGN OF VERTICAL ELEMENTS IN THIS AREA TO BE CONSISTENT WITH HIGHWAY DESIGN MANUAL TOPIC 201.3

DESIGN SPEED:

SR 20 = 65 MPH
(BASED ON THE PREVAILING SPEED PROVIDED BY CALTRANS)

STOPPING SIGHT DISTANCE:

STOPPING SIGHT DISTANCE = 660' PER HIGHWAY DESIGN MANUAL TABLE 201.1

80 0 80 160
1"=80' GRAPHIC SCALE

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Figure 7

Stopping Sight Distance - Back of Queue

SR 20 at Kibbe Road - Alternative 1 - Roundabout

LEGEND:

STOPPING SIGHT DISTANCE TRIANGLE - DESIGN OF VERTICAL ELEMENTS IN THIS AREA TO BE CONSISTENT WITH HIGHWAY DESIGN MANUAL TOPIC 201.3

DESIGN SPEED:

SR 20 = 65 MPH
(BASED ON THE PREVAILING SPEED PROVIDED BY CALTRANS)

STOPPING SIGHT DISTANCE:

STOPPING SIGHT DISTANCE = 660' PER HIGHWAY DESIGN MANUAL TABLE 201.1

80 0 80 160
1"=80' GRAPHIC SCALE

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Figure 8

Stopping Sight Distance - Approach

SR 20 at Kibbe Road - Alternative 1 - Roundabout

LEGEND:

STOPPING SIGHT DISTANCE TRIANGLE - DESIGN OF VERTICAL ELEMENTS IN THIS AREA TO BE CONSISTENT WITH HIGHWAY DESIGN MANUAL TOPIC 201.3

DESIGN SPEED:

SR 20 = 65 MPH
(BASED ON THE PREVAILING SPEED PROVIDED BY CALTRANS)

STOPPING SIGHT DISTANCE:

STOPPING SIGHT DISTANCE = 660' PER HIGHWAY DESIGN MANUAL TABLE 201.1

80 0 80 160
1"=80' GRAPHIC SCALE

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Figure 9

Stopping Sight Distance - Back of Queue

SR 20 at Kibbe Road - Alternative 2 - Roundabout

LEGEND:

STOPPING SIGHT DISTANCE TRIANGLE - DESIGN OF VERTICAL ELEMENTS IN THIS AREA TO BE CONSISTENT WITH HIGHWAY DESIGN MANUAL TOPIC 201.3

DESIGN SPEED:

SR 20 = 65 MPH
(BASED ON THE PREVAILING SPEED PROVIDED BY CALTRANS)

STOPPING SIGHT DISTANCE:

STOPPING SIGHT DISTANCE = 660' PER HIGHWAY DESIGN MANUAL TABLE 201.1

80 0 80 160
1"=80' GRAPHIC SCALE

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Figure 10

Stopping Sight Distance - Approach

SR 20 at Kibbe Road - Alternative 2 - Roundabout

FEHR & PEERS

TECHNICAL MEMORANDUM

Date: November 12, 2021

To: Michael Smith, Teichert Aggregates

From: David Manciati, Fehr & Peers

Subject: ***Teichert Aggregates' Fair Share Percentage Calculations for the State Route 20/Kibbe Road Intersection and Haul Road EIR (DRAFT)***

RS20-3973

Fehr & Peers has calculated Teichert Aggregates' fair share contribution requirements for Level of Service (LOS) conditions of approval related to the State Route (SR) 20/Kibbe Road Intersection and Haul Road project in Yuba County. This memorandum documents methodology and presents fair share percentages for improvements at study intersections, except for SR 20/Kibbe Road. Improvements at SR 20/Kibbe Road are fully funded project costs, as the intersection provides access to the Hallwood aggregate mining facility.

Existing Plus Project Conditions

The project Environmental Impact Report (EIR) identifies inconsistencies with Yuba County LOS policy at the following intersections under existing plus project conditions.

- SR 20/Loma Rica Road – AM peak hour only

At SR 20/Loma Rica Road, the proposed project would exacerbate LOS F operations by increasing side-street delay by 5 or more seconds. The fair share contribution at SR 20/Loma Rica Road is based on the project's percent volume increase to existing AM peak hour traffic volumes.

Table 1 summarizes the proposed project's fair share contribution requirements for existing plus project conditions.

TABLE 1. TEICHERT FAIR SHARE CONTRIBUTIONS – EXISTING PLUS PROJECT CONDITIONS

Intersection	Fair Share Contribution Requirement
State Route 20 / Loma Rica Road	4.4%

Source: Fehr & Peers, 2021

Cumulative Plus Project Conditions

The project EIR identifies inconsistencies with Yuba County LOS policy at the following intersections under cumulative plus project conditions.

- SR 20/Loma Rica Road – AM peak hour only
- SR 20/Woodruff Lane – AM peak hour only
- SR 20/Walnut Avenue – AM peak hour only

At SR 20/Loma Rica Road and SR 20/Woodruff Lane, the proposed project would exacerbate AM peak hour LOS F operations by increasing side-street delays by 5 or more seconds. Fair share percentages at these two intersections were derived using the Caltrans' Equitable Share Responsibility method. Using this method, the project's fair share is determined by estimating the percentage of total future traffic growth that would be attributable to the project.

The proposed project would shift northbound right-turn vehicles to the northbound through movement at SR 20/Walnut Avenue. Under cumulative plus project conditions, this would result in a net increase of 0 vehicles to the intersection. As a result, application of the Caltrans method results in a fair share contribution of 0% for the project applicant.

Table 2 summarizes the project's fair share contribution requirements for cumulative plus project conditions.

TABLE 1. TEICHERT FAIR SHARE CONTRIBUTIONS – CUMULATIVE PLUS PROJECT CONDITIONS

Intersection	Fair Share Contribution Requirement
State Route 20 / Loma Rica Road	7.7%
State Route 20 / Woodruff Lane	7.6%
State Route 20 / Walnut Avenue	0.0%

Source: Fehr & Peers, 2021